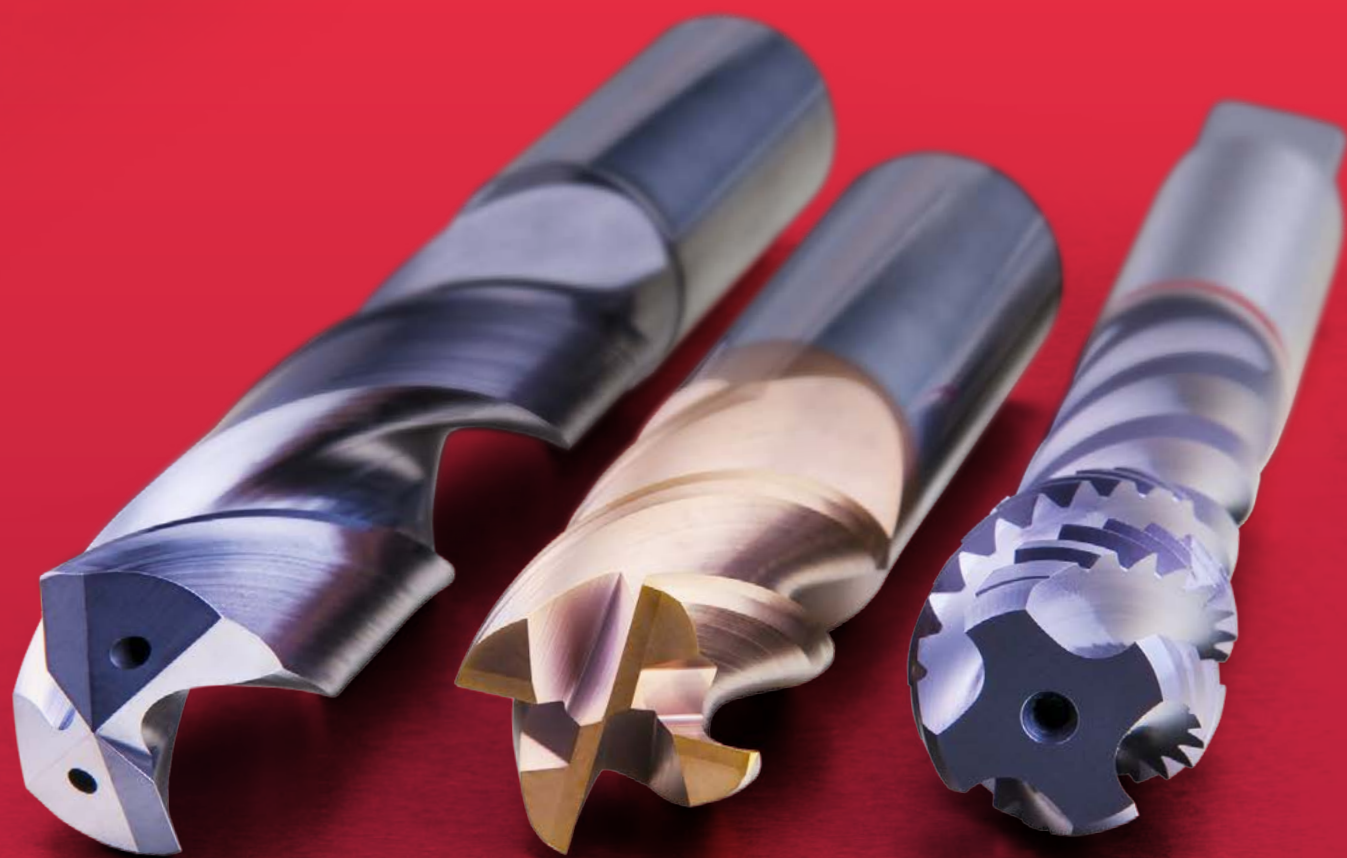




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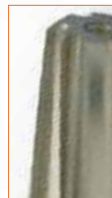
2018



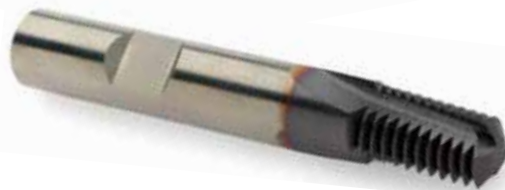
003 - 136



137 - 194



195 - 206



207 - 344



345 - 366



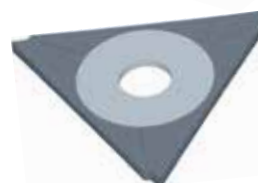
367 - 494



495 - 526



527 - 546



547 - 640



003 - 136



A002	63	A166	105	A405	114	H853	21
A002S	63	A170	74	A412	115	H855	21
A022	51	A188	134	A413	116	H858	21
A080	131	A190	132	A510	77	H860	24
A087	126	A191	133	A520	55	H861	24
A088	124	A199	130	A530	99	R100	30
A089	128	A200	117	A553	80	R120	28
A094	127	A201	119	A620	51	R122	26
A095	125	A205	117	A720	59	R123	26
A099	129	A206	117	A723	47	R200	25
A100	63	A210	118	A730	99	R453	40
A101	63	A225	120	A777	70	R454	40
A108	70	A237	121	A900	82	R457	36
A110	86	A238	122	A901	82	R458	36
A117	51	A242	123	A920	60	R459	44
A119	49	A243	85	A921	60	R510	34
A120	51	A244	85	A940	89	R520	32
A122	48	A266	117	A941	89	R6011	26
A123	50	A295	135	A951	110	R7131	27
A124	58	A296	136	A952	110	R950	18
A125	92	A345	108	A976	96	R960	18
A130	99	A350	106	A977	96	R970	18
A147	70	A400	112	A978	96		
A160	76	A402	113				







Anyag	Material	Malzeme	Material
Szabvány	Standard	Standart	Standard
Fúrási mélység	Adancimea	Derinlik	Depth
Csúcsszög	Unghiul la varf	Uç Açısı	Point Angle
Bevonat	Acoperire	Kaplama	Coating
Szár	Coadă	Şaft	Shank
Írány	Direcție	Yön	Direction
Hűtés	Racire	Soğutma	Coolant
■ Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
● Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metri pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
Kódok	Coduri	Kodlar	Codes
Választék	Gama	Ürün aralığı	Range

AMG	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvöztöt acél	Otel aliat	Alaşımli çelik	Alloy steel
1.5	Ötvöztöt, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvöztöt, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvöztöt, edzett acél	Otel aliat, calit	Alaşımli çelik, ısıl işlemli	Alloy steel, Heat treated
1.8	Ötvöztöt, edzett és kopásálló acél	Otel aliat, calit	Alaşımli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Auszenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Auszenites	Feritic+austenitic	Feritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımli	Titanium, unalloyed
4.2	Titánium, ötvöztöt	Aliat	Titanyum, alaşımli	Titanium, alloyed
4.3	Titánium, ötvöztöt	Aliat	Titanyum, alaşımli	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımli	Nickel, unalloyed
5.2	Nikkel, ötvöztöt	Aliat	Nikel, alaşımli	Nickel, alloyed
5.3	Nikkel, ötvöztöt	Aliat	Nikel, alaşımli	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımli	Al, Mg, unalloyed
7.2	Al ötvöztöt, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımli, Si < %0.5	Al alloyed, Si < 0.5%
7.3	Al ötvöztöt, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımli, Si > %0.5 < %10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvöztöt, Si > 10%	Al aliat cu Si >10%	Al alaşımli, Si > %10 sertleştirilmiş, Al alaşımli, Mg alaşımli	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzemeler	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

	HM	HM	HM	HSS	HSS	HSS			
				3XD	5XD	8XD			

Anyag	Material	Malzeme	Material
Szabvány	Standard	Standart	Standard
Fúrási mélység	Adancimea	Derinlik	Depth
Csúcsszög	Unghiul la varf	Uç Açısı	Point Angle
Bevonat	Acoperire	Kaplama	Coating
Szár	Coadă	Şaft	Shank
Alak	Forme	Form	Form
Írány	Directie	Yön	Direction
Hűtés	Racire	Soğutma	Coolant
Kúpsüllyesztők	Unghi tesire	Havşa	Countersink °
■ Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
● Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metrii pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
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1.4	Ötvöztött acél	Otel aliat	Alaşımli çelik	Alloy steel
1.5	Ötvöztött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvöztött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvöztött, edzett acél	Otel aliat, calit	Alaşımli çelik, ısıli işlemli	Alloy steel, Heat treated
1.8	Ötvöztött, edzett és kopásálló acél	Otel aliat, calit	Alaşımli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Auszenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Auszenites	Feritic+austenitic	Feritik + östenik, Ferritik, Martensitik	Feritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvöztetlen	Nealiat	Titanyum, alایشmsız	Titanium, unalloyed
4.2	Titánium, ötvöztött	Aliat	Titanyum, alایشmli	Titanium, alloyed
4.3	Titánium, ötvöztött	Aliat	Titanyum, alایشmli	Titanium, alloyed
5.1	Nikkel, ötvöztetlen	Nealiat	Nikel, alایشmsız	Nickel, unalloyed
5.2	Nikkel, ötvöztött	Aliat	Nikel, alایشmli	Nickel, alloyed
5.3	Nikkel, ötvöztött	Aliat	Nikel, alایشmli	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvöztetlen	Al, Mg nealiat	Al, Mg, alایشmsız	Al, Mg, unalloyed
7.2	Al ötvöztött, Si < 0.5%	Al aliat cu Si <0.5%	Al alایشmli, Si<%0.5	Al alloyed, Si < 0.5%
7.3	Al ötvöztött, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alایشmli, Si, >%0.5 <%10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvöztött, Si > 10%	Al aliat cu Si >10%	Al alایشmli, Si>%10 sertleştirilmiş. Al alایشmli, Mg alایشmli	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
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9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

							
	A094	A089	A099	A099	A199	A080	
	Set	Set	Set	DRILLBOY	Set	Set	
		NEW				NEW	
AMG	127	128	129	129	130	131	ISO
1.1							P 1
1.2							P 1
1.3							P 2
1.4							P 3
1.5							P 4
1.6							H 1
1.7							H 3
1.8							H 4
2.1							M 1
2.2							M 3
2.3							M 2
2.4							S 2
3.1							K 1
3.2							K 2
3.3							K 3
3.4							K 4
4.1							S 1
4.2							S 2
4.3							S 3
5.1							S 1
5.2							S 2
5.3							S 3
6.1							N 3
6.2							N 4
6.3							N 3
6.4							N 4
7.1							N 1
7.2							N 1
7.3							N 1
7.4							N 2
8.1							O
8.2							O
8.3							O
9.1							H
10.1							O



A190
Set

A191
Set

A188
Set

A295
Set

A296
Set

NEW

AMG	132	133	134	135	136	ISO
1.1						P 1
1.2						P 1
1.3						P 2
1.4						P 3
1.5						P 4
1.6						H 1
1.7						H 3
1.8						H 4
2.1						M 1
2.2						M 3
2.3						M 2
2.4						S 2
3.1						K 1
3.2						K 2
3.3						K 3
3.4						K 4
4.1						S 1
4.2						S 2
4.3						S 3
5.1						S 1
5.2						S 2
5.3						S 3
6.1						N 3
6.2						N 4
6.3						N 3
6.4						N 4
7.1						N 1
7.2						N 1
7.3						N 1
7.4						N 2
8.1						O
8.2						O
8.3						O
9.1						H
10.1						O

Fn	HM				HSS HM			HSS		HSS-E						
	Ø(D)	1mm	2mm	3mm	4mm	5mm	6mm	8mm	10mm	12mm	15mm	16mm	20mm	25mm	30mm	40mm	50mm
A	0.012	0.023	0.029	0.032	0.036	0.042	0.054	0.062	0.069	0.082	0.086	0.110	0.125	0.135	0.155	0.175
B	0.014	0.028	0.037	0.041	0.046	0.053	0.067	0.080	0.090	0.103	0.108	0.135	0.153	0.165	0.188	0.208
C	0.015	0.032	0.044	0.050	0.056	0.064	0.080	0.098	0.110	0.125	0.130	0.160	0.180	0.195	0.220	0.240
D	0.016	0.038	0.053	0.060	0.068	0.078	0.098	0.119	0.130	0.149	0.155	0.188	0.210	0.228	0.253	0.275
E	0.017	0.043	0.062	0.071	0.080	0.092	0.115	0.140	0.150	0.173	0.180	0.215	0.240	0.260	0.285	0.310
F	0.018	0.050	0.073	0.084	0.095	0.109	0.138	0.165	0.178	0.202	0.210	0.248	0.275	0.295	0.320	0.343
G	0.019	0.056	0.084	0.096	0.109	0.126	0.160	0.190	0.205	0.231	0.240	0.280	0.310	0.330	0.355	0.375
H	0.020	0.066	0.102	0.116	0.130	0.150	0.190	0.228	0.243	0.271	0.280	0.320	0.355	0.375	0.398	0.418
I	0.021	0.076	0.119	0.134	0.150	0.173	0.220	0.265	0.280	0.310	0.320	0.360	0.400	0.420	0.440	0.460
J	0.024	0.084	0.135	0.152	0.170	0.197	0.250	0.298	0.315	0.349	0.360	0.405	0.445	0.465	0.485	0.503
K	0.026	0.092	0.150	0.170	0.190	0.220	0.280	0.330	0.350	0.388	0.400	0.450	0.490	0.510	0.530	0.545
L	0.028	0.101	0.165	0.186	0.208	0.240	0.305	0.360	0.385	0.419	0.430	0.485	0.525	0.545	0.568	0.588
M	0.030	0.110	0.180	0.202	0.225	0.260	0.330	0.390	0.420	0.450	0.460	0.520	0.560	0.580	0.605	0.630
N	0.032	0.119	0.195	0.218	0.242	0.280	0.355	0.420	0.455	0.481	0.490	0.555	0.595	0.615	0.642	0.672
S	0.008	0.014	0.020	0.025	0.030	0.037	0.050	0.080	0.100	0.123	0.130	0.150				
T	0.015	0.028	0.040	0.050	0.060	0.070	0.090	0.110	0.130	0.160	0.170	0.190				
U	0.026	0.048	0.070	0.080	0.090	0.107	0.140	0.170	0.200	0.223	0.230	0.240				
V	0.038	0.069	0.100	0.115	0.130	0.153	0.200	0.250	0.280	0.310	0.320	0.340				
W	0.049	0.089	0.130	0.150	0.170	0.200	0.260	0.330	0.380	0.418	0.430	0.450				
X	0.056	0.103	0.150	0.180	0.210	0.250	0.330	0.420	0.480	0.533	0.550	0.580				
Y	0.068	0.124	0.180	0.220	0.260	0.317	0.430	0.550	0.700	0.700	0.700	0.740				
Z	0.094	0.172	0.250	0.325	0.400	0.533	0.800	1.000	1.100	1.175	1.200	1.200				

mm/N ± 25 %

$$n = \frac{V_c \times 1000}{\pi \times D}$$

$$V_f = n \times f_n$$

Fn	HM						
Ø(D)	12mm	15mm	16mm	20mm	25mm	30mm	40mm
S	0.100	0.123	0.130	0.150	0.170	0.190	0.220
T	0.130	0.160	0.170	0.190	0.210	0.230	0.260
U	0.200	0.223	0.230	0.240	0.270	0.300	0.360
V	0.280	0.310	0.320	0.340	0.400	0.440	0.510
W	0.380	0.418	0.430	0.450	0.470	0.490	0.520

mm/N ± 25 %

R950 R960 R970		18
H853 H855 H858		21
H860 H861		24



H861	H860	R950 R960 R970	H853 H855 H858
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R950	R960	R970	H853	H855	H858	H860	H861
15/32 - 42.00	15/32 - 30.50	15/32 - 42.00	15/32 - 42.00	15/32 - 30.50	15/32 - 42.00	N1 - N7	N1 - N6

R950	R960	R970	H853	H855	H858	H860	H861
R95015/32	R96015/32	R97015/32					
R95012.0	R96012.0	R97012.0	H85312.0	H85512.0	H85812.0		
R95012.1	R96012.1	R97012.1	H85331/64	H85531/64			
R95012.2	R96012.2	R97012.2					
R95031/64	R96031/64	R97031/64					
R95012.5	R96012.5	R97012.5					
R95012.6	R96012.6	R97012.6	H85312.5	H85512.5	H85812.5	H860N1	H860N1
R9501/2	R9601/2	R9701/2	H8531/2	H8551/2			
R95012.8	R96012.8	R97012.8					
R95012.9	R96012.9	R97012.9					
R95013.0	R96013.0	R97013.0					
R95033/64	R96033/64	R97033/64	H85313.0	H85513.0	H85813.0		
R95013.2	R96013.2	R97013.2	H85317/32	H85517/32			
R95017/32	R96017/32	R97017/32					
R95013.5	R96013.5	R97013.5					
R95013.6	R96013.6	R97013.6					
R95013.7	R96013.7	R97013.7					
R95013.8	R96013.8	R97013.8					
R95035/64	R96035/64	R97035/64	H85314.0	H85514.0	H85814.0		
R95014.0	R96014.0	R97014.0	H8539/16	H8559/16			
R95014.1	R96014.1	R97014.1					
R95014.2	R96014.2	R97014.2					
R9509/16	R9609/16	R9709/16					
R95014.5	R96014.5	R97014.5					
R95014.6	R96014.6	R97014.6				H860N1	H861N1
R95037/64	R96037/64	R97037/64					
R95014.7	R96014.7	R97014.7					
R95014.8	R96014.8	R97014.8					
R95015.0	R96015.0	R97015.0	H85315.0	H85515.0	H85815.0		
R95019/32	R96019/32	R97019/32	H85339/64	H85539/64			
R95015.1	R96015.1	R97015.1					
R95015.2	R96015.2	R97015.2					
R95039/64	R96039/64	R97039/64					
R95015.5	R96015.5	R97015.5					

R950	R960	R970	H853	H855	H858	H860	H861
R95015.6	R96015.6	R97015.6					
R95015.7	R96015.7	R97015.7					
R9505/8	R9605/8	R9705/8					
R95016.0	R96016.0	R97016.0					
R95016.1	R96016.1	R97016.1	H85316.0	H85516.0	H85816.0		
R95016.2	R96016.2	R97016.2	H85341/64	H85541/64			
R95041/64	R96041/64	R97041/64					
R95016.5	R96016.5	R97016.5					
R95016.6	R96016.6	R97016.6					
R95021/32	R96021/32	R97021/32					
R95016.7	R96016.7	R97016.7					
R95017.0	R96017.0	R97017.0					
R95043/64	R96043/64	R97043/64	H85317.0	H85517.0	H85817.0	H860N2	H861N2
R95017.1	R96017.1	R97017.1	H85311/16	H85511/16			
R95017.2	R96017.2	R97017.2					
R95011/16	R96011/16	R97011/16					
R95017.5	R96017.5	R97017.5					
R95017.6	R96017.6	R97017.6					
R95017.7	R96017.7	R97017.7					
R95045/64	R96045/64	R97045/64					
R95018.0	R96018.0	R97018.0	H85318.0	H85518.0	H85818.0		
R95018.1	R96018.1	R97018.1	H85323/32	H85523/32			
R95018.2	R96018.2	R97018.2					
R95023/32	R96023/32	R97023/32					
R95018.5	R96018.5	R97018.5					
R95018.6	R96018.6	R97018.6					
R95047/64	R96047/64	R97047/64					
R95018.7	R96018.7	R97018.7					
R95018.9	R96018.9	R97018.9					
R95019.0	R96019.0	R97019.0					
R9503/4	R9603/4	R9703/4	H85319.0	H85519.0	H85819.0		
R95019.1	R96019.1	R97019.1	H85349/64	H85549/64			
R95019.2	R96019.2	R97019.2					
R95019.25	R96019.25	R97019.25					
R95049/64	R96049/64	R97049/64					
R95019.5	R96019.5	R97019.5				H860N3	H861N3
R95019.6	R96019.6	R97019.6					
R95019.7	R96019.7	R97019.7					
R95025/32	R96025/32	R97025/32	H85320.0	H85520.0	H85820.0		
R95020.0	R96020.0	R97020.0	H85351/64	H85551/64			
R95051/64	R96051/64	R97051/64					
R95020.5	R96020.5	R97020.5					
R95013/16	R96013/16	R97013/16					
R95021.0	R96021.0	R97021.0					
R95053/64	R96053/64	R97053/64	H85321.0	H85521.0	H85821.0		
R95027/32	R96027/32	R97027/32	H85327/32	H85527/32			
R95021.5	R96021.5	R97021.5					
R95055/64	R96055/64	R97055/64					
R95022.0	R96022.0	R97022.0					
R9507/8	R9607/8	R9707/8	H85322.0	H85522.0	H85822.0		
R95022.5	R96022.5	R97022.5	H85357/64	H85557/64			
R95057/64	R96057/64	R97057/64					
R95022.7	R96022.7	R97022.7					
R95023.0	R96023.0	R97023.0					
R95029/32	R96029/32	R97029/32	H85323.0	H85523.0	H85823.0	H860N4	H861N3
R95059/64	R96059/64	R97059/64	H85359/64	H85559/64			
R95023.5	R96023.5	R97023.5					
R95015/16	R96015/16	R97015/16					
R95024.0	R96024.0	R97024.0					
R95061/64	R96061/64	R97061/64	H85324.0	H85524.0	H85824.0		
R95024.5	R96024.5	R97024.5	H85331/32	H85531/32			
R95031/32	R96031/32	R97031/32					

R950	R960	R970	H853	H855	H858	H860	H861
R95025.0	R96025.0	R97025.0					
R95063/64	R96063/64	R97063/64					
R9501	R9601	R9701	H85325.0	H85525.0	H85825.0		
R95025.5	R96025.5	R97025.5	H8531.1/64	H8551.1/64			
R95025.65	R96025.65	R97025.65					
R9501.1/64	R9601.1/64	R9701.1/64					
R95026.0	R96026.0	R97026.0					
R9501.1/32	R9601.1/32	R9701.1/32	H85326.0	H85526.0	H85826.0	H860N5	H861N4
R95026.5	R96026.5	R97026.5	H8531.3/64	H8551.3/64			
R9501.3/64	R9601.3/64	R9701.3/64					
R9501.1/16	R9601.1/16	R9701.1/16					
R95027.0	R96027.0	R97027.0					
R9501.5/64	R9601.5/64	R9701.5/64	H85327.0	H85527.0	H85827.0		
R95027.5	R96027.5	R97027.5	H8531.3/32	H8551.3/32			
R9501.3/32	R9601.3/32	R9701.3/32					
R95028.0	R96028.0	R97028.0					
R9501.7/64	R9601.7/64	R9701.7/64	H85328.0	H85528.0	H85828.0		
R95028.5	R96028.5	R97028.5	H8531.1/8	H8551.1/8			
R9501.1/8	R9601.1/8	R9701.1/8					
R9501.9/64	R9601.9/64	R9701.9/64					
R95029.0	R96029.0	R97029.0					
R9501.5/32	R9601.5/32	R9701.5/32	H85329.0	H85529.0	H85829.0		
R95029.5	R96029.5	R97029.5	H8531.11/64	H8551.11/64			
R9501.11/64	R9601.11/64	R9701.11/64					
R95030.0	R96030.0	R97030.0					
R9501.3/16	R9601.3/16	R9701.3/16	H85330.0	H85530.0	H85830.0	H860N6	H861N5
R95030.5	R96030.5	R97030.5	H8531.3/16	H8551.3/16			
R9501.7/32		R9701.7/32					
R95031.0		R97031.0					
R9501.1/4		R9701.1/4	H85332.0	H85532.0	H85832.0		
R95032.0		R97032.0					
R95032.5		R97032.5					
R9501.19/64		R9701.19/64					
R95033.0		R97033.0	H85333.5	H85533.5	H85833.5		
R95033.5		R97033.5					
R95034.0		R97034.0					
R9501.11/32		R9701.11/32					
R95034.5		R97034.5	H85335.0	H85535.0	H85835.0		
R9501.3/8		R9701.3/8					
R95035.0		R97035.0					
R95036.0		R97036.0					
R9501.27/64		R9701.27/64	H85336.5	H85536.5	H85836.5		
R95036.5		R97036.5					
R95037.0		R97037.0					
R9501.15/32		R9701.15/32					
R95037.5		R97037.5	H85338.0	H85538.0	H85838.0	H860N7	H861N6
R95038.0		R97038.0					
R9501.1/2		R9701.1/2					
R95038.5		R97038.5					
R9501.17/32		R9701.17/32	H85339.5	H85539.5	H85839.5		
R95039.0		R97039.0					
R95039.5		R97039.5					
R9501.9/16		R9701.9/16					
R95040.0		R97040.0	H85341.0	H85541.0	H85841.0		
R95041.0		R97041.0					
R9501.5/8		R9701.5/8					
R95042.0		R97042.0	H85342.5	H85542.5	H85842.5		

R950

- Hydra fúrófejek acélhoz
- Cap Hydra pentru Otel
- Hydra Matkap Ucu Çelik
- Hydra Drill Head for Steel

4db csavart H860 és 1db csavarhúzó H861 a fúrótesttel együtt szállítunk
 Patru (4) suruburi H860 si o (1) surubelnita H861 sunt livrate impreuna cu corpul de burghiu
 Dört (4) civata H860 ve bir (1) anahtar H861 dahildir
 Four (4) screws H860 and one (1) screwdriver H861 are included with a drill body

R960

- Hydra fúrófejek rosdamentes acélhoz
- Cap Hydra pentru Otel inox
- Hydra Matkap Ucu Paslanmaz Çelik
- Hydra Drill Head for Stainless Steel

4db csavart H860 és 1db csavarhúzó H861 a fúrótesttel együtt szállítunk
 Patru (4) suruburi H860 si o (1) surubelnita H861 sunt livrate impreuna cu corpul de burghiu
 Dört (4) civata H860 ve bir (1) anahtar H861 dahildir
 Four (4) screws H860 and one (1) screwdriver H861 are included with a drill body

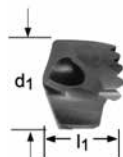
R970

- Hydra fúrófejek öntvényekhez
- Cap Hydra pentru Fonta
- Hydra Matkap Ucu Döküm Demir
- Hydra Drill Head for Cast Iron

4db csavart H860 és 1db csavarhúzó H861 a fúrótesttel együtt szállítunk
 Patru (4) suruburi H860 si o (1) surubelnita H861 sunt livrate impreuna cu corpul de burghiu
 Dört (4) civata H860 ve bir (1) anahtar H861 dahildir
 Four (4) screws H860 and one (1) screwdriver H861 are included with a drill body



R950	▪	1.3	1.4	1.5	1.6	3.3	3.4	
	•	1.1	1.2	2.4				
R960	▪	1.1	1.2	2.1	2.2	2.3	3.1	3.2
	•	2.4	3.3	3.4	4.1			
R970	▪	3.1	3.2	3.3	3.4			



R950	R960	R970
15/32 - 42.00	15/32 - 30.50	15/32 - 42.00

d_1 Øh ₇ Inch	d_1 Øh ₇ mm	d_1 decimal Inch	l_1 mm	R950	R960	R970
15/32	11.91	0.4688	9.1	R95015/32	R96015/32	R97015/32
	12.00	0.4724	9.1	R95012.0	R96012.0	R97012.0
	12.10	0.4764	9.1	R95012.1	R96012.1	R97012.1
	12.20	0.4803	9.1	R95012.2	R96012.2	R97012.2
31/64	12.30	0.4844	9.1	R95031/64	R96031/64	R97031/64
	12.50	0.4921	9.4	R95012.5	R96012.5	R97012.5
	12.60	0.4961	9.4	R95012.6	R96012.6	R97012.6
1/2	12.70	0.5000	9.4	R9501/2	R9601/2	R9701/2
	12.80	0.5039	9.4	R95012.8	R96012.8	R97012.8
	12.90	0.5079	9.4	R95012.9	R96012.9	R97012.9
	13.00	0.5118	9.7	R95013.0	R96013.0	R97013.0
	13.10	0.5156	9.7	R95033/64	R96033/64	R97033/64
17/32	13.20	0.5197	9.7	R95013.2	R96013.2	R97013.2
	13.49	0.5313	9.7	R95017/32	R96017/32	R97017/32
	13.50	0.5315	10.3	R95013.5	R96013.5	R97013.5
	13.60	0.5354	10.3	R95013.6	R96013.6	R97013.6
	13.70	0.5394	10.3	R95013.7	R96013.7	R97013.7
	13.80	0.5433	10.3	R95013.8	R96013.8	R97013.8

d ₁ Øh ₇ Inch	d ₁ Øh ₇ mm	d ₁ decimal Inch	l ₁ mm	R950	R960	R970
35/64	13.89	0.5469	10.3	R95035/64	R96035/64	R97035/64
	14.00	0.5512	10.3	R95014.0	R96014.0	R97014.0
	14.10	0.5551	10.3	R95014.1	R96014.1	R97014.1
	14.20	0.5591	10.3	R95014.2	R96014.2	R97014.2
9/16	14.29	0.5625	10.3	R9509/16	R9609/16	R9709/16
	14.50	0.5709	10.3	R95014.5	R96014.5	R97014.5
	14.60	0.5748	11.0	R95014.6	R96014.6	R97014.6
37/64	14.68	0.5781	11.0	R95037/64	R96037/64	R97037/64
	14.70	0.5787	11.0	R95014.7	R96014.7	R97014.7
	14.80	0.5827	11.0	R95014.8	R96014.8	R97014.8
	15.00	0.5906	11.0	R95015.0	R96015.0	R97015.0
19/32	15.08	0.5938	11.0	R95019/32	R96019/32	R97019/32
	15.10	0.5945	11.0	R95015.1	R96015.1	R97015.1
	15.20	0.5984	11.0	R95015.2	R96015.2	R97015.2
39/64	15.48	0.6094	11.0	R95039/64	R96039/64	R97039/64
	15.50	0.6102	11.0	R95015.5	R96015.5	R97015.5
	15.60	0.6142	11.6	R95015.6	R96015.6	R97015.6
	15.70	0.6181	11.6	R95015.7	R96015.7	R97015.7
5/8	15.88	0.6250	11.6	R9505/8	R9605/8	R9705/8
	16.00	0.6299	11.6	R95016.0	R96016.0	R97016.0
	16.10	0.6339	11.6	R95016.1	R96016.1	R97016.1
	16.20	0.6378	11.6	R95016.2	R96016.2	R97016.2
41/64	16.27	0.6406	11.6	R95041/64	R96041/64	R97041/64
	16.50	0.6496	11.6	R95016.5	R96016.5	R97016.5
	16.60	0.6535	12.2	R95016.6	R96016.6	R97016.6
21/32	16.67	0.6563	12.2	R95021/32	R96021/32	R97021/32
	16.70	0.6575	12.2	R95016.7	R96016.7	R97016.7
	17.00	0.6693	12.2	R95017.0	R96017.0	R97017.0
43/64	17.07	0.6719	12.2	R95043/64	R96043/64	R97043/64
	17.10	0.6732	12.2	R95017.1	R96017.1	R97017.1
	17.20	0.6772	12.2	R95017.2	R96017.2	R97017.2
11/16	17.46	0.6875	12.2	R95011/16	R96011/16	R97011/16
	17.50	0.6890	12.2	R95017.5	R96017.5	R97017.5
	17.60	0.6929	12.9	R95017.6	R96017.6	R97017.6
	17.70	0.6969	12.9	R95017.7	R96017.7	R97017.7
45/64	17.86	0.7031	12.9	R95045/64	R96045/64	R97045/64
	18.00	0.7087	12.9	R95018.0	R96018.0	R97018.0
	18.10	0.7126	12.9	R95018.1	R96018.1	R97018.1
	18.20	0.7165	12.9	R95018.2	R96018.2	R97018.2
23/32	18.26	0.7188	12.9	R95023/32	R96023/32	R97023/32
	18.50	0.7283	12.9	R95018.5	R96018.5	R97018.5
	18.60	0.7323	13.5	R95018.6	R96018.6	R97018.6
47/64	18.65	0.7344	13.5	R95047/64	R96047/64	R97047/64
	18.70	0.7362	13.5	R95018.7	R96018.7	R97018.7
	18.90	0.7441	13.5	R95018.9	R96018.9	R97018.9
	19.00	0.7480	13.5	R95019.0	R96019.0	R97019.0
3/4	19.05	0.7500	13.5	R9503/4	R9603/4	R9703/4
	19.10	0.7520	13.5	R95019.1	R96019.1	R97019.1
	19.20	0.7559	13.5	R95019.2	R96019.2	R97019.2
	19.25	0.7579	13.5	R95019.25	R96019.25	R97019.25
49/64	19.45	0.7656	13.5	R95049/64	R96049/64	R97049/64
	19.50	0.7677	13.5	R95019.5	R96019.5	R97019.5
	19.60	0.7717	14.1	R95019.6	R96019.6	R97019.6
25/32	19.70	0.7756	14.1	R95019.7	R96019.7	R97019.7
	19.84	0.7813	14.1	R95025/32	R96025/32	R97025/32
	20.00	0.7874	14.1	R95020.0	R96020.0	R97020.0
51/64	20.24	0.7969	14.1	R95051/64	R96051/64	R97051/64
	20.50	0.8071	14.1	R95020.5	R96020.5	R97020.5
13/16	20.64	0.8125	14.8	R95013/16	R96013/16	R97013/16
	21.00	0.8268	14.8	R95021.0	R96021.0	R97021.0
53/64	21.03	0.8281	14.8	R95053/64	R96053/64	R97053/64
27/32	21.43	0.8438	14.8	R95027/32	R96027/32	R97027/32
	21.50	0.8465	14.8	R95021.5	R96021.5	R97021.5
55/64	21.83	0.8594	15.0	R95055/64	R96055/64	R97055/64
	22.00	0.8661	15.0	R95022.0	R96022.0	R97022.0
7/8	22.22	0.8750	15.0	R9507/8	R9607/8	R9707/8
	22.50	0.8858	15.0	R95022.5	R96022.5	R97022.5
57/64	22.62	0.8906	15.0	R95057/64	R96057/64	R97057/64
	22.70	0.8937	15.0	R95022.7	R96022.7	R97022.7
	23.00	0.9055	15.1	R95023.0	R96023.0	R97023.0

d_1 $\varnothing h_7$ Inch	d_1 $\varnothing h_7$ mm	d_1 decimal Inch	l_1 mm	R950	R960	R970
29/32	23.02	0.9063	15.1	R95029/32	R96029/32	R97029/32
59/64	23.42	0.9219	15.1	R95059/64	R96059/64	R97059/64
	23.50	0.9252	15.1	R95023.5	R96023.5	R97023.5
15/16	23.81	0.9375	15.4	R95015/16	R96015/16	R97015/16
	24.00	0.9449	15.4	R95024.0	R96024.0	R97024.0
61/64	24.21	0.9531	15.4	R95061/64	R96061/64	R97061/64
	24.50	0.9646	15.4	R95024.5	R96024.5	R97024.5
31/32	24.61	0.9688	15.4	R95031/32	R96031/32	R97031/32
	25.00	0.9844	15.8	R95025.0	R96025.0	R97025.0
63/64	25.00	0.9844	15.8	R95063/64	R96063/64	R97063/64
1"	25.40	1.0000	15.8	R9501	R9601	R9701
	25.50	1.0039	15.8	R95025.5	R96025.5	R97025.5
	25.65	1.0098	15.8	R95025.65	R96025.65	R97025.65
1.1/64	25.80	1.0156	15.8	R9501.1/64	R9601.1/64	R9701.1/64
	26.00	1.0236	16.4	R95026.0	R96026.0	R97026.0
1.1/32	26.19	1.0313	16.4	R9501.1/32	R9601.1/32	R9701.1/32
	26.50	1.0433	16.4	R95026.5	R96026.5	R97026.5
1.3/64	26.59	1.0469	16.4	R9501.3/64	R9601.3/64	R9701.3/64
1.1/16	26.99	1.0625	17.1	R9501.1/16	R9601.1/16	R9701.1/16
	27.00	1.0630	17.1	R95027.0	R96027.0	R97027.0
1.5/64	27.38	1.0781	17.1	R9501.5/64	R9601.5/64	R9701.5/64
	27.50	1.0827	17.1	R95027.5	R96027.5	R97027.5
1.3/32	27.78	1.0938	17.1	R9501.3/32	R9601.3/32	R9701.3/32
	28.00	1.1024	17.7	R95028.0	R96028.0	R97028.0
1.7/64	28.18	1.1094	17.7	R9501.7/64	R9601.7/64	R9701.7/64
	28.50	1.1220	17.7	R95028.5	R96028.5	R97028.5
1.1/8	28.58	1.1250	17.7	R9501.1/8	R9601.1/8	R9701.1/8
1.9/64	28.97	1.1406	18.3	R9501.9/64	R9601.9/64	R9701.9/64
	29.00	1.1417	18.3	R95029.0	R96029.0	R97029.0
1.5/32	29.37	1.1563	18.3	R9501.5/32	R9601.5/32	R9701.5/32
	29.50	1.1614	18.3	R95029.5	R96029.5	R97029.5
1.11/64	29.77	1.1719	18.3	R9501.11/64	R9601.11/64	R9701.11/64
	30.00	1.1811	19.0	R95030.0	R96030.0	R97030.0
1.3/16	30.16	1.1875	19.0	R9501.3/16	R9601.3/16	R9701.3/16
	30.50	1.2008	19.0	R95030.5	R96030.5	R97030.5
1.7/32	30.96	1.2188	21.0	R9501.7/32		R9701.7/32
	31.00	1.2205	21.0	R95031.0		R97031.0
1.1/4	31.75	1.2500	21.0	R9501.1/4		R9701.1/4
	32.00	1.2598	21.0	R95032.0		R97032.0
	32.50	1.2795	21.0	R95032.5		R97032.5
	32.94	1.2969	21.0	R9501.19/64		R9701.19/64
1.19/64	33.00	1.2992	21.0	R95033.0		R97033.0
	33.50	1.3189	21.0	R95033.5		R97033.5
	34.00	1.3386	23.0	R95034.0		R97034.0
	34.13	1.3438	23.0	R9501.11/32		R9701.11/32
1.11/32	34.50	1.3583	23.0	R95034.5		R97034.5
	34.93	1.3750	23.0	R9501.3/8		R9701.3/8
1.3/8	35.00	1.3780	23.0	R95035.0		R97035.0
	36.00	1.4173	23.0	R95036.0		R97036.0
	36.12	1.4219	23.0	R9501.27/64		R9701.27/64
	36.50	1.4370	23.0	R95036.5		R97036.5
1.27/64	37.00	1.4567	25.0	R95037.0		R97037.0
	37.31	1.4688	25.0	R9501.15/32		R9701.15/32
	37.50	1.4764	25.0	R95037.5		R97037.5
	38.00	1.4961	25.0	R95038.0		R97038.0
1.1/2	38.10	1.5000	25.0	R9501.1/2		R9701.1/2
	38.50	1.5157	25.0	R95038.5		R97038.5
1.17/32	38.89	1.5313	25.0	R9501.17/32		R9701.17/32
	39.00	1.5354	25.0	R95039.0		R97039.0
1.9/16	39.50	1.5551	25.0	R95039.5		R97039.5
	39.69	1.5625	27.0	R9501.9/16		R9701.9/16
	40.00	1.5748	27.0	R95040.0		R97040.0
	41.00	1.6142	27.0	R95041.0		R97041.0
1.5/8	41.28	1.6250	27.0	R9501.5/8		R9701.5/8
	42.00	1.6535	27.0	R95042.0		R97042.0

H853

- Hydra fúrószer 3 x D
- Corp Hydra 3 x D
- Hydra gövde 3 x D
- Hydra Body 3 x D

4db csavart H860 és 1db csavarhúzó H861 a fúrótesttel együtt szállítunk
 Patru (4) suruburi H860 si o (1) surubelnita H861 sunt livrate impreuna cu corpul de burghiu
 Dört (4) civata H860 ve bir (1) anahtar H861 dahildir
 Four (4) screws H860 and one (1) screwdriver H861 are included with a drill body

H855

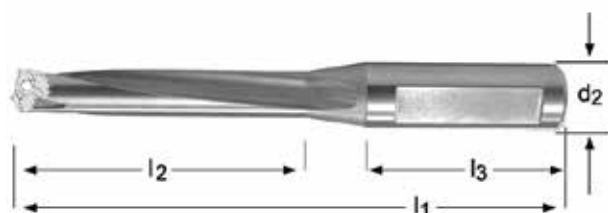
- Hydra fúrószer 5 x D
- Corp Hydra 5 x D
- Hydra gövde 5 x D
- Hydra Body 5 x D

4db csavart H860 és 1db csavarhúzó H861 a fúrótesttel együtt szállítunk
 Patru (4) suruburi H860 si o (1) surubelnita H861 sunt livrate impreuna cu corpul de burghiu
 Dört (4) civata H860 ve bir (1) anahtar H861 dahildir
 Four (4) screws H860 and one (1) screwdriver H861 are included with a drill body


H858


- Hydra fúrószer 8 x D
- Corp Hydra 8 x D
- Hydra gövde 8 x D
- Hydra Body 8 x D

4db csavart H860 és 1db csavarhúzó H861 a fúrótesttel együtt szállítunk
 Patru (4) suruburi H860 si o (1) surubelnita H861 sunt livrate impreuna cu corpul de burghiu
 Dört (4) civata H860 ve bir (1) anahtar H861 dahildir
 Four (4) screws H860 and one (1) screwdriver H861 are included with a drill body



d_2 $\varnothing h_6$ Inch	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	l_3 mm	DIN 6535HB DIN 6535HE	H853	H855	H858
	16.00	44.0	105.0	48.0	DIN6535HE	H85312.0		
	16.00	69.0	130.0	48.0	DIN6535HE		H85512.0	
5/8	15.88	44.0	105.0	48.0	DIN6535HE	H85331/64		
5/8	15.88	69.0	130.0	48.0	DIN6535HE		H85531/64	
	16.00	44.0	105.0	48.0	DIN6535HE	H85312.5		
	16.00	69.0	130.0	48.0	DIN6535HE		H85512.5	
5/8	15.88	44.0	105.0	48.0	DIN6535HE	H8531/2		
5/8	15.88	69.0	130.0	48.0	DIN6535HE		H8551/2	
	16.00	47.0	110.0	48.0	DIN6535HE	H85313.0		
	16.00	74.0	140.0	48.0	DIN6535HE		H85513.0	
5/8	15.88	47.0	110.0	48.0	DIN6535HE	H85317/32		
5/8	15.88	74.0	140.0	48.0	DIN6535HE		H85517/32	
	16.00	124.5	191.5	48.0	DIN6535HE			H85814.0
	16.00	52.5	116.5	48.0	DIN6535HE	H85314.0		
	16.00	81.5	146.5	48.0	DIN6535HE		H85514.0	
3/4	19.05	52.5	116.5	48.0	DIN6535HE	H8539/16		
3/4	19.05	81.5	146.5	48.0	DIN6535HE		H8559/16	
	20.00	133.5	201.5	50.0	DIN6535HE			H85815.0
	20.00	55.5	126.5	50.0	DIN6535HE	H85315.0		
	20.00	86.5	156.5	50.0	DIN6535HE		H85515.0	
3/4	19.05	55.5	126.5	50.0	DIN6535HE	H85339/64		
3/4	19.05	86.5	156.5	50.0	DIN6535HE		H85539/64	

d_2 $\emptyset h_6$ Inch	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	l_3 mm		H853	H855	H858
	20.00	141.5	211.5	50.0	DIN6535HE			H85816.0
	20.00	59.5	131.5	50.0	DIN6535HE	H85316.0		
	20.00	92.5	166.5	50.0	DIN6535HE		H85516.0	
3/4	19.05	59.5	131.5	50.0	DIN6535HE	H85341/64		
3/4	19.05	92.5	166.5	50.0	DIN6535HE		H85541/64	
	20.00	150.5	221.5	50.0	DIN6535HE			H85817.0
	20.00	62.5	136.5	50.0	DIN6535HE	H85317.0		
	20.00	97.5	171.5	50.0	DIN6535HE		H85517.0	
3/4	19.05	62.5	136.5	50.0	DIN6535HE	H85311/16		
3/4	19.05	97.5	171.5	50.0	DIN6535HE		H85511/16	
	20.00	158.5	226.5	50.0	DIN6535HE			H85818.0
	20.00	103.5	176.5	50.0	DIN6535HE		H85518.0	
	20.00	66.5	141.5	50.0	DIN6535HE	H85318.0		
3/4	19.05	103.5	176.5	50.0	DIN6535HE		H85523/32	
3/4	19.05	66.5	141.5	50.0	DIN6535HE	H85323/32		
	25.00	167.5	251.5	56.0	DIN6535HE			H85819.0
	25.00	108.5	191.5	56.0	DIN6535HE		H85519.0	
	25.00	69.5	156.5	56.0	DIN6535HE	H85319.0		
1"	25.40	108.5	191.5	56.0	DIN6535HE		H85549/64	
1"	25.40	69.5	156.5	56.0	DIN6535HE	H85349/64		
	25.00	175.5	264.5	56.0	DIN6535HE			H85820.0
	25.00	114.5	196.5	56.0	DIN6535HE		H85520.0	
	25.00	73.5	156.5	56.0	DIN6535HE	H85320.0		
1"	25.40	114.5	196.5	56.0	DIN6535HE		H85551/64	
1"	25.40	73.5	156.5	56.0	DIN6535HE	H85351/64		
	25.00	184.5	266.5	56.0	DIN6535HE			H85821.0
	25.00	119.5	196.5	56.0	DIN6535HE		H85521.0	
	25.00	76.5	156.5	56.0	DIN6535HE	H85321.0		
1"	25.40	119.5	196.5	56.0	DIN6535HE		H85527/32	
1"	25.40	76.5	156.5	56.0	DIN6535HE	H85327/32		
	25.00	192.1	271.1	56.0	DIN6535HE			H85822.0
	25.00	125.1	201.1	56.0	DIN6535HE		H85522.0	
	25.00	80.1	161.5	56.0	DIN6535HE	H85322.0		
1"	25.40	125.1	201.1	56.0	DIN6535HE		H85557/64	
1"	25.40	80.1	161.5	56.0	DIN6535HE	H85357/64		
	25.00	200.5	280.5	56.0	DIN6535HE			H85823.0
	25.00	129.5	210.5	56.0	DIN6535HE		H85523.0	
	25.00	82.5	160.5	56.0	DIN6535HE	H85323.0		
1"	25.40	129.5	210.5	56.0	DIN6535HE		H85559/64	
1"	25.40	82.5	160.5	56.0	DIN6535HE	H85359/64		
	32.00	208.2	295.2	60.0	DIN6535HE			H85824.0
	32.00	135.2	220.2	60.0	DIN6535HE		H85524.0	
	32.00	86.2	170.2	60.0	DIN6535HE	H85324.0		
1"	25.40	135.2	220.2	60.0	DIN6535HE		H85531/32	
1"	25.40	86.2	170.2	60.0	DIN6535HE	H85331/32		
	32.00	217.0	300.0	60.0	DIN6535HE			H85825.0
	32.00	140.0	225.0	60.0	DIN6535HE		H85525.0	
	32.00	88.0	170.0	60.0	DIN6535HE	H85325.0		
1.1/4	31.75	140.0	225.0	60.0	DIN6535HE		H8551.1/64	
1.1/4	31.75	88.0	170.0	60.0	DIN6535HE	H8531.1/64		
	32.00	225.0	310.0	60.0	DIN6535HE			H85826.0
	32.00	146.0	230.0	60.0	DIN6535HE		H85526.0	
	32.00	92.0	175.0	60.0	DIN6535HE	H85326.0		
1.1/4	31.75	146.0	230.0	60.0	DIN6535HE		H8551.3/64	
1.1/4	31.75	92.0	175.0	60.0	DIN6535HE	H8531.3/64		
	32.00	234.0	320.0	60.0	DIN6535HE			H85827.0
	32.00	151.0	235.0	60.0	DIN6535HE		H85527.0	
	32.00	94.0	175.0	60.0	DIN6535HE	H85327.0		
1.1/4	31.75	151.0	235.0	60.0	DIN6535HE		H8551.3/32	
1.1/4	31.75	94.0	175.0	60.0	DIN6535HE	H8531.3/32		
	32.00	242.0	325.0	60.0	DIN6535HE			H85828.0
	32.00	157.0	240.0	60.0	DIN6535HE		H85528.0	
	32.00	97.0	180.0	60.0	DIN6535HE	H85328.0		
1.1/4	31.75	157.0	240.0	60.0	DIN6535HE		H8551.1/8	
1.1/4	31.75	97.0	180.0	60.0	DIN6535HE	H8531.1/8		
	32.00	251.0	335.0	60.0	DIN6535HE			H85829.0
	32.00	100.0	185.0	60.0	DIN6535HE	H85329.0		
	32.00	162.0	245.0	60.0	DIN6535HE		H85529.0	
1.1/4	31.75	100.0	185.0	60.0	DIN6535HE	H8531.11/64		
1.1/4	31.75	162.0	245.0	60.0	DIN6535HE		H8551.11/64	
	32.00	259.0	345.0	60.0	DIN6535HE			H85830.0
	32.00	104.0	185.0	60.0	DIN6535HE	H85330.0		
	32.00	167.0	255.0	60.0	DIN6535HE		H85530.0	
1.1/4	31.75	104.0	185.0	60.0	DIN6535HE	H8531.3/16		
1.1/4	31.75	167.0	255.0	60.0	DIN6535HE		H8551.3/16	
	32.00	176.5	261.5	60.0	DIN6535HE		H85532.0	

d_2 $\varnothing h_6$ Inch	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	l_3 mm		H853	H855	H858
	32.00	271.5	356.5	60.0	DIN6535HE			H85832.0
	32.00	111.5	196.5	60.0	DIN6535HE	H85332.0		
	40.00	186.5	271.5	60.0	DIN6535HB		H85533.5	
	40.00	286.5	371.5	60.0	DIN6535HB			H85833.5
	40.00	116.5	201.5	60.0	DIN6535HB	H85333.5		
	40.00	196.5	291.5	70.0	DIN6535HB		H85535.0	
	40.00	301.5	396.5	70.0	DIN6535HB			H85835.0
	40.00	121.5	216.5	70.0	DIN6535HB	H85335.0		
	40.00	201.5	296.5	70.0	DIN6535HB		H85536.5	
	40.00	311.5	406.5	70.0	DIN6535HB			H85836.5
	40.00	125.5	221.5	70.0	DIN6535HB	H85336.5		
	40.00	211.5	306.5	70.0	DIN6535HB		H85538.0	
	40.00	326.5	421.5	70.0	DIN6535HB			H85838.0
	40.00	131.5	226.5	70.0	DIN6535HB	H85338.0		
	40.00	221.5	316.5	70.0	DIN6535HB		H85539.5	
	40.00	336.5	431.5	70.0	DIN6535HB			H85839.5
	40.00	136.5	231.5	70.0	DIN6535HB	H85339.5		
	40.00	226.5	325.6	70.0	DIN6535HB		H85541.0	
	40.00	351.5	451.5	70.0	DIN6535HB			H85841.0
	40.00	146.5	246.5	70.0	DIN6535HB	H85341.0		
	40.00	236.5	336.5	70.0	DIN6535HB		H85542.5	
	40.00	361.5	461.5	70.0	DIN6535HB			H85842.5
	40.00	151.6	251.6	70.0	DIN6535HB	H85342.5		

H860

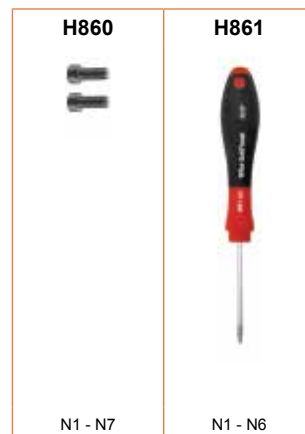
- Hydra rögzítőcsavar
- Suruburi Hydra
- Hydra vidalar
- Hydra Screws

4db csavart H860 és 1db csavarhúzó H861 a fúrótesttel együtt szállítunk
 Patru (4) suruburi H860 si o (1) surubelnita H861 sunt livrate impreuna cu corpul de burghiu
 Dört (4) civata H860 ve bir (1) anahtar H861 dahildir
 Four (4) screws H860 and one (1) screwdriver H861 are included with a drill body

H861

- Hydra csavarhúzó
- Surubelnita Hydra
- Hydra Tornavida
- Hydra Screwdriver

4db csavart H860 és 1db csavarhúzó H861 a fúrótesttel együtt szállítunk
 Patru (4) suruburi H860 si o (1) surubelnita H861 sunt livrate impreuna cu corpul de burghiu
 Dört (4) civata H860 ve bir (1) anahtar H861 dahildir
 Four (4) screws H860 and one (1) screwdriver H861 are included with a drill body



H860	H861
H860N7	H861N6
H860N6	H861N5
H860N5	H861N4
H860N4	H861N3
H860N3	H861N3
H860N2	H861N2
H860N1	H861N1

R200

- Központfúró - 60°
- Burghiu de centruire - 60°
- Punta Matkabi - 60°
- Centre Drill - 60°

R200 ■ 1.1 1.2 1.3 1.4 1.5 1.6 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4

R200 **HM** **DIN 333A** **1XD** **118°**



d_1 Ø mm	d_1 decimal Inch	l_2 max/min mm	l_1 mm	d_2 Ø mm	R200
1.00	0.0394	1.7 - 1.3	31	3.15	R2001.0X3.15
1.25	0.0492	2.0 - 1.6	31	3.15	R2001.25X3.15
1.60	0.0630	2.6 - 2.0	35	4.00	R2001.6X4.0
2.00	0.0787	3.1 - 2.5	40	5.00	R2002.0X5.0
2.50	0.0984	3.8 - 3.1	45	6.30	R2002.5X6.3
3.15	0.1240	4.6 - 3.9	50	8.00	R2003.15X8.0
4.00	0.1575	5.9 - 5.0	55	10.00	R2004.0X10.0
5.00	0.1969	7.2 - 6.3	63	12.50	R2005.0X12.5

R122

- Rövid pontozófúró - 120°
- Burghiu punctare - 120°
- Kısa Pilot Matkap - 120°
- Short Spotting Drill - 120°

4 köszörült élpont 10,0mm-ig
Pana la 10,0 mm varf cu 4 fatete
10,0 mm'ye kadar dört açılı kesme ucu
Four Facet Point upto 10,0mm

R123

- Rövid pontozófúró - 90°
- Burghiu punctare - 90°
- Kısa Pilot Matkap - 90°
- Short Spotting Drill - 90°

4 köszörült élpont 10,0mm-ig
Pana la 10,0 mm varf cu 4 fatete
10,0 mm'ye kadar dört açılı kesme ucu
Four Facet Point upto 10,0mm

R6011

- Rövid pontozófúró - 90°
- Burghiu punctare - 90°
- Pilot Matkap - 90°
- Spotting Drill - 90°

TiAIN-bevonatos
Acoperire cu TiAIN
TiAIN kaplamalı
TiAIN Coated

R122; R123; R6011	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	3.1	3.2	3.3	3.4	4.1	4.2
	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2		

R122	HM	DORMER	1XD	120°			N									
R123	HM	DORMER	1XD	90°			N									
R6011	HM	DORMER	1XD	90°	TiAIN	DIN 6535HA	N									



	R122	R123	R6011
	5.00 - 20.00	5.00 - 20.00	6.00 - 16.00
	R122	R123	R6011
d₁ Øh₆ mm			
5.00	R1225.0	R1235.0	
6.00			R60116.0
6.00	R1226.0	R1236.0	
8.00	R1228.0	R1238.0	
10.00			R601110.0
10.00	R12210.0	R12310.0	
12.00	R12212.0	R12312.0	
16.00			R601116.0
16.00	R12216.0	R12316.0	
20.00	R12220.0	R12320.0	

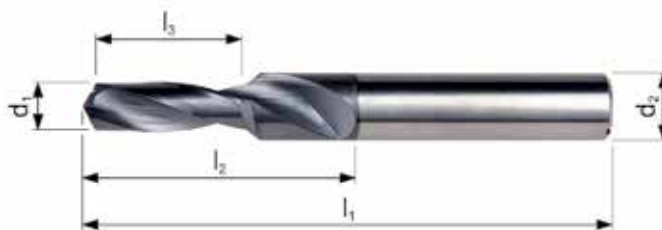
d₁ Øh₆ mm	d₁ decimal Inch	l₂ mm	l₁ mm
5.00	0.1969	16	62
6.00	0.2362	16	50
6.00	0.2362	17	66
8.00	0.3150	22	79
10.00	0.3937	25	70
10.00	0.3937	26	89
12.00	0.4724	30	102
16.00	0.6299	26	90
16.00	0.6299	34	115
20.00	0.7874	40	131

R7131

- Élletőző fűró menetes furatok magátmérőjéhez
- Burghiu cu teșire pentru prefiletarea alezajelor
- Havyalı Kılavuz Matkabı
- Chamfer drill for pre-tapping holes

R7131	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.1	7.2
		7.3	7.4																

R7131



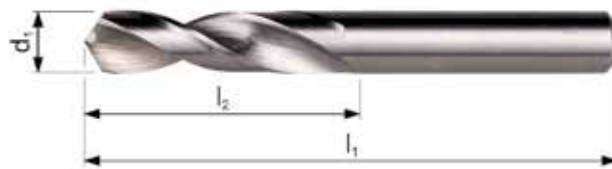
d_1 $\varnothing m_7$ mm	d_1 decimal Inch	l_3 mm	l_2 mm	l_1 mm	d_2 $\varnothing h_6$ mm	M	R7131
3.30	0.1299	11.4	20	66	6	M4	R71313.3
4.20	0.1654	13.6	24	66	6	M5	R71314.2
5.00	0.1969	16.5	28	79	8	M6	R71315.0
6.80	0.2677	21.0	34	89	10	M8	R71316.8
8.50	0.3346	25.5	47	102	12	M10	R71318.5
10.20	0.4016	30.0	55	107	14	M12	R713110.2
10.40	0.4094	30.0	55	107	14	M12	R713110.4

R120

- Extra Rövid Csigaűró
- Burghiu scurt
- Kisa Matkap
- Stub Drill

R120	▪	4.1	5.1	6.1	7.1	8.1	8.2																
	•	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	6.3	6.4	7.2		
		7.3	7.4																				

R120 **HM** **DIN 6539** **2.5XD** **120°**   **N**   



d_1 Ø _{h7} mm	d_1 decimal Inch	l_2 mm	l_1 mm	R120
1.00	0.0394	6	26	R1201.0
1.10	0.0433	7	28	R1201.1
1.20	0.0472	8	30	R1201.2
1.30	0.0512	8	30	R1201.3
1.40	0.0551	9	32	R1201.4
1.50	0.0591	9	32	R1201.5
1.60	0.0630	10	34	R1201.6
1.70	0.0669	10	34	R1201.7
1.80	0.0709	11	36	R1201.8
1.90	0.0748	11	36	R1201.9
2.00	0.0787	12	38	R1202.0
2.10	0.0827	12	38	R1202.1
2.20	0.0866	13	40	R1202.2
2.30	0.0906	13	40	R1202.3
2.40	0.0945	14	43	R1202.4
2.50	0.0984	14	43	R1202.5
2.60	0.1024	14	43	R1202.6
2.70	0.1063	16	46	R1202.7
2.80	0.1102	16	46	R1202.8
2.90	0.1142	16	46	R1202.9
3.00	0.1181	16	46	R1203.0
3.10	0.1220	18	49	R1203.1
3.20	0.1260	18	49	R1203.2
3.30	0.1299	18	49	R1203.3
3.40	0.1339	20	52	R1203.4
3.50	0.1378	20	52	R1203.5
3.60	0.1417	20	52	R1203.6
3.70	0.1457	20	52	R1203.7
3.80	0.1496	22	55	R1203.8
3.90	0.1535	22	55	R1203.9
4.00	0.1575	22	55	R1204.0
4.10	0.1614	22	55	R1204.1
4.20	0.1654	22	55	R1204.2
4.30	0.1693	24	58	R1204.3
4.40	0.1732	24	58	R1204.4
4.50	0.1772	24	58	R1204.5
4.60	0.1811	24	58	R1204.6
4.70	0.1850	24	58	R1204.7

d₁ Øh₇ mm	d₁ decimal Inch	l₂ mm	l₁ mm	R120
4.80	0.1890	26	62	R1204.8
4.90	0.1929	26	62	R1204.9
5.00	0.1969	26	62	R1205.0
5.10	0.2008	26	62	R1205.1
5.20	0.2047	26	62	R1205.2
5.30	0.2087	26	62	R1205.3
5.40	0.2126	28	66	R1205.4
5.50	0.2165	28	66	R1205.5
5.60	0.2205	28	66	R1205.6
5.70	0.2244	28	66	R1205.7
5.80	0.2283	28	66	R1205.8
5.90	0.2323	28	66	R1205.9
6.00	0.2362	28	66	R1206.0
6.10	0.2402	31	70	R1206.1
6.20	0.2441	31	70	R1206.2
6.30	0.2480	31	70	R1206.3
6.40	0.2520	31	70	R1206.4
6.50	0.2559	31	70	R1206.5
6.60	0.2598	31	70	R1206.6
6.70	0.2638	31	70	R1206.7
6.80	0.2677	34	74	R1206.8
6.90	0.2717	34	74	R1206.9
7.00	0.2756	34	74	R1207.0
7.10	0.2795	34	74	R1207.1
7.20	0.2835	34	74	R1207.2
7.30	0.2874	34	74	R1207.3
7.40	0.2913	34	74	R1207.4
7.50	0.2953	34	74	R1207.5
7.60	0.2992	37	79	R1207.6
7.70	0.3031	37	79	R1207.7
7.80	0.3071	37	79	R1207.8
7.90	0.3110	37	79	R1207.9
8.00	0.3150	37	79	R1208.0
8.10	0.3189	37	79	R1208.1
8.20	0.3228	37	79	R1208.2
8.30	0.3268	37	79	R1208.3
8.40	0.3307	37	79	R1208.4
8.50	0.3346	37	79	R1208.5
8.60	0.3386	40	84	R1208.6
8.70	0.3425	40	84	R1208.7
8.80	0.3465	40	84	R1208.8
8.90	0.3504	40	84	R1208.9
9.00	0.3543	40	84	R1209.0
9.10	0.3583	40	84	R1209.1
9.20	0.3622	40	84	R1209.2
9.30	0.3661	40	84	R1209.3
9.40	0.3701	40	84	R1209.4
9.50	0.3740	40	84	R1209.5
9.60	0.3780	43	89	R1209.6
9.70	0.3819	43	89	R1209.7
9.80	0.3858	43	89	R1209.8
9.90	0.3898	43	89	R1209.9
10.00	0.3937	43	89	R12010.0
10.20	0.4016	43	89	R12010.2
10.50	0.4134	43	89	R12010.5
11.00	0.4331	47	95	R12011.0
11.50	0.4528	47	95	R12011.5
12.00	0.4724	51	102	R12012.0

R100

- Csigafúró
- Burghiu lung
- Standart Matkap
- Jobber Drill

R100	▪	6.2	6.3	8.1	8.2														
	•	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4		

R100

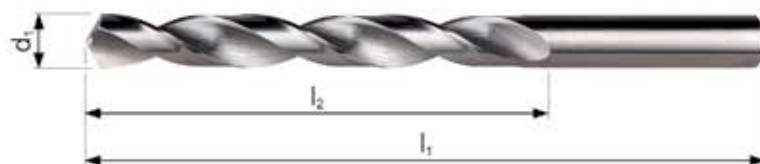
HM

DIN 338

4XD

120°

N



d_1 \varnothing_{h_7} mm	d_1 decimal inch	l_2 mm	l_1 mm	R100
1.00	0.0394	12	34	R1001.0
1.10	0.0433	14	36	R1001.1
1.20	0.0472	16	38	R1001.2
1.30	0.0512	16	38	R1001.3
1.40	0.0551	18	40	R1001.4
1.50	0.0591	18	40	R1001.5
1.60	0.0630	20	43	R1001.6
1.70	0.0669	20	43	R1001.7
1.80	0.0709	22	46	R1001.8
1.90	0.0748	22	46	R1001.9
2.00	0.0787	24	49	R1002.0
2.10	0.0827	24	49	R1002.1
2.20	0.0866	27	53	R1002.2
2.30	0.0906	27	53	R1002.3
2.40	0.0945	30	57	R1002.4
2.50	0.0984	30	57	R1002.5
2.60	0.1024	30	57	R1002.6
2.70	0.1063	33	61	R1002.7
2.80	0.1102	33	61	R1002.8
2.90	0.1142	33	61	R1002.9
3.00	0.1181	33	61	R1003.0
3.10	0.1220	36	65	R1003.1
3.20	0.1260	36	65	R1003.2
3.30	0.1299	36	65	R1003.3
3.40	0.1339	39	70	R1003.4
3.50	0.1378	39	70	R1003.5
3.60	0.1417	39	70	R1003.6
3.70	0.1457	39	70	R1003.7
3.80	0.1496	43	75	R1003.8
3.90	0.1535	43	75	R1003.9
4.00	0.1575	43	75	R1004.0
4.10	0.1614	43	75	R1004.1
4.20	0.1654	43	75	R1004.2
4.30	0.1693	47	80	R1004.3
4.40	0.1732	47	80	R1004.4
4.50	0.1772	47	80	R1004.5
4.60	0.1811	47	80	R1004.6
4.70	0.1850	47	80	R1004.7

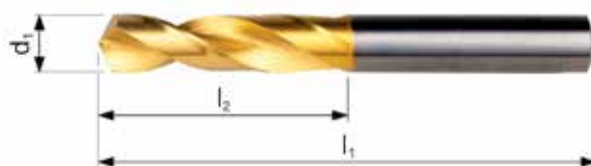
d₁ Øh₇ mm	d₁ decimal Inch	l₂ mm	l₁ mm	R100
4.80	0.1890	52	86	R1004.8
4.90	0.1929	52	86	R1004.9
5.00	0.1969	52	86	R1005.0
5.10	0.2008	52	86	R1005.1
5.20	0.2047	52	86	R1005.2
5.30	0.2087	52	86	R1005.3
5.40	0.2126	57	93	R1005.4
5.50	0.2165	57	93	R1005.5
5.60	0.2205	57	93	R1005.6
5.70	0.2244	57	93	R1005.7
5.80	0.2283	57	93	R1005.8
5.90	0.2323	57	93	R1005.9
6.00	0.2362	57	93	R1006.0
6.10	0.2402	63	101	R1006.1
6.20	0.2441	63	101	R1006.2
6.30	0.2480	63	101	R1006.3
6.40	0.2520	63	101	R1006.4
6.50	0.2559	63	101	R1006.5
6.60	0.2598	63	101	R1006.6
6.70	0.2638	63	101	R1006.7
6.80	0.2677	69	109	R1006.8
6.90	0.2717	69	109	R1006.9
7.00	0.2756	69	109	R1007.0
7.10	0.2795	69	109	R1007.1
7.20	0.2835	69	109	R1007.2
7.30	0.2874	69	109	R1007.3
7.40	0.2913	69	109	R1007.4
7.50	0.2953	69	109	R1007.5
7.60	0.2992	75	117	R1007.6
7.70	0.3031	75	117	R1007.7
7.80	0.3071	75	117	R1007.8
7.90	0.3110	75	117	R1007.9
8.00	0.3150	75	117	R1008.0
8.10	0.3189	75	117	R1008.1
8.20	0.3228	75	117	R1008.2
8.30	0.3268	75	117	R1008.3
8.40	0.3307	75	117	R1008.4
8.50	0.3346	75	117	R1008.5
8.60	0.3386	81	125	R1008.6
8.70	0.3425	81	125	R1008.7
8.80	0.3465	81	125	R1008.8
8.90	0.3504	81	125	R1008.9
9.00	0.3543	81	125	R1009.0
9.10	0.3583	81	125	R1009.1
9.20	0.3622	81	125	R1009.2
9.30	0.3661	81	125	R1009.3
9.40	0.3701	81	125	R1009.4
9.50	0.3740	81	125	R1009.5
9.60	0.3780	87	133	R1009.6
9.70	0.3819	87	133	R1009.7
9.80	0.3858	87	133	R1009.8
9.90	0.3898	87	133	R1009.9
10.00	0.3937	87	133	R10010.0
10.20	0.4016	87	133	R10010.2
10.50	0.4134	87	133	R10010.5
11.00	0.4331	94	142	R10011.0
11.50	0.4528	94	142	R10011.5
12.00	0.4724	101	151	R10012.0
13.00	0.5118	101	151	R10013.0
14.00	0.5512	108	160	R10014.0

R520

- CDX Csigafúró
- Burghiu CDX scurt
- CDX Kısa Matkap
- CDX Stub Drill

R520	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	5.1	7.1	7.2	7.3	7.4	8.1	8.2
	•	1.7	1.8	2.1	4.1	4.2	4.3											

R520	HM	DIN 6539	2.5XD	130°	TiN		N			
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R520



3.00 - 16.50

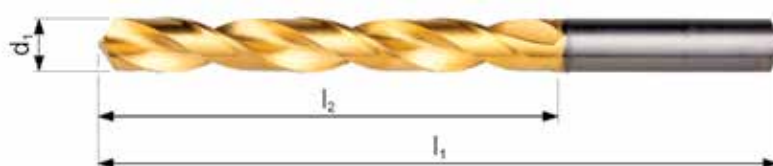
d_1 \varnothing_{h_7} Inch	d_1 \varnothing_{h_7} mm	d_1 decimal Inch	l_2 mm	l_1 mm	R520
1/8	3.00	0.1181	16	46	R5203.0
	3.10	0.1220	18	49	R5203.1
	3.18	0.1252	18	49	R5201/8
	3.20	0.1260	18	49	R5203.2
	3.30	0.1299	18	49	R5203.3
	3.40	0.1339	20	52	R5203.4
	3.50	0.1378	20	52	R5203.5
	3.60	0.1417	20	52	R5203.6
	3.70	0.1457	20	52	R5203.7
	3.80	0.1496	22	55	R5203.8
	3.90	0.1535	22	55	R5203.9
	4.00	0.1575	22	55	R5204.0
	4.10	0.1614	22	55	R5204.1
	4.20	0.1654	22	55	R5204.2
	4.30	0.1693	24	58	R5204.3
	4.40	0.1732	24	58	R5204.4
4.50	0.1772	24	58	R5204.5	
4.60	0.1811	24	58	R5204.6	
4.70	0.1850	24	58	R5204.7	
4.80	0.1890	26	62	R5204.8	
4.90	0.1929	26	62	R5204.9	
5.00	0.1969	26	62	R5205.0	
5.10	0.2008	26	62	R5205.1	
5.20	0.2047	26	62	R5205.2	
5.30	0.2087	26	62	R5205.3	
5.40	0.2126	28	66	R5205.4	
5.50	0.2165	28	66	R5205.5	
5.60	0.2205	28	66	R5205.6	
5.70	0.2244	28	66	R5205.7	
5.80	0.2283	28	66	R5205.8	
5.90	0.2323	28	66	R5205.9	
6.00	0.2362	28	66	R5206.0	
6.10	0.2402	31	70	R5206.1	
6.20	0.2441	31	70	R5206.2	
6.30	0.2480	31	70	R5206.3	
1/4	6.35	0.2500	31	70	R5201/4
	6.40	0.2520	31	70	R5206.4
	6.50	0.2559	31	70	R5206.5

d_1 $\varnothing h_7$ Inch	d_1 $\varnothing h_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R520
	6.60	0.2598	31	70	R5206.6
	6.70	0.2638	31	70	R5206.7
	6.80	0.2677	34	74	R5206.8
	6.90	0.2717	34	74	R5206.9
	7.00	0.2756	34	74	R5207.0
	7.10	0.2795	34	74	R5207.1
	7.20	0.2835	34	74	R5207.2
	7.30	0.2874	34	74	R5207.3
	7.40	0.2913	34	74	R5207.4
	7.50	0.2953	34	74	R5207.5
	7.60	0.2992	37	79	R5207.6
	7.70	0.3031	37	79	R5207.7
	7.80	0.3071	37	79	R5207.8
	7.90	0.3110	37	79	R5207.9
5/16	7.94	0.3126	37	79	R5205/16
	8.00	0.3150	37	79	R5208.0
	8.10	0.3189	37	79	R5208.1
	8.20	0.3228	37	79	R5208.2
	8.30	0.3268	37	79	R5208.3
	8.40	0.3307	37	79	R5208.4
	8.50	0.3346	37	79	R5208.5
	8.60	0.3386	40	84	R5208.6
	8.70	0.3425	40	84	R5208.7
	8.80	0.3465	40	84	R5208.8
	8.90	0.3504	40	84	R5208.9
	9.00	0.3543	40	84	R5209.0
	9.10	0.3583	40	84	R5209.1
	9.20	0.3622	40	84	R5209.2
	9.30	0.3661	40	84	R5209.3
	9.40	0.3701	40	84	R5209.4
	9.50	0.3740	40	84	R5209.5
3/8	9.52	0.3748	43	89	R5203/8
	9.60	0.3780	43	89	R5209.6
	9.70	0.3819	43	89	R5209.7
	9.80	0.3858	43	89	R5209.8
	9.90	0.3898	43	89	R5209.9
	10.00	0.3937	43	89	R52010.0
	10.10	0.3976	43	89	R52010.1
	10.20	0.4016	43	89	R52010.2
	10.30	0.4055	43	89	R52010.3
	10.40	0.4094	43	89	R52010.4
	10.50	0.4134	43	89	R52010.5
	11.00	0.4331	47	95	R52011.0
7/16	11.11	0.4374	47	95	R5207/16
	11.20	0.4409	47	95	R52011.2
	11.50	0.4528	47	95	R52011.5
	12.00	0.4724	51	102	R52012.0
	12.50	0.4921	51	102	R52012.5
1/2	12.70	0.5000	51	102	R5201/2
	13.00	0.5118	51	102	R52013.0
	13.50	0.5315	54	107	R52013.5
	14.00	0.5512	54	107	R52014.0
	14.20	0.5591	56	111	R52014.2
	14.25	0.5610	56	111	R52014.25
	14.50	0.5709	56	111	R52014.5
	15.00	0.5906	56	111	R52015.0
	15.10	0.5945	58	115	R52015.1
5/8	15.88	0.6252	58	115	R5205/8
	16.00	0.6299	58	115	R52016.0
	16.50	0.6496	60	119	R52016.5

R510

- CDX Csigafúró
- Burghiu CDX lung
- CDX Standart Matkap
- CDX Jobber Drill

R510	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4	8.1	8.2
	•	1.7	1.8	2.1	4.1	5.1											



d_1 \varnothing_{h_7} Inch	d_1 \varnothing_{h_7} mm	d_1 decimal Inch	l_2 mm	l_1 mm	R510
1/8	3.00	0.1181	33	61	R5103.0
	3.18	0.1252	36	65	R5101/8
	3.20	0.1260	36	65	R5103.2
	3.30	0.1299	36	65	R5103.3
	3.40	0.1339	39	70	R5103.4
	3.50	0.1378	39	70	R5103.5
	3.70	0.1457	39	70	R5103.7
	3.90	0.1535	43	75	R5103.9
	4.00	0.1575	43	75	R5104.0
	4.10	0.1614	43	75	R5104.1
	4.20	0.1654	43	75	R5104.2
	4.30	0.1693	47	80	R5104.3
	4.50	0.1772	47	80	R5104.5
	4.60	0.1811	47	80	R5104.6
4.70	0.1850	47	80	R5104.7	
3/16	4.76	0.1874	52	86	R5103/16
	4.90	0.1929	52	86	R5104.9
	5.00	0.1969	52	86	R5105.0
	5.10	0.2008	52	86	R5105.1
	5.50	0.2165	57	93	R5105.5
	5.60	0.2205	57	93	R5105.6
	5.70	0.2244	57	93	R5105.7
	6.00	0.2362	57	93	R5106.0
	6.35	0.2500	63	101	R5101/4
	6.50	0.2559	63	101	R5106.5
1/4	6.60	0.2598	63	101	R5106.6
	6.80	0.2677	69	109	R5106.8
	6.90	0.2717	69	109	R5106.9
	7.00	0.2756	69	109	R5107.0
	7.30	0.2874	69	109	R5107.3
	7.40	0.2913	69	109	R5107.4
	7.50	0.2953	69	109	R5107.5
	7.80	0.3071	75	117	R5107.8
	7.90	0.3110	75	117	R5107.9
	5/16	7.94	0.3126	75	117	R5105/16
8.00		0.3150	75	117	R5108.0

d_1 $\varnothing h_7$ Inch	d_1 $\varnothing h_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	R510
	8.50	0.3346	75	117	R5108.5
	8.70	0.3425	81	125	R5108.7
	8.80	0.3465	81	125	R5108.8
	9.00	0.3543	81	125	R5109.0
	9.20	0.3622	81	125	R5109.2
	9.30	0.3661	81	125	R5109.3
	9.40	0.3701	81	125	R5109.4
	9.50	0.3740	81	125	R5109.5
3/8	9.52	0.3748	87	133	R5103/8
	9.90	0.3898	87	133	R5109.9
	10.00	0.3937	87	133	R51010.0
	10.20	0.4016	87	133	R51010.2
	10.30	0.4055	87	133	R51010.3
	10.40	0.4094	87	133	R51010.4
	10.50	0.4134	87	133	R51010.5
	10.80	0.4252	94	142	R51010.8
	11.00	0.4331	94	142	R51011.0
7/16	11.11	0.4374	94	142	R5107/16
	11.20	0.4409	94	142	R51011.2
	11.50	0.4528	94	142	R51011.5
	12.00	0.4724	101	151	R51012.0
1/2	12.70	0.5000	101	151	R5101/2
	13.00	0.5118	101	151	R51013.0
	14.00	0.5512	108	160	R51014.0
	14.25	0.5610	114	169	R51014.25

R458

- Force-X Csigafúró 3XD
- Burghiu Force-X scurt 3XD
- Force-X Matkap 3XD
- Force X Drill 3XD

R457

- Force-X Csigafúró - Olajvezetővel 3XD
- Burghiu Force-X, Racire interna 3XD
- Force X Matkap Su Delikli 3xD
- Force X Drill Oil Feed 3XD

R458	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.1	6.2	6.3	7.1	7.2
		7.3	7.4																		
	•	2.4	4.1	4.2	4.3	6.4															
R457	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2
		6.3	6.4	7.1	7.2	7.3	7.4														

R458	HM	DIN 6537 K	3XD	140°	TiAIN	DIN 6535HA	CTW			
R457	HM	DIN 6537 K	3XD	140°	TiAIN	DIN 6535HA	CTW			



d_1 Ø "/Nr.	d_1 Ø _m mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Ø _{h6} mm	R458	R457
	3.00	0.1181	20	62	36	6	R4583.0	R4573.0
	3.10	0.1220	20	62	36	6	R4583.1	R4573.1
1/8	3.18	0.1252	20	62	36	6	R4581/8	R4571/8
	3.20	0.1260	20	62	36	6	R4583.2	R4573.2
30	3.26	0.1283	20	62	36	6	R458N30	R457N30
	3.30	0.1299	20	62	36	6	R4583.3	R4573.3
	3.40	0.1339	20	62	36	6	R4583.4	R4573.4
29	3.45	0.1358	20	62	36	6	R458N29	R457N29
	3.50	0.1378	20	62	36	6	R4583.5	R4573.5
28	3.57	0.1406	20	62	36	6	R458N28	R457N28
9/64	3.57	0.1406	20	62	36	6	R4589/64	R4579/64
	3.60	0.1417	20	62	36	6	R4583.6	R4573.6
27	3.66	0.1441	20	62	36	6	R458N27	R457N27
	3.70	0.1457	20	62	36	6	R4583.7	R4573.7
	3.73	0.1469	24	66	36	6	R4583.73	
26	3.73	0.1469	24	66	36	6	R458N26	R457N26
	3.80	0.1496	24	66	36	6	R4583.8	R4573.8
25	3.80	0.1496	24	66	36	6	R458N25	R457N25
24	3.86	0.1520	24	66	36	6	R458N24	R457N24
	3.90	0.1535	24	66	36	6	R4583.9	R4573.9
23	3.91	0.1539	24	66	36	6	R458N23	R457N23
5/32	3.97	0.1563	24	66	36	6	R4585/32	R4575/32
22	3.99	0.1571	24	66	36	6	R458N22	R457N22
	4.00	0.1575	24	66	36	6	R4584.0	R4574.0

d ₁ Ø "/Nr.	d ₁ Øm ₇ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Øh ₆ mm	R458	R457
21	4.04	0.1591	24	66	36	6	R458N21	R457N21
	4.05	0.1594	24	66	36	6		R4574.05
20	4.09	0.1610	24	66	36	6	R458N20	R457N20
	4.10	0.1614	24	66	36	6	R4584.1	R4574.1
	4.20	0.1654	24	66	36	6	R4584.2	R4574.2
19	4.22	0.1661	24	66	36	6	R458N19	R457N19
	4.30	0.1693	24	66	36	6	R4584.3	R4574.3
18	4.31	0.1697	24	66	36	6	R458N18	R457N18
11/64	4.37	0.1720	24	66	36	6	R45811/64	R45711/64
17	4.39	0.1728	24	66	36	6	R458N17	R457N17
	4.40	0.1732	24	66	36	6	R4584.4	R4574.4
16	4.50	0.1772	24	66	36	6	R458N16	R457N16
	4.50	0.1772	24	66	36	6	R4584.5	R4574.5
15	4.57	0.1799	24	66	36	6	R458N15	R457N15
	4.60	0.1811	24	66	36	6	R4584.6	R4574.6
14	4.62	0.1819	24	66	36	6	R458N14	R457N14
	4.70	0.1850	24	66	36	6	R4584.7	R4574.7
13	4.70	0.1850	24	66	36	6	R458N13	R457N13
3/16	4.76	0.1874	28	66	36	6	R4583/16	R4573/16
	4.80	0.1890	28	66	36	6	R4584.8	R4574.8
12	4.80	0.1890	28	66	36	6	R458N12	R457N12
11	4.85	0.1909	28	66	36	6	R458N11	R457N11
	4.90	0.1929	28	66	36	6	R4584.9	R4574.9
10	4.92	0.1937	28	66	36	6	R458N10	R457N10
9	4.98	0.1961	28	66	36	6	R458N9	R457N9
	5.00	0.1969	28	66	36	6	R4585.0	R4575.0
	5.05	0.1988	28	66	36	6		R4575.05
8	5.06	0.1992	28	66	36	6	R458N8	R457N8
	5.10	0.2008	28	66	36	6	R4585.1	R4575.1
7	5.11	0.2012	28	66	36	6	R458N7	R457N7
13/64	5.16	0.2031	28	66	36	6	R45813/64	R45713/64
6	5.18	0.2039	28	66	36	6	R458N6	R457N6
	5.20	0.2047	28	66	36	6	R4585.2	R4575.2
5	5.22	0.2055	28	66	36	6	R458N5	R457N5
	5.30	0.2087	28	66	36	6	R4585.3	R4575.3
4	5.31	0.2091	28	66	36	6	R458N4	R457N4
	5.40	0.2126	28	66	36	6	R4585.4	R4575.4
3	5.41	0.2130	28	66	36	6	R458N3	R457N3
	5.50	0.2165	28	66	36	6	R4585.5	R4575.5
7/32	5.56	0.2189	28	66	36	6	R4587/32	R4577/32
	5.60	0.2205	28	66	36	6	R4585.6	R4575.6
2	5.61	0.2209	28	66	36	6	R458N2	R457N2
	5.70	0.2244	28	66	36	6	R4585.7	R4575.7
1	5.79	0.2280	28	66	36	6	R458N1	R457N1
	5.80	0.2283	28	66	36	6	R4585.8	R4575.8
	5.90	0.2323	28	66	36	6	R4585.9	R4575.9
A	5.94	0.2339	28	66	36	6	R458A	R457A
15/64	5.95	0.2343	28	66	36	6	R45815/64	R45715/64
	6.00	0.2362	28	66	36	6	R4586.0	R4576.0
B	6.03	0.2374	34	79	36	8	R458B	R457B
	6.05	0.2382	34	79	36	8		R4576.05
	6.10	0.2402	34	79	36	8	R4586.1	R4576.1
C	6.15	0.2421	34	79	36	8	R458C	R457C
	6.20	0.2441	34	79	36	8	R4586.2	R4576.2
D	6.25	0.2461	34	79	36	8	R458D	R457D
	6.30	0.2480	34	79	36	8	R4586.3	R4576.3
1/4	6.35	0.2500	34	79	36	8	R4581/4	R4571/4
E	6.35	0.2500	34	79	36	8	R458E	R457E
	6.40	0.2520	34	79	36	8	R4586.4	R4576.4
	6.50	0.2559	34	79	36	8	R4586.5	R4576.5
F	6.53	0.2571	34	79	36	8	R458F	R457F
	6.60	0.2598	34	79	36	8	R4586.6	R4576.6
G	6.63	0.2610	34	79	36	8	R458G	R457G
	6.70	0.2638	34	79	36	8	R4586.7	R4576.7
17/64	6.75	0.2657	34	79	36	8	R45817/64	R45717/64
H	6.76	0.2661	34	79	36	8	R458H	R457H
	6.80	0.2677	34	79	36	8	R4586.8	R4576.8
	6.90	0.2717	34	79	36	8	R4586.9	R4576.9
I	6.91	0.2720	34	79	36	8	R458I	R457I
	7.00	0.2756	34	79	36	8	R4587.0	R4577.0

d ₁ Ø "/Nr.	d ₁ Øm ₇ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Øh _s mm	R458	R457
J	7.04	0.2772	41	79	36	8	R458J	R457J
	7.10	0.2795	41	79	36	8	R4587.1	R4577.1
K	7.14	0.2811	41	79	36	8	R458K	R457K
9/32	7.14	0.2811	41	79	36	8	R4589/32	R4579/32
	7.20	0.2835	41	79	36	8	R4587.2	R4577.2
	7.30	0.2874	41	79	36	8	R4587.3	R4577.3
L	7.37	0.2902	41	79	36	8	R458L	R457L
	7.40	0.2913	41	79	36	8	R4587.4	R4577.4
M	7.49	0.2949	41	79	36	8	R458M	R457M
	7.50	0.2953	41	79	36	8	R4587.5	R4577.5
19/64	7.54	0.2969	41	79	36	8	R45819/64	R45719/64
	7.60	0.2992	41	79	36	8	R4587.6	R4577.6
N	7.67	0.3020	41	79	36	8	R458N	R457N
	7.70	0.3031	41	79	36	8	R4587.7	R4577.7
	7.80	0.3071	41	79	36	8	R4587.8	R4577.8
	7.90	0.3110	41	79	36	8	R4587.9	R4577.9
5/16	7.94	0.3126	41	79	36	8	R4585/16	R4575/16
	8.00	0.3150	41	79	36	8	R4588.0	R4578.0
O	8.03	0.3161	47	89	40	10	R458O	R457O
	8.05	0.3169	47	89	40	10		R4578.05
	8.10	0.3189	47	89	40	10	R4588.1	R4578.1
	8.20	0.3228	47	89	40	10	R4588.2	R4578.2
P	8.20	0.3228	47	89	40	10	R458P	R457P
	8.30	0.3268	47	89	40	10	R4588.3	R4578.3
21/64	8.33	0.3280	47	89	40	10	R45821/64	R45721/64
	8.40	0.3307	47	89	40	10	R4588.4	R4578.4
Q	8.43	0.3319	47	89	40	10	R458Q	R457Q
	8.50	0.3346	47	89	40	10	R4588.5	R4578.5
	8.60	0.3386	47	89	40	10	R4588.6	R4578.6
R	8.61	0.3390	47	89	40	10	R458R	R457R
	8.70	0.3425	47	89	40	10	R4588.7	R4578.7
11/32	8.73	0.3437	47	89	40	10	R45811/32	R45711/32
	8.80	0.3465	47	89	40	10	R4588.8	R4578.8
S	8.84	0.3480	47	89	40	10	R458S	R457S
	8.90	0.3504	47	89	40	10	R4588.9	R4578.9
	9.00	0.3543	47	89	40	10	R4589.0	R4579.0
T	9.09	0.3579	47	89	40	10	R458T	R457T
	9.10	0.3583	47	89	40	10	R4589.1	R4579.1
23/64	9.13	0.3594	47	89	40	10	R45823/64	R45723/64
	9.20	0.3622	47	89	40	10	R4589.2	R4579.2
	9.30	0.3661	47	89	40	10	R4589.3	R4579.3
U	9.35	0.3681	47	89	40	10	R458U	R457U
	9.40	0.3701	47	89	40	10	R4589.4	R4579.4
	9.50	0.3740	47	89	40	10	R4589.5	R4579.5
3/8	9.52	0.3748	47	89	40	10	R4583/8	R4573/8
V	9.58	0.3772	47	89	40	10	R458V	R457V
	9.60	0.3780	47	89	40	10	R4589.6	R4579.6
	9.70	0.3819	47	89	40	10	R4589.7	R4579.7
	9.80	0.3858	47	89	40	10	R4589.8	R4579.8
W	9.80	0.3858	47	89	40	10	R458W	R457W
	9.90	0.3898	47	89	40	10	R4589.9	R4579.9
25/64	9.92	0.3906	47	89	40	10	R45825/64	R45725/64
	10.00	0.3937	47	89	40	10	R45810.0	R45710.0
	10.05	0.3957	55	102	45	12		R45710.05
X	10.08	0.3969	55	102	45	12	R458X	R457X
	10.10	0.3976	55	102	45	12	R45810.1	R45710.1
	10.20	0.4016	55	102	45	12	R45810.2	R45710.2
Y	10.26	0.4039	55	102	45	12	R458Y	R457Y
	10.30	0.4055	55	102	45	12	R45810.3	R45710.3
13/32	10.32	0.4063	55	102	45	12	R45813/32	R45713/32
	10.40	0.4094	55	102	45	12	R45810.4	R45710.4
Z	10.49	0.4130	55	102	45	12	R458Z	R457Z
	10.50	0.4134	55	102	45	12	R45810.5	R45710.5
	10.60	0.4173	55	102	45	12	R45810.6	R45710.6
	10.70	0.4213	55	102	45	12	R45810.7	
27/64	10.72	0.4220	55	102	45	12	R45827/64	R45727/64
	10.80	0.4252	55	102	45	12	R45810.8	R45710.8
	10.90	0.4291	55	102	45	12	R45810.9	
	11.00	0.4331	55	102	45	12	R45811.0	R45711.0
	11.10	0.4370	55	102	45	12	R45811.1	

d_1 Ø "/Nr.	d_1 Ø _{m7} mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Ø _{h6} mm	R458	R457
7/16	11.11	0.4374	55	102	45	12	R4587/16	R4577/16
	11.20	0.4409	55	102	45	12	R45811.2	R45711.2
	11.30	0.4449	55	102	45	12	R45811.3	R45711.3
	11.40	0.4488	55	102	45	12	R45811.4	R45711.4
29/64	11.50	0.4528	55	102	45	12	R45811.5	R45711.5
	11.51	0.4531	55	102	45	12	R45829/64	R45729/64
	11.60	0.4567	55	102	45	12	R45811.6	R45711.6
	11.70	0.4606	55	102	45	12	R45811.7	
	11.80	0.4646	55	102	45	12	R45811.8	R45711.8
15/32	11.90	0.4685	55	102	45	12	R45811.9	
	11.91	0.4689	55	102	45	12	R45815/32	R45715/32
	12.00	0.4724	55	102	45	12	R45812.0	R45712.0
	12.05	0.4744	60	107	45	14		R45712.05
	12.10	0.4764	60	107	45	14	R45812.1	R45712.1
31/64	12.20	0.4803	60	107	45	14	R45812.2	R45712.2
	12.30	0.4843	60	107	45	14	R45831/64	R45731/64
	12.50	0.4921	60	107	45	14	R45812.5	R45712.5
	12.70	0.5000	60	107	45	14	R45812.7	R45712.7
1/2	12.70	0.5000	60	107	45	14	R4581/2	R4571/2
	12.80	0.5039	60	107	45	14	R45812.8	R45712.8
	13.00	0.5118	60	107	45	14	R45813.0	R45713.0
33/64	13.10	0.5157	60	107	45	14	R45833/64	R45733/64
	13.30	0.5236	60	107	45	14	R45813.3	R45713.3
17/32	13.49	0.5311	60	107	45	14	R45817/32	R45717/32
	13.50	0.5315	60	107	45	14	R45813.5	R45713.5
35/64	13.80	0.5433	60	107	45	14	R45813.8	R45713.8
	13.89	0.5469	60	107	45	14	R45835/64	R45735/64
	14.00	0.5512	60	107	45	14	R45814.0	R45714.0
	14.25	0.5610	65	115	48	16	R45814.25	R45714.25
9/16	14.29	0.5626	65	115	48	16	R4589/16	R4579/16
	14.50	0.5709	65	115	48	16	R45814.5	R45714.5
37/64	14.68	0.5780	65	115	48	16	R45837/64	R45737/64
	14.80	0.5827	65	115	48	16	R45814.8	R45714.8
	15.00	0.5906	65	115	48	16	R45815.0	R45715.0
19/32	15.08	0.5937	65	115	48	16	R45819/32	R45719/32
	15.10	0.5945	65	115	48	16	R45815.1	R45715.1
	15.30	0.6024	65	115	48	16	R45815.3	R45715.3
39/64	15.48	0.6094	65	115	48	16	R45839/64	R45739/64
	15.50	0.6102	65	115	48	16	R45815.5	R45715.5
	15.80	0.6220	65	115	48	16	R45815.8	R45715.8
5/8	15.88	0.6252	65	115	48	16	R4585/8	R4575/8
	16.00	0.6299	65	115	48	16	R45816.0	R45716.0
41/64	16.27	0.6406	73	123	48	18	R45841/64	R45741/64
	16.50	0.6496	73	123	48	18	R45816.5	R45716.5
21/32	16.67	0.6563	73	123	48	18	R45821/32	R45721/32
	17.00	0.6693	73	123	48	18	R45817.0	R45717.0
43/64	17.07	0.6720	73	123	48	18	R45843/64	R45743/64
11/16	17.46	0.6874	73	123	48	18	R45811/16	R45711/16
	17.50	0.6890	73	123	48	18	R45817.5	R45717.5
	17.80	0.7008	73	123	48	18	R45817.8	
45/64	17.86	0.7031	73	123	48	18	R45845/64	R45745/64
	18.00	0.7087	73	123	48	18	R45818.0	R45718.0
	18.26	0.7189	79	131	50	20	R45823/32	R45723/32
23/32	18.50	0.7283	79	131	50	20	R45818.5	R45718.5
	18.65	0.7343	79	131	50	20	R45847/64	R45747/64
47/64	18.80	0.7402	79	131	50	20		R45718.8
	19.00	0.7480	79	131	50	20	R45819.0	R45719.0
	19.05	0.7500	79	131	50	20	R4583/4	R4573/4
	19.50	0.7677	79	131	50	20	R45819.5	R45719.5
	19.80	0.7795	79	131	50	20	R45819.8	R45719.8
3/4	20.00	0.7874	79	131	50	20	R45820.0	R45720.0

R454

- Force-X Hosszú Csigafúró 5XD
- Burghiu Force-X 5XD
- Force-X Matkap 5XD
- Force X Drill 5XD

R453

- Force-X Csigafúró - Olajvezetővel 5XD
- Burghiu Force-X, Racire interna 5XD
- Force X Matkap Su Delikli 5xD
- Force X Drill Oil Feed 5XD

R454	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.1	6.2	6.3	7.1	7.2
		7.3	7.4																		
	•	2.4	4.1	4.2	4.3	6.4															
R453	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3
		6.4	7.1	7.2	7.3	7.4															
	•	2.3	2.4																		

R454	HM	DIN 6537 L	5XD	140°	TiAIN	DIN 6535HA	CTW			
R453	HM	DIN 6537 L	5XD	140°	TiAIN	DIN 6535HA	CTW			



d ₁ Ø Inch	d ₁ Ø _{m7} mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Ø _{h6} mm	R454	R453
	3.00	0.1181	28	66	36	6	R4543.0	R4533.0
	3.10	0.1220	28	66	36	6	R4543.1	R4533.1
1/8	3.18	0.1252	28	66	36	6	R4541/8	R4531/8
	3.20	0.1260	28	66	36	6	R4543.2	R4533.2
30	3.26	0.1283	28	66	36	6	R454N30	R453N30
	3.30	0.1299	28	66	36	6	R4543.3	R4533.3
	3.40	0.1339	28	66	36	6	R4543.4	R4533.4
29	3.45	0.1358	28	66	36	6	R454N29	R453N29
	3.50	0.1378	28	66	36	6	R4543.5	R4533.5
28	3.57	0.1406	28	66	36	6	R454N28	R453N28
9/64	3.57	0.1406	28	66	36	6	R4549/64	R4539/64
	3.60	0.1417	28	66	36	6	R4543.6	R4533.6
27	3.66	0.1441	28	66	36	6	R454N27	R453N27
	3.70	0.1457	28	66	36	6	R4543.7	R4533.7
26	3.73	0.1469	36	74	36	6	R454N26	R453N26
	3.80	0.1496	36	74	36	6	R4543.8	R4533.8
25	3.80	0.1496	36	74	36	6	R454N25	R453N25
24	3.86	0.1520	36	74	36	6	R454N24	R453N24
	3.90	0.1535	36	74	36	6	R4543.9	R4533.9
23	3.91	0.1539	36	74	36	6	R454N23	R453N23
5/32	3.97	0.1563	36	74	36	6	R4545/32	R4535/32
22	3.99	0.1571	36	74	36	6	R454N22	R453N22

d ₁ Ø Inch	d ₁ Ø _m , mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Ø _h ₆ mm	R454	R453
	4.00	0.1575	36	74	36	6	R4544.0	R4534.0
21	4.04	0.1591	36	74	36	6	R454N21	R453N21
	4.05	0.1594	36	74	36	6		R4534.05
20	4.09	0.1610	36	74	36	6	R454N20	R453N20
	4.10	0.1614	36	74	36	6	R4544.1	R4534.1
	4.20	0.1654	36	74	36	6	R4544.2	R4534.2
19	4.22	0.1661	36	74	36	6	R454N19	R453N19
	4.30	0.1693	36	74	36	6	R4544.3	R4534.3
18	4.31	0.1697	36	74	36	6	R454N18	R453N18
11/64	4.37	0.1720	36	74	36	6	R45411/64	R45311/64
17	4.39	0.1728	36	74	36	6	R454N17	R453N17
	4.40	0.1732	36	74	36	6	R4544.4	R4534.4
	4.50	0.1772	36	74	36	6	R4544.5	R4534.5
16	4.50	0.1772	36	74	36	6	R454N16	R453N16
15	4.57	0.1799	36	74	36	6	R454N15	R453N15
	4.60	0.1811	36	74	36	6	R4544.6	R4534.6
14	4.62	0.1819	36	74	36	6	R454N14	R453N14
	4.70	0.1850	36	74	36	6	R4544.7	R4534.7
13	4.70	0.1850	36	74	36	6	R454N13	R453N13
3/16	4.76	0.1874	44	82	36	6	R4543/16	R4533/16
	4.80	0.1890	44	82	36	6	R4544.8	R4534.8
12	4.80	0.1890	44	82	36	6	R454N12	R453N12
11	4.85	0.1909	44	82	36	6	R454N11	R453N11
	4.90	0.1929	44	82	36	6	R4544.9	R4534.9
10	4.92	0.1937	44	82	36	6	R454N10	R453N10
9	4.98	0.1961	44	82	36	6	R454N9	R453N9
	5.00	0.1969	44	82	36	6	R4545.0	R4535.0
	5.05	0.1988	44	82	36	6		R4535.05
8	5.06	0.1992	44	82	36	6	R454N8	R453N8
	5.10	0.2008	44	82	36	6	R4545.1	R4535.1
7	5.11	0.2012	44	82	36	6	R454N7	R453N7
13/64	5.16	0.2031	44	82	36	6	R45413/64	R45313/64
6	5.18	0.2039	44	82	36	6	R454N6	R453N6
	5.20	0.2047	44	82	36	6	R4545.2	R4535.2
5	5.22	0.2055	44	82	36	6	R454N5	R453N5
	5.30	0.2087	44	82	36	6		R4535.3
4	5.31	0.2091	44	82	36	6	R454N4	R453N4
	5.40	0.2126	44	82	36	6		R4535.4
3	5.41	0.2130	44	82	36	6	R454N3	R453N3
	5.50	0.2165	44	82	36	6	R4545.5	R4535.5
7/32	5.56	0.2189	44	82	36	6	R4547/32	R4537/32
	5.60	0.2205	44	82	36	6	R4545.6	R4535.6
2	5.61	0.2209	44	82	36	6	R454N2	R453N2
	5.70	0.2244	44	82	36	6	R4545.7	R4535.7
1	5.79	0.2280	44	82	36	6	R454N1	R453N1
	5.80	0.2283	44	82	36	6	R4545.8	R4535.8
	5.90	0.2323	44	82	36	6		R4535.9
A	5.94	0.2339	44	82	36	6	R454A	R453A
15/64	5.95	0.2343	44	82	36	6	R45415/64	R45315/64
	6.00	0.2362	44	82	36	6	R4546.0	R4536.0
B	6.03	0.2374	53	91	36	8	R454B	R453B
	6.05	0.2382	53	91	36	8		R4536.05
	6.10	0.2402	53	91	36	8	R4546.1	R4536.1
C	6.15	0.2421	53	91	36	8	R454C	R453C
	6.20	0.2441	53	91	36	8	R4546.2	R4536.2
D	6.25	0.2461	53	91	36	8	R454D	R453D
	6.30	0.2480	53	91	36	8	R4546.3	R4536.3
1/4	6.35	0.2500	53	91	36	8	R4541/4	R4531/4
E	6.35	0.2500	53	91	36	8	R454E	R453E
	6.40	0.2520	53	91	36	8	R4546.4	R4536.4
	6.50	0.2559	53	91	36	8	R4546.5	R4536.5
F	6.53	0.2571	53	91	36	8	R454F	R453F
	6.60	0.2598	53	91	36	8	R4546.6	R4536.6
G	6.63	0.2610	53	91	36	8	R454G	R453G
	6.70	0.2638	53	91	36	8	R4546.7	R4536.7
17/64	6.75	0.2657	53	91	36	8	R45417/64	R45317/64
H	6.76	0.2661	53	91	36	8	R454H	R453H
	6.80	0.2677	53	91	36	8	R4546.8	R4536.8
	6.90	0.2717	53	91	36	8	R4546.9	R4536.9

d ₁ Ø Inch	d ₁ Øm ₁ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Øh _s mm	R454	R453
I	6.91	0.2720	53	91	36	8	R454I	R453I
	7.00	0.2756	53	91	36	8	R4547.0	R4537.0
J	7.04	0.2772	53	91	36	8	R454J	R453J
	7.10	0.2795	53	91	36	8	R4547.1	R4537.1
K	7.14	0.2811	53	91	36	8	R454K	R453K
9/32	7.14	0.2811	53	91	36	8	R4549/32	R4539/32
	7.20	0.2835	53	91	36	8		R4537.2
	7.30	0.2874	53	91	36	8	R4547.3	R4537.3
L	7.37	0.2902	53	91	36	8	R454L	R453L
	7.40	0.2913	53	91	36	8	R4547.4	R4537.4
M	7.49	0.2949	53	91	36	8	R454M	R453M
	7.50	0.2953	53	91	36	8	R4547.5	R4537.5
19/64	7.54	0.2969	53	91	36	8	R45419/64	R45319/64
	7.60	0.2992	53	91	36	8	R4547.6	R4537.6
N	7.67	0.3020	53	91	36	8	R454N	R453N
	7.70	0.3031	53	91	36	8	R4547.7	R4537.7
	7.80	0.3071	53	91	36	8	R4547.8	R4537.8
	7.90	0.3110	53	91	36	8	R4547.9	R4537.9
5/16	7.94	0.3126	53	91	36	8	R4545/16	R4535/16
	8.00	0.3150	53	91	36	8	R4548.0	R4538.0
O	8.03	0.3161	61	103	40	10	R454O	R453O
	8.05	0.3169	61	103	40	10		R4538.05
	8.10	0.3189	61	103	40	10	R4548.1	R4538.1
	8.20	0.3228	61	103	40	10	R4548.2	R4538.2
P	8.20	0.3228	61	103	40	10	R454P	R453P
	8.30	0.3268	61	103	40	10		R4538.3
21/64	8.33	0.3280	61	103	40	10	R45421/64	R45321/64
	8.40	0.3307	61	103	40	10	R4548.4	R4538.4
Q	8.43	0.3319	61	103	40	10	R454Q	R453Q
	8.50	0.3346	61	103	40	10	R4548.5	R4538.5
	8.60	0.3386	61	103	40	10	R4548.6	R4538.6
R	8.61	0.3390	61	103	40	10	R454R	R453R
	8.70	0.3425	61	103	40	10	R4548.7	R4538.7
11/32	8.73	0.3437	61	103	40	10	R45411/32	R45311/32
	8.80	0.3465	61	103	40	10	R4548.8	R4538.8
S	8.84	0.3480	61	103	40	10	R454S	R453S
	8.90	0.3504	61	103	40	10	R4548.9	R4538.9
	9.00	0.3543	61	103	40	10	R4549.0	R4539.0
T	9.09	0.3579	61	103	40	10	R454T	R453T
	9.10	0.3583	61	103	40	10	R4549.1	R4539.1
23/64	9.13	0.3594	61	103	40	10	R45423/64	R45323/64
	9.20	0.3622	61	103	40	10		R4539.2
	9.30	0.3661	61	103	40	10	R4549.3	R4539.3
U	9.35	0.3681	61	103	40	10	R454U	R453U
	9.40	0.3701	61	103	40	10	R4549.4	R4539.4
	9.50	0.3740	61	103	40	10	R4549.5	R4539.5
3/8	9.52	0.3748	61	103	40	10	R4543/8	R4533/8
V	9.58	0.3772	61	103	40	10	R454V	R453V
	9.60	0.3780	61	103	40	10	R4549.6	R4539.6
	9.70	0.3819	61	103	40	10	R4549.7	R4539.7
	9.80	0.3858	61	103	40	10	R4549.8	R4539.8
W	9.80	0.3858	61	103	40	10	R454W	R453W
	9.90	0.3898	61	103	40	10	R4549.9	R4539.9
25/64	9.92	0.3906	61	103	40	10	R45425/64	R45325/64
	10.00	0.3937	61	103	40	10	R45410.0	R45310.0
	10.05	0.3957	70	118	45	12		R45310.05
X	10.08	0.3969	70	118	45	12	R454X	R453X
	10.10	0.3976	70	118	45	12	R45410.1	R45310.1
	10.20	0.4016	70	118	45	12	R45410.2	R45310.2
Y	10.26	0.4039	70	118	45	12	R454Y	R453Y
	10.30	0.4055	70	118	45	12	R45410.3	R45310.3
13/32	10.32	0.4063	70	118	45	12	R45413/32	R45313/32
	10.40	0.4094	70	118	45	12	R45410.4	R45310.4
Z	10.49	0.4130	70	118	45	12	R454Z	R453Z
	10.50	0.4134	70	118	45	12	R45410.5	R45310.5
	10.60	0.4173	70	118	45	12	R45410.6	R45310.6
27/64	10.72	0.4220	70	118	45	12	R45427/64	R45327/64
	10.80	0.4252	70	118	45	12		R45310.8
	11.00	0.4331	70	118	45	12	R45411.0	R45311.0
7/16	11.11	0.4374	70	118	45	12	R4547/16	R4537/16

d ₁ Ø Inch	d ₁ Øm ₇ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Øh ₆ mm	R454	R453
	11.20	0.4409	70	118	45	12	R45411.2	R45311.2
	11.30	0.4449	70	118	45	12		R45311.3
	11.40	0.4488	70	118	45	12	R45411.4	R45311.4
	11.50	0.4528	70	118	45	12	R45411.5	R45311.5
29/64	11.51	0.4531	70	118	45	12	R45429/64	R45329/64
	11.60	0.4567	70	118	45	12	R45411.6	R45311.6
	11.80	0.4646	70	118	45	12	R45411.8	R45311.8
15/32	11.91	0.4689	70	118	45	12	R45415/32	R45315/32
	12.00	0.4724	70	118	45	12	R45412.0	R45312.0
	12.05	0.4744	76	124	45	14		R45312.05
	12.10	0.4764	76	124	45	14	R45412.1	
	12.20	0.4803	76	124	45	14	R45412.2	R45312.2
31/64	12.30	0.4843	76	124	45	14	R45431/64	R45331/64
	12.50	0.4921	76	124	45	14	R45412.5	R45312.5
	12.70	0.5000	76	124	45	14	R45412.7	R45312.7
1/2	12.70	0.5000	76	124	45	14	R4541/2	R4531/2
	12.80	0.5039	76	124	45	14	R45412.8	R45312.8
	13.00	0.5118	76	124	45	14	R45413.0	R45313.0
33/64	13.10	0.5157	76	124	45	14	R45433/64	R45333/64
	13.30	0.5236	76	124	45	14		R45313.3
17/32	13.49	0.5311	76	124	45	14	R45417/32	R45317/32
	13.50	0.5315	76	124	45	14	R45413.5	R45313.5
	13.80	0.5433	76	124	45	14	R45413.8	R45313.8
35/64	13.89	0.5469	76	124	45	14	R45435/64	R45335/64
	14.00	0.5512	76	124	45	14	R45414.0	R45314.0
	14.25	0.5610	82	133	48	16	R45414.25	R45314.25
9/16	14.29	0.5626	82	133	48	16	R4549/16	R4539/16
	14.50	0.5709	82	133	48	16	R45414.5	R45314.5
37/64	14.68	0.5780	82	133	48	16	R45437/64	R45337/64
	14.80	0.5827	82	133	48	16	R45414.8	R45314.8
	15.00	0.5906	82	133	48	16	R45415.0	R45315.0
19/32	15.08	0.5937	82	133	48	16	R45419/32	R45319/32
	15.10	0.5945	82	133	48	16	R45415.1	R45315.1
	15.30	0.6024	82	133	48	16		R45315.3
39/64	15.48	0.6094	82	133	48	16	R45439/64	R45339/64
	15.50	0.6102	82	133	48	16	R45415.5	R45315.5
	15.80	0.6220	82	133	48	16	R45415.8	R45315.8
5/8	15.88	0.6252	82	133	48	16	R4545/8	R4535/8
	16.00	0.6299	82	133	48	16	R45416.0	R45316.0
41/64	16.27	0.6406	91	143	48	18	R45441/64	R45341/64
	16.50	0.6496	91	143	48	18	R45416.5	R45316.5
21/32	16.67	0.6563	91	143	48	18	R45421/32	R45321/32
	17.00	0.6693	91	143	48	18	R45417.0	R45317.0
43/64	17.07	0.6720	91	143	48	18	R45443/64	R45343/64
11/16	17.46	0.6874	91	143	48	18	R45411/16	R45311/16
	17.50	0.6890	91	143	48	18	R45417.5	R45317.5
	17.80	0.7008	91	143	48	18	R45417.8	R45317.8
45/64	17.86	0.7031	91	143	48	18	R45445/64	R45345/64
	18.00	0.7087	91	143	48	18	R45418.0	R45318.0
23/32	18.26	0.7189	99	153	50	20	R45423/32	R45323/32
	18.50	0.7283	99	153	50	20	R45418.5	R45318.5
47/64	18.65	0.7343	99	153	50	20	R45447/64	R45347/64
	19.00	0.7480	99	153	50	20	R45419.0	R45319.0
3/4	19.05	0.7500	99	153	50	20	R4543/4	R4533/4
	19.50	0.7677	99	153	50	20	R45419.5	R45319.5
	19.80	0.7795	99	153	50	20	R45419.8	R45319.8
	20.00	0.7874	99	153	50	20	R45420.0	R45320.0

R459

- Force-X Csigafúró - Olajvezetővel 8XD
- Burghiu Force-X, Racire interna 8XD
- Force X Matkap Su Delikli 8xD
- Force X Drill Oil Feed 8XD

R459

▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	7.2	7.3
•	2.3	6.1	6.2	6.3	6.4	7.1								

R459

HM

DORMER

8XD



d_1 \varnothing_{m_7} Inch	d_1 \varnothing_{m_7} mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 \varnothing_{h_6} mm	R459
	3.00	0.1181	37	79	36	6	R4593.0
	3.10	0.1220	37	79	36	6	R4593.1
1/8	3.18	0.1252	37	79	36	6	R4591/8
	3.20	0.1260	37	79	36	6	R4593.2
	3.30	0.1299	37	79	36	6	R4593.3
	3.40	0.1339	37	79	36	6	R4593.4
	3.50	0.1378	37	79	36	6	R4593.5
9/64	3.57	0.1406	37	79	36	6	R4599/64
	3.60	0.1417	37	79	36	6	R4593.6
	3.70	0.1457	37	79	36	6	R4593.7
	3.80	0.1496	48	90	36	6	R4593.8
	3.90	0.1535	48	90	36	6	R4593.9
5/32	3.97	0.1563	48	90	36	6	R4595/32
	4.00	0.1575	48	90	36	6	R4594.0
	4.10	0.1614	48	90	36	6	R4594.1
	4.20	0.1654	48	90	36	6	R4594.2
	4.30	0.1693	48	90	36	6	R4594.3
11/64	4.37	0.1720	48	90	36	6	R45911/64
	4.40	0.1732	48	90	36	6	R4594.4
	4.50	0.1772	48	90	36	6	R4594.5
	4.60	0.1811	48	90	36	6	R4594.6
	4.70	0.1850	62	104	36	6	R4594.7
3/16	4.76	0.1874	62	104	36	6	R4593/16
	4.80	0.1890	62	104	36	6	R4594.8
	4.90	0.1929	62	104	36	6	R4594.9
	5.00	0.1969	62	104	36	6	R4595.0
	5.10	0.2008	62	104	36	6	R4595.1
13/64	5.16	0.2031	62	104	36	6	R45913/64
	5.20	0.2047	62	104	36	6	R4595.2
	5.30	0.2087	62	104	36	6	R4595.3
	5.40	0.2126	62	104	36	6	R4595.4
	5.50	0.2165	62	104	36	6	R4595.5
7/32	5.56	0.2189	62	104	36	6	R4597/32
	5.60	0.2205	62	104	36	6	R4595.6
	5.70	0.2244	62	104	36	6	R4595.7
	5.80	0.2283	62	104	36	6	R4595.8

d ₁ Øm ₇ Inch	d ₁ Øm ₇ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Øh ₆ mm	R459
	5.90	0.2323	62	104	36	6	R4595.9
15/64	5.95	0.2343	62	104	36	6	R45915/64
	6.00	0.2362	62	104	36	6	R4596.0
	6.10	0.2402	84	126	36	8	R4596.1
	6.20	0.2441	84	126	36	8	R4596.2
	6.30	0.2480	84	126	36	8	R4596.3
1/4	6.35	0.2500	84	126	36	8	R4591/4
	6.40	0.2520	84	126	36	8	R4596.4
	6.50	0.2559	84	126	36	8	R4596.5
	6.60	0.2598	84	126	36	8	R4596.6
	6.70	0.2638	84	126	36	8	R4596.7
17/64	6.75	0.2657	84	126	36	8	R45917/64
	6.80	0.2677	84	126	36	8	R4596.8
	6.90	0.2717	84	126	36	8	R4596.9
	7.00	0.2756	84	126	36	8	R4597.0
	7.10	0.2795	84	126	36	8	R4597.1
9/32	7.14	0.2811	84	126	36	8	R4599/32
	7.20	0.2835	84	126	36	8	R4597.2
	7.30	0.2874	84	126	36	8	R4597.3
	7.40	0.2913	84	126	36	8	R4597.4
	7.50	0.2953	84	126	36	8	R4597.5
19/64	7.54	0.2969	84	126	36	8	R45919/64
	7.60	0.2992	84	126	36	8	R4597.6
	7.70	0.3031	84	126	36	8	R4597.7
	7.80	0.3071	84	126	36	8	R4597.8
	7.90	0.3110	84	126	36	8	R4597.9
5/16	7.94	0.3126	84	126	36	8	R4595/16
	8.00	0.3150	84	126	36	8	R4598.0
	8.10	0.3189	106	152	40	10	R4598.1
	8.20	0.3228	106	152	40	10	R4598.2
	8.30	0.3268	106	152	40	10	R4598.3
21/64	8.33	0.3280	106	152	40	10	R45921/64
	8.40	0.3307	106	152	40	10	R4598.4
	8.50	0.3346	106	152	40	10	R4598.5
	8.60	0.3386	106	152	40	10	R4598.6
	8.70	0.3425	106	152	40	10	R4598.7
11/32	8.73	0.3437	106	152	40	10	R45911/32
	8.80	0.3465	106	152	40	10	R4598.8
	8.90	0.3504	106	152	40	10	R4598.9
	9.00	0.3543	106	152	40	10	R4599.0
	9.10	0.3583	106	152	40	10	R4599.1
23/64	9.13	0.3594	106	152	40	10	R45923/64
	9.20	0.3622	106	152	40	10	R4599.2
	9.30	0.3661	106	152	40	10	R4599.3
	9.40	0.3701	106	152	40	10	R4599.4
	9.50	0.3740	106	152	40	10	R4599.5
3/8	9.53	0.3748	106	152	40	10	R4593/8
	9.60	0.3780	106	152	40	10	R4599.6
	9.70	0.3819	106	152	40	10	R4599.7
	9.80	0.3858	106	152	40	10	R4599.8
	9.90	0.3898	106	152	40	10	R4599.9
25/64	9.92	0.3906	106	152	40	10	R45925/64
	10.00	0.3937	106	152	40	10	R45910.0
	10.20	0.4016	128	180	45	12	R45910.2
	10.30	0.4055	128	180	45	12	R45910.3
13/32	10.32	0.4063	128	180	45	12	R45913/32
	10.40	0.4094	128	180	45	12	R45910.4
	10.50	0.4134	128	180	45	12	R45910.5
27/64	10.72	0.4220	128	180	45	12	R45927/64
	10.80	0.4252	128	180	45	12	R45910.8
	11.00	0.4331	128	180	45	12	R45911.0
7/16	11.11	0.4374	128	180	45	12	R4597/16
	11.20	0.4409	128	180	45	12	R45911.2
	11.30	0.4449	128	180	45	12	R45911.3
	11.50	0.4528	128	180	45	12	R45911.5
29/64	11.51	0.4531	128	180	45	12	R45929/64
	11.80	0.4646	128	180	45	12	R45911.8
15/32	11.91	0.4689	128	180	45	12	R45915/32
	12.00	0.4724	128	180	45	12	R45912.0
	12.20	0.4803	151	202	48	14	R45912.2

d_1 $\varnothing m_7$ Inch	d_1 $\varnothing m_7$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 $\varnothing h_6$ mm	R459
31/64	12.30	0.4843	151	202	48	14	R45931/64
	12.50	0.4921	151	202	48	14	R45912.5
1/2	12.70	0.5000	151	202	48	14	R4591/2
	12.80	0.5039	151	202	48	14	R45912.8
	13.00	0.5118	151	202	48	14	R45913.0
33/64	13.10	0.5157	151	202	48	14	R45933/64
17/32	13.49	0.5311	151	202	48	14	R45917/32
	13.50	0.5315	151	202	48	14	R45913.5
35/64	13.89	0.5469	151	202	48	14	R45935/64
	14.00	0.5512	151	202	48	14	R45914.0
	14.25	0.5610	172	227	48	16	R45914.25
	14.29	0.5626	172	227	48	16	R4599/16
9/16	14.50	0.5709	172	227	48	16	R45914.5
	14.68	0.5780	172	227	48	16	R45937/64
37/64	15.00	0.5906	172	227	48	16	R45915.0
	15.08	0.5937	172	227	48	16	R45919/32
19/32	15.10	0.5945	172	227	48	16	R45915.1
	15.48	0.6094	172	227	48	16	R45939/64
39/64	15.50	0.6102	172	227	48	16	R45915.5
	15.88	0.6252	172	227	48	16	R4595/8
5/8	16.00	0.6299	172	227	48	16	R45916.0

A723

- Ponthegesztés lefűró
- Burghiu puncte sudură
- Punta çurütme matkabi
- Spot Weld Drill

A723 ■ 1.1 1.2
 • 1.3 1.4

A723 HSS-E DORMER 1XD Bronze N



d_1 \varnothing_{h_8} mm	d_1 decimal inch	l_2 mm	l_1 mm	A723
6.00	0.2362	18	66	A7236.0X66
6.00	0.2362	18	93	A7236.0X93
8.00	0.3150	24	79	A7238.0X79
8.00	0.3150	24	117	A7238.0X117

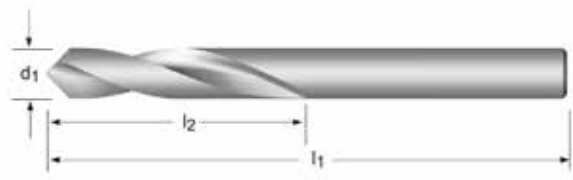
A122

- Pontozófúró
- Burghiu punctare
- Spot Matkap
- Spotting Drill

Szerszámhosszok DIN 1897 szerint
 Lungimea totala conf. DIN 1897
 DIN 1897 standarti uzunluk
 Overall Length to DIN 1897

A122	▪	1.1	1.2	1.3	6.1	6.2	6.3	6.4	7.1	7.2											
	•	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	7.3	7.4	8.1	8.2
		8.3	9.1																		

A122 **HSS** **DIN 1897** **1XD** **N**



d_1 \varnothing_{h_8} mm	d_1 decimal Inch	l_2 mm	l_1 mm	A122
6.00	0.2362	30	66	A1226.0X90
6.00	0.2362	30	66	A1226.0X120
8.00	0.3150	33	79	A1228.0X90
8.00	0.3150	33	79	A1228.0X120
10.00	0.3937	35	89	A12210.0X90
10.00	0.3937	35	89	A12210.0X120
12.00	0.4724	40	102	A12212.0X90
12.00	0.4724	40	102	A12212.0X120
16.00	0.6299	40	115	A12216.0X90
16.00	0.6299	40	115	A12216.0X120
20.00	0.7874	55	131	A12220.0X90
20.00	0.7874	55	131	A12220.0X120

A119

- Extra Rövid Kétoldalas Csigaűró
- Burghiu scurt doua capete
- Çift Taraflı Matkap
- Stub Drill - Double Ended

Lemezfűró
Burghiu pentru găurire tablă
Sac Matkabi
Sheet Metal Drill

A119	▪	1.1	1.2																			
		•	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
			7.4	8.1	8.2																	

A119 HSS DIN 1897 1.25XD 120° ST N



d_1 \varnothing_{h_8} mm	d_1 decimal Inch	l_2 mm	l_1 mm	A119
3.30	0.1299	11	49	A1193.3
3.60	0.1417	12	52	A1193.6
4.10	0.1614	14	55	A1194.1
4.20	0.1654	14	55	A1194.2
4.90	0.1929	17	62	A1194.9
5.10	0.2008	17	62	A1195.1

A123

- Extra Rövid Csigaúró
- Burghiu scurt
- Kısa Matkap
- Stub Drill

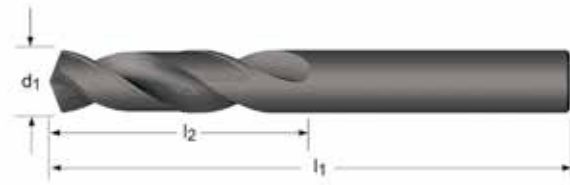
Lemezúró. Szerszámhosszok DIN 1897 szerint
 Lungimea totală pentru DIN 1897 și burghiu pentru tablă metalică
 DIN 1897 Silindirik Saplı Kısa Matkap
 Sheet Metal Drill. Overall Length to DIN 1897

A123	▪	1.1	1.2	1.3	6.1	6.2	6.3	6.4	7.1	7.2									
	•	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	7.3	7.4	8.1	8.2	8.3	9.1

A123 **HSS** **DIN 1897** **1.5XD** **120°** ST N



d_1 \varnothing_{h_8} Inch	d_1 \varnothing_{h_8} mm	d_1 decimal Inch	l_2 mm	l_1 mm	A123
3/32	2.38	0.0937	14	43	A1233/32S
	2.50	0.0984	14	43	A1232.5S
	3.00	0.1181	16	46	A1233.0S
1/8	3.18	0.1252	18	49	A1231/8S
	3.20	0.1260	18	49	A1233.2S
	3.30	0.1299	18	49	A1233.3S
	3.50	0.1378	18	52	A1233.5S
	3.70	0.1457	18	52	A1233.7S
5/32	3.97	0.1563	18	55	A1235/32S
	4.00	0.1575	18	55	A1234.0S
	4.10	0.1614	18	55	A1234.1S
	4.20	0.1654	18	55	A1234.2S
	4.50	0.1772	18	58	A1234.5S
3/16	4.76	0.1874	18	62	A1233/16S
	4.80	0.1890	18	62	A1234.8S
	4.90	0.1929	18	62	A1234.9S
	5.00	0.1969	18	62	A1235.0S
	5.50	0.2165	18	66	A1235.5S
7/32	5.56	0.2189	18	66	A1237/32S
	6.00	0.2362	18	66	A1236.0S
1/4	6.35	0.2500	19	70	A1231/4S



d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A120	A022	A620	A117
	0.50	0.0197	3	20	A120.5	A022.5		
	0.60	0.0236	3.5	21	A120.6	A022.6		
	0.70	0.0276	4.5	23	A120.7	A022.7		
1/32	0.79	0.0311	13	35		A0221/32		
1/32	0.79	0.0311	5	24	A1201/32			
	0.80	0.0315	5	24	A120.8	A022.8		
	0.90	0.0354	5.5	25	A120.9	A022.9		
	1.00	0.0394	6	26	A1201.0	A0221.0		A1171.0
	1.10	0.0433	7	28	A1201.1	A0221.1		A1171.1
3/64	1.19	0.0469	13	35		A0223/64		
3/64	1.19	0.0469	8	30	A1203/64			
	1.20	0.0472	8	30	A1201.2	A0221.2		A1171.2
	1.30	0.0512	8	30	A1201.3	A0221.3		A1171.3
	1.40	0.0551	9	32	A1201.4	A0221.4		A1171.4
	1.50	0.0591	9	32	A1201.5	A0221.5		A1171.5
1/16	1.59	0.0626	10	34	A1201/16			
1/16	1.59	0.0626	16	41		A0221/16		
	1.60	0.0630	10	34	A1201.6	A0221.6		A1171.6
	1.70	0.0669	10	34	A1201.7	A0221.7		A1171.7
	1.80	0.0709	11	36	A1201.8	A0221.8		A1171.8
	1.90	0.0748	11	36	A1201.9	A0221.9		A1171.9
5/64	1.98	0.0780	12	38	A1205/64			
5/64	1.98	0.0780	17	43		A0225/64		
	2.00	0.0787	12	38	A1202.0	A0222.0		A1172.0
	2.10	0.0827	12	38	A1202.1	A0222.1		A1172.1
	2.20	0.0866	13	40	A1202.2	A0222.2		A1172.2
	2.25	0.0886	13	40	A1202.25	A0222.25		
	2.30	0.0906	13	40	A1202.3	A0222.3		A1172.3
3/32	2.38	0.0937	14	43	A1203/32			
3/32	2.38	0.0937	20	45		A0223/32		
	2.40	0.0945	14	43	A1202.4	A0222.4		A1172.4
	2.50	0.0984	14	43	A1202.5	A0222.5	A6202.5	A1172.5
	2.60	0.1024	14	43	A1202.6	A0222.6	A6202.6	A1172.6
	2.65	0.1043	14	43	A1202.65	A0222.65		
	2.70	0.1063	16	46	A1202.7	A0222.7	A6202.7	A1172.7
7/64	2.78	0.1094	16	46	A1207/64			
7/64	2.78	0.1094	22	47		A0227/64		
	2.80	0.1102	16	46	A1202.8	A0222.8	A6202.8	A1172.8
	2.90	0.1142	16	46	A1202.9	A0222.9	A6202.9	A1172.9
	3.00	0.1181	16	46	A1203.0	A0223.0	A6203.0	A1173.0
	3.10	0.1220	18	49	A1203.1	A0223.1	A6203.1	A1173.1
1/8	3.18	0.1252	18	49	A1201/8			A1171/8
1/8	3.18	0.1252	23	49		A0221/8		
	3.20	0.1260	18	49	A1203.2	A0223.2	A6203.2	A1173.2
	3.25	0.1280	18	49	A1203.25	A0223.25		
	3.30	0.1299	18	49	A1203.3	A0223.3	A6203.3	A1173.3
	3.40	0.1339	20	52	A1203.4	A0223.4	A6203.4	A1173.4
	3.50	0.1378	20	52	A1203.5	A0223.5	A6203.5	A1173.5
9/64	3.57	0.1406	20	52	A1209/64			
9/64	3.57	0.1406	25	50		A0229/64		
	3.60	0.1417	20	52	A1203.6	A0223.6	A6203.6	A1173.6
	3.70	0.1457	20	52	A1203.7	A0223.7	A6203.7	A1173.7
	3.80	0.1496	22	55	A1203.8	A0223.8	A6203.8	A1173.8
	3.90	0.1535	22	55	A1203.9	A0223.9	A6203.9	A1173.9

d ₁ Øh ₈ Inch	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	A120	A022	A620	A117
5/32	3.97	0.1563	22	55	A1205/32			A1175/32
5/32	3.97	0.1563	26	53		A0225/32		
	4.00	0.1575	22	55	A1204.0	A0224.0	A6204.0	A1174.0
	4.10	0.1614	22	55	A1204.1	A0224.1	A6204.1	A1174.1
	4.20	0.1654	22	55	A1204.2	A0224.2	A6204.2	A1174.2
	4.30	0.1693	24	58	A1204.3	A0224.3	A6204.3	A1174.3
11/64	4.37	0.1720	24	58	A12011/64			
11/64	4.37	0.1720	28	55		A02211/64		
	4.40	0.1732	24	58	A1204.4	A0224.4	A6204.4	A1174.4
	4.50	0.1772	24	58	A1204.5	A0224.5	A6204.5	A1174.5
	4.60	0.1811	24	58	A1204.6	A0224.6	A6204.6	A1174.6
	4.70	0.1850	24	58	A1204.7	A0224.7	A6204.7	A1174.7
3/16	4.76	0.1874	26	62	A1203/16			A1173/16
3/16	4.76	0.1874	30	57		A0223/16		
	4.80	0.1890	26	62	A1204.8	A0224.8	A6204.8	A1174.8
	4.90	0.1929	26	62	A1204.9	A0224.9	A6204.9	A1174.9
	5.00	0.1969	26	62	A1205.0	A0225.0	A6205.0	A1175.0
	5.10	0.2008	26	62	A1205.1	A0225.1	A6205.1	A1175.1
13/64	5.16	0.2031	26	62	A12013/64			
13/64	5.16	0.2031	31	58		A02213/64		
	5.20	0.2047	26	62	A1205.2	A0225.2	A6205.2	A1175.2
	5.30	0.2087	26	62	A1205.3	A0225.3	A6205.3	A1175.3
	5.40	0.2126	28	66	A1205.4	A0225.4	A6205.4	A1175.4
	5.50	0.2165	28	66	A1205.5	A0225.5	A6205.5	A1175.5
7/32	5.56	0.2189	28	66	A1207/32			
7/32	5.56	0.2189	33	61		A0227/32		
	5.60	0.2205	28	66	A1205.6	A0225.6	A6205.6	A1175.6
	5.70	0.2244	28	66	A1205.7	A0225.7	A6205.7	A1175.7
	5.80	0.2283	28	66	A1205.8	A0225.8	A6205.8	A1175.8
	5.90	0.2323	28	66	A1205.9	A0225.9	A6205.9	A1175.9
15/64	5.95	0.2343	28	66	A12015/64			
15/64	5.95	0.2343	34	63		A02215/64		
	6.00	0.2362	28	66	A1206.0	A0226.0	A6206.0	A1176.0
	6.10	0.2402	31	70	A1206.1	A0226.1	A6206.1	A1176.1
	6.20	0.2441	31	70	A1206.2	A0226.2	A6206.2	A1176.2
	6.30	0.2480	31	70	A1206.3	A0226.3	A6206.3	A1176.3
1/4	6.35	0.2500	31	70	A1201/4			A1171/4
1/4	6.35	0.2500	36	65		A0221/4		
	6.40	0.2520	31	70	A1206.4	A0226.4	A6206.4	A1176.4
	6.50	0.2559	31	70	A1206.5	A0226.5	A6206.5	A1176.5
	6.60	0.2598	31	70	A1206.6	A0226.6	A6206.6	A1176.6
	6.70	0.2638	31	70	A1206.7	A0226.7	A6206.7	A1176.7
	6.80	0.2677	34	74	A1206.8	A0226.8	A6206.8	A1176.8
	6.90	0.2717	34	74	A1206.9	A0226.9	A6206.9	A1176.9
	7.00	0.2756	34	74	A1207.0	A0227.0	A6207.0	A1177.0
	7.10	0.2795	34	74	A1207.1	A0227.1	A6207.1	A1177.1
9/32	7.14	0.2811	34	74	A1209/32			
9/32	7.14	0.2811	40	70		A0229/32		
	7.20	0.2835	34	74	A1207.2	A0227.2	A6207.2	A1177.2
	7.30	0.2874	34	74	A1207.3	A0227.3	A6207.3	A1177.3
	7.40	0.2913	34	74	A1207.4	A0227.4	A6207.4	A1177.4
	7.50	0.2953	34	74	A1207.5	A0227.5	A6207.5	A1177.5
	7.60	0.2992	37	79	A1207.6	A0227.6	A6207.6	A1177.6
	7.70	0.3031	37	79	A1207.7	A0227.7	A6207.7	A1177.7
	7.80	0.3071	37	79	A1207.8	A0227.8	A6207.8	A1177.8
	7.90	0.3110	37	79	A1207.9	A0227.9	A6207.9	A1177.9
5/16	7.94	0.3126	37	79	A1205/16			A1175/16
5/16	7.94	0.3126	43	73		A0225/16		
	8.00	0.3150	37	79	A1208.0	A0228.0	A6208.0	A1178.0
	8.10	0.3189	37	79	A1208.1	A0228.1	A6208.1	A1178.1
	8.20	0.3228	37	79	A1208.2	A0228.2	A6208.2	A1178.2
	8.30	0.3268	37	79	A1208.3	A0228.3	A6208.3	A1178.3
	8.40	0.3307	37	79	A1208.4	A0228.4	A6208.4	A1178.4
	8.50	0.3346	37	79	A1208.5	A0228.5	A6208.5	A1178.5
	8.60	0.3386	40	84	A1208.6	A0228.6	A6208.6	A1178.6
	8.70	0.3425	40	84	A1208.7	A0228.7	A6208.7	A1178.7
11/32	8.73	0.3437	40	84	A12011/32			
11/32	8.73	0.3437	45	78		A02211/32		
	8.80	0.3465	40	84	A1208.8	A0228.8	A6208.8	A1178.8
	8.90	0.3504	40	84	A1208.9	A0228.9	A6208.9	A1178.9
	9.00	0.3543	40	84	A1209.0	A0229.0	A6209.0	A1179.0
	9.10	0.3583	40	84	A1209.1	A0229.1	A6209.1	A1179.1

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A120	A022	A620	A117
	9.20	0.3622	40	84	A1209.2	A0229.2	A6209.2	A1179.2
	9.30	0.3661	40	84	A1209.3	A0229.3	A6209.3	A1179.3
	9.40	0.3701	40	84	A1209.4	A0229.4	A6209.4	A1179.4
	9.50	0.3740	40	84	A1209.5	A0229.5	A6209.5	A1179.5
3/8	9.52	0.3748	43	89	A1203/8			A1173/8
3/8	9.52	0.3748	48	81		A0223/8		
	9.60	0.3780	43	89	A1209.6	A0229.6	A6209.6	A1179.6
	9.70	0.3819	43	89	A1209.7	A0229.7	A6209.7	A1179.7
	9.80	0.3858	43	89	A1209.8	A0229.8	A6209.8	A1179.8
	9.90	0.3898	43	89	A1209.9	A0229.9	A6209.9	A1179.9
	10.00	0.3937	43	89	A12010.0	A02210.0	A62010.0	A11710.0
	10.10	0.3976	43	89	A12010.1	A02210.1		
	10.20	0.4016	43	89	A12010.2	A02210.2	A62010.2	A11710.2
	10.30	0.4055	43	89	A12010.3	A02210.3	A62010.3	
13/32	10.32	0.4063	43	89	A12013/32			
13/32	10.32	0.4063	51	86		A02213/32		
	10.40	0.4094	43	89	A12010.4	A02210.4	A62010.4	
	10.50	0.4134	43	89	A12010.5	A02210.5	A62010.5	A11710.5
	10.60	0.4173	43	89	A12010.6	A02210.6		
	10.70	0.4213	47	95	A12010.7	A02210.7		
	10.80	0.4252	47	95	A12010.8	A02210.8	A62010.8	
	10.90	0.4291	47	95	A12010.9	A02210.9		
	11.00	0.4331	47	95	A12011.0	A02211.0	A62011.0	A11711.0
	11.10	0.4370	47	95	A12011.1	A02211.1		
7/16	11.11	0.4374	47	95	A1207/16			
7/16	11.11	0.4374	54	89		A0227/16		
	11.20	0.4409	47	95	A12011.2	A02211.2		
	11.30	0.4449	47	95	A12011.3	A02211.3		
	11.50	0.4528	47	95	A12011.5	A02211.5	A62011.5	A11711.5
	11.60	0.4567	47	95	A12011.6	A02211.6		
	11.70	0.4606	47	95	A12011.7	A02211.7		
	11.80	0.4646	47	95	A12011.8	A02211.8		
	11.90	0.4685	51	102	A12011.9	A02211.9		
	12.00	0.4724	51	102	A12012.0	A02212.0	A62012.0	A11712.0
	12.10	0.4764	51	102	A12012.1	A02212.1		
	12.20	0.4803	51	102	A12012.2	A02212.2	A62012.2	
	12.50	0.4921	51	102	A12012.5	A02212.5	A62012.5	
1/2	12.70	0.5000	51	102	A1201/2			A1171/2
1/2	12.70	0.5000	60	98		A0221/2		
	12.80	0.5039	51	102			A62012.8	
	13.00	0.5118	51	102	A12013.0	A02213.0	A62013.0	A11713.0
	13.50	0.5315	54	107	A12013.5	A02213.5		
	14.00	0.5512	54	107	A12014.0	A02214.0		
9/16	14.29	0.5626	56	111	A1209/16			
9/16	14.29	0.5626	67	105		A0229/16		
	14.50	0.5709	56	111	A12014.5	A02214.5		
	15.00	0.5906	56	111	A12015.0	A02215.0		
	15.50	0.6102	58	115	A12015.5	A02215.5		
5/8	15.88	0.6252	58	115	A1205/8			
5/8	15.88	0.6252	73	111		A0225/8		
	16.00	0.6299	58	115	A12016.0	A02216.0		
	16.50	0.6496	60	119	A12016.5			
	17.00	0.6693	60	119	A12017.0			
11/16	17.46	0.6874	62	123	A12011/16			
	17.50	0.6890	62	123	A12017.5			
	18.00	0.7087	62	123	A12018.0			
	18.50	0.7283	64	127	A12018.5			
	19.00	0.7480	64	127	A12019.0			
3/4	19.05	0.7500	66	131	A1203/4			
	19.50	0.7677	66	131	A12019.5			
	20.00	0.7874	66	131	A12020.0			
	20.50	0.8071	68	136	A12020.5			
13/16	20.64	0.8126	68	136	A12013/16			
	21.00	0.8268	68	136	A12021.0			
	22.00	0.8661	70	141	A12022.0			
7/8	22.22	0.8748	70	141	A1207/8			
	23.00	0.9055	72	146	A12023.0			
15/16	23.81	0.9374	75	151	A12015/16			
	24.00	0.9449	75	151	A12024.0			
	25.00	0.9843	75	151	A12025.0			

A520

- ADX Extra Rövid Csiga fúró
- Burghiu ADX scurt
- ADX Kısa Matkap
- ADX Stub Drill

A520	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	6.2	6.3	7.2	7.3	7.4	8.2	
		8.3																				
	•	1.6	4.3	5.1	5.2	5.3	6.1	6.4	7.1	8.1												

A520

HSS

DIN 1897

2.5XD

130°

TiN



d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A520
	3.00	0.1181	16	46	A5203.0
1/8	3.10	0.1220	18	49	A5203.1
	3.18	0.1252	18	49	A5201/8
	3.20	0.1260	18	49	A5203.2
	3.30	0.1299	18	49	A5203.3
	3.40	0.1339	20	52	A5203.4
9/64	3.50	0.1378	20	52	A5203.5
	3.57	0.1406	20	52	A5209/64
	3.60	0.1417	20	52	A5203.6
	3.70	0.1457	20	52	A5203.7
	3.80	0.1496	22	55	A5203.8
5/32	3.90	0.1535	22	55	A5203.9
	3.97	0.1563	22	55	A5205/32
	4.00	0.1575	22	55	A5204.0
	4.10	0.1614	22	55	A5204.1
	4.20	0.1654	22	55	A5204.2
11/64	4.30	0.1693	24	58	A5204.3
	4.37	0.1720	24	58	A52011/64
	4.40	0.1732	24	58	A5204.4
	4.50	0.1772	24	58	A5204.5
	4.60	0.1811	24	58	A5204.6
3/16	4.70	0.1850	24	58	A5204.7
	4.76	0.1874	26	62	A5203/16
	4.80	0.1890	26	62	A5204.8
	4.90	0.1929	26	62	A5204.9
	5.00	0.1969	26	62	A5205.0
13/64	5.10	0.2008	26	62	A5205.1
	5.16	0.2031	26	62	A52013/64
	5.20	0.2047	26	62	A5205.2
	5.30	0.2087	26	62	A5205.3
	5.40	0.2126	28	66	A5205.4
7/32	5.50	0.2165	28	66	A5205.5
	5.56	0.2189	28	66	A5207/32
	5.60	0.2205	28	66	A5205.6
	5.70	0.2244	28	66	A5205.7
	5.80	0.2283	28	66	A5205.8
15/64	5.90	0.2323	28	66	A5205.9
	5.95	0.2343	28	66	A52015/64

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A520
	6.00	0.2362	28	66	A5206.0
	6.10	0.2402	31	70	A5206.1
	6.20	0.2441	31	70	A5206.2
	6.30	0.2480	31	70	A5206.3
1/4	6.35	0.2500	31	70	A5201/4
	6.40	0.2520	31	70	A5206.4
	6.50	0.2559	31	70	A5206.5
	6.60	0.2598	31	70	A5206.6
	6.70	0.2638	31	70	A5206.7
17/64	6.75	0.2657	34	74	A52017/64
	6.80	0.2677	34	74	A5206.8
	6.90	0.2717	34	74	A5206.9
	7.00	0.2756	34	74	A5207.0
	7.10	0.2795	34	74	A5207.1
9/32	7.14	0.2811	34	74	A5209/32
	7.20	0.2835	34	74	A5207.2
	7.30	0.2874	34	74	A5207.3
	7.40	0.2913	34	74	A5207.4
	7.50	0.2953	34	74	A5207.5
19/64	7.54	0.2969	37	79	A52019/64
	7.60	0.2992	37	79	A5207.6
	7.70	0.3031	37	79	A5207.7
	7.80	0.3071	37	79	A5207.8
	7.90	0.3110	37	79	A5207.9
5/16	7.94	0.3126	37	79	A5205/16
	8.00	0.3150	37	79	A5208.0
	8.10	0.3189	37	79	A5208.1
	8.20	0.3228	37	79	A5208.2
	8.30	0.3268	37	79	A5208.3
21/64	8.33	0.3280	37	79	A52021/64
	8.40	0.3307	37	79	A5208.4
	8.50	0.3346	37	79	A5208.5
	8.60	0.3386	40	84	A5208.6
	8.70	0.3425	40	84	A5208.7
11/32	8.73	0.3437	40	84	A52011/32
	8.80	0.3465	40	84	A5208.8
	8.90	0.3504	40	84	A5208.9
	9.00	0.3543	40	84	A5209.0
	9.10	0.3583	40	84	A5209.1
23/64	9.13	0.3594	40	84	A52023/64
	9.20	0.3622	40	84	A5209.2
	9.30	0.3661	40	84	A5209.3
	9.40	0.3701	40	84	A5209.4
	9.50	0.3740	40	84	A5209.5
3/8	9.52	0.3748	43	89	A5203/8
	9.60	0.3780	43	89	A5209.6
	9.70	0.3819	43	89	A5209.7
	9.80	0.3858	43	89	A5209.8
	9.90	0.3898	43	89	A5209.9
25/64	9.92	0.3906	43	89	A52025/64
	10.00	0.3937	43	89	A52010.0
	10.10	0.3976	43	89	A52010.1
	10.20	0.4016	43	89	A52010.2
	10.30	0.4055	43	89	A52010.3
13/32	10.32	0.4063	43	89	A52013/32
	10.40	0.4094	43	89	A52010.4
	10.50	0.4134	43	89	A52010.5
	10.60	0.4173	43	89	A52010.6
	10.70	0.4213	47	95	A52010.7
27/64	10.72	0.4220	47	95	A52027/64
	10.80	0.4252	47	95	A52010.8
	10.90	0.4291	47	95	A52010.9
	11.00	0.4331	47	95	A52011.0
	11.10	0.4370	47	95	A52011.1
7/16	11.11	0.4374	47	95	A5207/16
	11.20	0.4409	47	95	A52011.2
	11.30	0.4449	47	95	A52011.3
	11.40	0.4488	47	95	A52011.4
	11.50	0.4528	47	95	A52011.5
29/64	11.51	0.4531	47	95	A52029/64

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A520
	11.60	0.4567	47	95	A52011.6
	11.70	0.4606	47	95	A52011.7
	11.80	0.4646	47	95	A52011.8
	11.90	0.4685	51	102	A52011.9
15/32	11.91	0.4689	51	102	A52015/32
	12.00	0.4724	51	102	A52012.0
	12.10	0.4764	51	102	A52012.1
	12.20	0.4803	51	102	A52012.2
	12.30	0.4843	51	102	A52012.3
31/64	12.30	0.4843	51	102	A52031/64
	12.40	0.4882	51	102	A52012.4
	12.50	0.4921	51	102	A52012.5
	12.60	0.4961	51	102	A52012.6
	12.70	0.5000	51	102	A52012.7
1/2	12.70	0.5000	51	102	A5201/2
	12.80	0.5039	51	102	A52012.8
	12.90	0.5079	51	102	A52012.9
	13.00	0.5118	51	102	A52013.0

A124

- Rövid csigafúró forrasztott keményfém éllel
- Burghiu cu 4 fatete brazate din carbura
- 4 açılı kesme ucu ve karbür kaynaklı kısa matkap
- Stub Drill with 4 facet ground Brazed Carbide Tip

Menesztő a DIN 1809 szabvány szerint
Antrenor conf. DIN 1809
DIN 1809 standardı şaft
Tang to DIN 1809

A124	▪	3.1	3.2	3.3	3.4													
	•	1.5	1.6	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.2	6.3	6.4	8.2	9.1		

A124

HSS
HM

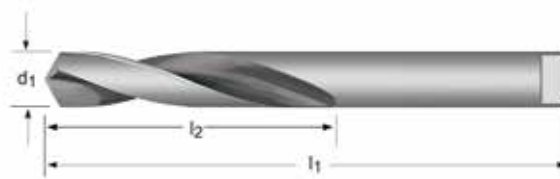
DIN
8037

2.5XD

118°

ST

H



d ₁ Ø mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	A124
3.00	0.1181	20	50	A1243.0
3.20	0.1260	25	56	A1243.2
3.50	0.1378	25	56	A1243.5
4.00	0.1575	25	56	A1244.0
4.20	0.1654	28	63	A1244.2
4.50	0.1772	28	63	A1244.5
4.80	0.1890	28	63	A1244.8
5.00	0.1969	28	63	A1245.0
5.20	0.2047	32	71	A1245.2
5.50	0.2165	32	71	A1245.5
5.80	0.2283	32	71	A1245.8
6.00	0.2362	32	71	A1246.0
6.50	0.2559	32	71	A1246.5
6.80	0.2677	40	80	A1246.8
7.00	0.2756	40	80	A1247.0
7.50	0.2953	40	80	A1247.5
8.00	0.3150	40	80	A1248.0
8.50	0.3346	50	90	A1248.5
9.00	0.3543	50	90	A1249.0
9.50	0.3740	50	90	A1249.5
10.00	0.3937	56	100	A12410.0
10.50	0.4134	56	100	A12410.5
11.00	0.4331	56	100	A12411.0
11.50	0.4528	63	112	A12411.5
12.00	0.4724	63	112	A12412.0
13.00	0.5118	63	112	A12413.0
14.00	0.5512	71	125	A12414.0
15.00	0.5906	71	125	A12415.0
16.00	0.6299	80	140	A12416.0

A720

- Mikro Csigafúró
- Micro burghie
- Mikro Matkap
- Micro Drill

A720	▪	1.1	1.2	1.3	1.4	3.1	3.2															
		•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2																		

A720 **HSS-E** **DIN 1899** **2.5XD** **118°** **N**



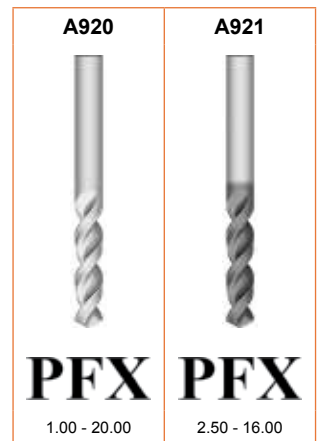
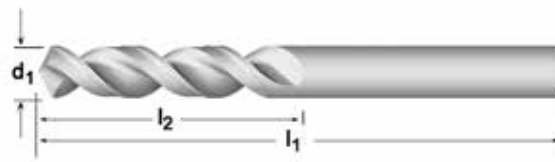
d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	d_2 Ø mm	A720
0.15	0.0059	1.0	25	1	A720.15
0.16	0.0063	1.4	25	1	A720.16
0.17	0.0067	1.4	25	1	A720.17
0.18	0.0070	1.4	25	1	A720.18
0.20	0.0078	1.8	25	1	A720.2
0.22	0.0087	1.8	25	1	A720.22
0.25	0.0098	2.2	25	1	A720.25
0.27	0.0106	2.2	25	1	A720.27
0.28	0.0110	2.2	25	1	A720.28
0.30	0.0118	2.2	25	1	A720.3
0.35	0.0138	2.8	25	1	A720.35
0.38	0.0150	2.8	25	1	A720.38
0.39	0.0154	3.6	25	1	A720.39
0.40	0.0157	3.6	25	1	A720.4
0.45	0.0177	3.6	25	1	A720.45
0.50	0.0197	4.0	25	1	A720.5
0.55	0.0217	4.5	25	1	A720.55
0.60	0.0236	4.5	25	1	A720.6
0.62	0.0244	5.0	25	1	A720.62
0.65	0.0256	5.0	25	1	A720.65
0.70	0.0276	5.6	25	1	A720.7
0.75	0.0295	5.6	25	1	A720.75
0.80	0.0315	6.3	25	1.5	A720.8
0.85	0.0335	6.3	25	1.5	A720.85
0.90	0.0354	7.1	25	1.5	A720.9
0.95	0.0374	7.1	25	1.5	A720.95
1.00	0.0394	8.0	25	1.5	A7201.0
1.05	0.0413	8.0	25	1.5	A7201.05
1.10	0.0433	9.0	25	1.5	A7201.1
1.20	0.0472	10.0	25	1.5	A7201.2
1.30	0.0512	10.0	25	1.5	A7201.3
1.40	0.0551	11.2	25	1.5	A7201.4

A920 • PFX Rövid Csigaűró
• Burghiu scurt PFX

A921 • PFX Kısa Matkap
• PFX Stub Drill

A920	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	7.2
	•	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.1	7.3	7.4	8.1	8.2			
A921	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	7.4		
	•	4.1	4.2	4.3	5.1	5.2	5.3	6.3	6.4								

A920	HSS-E	DIN ANSI	3XD	130°			W			
A921	HSS-E	DIN ANSI	3XD	130°	Alcrona Top		W			



d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A920	A921
	1.00	0.0394	6	26	A9201.0	
	1.10	0.0433	7	28	A9201.1	
3/64	1.19	0.0469	13	35	A9203/64	
	1.20	0.0472	8	30	A9201.2	
	1.25	0.0492	8	30	A9201.25	
	1.30	0.0512	8	30	A9201.3	
	1.35	0.0531	9	32	A9201.35	
	1.40	0.0551	9	32	A9201.4	
	1.50	0.0591	9	32	A9201.5	
	1.55	0.0610	10	34	A9201.55	
1/16	1.59	0.0626	16	41	A9201/16	
	1.60	0.0630	10	34	A9201.6	
	1.70	0.0669	10	34	A9201.7	
	1.75	0.0689	11	36	A9201.75	
	1.80	0.0709	11	36	A9201.8	
	1.90	0.0748	11	36	A9201.9	
5/64	1.98	0.0780	17	43	A9205/64	
	2.00	0.0787	12	38	A9202.0	
	2.10	0.0827	12	38	A9202.1	
	2.15	0.0846	13	40	A9202.15	
	2.20	0.0866	13	40	A9202.2	
	2.30	0.0906	13	40	A9202.3	
	2.35	0.0925	14	43	A9202.35	
3/32	2.38	0.0937	19	41	A9203/32	
	2.40	0.0945	14	43	A9202.4	
	2.50	0.0984	14	43	A9202.5	A9212.5
	2.60	0.1024	14	43	A9202.6	A9212.6
	2.70	0.1063	16	46	A9202.7	A9212.7
7/64	2.78	0.1094	21	46	A9207/64	A9217/64
	2.80	0.1102	16	46	A9202.8	
	2.90	0.1142	16	46	A9202.9	A9212.9
	3.00	0.1181	16	46	A9203.0	A9213.0

d_1 Øh ₈ Inch	d_1 Øh ₈ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A920	A921
1/8	3.10	0.1220	18	49	A9203.1	A9213.1
	3.18	0.1252	22	48	A9201/8	A9211/8
	3.20	0.1260	18	49	A9203.2	A9213.2
	3.30	0.1299	18	49	A9203.3	A9213.3
9/64	3.40	0.1339	20	52	A9203.4	A9213.4
	3.50	0.1378	20	52	A9203.5	A9213.5
	3.57	0.1406	24	49	A9209/64	A9219/64
	3.60	0.1417	20	52	A9203.6	A9213.6
	3.70	0.1457	20	52	A9203.7	A9213.7
	3.80	0.1496	22	55	A9203.8	A9213.8
5/32	3.90	0.1535	22	55	A9203.9	A9213.9
	3.97	0.1563	25	52	A9205/32	A9215/32
	4.00	0.1575	22	55	A9204.0	A9214.0
	4.10	0.1614	22	55	A9204.1	A9214.1
	4.20	0.1654	22	55	A9204.2	A9214.2
11/64	4.30	0.1693	24	58	A9204.3	A9214.3
	4.37	0.1720	27	54	A92011/64	A92111/64
	4.40	0.1732	24	58	A9204.4	A9214.4
	4.50	0.1772	24	58	A9204.5	A9214.5
	4.60	0.1811	24	58	A9204.6	A9214.6
	4.70	0.1850	24	58	A9204.7	A9214.7
3/16	4.76	0.1874	29	56	A9203/16	A9213/16
	4.80	0.1890	26	62	A9204.8	A9214.8
	4.90	0.1929	26	62	A9204.9	A9214.9
	5.00	0.1969	26	62	A9205.0	A9215.0
	5.10	0.2008	26	62	A9205.1	A9215.1
13/64	5.16	0.2031	30	57	A92013/64	A92113/64
	5.20	0.2047	26	62	A9205.2	A9215.2
	5.30	0.2087	26	62	A9205.3	A9215.3
	5.40	0.2126	28	66	A9205.4	A9215.4
	5.50	0.2165	28	66	A9205.5	A9215.5
7/32	5.56	0.2189	32	60	A9207/32	A9217/32
	5.60	0.2205	28	66	A9205.6	A9215.6
	5.70	0.2244	28	66	A9205.7	A9215.7
	5.80	0.2283	28	66	A9205.8	A9215.8
	5.90	0.2323	28	66	A9205.9	A9215.9
15/64	5.95	0.2343	33	62	A92015/64	A92115/64
	6.00	0.2362	28	66	A9206.0	A9216.0
	6.10	0.2402	31	70	A9206.1	A9216.1
	6.20	0.2441	31	70	A9206.2	A9216.2
	6.30	0.2480	31	70	A9206.3	A9216.3
1/4	6.35	0.2500	35	64	A9201/4	A9211/4
	6.40	0.2520	31	70	A9206.4	A9216.4
	6.50	0.2559	31	70	A9206.5	A9216.5
	6.60	0.2598	31	70	A9206.6	A9216.6
	6.70	0.2638	31	70	A9206.7	A9216.7
17/64	6.75	0.2657	37	67	A92017/64	A92117/64
	6.80	0.2677	34	74	A9206.8	A9216.8
	6.90	0.2717	34	74	A9206.9	A9216.9
	7.00	0.2756	34	74	A9207.0	A9217.0
	7.10	0.2795	34	74	A9207.1	A9217.1
9/32	7.14	0.2811	38	68	A9209/32	A9219/32
	7.20	0.2835	34	74	A9207.2	A9217.2
	7.30	0.2874	34	74	A9207.3	A9217.3
	7.40	0.2913	34	74	A9207.4	A9217.4
	7.50	0.2953	34	74	A9207.5	A9217.5
19/64	7.54	0.2969	40	70	A92019/64	A92119/64
	7.60	0.2992	37	79	A9207.6	A9217.6
	7.70	0.3031	37	79	A9207.7	A9217.7
	7.80	0.3071	37	79	A9207.8	A9217.8
	7.90	0.3110	37	79	A9207.9	A9217.9
5/16	7.94	0.3126	41	71	A9205/16	A9215/16
	8.00	0.3150	37	79	A9208.0	A9218.0
	8.10	0.3189	37	79	A9208.1	A9218.1
	8.20	0.3228	37	79	A9208.2	A9218.2
	8.30	0.3268	37	79	A9208.3	A9218.3
21/64	8.33	0.3280	43	75	A92021/64	A92121/64
	8.40	0.3307	37	79	A9208.4	A9218.4
	8.50	0.3346	37	79	A9208.5	A9218.5
	8.60	0.3386	40	84	A9208.6	A9218.6

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A920	A921
11/32	8.70	0.3425	40	84	A9208.7	A9218.7
	8.73	0.3437	43	76	A92011/32	A92111/32
	8.80	0.3465	40	84	A9208.8	A9218.8
	8.90	0.3504	40	84	A9208.9	A9218.9
	9.00	0.3543	40	84	A9209.0	A9219.0
23/64	9.10	0.3583	40	84	A9209.1	A9219.1
	9.13	0.3594	44	78	A92023/64	A92123/64
	9.20	0.3622	40	84	A9209.2	A9219.2
	9.30	0.3661	40	84	A9209.3	A9219.3
	9.40	0.3701	40	84	A9209.4	A9219.4
3/8	9.50	0.3740	40	84	A9209.5	A9219.5
	9.52	0.3748	46	79	A9203/8	A9213/8
	9.60	0.3780	43	89	A9209.6	A9219.6
	9.70	0.3819	43	89	A9209.7	A9219.7
	9.80	0.3858	43	89	A9209.8	A9219.8
25/64	9.90	0.3898	43	89	A9209.9	A9219.9
	9.92	0.3906	48	83	A92025/64	A92125/64
	10.00	0.3937	43	89	A92010.0	A92110.0
	10.20	0.4016	43	89	A92010.2	A92110.2
	10.30	0.4055	43	89	A92010.3	A92110.3
13/32	10.32	0.4063	49	84	A92013/32	A92113/32
	10.50	0.4134	43	89	A92010.5	A92110.5
	10.72	0.4220	51	86	A92027/64	A92127/64
27/64	10.80	0.4252	47	95	A92010.8	A92110.8
	11.00	0.4331	47	95	A92011.0	A92111.0
	11.11	0.4374	52	87	A9207/16	A9217/16
7/16	11.50	0.4528	47	95	A92011.5	A92111.5
	11.51	0.4531	54	90	A92029/64	A92129/64
	11.80	0.4646	47	95	A92011.8	A92111.8
15/32	11.91	0.4689	54	92	A92015/32	A92115/32
	12.00	0.4724	51	102	A92012.0	A92112.0
	12.20	0.4803	51	102	A92012.2	
31/64	12.30	0.4843	56	94	A92031/64	A92131/64
	12.50	0.4921	51	102	A92012.5	A92112.5
	12.70	0.5000	57	95	A9201/2	A9211/2
1/2	13.00	0.5118	51	102	A92013.0	A92113.0
	13.10	0.5157	60	98	A92033/64	A92133/64
	13.50	0.5315	54	107	A92013.5	A92113.5
33/64	13.89	0.5469	64	102	A92035/64	A92135/64
	14.00	0.5512	54	107	A92014.0	A92114.0
	14.29	0.5626	64	102	A9209/16	A9219/16
9/16	14.50	0.5709	56	111	A92014.5	A92114.5
	14.68	0.5780	67	105	A92037/64	A92137/64
	14.75	0.5807	56	111	A92014.75	A92114.75
37/64	15.00	0.5906	56	111	A92015.0	A92115.0
	15.08	0.5937	67	105	A92019/32	A92119/32
	15.48	0.6094	70	108	A92039/64	A92139/64
5/8	15.50	0.6102	58	115	A92015.5	A92115.5
	15.88	0.6252	70	108	A9205/8	A9215/8
	16.00	0.6299	58	115	A92016.0	A92116.0
41/64	16.27	0.6406	73	114	A92041/64	
	16.50	0.6496	60	119	A92016.5	
	16.67	0.6563	73	114	A92021/32	
21/32	16.75	0.6594	60	119	A92016.75	
	17.00	0.6693	60	119	A92017.0	
	17.07	0.6720	73	117	A92043/64	
43/64	17.46	0.6874	73	117	A92011/16	
	17.50	0.6890	62	123	A92017.5	
	17.86	0.7031	76	121	A92045/64	
45/64	18.00	0.7087	62	123	A92018.0	
	18.26	0.7189	76	121	A92023/32	
	18.50	0.7283	64	127	A92018.5	
47/64	18.65	0.7343	79	127	A92047/64	
	19.00	0.7480	64	127	A92019.0	
	19.05	0.7500	79	127	A9203/4	
3/4	19.45	0.7657	83	130	A92049/64	
	19.50	0.7677	66	131	A92019.5	
	19.84	0.7811	83	130	A92025/32	
25/32	20.00	0.7874	66	131	A92020.0	

A002	<ul style="list-style-type: none"> • 002 csigafúró osztott keresztlélel • 002 Burghiu uzual split point • 002 yarik uçlu standart matkap • 002 Jobber Drill Split Point 	<p>2,0 mm alatt fényes, TiN bevonat a végén és osztott keresztél 2,0 mm felett Lucios sub 2.0 mm, varf TiN si Split Point peste 2.0 mm 2.0mm'ye kadar parlak, 2mm^den sonra yarik ve TiN kaplamalı uç Bright below 2.0mm, TiN Tipped and Split Point 2.0mm and above</p>
A002S	<ul style="list-style-type: none"> • 002 osztott keresztélú csigafúró készlet • 002 Burghiu uzual split point- Ambalaj punga • 002 yarik uçlu standart matkap - paketleni • 002 Jobber Drill Split Point - Pouch Pack 	<p>Végén TiN bevonat varf TiN Ucu TiN kaplı TiN Tipped</p>
A100	<ul style="list-style-type: none"> • Csigafúró • Burghiu lung • Standart Matkap • Jobber Drill 	<p>Fényes kivitel 1,0mm alatt, 3/64", N60 Lucios sub 1,0 mm, 3/64", N60 1.0mm, 3/64", N60'a kadar parlak Bright below 1.0mm, 3/64", N60</p>
A101	<ul style="list-style-type: none"> • LH csigafúró • Burghiu lung • Standart matkap - sol yön • Jobber Drill - LH 	<p>Fényes kivitel 3,0mm alatt Lucios sub 3,0 mm 3.0mm'ye kadar parlak Bright below 3.0mm</p>

A002; A002S	<ul style="list-style-type: none"> ▪ 1.1 1.2 1.3 1.4 3.1 3.2 7.1 7.2 8.1 8.2 • 1.5 1.6 2.1 2.2 2.3 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.3 9.1
A100; A101	<ul style="list-style-type: none"> ▪ 1.1 1.2 1.3 1.4 3.1 3.2 • 1.5 1.6 2.1 2.2 2.3 3.3 3.4 4.1 4.2 4.3 5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.4 8.1 8.2 8.3 9.1

A002	HSS	DIN 338	4XD	118°	TiN		N												
A002S	HSS	DIN 338	4XD	118°	TiN		N												
A100	HSS	DIN 338	4XD	118°	ST		N												
A101	HSS	DIN 338	4XD	118°	ST		N												



d_1 $\varnothing h_8$ "/Nr./letter	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
	0.20	0.0079	2.5	19			A100.2	
	0.25	0.0098	3	19			A100.25	
	0.30	0.0118	3	19			A100.3	
	0.32	0.0126	4	19			A100.32	
80	0.34	0.0134	4	19			A100N80	
	0.35	0.0138	4	19			A100.35	
79	0.37	0.0146	4	19			A100N79	
	0.38	0.0150	4	19			A100.38	
1/64	0.40	0.0157	5	20			A1001/64	
	0.40	0.0157	5	20			A100.4	
78	0.41	0.0161	5	20			A100N78	
	0.42	0.0165	5	20			A100.42	
	0.45	0.0177	5	20			A100.45	
77	0.46	0.0181	5	20			A100N77	
	0.48	0.0189	5	20			A100.48	
	0.50	0.0197	6	22			A100.5	
76	0.51	0.0201	6	22			A100N76	
	0.52	0.0205	6	22			A100.52	
75	0.53	0.0209	6	22			A100N75	
	0.55	0.0217	7	24			A100.55	
74	0.57	0.0224	7	24			A100N74	
	0.58	0.0228	7	24			A100.58	
	0.60	0.0236	7	24			A100.6	
73	0.61	0.0240	8	26			A100N73	
	0.62	0.0244	8	26			A100.62	
72	0.64	0.0252	8	26			A100N72	
	0.65	0.0256	8	26			A100.65	
71	0.66	0.0260	8	26			A100N71	
	0.68	0.0268	9	28			A100.68	
	0.70	0.0276	9	28			A100.7	
70	0.71	0.0280	9	28			A100N70	
	0.72	0.0283	9	28			A100.72	
69	0.74	0.0291	9	28			A100N69	
	0.75	0.0295	9	28			A100.75	
68	0.79	0.0311	10	30			A100N68	
	0.78	0.0307	10	30			A100.78	
1/32	0.79	0.0311	10	30			A1001/32	
	0.80	0.0315	10	30			A100.8	
67	0.81	0.0319	10	30			A100N67	
	0.82	0.0323	10	30			A100.82	
66	0.84	0.0331	10	30			A100N66	
	0.85	0.0335	10	30			A100.85	
	0.88	0.0346	11	32			A100.88	
65	0.89	0.0350	11	32			A100N65	
	0.90	0.0354	11	32			A100.9	
64	0.91	0.0358	11	32			A100N64	
	0.92	0.0362	11	32			A100.92	
63	0.94	0.0370	11	32			A100N63	

d ₁ Øh ₈ "/Nr./letter	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	A002	A002S	A100	A101
	0.95	0.0374	11	32			A100.95	
62	0.97	0.0382	12	34			A100N62	
	0.98	0.0386	12	34			A100.98	
61	0.99	0.0390	12	34			A100N61	
	1.00	0.0394	12	34	A0021.0		A1001.0	A1011.0
60	1.02	0.0402	12	34			A100N60	
59	1.04	0.0409	12	34			A100N59	
	1.05	0.0413	12	34			A1001.05	
58	1.07	0.0421	14	36			A100N58	
57	1.09	0.0429	14	36			A100N57	
	1.10	0.0433	14	36	A0021.1		A1001.1	A1011.1
	1.15	0.0453	14	36			A1001.15	
56	1.18	0.0465	14	36			A100N56	
3/64	1.19	0.0469	16	38	A0023/64		A1003/64	
	1.20	0.0472	16	38	A0021.2		A1001.2	A1011.2
	1.25	0.0492	16	38			A1001.25	A1011.25
	1.30	0.0512	16	38	A0021.3		A1001.3	A1011.3
55	1.32	0.0520	16	38			A100N55	
	1.35	0.0531	18	40			A1001.35	
	1.40	0.0551	18	40	A0021.4		A1001.4	A1011.4
54	1.40	0.0551	18	40			A100N54	
	1.45	0.0571	18	40			A1001.45	
	1.50	0.0591	18	40	A0021.5		A1001.5	A1011.5
53	1.51	0.0594	20	43			A100N53	
	1.55	0.0610	20	43			A1001.55	
1/16	1.59	0.0626	20	43	A0021/16		A1001/16	
	1.60	0.0630	20	43	A0021.6		A1001.6	A1011.6
52	1.61	0.0634	20	43			A100N52	
	1.65	0.0650	20	43			A1001.65	
	1.70	0.0669	20	43	A0021.7		A1001.7	A1011.7
51	1.70	0.0669	22	46			A100N51	
	1.75	0.0689	22	46			A1001.75	
50	1.78	0.0701	22	46			A100N50	
	1.80	0.0709	22	46	A0021.8		A1001.8	A1011.8
	1.85	0.0728	22	46			A1001.85	
49	1.85	0.0728	22	46			A100N49	
	1.90	0.0748	22	46	A0021.9		A1001.9	A1011.9
48	1.93	0.0760	24	49			A100N48	
	1.95	0.0768	24	49			A1001.95	
5/64	1.98	0.0780	24	49	A0025/64		A1005/64	
47	1.99	0.0783	24	49			A100N47	
	2.00	0.0787	24	49	A0022.0	A002S2.0 ²⁾	A1002.0	A1012.0
	2.05	0.0807	24	49			A1002.05	
46	2.06	0.0811	24	49			A100N46	
45	2.08	0.0819	24	49			A100N45	
	2.10	0.0827	24	49	A0022.1		A1002.1	A1012.1
	2.15	0.0846	27	53			A1002.15	
44	2.18	0.0858	27	53			A100N44	
	2.20	0.0866	27	53	A0022.2		A1002.2	A1012.2
	2.25	0.0886	27	53			A1002.25	
43	2.26	0.0890	27	53			A100N43	
	2.30	0.0906	27	53	A0022.3		A1002.3	A1012.3
	2.35	0.0925	27	53			A1002.35	
42	2.38	0.0937	30	57			A100N42	
3/32	2.38	0.0937	30	57	A0023/32		A1003/32	
	2.40	0.0945	30	57	A0022.4		A1002.4	A1012.4
41	2.44	0.0961	30	57			A100N41	
	2.45	0.0965	30	57			A1002.45	
40	2.49	0.0980	30	57			A100N40	
	2.50	0.0984	30	57	A0022.5	A002S2.5 ²⁾	A1002.5	A1012.5
39	2.53	0.0996	30	57			A100N39	
	2.55	0.1004	30	57			A1002.55	
38	2.58	0.1016	30	57			A100N38	
	2.60	0.1024	30	57	A0022.6		A1002.6	A1012.6
37	2.64	0.1039	30	57			A100N37	
	2.65	0.1043	30	57			A1002.65	
	2.70	0.1063	33	61	A0022.7		A1002.7	A1012.7
36	2.71	0.1067	33	61			A100N36	

d ₁ Øh ₈ "/Nr./letter	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	A002	A002S	A100	A101
	2.75	0.1083	33	61			A1002.75	
7/64	2.78	0.1094	33	61	A0027/64		A1007/64	
35	2.79	0.1098	33	61			A100N35	
	2.80	0.1102	33	61	A0022.8		A1002.8	A1012.8
34	2.82	0.1110	33	61			A100N34	
	2.85	0.1122	33	61			A1002.85	
33	2.87	0.1130	33	61			A100N33	
	2.90	0.1142	33	61	A0022.9		A1002.9	A1012.9
	2.95	0.1161	33	61			A1002.95	
32	2.95	0.1161	33	61			A100N32	
	3.00	0.1181	33	61	A0023.0	A002S3.0 ²⁾	A1003.0	A1013.0
31	3.05	0.1201	36	65			A100N31	
	3.10	0.1220	36	65	A0023.1		A1003.1	
	3.15	0.1240	36	65			A1003.15	
1/8	3.18	0.1252	36	65	A0021/8	A002S1/8 ²⁾	A1001/8	
	3.20	0.1260	36	65	A0023.2	A002S3.2 ²⁾	A1003.2	A1013.2
	3.25	0.1280	36	65	A0023.25		A1003.25	
30	3.26	0.1283	36	65			A100N30	
	3.30	0.1299	36	65	A0023.3	A002S3.3 ²⁾	A1003.3	A1013.3
	3.40	0.1339	39	70	A0023.4		A1003.4	
29	3.45	0.1358	39	70			A100N29	
	3.50	0.1378	39	70	A0023.5	A002S3.5 ²⁾	A1003.5	A1013.5
28	3.57	0.1406	39	70			A100N28	
9/64	3.57	0.1406	39	70	A0029/64		A1009/64	
	3.60	0.1417	39	70	A0023.6		A1003.6	
27	3.66	0.1441	39	70			A100N27	
	3.70	0.1457	39	70	A0023.7		A1003.7	
26	3.73	0.1469	39	70			A100N26	
	3.75	0.1476	39	70			A1003.75	
	3.80	0.1496	43	75	A0023.8		A1003.8	A1013.8
25	3.80	0.1496	43	75			A100N25	
24	3.86	0.1520	43	75			A100N24	
	3.90	0.1535	43	75	A0023.9		A1003.9	
23	3.91	0.1539	43	75			A100N23	
5/32	3.97	0.1563	43	75	A0025/32	A002S5/32 ²⁾	A1005/32	
22	3.99	0.1571	43	75			A100N22	
	4.00	0.1575	43	75	A0024.0	A002S4.0 ²⁾	A1004.0	A1014.0
21	4.04	0.1591	43	75			A100N21	
20	4.09	0.1610	43	75			A100N20	
	4.10	0.1614	43	75	A0024.1	A002S4.1 ²⁾	A1004.1	
	4.20	0.1654	43	75	A0024.2	A002S4.2 ²⁾	A1004.2	A1014.2
19	4.22	0.1661	43	75			A100N19	
	4.25	0.1673	43	75			A1004.25	
	4.30	0.1693	47	80	A0024.3		A1004.3	
18	4.31	0.1697	47	80			A100N18	
11/64	4.37	0.1720	47	80	A00211/64		A10011/64	
17	4.39	0.1728	47	80			A100N17	
	4.40	0.1732	47	80	A0024.4		A1004.4	
	4.50	0.1772	47	80	A0024.5	A002S4.5 ²⁾	A1004.5	A1014.5
16	4.50	0.1772	47	80			A100N16	
15	4.57	0.1799	47	80			A100N15	
	4.60	0.1811	47	80	A0024.6		A1004.6	
14	4.62	0.1819	47	80			A100N14	
	4.70	0.1850	47	80	A0024.7		A1004.7	
13	4.70	0.1850	47	80			A100N13	
	4.75	0.1870	47	80			A1004.75	
3/16	4.76	0.1874	52	86	A0023/16	A002S3/16 ²⁾	A1003/16	
	4.80	0.1890	52	86	A0024.8		A1004.8	A1014.8
12	4.80	0.1890	52	86			A100N12	
11	4.85	0.1909	52	86			A100N11	
	4.90	0.1929	52	86	A0024.9		A1004.9	
10	4.92	0.1937	52	86			A100N10	
9	4.98	0.1961	52	86			A100N9	
	5.00	0.1969	52	86	A0025.0	A002S5.0 ²⁾	A1005.0	A1015.0
8	5.06	0.1992	52	86			A100N8	
	5.10	0.2008	52	86	A0025.1		A1005.1	A1015.1
7	5.11	0.2012	52	86			A100N7	
13/64	5.16	0.2031	52	86	A00213/64	A002S13/64	A10013/64	

d_1 $\varnothing h_8$ "/Nr./letter	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
6	5.18	0.2039	52	86			A100N6	
	5.20	0.2047	52	86	A0025.2		A1005.2	A1015.2
5	5.22	0.2055	52	86			A100N5	
	5.25	0.2067	52	86			A1005.25	
	5.30	0.2087	52	86	A0025.3		A1005.3	
4	5.31	0.2091	57	93			A100N4	
	5.40	0.2126	57	93	A0025.4		A1005.4	
3	5.41	0.2130	57	93			A100N3	
	5.50	0.2165	57	93	A0025.5	A002S5.5	A1005.5	A1015.5
7/32	5.56	0.2189	57	93	A0027/32	A002S7/32	A1007/32	
	5.60	0.2205	57	93	A0025.6		A1005.6	
2	5.61	0.2209	57	93			A100N2	
	5.70	0.2244	57	93	A0025.7		A1005.7	
1	5.75	0.2264	57	93			A1005.75	
	5.79	0.2280	57	93			A100N1	
	5.80	0.2283	57	93	A0025.8		A1005.8	
A	5.90	0.2323	57	93	A0025.9		A1005.9	
	5.94	0.2339	57	93			A100A	
	5.95	0.2343	57	93	A00215/64		A10015/64	
15/64	6.00	0.2362	57	93	A0026.0	A002S6.0	A1006.0	A1016.0
B	6.03	0.2374	63	101			A100B	
	6.10	0.2402	63	101	A0026.1		A1006.1	
C	6.15	0.2421	63	101			A100C	
	6.20	0.2441	63	101	A0026.2		A1006.2	
D	6.25	0.2461	63	101			A1006.25	
	6.25	0.2461	63	101			A100D	
	6.30	0.2480	63	101	A0026.3		A1006.3	
1/4	6.35	0.2500	63	101	A0021/4	A002S1/4	A1001/4	
E	6.35	0.2500	63	101			A100E	
	6.40	0.2520	63	101	A0026.4		A1006.4	
F	6.50	0.2559	63	101	A0026.5	A002S6.5	A1006.5	A1016.5
	6.53	0.2571	63	101			A100F	
G	6.60	0.2598	63	101	A0026.6		A1006.6	
	6.63	0.2610	63	101			A100G	
	6.70	0.2638	63	101	A0026.7		A1006.7	
17/64	6.75	0.2657	69	109	A00217/64	A002S17/64	A10017/64	
	6.75	0.2657	69	109			A1006.75	
H	6.76	0.2661	69	109			A100H	
	6.80	0.2677	69	109	A0026.8	A002S6.8	A1006.8	
	6.90	0.2717	69	109	A0026.9		A1006.9	
I	6.91	0.2720	69	109			A100I	
	7.00	0.2756	69	109	A0027.0	A002S7.0	A1007.0	A1017.0
J	7.04	0.2772	69	109			A100J	
	7.10	0.2795	69	109	A0027.1		A1007.1	
K	7.14	0.2811	69	109			A100K	
	7.14	0.2811	69	109	A0029/32		A1009/32	
	7.20	0.2835	69	109	A0027.2		A1007.2	
	7.25	0.2854	69	109			A1007.25	
	7.30	0.2874	69	109	A0027.3		A1007.3	
L	7.37	0.2902	69	109			A100L	
	7.40	0.2913	69	109	A0027.4		A1007.4	
M	7.49	0.2949	69	109			A100M	
	7.50	0.2953	69	109	A0027.5	A002S7.5	A1007.5	A1017.5
	7.54	0.2969	75	117	A00219/64		A10019/64	
19/64	7.60	0.2992	75	117	A0027.6		A1007.6	
	7.67	0.3020	75	117			A100N	
N	7.70	0.3031	75	117	A0027.7		A1007.7	
	7.75	0.3051	75	117			A1007.75	
	7.80	0.3071	75	117	A0027.8		A1007.8	
	7.90	0.3110	75	117	A0027.9		A1007.9	
	7.94	0.3126	75	117	A0025/16	A002S5/16	A1005/16	
	8.00	0.3150	75	117	A0028.0	A002S8.0	A1008.0	A1018.0
O	8.03	0.3161	75	117			A100O	
	8.10	0.3189	75	117	A0028.1		A1008.1	
	8.20	0.3228	75	117	A0028.2	A002S8.2	A1008.2	
P	8.20	0.3228	75	117			A100P	
	8.25	0.3248	75	117			A1008.25	
	8.30	0.3268	75	117	A0028.3		A1008.3	
21/64	8.33	0.3280	75	117	A00221/64		A10021/64	
	8.40	0.3307	75	117	A0028.4		A1008.4	

d ₁ Øh ₈ "/Nr./letter	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	A002	A002S	A100	A101
Q	8.43	0.3319	75	117			A100Q	
	8.50	0.3346	75	117	A0028.5	A002S8.5	A1008.5	A1018.5
	8.60	0.3386	81	125	A0028.6		A1008.6	
R	8.61	0.3390	81	125			A100R	
	8.70	0.3425	81	125	A0028.7		A1008.7	
11/32	8.73	0.3437	81	125	A00211/32		A10011/32	
	8.75	0.3445	81	125			A1008.75	
	8.80	0.3465	81	125	A0028.8		A1008.8	
S	8.84	0.3480	81	125			A100S	
	8.90	0.3504	81	125	A0028.9		A1008.9	
	9.00	0.3543	81	125	A0029.0	A002S9.0	A1009.0	A1019.0
T	9.09	0.3579	81	125			A100T	
	9.10	0.3583	81	125	A0029.1		A1009.1	
23/64	9.13	0.3594	81	125	A00223/64		A10023/64	
	9.20	0.3622	81	125	A0029.2		A1009.2	
	9.25	0.3642	81	125			A1009.25	
	9.30	0.3661	81	125	A0029.3		A1009.3	
U	9.35	0.3681	81	125			A100U	
	9.40	0.3701	81	125	A0029.4		A1009.4	
	9.50	0.3740	81	125	A0029.5	A002S9.5	A1009.5	
3/8	9.52	0.3748	87	133	A0023/8	A002S3/8	A1003/8	
V	9.58	0.3772	87	133			A100V	
	9.60	0.3780	87	133	A0029.6		A1009.6	
	9.70	0.3819	87	133	A0029.7		A1009.7	
	9.75	0.3839	87	133			A1009.75	
	9.80	0.3858	87	133	A0029.8		A1009.8	
W	9.80	0.3858	87	133			A100W	
	9.90	0.3898	87	133	A0029.9		A1009.9	
25/64	9.92	0.3906	87	133	A00225/64		A10025/64	
	10.00	0.3937	87	133	A00210.0	A002S10.0	A10010.0	A10110.0
X	10.08	0.3969	87	133			A100X	
	10.10	0.3976	87	133	A00210.1		A10010.1	
	10.20	0.4016	87	133	A00210.2	A002S10.2	A10010.2	
	10.25	0.4035	87	133			A10010.25	
Y	10.26	0.4039	87	133			A100Y	
	10.30	0.4055	87	133	A00210.3		A10010.3	
13/32	10.32	0.4063	87	133	A00213/32		A10013/32	
	10.40	0.4094	87	133	A00210.4		A10010.4	
Z	10.49	0.4130	87	133			A100Z	
	10.50	0.4134	87	133	A00210.5	A002S10.5	A10010.5	
	10.60	0.4173	87	133	A00210.6		A10010.6	
	10.70	0.4213	94	142	A00210.7		A10010.7	
27/64	10.72	0.4220	94	142	A00227/64		A10027/64	
	10.75	0.4232	94	142			A10010.75	
	10.80	0.4252	94	142	A00210.8		A10010.8	
	10.90	0.4291	94	142	A00210.9		A10010.9	
	11.00	0.4331	94	142	A00211.0	A002S11.0	A10011.0	A10111.0
	11.10	0.4370	94	142	A00211.1		A10011.1	
7/16	11.11	0.4374	94	142	A0027/16		A1007/16	
	11.20	0.4409	94	142	A00211.2		A10011.2	
	11.25	0.4429	94	142			A10011.25	
	11.30	0.4449	94	142	A00211.3		A10011.3	
	11.40	0.4488	94	142	A00211.4		A10011.4	
	11.50	0.4528	94	142	A00211.5	A002S11.5	A10011.5	
29/64	11.51	0.4531	94	142	A00229/64		A10029/64	
	11.60	0.4567	94	142	A00211.6		A10011.6	
	11.70	0.4606	94	142	A00211.7		A10011.7	
	11.75	0.4626	94	142			A10011.75	
	11.80	0.4646	94	142	A00211.8		A10011.8	
	11.90	0.4685	101	151	A00211.9		A10011.9	
15/32	11.91	0.4689	101	151	A00215/32		A10015/32	
	12.00	0.4724	101	151	A00212.0	A002S12.0	A10012.0	A10112.0
	12.10	0.4764	101	151	A00212.1		A10012.1	
	12.20	0.4803	101	151	A00212.2		A10012.2	
	12.25	0.4823	101	151			A10012.25	
	12.30	0.4843	101	151	A00212.3		A10012.3	
31/64	12.30	0.4843	101	151	A00231/64		A10031/64	
	12.40	0.4882	101	151	A00212.4		A10012.4	
	12.50	0.4921	101	151	A00212.5	A002S12.5	A10012.5	
	12.60	0.4961	101	151	A00212.6		A10012.6	

d_1 $\varnothing h_8$ "/Nr./letter	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A002	A002S	A100	A101
	12.70	0.5000	101	151	A00212.7		A10012.7	
1/2	12.70	0.5000	101	151	A0021/2	A002S1/2	A1001/2	
	12.75	0.5020	101	151			A10012.75	
	12.80	0.5039	101	151	A00212.8		A10012.8	
	12.90	0.5079	101	151	A00212.9		A10012.9	
	13.00	0.5118	101	151	A00213.0	A002S13.0	A10013.0	
33/64	13.10	0.5157	101	151	A00233/64		A10033/64	
	13.10	0.5157	101	151	A00213.1		A10013.1	
	13.20	0.5197	101	151	A00213.2		A10013.2	
	13.25	0.5217	108	160	A00213.25		A10013.25	
	13.30	0.5236	108	160	A00213.3		A10013.3	
	13.40	0.5276	108	160	A00213.4		A10013.4	
17/32	13.49	0.5311	108	160	A00217/32		A10017/32	
	13.50	0.5315	108	160	A00213.5		A10013.5	
	13.60	0.5354	108	160	A00213.6		A10013.6	
	13.70	0.5394	108	160	A00213.7		A10013.7	
	13.75	0.5413	108	160	A00213.75		A10013.75	
	13.80	0.5433	108	160	A00213.8		A10013.8	
35/64	13.89	0.5469	108	160	A00235/64		A10035/64	
	13.90	0.5472	108	160	A00213.9		A10013.9	
	14.00	0.5512	108	160	A00214.0		A10014.0	
	14.25	0.5610	114	169	A00214.25		A10014.25	
9/16	14.29	0.5626	114	169	A0029/16		A1009/16	
	14.50	0.5709	114	169	A00214.5		A10014.5	
37/64	14.68	0.5780	114	169	A00237/64		A10037/64	
	14.75	0.5807	114	169	A00214.75		A10014.75	
	15.00	0.5906	114	169	A00215.0		A10015.0	
19/32	15.08	0.5937	120	178	A00219/32		A10019/32	
	15.25	0.6004	120	178	A00215.25		A10015.25	
39/64	15.48	0.6094	120	178	A00239/64		A10039/64	
	15.50	0.6102	120	178	A00215.5		A10015.5	
	15.75	0.6201	120	178	A00215.75		A10015.75	
5/8	15.88	0.6252	120	178	A0025/8		A1005/8	
	16.00	0.6299	120	178	A00216.0		A10016.0	
41/64	16.27	0.6406	125	184			A10041/64	
	16.50	0.6496	125	184			A10016.5	
21/32	16.67	0.6563	125	184			A10021/32	
	17.00	0.6693	125	184			A10017.0	
43/64	17.07	0.6720	130	191			A10043/64	
11/16	17.46	0.6874	130	191			A10011/16	
	17.50	0.6890	130	191			A10017.5	
	18.00	0.7087	130	191			A10018.0	
	18.50	0.7283	135	198			A10018.5	
	19.00	0.7480	135	198			A10019.0	
	19.50	0.7677	140	205			A10019.5	
	20.00	0.7874	140	205			A10020.0	

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- Csigafúró osztott keresztéllel
- Burghiu lung
- Yarıık uçlu standart matkap
- Jobber Drill Split Point

1,6 mm felett osztott keresztélű, 1/16" felett
Varf supraascutit 1,6 mm, 1/16 si peste
1.6mm, 1/16"ten itibaren yarıık uçlu
Split Point 1.6mm, 1/16" and above

A147

- Csigafúró
- Burghiu lung
- Standart Matkap
- Jobber Drill

A777

- Csigafúró osztott keresztéllel
- Burghiu lung
- Standart Matkap
- Jobber Drill Split Point

4 köszörült élpont 1,4mm alatt.
Pana la 1,4 mm, varf cu 4 fatete
1.4mm'ye kadar 4 açılı kesme ucu
4 Facet Point up to 1.4mm.

A108	▪	2.2	2.3	4.1	4.2																	
	•	1.1	1.2	1.3	1.4	1.5	1.6	2.1	3.1	3.2	3.3	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	
		7.2	7.3	7.4	8.1	8.2	8.3	9.1														
A147	▪	2.1	2.2	2.3	4.1	4.2	5.1															
	•	1.1	1.2	1.3	1.4	1.5	1.6	2.4	3.1	3.2	3.3	3.4	4.3	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	
		7.3	7.4	8.1	8.2	8.3	9.1															
A777	▪	1.5	1.6	3.4	4.1	4.2	4.3	5.2														
	•	1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	5.1	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	
		9.1																				

A108	HSS	DIN 338	4XD	135°	ST		W			A188 134	L114 334
A147	HSS-E	DIN 338	4XD	130°			VA				
A777	HSS-E	DIN 338	4XD	135°	Bronze		N		NAS 907J	A295 135	



A108	A147	A777
1.00 - 16.00	0.30 - 15.0	0.30 - 16.00
A108	A147	A777
	A147.3	A777.3
	A147.4	A777.4
	A147.5	A777.5
		A777.35
		A777.45
		A777.55

d ₁ Øh ₈ Inch	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm
	0.30	0.0118	3	19
	0.35	0.0138	4	19
	0.40	0.0157	5	20
	0.45	0.0177	5	20
	0.50	0.0197	6	22
	0.55	0.0217	7	24

d_1 \varnothing_{h_8} Inch	d_1 \varnothing_{h_8} mm	d_1 decimal Inch	l_2 mm	l_1 mm	A108	A147	A777
	0.60	0.0236	7	24		A147.6	A777.6
	0.65	0.0256	8	26			A777.65
	0.70	0.0276	9	28		A147.7	A777.7
	0.80	0.0315	10	30		A147.8	A777.8
	0.90	0.0354	11	32		A147.9	A777.9
	0.95	0.0374	11	32			A777.95
	1.00	0.0394	12	34	A1081.0	A1471.0	A7771.0
	1.10	0.0433	14	36	A1081.1	A1471.1	A7771.1
	1.20	0.0472	16	38	A1081.2	A1471.2	A7771.2
	1.30	0.0512	16	38	A1081.3	A1471.3	A7771.3
	1.40	0.0551	18	40	A1081.4	A1471.4	A7771.4
	1.50	0.0591	18	40	A1081.5	A1471.5	A7771.5
1/16	1.59	0.0626	20	43	A1081/16	A1471/16	A7771/16
	1.60	0.0630	20	43	A1081.6	A1471.6	A7771.6
	1.70	0.0669	20	43	A1081.7	A1471.7	A7771.7
	1.80	0.0709	22	46	A1081.8	A1471.8	A7771.8
	1.90	0.0748	22	46	A1081.9	A1471.9	A7771.9
5/64	1.98	0.0780	24	49	A1085/64		A7775/64
	2.00	0.0787	24	49	A1082.0	A1472.0	A7772.0
	2.10	0.0827	24	49	A1082.1	A1472.1	A7772.1
	2.20	0.0866	27	53	A1082.2	A1472.2	A7772.2
	2.30	0.0906	27	53	A1082.3	A1472.3	A7772.3
3/32	2.38	0.0937	30	57	A1083/32	A1473/32	A7773/32
	2.40	0.0945	30	57	A1082.4	A1472.4	A7772.4
	2.50	0.0984	30	57	A1082.5	A1472.5	A7772.5
	2.60	0.1024	30	57	A1082.6	A1472.6	A7772.6
	2.70	0.1063	33	61	A1082.7	A1472.7	A7772.7
7/64	2.78	0.1094	33	61	A1087/64		A7777/64
	2.80	0.1102	33	61	A1082.8	A1472.8	A7772.8
	2.90	0.1142	33	61	A1082.9	A1472.9	A7772.9
	3.00	0.1181	33	61	A1083.0	A1473.0	A7773.0
	3.10	0.1220	36	65	A1083.1	A1473.1	A7773.1
1/8	3.18	0.1252	36	65	A1081/8	A1471/8	A7771/8
	3.20	0.1260	36	65	A1083.2	A1473.2	A7773.2
	3.30	0.1299	36	65	A1083.3	A1473.3	A7773.3
	3.40	0.1339	39	70	A1083.4	A1473.4	A7773.4
	3.50	0.1378	39	70	A1083.5	A1473.5	A7773.5
9/64	3.57	0.1406	39	70	A1089/64		A7779/64
	3.60	0.1417	39	70	A1083.6	A1473.6	A7773.6
	3.70	0.1457	39	70	A1083.7	A1473.7	A7773.7
	3.80	0.1496	43	75	A1083.8	A1473.8	A7773.8
	3.90	0.1535	43	75	A1083.9	A1473.9	A7773.9
5/32	3.97	0.1563	43	75	A1085/32	A1475/32	A7775/32
	4.00	0.1575	43	75	A1084.0	A1474.0	A7774.0
	4.10	0.1614	43	75	A1084.1	A1474.1	A7774.1
	4.20	0.1654	43	75	A1084.2	A1474.2	A7774.2
	4.30	0.1693	47	80	A1084.3	A1474.3	A7774.3
11/64	4.37	0.1720	47	80	A10811/64		A77711/64
	4.40	0.1732	47	80	A1084.4	A1474.4	A7774.4
	4.50	0.1772	47	80	A1084.5	A1474.5	A7774.5
	4.60	0.1811	47	80	A1084.6	A1474.6	A7774.6
	4.70	0.1850	47	80	A1084.7	A1474.7	A7774.7
3/16	4.76	0.1874	52	86	A1083/16	A1473/16	A7773/16
	4.80	0.1890	52	86	A1084.8	A1474.8	A7774.8
	4.90	0.1929	52	86	A1084.9	A1474.9	A7774.9
N10	4.92	0.1935	52	86	A108N10		
	5.00	0.1969	52	86	A1085.0	A1475.0	A7775.0
	5.10	0.2008	52	86	A1085.1	A1475.1	A7775.1
13/64	5.16	0.2031	52	86	A10813/64		A77713/64
	5.20	0.2047	52	86	A1085.2	A1475.2	A7775.2
	5.30	0.2087	52	86	A1085.3	A1475.3	A7775.3
	5.40	0.2126	57	93	A1085.4	A1475.4	A7775.4
	5.50	0.2165	57	93	A1085.5	A1475.5	A7775.5
7/32	5.56	0.2189	57	93	A1087/32		A7777/32
	5.60	0.2205	57	93	A1085.6	A1475.6	A7775.6
	5.70	0.2244	57	93	A1085.7	A1475.7	A7775.7
	5.80	0.2283	57	93	A1085.8	A1475.8	A7775.8
	5.90	0.2323	57	93	A1085.9	A1475.9	A7775.9
15/64	5.95	0.2343	57	93	A10815/64		A77715/64
	6.00	0.2362	57	93	A1086.0	A1476.0	A7776.0

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A108	A147	A777
	6.10	0.2402	63	101	A1086.1	A1476.1	A7776.1
	6.20	0.2441	63	101	A1086.2	A1476.2	A7776.2
	6.30	0.2480	63	101	A1086.3	A1476.3	A7776.3
1/4	6.35	0.2500	63	101	A1081/4	A1471/4	A7771/4
	6.40	0.2520	63	101	A1086.4	A1476.4	A7776.4
	6.50	0.2559	63	101	A1086.5	A1476.5	A7776.5
	6.60	0.2598	63	101	A1086.6	A1476.6	A7776.6
	6.70	0.2638	63	101	A1086.7	A1476.7	A7776.7
17/64	6.75	0.2657	69	109	A10817/64		A77717/64
	6.80	0.2677	69	109	A1086.8	A1476.8	A7776.8
	6.90	0.2717	69	109	A1086.9	A1476.9	A7776.9
	7.00	0.2756	69	109	A1087.0	A1477.0	A7777.0
	7.10	0.2795	69	109	A1087.1	A1477.1	A7777.1
9/32	7.14	0.2811	69	109	A1089/32		A7779/32
	7.20	0.2835	69	109	A1087.2	A1477.2	A7777.2
	7.30	0.2874	69	109	A1087.3	A1477.3	A7777.3
	7.40	0.2913	69	109	A1087.4	A1477.4	A7777.4
	7.50	0.2953	69	109	A1087.5	A1477.5	A7777.5
19/64	7.54	0.2969	75	117	A10819/64		A77719/64
	7.60	0.2992	75	117	A1087.6	A1477.6	A7777.6
	7.70	0.3031	75	117	A1087.7	A1477.7	A7777.7
	7.80	0.3071	75	117	A1087.8	A1477.8	A7777.8
	7.90	0.3110	75	117	A1087.9	A1477.9	A7777.9
5/16	7.94	0.3126	75	117	A1085/16		A7775/16
	8.00	0.3150	75	117	A1088.0	A1478.0	A7778.0
	8.10	0.3189	75	117	A1088.1	A1478.1	A7778.1
	8.20	0.3228	75	117	A1088.2	A1478.2	A7778.2
	8.30	0.3268	75	117	A1088.3	A1478.3	A7778.3
21/64	8.33	0.3280	75	117	A10821/64		A77721/64
	8.40	0.3307	75	117	A1088.4	A1478.4	A7778.4
	8.50	0.3346	75	117	A1088.5	A1478.5	A7778.5
	8.60	0.3386	81	125	A1088.6	A1478.6	A7778.6
	8.70	0.3425	81	125	A1088.7	A1478.7	A7778.7
11/32	8.73	0.3437	81	125	A10811/32		A77711/32
	8.80	0.3465	81	125	A1088.8	A1478.8	A7778.8
	8.90	0.3504	81	125	A1088.9	A1478.9	A7778.9
	9.00	0.3543	81	125	A1089.0	A1479.0	A7779.0
	9.10	0.3583	81	125	A1089.1	A1479.1	A7779.1
23/64	9.13	0.3594	81	125	A10823/64		A77723/64
	9.20	0.3622	81	125	A1089.2	A1479.2	A7779.2
	9.30	0.3661	81	125	A1089.3	A1479.3	A7779.3
	9.40	0.3701	81	125	A1089.4	A1479.4	A7779.4
	9.50	0.3740	81	125	A1089.5	A1479.5	A7779.5
3/8	9.52	0.3748	87	133	A1083/8		A7773/8
	9.60	0.3780	87	133	A1089.6	A1479.6	A7779.6
	9.70	0.3819	87	133	A1089.7	A1479.7	A7779.7
	9.80	0.3858	87	133	A1089.8	A1479.8	A7779.8
	9.90	0.3898	87	133	A1089.9	A1479.9	A7779.9
25/64	9.92	0.3906	87	133	A10825/64		A77725/64
	10.00	0.3937	87	133	A10810.0	A14710.0	A77710.0
	10.10	0.3976	87	133			A77710.1
	10.20	0.4016	87	133	A10810.2	A14710.2	A77710.2
13/32	10.32	0.4063	87	133	A10813/32		A77713/32
	10.50	0.4134	87	133	A10810.5	A14710.5	A77710.5
27/64	10.72	0.4220	94	142	A10827/64		A77727/64
	10.80	0.4252	94	142	A10810.8		A77710.8
	11.00	0.4331	94	142	A10811.0	A14711.0	A77711.0
7/16	11.11	0.4374	94	142	A1087/16		A7777/16
	11.20	0.4409	94	142		A14711.2	A77711.2
	11.50	0.4528	94	142	A10811.5	A14711.5	A77711.5
29/64	11.51	0.4531	94	142	A10829/64		A77729/64
	11.80	0.4646	94	142	A10811.8		A77711.8
15/32	11.91	0.4689	101	151	A10815/32		A77715/32
	12.00	0.4724	101	151	A10812.0	A14712.0	A77712.0
	12.20	0.4803	101	151	A10812.2		A77712.2
31/64	12.30	0.4843	101	151	A10831/64		A77731/64
	12.50	0.4921	101	151	A10812.5	A14712.5	A77712.5
1/2	12.70	0.5000	101	151	A1081/2		A7771/2
	12.80	0.5039	101	151	A10812.8		A77712.8
	12.90	0.5079	101	151	A10812.9		

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A108	A147	A777
	13.00	0.5118	101	151	A10813.0	A14713.0	A77713.0
	13.50	0.5315	108	160	A10813.5	A14713.5	A77713.5
	14.00	0.5512	108	160	A10814.0	A14714.0	A77714.0
	14.50	0.5709	114	169	A10814.5	A14714.5	A77714.5
	15.00	0.5906	114	169	A10815.0	A14715.0	A77715.0
	15.25	0.6004	120	178	A10815.25		
	15.50	0.6102	120	178	A10815.5		A77715.5
	16.00	0.6299	120	178	A10816.0		A77716.0

A170

- 1/2" csökkentett hengeres szárú csigafúró
- Burghiu cu coada cilindrica 1/2 Inch
- 1/2" inceltmiş silindirik şaftlı matkap
- 1/2" Reduced Parallel Shank Drill

A170	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1										

A170

HSS

DORMER

4XD



A170



13.00 - 1.1/2

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 Inch	l_1 Inch	l_2 mm	l_1 mm	A170
	13.00	0.5118					A17013.0
33/64	13.10	0.5157	3.1/8	6"			A17033/64
17/32	13.49	0.5311	3.1/8	6"			A17017/32
	13.50	0.5315			83	156	A17013.5
35/64	13.89	0.5469	3.1/8	6"			A17035/64
	14.00	0.5512			83	156	A17014.0
9/16	14.29	0.5626	3.1/8	6"			A1709/16
	14.50	0.5709			83	156	A17014.5
37/64	14.68	0.5780	3.1/8	6"			A17037/64
	15.00	0.5906			83	156	A17015.0
19/32	15.08	0.5937	3.1/8	6"			A17019/32
39/64	15.48	0.6094	3.1/8	6"			A17039/64
	15.50	0.6102			83	156	A17015.5
5/8	15.88	0.6252	3.1/8	6"			A1705/8
	16.00	0.6299			84	157	A17016.0
41/64	16.27	0.6406	3.1/8	6"			A17041/64
	16.50	0.6496			84	157	A17016.5
21/32	16.67	0.6563	3.1/8	6"			A17021/32
	17.00	0.6693			84	157	A17017.0
43/64	17.07	0.6720	3.1/8	6"			A17043/64
11/16	17.46	0.6874	3.1/8	6"			A17011/16
	17.50	0.6890			84	157	A17017.5
45/64	17.86	0.7031	3.1/8	6"			A17045/64
	18.00	0.7087			84	157	A17018.0
23/32	18.26	0.7189	3.1/8	6"			A17023/32
	18.50	0.7283			84	157	A17018.5
47/64	18.65	0.7343	3.1/8	6"			A17047/64
	19.00	0.7480			84	157	A17019.0
3/4	19.05	0.7500	3.1/8	6"			A1703/4
49/64	19.45	0.7657	3"	6"			A17049/64
	19.50	0.7677			81	158	A17019.5
25/32	19.84	0.7811	3"	6"			A17025/32
	20.00	0.7874			81	158	A17020.0
51/64	20.24	0.7969	3"	6"			A17051/64
13/16	20.64	0.8126	3"	6"			A17013/16
	21.00	0.8268			82	158	A17021.0
53/64	21.03	0.8280	3"	6"			A17053/64
27/32	21.43	0.8437	3"	6"			A17027/32

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 Inch	l_1 Inch	l_2 mm	l_1 mm	A170
55/64	21.83	0.8594	3"	6"			A17055/64
	22.00	0.8661			82	158	A17022.0
7/8	22.22	0.8748	3"	6"			A1707/8
57/64	22.62	0.8906	3"	6"			A17057/64
	23.00	0.9055			82	158	A17023.0
29/32	23.02	0.9063	3"	6"			A17029/32
59/64	23.42	0.9220	3"	6"			A17059/64
15/16	23.81	0.9374	3"	6"			A17015/16
	24.00	0.9449			83	159	A17024.0
61/64	24.21	0.9531	3"	6"			A17061/64
31/32	24.61	0.9689	3"	6"			A17031/32
	25.00	0.9843			83	159	A17025.0
63/64	25.00	0.9843	3"	6"			A17063/64
1"	25.40	1.0000	3"	6"			A1701
1.1/32	26.19	1.0311	3"	6"			A1701.1/32
1.1/16	26.99	1.0626	3"	6"			A1701.1/16
1.7/64	28.18	1.1094	3"	6"			A1701.7/64
1.1/8	28.58	1.1252	3"	6"			A1701.1/8
1.9/64	28.97	1.1406	3"	6"			A1701.9/64
1.5/32	29.37	1.1563	3"	6"			A1701.5/32
1.3/16	30.16	1.1874	3"	6"			A1701.3/16
1.7/32	30.96	1.2189	3"	6"			A1701.7/32
1.1/4	31.75	1.2500	3"	6"			A1701.1/4
1.5/16	33.34	1.3126	3"	6"			A1701.5/16
1.3/8	34.93	1.3752	3"	6"			A1701.3/8
1.7/16	36.51	1.4374	3"	6"			A1701.7/16
1.1/2	38.10	1.5000	3"	6"			A1701.1/2

A160

- Csigafúró forrasztott keményfém éllel
- Burghiu uzual cu 4 fatete brazate din carbura
- 4 açılı kesme ucu ve karbür kaynaklı kısa matkap
- Jobber Drill with 4 facet ground Brazed Carbide Tip

A160	▪	3.1	3.2	3.3	3.4																
	•	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1
		7.2	7.3	7.4	8.2	9.1															



d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A160
4.00	0.1575	43	75	A1604.0
4.50	0.1772	47	80	A1604.5
5.00	0.1969	52	86	A1605.0
5.50	0.2165	57	93	A1605.5
6.00	0.2362	57	93	A1606.0
6.50	0.2559	63	101	A1606.5
6.80	0.2677	69	109	A1606.8
7.00	0.2756	69	109	A1607.0
7.50	0.2953	69	109	A1607.5
8.00	0.3150	75	117	A1608.0
8.50	0.3346	75	117	A1608.5
9.00	0.3543	81	125	A1609.0
9.50	0.3740	81	125	A1609.5
10.00	0.3937	87	133	A16010.0
10.20	0.4016	87	133	A16010.2
10.50	0.4134	87	133	A16010.5
11.00	0.4331	94	142	A16011.0
11.50	0.4528	94	142	A16011.5
12.00	0.4724	101	151	A16012.0
13.00	0.5118	101	151	A16013.0
14.00	0.5512	108	160	A16014.0
15.00	0.5906	114	169	A16015.0
16.00	0.6299	120	178	A16016.0

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A510
15/64	5.90	0.2323	57	93	A5105.9
	5.95	0.2343	57	93	A51015/64
	6.00	0.2362	57	93	A5106.0
	6.10	0.2402	63	101	A5106.1
1/4	6.20	0.2441	63	101	A5106.2
	6.30	0.2480	63	101	A5106.3
	6.35	0.2500	63	101	A5101/4
	6.40	0.2520	63	101	A5106.4
	6.50	0.2559	63	101	A5106.5
	6.60	0.2598	63	101	A5106.6
17/64	6.70	0.2638	63	101	A5106.7
	6.75	0.2657	69	109	A51017/64
	6.80	0.2677	69	109	A5106.8
	6.90	0.2717	69	109	A5106.9
	7.00	0.2756	69	109	A5107.0
9/32	7.10	0.2795	69	109	A5107.1
	7.14	0.2811	69	109	A5109/32
	7.20	0.2835	69	109	A5107.2
	7.30	0.2874	69	109	A5107.3
	7.40	0.2913	69	109	A5107.4
19/64	7.50	0.2953	69	109	A5107.5
	7.54	0.2969	75	117	A51019/64
	7.60	0.2992	75	117	A5107.6
	7.70	0.3031	75	117	A5107.7
	7.80	0.3071	75	117	A5107.8
5/16	7.90	0.3110	75	117	A5107.9
	7.94	0.3126	75	117	A5105/16
	8.00	0.3150	75	117	A5108.0
	8.10	0.3189	75	117	A5108.1
	8.20	0.3228	75	117	A5108.2
21/64	8.30	0.3268	75	117	A5108.3
	8.33	0.3280	75	117	A51021/64
	8.40	0.3307	75	117	A5108.4
	8.50	0.3346	75	117	A5108.5
	8.60	0.3386	81	125	A5108.6
11/32	8.70	0.3425	81	125	A5108.7
	8.73	0.3437	81	125	A51011/32
	8.80	0.3465	81	125	A5108.8
	8.90	0.3504	81	125	A5108.9
	9.00	0.3543	81	125	A5109.0
23/64	9.10	0.3583	81	125	A5109.1
	9.13	0.3594	81	125	A51023/64
	9.20	0.3622	81	125	A5109.2
	9.30	0.3661	81	125	A5109.3
	9.40	0.3701	81	125	A5109.4
3/8	9.50	0.3740	81	125	A5109.5
	9.52	0.3748	87	133	A5103/8
	9.60	0.3780	87	133	A5109.6
	9.70	0.3819	87	133	A5109.7
	9.80	0.3858	87	133	A5109.8
25/64	9.90	0.3898	87	133	A5109.9
	9.92	0.3906	87	133	A51025/64
	10.00	0.3937	87	133	A51010.0
	10.10	0.3976	87	133	A51010.1
	10.20	0.4016	87	133	A51010.2
13/32	10.30	0.4055	87	133	A51010.3
	10.32	0.4063	87	133	A51013/32
	10.40	0.4094	87	133	A51010.4
	10.50	0.4134	87	133	A51010.5
	10.60	0.4173	87	133	A51010.6
27/64	10.70	0.4213	94	142	A51010.7
	10.72	0.4220	94	142	A51027/64
	10.80	0.4252	94	142	A51010.8
	10.90	0.4291	94	142	A51010.9
	11.00	0.4331	94	142	A51011.0
7/16	11.10	0.4370	94	142	A51011.1
	11.11	0.4374	94	142	A5107/16
	11.20	0.4409	94	142	A51011.2
	11.30	0.4449	94	142	A51011.3
	11.40	0.4488	94	142	A51011.4

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A510
29/64	11.50	0.4528	94	142	A51011.5
	11.51	0.4531	94	142	A51029/64
	11.60	0.4567	94	142	A51011.6
	11.70	0.4606	94	142	A51011.7
	11.80	0.4646	94	142	A51011.8
15/32	11.90	0.4685	101	151	A51011.9
	11.91	0.4689	101	151	A51015/32
	12.00	0.4724	101	151	A51012.0
	12.10	0.4764	101	151	A51012.1
	12.20	0.4803	101	151	A51012.2
31/64	12.30	0.4843	101	151	A51012.3
	12.30	0.4843	101	151	A51031/64
	12.40	0.4882	101	151	A51012.4
	12.50	0.4921	101	151	A51012.5
	12.60	0.4961	101	151	A51012.6
1/2	12.70	0.5000	101	151	A51012.7
	12.70	0.5000	101	151	A5101/2
	12.80	0.5039	101	151	A51012.8
	12.90	0.5079	101	151	A51012.9
	13.00	0.5118	101	151	A51013.0
	14.00	0.5512	108	160	A51014.0

- A553**
- ADX Csigafúró - Olajvezetővel
 - Burghiu ADX, Racire interna
 - ADX Matkap Su Delikli
 - ADX Drill Oil Feed

A553	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	4.1	6.2	6.3	7.2	7.3	7.4	8.1
	•	2.3	4.2	4.3	5.1	5.2	5.3	6.1	6.4	7.1										

A553 HSS-E  5XD  130°  TiAIN Top  DIN 6535HA   



d_1 \varnothing_{h_8} mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 \varnothing_{h_6} mm	A553
5.00	0.1969	36	79	36	6	A5535.0
5.20	0.2047	38	79	36	6	A5535.2
5.50	0.2165	40	79	36	6	A5535.5
6.00	0.2362	43	79	36	6	A5536.0
6.30	0.2480	46	87	36	8	A5536.3
6.50	0.2559	47	87	36	8	A5536.5
6.80	0.2677	48	87	36	8	A5536.8
6.90	0.2717	48	87	36	8	A5536.9
7.00	0.2756	48	87	36	8	A5537.0
7.40	0.2913	54	94	36	8	A5537.4
7.50	0.2953	54	94	36	8	A5537.5
8.00	0.3150	58	94	36	8	A5538.0
8.50	0.3346	75	130	40	10	A5538.5
8.70	0.3425	75	130	40	10	A5538.7
9.00	0.3543	75	130	40	10	A5539.0
9.50	0.3740	75	130	40	10	A5539.5
10.00	0.3937	75	130	40	10	A55310.0
10.20	0.4016	87	150	45	12	A55310.2
10.30	0.4055	87	150	45	12	A55310.3
10.50	0.4134	87	150	45	12	A55310.5
11.00	0.4331	94	150	45	12	A55311.0
11.30	0.4449	94	150	45	12	A55311.3
11.50	0.4528	94	150	45	12	A55311.5
12.00	0.4724	94	150	45	12	A55312.0
12.50	0.4921	101	160	45	14	A55312.5
13.00	0.5118	101	160	45	14	A55313.0
13.50	0.5315	101	160	45	14	A55313.5
14.00	0.5512	101	160	45	14	A55314.0
14.25	0.5610	108	170	48	16	A55314.25
14.50	0.5709	108	170	48	16	A55314.5
15.00	0.5906	108	170	48	16	A55315.0
15.25	0.6004	108	170	48	16	A55315.25
15.50	0.6102	108	170	48	16	A55315.5
16.00	0.6299	108	170	48	16	A55316.0
16.50	0.6496	125	190	48	18	A55316.5
17.00	0.6693	125	190	48	18	A55317.0

d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 $\varnothing h_6$ mm	A553
17.50	0.6890	130	190	48	18	A55317.5
17.75	0.6988	130	190	48	18	A55317.75
18.00	0.7087	130	190	48	18	A55318.0
19.00	0.7480	135	200	50	20	A55319.0
19.25	0.7579	140	200	50	20	A55319.25
20.00	0.7874	140	200	50	20	A55320.0

A900

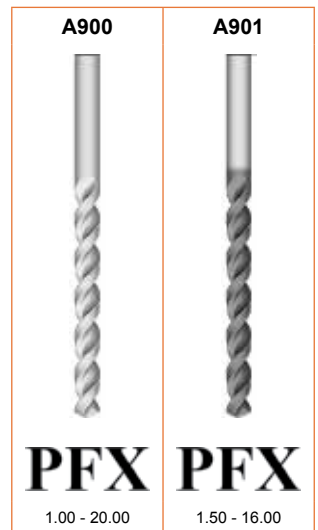
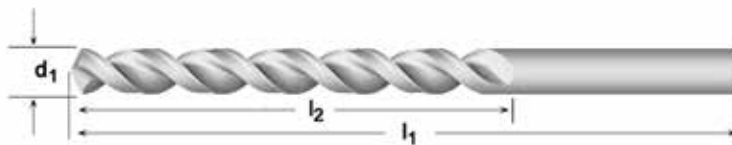
- PFX Csigafúró
- Burghiu lung PFX

A901

- PFX Standart Matkap
- PFX Jobber Drill

A900	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	7.2
	•	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.1	7.3	7.4	8.1	8.2			
A901	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	7.4		
	•	4.1	4.2	4.3	5.1	5.2	5.3	6.3	6.4								

A900	HSS-E	DIN ANSI	6XD	130°			W			
A901	HSS-E	DIN ANSI	6XD	130°	Alcrona Top		W			



d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A900	A901
	1.00	0.0394	12	34	A9001.0	
	1.10	0.0433	14	36	A9001.1	
3/64	1.19	0.0469	19	44	A9003/64	
	1.20	0.0472	16	38	A9001.2	
	1.25	0.0492	16	36	A9001.25	
	1.30	0.0512	16	38	A9001.3	
	1.40	0.0551	18	40	A9001.4	
	1.50	0.0591	18	40	A9001.5	A9011.5
	1.55	0.0610	20	43	A9001.55	A9011.55
1/16	1.59	0.0626	22	48	A9001/16	A9011/16
	1.60	0.0630	20	43	A9001.6	A9011.6
	1.70	0.0669	20	43	A9001.7	
	1.75	0.0689	22	46	A9001.75	A9011.75
	1.80	0.0709	22	46	A9001.8	A9011.8
	1.90	0.0748	22	46	A9001.9	A9011.9
5/64	1.98	0.0780	25	51	A9005/64	A9015/64
	2.00	0.0787	24	49	A9002.0	A9012.0
	2.10	0.0827	24	49	A9002.1	A9012.1
	2.15	0.0846	27	53	A9002.15	A9012.15
	2.20	0.0866	27	53	A9002.2	
	2.30	0.0906	27	53	A9002.3	
3/32	2.38	0.0937	32	57	A9003/32	A9013/32
	2.40	0.0945	30	57	A9002.4	A9012.4
	2.50	0.0984	30	57	A9002.5	A9012.5
	2.60	0.1024	30	57	A9002.6	A9012.6
	2.70	0.1063	33	61	A9002.7	A9012.7
7/64	2.78	0.1094	38	67	A9007/64	A9017/64
	2.80	0.1102	33	61	A9002.8	

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A900	A901
	2.90	0.1142	33	61	A9002.9	A9012.9
	3.00	0.1181	33	61	A9003.0	A9013.0
	3.10	0.1220	36	65	A9003.1	A9013.1
1/8	3.18	0.1252	41	70	A9001/8	A9011/8
	3.20	0.1260	36	65	A9003.2	A9013.2
	3.30	0.1299	36	65	A9003.3	A9013.3
	3.40	0.1339	39	70	A9003.4	A9013.4
	3.50	0.1378	39	70	A9003.5	A9013.5
9/64	3.57	0.1406	44	73	A9009/64	A9019/64
	3.60	0.1417	39	70	A9003.6	A9013.6
	3.70	0.1457	39	70	A9003.7	A9013.7
	3.80	0.1496	43	75	A9003.8	A9013.8
	3.90	0.1535	43	75	A9003.9	A9013.9
5/32	3.97	0.1563	51	79	A9005/32	A9015/32
	4.00	0.1575	43	75	A9004.0	A9014.0
	4.10	0.1614	43	75	A9004.1	A9014.1
	4.20	0.1654	43	75	A9004.2	A9014.2
	4.30	0.1693	47	80	A9004.3	A9014.3
11/64	4.37	0.1720	54	83	A90011/64	A90111/64
	4.40	0.1732	47	80	A9004.4	A9014.4
	4.50	0.1772	47	80	A9004.5	A9014.5
	4.60	0.1811	47	80	A9004.6	A9014.6
	4.70	0.1850	47	80	A9004.7	A9014.7
3/16	4.76	0.1874	59	89	A9003/16	A9013/16
	4.80	0.1890	52	86	A9004.8	A9014.8
	4.90	0.1929	52	86	A9004.9	A9014.9
	5.00	0.1969	52	86	A9005.0	A9015.0
	5.10	0.2008	52	86	A9005.1	A9015.1
13/64	5.16	0.2031	62	92	A90013/64	A90113/64
	5.20	0.2047	52	86	A9005.2	A9015.2
	5.30	0.2087	52	86	A9005.3	A9015.3
	5.40	0.2126	57	93	A9005.4	A9015.4
	5.50	0.2165	57	93	A9005.5	A9015.5
7/32	5.56	0.2189	64	95	A9007/32	A9017/32
	5.60	0.2205	57	93	A9005.6	A9015.6
	5.70	0.2244	57	93	A9005.7	A9015.7
	5.80	0.2283	57	93	A9005.8	A9015.8
	5.90	0.2323	57	93	A9005.9	A9015.9
15/64	5.95	0.2343	67	98	A90015/64	A90115/64
	6.00	0.2362	57	93	A9006.0	A9016.0
	6.10	0.2402	63	101	A9006.1	A9016.1
	6.20	0.2441	63	101	A9006.2	A9016.2
	6.30	0.2480	63	101	A9006.3	A9016.3
1/4	6.35	0.2500	70	102	A9001/4	A9011/4
	6.40	0.2520	63	101	A9006.4	A9016.4
	6.50	0.2559	63	101	A9006.5	A9016.5
	6.60	0.2598	63	101	A9006.6	A9016.6
	6.70	0.2638	63	101	A9006.7	A9016.7
17/64	6.75	0.2657	73	105	A90017/64	A90117/64
	6.80	0.2677	69	109	A9006.8	A9016.8
	6.90	0.2717	69	109	A9006.9	A9016.9
	7.00	0.2756	69	109	A9007.0	A9017.0
	7.10	0.2795	69	109	A9007.1	A9017.1
9/32	7.14	0.2811	75	108	A9009/32	A9019/32
	7.20	0.2835	69	109	A9007.2	A9017.2
	7.30	0.2874	69	109	A9007.3	A9017.3
	7.40	0.2913	69	109	A9007.4	A9017.4
	7.50	0.2953	69	109	A9007.5	A9017.5
19/64	7.54	0.2969	78	111	A90019/64	A90119/64
	7.60	0.2992	75	117	A9007.6	A9017.6
	7.70	0.3031	75	117	A9007.7	A9017.7
	7.80	0.3071	75	117	A9007.8	A9017.8
	7.90	0.3110	75	117	A9007.9	A9017.9
5/16	7.94	0.3126	81	114	A9005/16	A9015/16
	8.00	0.3150	75	117	A9008.0	A9018.0
	8.10	0.3189	75	117	A9008.1	A9018.1
	8.20	0.3228	75	117	A9008.2	A9018.2
	8.30	0.3268	75	117	A9008.3	A9018.3
21/64	8.33	0.3280	84	117	A90021/64	A90121/64
	8.40	0.3307	75	117	A9008.4	A9018.4

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A900	A901
	8.50	0.3346	75	117	A9008.5	A9018.5
	8.60	0.3386	81	125	A9008.6	A9018.6
	8.70	0.3425	81	125	A9008.7	A9018.7
11/32	8.73	0.3437	87	121	A90011/32	A90111/32
	8.80	0.3465	81	125	A9008.8	A9018.8
	8.90	0.3504	81	125	A9008.9	A9018.9
	9.00	0.3543	81	125	A9009.0	A9019.0
	9.10	0.3583	81	125	A9009.1	A9019.1
23/64	9.13	0.3594	89	124	A90023/64	A90123/64
	9.20	0.3622	81	125	A9009.2	A9019.2
	9.30	0.3661	81	125	A9009.3	A9019.3
	9.40	0.3701	81	125	A9009.4	A9019.4
	9.50	0.3740	81	125	A9009.5	A9019.5
3/8	9.52	0.3748	92	127	A9003/8	A9013/8
	9.60	0.3780	87	133	A9009.6	A9019.6
	9.70	0.3819	87	133	A9009.7	A9019.7
	9.80	0.3858	87	133	A9009.8	A9019.8
	9.90	0.3898	87	133	A9009.9	A9019.9
25/64	9.92	0.3906	95	130	A90025/64	A90125/64
	10.00	0.3937	87	133	A90010.0	A90110.0
	10.20	0.4016	87	133	A90010.2	A90110.2
	10.30	0.4055	87	133	A90010.3	A90110.3
13/32	10.32	0.4063	98	133	A90013/32	A90113/32
	10.40	0.4094	87	133	A90010.4	A90110.4
	10.50	0.4134	87	133	A90010.5	A90110.5
27/64	10.72	0.4220	100	137	A90027/64	A90127/64
	10.80	0.4252	94	142	A90010.8	A90110.8
	11.00	0.4331	94	142	A90011.0	A90111.0
7/16	11.11	0.4374	103	140	A9007/16	A9017/16
	11.50	0.4528	94	142	A90011.5	A90111.5
29/64	11.51	0.4531	106	143	A90029/64	A90129/64
	11.80	0.4646	94	142	A90011.8	A90111.8
15/32	11.91	0.4689	110	146	A90015/32	A90115/32
	12.00	0.4724	101	151	A90012.0	A90112.0
31/64	12.30	0.4843	111	149	A90031/64	A90131/64
	12.50	0.4921	101	151	A90012.5	A90112.5
1/2	12.70	0.5000	101	151	A9001/2	A9011/2
	13.00	0.5118	101	151	A90013.0	A90113.0
33/64	13.10	0.5157	122	168	A90033/64	A90133/64
	13.50	0.5315	108	160	A90013.5	A90113.5
35/64	13.89	0.5469	122	168	A90035/64	A90135/64
	14.00	0.5512	108	160	A90014.0	A90114.0
9/16	14.29	0.5626	122	168	A9009/16	A9019/16
	14.50	0.5709	114	169	A90014.5	A90114.5
37/64	14.68	0.5780	122	168	A90037/64	A90137/64
	15.00	0.5906	114	169	A90015.0	A90115.0
19/32	15.08	0.5937	132	181	A90019/32	A90119/32
39/64	15.48	0.6094	132	181	A90039/64	A90139/64
	15.50	0.6102	120	178	A90015.5	A90115.5
5/8	15.88	0.6252	132	181	A9005/8	A9015/8
	16.00	0.6299	120	178	A90016.0	A90116.0
41/64	16.27	0.6406	132	181	A90041/64	
	16.50	0.6496	125	184	A90016.5	
21/32	16.67	0.6563	132	181	A90021/32	
	17.00	0.6693	125	184	A90017.0	
43/64	17.07	0.6720	143	194	A90043/64	
11/16	17.46	0.6874	143	194	A90011/16	
	17.50	0.6890	130	191	A90017.5	
45/64	17.86	0.7031	130	191	A90045/64	
	18.00	0.7087	130	191	A90018.0	
23/32	18.26	0.7189	130	191	A90023/32	
	18.50	0.7283	135	198	A90018.5	
47/64	18.65	0.7343	135	198	A90047/64	
	19.00	0.7480	135	198	A90019.0	
3/4	19.05	0.7500	135	198	A9003/4	
49/64	19.45	0.7657	135	198	A90049/64	
	19.50	0.7677	140	205	A90019.5	
25/32	19.84	0.7811	140	205	A90025/32	
	20.00	0.7874	140	205	A90020.0	

- A243**
- Repülőgépipari Hosszú Csigaűró
 - Burghiu co coada lungita pentru aviatie
- A244**
- Havacılık uzatma matkapları
 - Aircraft Extension Drill

150mm teljes hossz
Lungime totala 150 mm
Toplam boy 150mm
6" Overall Length

A243; A244	▪	1.5	1.6	2.2	2.3	3.4	4.1	4.2	4.3	5.1	6.4	7.4
	•	1.3	1.4	2.1	3.1	3.2	3.3	5.2	5.3	6.3	9.1	

A243	HSS	NAS 907	4XD	135°			N			
A244	HSS	NAS 907	4XD	118°			N			



d_1 $\varnothing h_8$ Inch	d_1 decimal Inch	l_2 Inch	l_1 Inch	A243	A244
3/32	0.0938	1.1/4	6"	A2433/32X6	
40	0.0980	1.3/8	6"	A243N40X6	
1/8	0.1250	1.5/8	6"	A2431/8X6	A2441/8X6
30	0.1285	1.5/8	6"	A243N30X6	
5/32	0.1563	2"	6"	A2435/32X6	A2445/32X6
21	0.1590	2.1/8	6"	A243N21X6	
20	0.1610	2.1/8	6"	A243N20X6	
3/16	0.1875	2.5/16	6"	A2433/16X6	A2443/16X6
11	0.1910	2.5/16	6"	A243N11X6	
10	0.1935	2.7/16	6"	A243N10X6	
1/4	0.2500	2.3/4	6"	A2431/4X6	A2441/4X6

A110

- Hosszú Csigafúró
- Burghie serie lunga
- Uzun Seri Matkap
- Long Series Drill

Fényes kivitel 1,0mm alatt, 1/16"
Lucios sub 1,0 mm, 1/16"
1.0mm, 1/16"e kadar parlak
Bright below 1.0mm, 1/16"

A110	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1									

A110

HSS

DIN
340

6XD



A110



0.50 - 1"

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A110
	0.50	0.0197	12	32	A110.5
	0.60	0.0236	15	35	A110.6
	0.70	0.0276	21	42	A110.7
1/32	0.79	0.0311	25	46	A1101/32
	0.80	0.0315	25	46	A110.8
	0.90	0.0354	29	51	A110.9
	1.00	0.0394	33	56	A1101.0
	1.10	0.0433	37	60	A1101.1
	1.20	0.0472	41	65	A1101.2
	1.30	0.0512	41	65	A1101.3
	1.40	0.0551	45	70	A1101.4
	1.50	0.0591	45	70	A1101.5
1/16	1.59	0.0626	50	76	A1101/16
	1.60	0.0630	50	76	A1101.6
	1.70	0.0669	50	76	A1101.7
	1.75	0.0689	53	80	A1101.75
	1.80	0.0709	53	80	A1101.8
	1.90	0.0748	53	80	A1101.9
5/64	1.98	0.0780	56	85	A1105/64
	2.00	0.0787	56	85	A1102.0
	2.05	0.0807	56	85	A1102.05
	2.10	0.0827	56	85	A1102.1
	2.20	0.0866	59	90	A1102.2
	2.25	0.0886	59	90	A1102.25
	2.30	0.0906	59	90	A1102.3
3/32	2.38	0.0937	62	95	A1103/32
	2.40	0.0945	62	95	A1102.4
	2.50	0.0984	62	95	A1102.5
	2.60	0.1024	62	95	A1102.6
	2.70	0.1063	66	100	A1102.7
7/64	2.78	0.1094	66	100	A1107/64
	2.80	0.1102	66	100	A1102.8
	2.90	0.1142	66	100	A1102.9
	3.00	0.1181	66	100	A1103.0
	3.10	0.1220	69	106	A1103.1
1/8	3.18	0.1252	69	106	A1101/8
	3.20	0.1260	69	106	A1103.2
	3.25	0.1280	69	106	A1103.25

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A110
	3.30	0.1299	69	106	A1103.3
	3.40	0.1339	73	112	A1103.4
	3.50	0.1378	73	112	A1103.5
9/64	3.57	0.1406	73	112	A1109/64
	3.60	0.1417	73	112	A1103.6
	3.70	0.1457	73	112	A1103.7
	3.75	0.1476	73	112	A1103.75
	3.80	0.1496	78	119	A1103.8
	3.90	0.1535	78	119	A1103.9
5/32	3.97	0.1563	78	119	A1105/32
	4.00	0.1575	78	119	A1104.0
	4.10	0.1614	78	119	A1104.1
	4.20	0.1654	78	119	A1104.2
	4.25	0.1673	78	119	A1104.25
	4.30	0.1693	82	126	A1104.3
11/64	4.37	0.1720	82	126	A11011/64
	4.40	0.1732	82	126	A1104.4
	4.50	0.1772	82	126	A1104.5
	4.60	0.1811	82	126	A1104.6
	4.70	0.1850	82	126	A1104.7
	4.75	0.1870	82	126	A1104.75
3/16	4.76	0.1874	87	132	A1103/16
	4.80	0.1890	87	132	A1104.8
	4.90	0.1929	87	132	A1104.9
	5.00	0.1969	87	132	A1105.0
	5.10	0.2008	87	132	A1105.1
13/64	5.16	0.2031	87	132	A11013/64
	5.20	0.2047	87	132	A1105.2
	5.25	0.2067	87	132	A1105.25
	5.30	0.2087	87	132	A1105.3
	5.40	0.2126	91	139	A1105.4
	5.50	0.2165	91	139	A1105.5
7/32	5.56	0.2189	91	139	A1107/32
	5.60	0.2205	91	139	A1105.6
	5.70	0.2244	91	139	A1105.7
	5.75	0.2264	91	139	A1105.75
	5.80	0.2283	91	139	A1105.8
	5.90	0.2323	91	139	A1105.9
15/64	5.95	0.2343	91	139	A11015/64
	6.00	0.2362	91	139	A1106.0
	6.10	0.2402	97	148	A1106.1
	6.20	0.2441	97	148	A1106.2
	6.25	0.2461	97	148	A1106.25
	6.30	0.2480	97	148	A1106.3
1/4	6.35	0.2500	97	148	A1101/4
	6.40	0.2520	97	148	A1106.4
	6.50	0.2559	97	148	A1106.5
	6.60	0.2598	97	148	A1106.6
	6.70	0.2638	97	148	A1106.7
17/64	6.75	0.2657	102	156	A11017/64
	6.75	0.2657	102	156	A1106.75
	6.80	0.2677	102	156	A1106.8
	6.90	0.2717	102	156	A1106.9
	7.00	0.2756	102	156	A1107.0
	7.10	0.2795	102	156	A1107.1
9/32	7.14	0.2811	102	156	A1109/32
	7.20	0.2835	102	156	A1107.2
	7.25	0.2854	102	156	A1107.25
	7.30	0.2874	102	156	A1107.3
	7.40	0.2913	102	156	A1107.4
	7.50	0.2953	102	156	A1107.5
	7.60	0.2992	109	165	A1107.6
	7.70	0.3031	109	165	A1107.7
	7.75	0.3051	109	165	A1107.75
	7.80	0.3071	109	165	A1107.8
	7.90	0.3110	109	165	A1107.9
5/16	7.94	0.3126	109	165	A1105/16
	8.00	0.3150	109	165	A1108.0
	8.10	0.3189	109	165	A1108.1
	8.20	0.3228	109	165	A1108.2

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A110
	8.25	0.3248	109	165	A1108.25
	8.30	0.3268	109	165	A1108.3
	8.40	0.3307	109	165	A1108.4
	8.50	0.3346	109	165	A1108.5
	8.60	0.3386	115	175	A1108.6
	8.70	0.3425	115	175	A1108.7
11/32	8.73	0.3437	115	175	A11011/32
	8.75	0.3445	115	175	A1108.75
	8.80	0.3465	115	175	A1108.8
	8.90	0.3504	115	175	A1108.9
	9.00	0.3543	115	175	A1109.0
	9.10	0.3583	115	175	A1109.1
	9.20	0.3622	115	175	A1109.2
	9.25	0.3642	115	175	A1109.25
	9.30	0.3661	115	175	A1109.3
	9.40	0.3701	115	175	A1109.4
	9.50	0.3740	115	175	A1109.5
3/8	9.52	0.3748	121	184	A1103/8
	9.60	0.3780	121	184	A1109.6
	9.70	0.3819	121	184	A1109.7
	9.75	0.3839	121	184	A1109.75
	9.80	0.3858	121	184	A1109.8
	9.90	0.3898	121	184	A1109.9
	10.00	0.3937	121	184	A11010.0
	10.10	0.3976	121	184	A11010.1
	10.20	0.4016	121	184	A11010.2
	10.25	0.4035	121	184	A11010.25
	10.30	0.4055	121	184	A11010.3
13/32	10.32	0.4063	121	184	A11013/32
	10.50	0.4134	121	184	A11010.5
	10.75	0.4232	128	195	A11010.75
	10.80	0.4252	128	195	A11010.8
	11.00	0.4331	128	195	A11011.0
7/16	11.11	0.4374	128	195	A1107/16
	11.25	0.4429	128	195	A11011.25
	11.40	0.4488	128	195	A11011.4
	11.50	0.4528	128	195	A11011.5
	11.75	0.4626	128	195	A11011.75
	12.00	0.4724	134	205	A11012.0
	12.10	0.4764	134	205	A11012.1
	12.25	0.4823	134	205	A11012.25
	12.50	0.4921	134	205	A11012.5
1/2	12.70	0.5000	134	205	A1101/2
	13.00	0.5118	134	205	A11013.0
17/32	13.49	0.5311	140	214	A11017/32
	13.50	0.5315	140	214	A11013.5
	14.00	0.5512	140	214	A11014.0
9/16	14.29	0.5626	144	220	A1109/16
	14.50	0.5709	144	220	A11014.5
	15.00	0.5906	144	220	A11015.0
	15.50	0.6102	149	227	A11015.5
5/8	15.88	0.6252	149	227	A1105/8
	16.00	0.6299	149	227	A11016.0
	16.50	0.6496	154	235	A11016.5
	17.00	0.6693	154	235	A11017.0
11/16	17.46	0.6874	158	241	A11011/16
	17.50	0.6890	158	241	A11017.5
	18.00	0.7087	158	241	A11018.0
	18.50	0.7283	162	247	A11018.5
	19.00	0.7480	162	247	A11019.0
3/4	19.05	0.7500	166	254	A1103/4
	19.50	0.7677	166	254	A11019.5
	20.00	0.7874	166	254	A11020.0
	21.00	0.8268	171	261	A11021.0
	22.00	0.8661	176	268	A11022.0
7/8	22.22	0.8748	176	268	A1107/8
15/16	23.81	0.9374	185	282	A11015/16
1"	25.40	1.0000	190	290	A1101

A940

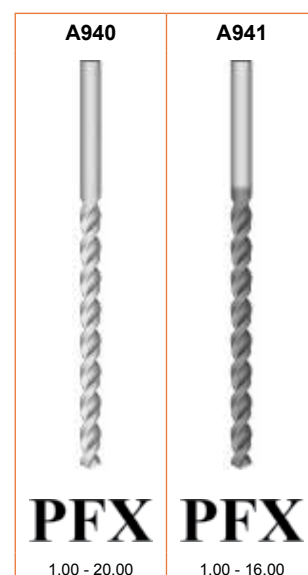
- PFX Hosszú Csigaúró
- Burghiu serie lunga PFX

A941

- PFX Uzun Seri Matkap
- PFX Long Series Drill

A940	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	7.2	
	•	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.1	7.3	7.4	8.1	8.2		
A941	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	7.4
	•	4.1	4.2	4.3	6.3	6.4									

A940	HSS-E	DIN ANSI	10XD	130°			W			
A941	HSS-E	DIN ANSI	10XD	130°	Alcrona Top		W			



d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A940	A941
	1.00	0.0394	33	56	A9401.0	A9411.0
	1.10	0.0433	37	60	A9401.1	
3/64	1.19	0.0469	29	57	A9403/64	A9413/64
	1.20	0.0472	41	65	A9401.2	
	1.30	0.0512	41	65	A9401.3	
	1.40	0.0551	45	70	A9401.4	
	1.50	0.0591	45	70	A9401.5	A9411.5
1/16	1.59	0.0626	44	76	A9401/16	A9411/16
	1.60	0.0630	50	76	A9401.6	
	1.70	0.0669	50	76	A9401.7	
	1.80	0.0709	53	80	A9401.8	
	1.90	0.0748	53	80	A9401.9	
5/64	1.98	0.0780	51	95	A9405/64	A9415/64
	2.00	0.0787	56	85	A9402.0	A9412.0
	2.10	0.0827	56	85	A9402.1	
	2.20	0.0866	59	90	A9402.2	
	2.30	0.0906	59	90	A9402.3	
3/32	2.38	0.0937	57	108	A9403/32	A9413/32
	2.40	0.0945	62	95	A9402.4	
	2.50	0.0984	62	95	A9402.5	A9412.5
	2.60	0.1024	62	95	A9402.6	
	2.70	0.1063	66	100	A9402.7	
7/64	2.78	0.1094	64	117	A9407/64	A9417/64
	2.80	0.1102	66	100	A9402.8	
	2.90	0.1142	66	100	A9402.9	
	3.00	0.1181	66	100	A9403.0	A9413.0

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A940	A941
1/8	3.10	0.1220	69	106	A9403.1	A9413.1
	3.18	0.1252	70	130	A9401/8	A9411/8
	3.20	0.1260	69	106	A9403.2	A9413.2
	3.30	0.1299	69	106	A9403.3	A9413.3
	3.40	0.1339	73	112	A9403.4	A9413.4
9/64	3.50	0.1378	73	112	A9403.5	A9413.5
	3.57	0.1406	76	137	A9409/64	A9419/64
	3.60	0.1417	73	112	A9403.6	A9413.6
	3.70	0.1457	73	112	A9403.7	A9413.7
	3.80	0.1496	78	119	A9403.8	A9413.8
5/32	3.90	0.1535	78	119	A9403.9	A9413.9
	3.97	0.1563	76	137	A9405/32	A9415/32
	4.00	0.1575	78	119	A9404.0	A9414.0
	4.10	0.1614	78	119	A9404.1	A9414.1
	4.20	0.1654	78	119	A9404.2	A9414.2
11/64	4.30	0.1693	82	126	A9404.3	A9414.3
	4.37	0.1720	86	146	A94011/64	A94111/64
	4.40	0.1732	82	126	A9404.4	A9414.4
	4.50	0.1772	82	126	A9404.5	A9414.5
	4.60	0.1811	82	126	A9404.6	A9414.6
3/16	4.70	0.1850	82	126	A9404.7	A9414.7
	4.76	0.1874	86	146	A9403/16	A9413/16
	4.80	0.1890	87	132	A9404.8	A9414.8
	4.90	0.1929	87	132	A9404.9	A9414.9
	5.00	0.1969	87	132	A9405.0	A9415.0
13/64	5.10	0.2008	87	132	A9405.1	A9415.1
	5.16	0.2031	92	152	A94013/64	A94113/64
	5.20	0.2047	87	132	A9405.2	A9415.2
	5.30	0.2087	87	132	A9405.3	A9415.3
	5.40	0.2126	91	139	A9405.4	A9415.4
7/32	5.50	0.2165	91	139	A9405.5	A9415.5
	5.56	0.2189	92	152	A9407/32	A9417/32
	5.60	0.2205	91	139	A9405.6	A9415.6
	5.70	0.2244	91	139	A9405.7	A9415.7
	5.80	0.2283	91	139	A9405.8	A9415.8
15/64	5.90	0.2323	91	139	A9405.9	A9415.9
	5.95	0.2343	95	156	A94015/64	A94115/64
	6.00	0.2362	91	139	A9406.0	A9416.0
	6.10	0.2402	97	148	A9406.1	A9416.1
	6.20	0.2441	97	148	A9406.2	A9416.2
1/4	6.30	0.2480	97	148	A9406.3	A9416.3
	6.35	0.2500	95	156	A9401/4	A9411/4
	6.40	0.2520	97	148	A9406.4	A9416.4
	6.50	0.2559	97	148	A9406.5	A9416.5
	6.60	0.2598	97	148	A9406.6	A9416.6
17/64	6.70	0.2638	97	148	A9406.7	A9416.7
	6.75	0.2657	98	159	A94017/64	A94117/64
	6.80	0.2677	102	156	A9406.8	A9416.8
	6.90	0.2717	102	156	A9406.9	A9416.9
	7.00	0.2756	102	156	A9407.0	A9417.0
9/32	7.10	0.2795	102	156	A9407.1	A9417.1
	7.14	0.2811	98	159	A9409/32	A9419/32
	7.20	0.2835	102	156	A9407.2	A9417.2
	7.30	0.2874	102	156	A9407.3	A9417.3
	7.40	0.2913	102	156	A9407.4	A9417.4
19/64	7.50	0.2953	102	156	A9407.5	A9417.5
	7.54	0.2969	102	162	A94019/64	A94119/64
	7.60	0.2992	109	165	A9407.6	A9417.6
	7.70	0.3031	109	165	A9407.7	A9417.7
	7.80	0.3071	109	165	A9407.8	A9417.8
5/16	7.90	0.3110	109	165	A9407.9	A9417.9
	7.94	0.3126	102	162	A9405/16	A9415/16
	8.00	0.3150	109	165	A9408.0	A9418.0
	8.10	0.3189	109	165	A9408.1	A9418.1
	8.20	0.3228	109	165	A9408.2	A9418.2
21/64	8.30	0.3268	109	165	A9408.3	A9418.3
	8.33	0.3280	105	165	A94021/64	A94121/64
	8.40	0.3307	109	165	A9408.4	A9418.4
	8.50	0.3346	109	165	A9408.5	A9418.5
	8.60	0.3386	115	175	A9408.6	A9418.6

d ₁ Øh ₈ Inch	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	A940	A941
11/32	8.70	0.3425	115	175	A9408.7	A9418.7
	8.73	0.3437	105	165	A94011/32	A94111/32
	8.80	0.3465	115	175	A9408.8	A9418.8
	8.90	0.3504	115	175	A9408.9	A9418.9
	9.00	0.3543	115	175	A9409.0	A9419.0
23/64	9.10	0.3583	115	175	A9409.1	A9419.1
	9.13	0.3594	108	171	A94023/64	A94123/64
	9.20	0.3622	115	175	A9409.2	A9419.2
	9.30	0.3661	115	175	A9409.3	A9419.3
	9.40	0.3701	115	175	A9409.4	A9419.4
3/8	9.50	0.3740	115	175	A9409.5	A9419.5
	9.52	0.3748	108	171	A9403/8	A9413/8
	9.60	0.3780	121	184	A9409.6	A9419.6 ³⁾
	9.70	0.3819	121	184	A9409.7	A9419.7 ³⁾
	9.80	0.3858	121	184	A9409.8	A9419.8 ³⁾
25/64	9.90	0.3898	121	184	A9409.9	A9419.9 ³⁾
	9.92	0.3906	111	178	A94025/64	A94125/64 ³⁾
	10.00	0.3937	121	184	A94010.0	A94110.0 ³⁾
	10.20	0.4016	121	184	A94010.2	A94110.2 ³⁾
	10.30	0.4055	121	184	A94010.3	A94110.3 ³⁾
13/32	10.32	0.4063	111	178	A94013/32	A94113/32 ³⁾
	10.50	0.4134	121	184	A94010.5	A94110.5 ³⁾
27/64	10.72	0.4220	117	184	A94027/64	A94127/64 ³⁾
	11.00	0.4331	128	195	A94011.0	A94111.0 ³⁾
7/16	11.11	0.4374	117	184	A9407/16	A9417/16 ³⁾
	11.20	0.4409	128	195	A94011.2	A94111.2 ³⁾
	11.50	0.4528	128	195	A94011.5	A94111.5 ³⁾
29/64	11.51	0.4531	121	190	A94029/64	A94129/64 ³⁾
	11.80	0.4646	128	195	A94011.8	A94111.8 ³⁾
15/32	11.91	0.4689	121	190	A94015/32	A94115/32 ³⁾
	12.00	0.4724	134	205	A94012.0	A94112.0 ³⁾
31/64	12.20	0.4803	134	205	A94012.2	A94112.2 ³⁾
	12.30	0.4843	121	197	A94031/64	A94131/64 ³⁾
	12.50	0.4921	134	205	A94012.5	A94112.5 ³⁾
1/2	12.70	0.5000	121	197	A9401/2	A9411/2 ³⁾
	13.00	0.5118	134	205	A94013.0	A94113.0 ³⁾
33/64	13.10	0.5157	121	203	A94033/64	A94133/64 ³⁾
17/32	13.49	0.5311	121	203	A94017/32	
	13.50	0.5315	140	214	A94013.5	A94113.5 ³⁾
35/64	13.89	0.5469	124	210	A94035/64	A94135/64 ³⁾
	14.00	0.5512	140	214	A94014.0	A94114.0 ³⁾
9/16	14.29	0.5626	124	210	A9409/16	A9419/16 ³⁾
	14.50	0.5709	144	220	A94014.5	A94114.5 ³⁾
37/64	14.68	0.5780	124	222	A94037/64	A94137/64 ³⁾
	15.00	0.5906	144	220	A94015.0	A94115.0 ³⁾
19/32	15.08	0.5937	124	222	A94019/32	A94119/32 ³⁾
39/64	15.48	0.6094	124	222	A94039/64	A94139/64 ³⁾
	15.50	0.6102	149	227	A94015.5	A94115.5 ³⁾
5/8	15.88	0.6252	124	222	A9405/8	A9415/8 ³⁾
	16.00	0.6299	149	227	A94016.0	A94116.0 ³⁾
41/64	16.27	0.6406	130	229	A94041/64	
	16.50	0.6496	154	235	A94016.5	
21/32	16.67	0.6563	130	229	A94021/32	
	17.00	0.6693	154	235	A94017.0	
43/64	17.07	0.6720	137	235	A94043/64	
11/16	17.46	0.6874	137	235	A94011/16	
	17.50	0.6890	158	241	A94017.5	
45/64	17.86	0.7031	143	241	A94045/64	
	18.00	0.7087	158	241	A94018.0	
23/32	18.26	0.7189	143	241	A94023/32	
47/64	18.65	0.7343	149	248	A94047/64	
	19.00	0.7480	162	247	A94019.0	
3/4	19.05	0.7500	149	248	A9403/4	
	19.45	0.7657	152	251	A94049/64	
25/32	19.84	0.7811	152	251	A94025/32	
	20.00	0.7874	166	254	A94020.0	

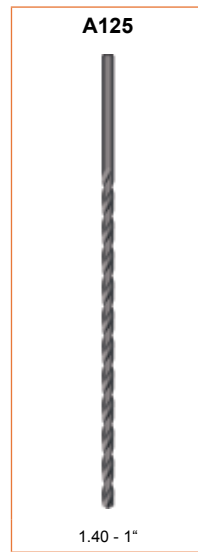
A125

- Extra hosszú csigafúró
- Burghiu extralung cu coada Morse
- Ekstra Uzun Matkap
- Extra Length Drill

Fényes kivitel 2,2mm alatt, 5/64"
 Lucios sub 2,2 mm, 5/64"
 5/64", 2.2mm'ye kadar parlak
 Bright below 2.2mm, 5/64"

A125	▪	1.1	1.2																		
	•	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
		6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1											

A125 HSS BS 328 10XD 118° ST N



d_1 \varnothing_{h_8} Inch	d_1 \varnothing_{h_8} mm	d_1 decimal Inch	l_2 mm	l_1 mm	A125
	1.40	0.0551	100	160	A1251.4X160
	1.50	0.0591	80	125	A1251.5X125
	1.50	0.0591	100	160	A1251.5X160
1/16	1.59	0.0626	80	125	A1251/16X125
1/16	1.59	0.0626	100	160	A1251/16X160
	1.80	0.0709	100	160	A1251.8X160
5/64	1.98	0.0780	80	125	A1255/64X125
5/64	1.98	0.0780	100	160	A1255/64X160
	2.00	0.0787	80	125	A1252.0X125
	2.00	0.0787	100	160	A1252.0X160
	2.20	0.0866	100	160	A1252.2X160
3/32	2.38	0.0937	80	125	A1253/32X125
3/32	2.38	0.0937	100	160	A1253/32X160
	2.50	0.0984	80	125	A1252.5X125
	2.50	0.0984	100	160	A1252.5X160
7/64	2.78	0.1094	80	125	A1257/64X125
7/64	2.78	0.1094	100	160	A1257/64X160
	3.00	0.1181	100	160	A1253.0X160
	3.00	0.1181	150	200	A1253.0X200
	3.00	0.1181	200	250	A1253.0X250
1/8	3.18	0.1252	100	160	A1251/8X160
1/8	3.18	0.1252	150	200	A1251/8X200
1/8	3.18	0.1252	200	250	A1251/8X250
1/8	3.18	0.1252	250	310	A1251/8X315
	3.30	0.1299	100	160	A1253.3X160
	3.50	0.1378	100	160	A1253.5X160
	3.50	0.1378	150	200	A1253.5X200
	3.50	0.1378	200	250	A1253.5X250
9/64	3.57	0.1406	100	160	A1259/64X160
9/64	3.57	0.1406	150	200	A1259/64X200
9/64	3.57	0.1406	250	310	A1259/64X315
5/32	3.97	0.1563	100	160	A1255/32X160
5/32	3.97	0.1563	150	200	A1255/32X200
5/32	3.97	0.1563	200	250	A1255/32X250

d_1 \varnothing_{h_8} Inch	d_1 \varnothing_{h_8} mm	d_1 decimal inch	l_2 mm	l_1 mm	A125
5/32	3.97	0.1563	250	310	A1255/32X315
	4.00	0.1575	100	160	A1254.0X160
	4.00	0.1575	150	200	A1254.0X200
	4.00	0.1575	200	250	A1254.0X250
	4.00	0.1575	250	310	A1254.0X315
11/64	4.37	0.1720	100	160	A12511/64X160
11/64	4.37	0.1720	150	200	A12511/64X200
11/64	4.37	0.1720	250	310	A12511/64X315
	4.50	0.1772	100	160	A1254.5X160
	4.50	0.1772	150	200	A1254.5X200
	4.50	0.1772	200	250	A1254.5X250
	4.50	0.1772	250	310	A1254.5X315
3/16	4.76	0.1874	100	160	A1253/16X160
3/16	4.76	0.1874	150	200	A1253/16X200
3/16	4.76	0.1874	200	250	A1253/16X250
3/16	4.76	0.1874	250	310	A1253/16X315
3/16	4.76	0.1874	300	400	A1253/16X400
	5.00	0.1969	100	160	A1255.0X160
	5.00	0.1969	150	200	A1255.0X200
	5.00	0.1969	200	250	A1255.0X250
	5.00	0.1969	250	310	A1255.0X315
	5.00	0.1969	300	400	A1255.0X400
13/64	5.16	0.2031	150	200	A12513/64X200
13/64	5.16	0.2031	200	250	A12513/64X250
13/64	5.16	0.2031	250	310	A12513/64X315
	5.50	0.2165	150	200	A1255.5X200
	5.50	0.2165	200	250	A1255.5X250
	5.50	0.2165	250	310	A1255.5X315
7/32	5.56	0.2189	150	200	A1257/32X200
7/32	5.56	0.2189	200	250	A1257/32X250
7/32	5.56	0.2189	250	310	A1257/32X315
15/64	5.95	0.2343	150	200	A12515/64X200
15/64	5.95	0.2343	200	250	A12515/64X250
15/64	5.95	0.2343	250	310	A12515/64X315
	6.00	0.2362	150	200	A1256.0X200
	6.00	0.2362	200	250	A1256.0X250
	6.00	0.2362	250	310	A1256.0X315
	6.00	0.2362	300	400	A1256.0X400
1/4	6.35	0.2500	150	200	A1251/4X200
1/4	6.35	0.2500	200	250	A1251/4X250
1/4	6.35	0.2500	250	310	A1251/4X315
1/4	6.35	0.2500	300	400	A1251/4X400
1/4	6.35	0.2500	400	460	A1251/4X500
	6.50	0.2559	150	200	A1256.5X200
	6.50	0.2559	200	250	A1256.5X250
	6.50	0.2559	250	310	A1256.5X315
17/64	6.75	0.2657	150	200	A12517/64X200
17/64	6.75	0.2657	200	250	A12517/64X250
17/64	6.75	0.2657	400	460	A12517/64X500
	7.00	0.2756	150	200	A1257.0X200
	7.00	0.2756	200	250	A1257.0X250
	7.00	0.2756	250	310	A1257.0X315
9/32	7.14	0.2811	150	200	A1259/32X200
9/32	7.14	0.2811	200	250	A1259/32X250
9/32	7.14	0.2811	250	310	A1259/32X315
9/32	7.14	0.2811	400	460	A1259/32X500
	7.50	0.2953	150	200	A1257.5X200
	7.50	0.2953	200	250	A1257.5X250
	7.50	0.2953	250	310	A1257.5X315
19/64	7.54	0.2969	250	310	A12519/64X315
19/64	7.54	0.2969	400	460	A12519/64X500
5/16	7.94	0.3126	150	200	A1255/16X200
5/16	7.94	0.3126	200	250	A1255/16X250
5/16	7.94	0.3126	250	310	A1255/16X315
5/16	7.94	0.3126	300	400	A1255/16X400
5/16	7.94	0.3126	400	460	A1255/16X500
	8.00	0.3150	200	250	A1258.0X250
	8.00	0.3150	250	310	A1258.0X315
	8.00	0.3150	300	400	A1258.0X400
21/64	8.33	0.3280	250	310	A12521/64X315

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A125
21/64	8.33	0.3280	400	460	A12521/64X500
	8.50	0.3346	200	250	A1258.5X250
	8.50	0.3346	250	310	A1258.5X315
11/32	8.73	0.3437	200	250	A12511/32X250
11/32	8.73	0.3437	250	310	A12511/32X315
11/32	8.73	0.3437	300	400	A12511/32X400
11/32	8.73	0.3437	400	460	A12511/32X500
	9.00	0.3543	200	250	A1259.0X250
	9.00	0.3543	250	310	A1259.0X315
	9.00	0.3543	300	400	A1259.0X400
23/64	9.13	0.3594	250	310	A12523/64X315
23/64	9.13	0.3594	400	460	A12523/64X500
	9.50	0.3740	200	250	A1259.5X250
	9.50	0.3740	250	310	A1259.5X315
3/8	9.52	0.3748	200	250	A1253/8X250
3/8	9.52	0.3748	250	310	A1253/8X315
3/8	9.52	0.3748	300	400	A1253/8X400
3/8	9.52	0.3748	400	460	A1253/8X500
25/64	9.92	0.3906	250	310	A12525/64X315
25/64	9.92	0.3906	400	460	A12525/64X500
	10.00	0.3937	200	250	A12510.0X250
	10.00	0.3937	250	310	A12510.0X315
	10.00	0.3937	300	400	A12510.0X400
13/32	10.32	0.4063	200	250	A12513/32X250
13/32	10.32	0.4063	250	310	A12513/32X315
13/32	10.32	0.4063	400	460	A12513/32X500
	10.50	0.4134	200	250	A12510.5X250
	10.50	0.4134	250	310	A12510.5X315
	10.50	0.4134	300	400	A12510.5X400
27/64	10.72	0.4220	250	310	A12527/64X315
	11.00	0.4331	200	250	A12511.0X250
	11.00	0.4331	250	310	A12511.0X315
	11.00	0.4331	300	400	A12511.0X400
7/16	11.11	0.4374	200	250	A1257/16X250
7/16	11.11	0.4374	250	310	A1257/16X315
7/16	11.11	0.4374	300	400	A1257/16X400
7/16	11.11	0.4374	400	460	A1257/16X500
29/64	11.51	0.4531	250	310	A12529/64X315
29/64	11.51	0.4531	400	460	A12529/64X500
15/32	11.91	0.4689	200	250	A12515/32X250
15/32	11.91	0.4689	250	310	A12515/32X315
15/32	11.91	0.4689	400	460	A12515/32X500
	12.00	0.4724	200	250	A12512.0X250
	12.00	0.4724	250	310	A12512.0X315
	12.00	0.4724	300	400	A12512.0X400
31/64	12.30	0.4843	250	310	A12531/64X315
31/64	12.30	0.4843	400	460	A12531/64X500
1/2	12.70	0.5000	200	250	A1251/2X250
1/2	12.70	0.5000	250	310	A1251/2X315
1/2	12.70	0.5000	300	400	A1251/2X400
1/2	12.70	0.5000	400	460	A1251/2X500
	13.00	0.5118	250	310	A12513.0X315
	13.00	0.5118	300	400	A12513.0X400
33/64	13.10	0.5157	250	310	A12533/64X315
33/64	13.10	0.5157	400	460	A12533/64X500
17/32	13.49	0.5311	250	310	A12517/32X315
17/32	13.49	0.5311	400	460	A12517/32X500
35/64	13.89	0.5469	250	310	A12535/64X315
35/64	13.89	0.5469	400	460	A12535/64X500
	14.00	0.5512	250	310	A12514.0X315
	14.00	0.5512	300	400	A12514.0X400
9/16	14.29	0.5626	250	310	A1259/16X315
9/16	14.29	0.5626	400	460	A1259/16X500
37/64	14.68	0.5780	250	310	A12537/64X315
19/32	15.08	0.5937	250	310	A12519/32X315
19/32	15.08	0.5937	400	460	A12519/32X500
39/64	15.48	0.6094	250	310	A12539/64X315
39/64	15.48	0.6094	400	460	A12539/64X500
5/8	15.88	0.6252	250	310	A1255/8X315
5/8	15.88	0.6252	400	460	A1255/8X500

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A125
21/32	16.67	0.6563	250	310	A12521/32X315
21/32	16.67	0.6563	400	460	A12521/32X500
11/16	17.46	0.6874	250	310	A12511/16X315
11/16	17.46	0.6874	400	460	A12511/16X500
23/32	18.26	0.7189	250	310	A12523/32X315
23/32	18.26	0.7189	400	460	A12523/32X500
3/4	19.05	0.7500	250	310	A1253/4X315
3/4	19.05	0.7500	400	460	A1253/4X500
25/32	19.84	0.7811	400	460	A12525/32X500
13/16	20.64	0.8126	400	460	A12513/16X500
7/8	22.22	0.8748	400	460	A1257/8X500
15/16	23.81	0.9374	400	460	A12515/16X500
1"	25.40	1.0000	400	460	A1251X500

A976 • PFX Extra Hosszú Csigaúró

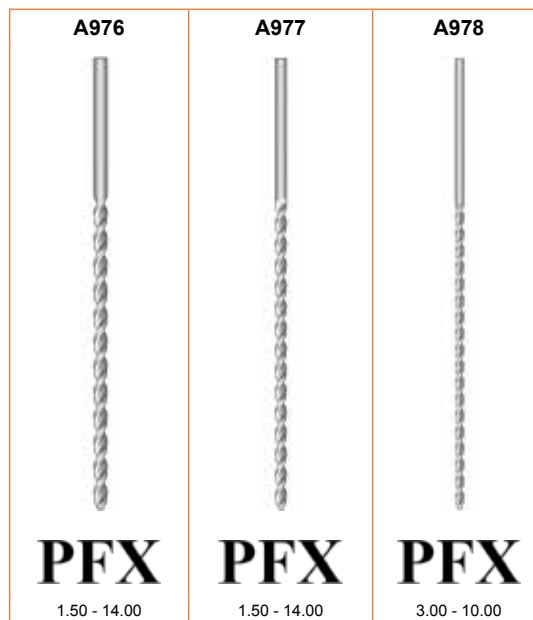
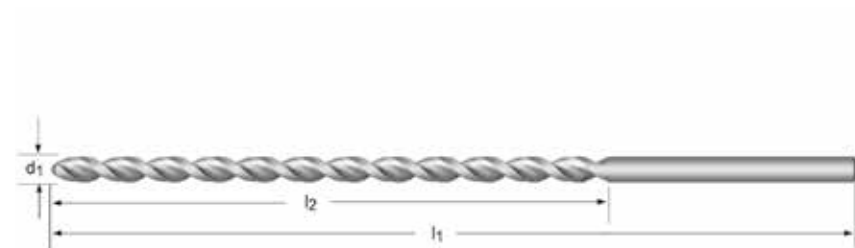
A977 • Burghiu extralung PFX

• PFX Ekstra Uzun Matkap

A978 • PFX Extra Length Drill

A976; A977; A978	▪	1.3	1.4	1.5	1.6													
	•	1.1	1.2	2.1	2.2	2.3	3.2	3.3	3.4	4.1	4.2	4.3	6.3	6.4	7.4			

A976	HSS-E	DIN 1869/1	15XD	130°				W			
A977	HSS-E	DIN 1869/2	20XD	130°				W			
A978	HSS-E	DIN 1869/3	25XD	130°				W			



d_1 \varnothing_{h_8} Inch	d_1 \varnothing_{h_8} mm	d_1 decimal Inch	l_2 mm	l_1 mm	A976	A977	A978
	1.50	0.0591	75	115	A9761.5		
1/16	1.50	0.0591	100	150		A9771.5 ⁴⁾	
	1.59	0.0626	100	150		A9771/16 ⁴⁾	
	2.00	0.0787	110	160		A9772.0 ⁴⁾	
	2.00	0.0787	85	125	A9762.0X125		
3/32	2.10	0.0827	85	125	A9762.1X125		
	2.20	0.0866	90	135	A9762.2X135		
	2.30	0.0906	90	135	A9762.3X135		
	2.38	0.0937	115	170		A9773/32 ⁴⁾	
	2.40	0.0945	95	140	A9762.4X140		
	2.50	0.0984	95	140	A9762.5X140		
	2.60	0.1024	95	140	A9762.6X140		
	2.70	0.1063	100	150	A9762.7X150		
	2.80	0.1102	100	150	A9762.8X150		
	2.90	0.1142	100	150	A9762.9X150		
	3.00	0.1181	100	150	A9763.0X150		
		3.00	0.1181	130	190		A9773.0X190
1/8	3.00	0.1181	160	240			A9783.0 ⁴⁾
	3.10	0.1220	105	155	A9763.1X155		
	3.18	0.1252	105	155	A9761/8		

4) A dolgozó hossz és teljes hossz a Dormer szabvány szerint / Elicea si lungimea totala conf. Standard DORMER / Dormer Standart / Dormer Standard

d ₁ Øh ₈ Inch	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	A976	A977	A978	
1/8	3.18	0.1252	135	200				
	3.20	0.1260	105	155	A9763.2X155	A9771/8		
	3.30	0.1299	105	155	A9763.3X155			
	3.40	0.1339	115	165	A9763.4X165			
	3.50	0.1378	115	165	A9763.5X165			
	3.50	0.1378	145	210		A9773.5X210		
	3.50	0.1378	180	265			A9783.5X265	
	3.60	0.1417	115	165	A9763.6X165			
	3.70	0.1457	115	165	A9763.7X165			
	3.80	0.1496	120	175	A9763.8X175			
5/32	3.90	0.1535	120	175	A9763.9X175			
	3.97	0.1563	120	175	A9765/32			
	4.00	0.1575	120	175	A9764.0X175			
	4.00	0.1575	150	220		A9774.0X220		
	4.00	0.1575	190	280			A9784.0X280	
	4.10	0.1614	120	175	A9764.1X175			
	4.20	0.1654	120	175	A9764.2X175			
	4.30	0.1693	125	185	A9764.3X185			
	4.40	0.1732	125	185	A9764.4X185			
	4.50	0.1772	125	185	A9764.5X185			
3/16	4.50	0.1772	160	235		A9774.5X235		
	4.50	0.1772	200	295			A9784.5X295	
	4.60	0.1811	125	185	A9764.6X185			
	4.70	0.1850	125	185	A9764.7X185			
	4.76	0.1874	135	195	A9763/16			
	3/16	4.76	0.1874	170	245		A9773/16	
		4.80	0.1890	135	195	A9764.8X195		
		4.90	0.1929	135	195	A9764.9X195		
		5.00	0.1969	135	195	A9765.0X195		
		5.00	0.1969	170	245		A9775.0X245	
5.00		0.1969	210	315			A9785.0X315	
5.10		0.2008	135	195	A9765.1X195			
5.20		0.2047	135	195	A9765.2X195			
5.30		0.2087	135	195	A9765.3X195			
5.40		0.2126	140	205	A9765.4X205			
1/4	5.50	0.2165	140	205	A9765.5X205			
	5.50	0.2165	180	260		A9775.5X260		
	5.50	0.2165	225	330			A9785.5X330	
	5.60	0.2205	140	205	A9765.6X205			
	5.70	0.2244	140	205	A9765.7X205			
	5.80	0.2283	140	205	A9765.8X205			
	5.90	0.2323	140	205	A9765.9X205			
	6.00	0.2362	140	205	A9766.0X205			
	6.00	0.2362	180	260		A9776.0X260		
	6.00	0.2362	225	330			A9786.0X330	
1/4	6.10	0.2402	150	215	A9766.1X215			
	6.20	0.2441	150	215	A9766.2X215			
	6.30	0.2480	150	215	A9766.3X215			
	6.35	0.2500	150	215	A9761/4			
	6.35	0.2500	190	275		A9771/4		
	6.35	0.2500	235	350			A9781/4	
	6.40	0.2520	150	215	A9766.4X215			
	6.50	0.2559	150	215	A9766.5X215			
	6.50	0.2559	190	275		A9776.5X275		
	6.50	0.2559	235	350			A9786.5X350	
1/4	6.60	0.2598	150	215	A9766.6X215			
	6.70	0.2638	150	215	A9766.7X215			
	6.80	0.2677	155	225	A9766.8X225			
	6.90	0.2717	155	225	A9766.9X225			
	7.00	0.2756	155	225	A9767.0X225			
	7.00	0.2756	200	290		A9777.0X290		
	7.00	0.2756	250	370			A9787.0X370	
	7.50	0.2953	155	225	A9767.5X225			
	7.50	0.2953	200	290		A9777.5X290		
	7.50	0.2953	250	370			A9787.5X370	
5/16	7.94	0.3126	165	240	A9765/16			
	8.00	0.3150	165	240	A9768.0X240			
	8.00	0.3150	210	305		A9778.0X305		
	8.00	0.3150	265	390			A9788.0X390	
	8.50	0.3346	165	240	A9768.5X240			

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	A976	A977	A978
	8.50	0.3346	210	305		A9778.5X305	
	8.50	0.3346	265	390			A9788.5X390
11/32	8.73	0.3437	175	250	A97611/32		
11/32	8.73	0.3437	220	320		A97711/32	
	9.00	0.3543	175	250	A9769.0X250		
	9.00	0.3543	220	320		A9779.0X320	
	9.00	0.3543	280	410			A9789.0X410
	9.50	0.3740	175	250	A9769.5X250		
	9.50	0.3740	220	320		A9779.5X320	
	9.50	0.3740	280	410			A9789.5X410
3/8	9.52	0.3748	185	265	A9763/8		
	10.00	0.3937	185	265	A97610.0X265		
	10.00	0.3937	235	340		A97710.0X340	
	10.00	0.3937	295	430			A97810.0X430
	10.50	0.4134	185	265	A97610.5		
	10.50	0.4134	235	340		A97710.5	
	11.00	0.4331	195	280	A97611.0		
	11.00	0.4331	250	365		A97711.0	
7/16	11.11	0.4374	195	280	A9767/16		
	11.50	0.4528	195	280	A97611.5		
	11.50	0.4528	250	365		A97711.5	
	12.00	0.4724	205	295	A97612.0		
	12.00	0.4724	260	375		A97712.0	
	12.50	0.4921	205	295	A97612.5		
	12.50	0.4921	260	375		A97712.5	
1/2	12.70	0.5000	205	295	A9761/2		
	13.00	0.5118	205	295	A97613.0		
	13.00	0.5118	260	375		A97713.0	
	14.00	0.5512	215	310	A97614.0		
	14.00	0.5512	270	390		A97714.0	

A130

- Kúpos Szárú Csigafúró
- Burghiu cu coada Morse
- Konik Şaftlı Matkap
- Taper Shank Drill

14,0 mm felett - vékonyított élgeometria
 Peste 14,0 mm miez subtiat
 14.0mm'den itibaren inceltmiş uç
 Above 14.0mm - Point Thinned

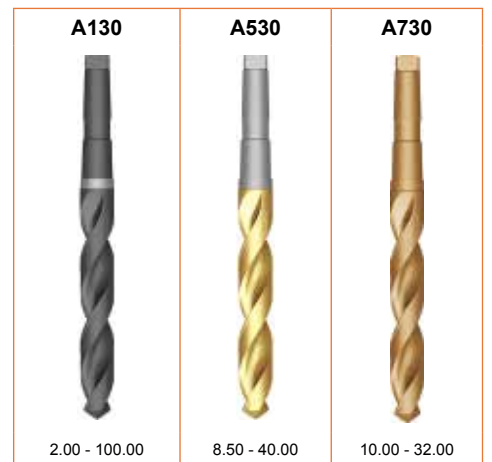
A530

- Kúpos Szárú Csigafúró
- Burghiu cu coada Morse
- Konik Şaftlı Matkap
- Taper Shank Drill

A730

A130	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1															
A530	▪	1.1	1.2	1.3	1.4	3.2	3.3	6.3													
	•	1.5	1.6	2.1	2.2	2.3	3.1	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.4	7.1	7.2	7.3	7.4
		8.1	8.2	8.3	9.1																
A730	▪	1.5	1.6	2.2	2.3	3.4															
	•	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2
		7.3	7.4	8.1	8.2	8.3	9.1														

A130	HSS	DIN 345	4XD	118°	ST		N			
A530	HSS	DIN 345	4XD	118°	TiN		N			
A730	HSS-E	DIN 345	4XD	118°	Bronze		N			



d ₁ Øh ₈ Inch	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	MK	A130	A530	A730
	2.00	0.0787	24	105	1	A1302.0		
	2.50	0.0984	30	111	1	A1302.5		
	3.00	0.1181	33	114	1	A1303.0		
1/8	3.18	0.1252	36	117	1	A1301/8		
	3.20	0.1260	36	117	1	A1303.2		
	3.25	0.1280	36	117	1	A1303.25		
	3.30	0.1299	36	117	1	A1303.3		
	3.50	0.1378	39	120	1	A1303.5		
9/64	3.57	0.1406	39	120	1	A1309/64		
	3.75	0.1476	39	120	1	A1303.75		
5/32	3.97	0.1563	43	124	1	A1305/32		
	4.00	0.1575	43	124	1	A1304.0		

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
	4.10	0.1614	43	124	1	A1304.1		
	4.20	0.1654	43	124	1	A1304.2		
	4.25	0.1673	43	124	1	A1304.25		
11/64	4.37	0.1720	47	128	1	A13011/64		
	4.50	0.1772	47	128	1	A1304.5		
	4.75	0.1870	52	128	1	A1304.75		
3/16	4.76	0.1874	52	133	1	A1303/16		
	4.80	0.1890	52	133	1	A1304.8		
	4.90	0.1929	52	133	1	A1304.9		
	5.00	0.1969	52	133	1	A1305.0		
	5.10	0.2008	52	133	1	A1305.1		
13/64	5.16	0.2031	52	133	1	A13013/64		
	5.20	0.2047	52	133	1	A1305.2		
	5.25	0.2067	52	133	1	A1305.25		
	5.40	0.2126	57	138	1	A1305.4		
	5.50	0.2165	57	138	1	A1305.5		
7/32	5.56	0.2189	57	138	1	A1307/32		
	5.70	0.2244	57	138	1	A1305.7		
	5.75	0.2264	57	138	1	A1305.75		
	5.80	0.2283	57	138	1	A1305.8		
	5.90	0.2323	57	138	1	A1305.9		
15/64	5.95	0.2343	57	138	1	A13015/64		
	6.00	0.2362	57	138	1	A1306.0		
	6.10	0.2402	63	144	1	A1306.1		
	6.20	0.2441	63	144	1	A1306.2		
	6.25	0.2461	63	144	1	A1306.25		
	6.30	0.2480	63	144	1	A1306.3		
1/4	6.35	0.2500	63	144	1	A1301/4		
	6.40	0.2520	63	144	1	A1306.4		
	6.50	0.2559	63	144	1	A1306.5		
	6.60	0.2598	63	144	1	A1306.6		
	6.70	0.2638	63	144	1	A1306.7		
17/64	6.75	0.2657	69	150	1	A13017/64		
	6.75	0.2657	69	150	1	A1306.75		
	6.80	0.2677	69	150	1	A1306.8		
	6.90	0.2717	69	150	1	A1306.9		
	7.00	0.2756	69	150	1	A1307.0		
9/32	7.14	0.2811	69	150	1	A1309/32		
	7.20	0.2835	69	150	1	A1307.2		
	7.25	0.2854	69	150	1	A1307.25		
	7.30	0.2874	69	150	1	A1307.3		
	7.40	0.2913	69	150	1	A1307.4		
	7.50	0.2953	69	150	1	A1307.5		
19/64	7.54	0.2969	75	156	1	A13019/64		
	7.70	0.3031	75	156	1	A1307.7		
	7.75	0.3051	75	156	1	A1307.75		
	7.80	0.3071	75	156	1	A1307.8		
	7.90	0.3110	75	156	1	A1307.9		
5/16	7.94	0.3126	75	156	1	A1305/16		
	8.00	0.3150	75	156	1	A1308.0		
	8.10	0.3189	75	156	1	A1308.1		
	8.20	0.3228	75	156	1	A1308.2		
	8.25	0.3248	75	156	1	A1308.25		
	8.30	0.3268	75	156	1	A1308.3		
21/64	8.33	0.3280	75	156	1	A13021/64		
	8.40	0.3307	75	156	1	A1308.4		
	8.50	0.3346	75	156	1	A1308.5	A5308.5	
	8.60	0.3386	81	162	1	A1308.6		
	8.70	0.3425	81	162	1	A1308.7		
11/32	8.73	0.3437	81	162	1	A13011/32		
	8.75	0.3445	81	162	1	A1308.75		
	8.80	0.3465	81	162	1	A1308.8		
	8.90	0.3504	81	162	1	A1308.9		
	9.00	0.3543	81	162	1	A1309.0	A5309.0	
	9.10	0.3583	81	162	1	A1309.1		
23/64	9.13	0.3594	81	162	1	A13023/64		
	9.20	0.3622	81	162	1	A1309.2		
	9.25	0.3642	81	162	1	A1309.25		
	9.30	0.3661	81	162	1	A1309.3		
	9.50	0.3740	81	162	1	A1309.5		

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
3/8	9.52	0.3748	87	168	1	A1303/8		
	9.60	0.3780	87	168	1	A1309.6		
	9.70	0.3819	87	168	1	A1309.7		
	9.75	0.3839	87	168	1	A1309.75		
	9.80	0.3858	87	168	1	A1309.8		
25/64	9.90	0.3898	87	168	1	A1309.9		
	9.92	0.3906	87	168	1	A13025/64		
	10.00	0.3937	87	168	1	A13010.0	A53010.0	A73010.0
	10.10	0.3976	87	168	1	A13010.1		
	10.20	0.4016	87	168	1	A13010.2	A53010.2	A73010.2
13/32	10.25	0.4035	87	168	1	A13010.25		
	10.30	0.4055	87	168	1	A13010.3		
	10.32	0.4063	87	168	1	A13013/32		
	10.50	0.4134	87	168	1	A13010.5	A53010.5	A73010.5
	27/64	10.72	0.4220	94	175	1	A13027/64	
10.75		0.4232	94	175	1	A13010.75		
10.80		0.4252	94	175	1	A13010.8		A73010.8
10.90		0.4291	94	175	1	A13010.9		
11.00		0.4331	94	175	1	A13011.0	A53011.0	A73011.0
7/16	11.10	0.4370	94	175	1	A13011.1		
	11.11	0.4374	94	175	1	A1307/16		
	11.20	0.4409	94	175	1	A13011.2		
	11.25	0.4429	94	175	1	A13011.25		
	11.30	0.4449	94	175	1	A13011.3		
29/64	11.40	0.4488	94	175	1	A13011.4		
	11.50	0.4528	94	175	1	A13011.5	A53011.5	A73011.5
	11.51	0.4531	94	175	1	A13029/64		
	11.60	0.4567	94	175	1	A13011.6		
	11.70	0.4606	94	175	1	A13011.7		
15/32	11.75	0.4626	94	175	1	A13011.75	A53011.75	
	11.80	0.4646	94	175	1	A13011.8		A73011.8
	11.90	0.4685	101	182	1	A13011.9		
	11.91	0.4689	101	182	1	A13015/32		
	12.00	0.4724	101	182	1	A13012.0	A53012.0	A73012.0
31/64	12.10	0.4764	101	182	1	A13012.1		
	12.20	0.4803	101	182	1	A13012.2		A73012.2
	12.25	0.4823	101	182	1	A13012.25		
	12.30	0.4843	101	182	1	A13012.3		
	12.30	0.4843	101	182	1	A13031/64		
1/2	12.40	0.4882	101	182	1	A13012.4		
	12.50	0.4921	101	182	1	A13012.5	A53012.5	A73012.5
	12.60	0.4961	101	182	1	A13012.6		
	12.70	0.5000	101	182	1	A13012.7		
	12.70	0.5000	101	182	1	A1301/2		
33/64	12.75	0.5020	101	182	1	A13012.75		
	12.80	0.5039	101	182	1	A13012.8		A73012.8
	12.90	0.5079	101	182	1	A13012.9		
	13.00	0.5118	101	182	1	A13013.0	A53013.0	A73013.0
	13.10	0.5157	101	182	1	A13033/64		
17/32	13.20	0.5197	101	182	1	A13013.2		
	13.25	0.5217	108	189	1	A13013.25		
	13.49	0.5311	108	189	1	A13017/32		
	13.50	0.5315	108	189	1	A13013.5	A53013.5	A73013.5
	13.60	0.5354	108	189	1	A13013.6		
35/64	13.70	0.5394	108	189	1	A13013.7		
	13.75	0.5413	108	189	1	A13013.75		
	13.80	0.5433	108	189	1	A13013.8		A73013.8
	13.89	0.5469	108	189	1	A13035/64		
	13.90	0.5472	108	189	1	A13013.9		
9/16	14.00	0.5512	108	189	1	A13014.0	A53014.0	A73014.0
	14.10	0.5551	114	212	2	A13014.1		
	14.20	0.5591	114	212	2	A13014.2		
	14.25	0.5610	114	212	2	A13014.25		A73014.25
	14.29	0.5626	114	212	2	A1309/16		
37/64	14.30	0.5630	114	212	2	A13014.3		
	14.40	0.5669	114	212	2	A13014.4		
	14.50	0.5709	114	212	2	A13014.5	A53014.5	A73014.5
	14.60	0.5748	114	212	2	A13014.6		
	14.68	0.5780	114	212	2	A13037/64		
	14.70	0.5787	114	212	2	A13014.7		

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
	14.75	0.5807	114	212	2	A13014.75		A73014.75
	14.80	0.5827	114	212	2	A13014.8		
	14.90	0.5866	114	212	2	A13014.9		
19/32	15.00	0.5906	114	212	2	A13015.0	A53015.0	A73015.0
	15.08	0.5937	120	218	2	A13019/32		
	15.10	0.5945	120	218	2	A13015.1		
	15.20	0.5984	120	218	2	A13015.2		
39/64	15.25	0.6004	120	218	2	A13015.25	A53015.25	A73015.25
	15.48	0.6094	120	218	2	A13039/64		
	15.50	0.6102	120	218	2	A13015.5	A53015.5	A73015.5
	15.70	0.6181	120	218	2	A13015.7		
	15.75	0.6201	120	218	2	A13015.75		A73015.75
	15.80	0.6220	120	218	2	A13015.8		
5/8	15.88	0.6252	120	218	2	A1305/8		
	15.90	0.6260	120	218	2	A13015.9		
	16.00	0.6299	120	218	2	A13016.0	A53016.0	A73016.0
	16.10	0.6339	125	223	2	A13016.1		
	16.20	0.6378	125	223	2	A13016.2		
	16.25	0.6398	120	218	2			A73016.25
41/64	16.25	0.6398	125	223	2	A13016.25		
	16.27	0.6406	125	223	2	A13041/64		
	16.50	0.6496	125	223	2	A13016.5	A53016.5	A73016.5
21/32	16.67	0.6563	125	223	2	A13021/32		
	16.75	0.6594	125	223	2	A13016.75		
	17.00	0.6693	125	223	2	A13017.0	A53017.0	A73017.0
43/64	17.07	0.6720	130	228	2	A13043/64		
	17.25	0.6791	130	228	2	A13017.25		A73017.25
11/16	17.46	0.6874	130	228	2	A13011/16		
	17.50	0.6890	130	228	2	A13017.5	A53017.5	A73017.5
	17.75	0.6988	130	228	2	A13017.75		A73017.75
45/64	17.86	0.7031	130	228	2	A13045/64		
	18.00	0.7087	130	228	2	A13018.0	A53018.0	A73018.0
	18.25	0.7185	135	233	2	A13018.25		A73018.25
23/32	18.26	0.7189	135	233	2	A13023/32		
	18.50	0.7283	135	233	2	A13018.5	A53018.5	A73018.5
47/64	18.65	0.7343	135	233	2	A13047/64		
	18.75	0.7382	135	233	2	A13018.75		A73018.75
	19.00	0.7480	135	233	2	A13019.0	A53019.0	A73019.0
3/4	19.05	0.7500	140	238	2	A1303/4		
	19.25	0.7579	140	238	2	A13019.25		A73019.25
49/64	19.45	0.7657	140	238	2	A13049/64		
	19.50	0.7677	140	238	2	A13019.5	A53019.5	A73019.5
	19.75	0.7776	140	238	2	A13019.75		A73019.75
25/32	19.84	0.7811	140	238	2	A13025/32		
	20.00	0.7874	140	238	2	A13020.0	A53020.0	A73020.0
51/64	20.24	0.7969	145	243	2	A13051/64		
	20.25	0.7972	145	243	2	A13020.25		A73020.25
	20.40	0.8031	145	243	2	A13020.4		
	20.50	0.8071	145	243	2	A13020.5	A53020.5	A73020.5
13/16	20.64	0.8126	145	243	2	A13013/16		
	20.75	0.8169	145	243	2	A13020.75		A73020.75
	21.00	0.8268	145	243	2	A13021.0	A53021.0	A73021.0
53/64	21.03	0.8280	145	243	2	A13053/64		
	21.25	0.8366	150	248	2	A13021.25		
27/32	21.43	0.8437	150	248	2	A13027/32		
	21.50	0.8465	150	248	2	A13021.5	A53021.5	A73021.5
	21.75	0.8563	150	248	2	A13021.75		
55/64	21.83	0.8594	150	248	2	A13055/64		
	22.00	0.8661	150	248	2	A13022.0	A53022.0	A73022.0
7/8	22.22	0.8748	150	248	2	A1307/8		
	22.25	0.8760	150	248	2	A13022.25		
	22.50	0.8858	155	253	2	A13022.5	A53022.5	A73022.5
57/64	22.62	0.8906	155	253	2	A13057/64		
	22.75	0.8957	155	253	2	A13022.75		
	23.00	0.9055	155	253	2	A13023.0	A53023.0	A73023.0
29/32	23.02	0.9063	155	253	2	A13029/32		
	23.25	0.9154	155	276	3	A13023.25		
59/64	23.42	0.9220	155	276	3	A13059/64		
	23.50	0.9252	155	276	3	A13023.5	A53023.5	A73023.5
	23.75	0.9350	160	281	3	A13023.75		

d ₁ Øh ₈ Inch	d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	MK	A130	A530	A730
15/16	23.81	0.9374	160	281	3	A13015/16		
	24.00	0.9449	160	281	3	A13024.0	A53024.0	A73024.0
61/64	24.21	0.9531	160	281	3	A13061/64		
	24.25	0.9547	160	281	3	A13024.25		
31/32	24.50	0.9646	160	281	3	A13024.5	A53024.5	A73024.5
	24.61	0.9689	160	281	3	A13031/32		
	24.75	0.9744	160	281	3	A13024.75		
63/64	25.00	0.9843	160	281	3	A13025.0	A53025.0	A73025.0
	25.00	0.9843	160	286	3	A13063/64		
	25.25	0.9941	165	286	3	A13025.25		
1"	25.40	1.0000	165	286	3	A1301		
	25.50	1.0039	165	286	3	A13025.5	A53025.5	A73025.5
	25.75	1.0138	165	286	3	A13025.75		
	26.00	1.0236	165	286	3	A13026.0	A53026.0	A73026.0
	26.25	1.0335	165	286	3	A13026.25		
	26.50	1.0433	165	286	3	A13026.5	A53026.5	A73026.5
	26.75	1.0531	170	291	3	A13026.75		
	1.1/16	26.99	1.0626	170	291	3	A1301.1/16	
27.00		1.0630	170	291	3	A13027.0	A53027.0	A73027.0
27.25		1.0728	170	291	3	A13027.25		
27.50		1.0827	170	291	3	A13027.5	A53027.5	A73027.5
27.75		1.0925	170	291	3	A13027.75		
1.1/8	28.00	1.1024	170	291	3	A13028.0	A53028.0	A73028.0
	28.25	1.1122	175	296	3	A13028.25		
	28.50	1.1220	175	296	3	A13028.5	A53028.5	A73028.5
	28.58	1.1252	175	296	3	A1301.1/8		
	28.75	1.1319	175	296	3	A13028.75		
	29.00	1.1417	175	296	3	A13029.0	A53029.0	A73029.0
	29.25	1.1516	175	296	3	A13029.25		
	1.5/32	29.37	1.1563	175	296	3	A1301.5/32	
29.50		1.1614	175	296	3	A13029.5	A53029.5	
29.75		1.1713	175	296	3	A13029.75		
1.3/16	30.00	1.1811	175	296	3	A13030.0	A53030.0	A73030.0
	30.16	1.1874	180	301	3	A1301.3/16		
	30.25	1.1909	180	301	3	A13030.25		
	30.50	1.2008	180	301	3	A13030.5		
	30.75	1.2106	180	301	3	A13030.75		
1.7/32	30.96	1.2189	180	301	3	A1301.7/32		
	31.00	1.2205	180	301	3	A13031.0	A53031.0	A73031.0
	31.25	1.2303	180	301	3	A13031.25		
	31.50	1.2402	180	301	3	A13031.5		
1.1/4	31.75	1.2500	185	306	3	A13031.75		
	31.75	1.2500	185	306	3	A1301.1/4		
	32.00	1.2598	185	334	4	A13032.0	A53032.0	A73032.0
1.9/32	32.50	1.2795	185	334	4	A13032.5		
	32.54	1.2811	185	334	4	A1301.9/32		
1.5/16	33.00	1.2992	185	334	4	A13033.0	A53033.0	
	33.34	1.3126	185	334	4	A1301.5/16		
	33.50	1.3189	185	334	4	A13033.5		
1.11/32	34.00	1.3386	190	339	4	A13034.0		
	34.13	1.3437	190	339	4	A1301.11/32		
	34.50	1.3583	190	339	4	A13034.5		
1.3/8	34.93	1.3752	190	339	4	A1301.3/8		
	35.00	1.3780	190	339	4	A13035.0	A53035.0	
	35.50	1.3976	190	339	4	A13035.5		
1.13/32	35.72	1.4063	195	344	4	A1301.13/32		
	36.00	1.4173	195	344	4	A13036.0		
	36.50	1.4370	195	344	4	A13036.5		
1.7/16	36.51	1.4374	195	344	4	A1301.7/16		
	37.00	1.4567	195	344	4	A13037.0		
	37.50	1.4764	195	344	4	A13037.5		
	38.00	1.4961	200	349	4	A13038.0		
1.1/2	38.10	1.5000	200	349	4	A1301.1/2		
	38.50	1.5157	200	349	4	A13038.5		
	39.00	1.5354	200	349	4	A13039.0		
	39.50	1.5551	200	349	4	A13039.5		
1.9/16	39.69	1.5626	200	349	4	A1301.9/16		
	40.00	1.5748	200	349	4	A13040.0	A53040.0	
	40.50	1.5945	205	354	4	A13040.5		
	41.00	1.6142	205	354	4	A13041.0		

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A130	A530	A730
1.5/8	41.28	1.6252	205	354	4	A1301.5/8		
	41.50	1.6339	205	354	4	A13041.5		
	42.00	1.6535	205	354	4	A13042.0		
	42.50	1.6732	205	354	4	A13042.5		
1.11/16	42.86	1.6874	210	359	4	A1301.11/16		
	43.00	1.6929	210	359	4	A13043.0		
	43.50	1.7126	210	359	4	A13043.5		
	44.00	1.7323	210	359	4	A13044.0		
1.3/4	44.45	1.7500	210	359	4	A1301.3/4		
	44.50	1.7520	210	359	4	A13044.5		
	45.00	1.7717	210	359	4	A13045.0		
	45.50	1.7913	215	364	4	A13045.5		
	46.00	1.8110	215	364	4	A13046.0		
	46.50	1.8307	215	364	4	A13046.5		
	47.00	1.8504	215	364	4	A13047.0		
	47.50	1.8701	215	364	4	A13047.5		
	48.00	1.8898	220	369	4	A13048.0		
	48.50	1.9094	220	369	4	A13048.5		
	49.00	1.9291	220	369	4	A13049.0		
	49.50	1.9488	220	369	4	A13049.5		
	50.00	1.9685	220	369	4	A13050.0		
	2"	50.80	2.0000	225	374	4	A1302	
51.00		2.0079	225	412	5	A13051.0		
52.00		2.0472	225	412	5	A13052.0		
53.00		2.0866	225	412	5	A13053.0		
54.00		2.1260	230	417	5	A13054.0		
55.00		2.1654	230	417	5	A13055.0		
56.00		2.2047	230	417	5	A13056.0		
57.00		2.2441	235	422	5	A13057.0		
58.00		2.2835	235	422	5	A13058.0		
59.00		2.3228	235	422	5	A13059.0		
60.00		2.3622	235	422	5	A13060.0		
61.00		2.4016	240	427	5	A13061.0		
62.00		2.4409	240	427	5	A13062.0		
63.00		2.4803	240	427	5	A13063.0		
2.1/2	63.50	2.5000	245	432	5	A1302.1/2		
	64.00	2.5197	245	432	5	A13064.0		
	65.00	2.5591	245	432	5	A13065.0		
	66.00	2.5984	245	432	5	A13066.0		
2.5/8	66.68	2.6252	245	432	5	A1302.5/8		
	67.00	2.6378	245	432	5	A13067.0		
	68.00	2.6772	250	437	5	A13068.0		
	69.00	2.7165	250	437	5	A13069.0		
2.3/4	69.85	2.7500	250	437	5	A1302.3/4		
	70.00	2.7559	250	437	5	A13070.0		
	71.00	2.7953	250	437	5	A13071.0		
	72.00	2.8346	255	442	5	A13072.0		
2.7/8	73.00	2.8740	255	442	5	A13073.0		
	73.03	2.8752	255	442	5	A1302.7/8		
	74.00	2.9134	255	442	5	A13074.0		
	75.00	2.9528	255	442	5	A13075.0		
3"	76.00	2.9921	260	447	5	A13076.0		
	76.20	3.0000	260	447	5	A1303		
	77.00	3.0315	260	514	6	A13077.0		
	78.00	3.0709	260	514	6	A13078.0		
	79.00	3.1102	260	514	6	A13079.0		
	80.00	3.1496	260	514	6	A13080.0		
	81.00	3.1890	265	519	6	A13081.0		
	84.00	3.3071	265	519	6	A13084.0		
	85.00	3.3465	265	519	6	A13085.0		
	90.00	3.5433	270	524	6	A13090.0		
	95.00	3.7402	275	529	6	A13095.0		
100.00	3.9370	280	534	6	A130100.0			

A166

- Kúpos szárú csigafúró forrasztott keményfém éllel
- Burghiu cu coadă conică și 4 fatete brazate din carbura
- 4 açılı kesme ucu ve karbür kaynaklı konik şaftlı matkap
- Taper Shank Drill with 4 facet ground Brazed Carbide Tip

A166	▪	3.1	3.2	3.3	3.4																
	•	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1
		7.2	7.3	7.4	8.2	9.1															

A166

HSS
HM

DIN
345

4XD

118°

ST

N



d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A166
10.00	0.3937	87	168	1	A16610.0
10.50	0.4134	87	168	1	A16610.5
11.00	0.4331	94	175	1	A16611.0
11.50	0.4528	94	175	1	A16611.5
12.00	0.4724	101	182	1	A16612.0
13.00	0.5118	101	182	1	A16613.0
13.50	0.5315	108	189	1	A16613.5
14.00	0.5512	108	189	1	A16614.0
15.00	0.5906	114	212	2	A16615.0
16.00	0.6299	120	218	2	A16616.0
17.00	0.6693	125	223	2	A16617.0
17.50	0.6890	130	228	2	A16617.5
18.00	0.7087	130	228	2	A16618.0
19.00	0.7480	135	233	2	A16619.0
20.00	0.7874	140	238	2	A16620.0
21.00	0.8268	145	243	2	A16621.0
22.00	0.8661	150	248	2	A16622.0
22.50	0.8858	155	253	2	A16622.5
23.00	0.9055	155	253	2	A16623.0
24.00	0.9449	160	281	3	A16624.0
25.00	0.9843	160	281	3	A16625.0
26.00	1.0236	165	286	3	A16626.0
27.00	1.0630	170	291	3	A16627.0
28.00	1.1024	170	291	3	A16628.0
29.00	1.1417	175	296	3	A16629.0
30.00	1.1811	175	296	3	A16630.0
32.00	1.2598	185	334	4	A16632.0
33.00	1.2992	185	334	4	A16633.0

A350

- Kúpos szárú hosszú csigafúró
- Burghie serie lunga
- Uzun Seri Konik Şaftlı Matkap
- Long Series Tapershank Drill

A350	▪	1.1	1.2																		
	•	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
		6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1											

A350

HSS

DIN 341

6XD

118°

ST

N



d ₁ Øh ₈ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	MK	A350
5.00	0.1969	74	155	1	A3505.0
5.50	0.2165	80	161	1	A3505.5
6.00	0.2362	80	161	1	A3506.0
6.70	0.2638	86	167	1	A3506.7
6.80	0.2677	93	174	1	A3506.8
7.00	0.2756	93	174	1	A3507.0
7.50	0.2953	93	174	1	A3507.5
8.00	0.3150	100	181	1	A3508.0
8.40	0.3307	100	181	1	A3508.4
8.50	0.3346	100	181	1	A3508.5
8.75	0.3445	107	188	1	A3508.75
9.00	0.3543	107	188	1	A3509.0
9.50	0.3740	107	188	1	A3509.5
9.80	0.3858	116	197	1	A3509.8
10.00	0.3937	116	197	1	A35010.0
10.20	0.4016	116	197	1	A35010.2
10.50	0.4134	116	197	1	A35010.5
10.70	0.4213	125	206	1	A35010.7
11.00	0.4331	125	206	1	A35011.0
11.50	0.4528	125	206	1	A35011.5
11.75	0.4626	125	206	1	A35011.75
11.80	0.4646	125	206	1	A35011.8
12.00	0.4724	134	215	1	A35012.0
12.50	0.4921	134	215	1	A35012.5
13.00	0.5118	134	215	1	A35013.0
13.50	0.5315	142	223	1	A35013.5
14.00	0.5512	142	223	1	A35014.0
14.25	0.5610	147	245	2	A35014.25
14.50	0.5709	147	245	2	A35014.5
14.75	0.5807	147	245	2	A35014.75
15.00	0.5906	147	245	2	A35015.0
15.25	0.6004	153	251	2	A35015.25
15.50	0.6102	153	251	2	A35015.5
15.75	0.6201	153	251	2	A35015.75

d_1 \varnothing_{h_8} mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A350
16.00	0.6299	153	251	2	A35016.0
16.25	0.6398	159	257	2	A35016.25
16.50	0.6496	159	257	2	A35016.5
16.75	0.6594	159	257	2	A35016.75
17.00	0.6693	159	257	2	A35017.0
17.25	0.6791	165	263	2	A35017.25
17.50	0.6890	165	263	2	A35017.5
18.00	0.7087	165	263	2	A35018.0
18.50	0.7283	171	269	2	A35018.5
19.00	0.7480	171	269	2	A35019.0
19.50	0.7677	177	275	2	A35019.5
19.75	0.7776	177	275	2	A35019.75
20.00	0.7874	177	275	2	A35020.0
20.25	0.7972	184	282	2	A35020.25
20.50	0.8071	184	282	2	A35020.5
21.00	0.8268	184	282	2	A35021.0
21.50	0.8465	191	289	2	A35021.5
22.00	0.8661	191	289	2	A35022.0
22.50	0.8858	198	296	2	A35022.5
23.00	0.9055	198	296	2	A35023.0
23.50	0.9252	198	319	3	A35023.5
24.00	0.9449	206	327	3	A35024.0
24.50	0.9646	206	327	3	A35024.5
25.00	0.9843	206	327	3	A35025.0
25.50	1.0039	214	335	3	A35025.5
26.00	1.0236	214	335	3	A35026.0
26.50	1.0433	214	335	3	A35026.5
27.00	1.0630	222	343	3	A35027.0
27.50	1.0827	222	343	3	A35027.5
28.00	1.1024	222	343	3	A35028.0
29.00	1.1417	230	351	3	A35029.0
30.00	1.1811	230	351	3	A35030.0
30.50	1.2008	239	360	3	A35030.5
31.00	1.2205	239	360	3	A35031.0
31.50	1.2402	239	360	3	A35031.5
32.00	1.2598	248	397	4	A35032.0
33.00	1.2992	248	397	4	A35033.0
34.00	1.3386	257	406	4	A35034.0
35.00	1.3780	257	406	4	A35035.0
36.00	1.4173	267	416	4	A35036.0
37.00	1.4567	267	416	4	A35037.0
38.00	1.4961	277	426	4	A35038.0
39.00	1.5354	277	426	4	A35039.0
40.00	1.5748	277	426	4	A35040.0
41.00	1.6142	287	436	4	A35041.0
42.00	1.6535	287	436	4	A35042.0
43.00	1.6929	298	447	4	A35043.0
44.00	1.7323	298	447	4	A35044.0
45.00	1.7717	298	447	4	A35045.0
46.00	1.8110	310	459	4	A35046.0
47.00	1.8504	310	459	4	A35047.0
48.00	1.8898	321	470	4	A35048.0
50.00	1.9685	321	470	4	A35050.0

A345

- Morse-kúpos szárú csigafúró - extra hosszú
- Burghiu extralung cu coada Morse
- Extra Uzun Seri Mors Konik Şaftlı Matkap
- Morse Taper Shank Extra Length Drill

A345	▪	1.1	1.2																		
	•	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
		6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1											

A345 HSS DIN 1870/1 10XD 118° ST N



d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A345
	8.00	0.3150	165	265	1	A3458.0
	8.50	0.3346	165	265	1	A3458.5
	9.00	0.3543	175	275	1	A3459.0
	9.50	0.3740	175	275	1	A3459.5
3/8	9.52	0.3748	185	285	1	A3453/8
	10.00	0.3937	185	285	1	A34510.0
13/32	10.32	0.4063	185	285	1	A34513/32
	10.50	0.4134	185	285	1	A34510.5
	11.00	0.4331	195	300	1	A34511.0
7/16	11.11	0.4374	195	300	1	A3457/16
	11.50	0.4528	195	300	1	A34511.5
29/64	11.51	0.4531	205	310	1	A34529/64
	12.00	0.4724	205	310	1	A34512.0
	12.50	0.4921	205	310	1	A34512.5
1/2	12.70	0.5000	205	310	1	A3451/2
	13.00	0.5118	205	310	1	A34513.0
17/32	13.49	0.5311	220	325	1	A34517/32
	13.50	0.5315	220	325	1	A34513.5
	14.00	0.5512	220	325	1	A34514.0
9/16	14.29	0.5626	220	340	2	A3459/16
37/64	14.68	0.5780	220	340	2	A34537/64
	15.00	0.5906	220	340	2	A34515.0
39/64	15.48	0.6094	230	355	2	A34539/64
	15.50	0.6102	230	355	2	A34515.5
5/8	15.88	0.6252	230	355	2	A3455/8
	16.00	0.6299	230	355	2	A34516.0
41/64	16.27	0.6406	230	355	2	A34541/64
	16.50	0.6496	230	355	2	A34516.5
21/32	16.67	0.6563	230	355	2	A34521/32
	17.00	0.6693	230	355	2	A34517.0
11/16	17.46	0.6874	245	370	2	A34511/16
	17.50	0.6890	245	370	2	A34517.5

d_1 $\varnothing h_8$ Inch	d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A345
3/4	18.00	0.7087	245	370	2	A34518.0
	18.50	0.7283	245	370	2	A34518.5
	19.00	0.7480	245	370	2	A34519.0
	19.05	0.7500	260	385	2	A3453/4
	19.50	0.7677	260	385	2	A34519.5
	20.00	0.7874	260	385	2	A34520.0
	20.50	0.8071	260	385	2	A34520.5
	21.00	0.8268	260	385	2	A34521.0
7/8	21.50	0.8465	270	405	2	A34521.5
	22.00	0.8661	270	405	2	A34522.0
	22.22	0.8748	270	405	2	A3457/8
	22.50	0.8858	270	405	3	A34522.5
	23.00	0.9055	270	405	3	A34523.0
	23.50	0.9252	270	425	3	A34523.5
	24.00	0.9449	290	440	3	A34524.0
	24.50	0.9646	290	440	3	A34524.5
1"	25.00	0.9843	290	440	3	A34525.0
	25.40	1.0000	290	440	3	A3451 ³⁾
	25.50	1.0039	290	440	3	A34525.5 ³⁾
	26.00	1.0236	290	440	3	A34526.0 ³⁾
	26.50	1.0433	290	440	3	A34526.5 ³⁾
	27.00	1.0630	305	460	3	A34527.0 ³⁾
	28.00	1.1024	305	460	3	A34528.0 ³⁾
	29.00	1.1417	305	460	3	A34529.0 ³⁾
1.1/4	30.00	1.1811	305	460	3	A34530.0 ³⁾
	31.75	1.2500	320	480	3	A3451.1/4 ³⁾
	31.00	1.2205	320	480	3	A34531.0 ³⁾
	32.00	1.2598	320	505	4	A34532.0 ³⁾
	33.00	1.2992	320	505	4	A34533.0 ³⁾
	34.00	1.3386	340	530	4	A34534.0 ³⁾
	35.00	1.3780	340	530	4	A34535.0 ³⁾
	36.00	1.4173	340	530	4	A34536.0 ³⁾
1.1/2	37.00	1.4567	340	530	4	A34537.0 ³⁾
	38.00	1.4961	360	555	4	A34538.0 ³⁾
	38.10	1.5000	360	555	4	A3451.1/2 ³⁾
	39.00	1.5354	360	555	4	A34539.0 ³⁾
	40.00	1.5748	360	555	4	A34540.0 ³⁾
	41.00	1.6142	360	555	4	A34541.0 ³⁾
	42.00	1.6535	360	555	4	A34542.0 ³⁾
	1.3/4	44.45	1.7500	385	585	4	A3451.3/4^{3)}
45.00		1.7717	385	585	4	A34545.0 ³⁾
48.00		1.8898	405	605	4	A34548.0 ³⁾
50.00		1.9685	405	605	4	A34550.0 ³⁾

A951 • Morse-kúpos szárú csigafúró - extra hosszú
• Burghiu extralung cu coada Morse

A952 • Extra Uzun Seri Mors Konik Şaftlı Matkap
• Morse Taper Shank Extra Length Drill

A951; A952	▪	1.1	1.2	1.3																
	•	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	
		6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1									

A951	HSS	DIN 1870/1	15XD	130°	ST		W			
A952	HSS	DIN 1870/2	20XD	130°	ST		W			



d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A951	A952
8.00	0.3150	210	330	1		A9528.0
8.50	0.3346	210	330	1		A9528.5
9.00	0.3543	220	345	1		A9529.0
10.00	0.3937	185	285	1	A95110.0	
10.00	0.3937	235	360	1		A95210.0
10.50	0.4134	235	360	1		A95210.5
11.00	0.4331	195	300	1	A95111.0	
11.00	0.4331	250	375	1		A95211.0
11.50	0.4528	250	375	1		A95211.5
12.00	0.4724	205	310	1	A95112.0	
12.00	0.4724	260	395	1		A95212.0
12.50	0.4921	205	310	1	A95112.5	
12.50	0.4921	260	395	1		A95212.5
13.00	0.5118	205	310	1	A95113.0	
13.00	0.5118	260	395	1		A95213.0
13.50	0.5315	220	325	1	A95113.5	
13.50	0.5315	275	410	1		A95213.5
14.00	0.5512	220	325	1	A95114.0	
14.00	0.5512	275	410	1		A95214.0
14.50	0.5709	220	340	2	A95114.5 ⁵⁾	
14.50	0.5709	275	425	2		A95214.5 ⁶⁾
15.00	0.5906	220	340	2	A95115.0 ⁵⁾	
15.00	0.5906	275	425	2		A95215.0 ⁶⁾
15.50	0.6102	230	355	2	A95115.5 ⁵⁾	
15.50	0.6102	295	445	2		A95215.5 ⁶⁾
16.00	0.6299	230	355	2	A95116.0 ⁵⁾	
16.00	0.6299	295	445	2		A95216.0 ⁶⁾
16.50	0.6496	230	355	2	A95116.5 ⁵⁾	

⁵⁾ < 15xD

⁶⁾ < 20xD

d_1 $\varnothing h_8$ mm	d_1 decimal Inch	l_2 mm	l_1 mm	MK	A951	A952
16.50	0.6496	295	445	2		A95216.5 ⁶⁾
17.00	0.6693	230	355	2	A95117.0 ⁵⁾	A95217.0 ⁶⁾
17.00	0.6693	295	445	2		A95217.0 ⁶⁾
17.50	0.6890	245	370	2	A95117.5 ⁵⁾	A95217.5 ⁶⁾
17.50	0.6890	310	465	2		A95217.5 ⁶⁾
18.00	0.7087	245	370	2	A95118.0 ⁵⁾	A95218.0 ⁶⁾
18.00	0.7087	310	465	2		A95218.0 ⁶⁾
18.50	0.7283	245	370	2	A95118.5 ⁵⁾	A95218.5 ⁶⁾
18.50	0.7283	310	465	2		A95218.5 ⁶⁾
19.00	0.7480	245	370	2	A95119.0 ⁵⁾	A95219.0 ⁶⁾
19.00	0.7480	310	465	2		A95219.0 ⁶⁾
19.50	0.7677	260	385	2	A95119.5 ⁵⁾	A95219.5 ⁶⁾
19.50	0.7677	325	490	2		A95219.5 ⁶⁾
20.00	0.7874	260	385	2	A95120.0 ⁵⁾	A95220.0 ⁶⁾
20.00	0.7874	325	490	2		A95220.0 ⁶⁾
21.00	0.8268	260	385	2	A95121.0 ⁵⁾	A95221.0 ⁶⁾
21.00	0.8268	325	490	2		A95221.0 ⁶⁾
22.00	0.8661	270	405	2	A95122.0 ⁵⁾	A95222.0 ⁶⁾
22.00	0.8661	345	515	2		A95222.0 ⁶⁾
23.00	0.9055	270	405	2	A95123.0 ⁵⁾	A95223.0 ⁶⁾
23.00	0.9055	345	515	2		A95223.0 ⁶⁾
24.00	0.9449	290	440	3	A95124.0 ⁵⁾	A95224.0 ⁶⁾
24.00	0.9449	365	555	3		A95224.0 ⁶⁾
25.00	0.9843	290	440	3	A95125.0 ⁵⁾	A95225.0 ⁶⁾
25.00	0.9843	365	555	3		A95225.0 ⁶⁾
26.00	1.0236	290	440	3	A95126.0 ⁵⁾	A95226.0 ⁶⁾
26.00	1.0236	365	555	3		A95226.0 ⁶⁾
27.00	1.0630	305	460	3	A95127.0 ⁵⁾	A95227.0 ⁶⁾
27.00	1.0630	385	580	3		A95227.0 ⁶⁾
28.00	1.1024	305	460	3	A95128.0 ⁵⁾	A95228.0 ⁶⁾
28.00	1.1024	385	580	3		A95228.0 ⁶⁾
29.00	1.1417	305	460	3	A95129.0 ⁵⁾	A95229.0 ⁶⁾
29.00	1.1417	385	580	3		A95229.0 ⁶⁾
30.00	1.1811	305	460	3	A95130.0 ⁵⁾	A95230.0 ⁶⁾
30.00	1.1811	385	580	3		A95230.0 ⁶⁾
31.00	1.2205	410	610	3		A95231.0 ⁶⁾
32.00	1.2598	410	635	4		A95232.0 ⁶⁾
33.00	1.2992	410	635	4		A95233.0 ⁶⁾
34.00	1.3386	430	665	4		A95234.0 ⁶⁾
35.00	1.3780	430	665	4		A95235.0 ⁶⁾
38.00	1.4961	460	695	4		A95238.0 ⁶⁾
40.00	1.5748	460	695	4		A95240.0 ⁶⁾

⁵⁾ < 15xD

⁶⁾ < 20xD

- A400**
- Lépcsős süllyesztő fúró - 90°
 - Burghiu in trepte - 90°
 - Kademeli kilavuz matkabı - 90°
 - Subland Drill - 90°

A400	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1																		

A400

HSS

DIN
8374

4XD

118°

ST

N



M	d ₁ ∅ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ ∅ mm	A400
M3	3.20	0.1260	57	93	9	6	A400M3
M4	4.30	0.1693	75	117	11	8	A400M4
M5	5.30	0.2087	87	133	13	10	A400M5
M6	6.40	0.2520	94	142	15	11.5	A400M6
M8	8.40	0.3307	114	169	19	15	A400M8
M10	10.50	0.4134	135	198	23	19	A400M10

A402

- Lépcsős süllyesztő fúró - 180°
- Burghiu in trepte - 180°
- Kademelí kilavuz matkábi - 180°
- Subland Drill - 180°

A402	▪	1.1	1.2	1.3	1.4	3.1	3.2															
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	
		7.4	8.1																			

A402 HSS DIN 8376 4XD 118° ST N 180°



M	d_1 Ø mm	d_1 decimal Inch	l_2 mm	l_1 mm	l_3 mm	d_2 Ø mm	A402
M3	3.40	0.1339	57	93	9	6	A402M3
M4	4.50	0.1772	75	117	11	8	A402M4
M5	5.50	0.2165	87	133	13	10	A402M5
M6	6.60	0.2598	94	142	15	11	A402M6
M8	9.00	0.3543	114	169	19	15	A402M8
M10	11.00	0.4331	130	191	23	18	A402M10

A405

- Morse-kúpos lépcsős süllyesztő fúró
- Burghiu in trepte cu coada Morse - 180°
- Mors Konik Şaftlı Kademeli Kılavuz Matkabı - 180°
- Morse Taper Shank Subland Drill - 180°

A405	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1																		

A405 HSS DIN 8377 4XD 118° ST N 180°



A405



M6 - M18

M	d ₁ ∅ mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ ∅ mm	MK	A405
M6	6.60	0.2598	94	175	15	11	1	A405M6
M8	9.00	0.3543	114	212	19	15	2	A405M8
M10	11.00	0.4331	130	228	23	18	2	A405M10
M12	13.50	0.5315	140	238	27	20	2	A405M12
M14	15.50	0.6102	160	281	31	24	3	A405M14
M16	17.50	0.6890	165	286	35	26	3	A405M16
M18	20.00	0.7874	175	296	39	30	3	A405M18

A412

- Lépcsős fúró
- Burghiu in trepte
- Kademeli Matkap
- Step Drill

A412	▪	1.1	1.2	1.3	1.4	2.1	3.1	3.2													
	•	1.5	1.6	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4
		8.1																			

A412 HSS DORMER 2.5XD 118° ST



M	d ₁ Ø mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Ø mm	A412
M3	3.40	0.1339	31	70	9	6.6	A412M3
M4	4.50	0.1772	40	84	11	9	A412M4
M5	5.50	0.2165	47	95	13	11	A412M5
M6	6.60	0.2598	51	102	15	13	A412M6
M8	9.00	0.3543	62	123	19	17.2	A412M8
M10	11.00	0.4331	70	141	23	21.5	A412M10

A413

- Lépcsős fúró
- Burghiu in trepte
- Kademeli Matkap
- Step Drill

A413	▪	1.1	1.2	1.3	1.4	2.1	3.1	3.2													
	•	1.5	1.6	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4
		8.1																			

A413 HSS DORMER 2.5XD 118° ST



M	d ₁ Ø mm	d ₁ decimal Inch	l ₂ mm	l ₁ mm	l ₃ mm	d ₂ Ø mm	A413
M3	3.40	0.1339	28	66	9	6	A413M3
M4	4.50	0.1772	37	79	11	8	A413M4
M5	5.50	0.2165	43	89	13	10	A413M5
M6	6.60	0.2598	47	95	15	11	A413M6
M8	9.00	0.3543	56	111	19	15	A413M8
M10	11.00	0.4331	62	123	23	18	A413M10

A201

- Központfúró - 60°
- Burghiu de centruire - 60°
- Punta Matkabi - 60°
- Centre Drill - 60°

A201	▪	1.1	1.2	1.3	1.4	3.1	3.2															
		•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1																

A201 HSS DORMER 1XD 122° 60°



d ₁ Ø mm	d ₁ decimal Inch	l ₂ max/min mm	l ₁ mm	d ₂ Ø mm	A201
0.63	0.0248	1.2 - 0.9	20	3.15	A201.63X3.15 ⁷⁾
0.75	0.0295	1.3 - 1.0	35	3.50	A201.75X3.5
1.00	0.0394	2.1 - 1.5	35	4.00	A2011.0X4.0
1.50	0.0591	2.8 - 2.0	40	5.00	A2011.5X5.0
1.60	0.0630	2.4 - 2.0	40	5.00	A2011.6X5.0
2.00	0.0787	4.0 - 3.0	45	6.00	A2012.0X6.0
2.00	0.0787	2.9 - 2.5	45	6.30	A2012.0X6.3
2.50	0.0984	4.5 - 3.5	50	8.00	A2012.5X8.0
3.00	0.1181	4.4 - 3.9	50	8.00	A2013.0X8.0
3.00	0.1181	5.0 - 4.0	56	10.00	A2013.0X10.0
3.15	0.1240	4.4 - 3.9	56	10.00	A2013.15X10.0
4.00	0.1575	6.2 - 5.0	66	12.00	A2014.0X12.0
5.00	0.1969	7.7 - 6.5	78	14.00	A2015.0X14.0
6.00	0.2362	9.2 - 8.0	90	18.00	A2016.0X18.0

7) Egyoldalas kivitel / Cu un capat / Sadece Tek Tarafli / Single Ended Only

A225

- Központfúró - 60°
- Burghiu de centruire - 60°
- Punta Matkabi - 60°
- Centre Drill - 60°

A225	▪	1.1	1.2	1.3	1.4	3.1	3.2														
	•	1.5	1.6	2.1	2.2	2.3	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3	9.1															

A225 HSS BS 328 1XD 120° 60° A296 136



Nr.	d ₁ Ø Inch	d ₁ decimal Inch	l ₂ max/min Inch	l ₁ Inch	d ₂ Ø Inch	A225
BS1	3/64	0.0469	5/64 - 1/16	1.1/2	1/8	A225BS1
BS2	1/16	0.0625	3/32 - 5/64	1.3/4	3/16	A225BS2
BS3	3/32	0.0938	5/32 - 1/8	2"	1/4	A225BS3
BS4	1/8	0.1250	3/16 - 5/32	2.1/4	5/16	A225BS4
BS5	3/16	0.1875	9/32 - 1/4	2.1/2	7/16	A225BS5
BS5A	7/32	0.2188	5/16 - 9/32	2.3/4	1/2	A225BS5A
BS6	1/4	0.2500	3/8 - 5/16	3"	5/8	A225BS6
BS7	5/16	0.3125	15/32 - 13/32	3.1/2	3/4	A225BS7

A088

- Rövid csigafúró készlet
- Set burghie lungi
- MATKAP SETI
- Stub Drill Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 A= Set modeli, B= Set içerik adedi, C= Set çapları
 A=Styles in Set, B=No. in Set, C=Diameters in Set



Set	A	B	C	A088
200S	A022	24	1.0 mm - 10.5 mm x 0.5 mm + 3.3 mm, 4.2 mm, 6.8 mm, 10.2 mm	A088200S

A095

- Csigafúró készlet
- Set burghie lungi
- SILINDRIK SAPLI MATKAP SETI
- Jobber Drill Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 A= Set modeli, B= Set içerik adedi, C= Set çapları
 A=Styles in Set, B=No. in Set, C=Diameters in Set



Set

Set	A	B	C	A095
18	A002	29	1/16 inch - 1/2 inch x 1/64 inch	A09518
20	A002	15	1/16 inch - 1/2 inch x 1/32 inch	A09520
200	A002	24	1.0 mm - 10.5 mm x 0.5 mm + 3.3 mm, 4.2 mm, 6.8 mm, 10.2 mm	A095200
201	A002	19	1.0 mm - 10.0 mm x 0.5 mm	A095201
202	A002	51	1.0 mm - 6.0 mm x 0.1 mm	A095202
203	A002	41	6.0 mm - 10.0 mm x 0.1 mm	A095203
204	A002	25	1.0 mm - 13.0 mm x 0.5 mm	A095204
206	A002	29	1.0 mm - 13.0 mm x 0.5 mm + 3.3 mm, 4.2 mm, 6.8 mm, 10.2 mm	A095206
209	A002	91	1.0 mm - 10.0 mm x 0.1 mm	A095209

A087

- Kompakt fúrószett
- Set compact de burghie
- KOMPAKT MATKAP SETİ
- Compact Drill Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 A= Set modeli, B= Set içerik adedi, C= Set çapları
 A=Styles in Set, B=No. in Set, C=Diameters in Set



Nr.	A	B	C	A087
201	A002	19	1.0 mm - 10.0 mm x 0.5 mm	A087201

A094

- Csigafúró készlet
- Set burghie lungi
- SILINDRIK SAPLI MATKAP SETI
- Jobber Drill Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben

A=tipuri în set, B=Nr. în Set, C=Diametre în Set

A= Set modeli, B= Set içerik adedi, C= Set çapları

A=Styles in Set, B=No. in Set, C=Diameters in Set



A094



Set

A094

Set	A	B	C	
413	A002	13	1.5 mm - 6.5 mm x 0.5 mm + 3.3 mm, 4.2 mm	A094413
419	A002	19	1.0 mm - 10.0 mm x 0.5 mm	A094419

A089

- Csigafúró készlet
- Set burghie lungi
- Silindrik Saplı Matkap Seti
- Jobber Drill Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 A= Set modeli, B= Set içerik adedi, C= Set çapları
 A=Styles in Set, B=No. in Set, C=Diameters in Set



Nr.	A	B	C	
10	A002	5	A0024.0, A0025.0, A0026.0, A0028.0, A00210.0	A08910

A099

- Csigafúró készlet - Osztott, adagoló tárolószekrényvel
- Set burghie lungi - Raft depozitare
- Takım dolabı
- Counter Dispenser

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben

A=tipuri în set, B=Nr. în Set, C=Diametre în Set

A= Set modeli, B= Set içerik adedi, C= Set çapları

A=Styles in Set, B=No. in Set, C=Diameters in Set



A099

Set

Set	A	B	C
F1	A002	380	5 x (13/32, 7/16, 15/32, 1/2) inch; 10 x (5/64, 7/64, 9/64, 11/64, 13/64, 15/64, 17/64, 9/32, 19/64, 5/16, 21/64, 11/32, 23/64, 3/8) inch; 20 x (1/16, 7/32, 1/4) inch; 30 x 3/32 inch; 40 x (5/32, 3/16) inch; 50 x 1/8 inch
M1	A002	340	5 x (10.50, 11.00, 11.50, 12.00, 12.50, 13.00) mm; 10 x (1.50, 2.50, 3.50, 4.50, 5.50, 6.50, 7.00, 7.50, 8.00, 8.50, 9.00, 9.50, 10.00) mm; 20 x (1.00, 5.00, 6.00) mm; 30 x 2.00 mm; 40 x 4.00 mm; 50 x 3.00 mm

A099

A099F1

A099M1



A099DRILLBOY



Set

Set	A	B	C
DRILLBOY	A002	43	3 x (3.0 mm, 3.3 mm, 3.5 mm, 4.0 mm) 2 x (4.2 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm, 6.8 mm, 7.0 mm, 7.5 mm, 8.0 mm) + 8.5 mm, 9.0 mm, 9.5 mm, 10.0 mm, 10.2 mm, 10.5 mm, 11.0 mm, 11.5 mm, 12.0 mm, 12.5 mm, 13.0 mm

A099

A099DRILLBOY

A199

- Csigafúró készlet - Osztott, adagoló tárolószekrénnyel
- Set burghie lungi - Raft depozitare
- Takım dolabı
- Counter Dispenser

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben

A=tipuri în set, B=Nr. în Set, C=Diametre în Set

A= Set modeli, B= Set içerik adedi, C= Set çapları

A=Styles in Set, B=No. in Set, C=Diameters in Set



Set	A	B	C	A199
F1	A100	380	5 x (13/32, 7/16, 15/32, 1/2) inch; 10 x (5/64, 7/64, 9/64, 11/64, 13/64, 15/64, 17/64, 9/32, 19/64, 5/16, 21/64, 11/32, 23/64, 3/8) inch; 20 x (1/16, 7/32, 1/4) inch; 30 x 3/32 inch; 40 x (5/32, 3/16) inch; 50 x 1/8 inch	A199F1
M1	A100	340	5 x (10.50, 11.00, 11.50, 12.00, 12.50, 13.00) mm; 10 x (1.50, 2.50, 3.50, 4.50, 5.50, 6.50, 7.00, 7.50, 8.00, 8.50, 9.00, 9.50, 10.00) mm; 20 x (1.00, 5.00, 6.00) mm; 30 x 2.00 mm; 40 x 4.00 mm; 50 x 3.00 mm	A199M1

A080

- Csigafúró készlet - Osztott, adagoló tárolószekrénnel
- Set burghie lungi - Raft depozitare
- Takım dolabı
- Counter Dispenser

- Üres adagoló
- Dozator gol
- Boş takım dolabı
- Empty Dispenser



A080

Set

A080

Nr.	d Ø mm	
M1EMPTY	(1.00, 1.50, 2.00, 2.50, 3.00, 3.50, 4.00, 4.50, 5.00, 5.50, 6.00, 6.50, 7.00, 7.50, 8.00, 8.50, 9.00, 9.50, 10.00, 10.50, 11.00, 11.50, 12.00) mm	A080M1EMPTY
F1EMPTY	(1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64, 3/16, 13/64, 7/32, 15/64, 1/4, 17/64, 9/32, 19/64, 5/16, 21/64, 11/32, 3/8, 13/32, 7/16, 1/2) inch	A080F1EMPTY

A190

- Csigafúró készlet
- Set burghie lungi
- SILINDRİK SAPLI MATKAP SETİ
- Jobber Drill Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 A= Set modeli, B= Set içerik adedi, C= Set çapları
 A=Styles in Set, B=No. in Set, C=Diameters in Set



Set	A	B	C	A190
3	A100	21	1/16 inch - 3/8 inch x 1/64 inch	A1903
12	A100	60	No.1 - No.60	A19012
18	A100	29	1/16 inch - 1/2 inch x 1/64 inch	A19018
20	A100	15	1/16 inch - 1/2 inch x 1/32 inch	A19020
201	A100	19	1.0 mm - 10.0 mm x 0.5 mm	A190201
202	A100	51	1.0 mm - 6.0 mm x 0.1 mm	A190202
203	A100	41	6.0 mm - 10.0 mm x 0.1 mm	A190203
204	A100	25	1.0 mm - 13.0 mm x 0.5 mm	A190204
206	A100	29	1.0 mm - 13.0 mm x 0.5 mm + 3.3 mm, 4.2 mm, 6.8 mm, 10.2 mm	A190206
209	A100	91	1.0 mm - 10.0 mm x 0.1 mm	A190209 ⁸⁾

⁸⁾ Az A190209 két dobozban kapható: 1. doboz (1,0–5,9 x 0,1 mm) + 2. doboz (6,0–10,0 x 0,1 mm) / A190209 se vinde în 2 cutii: cutia 1 (1,0-5,9 x 0,1 mm) + cutia 2 (6,0-10,0 x 0,1 mm) / A190209 2 kutu olarak satılır: 1. kutu ölçüleri (1.0-5.9 x 0.1mm); 2. kutu ölçüleri (6.0-10.0 x 0.1mm) / Sold in 2 boxes: box 1 contains sizes (1.0-5.9 x 0.1mm); box 2 contains sizes (6.0-10.0 x 0.1mm)

A191

- Csigafúró készlet
- Set burghie lungi
- SILINDRİK SAPLI MATKAP SETİ
- Jobber Drill Set

Fényes kivitel 1,0mm alatt, 3/64". A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben

Lucios sub 1,0 mm, 3/64", N60. A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 1.0mm, 3/64", N60'a kadar parlak. A= Set modeli, B= Set içerik adedi, C= Set çapları
 Bright below 1.0mm, 3/64", N60. A=Styles in Set, B=No. in Set, C=Diameters in Set



A191



Set

Set	A	B	C	A191
31M	A100	20	0.3 mm - 1.0 mm x 0.05 mm + 0.38 mm, 0.52 mm, 0.58 mm, 0.78 mm, 0.82 mm	A19131M
61-80	A100	20	No.61 - No. 80	A19161-80
413	A100	13	1.5 mm - 6.5 mm x 0.5 mm + 3.3 mm, 4.2 mm	A191413
419	A100	19	1.0 mm - 10.0 mm x 0.5 mm	A191419

A188

- Csiga fúró készlet
- Set burghie lungi
- SILINDRİK SAPLI MATKAP SETİ
- Jobber Drill Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 A= Set modeli, B= Set içerik adedi, C= Set çapları
 A=Styles in Set, B=No. in Set, C=Diameters in Set



Nr.	A	B	C	A188
201	A108	19	1.0 mm - 10.0 mm x 0.5 mm	A188201
204	A108	25	1.0 mm - 13.0 mm x 0.5 mm	A188204

A295

- Csigafúró készlet
- Set burghie lungi
- SILINDRİK SAPLI MATKAP SETİ
- Jobber Drill Set

4 köszörült élpont 1,4mm alatt. A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 Varf cu 4 fatete pana la 1.4mm. A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 1.4mm'ye kadar 4 Açılı Kesme Ucu. A= Set modeli, B= Set içerik adedi, C= Set çapları
 4 Facet Point up to 1.4mm. A=Styles in Set, B=No. in Set, C=Diameters in Set



Set	A	B	C	A295
219	A777	19	1.0 mm - 10.0 mm x 0.5 mm	A295219
225	A777	25	1.0 mm - 13.0 mm x 0.5 mm	A295225

A296

- Központfúró készlet
- Set Burghiu de centruiere
- PUNTA MATKAP SETI
- Centre Drill Set

A296200 - 118° kúpszög DIN333A, A296225 - 120° BS328. A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben.

A296200 - 118° la varf DIN333A, A296225 - 120° la varf BS328 A=tipuri în set, B=Nr. în Set, C=Diametre în Set

A296200 - 118° DIN333A, A296225 - 120° BS328. A= Set modeli, B= Set içerik adedi, C= Set çapları

A296200 - 118° point DIN333A, A296225 - 120° point BS328. A=Styles in Set, B=No. in Set, C=Diameters in Set



A296

Set

A296

Nr.	A	B	C	
200	A200	5	1.00 mm, 2.00 mm, 2.50 mm, 3.15 mm, 4.00 mm	A296200
225	A225	5	BS1, BS2, BS3, BS4, BS5	A296225

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B400	146	G400	177
B481	147	G135	178
B441	149	G335	178
B411	150	G137	179
B442	151	G154	180
B100	152	G129	181
B334	154	G149	182
B335	155	G136	183
B901	156	G560	183
B301	157	G106	183
B903	158	G506	183
B952	159	G142	185
B122	160	G570	185
B953	161	G107	186
B180	162	G600	187
B170	164	G132	188
B157	167	G138	189
B161	168	G338	189
B101	170	G171	190
B121	172	M138	191
B954	173	G314	192
B955	174	G125	193
B956	175	G236	194
B957	176		

Anyag	Material	Malzeme	Material
Bevonat	Acoperire	Kaplama	Coating
Szabvány	Standard	Standart	Standard
Írány	Direcție	Yön	Direction
Szár	Coadă	Şaft	Shank
Horony típus	Tip canal	Helis tipi	Flute Style
Tűrés	Toleranța	Tolerans	Tolerance
Kúposág	Gradientul conului	Konik oranı	Taper gradient
■ Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
■ Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metri pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
Kódok	Coduri	Kodlar	Product Codes
Választék	Gama	Ürün aralığı	Range

AMG	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvöztöt acél	Otel aliat	Alaşımli çelik	Alloy steel
1.5	Ötvöztöt, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvöztöt, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvöztöt, edzett acél	Otel aliat, calit	Alaşımli çelik, ısıl işlemlı	Alloy steel, Heat treated
1.8	Ötvöztöt, edzett és kopásálló acél	Otel aliat, calit	Alaşımli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Auszenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Auszenites	Feritic+austenitic	Ferritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımsız	Titanium, unalloyed
4.2	Titánium, ötvöztöt	Aliat	Titanyum, alaşımlı	Titanium, alloyed
4.3	Titánium, ötvöztöt	Aliat	Titanyum, alaşımlı	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımsız	Nickel, unalloyed
5.2	Nikkel, ötvözett	Aliat	Nikel, alaşımlı	Nickel, alloyed
5.3	Nikkel, ötvözett	Aliat	Nikel, alaşımlı	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımsız	Al, Mg, unalloyed
7.2	Al ötvöztöt, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımlı, Si < %0.5	Al alloyed, Si < 0.5%
7.3	Al ötvöztöt, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımlı, Si > %0.5 < %10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvöztöt, Si > 10%	Al aliat cu Si >10%	Al alaşımlı, Si > %10 sertleştirilmiş, Al alaşımları, Mg alaşımları	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzemeler	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

	HM	HM	HM	HM	HM	HSS	HSS	HSS	HSS-E	HSS	HSS	HSS	HSS	HSS-E	HSS-E	HSS-E	HSS-E	
	DIN 8093	DIN 8093	DIN 8050	DIN 8094	DIN 8051	DIN 206	DORMER	DORMER	BS 328	BS 328	DIN 9	DIN 9	ANSI	DIN 2179	DIN 212	DIN 212	DIN 212	
	B	B	A	B	A	B			B	A	A	B			B	B	E	
	H7	$\begin{matrix} \text{H7} \\ \text{DIN 6535HA} \\ \text{DIN 6535HA} \\ \text{DIN 6535HA} \end{matrix}$	H7	H7	H7	H7			H7						H7	$\begin{matrix} \text{H7} \\ \text{DIN 6535HA} \\ \text{DIN 6535HA} \\ \text{DIN 6535HA} \end{matrix}$	H7	
										1:48	1:50	1:50		1:50				
	B400	B481	B441	B411	B442	B100	B334	B335	B901	B301	B903	B952	B122	B953	B180	B170	B157	
	1.00 - 20.00	0.98 - 12.05	10.00 - 20.00	5.00 - 30.00	10.00 - 20.00	1.50 - 50.00	N000 - N16	N000BLADES - N16NUT	1.50 - 1/2	1/16 - 1/2	1.50 - 20.00	1.20 - 50.00	3/8 - 1.1/16	1.00 - 12.00	1.50 - 20.0	0.98 - 12.00	2.00 - 20.00	
AMG	146	147	149	150	151	152	154	155	156	157	158	159	160	161	162	164	167	ISO
1.1	18B	18B	18B	18B	18B	18C	18C		18C	18C	18C	18C	18C	25C	25C	25C	25C	P 1
1.2	18B	18B	18B	18B	18B	14C	14C		14C	14C	14C	14C	14C	20C	20C	20C	20C	P 1
1.3	14B	14B	14B	14B	14B	11C	11C		11C	11C	11C	11C	11C	16C	16C	16C	16C	P 2
1.4	14B	14B	14B	14B	14B	10B	10B		10B	10B	10B	10B	10B	15B	15B	15B	15B	P 3
1.5	10C	10C	10C	10C	10C	5B	5B		5B	5B	5B	5B	5B	9B	9B	9B	9B	P 4
1.6	10C	10C	10C	10C	10C	4A	4A		4A	4A	4A	4A	4A	5A	5A	5A	5A	H 1
1.7																		H 3
1.8																		H 4
2.1						8F	8F		8C	8C	8C	8C	8C	11C	11C	11C	11C	M 1
2.2									5B	5B	5B	5B	5B	6B	6B	6B	6B	M 3
2.3									6B	6B	6B	6B	6B	8B	8B	8B	8B	M 2
2.4														6B				S 2
3.1	17D	17D	17D	17D	17D	14E	14E		14E	14E	14E	14E	14E	16E	16E	16E	16E	K 1
3.2	17D	17D	17D	17D	17D	11D	11D		11D	11D	11D	11D	11D	15D	15D	15D	15D	K 2
3.3	17D	17D	17D	17D	17D	10C	10C		10C	10C	10C	10C	10C	13C	13C	13C	13C	K 3
3.4	14D	14D	14D	14D	14D	9C	9C		9C	9C	9C	9C	9C	11C	11C	11C	11C	K 4
4.1	14C	14C	14C	14C	14C	11C	11C		11C	11C	11C	11C	11C	15C	15C	15C	15C	S 1
4.2	14C	14C	14C	14C	14C	5B	5B		5B	5B	5B	5B	5B	9B	9B	9B	9B	S 2
4.3	10B	10B	10B	10B	10B	4B	4B		4B	4B	4B	4B	4B	5B	5B	5B	5B	S 3
5.1	10C	10C	10C	10C	10C	5D	5D		5D	5D	5D	5D	5D	8D	8D	8D	8D	S 1
5.2	10B	10B	10B	10B	10B	3C	3C		3C					5C	5C	5C	5C	S 2
5.3	10B	10B	10B	10B	10B	2C	2C		2C					3C	3C	3C	3C	S 3
6.1	38E	38E	38E	38E	38E	18D	18D		18D	18D	18D	18D	18D	25D	25D	25D	25D	N 3
6.2	38E	38E	38E	38E	38E	20E	20E		20E	20E	20E	20E	20E	28E	28E	28E	28E	N 4
6.3	38E	38E	38E	38E	38E	18D	18D		18D	18D	18D	18D	18D	25D	25D	25D	25D	N 3
6.4	38D	38D	38D	38D	38D	11D	11D		11D	11D	11D	11D	11D	14D	14D	14D	14D	N 4
7.1	60D	60D	60D	60D	60D	23F	23F		23F	23F	23F	23F	23F	28F			28F	N 1
7.2	60D	60D	60D	60D	60D	18F	18F		18F	18F	18F	18F	18F	25F			25F	N 1
7.3	25D	25D	25D	25D	25D				15E	15E	15E	15E	15E	20E			20E	N 1
7.4	25D	25D	25D	25D	25D				14D	14D	14D	14D	14D	16D			16D	N 2
8.1	25C	25C	25C	25C	25C									30B			30B	O
8.2	13C	13C	13C	13C	13C	21B	21B		21B	21B	21B	21B	21B					O
8.3																		O
9.1														3A			3A	H
10.1																		O


	HSS-E	HSS-E	HSS	HSS-E	HSS-E	HSS-E		
	DIN 208	BS 328	DIN 311	DIN 2180	DIN 219	DIN 217		
	B	B			B			
	H7	H7	k11		H7			
				1:50 ▶				
	B161	B101	B121	B954	B955	B956	B957	
	3.00 - 50.00	3.00 - 2"	10.00 - 30.00	5.00 - 30.00	25.00 - 80.00	13.00 - 40.00	N3DRIVER - N9WASHER	
AMG	168	170	172	173	174	175	176	ISO
1.1	■25C	■18C	■18C	●25C	■18C			P 1
1.2	■20C	■14C	■14C	●20C	■14C			P 1
1.3	■16C	■11C	■11C	●16C	■11C			P 2
1.4	■15B	■10B	■10B	●15B	■10B			P 3
1.5	●9B	●5B	●5B	●9B	●5B			P 4
1.6	●5A	●4A	●4A	●5A	●4A			H 1
1.7								H 3
1.8								H 4
2.1	■11C	■8C		■11C	■8C			M 1
2.2	●6B			■6B	●5B			M 3
2.3	●8B			■8B	●6B			M 2
2.4								S 2
3.1	●16E	■14E	■14E		●14E			K 1
3.2	●15D	●11D	●11D					K 2
3.3	●13C	●10C	●10C					K 3
3.4	●11C	●9C	●9C					K 4
4.1	■15C	■11C	■11C	■15C	■11C			S 1
4.2	●9B	●5B		■9B	●5B			S 2
4.3	●5B	●4B		■5B	●4B			S 3
5.1	■8D	●5D		■8D	■5D			S 1
5.2	●5C	●3C		■5C	●3C			S 2
5.3	●3C	●2C		■3C	●2C			S 3
6.1	●25D	●18D		■25D	●18D			N 3
6.2	●28E	■20E		●28E	●20E			N 4
6.3	●25D	●18D						N 3
6.4	●14D	●11D						N 4
7.1		●23F		■28F	●23F			N 1
7.2		●18F		■25F	●18F			N 1
7.3				■20E	●15E			N 1
7.4				■16D	●14D			N 2
8.1				■30B				O
8.2		●21B	●21B		●21B			O
8.3								O
9.1				●3A				H
10.1								O

Anyag	Material	Malzeme	Material
Bevonat	Acoperire	Kaplama	Coating
Szabvány	Standard	Standart	Standard
Írány	Direcție	Yön	Direction
Alkalmazás	Aplicatie	Uygulama	Application
Szár	Coada	Şaft	Shank
Kúpsüllyesztő szöge	Unghi zencuire	Havşa açısı	Countersink °
■ Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
■ Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metrii pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
Kódkod	Coduri	Kodlar	Product Codes
Választék	Gama	Ürün aralığı	Range


AMG	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvöztött acél	Otel aliat	Alaşımli çelik	Alloy steel
1.5	Ötvöztött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvöztött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvöztött, edzett acél	Otel aliat, calit	Alaşımli çelik, ısıl işlemli	Alloy steel, Heat treated
1.8	Ötvöztött, edzett és kopásálló acél	Otel aliat, calit	Alaşımli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Ausztenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Ausztenites	Feritic+austenitic	Ferritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımsız	Titanium, unalloyed
4.2	Titánium, ötvöztött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
4.3	Titánium, ötvöztött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımsız	Nickel, unalloyed
5.2	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
5.3	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımsız	Al, Mg, unalloyed
7.2	Al ötvöztött, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımlı, Si < %0.5	Al alloyed, Si < 0.5%
7.3	Al ötvöztött, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımlı, Si > %0.5 < %10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvöztött, Si > 10%	Al aliat cu Si >10%	Al alaşımlı, Si > %10 sertleştirilmiş. Al alaşımları, Mg alaşımları	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzemeler	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

	HM	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS	HSS	HSS	HSS	HSS	HSS-E	HSS-E	
	DIN 335C	DIN 334C	DIN 334C	DIN 334D	DIN 335C	DORMER	DORMER	DIN 335C	DIN 335C	DIN 335C	DIN 335C	DIN 335C	DIN 335C	DORMER	
	6.30 - 31.00	6.30 - 25.00	6.30 - 25.00	16.00 - 80.00	6.30 - 25.00	6.00 - 31.50	5.00 - 50.00	4.30 - 31.00	6.30 - 31.00	6.30 - 50.00	6.30 - 50.00	4.80 - 31.00	6.30 - 31.00	6.30 - 20.50	
										NEW	NEW			NEW	
AMG	177	178	178	179	180	181	182	183	183	183	183	185	185	186	ISO
1.1	■30F	■30F	■50E	■30F	■30F	■30D	■30D	■30F	■50E	■30F	■50E	■30F	●45E	■30F	P 1
1.2	■25E	■25E	■40E	■25E	■25E	■25D	■25D	■25E	■40E	■25E	■40E	■25E	●36E	■25E	P 1
1.3	■20D	■20D	■30D	■20D	■20D	■20C	■20C	■20D	■30D	■20D	■30D	■20D	●27D	■20D	P 2
1.4	■15D	■15D	●20D	■15D	■15D	■15B	■15B	■15D	■20D	■15D	●20D	●15D	■22D	■15D	P 3
1.5	■10B	■10B	●15B	■10B	■10B	●10A	●10A	●10B	■15B	■10B	●15B		■17B	■10B	P 4
1.6	●6A	●6A	●10B	●6A	●6A	●6A	●6A	●6A	●10B	●6A	●10B		●12B	●6A	H 1
1.7															H 3
1.8															H 4
2.1	●8C	●8C		●8C	●8C	●8B	●8B	●8C	■8C	●8C		■8C	■17C	●8C	M 1
2.2	●6B	●6B		●6B	●6B	●6A	●6A	●6B	●6B	●6B		■6B	■12B	●6B	M 3
2.3	●4A	●4A		●4A	●4A			●4A	●4A	●4A		■4A	■15A	●4A	M 2
2.4													●10A		S 2
3.1	●25F	●25F	■45F	●25F	●25F	●25D	●25D	●25F	■45F	●25F	■45F		●40C	●25F	K 1
3.2	●15D	●15D	■35D	●15D	●15D	●15C	●15C	●15D	■35D	●15D	■35D		●32C	●15D	K 2
3.3	●12C	●12C	■30C	●12C	●12C	●12A	●12A	●12C	■30C	●12C	■30C		●27C	●12C	K 3
3.4	■8C	■8C	■30C	■8C	■8C	●8A	●8A	●8C	■30C	●8C	■30C		●24C	●8C	K 4
4.1	■12C	■12C	■20C	■12C	■12C	■12B	■12B	■12C	●20C	■12C	■20C	■12C		■12C	S 1
4.2	■10A	■10A	■15A	■10A	■10A	■10A	■10A	■10A	●15A	■10A	●15A	●10A		■10A	S 2
4.3	■8A	■8A	■10A	■8A	■8A	●8A	●8A	●8A	●10A	■8A	●10A			■8A	S 3
5.1	■12C	■12C	■20C	■12C	■12C	■12B	■12B	■12C	■20C	■12C	■20C	■12C		■12C	S 1
5.2	■6B	■6B	●10B	■6B	■6B	■6A	■6A	■6B	■10B	■6B	●10B	●6B	●6A	■6B	S 2
5.3	■4A	■4A	●6A	■4A	■4A	●4A	●4A	●4A	■6A	■4A	●6A		●4A	■4A	S 3
6.1	■25D	■25D	■40D	■25D	■25D	■25B	■25B	■25D	●40D	■25D	■40D	■25D	■40D	■25D	N 3
6.2	■20F	■20F	●30F	■20F	■20F	■20C	■20C	■20F	●30F	■20F	●30F	■20F	●30F	■20F	N 4
6.3	■25F	■25F	●40F	■25F	■25F	■25C	■25C	■25F	●40F	■25F	●40F	●25F	●40F	■25F	N 3
6.4	●10D	●10D	●15D	●10D	●10D	●10B	●10B	●10D	●15D	●10D	●15D		●15D	●10D	N 4
7.1	●30G	●30G	■50G	●30G	●30G	■30D	■30D	■30G	■50G	●30G	■50G	■30G	●45G	●30G	N 1
7.2	●25F	●25F	■40F	●25F	●25F	■25C	■25C	■25F	●40F	●25F	■40F	■25F	●36F	●25F	N 1
7.3	●20F	●20F	■30F	●20F	●20F	●20C	●20C	●20F	■30F	●20F	■30F	●20F	●27F	●20F	N 1
7.4	●10F	●10F	■15F	●10F	●10F	●10C	●10C	●10F	■15F	●10F	■15F	●10F	●13F	●10F	N 2
8.1	●30G	●30G	●50G	●30G	●30G	●30D	●30D	■30G	●50G	●30G	●50G	■30G		●30G	O
8.2	●20G	●20G	●30G	●20G	●20G	●20D	●20D	●20G	●30G	●20G	●30G	■20G		●20G	O
8.3															O
9.1															H
10.1															O

	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS		
		DIN 335A	DIN 335D	DIN 335D	DIN 335C			DIN 373		
	G600	G132	G138	G338	G171	M138	G314	G125	G236	
	6.30 - 25.00	8.00 - 20.00	25.00 - 80.00	25.00 - 63.00	6.30 - 25.00	No.1 - No.6	4.00 - 9.00	6.50 - 20.00	Set	
									NEW	
AMG	187	188	189	189	190	191	192	193	194	ISO
1.1	■22F		■30F	■50F	■50E	■30D	■30D	■30E		P 1
1.2	■17E		■25E	■40E	■40E	■25D	■25D	■25E		P 1
1.3	■15D	●20E	■20D	■30D	■30D	■20C	■20C	■20D		P 2
1.4	■12D	●15D	■15D	■20D	●20D	■15B	■15B	●15D		P 3
1.5	■8B	■10D	■10B	■15B	●15B	●10A	●10A	●10C		P 4
1.6	●6A	■6B	●6A	●10A	●10B	●6A	●6A	●6C		H 1
1.7										H 3
1.8										H 4
2.1	●8C		●8C			●8B	●8B	■8D		M 1
2.2	●6B		●6B			●6A	●6A	●6C		M 3
2.3	●4A	●4B	●4A			●4A	●4A			M 2
2.4										S 2
3.1	●25F		●25F	■45F	■45F	●25D	●25D	■25E		K 1
3.2	●15D		●15D	■35D	■35D	●15C	●15C	■15E		K 2
3.3	●12C		●12C	■30C	■30C	●12A	●12A	●12D		K 3
3.4		■8D	●8C	■30C	■30C	●8A	●8A	●8C		K 4
4.1			■12C	●20C	●20C	■12B	■12B	●12E		S 1
4.2		■8A	■10A	●15A	●15A	■10A	■10A	●10E		S 2
4.3		■8A	■8A	●10A	●10A	■8A	■8A	●8E		S 3
5.1			■12C	●20C	●20C	■12B	■12B	●12E		S 1
5.2		■6C	■6B	●10B	●10B	■6A	■6A	●6C		S 2
5.3		■4B	■4A	●6A	●6A	■4A	■4A	●4E		S 3
6.1	●25D		■25D	●40D	●40D	■25B	■25B	●25C		N 3
6.2	●20F		■20F	●30F	●30F	■20C	■20C	●20C		N 4
6.3	●25F		■25F	●40F	●40F	■25C	■25C	●25C		N 3
6.4	●10D	■10F	●10D	●15D	●15D	●10B	●10B			N 4
7.1	●30G		●30G	■50G	■50G	■30D	■30D	■30G		N 1
7.2	●25F		●25F	■40F	■40F	■25C	■25C	■25G		N 1
7.3	●20F		●20F	■30F	■30F	●20C	●20C	●20G		N 1
7.4	●10F		●10F	■15F	■15F	●10C	●10C	●10E		N 2
8.1			●30G	●50G	●50G	■30D	■30D	■30C		O
8.2			●20G	●30G	●30G	■20D	■20D	●20C		O
8.3		●5G								O
9.1										H
10.1										O

	Ø mm												
	1,5	2	3	5	8	10	12	16	20	25	30	40	50
A	0,045	0,055	0,078	0,100	0,150	0,170	0,185	0,220	0,250	0,280	0,320	0,390	0,440
B	0,055	0,072	0,110	0,150	0,180	0,210	0,240	0,280	0,310	0,360	0,400	0,500	0,550
C	0,065	0,085	0,135	0,185	0,220	0,260	0,285	0,335	0,390	0,440	0,480	0,600	0,680
D	0,080	0,110	0,160	0,200	0,270	0,320	0,360	0,410	0,470	0,540	0,600	0,730	0,850
E	0,100	0,140	0,180	0,250	0,350	0,390	0,430	0,500	0,530	0,640	0,750	0,910	1,100
F	0,140	0,180	0,260	0,350	0,440	0,500	0,550	0,630	0,700	0,800	0,930	1,200	1,500

mm/REV ± 15 %

	Ø mm										
	6	8	10	16	20	25	32	40	60	80	
A	0.03	0.04	0.05	0.06	0.08	0.09	0.10	0.12	0.14	0.16	
B	0.04	0.05	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	
C	0.05	0.06	0.08	0.10	0.12	0.14	0.16	0.18	0.20	0.22	
D	0.06	0.08	0.10	0.12	0.15	0.18	0.20	0.22	0.25	0.28	
E	0.08	0.10	0.12	0.15	0.18	0.20	0.25	0.27	0.30	0.32	
F	0.09	0.11	0.13	0.16	0.19	0.21	0.26	0.29	0.33	0.36	
G	0.10	0.12	0.15	0.18	0.20	0.22	0.28	0.32	0.36	0.40	
H	0.12	0.15	0.18	0.20	0.22	0.25	0.30	0.35	0.40	0.45	

mm/REV

• Javasolt technológia különböző előfúrásokhoz • Indicatii generale privind adaosul dupa pre-gaurire • General guidelines for stock removal when pre-drilling holes • General guidelines for stock removal when pre-drilling holes

	Ø (mm)					
	3 - 5mm	5.1 - 10mm	10.1 - 20mm	20.1 - 30mm	> 30mm	
1.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	P 1
1.2	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	P 1
1.3	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	P 2
1.4	0.1-0.2	0.2	0.2	0.3	0.3-0.4	P 3
1.5	0.1-0.2	0.2	0.2	0.3	0.3-0.4	P 4
1.6	0.1-0.2	0.2	0.2	0.3	0.3-0.4	H 1
1.7	0.1-0.2	0.2	0.2	0.3	0.3-0.4	H 3
1.8	0.1-0.2	0.2	0.2	0.3	0.3-0.4	H 4
2.1	0.1-0.2	0.2	0.2	0.3	0.3-0.4	M 1
2.2	0.1-0.2	0.2	0.2	0.3	0.3-0.4	M 3
2.3	0.1-0.2	0.2	0.2	0.3	0.3-0.4	M 2
2.4	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 2
3.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	K 1
3.2	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	K 2
3.3	0.1-0.2	0.2	0.3	0.4	0.5	K 3
3.4	0.1-0.2	0.2	0.3	0.4	0.5	K 4
4.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.3-0.4	S 1
4.2	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 2
4.3	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 3
5.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	S 1
5.2	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 2
5.3	0.1-0.2	0.2	0.2	0.3	0.3-0.4	S 3
6.1	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 3
6.2	0.1-0.2	0.2	0.2-0.3	0.3	0.3-0.4	N 4
6.3	0.1-0.2	0.2	0.2-0.3	0.3	0.3-0.4	N 3
6.4	0.1-0.2	0.2	0.2-0.3	0.3	0.3-0.4	N 4
7.1	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 1
7.2	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 1
7.3	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 1
7.4	0.1-0.2	0.2-0.3	0.3-0.4	0.4-0.5	0.5	N 2
8.1	0.1-0.2	0.3	0.4	0.4-0.5	0.5	O
8.2	0.1-0.2	0.2	0.2	0.3	0.3-0.4	O
8.3	0.1-0.2	0.2	0.2	0.3	0.3-0.4	O
9.1	0.1-0.2	0.2	0.2	0.3	0.3-0.4	H
10.1	0.1-0.2	0.2	0.2-0.3	0.3-0.4	0.4-0.5	O

Állítható vagy penge dörzsárak esetében csökkentse az percenkénti előtölést 30%-kal. Alacsonyabb horonyemelkedésű dörzsáraknál növelje 50%-kal. / Pentru alezoare reglabile sau cu lamele, reduceti adaosul cu 30%. Pentru alezoare cu elice pronuntata cresteti cu 50%. / For adjustable or blade reamers reduce stock removal by 30%. For quick helix reamers increase by 50% / For adjustable or blade reamers reduce stock removal by 30%. For quick helix reamers increase by 50%

B400

- Gépi dörzsár nagy egyenlőtlenységű horonyosztással
- Alezoare de masina Divizare extrem de inegala
- Makina Raybası Çok Eşit Olmayan Boşluk
- Machine Reamer Extremely unequal spacing

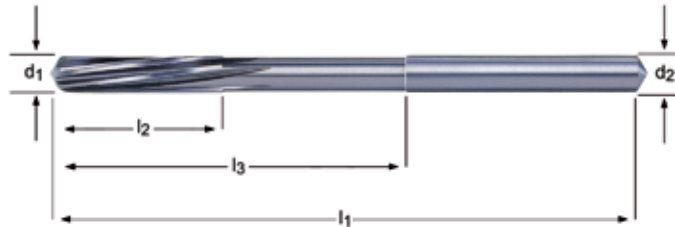
B400	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	
		8.1	8.2																			
	•	1.1	1.2	1.3	1.4																	



B400



1.00 - 20.00



d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Ø _{h7} mm	B400
1.0	34	6	15	3	1.0	B4001.0 ¹⁾
1.2	38	8	16.5	3	1.2	B4001.2 ¹⁾
1.4	40	8	18	3	1.4	B4001.4 ¹⁾
1.5	40	8	18	3	1.5	B4001.5 ¹⁾
1.6	49	11	26	3	1.6	B4001.6 ¹⁾
1.8	49	11	25	4	1.8	B4001.8 ¹⁾
2.0	49	11	24	4	2.0	B4002.0 ¹⁾
2.2	57	15	30	4	2.2	B4002.2 ¹⁾
2.5	57	15	28	4	2.5	B4002.5 ¹⁾
2.8	61	15	32	4	2.8	B4002.8 ¹⁾
3.0	61	15	30	6	3.0	B4003.0 ¹⁾
3.2	70	18	33	6	3.2	B4003.2 ¹⁾
3.5	70	18	33	6	3.5	B4003.5 ¹⁾
4.0	75	19	44	6	4.0	B4004.0 ¹⁾
4.5	80	21	46	6	4.5	B4004.5 ¹⁾
5.0	86	23	53	6	5.0	B4005.0 ¹⁾
5.5	93	26	56	6	5.6	B4005.5 ¹⁾
6.0	93	26	56	6	5.6	B4006.0 ¹⁾
6.5	101	28	63	6	6.3	B4006.5 ²⁾
7.0	109	31	69	6	7.1	B4007.0 ²⁾
8.0	117	33	75	6	8.0	B4008.0 ²⁾
9.0	125	36	81	6	9.0	B4009.0 ²⁾
10.0	133	38	87	6	10.0	B40010.0 ²⁾
12.0	151	44	105	6	10.0	B40012.0 ²⁾
14.0	160	47	110	8	12.5	B40014.0 ²⁾
16.0	170	52	120	8	12.5	B40016.0 ²⁾
18.0	182	56	130	6	14.0	B40018.0 ³⁾
20.0	195	60	137	6	16.0	B40020.0 ³⁾

¹⁾ Tömör keményfém / Cap din carbura / Solid Karbür / Solid Carbide

²⁾ Keményfém fej / Cap din carbura / Karbür uç / Carbide Head

³⁾ Keményfém hegyű / Placat cu carbura / Karbür başlıklı / Carbide Tipped

B481

- NC - dörzsár precíziós fúrótokmányokhoz
- Alezör NC, centesimale pentru portscule de precizie
- NC - Hassas Tutucular için Sentesimal Rayba
- NC - Centesimal Reamer for High Precision Chucks

Nagy egyenlőtlenységű horonyosztás
Divizare extrem de inegala
Çok eşit olmayan boşluk
Extremely unequal spacing

B481	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	
		8.1	8.2																			
		•	1.1	1.2	1.3	1.4																

B481



B481



0.98 - 12.05

d_1 \varnothing mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 $\varnothing h_6$ mm	B481
0.98	49.5	6	21.5	3	4	B4810.98
0.99	49.5	6	21.5	3	4	B4810.99
1.00	49.5	6	21.5	3	4	B4811.00
1.01	49.5	6	21.5	3	4	B4811.01
1.02	49.5	6	21.5	3	4	B4811.02
1.03	49.5	9	21.5	3	4	B4811.03
1.48	49	9	21	3	4	B4811.48
1.49	49	9	21	3	4	B4811.49
1.50	49	9	21	3	4	B4811.50
1.51	49	9	21	3	4	B4811.51
1.52	49	9	21	3	4	B4811.52
1.53	49	9	21	3	4	B4811.53
1.98	49	12	21	4	4	B4811.98
1.99	49	12	21	4	4	B4811.99
2.00	49	12	21	4	4	B4812.00
2.01	49	12	21	4	4	B4812.01
2.02	49	12	21	4	4	B4812.02
2.03	49	12	21	4	4	B4812.03
2.48	59	16	31	4	4	B4812.48
2.49	59	16	31	4	4	B4812.49
2.50	59	16	31	4	4	B4812.50
2.51	59	16	31	4	4	B4812.51
2.52	59	16	31	4	4	B4812.52
2.53	59	16	31	4	4	B4812.53
2.97	62.5	17	35	6	4	B4812.97
2.98	62.5	17	35	6	4	B4812.98
2.99	62.5	17	35	6	4	B4812.99
3.00	62.5	17	35	6	4	B4813.00
3.01	62.5	17	35	6	4	B4813.01
3.02	62.5	17	35	6	4	B4813.02
3.03	62.5	17	35	6	4	B4813.03
3.97	75	19	47	6	4	B4813.97
3.98	75	19	47	6	4	B4813.98
3.99	75	19	47	6	4	B4813.99
4.00	75	19	47	6	4	B4814.00
4.01	75	19	47	6	4	B4814.01
4.02	75	19	47	6	4	B4814.02
4.03	75	19	47	6	4	B4814.03

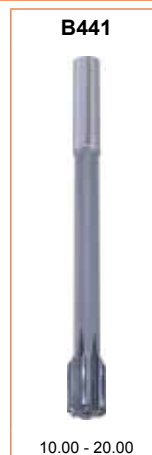
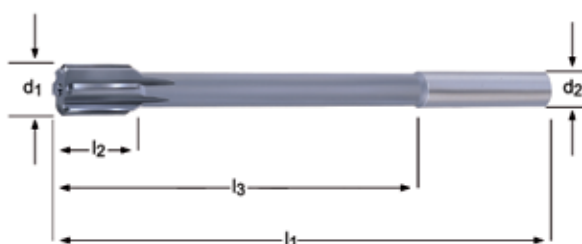
d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Ø h_6 mm	B481
4.97	86	23	50	6	6	B4814.97
4.98	86	23	50	6	6	B4814.98
4.99	86	23	50	6	6	B4814.99
5.00	86	23	50	6	6	B4815.00
5.01	86	23	50	6	6	B4815.01
5.02	86	23	50	6	6	B4815.02
5.03	86	23	50	6	6	B4815.03
5.97	93	26	57	6	6	B4815.97
5.98	93	26	57	6	6	B4815.98
5.99	93	26	57	6	6	B4815.99
6.00	93	26	57	6	6	B4816.00
6.01	93	26	57	6	6	B4816.01
6.02	93	26	57	6	6	B4816.02
6.03	93	26	57	6	6	B4816.03
7.97	117	33	81	6	8	B4817.97
7.98	117	33	81	6	8	B4817.98
7.99	117	33	81	6	8	B4817.99
8.00	117	33	81	6	8	B4818.00
8.01	117	33	81	6	8	B4818.01
8.02	117	33	81	6	8	B4818.02
8.03	117	33	81	6	8	B4818.03
8.04	117	33	81	6	8	B4818.04
9.97	133	38	93	6	10	B4819.97
9.98	133	38	93	6	10	B4819.98
9.99	133	38	93	6	10	B4819.99
10.00	133	38	93	6	10	B48110.00
10.01	133	38	93	6	10	B48110.01
10.02	133	38	93	6	10	B48110.02
10.03	133	38	93	6	10	B48110.03
10.04	133	38	93	6	10	B48110.04
10.05	133	38	93	6	10	B48110.05
11.97	151	44	106	6	12	B48111.97
11.98	151	44	106	6	12	B48111.98
11.99	151	44	106	6	12	B48111.99
12.00	151	44	106	6	12	B48112.00
12.01	151	44	106	6	12	B48112.01
12.02	151	44	106	6	12	B48112.02
12.03	151	44	106	6	12	B48112.03
12.04	151	44	106	6	12	B48112.04
12.05	151	44	106	6	12	B48112.05

B441

- Gépi dörzsár nagy egyenlőtlenségű horonyosztással
- Alezoare de masina Divizare extrem de inegala
- Makina Raybası Çok Eşit Olmayan Boşluk
- Machine Reamer Extremely unequal spacing

B441	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	
		8.1	8.2																			
	•	1.1	1.2	1.3	1.4																	

B441



d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Ø _h mm	B441
10.0	133	19	87	6	10	B44110.0 ³⁾
11.0	142	19	96	6	10	B44111.0 ³⁾
12.0	151	19	105	6	10	B44112.0 ³⁾
13.0	151	19	105	6	10	B44113.0 ³⁾
14.0	160	19	110	6	12.5	B44114.0 ³⁾
15.0	162	19	112	6	12.5	B44115.0 ³⁾
16.0	170	22	120	6	12.5	B44116.0 ³⁾
17.0	175	22	123	6	14	B44117.0 ³⁾
18.0	182	22	130	6	14	B44118.0 ³⁾
19.0	189	22	131	6	16	B44119.0 ³⁾
20.0	195	22	137	6	16	B44120.0 ³⁾

³⁾ Keményfém végű / Placat cu carbura / Karbür başlıklı / Carbide Tipped

B411

- Gépi dörzsár nagy egyenlőtlenységű horonyosztással
- Alezoare de masina Divizare extrem de inegala
- Makina Raybası Çok Eşit Olmayan Boşluk
- Machine Reamer Extremely unequal spacing

B411	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	
		8.1	8.2																			
	•	1.1	1.2	1.3	1.4																	

B411

HM



DIN
8094



B

H7



B411



5.00 - 30.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B411
5.0	133	23	67.5	6	1	B4115.0 ²⁾
6.0	138	26	72.5	6	1	B4116.0 ²⁾
7.0	150	31	84.5	6	1	B4117.0 ²⁾
8.0	156	33	90.5	6	1	B4118.0 ²⁾
9.0	162	36	96.5	6	1	B4119.0 ²⁾
10.0	168	38	102.5	6	1	B41110.0 ²⁾
12.0	182	44	116.5	6	1	B41112.0 ²⁾
14.0	189	47	123.5	8	1	B41114.0 ²⁾
15.0	204	50	124	8	2	B41115.0 ²⁾
16.0	210	52	130	8	2	B41116.0 ²⁾
17.0	214	54	134	6	2	B41117.0 ³⁾
18.0	219	56	139	6	2	B41118.0 ³⁾
19.0	223	58	143	6	2	B41119.0 ³⁾
20.0	228	60	148	6	2	B41120.0 ³⁾
22.0	237	64	157	6	2	B41122.0 ³⁾
24.0	268	68	169	8	3	B41124.0 ³⁾
25.0	268	68	169	8	3	B41125.0 ³⁾
26.0	273	70	174	8	3	B41126.0 ³⁾
30.0	281	73	182	8	3	B41130.0 ³⁾

²⁾ Keményfém fej / Cap din carbura / Karbür uç / Carbide Head

³⁾ Keményfém végű / Placat cu carbura / Karbür başlıklı / Carbide Tipped

- B442**
- Gépi dörzsár nagy egyenlőtlenségű horonyosztással
 - Alezoare de masina Divizare extrem de inegala
 - Makina Raybası Çok Eşit Olmayan Boşluk
 - Machine Reamer Extremely unequal spacing

B442	▪	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	
		8.1	8.2																			
	•	1.1	1.2	1.3	1.4																	

B442

HM

DIN
8051

A

H7



d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B442
10.0	168	19	102.5	6	1	B44210.0
12.0	182	19	116.5	6	1	B44212.0
14.0	189	19	123.5	6	1	B44214.0
15.0	204	19	124	6	2	B44215.0
16.0	210	22	130	6	2	B44216.0
17.0	214	22	134	6	2	B44217.0
18.0	219	22	139	6	2	B44218.0
19.0	223	22	143	6	2	B44219.0
20.0	228	22	148	6	2	B44220.0

B100

- Kézi Dörzsár
- Alezor de mâna
- El raybası
- Hand Reamer

d2=d1 turés e9
 d2=d1 cu toleranta e9
 d2=d1 e9 toleransı ile
 d2=d1 with tolerance e9

B100	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2							
	•	1.5	1.6	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.1	6.3	6.4	7.1	7.2

B100 HSS ST DIN 206 B H7



B100



1.50 - 50.00

d ₁ Ø Inch	d ₁ Ø mm	l ₁ mm	l ₂ mm	l ₃ mm	z	□ a mm	B100
	1.50	41	20	5	3	1.12	B1001.5
1/16	1.59	41	20	5	3	1.12	B1001/16
	1.60	44	21	5	3	1.25	B1001.6
5/64	1.98	47	23	6	4	1.40	B1005/64
	2.00	50	25	6	4	1.60	B1002.0
3/32	2.38	54	27	7	4	1.80	B1003/32
	2.50	58	29	7	4	2.10	B1002.5
7/64	2.78	62	31	8	6	2.10	B1007/64
	3.00	62	31	8	6	2.40	B1003.0
1/8	3.18	66	33	8	6	2.40	B1001/8
	3.20	66	33	8	6	2.40	B1003.2
	3.50	71	35	9	6	2.70	B1003.5
9/64	3.57	71	35	9	6	2.70	B1009/64
5/32	3.97	76	38	10	6	3.00	B1005/32
	4.00	76	38	10	6	3.00	B1004.0
11/64	4.37	81	41	10	6	3.40	B10011/64
	4.50	81	41	10	6	3.40	B1004.5
3/16	4.76	87	44	11	6	3.80	B1003/16
	5.00	87	44	11	6	3.80	B1005.0
13/64	5.16	87	44	11	6	3.80	B10013/64
	5.50	93	47	12	6	4.30	B1005.5
7/32	5.56	93	47	12	6	4.30	B1007/32
15/64	5.95	93	47	12	6	4.90	B10015/64
	6.00	93	47	12	6	4.90	B1006.0
1/4	6.35	100	50	13	6	4.90	B1001/4
	6.50	100	50	13	6	4.90	B1006.5
17/64	6.75	107	54	14	6	5.50	B10017/64
	7.00	107	54	14	6	5.50	B1007.0
9/32	7.14	107	54	14	6	6.20	B1009/32
	7.50	107	54	14	6	6.20	B1007.5
19/64	7.54	115	58	15	6	6.20	B10019/64
5/16	7.94	115	58	15	6	6.20	B1005/16
	8.00	115	58	15	6	6.20	B1008.0
21/64	8.33	115	58	15	6	7.00	B10021/64
	8.50	115	58	15	6	7.00	B1008.5
11/32	8.73	124	62	16	6	7.00	B10011/32
	9.00	124	62	16	6	7.00	B1009.0
23/64	9.13	124	62	16	6	8.00	B10023/64
	9.50	124	62	16	6	8.00	B1009.5
3/8	9.52	124	62	17	6	8.00	B1003/8

d ₁ Ø Inch	d ₁ Ø mm	l ₁ mm	l ₂ mm	l ₃ mm	z	□ a mm	B100
25/64	9.92	133	66	17	6	8.00	B10025/64
	10.00	133	66	17	6	8.00	B10010.0
13/32	10.32	133	66	17	6	8.00	B10013/32
	10.50	133	66	17	6	8.00	B10010.5
7/16	11.00	142	71	18	6	9.00	B10011.0
	11.11	142	71	18	6	9.00	B1007/16
	11.50	142	71	18	6	9.00	B10011.5
	12.00	152	76	19	6	9.00	B10012.0
1/2	12.50	152	76	19	6	10.00	B10012.5
	12.70	152	76	19	6	10.00	B1001/2
	13.00	152	76	19	6	10.00	B10013.0
17/32	13.49	163	81	20	8	11.00	B10017/32
	13.50	163	81	20	8	11.00	B10013.5
9/16	14.00	163	81	20	8	11.00	B10014.0
	14.29	163	81	20	8	11.00	B1009/16
	14.50	163	81	20	8	11.00	B10014.5
	15.00	163	81	20	8	12.00	B10015.0
19/32	15.08	163	81	22	8	12.00	B10019/32
5/8	15.88	175	87	22	8	12.00	B1005/8
	16.00	175	87	22	8	12.00	B10016.0
11/16	17.00	175	87	22	8	13.00	B10017.0
	17.46	188	93	23	8	14.50	B10011/16
	18.00	188	93	23	8	14.50	B10018.0
	19.00	188	93	23	8	14.50	B10019.0
3/4	19.05	188	93	25	8	14.50	B1003/4
	20.00	201	100	25	8	16.00	B10020.0
13/16	20.64	201	100	25	8	16.00	B10013/16
	21.00	201	100	25	8	16.00	B10021.0
	22.00	215	107	27	8	18.00	B10022.0
7/8	22.22	215	107	27	8	18.00	B1007/8
	23.00	215	107	27	8	18.00	B10023.0
	24.00	231	115	29	8	18.00	B10024.0
	25.00	231	115	29	8	20.00	B10025.0
1"	25.40	231	115	29	8	20.00	B1001
	26.00	231	115	29	8	20.00	B10026.0
	27.00	247	124	31	10	22.00	B10027.0
	28.00	247	124	31	10	22.00	B10028.0
	29.00	247	124	31	10	22.00	B10029.0
	30.00	247	124	31	10	24.00	B10030.0
	31.00	265	133	33	10	24.00	B10031.0
	32.00	265	133	33	10	24.00	B10032.0
	33.00	265	133	33	10	26.00	B10033.0
	34.00	284	142	36	10	26.00	B10034.0
	35.00	284	142	36	10	29.00	B10035.0
	36.00	284	142	36	10	29.00	B10036.0
	37.00	284	142	36	10	29.00	B10037.0
	38.00	305	152	38	10	29.00	B10038.0
	39.00	305	152	38	10	32.00	B10039.0
	40.00	305	152	38	10	32.00	B10040.0
45.00	326	163	41	12	35.00	B10045.0	
50.00	347	174	44	12	39.00	B10050.0	

- B334**
- Állítható kézi dörzsár
 - Alezoare reglabile de mâna - Canale drepte
 - Hızlı ayarlanabilen El Raybası
 - Hand Reamer Quickly Adjustable

B334	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2							
	•	1.5	1.6	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.1	6.3	6.4	7.1	7.2



B334



N000 - N16

Nr.	d min-max mm	l ₁ mm	l ₂ mm	l ₃ mm	z	∇ a mm	B334
000	6.4 - 7.2	110	32	7	4	3.0	B334000
00	7.2 - 8.0	110	32	7	4	3.4	B33400
0	8.0 - 9.0	115	34	9	5	3.8	B3340
1	9.0 - 10.0	115	34	9	5	4.3	B3341
2	10.0 - 11.0	115	34	9	5	4.9	B3342
3	11.0 - 12.0	125	35	9	5	4.9	B3343
4	12.0 - 13.5	135	41	9	5	6.2	B3344
5	13.5 - 15.5	146	50	12	5	7.0	B3345
6	15.5 - 18.0	166	60	12	5	8.0	B3346
7	18.0 - 21.0	178	65	15	5	9.0	B3347
8	21.0 - 24.0	195	76	15	5	11.0	B3348
9	24.0 - 27.5	218	82	18	5	12.0	B3349
10	27.5 - 31.5	245	86	18	5	14.5	B33410
11	31.5 - 37.0	280	98	18	6	18.0	B33411
12	37.0 - 45.0	325	108	20	6	20.0	B33412
13	45.0 - 55.0	370	118	20	6	26.0	B33413
14	55.0 - 67.0	400	125	20	6	32.0	B33414
15	67.0 - 80.0	435	140	23	8	39.0	B33415
16	80.0 - 95.0	475	155	23	8	49.0	B33416

- B335**
- Állítható Kézi Dörzsár - Pótalkatrész (B334)
 - Alezoare reglabile de mâna - Piese de schimb (B334)
 - Hızlı ayarlanabilen El Raybası - Yedek Parçalar (B334)
 - Hand Reamer Quickly Adjustable - Spare Parts (B334)



BLADES



NUT

B335



N000BLADES - N16NUT

Nr.	B335
000	B335000BLADES
000	B335000NUT
00	B33500BLADES
00	B33500NUT
0	B3350BLADES
0	B3350NUT
1	B3351BLADES
1	B3351NUT
2	B3352BLADES
2	B3352NUT
3	B3353BLADES
3	B3353NUT
4	B3354BLADES
4	B3354NUT
5	B3355BLADES
5	B3355NUT
6	B3356BLADES
6	B3356NUT
7	B3357BLADES
7	B3357NUT
8	B3358BLADES
8	B3358NUT
9	B3359BLADES
9	B3359NUT
10	B33510BLADES
10	B33510NUT
11	B33511BLADES
11	B33511NUT
12	B33512BLADES
12	B33512NUT
13	B33513BLADES
13	B33513NUT
14	B33514BLADES
14	B33514NUT
15	B33515BLADES
15	B33515NUT
16	B33516BLADES
16	B33516NUT

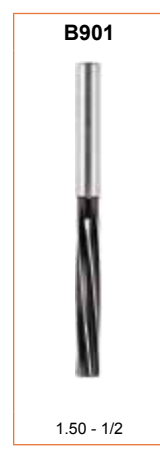
B901

- Gépi Dörzsár
- Alezoare de masina
- Makine Raybası
- Machine Reamer

d2=d1 - 0.025
d2=d1 - 0.025
d2=d1 - 0.025
d2=d1 - 0.025

B901	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2								
	•	1.5	1.6	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.1	6.3	6.4	7.1	7.2	8.2

B901 HSS-E     B H7



d ₁ Ø Inch	d ₁ Ø mm	l ₁ mm	l ₂ mm	z	B901
	1.50	44	21	4	B9011.5
1/16	1.59	44	21	4	B9011/16
	2.00	50	25	4	B9012.0
3/32	2.38	58	29	4	B9013/32
	2.50	58	29	4	B9012.5
	3.00	62	31	4	B9013.0
1/8	3.18	66	33	4	B9011/8
	3.50	71	35	4	B9013.5
5/32	3.97	76	38	6	B9015/32
	4.00	76	38	6	B9014.0
	4.50	81	41	6	B9014.5
3/16	4.76	87	44	6	B9013/16
	5.00	87	44	6	B9015.0
13/64	5.16	87	44	6	B90113/64
	5.50	93	47	6	B9015.5
7/32	5.56	93	47	6	B9017/32
15/64	5.95	93	47	6	B90115/64
	6.00	93	47	6	B9016.0
1/4	6.35	100	50	6	B9011/4
	7.00	107	54	6	B9017.0
9/32	7.14	107	54	6	B9019/32
5/16	7.94	115	58	6	B9015/16
	8.00	115	58	6	B9018.0
	9.00	124	62	6	B9019.0
3/8	9.52	133	66	6	B9013/8
	10.00	133	66	6	B90110.0
	11.00	142	71	6	B90111.0
7/16	11.11	142	71	6	B9017/16
	12.00	152	76	6	B90112.0
1/2	12.70	152	76	6	B9011/2

B301

- Kézi kúpos csapszegfurat dörzsár
- Alezor de mâna conic pentru stifturi - Canal elicoidal
- Pim tip El Raybası
- Hand Taper Pin Reamer

B301	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2										
	•	1.5	1.6	2.2	2.3	3.2	3.3	3.4	4.2	4.3	5.1	6.1	6.3	6.4	7.1	7.2	7.3	7.4	8.2

B301 HSS A



nom Ø	d ₁ Ø mm	l ₁ mm	l ₂ mm	z	∇ a mm	d ₂ Ø mm	B301
1/16	1.10	51	25	4	1.2	1.63	B3011/16 ⁴⁾
5/64	1.50	51	25	4	1.6	2.03	B3015/64 ⁴⁾
3/32	1.75	57	32	4	2.0	2.41	B3013/32 ⁴⁾
7/64	2.03	64	38	4	2.2	2.82	B3017/64 ⁴⁾
1/8	2.30	70	44	4	2.5	3.23	B3011/8 ⁴⁾
9/64	2.64	73	48	4	2.8	3.63	B3019/64 ⁴⁾
5/32	2.95	76	51	4	3.1	4.01	B3015/32 ⁴⁾
11/64	3.23	89	57	4	3.6	4.42	B3011/64 ⁴⁾
3/16	3.50	102	70	4	4.0	4.95	B3013/16 ⁴⁾
7/32	4.13	102	70	6	4.5	5.59	B3017/32 ⁴⁾
1/4	4.64	117	86	6	5.0	6.43	B3011/4 ⁵⁾
9/32	5.23	143	105	6	5.6	7.42	B3019/32 ⁵⁾
5/16	5.84	143	105	6	6.3	8.03	B3015/16 ⁵⁾
11/32	6.43	152	114	6	7.1	8.81	B3011/32 ⁵⁾
3/8	7.03	165	127	6	8.0	9.68	B3013/8 ⁵⁾
13/32	7.42	191	146	6	8.0	10.46	B30113/32 ⁵⁾
7/16	8.21	191	146	6	9.0	11.25	B3017/16 ⁵⁾
1/2	9.41	210	165	6	10.0	12.85	B3011/2 ⁵⁾

⁴⁾ Turés határ +0.0030 / Limitele campului de toleranta +0.0030 / Tolerans limiti +0.0030 / Limit of tolerance +0.0030

⁵⁾ Turés határ +0.0050 / Limitele campului de toleranta +0.0040 / Tolerans limiti +0.0050 / Limit of tolerance +0.0050

- B903**
- Kézi kúpos csapszegfurat dörzsár
 - Alezor de mâna conic pentru stifturi - Canal elicoidal
 - Pim tip El Raybas
 - Hand Taper Pin Reamer

B903	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2										
	•	1.5	1.6	2.2	2.3	3.2	3.3	3.4	4.2	4.3	5.1	6.1	6.3	6.4	7.1	7.2	7.3	7.4	8.2



B903



1.50 - 20.00

nom Ø	d ₁ Ø mm	d ₂ Ø mm	l ₁ mm	l ₂ mm	z	∇ a mm	d ₃ Øh ₁₁ mm	B903
1.5	1.40	2.14	57	37	4	1.80	2.14	B9031.5 ⁶⁾
2.0	1.90	2.86	68	48	4	2.24	2.86	B9032.0 ⁶⁾
2.5	2.40	3.36	68	48	4	2.80	3.36	B9032.5 ⁶⁾
3.0	2.90	4.06	80	58	4	3.15	4.00	B9033.0 ⁶⁾
4.0	3.90	5.26	93	68	4	4.00	5.00	B9034.0 ⁶⁾
5.0	4.90	6.36	100	73	4	5.00	6.30	B9035.0 ⁶⁾
6.0	5.90	8.00	135	105	6	6.30	7.90	B9036.0 ⁷⁾
8.0	7.90	10.80	180	145	6	8.00	10.50	B9038.0 ⁷⁾
10.0	9.90	13.40	215	175	6	10.00	13.30	B90310.0 ⁷⁾
12.0	11.80	16.00	255	210	8	11.20	16.00	B90312.0 ⁷⁾
13.0	12.86	16.74	255	210	8	12.50	16.74	B90313.0 ⁷⁾
14.0	13.86	17.74	255	210	8	12.50	17.74	B90314.0 ⁷⁾
16.0	15.80	20.40	280	230	8	14.00	20.40	B90316.0 ⁷⁾
20.0	19.80	24.80	310	250	8	18.00	24.80	B90320.0 ⁷⁾

⁶⁾ Turés határ +0.0750 / Limitele campului de toleranta +0.0750 / Tolerans limiti +0.0750 / Limit of tolerance +0.0750

⁷⁾ Turés határ +0.125 / Limitele campului de toleranta +0.125 / Tolerans limiti +0.125 / Limit of tolerance +0.125

- B952**
- Kézi kúpos csapszegfurat dörzsár
 - Alezor de mâna conic pentru stifturi - Canal elicoidal
 - Pim tip El Raybası
 - Hand Taper Pin Reamer

B952	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2									
	•	1.5	1.6	2.2	2.3	3.2	3.3	3.4	4.2	4.3	5.1	6.1	6.3	6.4	7.1	7.2	7.3	7.4	8.2

B952 HSS



nom Ø	d ₁ Ø mm	d ₂ Ø mm	l ₁ mm	l ₂ mm	z	□ a mm	d ₃ Ø _{h₁₁} mm	B952
1.2	1.1	1.74	50	32	3	2.4	3.15	B9521.2 ⁸⁾
1.5	1.4	2.14	57	37	3	2.4	3.15	B9521.5 ⁸⁾
2.0	1.9	2.86	68	48	3	2.4	3.15	B9522.0 ⁸⁾
2.5	2.4	3.36	68	48	4	2.4	3.15	B9522.5 ⁸⁾
3.0	2.9	4.06	80	58	5	3.0	4.00	B9523.0
3.5	3.4	4.66	87	63	5	3.4	4.50	B9523.5
4.0	3.9	5.26	93	68	5	3.8	5.00	B9524.0
4.5	4.4	5.80	95	70	5	4.3	5.60	B9524.5
5.0	4.9	6.36	100	73	5	4.9	6.30	B9525.0
5.5	5.4	7.20	118	90	6	5.5	7.10	B9525.5
6.0	5.9	8.00	135	105	6	6.2	8.00	B9526.0
6.5	6.4	8.60	140	110	6	6.2	8.00	B9526.5
7.0	6.9	9.40	160	125	6	7.0	9.00	B9527.0
8.0	7.9	10.8	180	145	6	8.0	10.00	B9528.0
9.0	8.9	12.1	195	160	6	9.0	11.20	B9529.0
10.0	9.9	13.4	215	175	6	10.0	12.50	B95210.0
12.0	11.8	16.0	255	210	8	11.0	14.00	B95212.0
13.0	12.8	17.0	255	210	8	12.0	16.00	B95213.0
14.0	13.8	18.0	255	210	8	12.0	16.00	B95214.0
16.0	15.8	20.4	280	230	8	14.5	18.00	B95216.0
20.0	19.8	24.8	310	250	8	18.0	22.40	B95220.0
25.0	24.7	30.7	370	300	10	22.0	28.00	B95225.0
30.0	29.7	36.1	400	320	10	24.0	31.50	B95230.0
40.0	39.7	46.5	430	340	12	32.0	40.00	B95240.0
50.0	49.7	56.9	460	360	12	39.0	50.00	B95250.0

⁸⁾ Egyenes hornyú, A típus / Canal drept, forma A / Düz helis, form A / Straight Flute, form A

- B122**
- Autóipari dörzsár, balos csavart hornyú
 - Cilindrica Alezoare auto cu canale elicoidale stanga
 - Düz helis, sol helis
 - Straight Car Reamers, LH Helical Flute

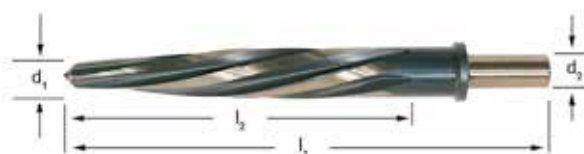
B122	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2										
	•	1.5	1.6	2.2	2.3	3.2	3.3	3.4	4.2	4.3	5.1	6.1	6.3	6.4	7.1	7.2	7.3	7.4	8.2

B122

HSS

ST Bronze

ANSI



d_1 Ø Inch	d_1 decimal Inch	l_1 Inch	l_2 Inch	z	d_2 Ø Inch	B122
3/8	0.3750	4.5/8	2.1/2	4	3/8	B1223/8
1/2	0.5000	5.7/8	3.3/4	5	1/2	B1221/2
9/16	0.5625	5.7/8	3.3/4	5	1/2	B1229/16
5/8	0.6250	6.3/8	4.1/4	5	1/2	B1225/8
11/16	0.6875	6.3/8	4.1/4	5	1/2	B12211/16
3/4	0.7500	6.7/8	4.1/2	5	1/2	B1223/4
13/16	0.8125	6.7/8	4.1/2	5	1/2	B12213/16
7/8	0.8750	6.7/8	4.1/2	5	1/2	B1227/8
15/16	0.9375	6.7/8	4.1/2	5	1/2	B12215/16
1"	1.0000	6.7/8	4.1/2	5	1/2	B1221
1.1/16	1.0625	6.7/8	4.1/2	5	1/2	B1221.1/16

B953

- Gépi csapszegfurat dörzsár, 45°-os balos spirállal
- Alezor de masina, pentru stifturi conice, canale stanga 45°
- 45° Makine raybası, konik
- Machine Reamer for Conical Pin Left Hand Helix 45°

Menesztő a DIN 1809 szabvány szerint
Antrenor conf. DIN 1809
DIN 1809 standartı
Tang to DIN 1809

B953	▪	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	7.1	7.2	7.3	7.4	8.1
	•	1.1	1.2	1.3	1.4	1.5	1.6	6.2	9.1							

B953

HSS-E



DIN
2179



1:50



B953



1.00 - 12.00

nom Ø	d ₁ Ø mm	d ₂ Ø mm	l ₁ mm	l ₂ mm	z	d ₃ Øh ₃ mm	B953
1.0	0.8	1.46	60	33	2	1.4	B9531.0
1.5	1.4	2.14	70	37	2	2.1	B9531.5
2.0	1.9	2.86	86	48	3	3.15	B9532.0
2.5	2.4	3.36	86	48	3	3.15	B9532.5
3.0	2.9	4.06	100	58	3	4.0	B9533.0
4.0	3.9	5.26	112	68	3	5.0	B9534.0
5.0	4.9	6.36	122	73	3	6.3	B9535.0
6.0	5.9	8.00	160	105	3	8.0	B9536.0
6.5	6.4	8.78	188	119	3	8.5	B9536.5
8.0	7.9	10.80	207	145	3	10.0	B9538.0
10.0	9.9	13.40	245	175	3	12.5	B95310.0
12.0	11.8	16.00	290	210	3	16.0	B95312.0

- B180**
- NC - dörzsár precíziós fúrótokmányokhoz
 - Alezor de precizie pt NC
 - NC - Hassas tutucular için rayba
 - NC - Reamer for High Precision Chucks

B180	▪	1.1	1.2	1.3	1.4	2.1	4.2	5.1										
	•	1.5	1.6	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.3	5.2	5.3	6.1	6.2	6.3	6.4

B180 HSS-E     



d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Ø _{h6} mm	B180
1.5	40	8	18	3	2	B1801.5
1.6	43	9	20	3	2	B1801.6
1.7	43	9	20	3	2	B1801.7
1.8	46	10	22	4	2	B1801.8
1.9	46	10	22	4	2	B1801.9
2.0	49	11	24	4	2	B1802.0
2.1	49	11	24	4	2	B1802.1
2.2	53	12	26	4	3	B1802.2
2.3	53	12	26	4	3	B1802.3
2.4	57	14	28	4	3	B1802.4
2.5	57	14	28	4	3	B1802.5
2.6	57	14	28	4	3	B1802.6
2.7	61	15	32	6	3	B1802.7
2.8	61	15	32	6	3	B1802.8
2.9	61	15	32	6	3	B1802.9
3.0	61	15	32	6	3	B1803.0
3.1	65	16	35	6	4	B1803.1
3.2	65	16	35	6	4	B1803.2
3.3	65	16	35	6	4	B1803.3
3.4	70	18	40	6	4	B1803.4
3.5	70	18	40	6	4	B1803.5
3.6	70	18	40	6	4	B1803.6
3.7	70	18	40	6	4	B1803.7
3.8	75	19	43	6	4	B1803.8
3.9	75	19	43	6	4	B1803.9
4.0	75	19	43	6	4	B1804.0
4.1	75	19	43	6	4	B1804.1
4.2	75	19	43	6	4	B1804.2
4.3	80	21	47	6	5	B1804.3
4.4	80	21	47	6	5	B1804.4
4.5	80	21	47	6	5	B1804.5
4.6	80	21	47	6	5	B1804.6
4.7	80	21	47	6	5	B1804.7
4.8	86	23	52	6	5	B1804.8
4.9	86	23	52	6	5	B1804.9
5.0	86	23	52	6	5	B1805.0
5.1	86	23	52	6	5	B1805.1
5.2	86	23	52	6	5	B1805.2
5.3	86	23	52	6	5	B1805.3
5.4	93	26	57	6	6	B1805.4

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Ø h_6 mm	B180
5.5	93	26	57	6	6	B1805.5
5.6	93	26	57	6	6	B1805.6
5.7	93	26	57	6	6	B1805.7
5.8	93	26	57	6	6	B1805.8
5.9	93	26	57	6	6	B1805.9
6.0	93	26	57	6	6	B1806.0
6.1	101	28	63	6	6	B1806.1
6.2	101	28	63	6	6	B1806.2
6.3	101	28	63	6	6	B1806.3
6.4	101	28	63	6	6	B1806.4
6.5	101	28	63	6	6	B1806.5
6.6	101	28	63	6	6	B1806.6
6.7	101	28	63	6	6	B1806.7
6.8	109	31	69	6	8	B1806.8
6.9	109	31	69	6	8	B1806.9
7.0	109	31	69	6	8	B1807.0
7.1	109	31	69	6	8	B1807.1
7.2	109	31	69	6	8	B1807.2
7.3	109	31	69	6	8	B1807.3
7.4	109	31	69	6	8	B1807.4
7.5	109	31	69	6	8	B1807.5
7.6	117	33	75	6	8	B1807.6
7.7	117	33	75	6	8	B1807.7
7.8	117	33	75	6	8	B1807.8
7.9	117	33	75	6	8	B1807.9
8.0	117	33	75	6	8	B1808.0
8.1	117	33	75	6	8	B1808.1
8.2	117	33	75	6	8	B1808.2
8.3	117	33	75	6	8	B1808.3
8.4	117	33	75	6	8	B1808.4
8.5	117	33	75	6	8	B1808.5
8.6	125	36	81	6	10	B1808.6
8.7	125	36	81	6	10	B1808.7
8.8	125	36	81	6	10	B1808.8
8.9	125	36	81	6	10	B1808.9
9.0	125	36	81	6	10	B1809.0
9.1	125	36	81	6	10	B1809.1
9.2	125	36	81	6	10	B1809.2
9.3	125	36	81	6	10	B1809.3
9.4	125	36	81	6	10	B1809.4
9.5	125	36	81	6	10	B1809.5
9.6	133	38	87	6	10	B1809.6
9.7	133	38	87	6	10	B1809.7
9.8	133	38	87	6	10	B1809.8
9.9	133	38	87	6	10	B1809.9
10.0	133	38	87	6	10	B18010.0
11.0	142	41	96	6	10	B18011.0
12.0	151	44	105	6	10	B18012.0
13.0	151	44	105	6	10	B18013.0
14.0	160	47	110	8	14	B18014.0
15.0	162	50	112	8	14	B18015.0
16.0	170	52	120	8	14	B18016.0
17.0	175	54	123	8	14	B18017.0
18.0	182	56	130	8	14	B18018.0
19.0	189	58	131	8	16	B18019.0
20.0	195	60	137	8	16	B18020.0

B170

- Tizedes gépi dörzsár
- Alezor de masina centesimal
- Makine merkezeleme raybası
- Machine Centesimal Reamer

B170	▪	1.1	1.2	1.3	1.4	2.1	4.2	5.1										
	•	1.5	1.6	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.3	5.2	5.3	6.1	6.2	6.3	6.4	

B170 HSS-E       

$\begin{matrix} \text{Ø} 95-5.5 \\ 0, +0,004 \\ \text{Ø} 5.51-12 \\ 0, +0,005 \end{matrix}$



B170



0.98 - 12.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Ø _{h9} mm	B170
0.98	34	5.5	15	3	1.0	B170.98
0.99	34	5.5	15	3	1.0	B170.99
1.00	34	5.5	15	3	1.0	B1701.0
1.01	34	5.5	15	3	1.0	B1701.01
1.02	34	5.5	15	3	1.0	B1701.02
1.03	34	5.5	15	3	1.0	B1701.03
1.04	34	5.5	15	3	1.0	B1701.04
1.05	34	5.5	15	3	1.0	B1701.05
1.49	40	8.0	18	3	1.5	B1701.49
1.50	40	8.0	18	3	1.5	B1701.5
1.51	43	9.0	20	3	1.6	B1701.51
1.52	43	9.0	20	3	1.6	B1701.52
1.98	49	11.0	24	4	2.0	B1701.98
1.99	49	11.0	24	4	2.0	B1701.99
2.00	49	11.0	24	4	2.0	B1702.0
2.01	49	11.0	24	4	2.0	B1702.01
2.02	49	11.0	24	4	2.0	B1702.02
2.03	49	11.0	24	4	2.0	B1702.03
2.04	49	11.0	24	4	2.0	B1702.04
2.05	49	11.0	24	4	2.0	B1702.05
2.49	57	14.0	28	4	2.5	B1702.49
2.50	57	14.0	28	4	2.5	B1702.5
2.51	57	14.0	28	4	2.5	B1702.51
2.52	57	14.0	28	4	2.5	B1702.52
2.98	61	15.0	32	6	3.0	B1702.98
2.99	61	15.0	32	6	3.0	B1702.99
3.00	61	15.0	32	6	3.0	B1703.0
3.01	65	16.0	35	6	3.2	B1703.01
3.02	65	16.0	35	6	3.2	B1703.02
3.03	65	16.0	35	6	3.2	B1703.03
3.04	65	16.0	35	6	3.2	B1703.04
3.05	65	16.0	35	6	3.2	B1703.05
3.49	70	18.0	40	6	3.5	B1703.49
3.50	70	18.0	40	6	3.5	B1703.5
3.51	70	18.0	40	6	3.5	B1703.51
3.52	70	18.0	40	6	3.5	B1703.52
3.98	75	19.0	43	6	4.0	B1703.98
3.99	75	19.0	43	6	4.0	B1703.99
4.00	75	19.0	43	6	4.0	B1704.0
4.01	75	19.0	43	6	4.0	B1704.01

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Ø h_3 mm	B170
4.02	75	19.0	43	6	4.0	B1704.02
4.03	75	19.0	43	6	4.0	B1704.03
4.04	75	19.0	43	6	4.0	B1704.04
4.05	75	19.0	43	6	4.0	B1704.05
4.49	80	21.0	47	6	4.5	B1704.49
4.50	80	21.0	47	6	4.5	B1704.5
4.51	80	21.0	47	6	4.5	B1704.51
4.52	80	21.0	47	6	4.5	B1704.52
4.98	86	23.0	52	6	5.0	B1704.98
4.99	86	23.0	52	6	5.0	B1704.99
5.00	86	23.0	52	6	5.0	B1705.0
5.01	86	23.0	52	6	5.0	B1705.01
5.02	86	23.0	52	6	5.0	B1705.02
5.03	86	23.0	52	6	5.0	B1705.03
5.04	86	23.0	52	6	5.0	B1705.04
5.05	86	23.0	52	6	5.0	B1705.05
5.49	93	26.0	57	6	5.6	B1705.49
5.50	93	26.0	57	6	5.6	B1705.5
5.51	93	26.0	57	6	5.6	B1705.51
5.52	93	26.0	57	6	5.6	B1705.52
5.98	93	26.0	57	6	5.6	B1705.98
5.99	93	26.0	57	6	5.6	B1705.99
6.00	93	26.0	57	6	5.6	B1706.0
6.01	101	28.0	63	6	6.3	B1706.01
6.02	101	28.0	63	6	6.3	B1706.02
6.03	101	28.0	63	6	6.3	B1706.03
6.04	101	28.0	63	6	6.3	B1706.04
6.05	101	28.0	63	6	6.3	B1706.05
6.49	101	28.0	63	6	6.3	B1706.49
6.50	101	28.0	63	6	6.3	B1706.5
6.51	101	28.0	63	6	6.3	B1706.51
6.52	101	28.0	63	6	6.3	B1706.52
6.98	109	31.0	69	6	7.1	B1706.98
6.99	109	31.0	69	6	7.1	B1706.99
7.00	109	31.0	69	6	7.1	B1707.0
7.01	109	31.0	69	6	7.1	B1707.01
7.02	109	31.0	69	6	7.1	B1707.02
7.03	109	31.0	69	6	7.1	B1707.03
7.04	109	31.0	69	6	7.1	B1707.04
7.05	109	31.0	69	6	7.1	B1707.05
7.49	109	31.0	69	6	7.1	B1707.49
7.50	109	31.0	69	6	7.1	B1707.5
7.51	117	33.0	75	6	8.0	B1707.51
7.52	117	33.0	75	6	8.0	B1707.52
7.98	117	33.0	75	6	8.0	B1707.98
7.99	117	33.0	75	6	8.0	B1707.99
8.00	117	33.0	75	6	8.0	B1708.0
8.01	117	33.0	75	6	8.0	B1708.01
8.02	117	33.0	75	6	8.0	B1708.02
8.03	117	33.0	75	6	8.0	B1708.03
8.04	117	33.0	75	6	8.0	B1708.04
8.05	117	33.0	75	6	8.0	B1708.05
8.49	117	33.0	75	6	8.0	B1708.49
8.50	117	33.0	75	6	8.0	B1708.5
8.51	125	36.0	81	6	9.0	B1708.51
8.52	125	36.0	81	6	9.0	B1708.52
8.98	125	36.0	81	6	9.0	B1708.98
8.99	125	36.0	81	6	9.0	B1708.99
9.00	125	36.0	81	6	9.0	B1709.0
9.01	125	36.0	81	6	9.0	B1709.01
9.02	125	36.0	81	6	9.0	B1709.02
9.03	125	36.0	81	6	9.0	B1709.03
9.04	125	36.0	81	6	9.0	B1709.04
9.05	125	36.0	81	6	9.0	B1709.05
9.49	125	36.0	81	6	9.0	B1709.49
9.50	125	36.0	81	6	9.0	B1709.5
9.51	133	38.0	87	6	10.0	B1709.51
9.52	133	38.0	87	6	10.0	B1709.52
9.98	133	38.0	87	6	10.0	B1709.98
9.99	133	38.0	87	6	10.0	B1709.99

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	d_2 Ø h_9 mm	B170
10.00	133	38.0	87	6	10.0	B17010.0
10.01	133	38.0	87	6	10.0	B17010.01
10.02	133	38.0	87	6	10.0	B17010.02
10.03	133	38.0	87	6	10.0	B17010.03
10.04	133	38.0	87	6	10.0	B17010.04
10.05	133	38.0	87	6	10.0	B17010.05
10.49	133	38.0	87	6	10.0	B17010.49
10.50	133	38.0	87	6	10.0	B17010.5
10.51	133	38.0	87	6	10.0	B17010.51
10.52	133	38.0	87	6	10.0	B17010.52
10.98	142	41.0	96	6	10.0	B17010.98
10.99	142	41.0	96	6	10.0	B17010.99
11.00	142	41.0	96	6	10.0	B17011.0
11.01	142	41.0	96	6	10.0	B17011.01
11.02	142	41.0	96	6	10.0	B17011.02
11.03	142	41.0	96	6	10.0	B17011.03
11.04	142	41.0	96	6	10.0	B17011.04
11.05	142	41.0	96	6	10.0	B17011.05
11.49	142	41.0	96	6	10.0	B17011.49
11.50	142	41.0	96	6	10.0	B17011.5
11.51	142	41.0	96	6	10.0	B17011.51
11.52	142	41.0	96	6	10.0	B17011.52
11.98	151	44.0	105	6	10.0	B17011.98
11.99	151	44.0	105	6	10.0	B17011.99
12.00	151	44.0	105	6	10.0	B17012.0

- B157**
- Gépi dörzsár, 45°-os balos spirállal
 - Alezor de masina, canale stanga 45°
 - 45° Makine raybası, sol
 - Machine Reamer Left Hand Helix 45°

B157	▪	1.1	1.2	1.3	1.4	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	7.1	7.2	7.3	7.4	8.1
	•	1.5	1.6	6.2	9.1															

B157

HSS-E

DIN 212

E

H7



d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	l_4 mm	z	d_2 Ø _{h9} mm	B157
2.0	49	11	3.5	24	3	2.0	B1572.0
3.0	61	15	4.0	32	3	3.0	B1573.0
4.0	75	19	4.0	43	3	4.0	B1574.0
5.0	86	23	4.5	52	3	5.0	B1575.0
6.0	93	26	6.0	57	3	5.6	B1576.0
7.0	109	31	7.0	69	3	7.1	B1577.0
8.0	117	33	9.0	75	3	8.0	B1578.0
9.0	125	36	9.5	81	3	9.0	B1579.0
10.0	133	38	10.0	87	3	10.0	B15710.0
11.0	142	41	10.5	96	3	10.0	B15711.0
12.0	151	44	11.0	105	3	10.0	B15712.0
13.0	151	44	11.5	105	3	10.0	B15713.0
14.0	160	47	12.0	110	3	12.5	B15714.0
15.0	162	50	12.5	112	3	12.5	B15715.0
16.0	170	52	13.0	120	3	12.5	B15716.0
17.0	175	54	13.5	123	3	14.0	B15717.0
18.0	182	56	14.0	130	3	14.0	B15718.0
19.0	189	58	14.5	131	3	16.0	B15719.0
20.0	195	60	15.0	137	3	16.0	B15720.0

B161

- Gépi Dörzsár
- Alezoare de masina
- Makine raybası
- Machine Reamer

B161	▪	1.1	1.2	1.3	1.4	2.1	4.1	5.1										
	•	1.5	1.6	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.1	6.2	6.3	6.4	



B161



3.00 - 50.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B161
3.0	113	15	47.5	6	1	B1613.0
4.0	124	19	58.5	6	1	B1614.0
5.0	133	23	67.5	6	1	B1615.0
6.0	138	26	72.5	6	1	B1616.0
7.0	150	31	84.5	6	1	B1617.0
8.0	156	33	90.5	6	1	B1618.0
9.0	162	36	96.5	6	1	B1619.0
10.0	168	38	102.5	6	1	B16110.0
11.0	175	41	109.5	6	1	B16111.0
12.0	182	44	116.5	6	1	B16112.0
13.0	182	44	116.5	6	1	B16113.0
14.0	189	47	123.5	8	1	B16114.0
15.0	204	50	124	8	2	B16115.0
16.0	210	52	130	8	2	B16116.0
17.0	214	54	134	8	2	B16117.0
18.0	219	56	139	8	2	B16118.0
19.0	223	58	143	8	2	B16119.0
20.0	228	60	148	8	2	B16120.0
21.0	232	62	152	8	2	B16121.0
22.0	237	64	157	8	2	B16122.0
23.0	241	66	161	8	2	B16123.0
24.0	268	68	169	8	3	B16124.0
25.0	268	68	169	8	3	B16125.0
26.0	273	70	174	8	3	B16126.0
27.0	277	71	178	10	3	B16127.0
28.0	277	71	178	10	3	B16128.0
29.0	281	73	182	10	3	B16129.0
30.0	281	73	182	10	3	B16130.0
31.0	285	75	186	10	3	B16131.0
32.0	317	77	193	10	4	B16132.0
33.0	317	77	193	10	4	B16133.0
34.0	321	78	197	10	4	B16134.0
35.0	321	78	197	10	4	B16135.0
36.0	325	79	201	10	4	B16136.0
38.0	329	81	205	10	4	B16138.0
40.0	329	81	205	10	4	B16140.0
42.0	333	82	209	12	4	B16142.0
44.0	336	83	212	12	4	B16144.0

d₁ Ø mm	l₁ mm	l₂ mm	l₃ mm	z	MK	B161
45.0	336	83	212	12	4	B16145.0
46.0	340	84	216	12	4	B16146.0
47.0	340	84	216	12	4	B16147.0
48.0	344	86	220	12	4	B16148.0
50.0	344	86	220	12	4	B16150.0

B101

- Gépi Dörzsár
- Alezoare de masina
- Makine raybası
- Machine Reamer

B101	▪	1.1	1.2	1.3	1.4	2.1	3.1	4.1	6.2								
	•	1.5	1.6	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.1	6.3	6.4	7.1	7.2	8.2



B101



3.00 - 2"

d_1 Ø Inch	d_1 Ø mm	l_1 mm	l_2 mm	z	MK	B101
1/8	3.00	112	33	4	1	B1013.0
	3.18	112	33	4	1	B1011/8
	3.50	115	35	6	1	B1013.5
	4.00	117	38	6	1	B1014.0
	4.50	120	41	6	1	B1014.5
3/16	4.76	124	44	6	1	B1013/16
	5.00	124	44	6	1	B1015.0
	5.50	127	47	6	1	B1015.5
	6.00	127	47	6	1	B1016.0
1/4	6.35	130	50	6	1	B1011/4
	6.50	130	50	6	1	B1016.5
	7.00	134	54	6	1	B1017.0
5/16	7.94	138	58	6	1	B1015/16
	8.00	138	58	6	1	B1018.0
	8.50	138	58	6	1	B1018.5
	9.00	142	62	6	1	B1019.0
	9.50	142	62	6	1	B1019.5
3/8	9.52	146	66	6	1	B1013/8
	10.00	146	66	6	1	B10110.0
	10.50	146	66	6	1	B10110.5
	11.00	151	71	6	1	B10111.0
7/16	11.11	151	71	6	1	B1017/16
	12.00	156	76	6	1	B10112.0
	12.50	156	76	6	1	B10112.5
1/2	12.70	156	76	6	1	B1011/2
	13.00	156	76	6	1	B10113.0
	13.50	161	81	6	1	B10113.5
	14.00	161	81	8	1	B10114.0
9/16	14.29	181	81	8	2	B1019/16
	14.50	181	81	8	2	B10114.5
	15.00	181	81	8	2	B10115.0
	15.50	187	87	8	2	B10115.5
5/8	15.88	187	87	8	2	B1015/8
	16.00	187	87	8	2	B10116.0
	16.50	187	87	8	2	B10116.5
	17.00	187	87	8	2	B10117.0
	18.00	193	93	8	2	B10118.0
	19.00	193	93	8	2	B10119.0
3/4	19.05	200	100	8	2	B1013/4
	20.00	200	100	8	2	B10120.0

d_1 Ø Inch	d_1 Ø mm	l_1 mm	l_2 mm	z	MK	B101
13/16	20.64	200	100	8	2	B10113/16
	21.00	200	100	8	2	B10121.0
	22.00	207	107	8	2	B10122.0
7/8	22.22	207	107	8	2	B1017/8
	23.00	207	107	8	2	B10123.0
	24.00	242	115	8	3	B10124.0
1"	25.00	242	115	10	3	B10125.0
	25.40	242	115	10	3	B1011
	26.00	242	115	10	3	B10126.0
	27.00	251	124	10	3	B10127.0
1.1/8	28.00	251	124	10	3	B10128.0
	28.58	251	124	10	3	B1011.1/8
	29.00	251	124	10	3	B10129.0
	30.00	251	124	10	3	B10130.0
1.1/4	31.00	260	133	10	3	B10131.0
	31.75	260	133	10	3	B1011.1/4
	32.00	293	133	10	4	B10132.0
	34.00	302	142	10	4	B10134.0
1.3/8	34.93	302	142	10	4	B1011.3/8
	35.00	302	142	10	4	B10135.0
	36.00	302	142	10	4	B10136.0
	37.00	302	142	10	4	B10137.0
1.1/2	38.00	312	152	10	4	B10138.0
	38.10	312	152	10	4	B1011.1/2
	39.00	312	152	10	4	B10139.0
	40.00	312	152	10	4	B10140.0
	41.00	312	152	10	4	B10141.0
	42.00	312	152	10	4	B10142.0
1.3/4	43.00	323	163	10	4	B10143.0
	44.00	323	163	10	4	B10144.0
	44.45	323	163	10	4	B1011.3/4
	45.00	323	163	12	4	B10145.0
	46.00	323	163	12	4	B10146.0
	47.00	323	163	12	4	B10147.0
	48.00	334	174	12	4	B10148.0
	50.00	334	174	12	4	B10150.0
2"	50.80	334	174	12	4	B1012

B121

- Morse-kúpos szárú dörzsár zártszelvényekhez
- Alezor cu coada Morse
- Mors konik rayba
- Morse Taper Shank Bridge Reamer

Kúp típus 1:10
 Conicitate 1:10
 1:10 konik (I3)
 With 1:10 starting taper (I3)

B121	▪	1.1	1.2	1.3	1.4	3.1	4.1
	•	1.5	1.6	3.2	3.3	3.4	8.2

B121

HSS



DIN
311



k11



B121



10.00 - 30.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	z	MK	B121
10.0	171	95	30	4	1	B12110.0
11.0	176	100	33	4	1	B12111.0
12.0	199	105	39	4	2	B12112.0
13.0	199	105	39	4	2	B12113.0
14.0	209	115	42	4	2	B12114.0
15.0	219	125	45	4	2	B12115.0
16.0	229	135	48	4	2	B12116.0
17.0	251	135	51	4	3	B12117.0
18.0	261	145	58	4	3	B12118.0
19.0	261	145	58	4	3	B12119.0
20.0	271	155	62	4	3	B12120.0
21.0	271	155	62	4	3	B12121.0
22.0	281	165	66	4	3	B12122.0
23.0	281	165	66	4	3	B12123.0
24.0	296	180	72	4	3	B12124.0
25.0	296	180	72	4	3	B12125.0
26.0	296	180	72	4	3	B12126.0
30.0	311	195	78	5	3	B12130.0

B954

- Gépi csapszegfurat dörzsár , 45°-os balos spirállal
- Alezor de masina, pentru stifturi conice, canale stanga 45°
- 45° Makine raybası, konik
- Machine Reamer for Conical Pin Left Hand Helix 45°

B954	▪	2.1	2.2	2.3	4.1	4.2	4.3	5.1	5.2	5.3	6.1	7.1	7.2	7.3	7.4	8.1
	•	1.1	1.2	1.3	1.4	1.5	1.6	6.2	9.1							

B954



nom Ø	d ₁ Ø mm	d ₂ Ø mm	l ₁ mm	l ₂ mm	z	MK	B954
5.0	4.90	6.36	155	73	3	1	B9545.0
6.0	5.90	8.00	187	105	3	1	B9546.0
8.0	7.90	10.80	227	145	3	1	B9548.0
10.0	9.90	13.40	257	175	3	1	B95410.0
12.0	11.80	16.00	315	210	3	2	B95412.0
13.0	12.86	16.74	295	194	3	2	B95413.0
14.0	13.86	17.74	295	194	3	2	B95414.0
16.0	15.80	20.40	335	230	3	2	B95416.0
20.0	19.80	24.80	377	250	3	3	B95420.0
25.0	24.70	30.70	427	300	3	3	B95425.0
30.0	29.70	36.10	475	320	4	4	B95430.0

B955

- Feltűzhető Dörzsár
- Alezör cu alezaj
- Göbekten bağlamalı rayba
- Shell Reamer

d2 = B956 d1 nominális átmérője
 d2=Diametrul nominal d1 al B956
 d2=Nominal diameter d1of B956
 d2=Nominal diameter d1of B956

B955	▪	1.1	1.2	1.3	1.4	2.1	4.1	5.1								
	•	1.5	1.6	2.2	2.3	3.1	4.2	4.3	5.2	5.3	6.1	6.2	7.1	7.2	7.3	7.4	8.2

B955 HSS-E       

B955



25.00 - 80.00



d ₁ Ø mm	l ₁ mm	l ₂ mm	z	d ₂ Ø mm	B955
25.0	45	32	8	13	B95525.0
26.0	45	32	8	13	B95526.0
27.0	45	32	8	13	B95527.0
28.0	45	32	8	13	B95528.0
29.0	45	32	8	13	B95529.0
30.0	45	32	8	13	B95530.0
31.0	50	36	10	16	B95531.0
32.0	50	36	10	16	B95532.0
34.0	50	36	10	16	B95534.0
35.0	50	36	10	16	B95535.0
36.0	56	40	10	19	B95536.0
37.0	56	40	10	19	B95537.0
38.0	56	40	10	19	B95538.0
40.0	56	40	10	19	B95540.0
42.0	56	40	10	19	B95542.0
44.0	63	45	12	22	B95544.0
45.0	63	45	12	22	B95545.0
48.0	63	45	12	22	B95548.0
50.0	63	45	12	22	B95550.0
52.0	71	50	12	27	B95552.0
55.0	71	50	12	27	B95555.0
58.0	71	50	12	27	B95558.0
60.0	71	50	12	27	B95560.0
65.0	80	56	14	32	B95565.0
70.0	80	56	14	32	B95570.0
75.0	90	63	14	40	B95575.0
80.0	90	63	14	40	B95580.0

B956

- Kúpos szárú feltűzhető dörzsár alaptartó (B955)
- Ax alezor cu coada Morse
- Mors konik şaftlı rayba malafası
- Morse Taper Shank Shell Reamer Arbor (B955)

B956

HSS-E



DIN
217



B956



13.00 - 40.00

d_1 Ø mm	l_1 mm	l_2 mm	l_3 mm	MK	B956
13.0	250	45	151	3	B95613.0
16.0	261	50	162	3	B95616.0
19.0	298	56	174	4	B95619.0
22.0	312	63	188	4	B95622.0
27.0	359	71	203	5	B95627.0
32.0	376	80	220	5	B95632.0
40.0	396	90	240	5	B95640.0

B957

- Feltűzhető dörzsár alaptartó- pótalkatrész (B956)
- Ax alezör - Piese schimb (B956)
- Rayba malafası - yedek parçalar (B956)
- Shell Reamer Arbor - Spare Parts (B956)



DRIVER



NUT



WASHER



Nr.	d	B957
3	13.00	B957N3DRIVER
3		B957N3NUT
3		B957N3WASHER
4	16.00	B957N4DRIVER
4		B957N4NUT
4		B957N4WASHER
5	19.00	B957N5DRIVER
5		B957N5NUT
5		B957N5WASHER
6	22.00	B957N6DRIVER
6		B957N6NUT
6		B957N6WASHER
7	27.00	B957N7DRIVER
7		B957N7NUT
7		B957N7WASHER
8	32.00	B957N8DRIVER
8		B957N8NUT
8		B957N8WASHER
9	40.00	B957N9DRIVER
9		B957N9NUT
9		B957N9WASHER

G400

- Kúpos süllyesztő precíziós fúrótokmányokhoz - 90°
- Zencuitoare pentru portscule de precizi - 90°
- Hassas Tutucular için Havşa Matkabi 90°
- Countersink for High Precision Chucks - 90°

G400	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2

G400



max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₆ mm	z	G400
6.3	1.5	5.0	45	5	3	G4006.3
8.3	2.0	6.0	50	6	3	G4008.3
10.4	2.5	7.1	50	6	3	G40010.4
12.4	2.8	8.0	56	8	3	G40012.4
16.5	3.2	10.0	60	10	3	G40016.5
20.5	3.5	12.5	63	10	3	G40020.5
25.0	3.8	15.0	67	10	3	G40025.0
31.0	4.2	18.0	71	12	3	G40031.0

G135 • Kúpsüllyesztő - 60°
• Zencuitoare - 60°

G335 • 60° HAVŞA FREZE
• Countersink - 60°

G135	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2
G335	▪	1.1	1.2	1.3	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4			
	•	1.4	1.5	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1	8.2



max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₃ mm	z	G135	G335
6.3	1.6	6.8	45	5	3	G1356.3	G3356.3
8.0	2.0	8.5	50	6	3	G1358.0	G3358.0
10.0	2.5	7.6	50	6	3	G13510.0	G33510.0
12.5	3.2	11.7	56	8	3	G13512.5	G33512.5
16.0	4.0	14.5	63	10	3	G13516.0	G33516.0
20.0	5.0	17.5	67	10	3	G13520.0	G33520.0
25.0	6.3	20.5	71	10	3	G13525.0	G33525.0

G137

- Kúpos szárú Kúpsüllyesztő - 60°
- Zencuitoare cu coada Morse - 60°
- Mors Konik Şaftlı Havşa Matkabı 60°
- Morse Taper Shank Countersink - 60°

G137	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2

G137



max d mm	min d mm	l ₂ mm	l ₁ mm	MK	z	G137
16.0	4.0	14.5	90	1	3	G13716.0
20.0	5.0	17.5	106	2	3	G13720.0
25.0	6.3	20.0	112	2	3	G13725.0
31.5	10.0	23.0	118	2	3	G13731.5
40.0	12.5	28.5	150	3	3	G13740.0
50.0	16.0	36.0	160	3	3	G13750.0
63.0	20.0	43.0	190	4	3	G13763.0
80.0	25.0	54.0	200	4	3	G13780.0

G154

- Kúpsüllyesztő - 82°
- Zencuitoare - 82°
- 82° HAVŞA FREZE
- Countersink - 82°

G154	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2

G154

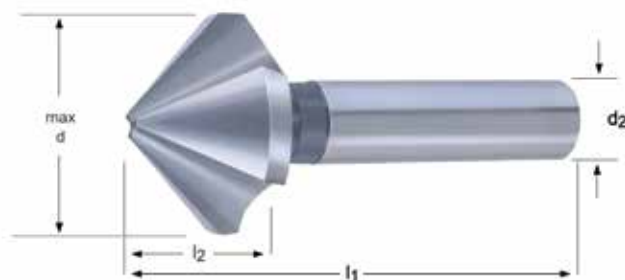
HSS



DIN
335C



82°



G154



6.30 - 25.00

max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₉ mm	z	G154
6.3	1.5	5.5	45	5	3	G1546.3
8.3	2.0	6.5	50	6	3	G1548.3
10.4	2.5	7.6	50	6	3	G15410.4
12.4	2.8	8.5	56	8	3	G15412.4
16.5	3.2	10.5	60	10	3	G15416.5
20.5	3.5	13.0	63	10	3	G15420.5
25.0	3.8	15.5	67	10	3	G15425.0

G129

- Kúpsüllyesztő - 90°
- Zencuitoare - 90°
- 90° HAVŞA FREZE
- Countersink - 90°

G129	▪	1.1	1.2	1.3	1.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	7.1	7.2	
	•	1.1	1.6	2.1	2.2	3.1	3.2	3.3	3.4	4.3	5.3	6.4	7.3	7.4	8.1	8.2

G129 HSS



max d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₉ mm	z	G129
6.0	0.0	45	6	1	G1296.0
8.0	0.0	50	8	1	G1298.0
10.0	17.0	49	8	1	G12910.0
12.5	17.0	49	8	1	G12912.5
16.0	20.0	56	10	1	G12916.0
20.0	24.0	60	10	1	G12920.0
25.0	25.0	75	12	1	G12925.0
31.5	29.0	80	12	1	G12931.5

- G149**
- Kúpsüllyesztő - 90°
 - Zencuitoare - 90°
 - 90° HAVŞA FREZE
 - Countersink - 90°

G149	▪	1.1	1.2	1.3	1.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	7.1	7.2	
	•	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	4.3	5.3	6.4	7.3	7.4	8.1	8.2



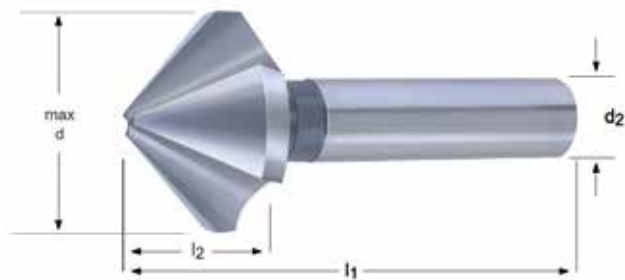
max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Ø mm	d ₁ Ø mm	z	G149
5	2	19.0	45	6	10	1	G1495
10	5	23.0	48	8	14	1	G14910
15	10	34.0	65	10	21	1	G14915
20	15	43.0	84	12	28	1	G14920
25	20	48.0	102	15	35	1	G14925
30	25	61.0	115	15	44	1	G14930
35	30	65.0	127	15	48	1	G14935
40	35	66.0	136	15	53	1	G14940
50	40	85.0	166	20	60	1	G14950

- G136** • Kúpsüllyesztő - 90°
 • Zencuitoare - 90°
G560 • 90° HAVŞA FREZE
 • Countersink - 90°

- G106** • Kúpsüllyesztő 3-as lapolású szárral - 90°
 • Zencuitor cu coadă tri-plană - 90°
G506 • 3 AĞIZLI SİLİNDİRİK SAPLI 90° HAVŞA FREZE
 • Countersink with Tri-Flat shank - 90°

G136	▪	1.1	1.2	1.3	1.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	7.1	7.2	8.1	
	•	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.3	5.3	6.4	7.3	7.4	8.2
G560	▪	1.1	1.2	1.3	1.4	1.5	2.1	3.1	3.2	3.3	3.4	5.1	5.2	5.3	7.3	7.4
	•	1.6	2.2	2.3	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	8.1	8.2	
G106	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2
G506	▪	1.1	1.2	1.3	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4				
	•	1.4	1.5	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1	8.2

G136	HSS		DIN 335C				90°	
G560	HSS	TiAIN	DIN 335C				90°	
G106	HSS		DIN 335C				90°	
G506	HSS	TiAIN	DIN 335C				90°	



max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₉ mm	z	G136	G560	G106	G506
4.3	1.3	4.0	40	4	3	G1364.3			
5.0	1.5	4.5	40	4	3	G1365.0			
5.3	1.5	4.5	40	4	3	G1365.3			
5.8	1.5	5.0	45	5	3	G1365.8			
6.0	1.5	5.0	45	5	3	G1366.0			
6.3	1.5	5.5	45	5	3	G1366.3	G5606.3		
6.3	1.5	5.6	45	5	3			G1066.3	G5066.3
7.0	1.8	5.5	50	6	3	G1367.0			
7.3	1.8	6.1	50	6	3	G1367.3			
8.0	2.0	6.1	50	6	3	G1368.0	G5608.0		
8.3	2.0	6.5	50	6	3	G1368.3	G5608.3		

max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₃ mm	z	G136	G560	G106	G506
8.3	2.0	6.9	50	6	3			G1068.3	G5068.3
9.4	2.2	7.2	50	6	3	G1369.4			
10.0	2.5	7.6	50	6	3	G13610.0	G56010.0		
10.4	2.5	7.6	50	6	3	G13610.4	G56010.4		
10.4	2.5	7.8	50	6	3			G10610.4	G50610.4
11.5	2.8	8.0	56	8	3	G13611.5			
12.4	2.8	8.5	56	8	3	G13612.4	G56012.4		
12.4	2.8	8.6	56	8	3			G10612.4	G50612.4
13.4	2.9	9.0	56	8	3	G13613.4			
15.0	3.2	9.5	60	10	3	G13615.0			
16.5	3.2	10.5	60	10	3	G13616.5	G56016.5		
16.5	3.2	11.1	60	10	3			G10616.5	G50616.5
19.0	3.5	11.7	63	10	3	G13619.0			
20.5	3.5	13.0	63	10	3	G13620.5	G56020.5		
20.5	3.5	12.9	63	10	3			G10620.5	G50620.5
23.0	3.8	13.7	67	10	3	G13623.0			
25.0	3.8	15.5	67	10	3	G13625.0	G56025.0		
25.0	3.8	15.7	67	10	3			G10625.0	G50625.0
26.0	3.8	15.5	67	10	3	G13626.0			
28.0	4.0	16.5	71	12	3	G13628.0			
30.0	4.2	18.5	71	12	3	G13630.0			
31.0	4.2	18.5	71	12	3	G13631.0	G56031.0	G10631.0	G50631.0
34.0	4.5	19.0	103	16	3			G10634.0	G50634.0
37.0	4.5	21.2	118	16	3			G10637.0	G50637.0
40.0	4.5	20.0	118	16	3			G10640.0	G50640.0
50.0	5.0	23.6	126	16	3			G10650.0	G50650.0

- ## G142
- Kúpsüllyesztő extra radiális hátszöggel - 90°
 - Zencuitor cu unghi asezare marit - 90°
 - Ekstra radyal boşaltmalı Havşa Matkabı - 90°
 - Countersink with extra radial relief - 90°

- ## G570
- Kúpsüllyesztő - 90°
 - Zencuitoare - 90°
 - 90° HAVŞA FREZE
 - Countersink - 90°

G142	▪	1.1	1.2	2.1	2.2	2.3	4.1	5.1	6.1	6.2	7.1	7.2	8.1	8.2					
	•	1.3	1.4	4.2	5.2	6.3	7.3	7.4											
G570	▪	1.4	1.5	2.1	2.2	2.3													
	•	1.1	1.2	1.3	1.6	2.4	3.1	3.2	3.3	3.4	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4



max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₉ mm	z	G142	G570
4.8	1.3	4.5	40	4	3	G1424.8	
5.0	1.5	4.5	40	4	3	G1425.0	
6.0	1.5	5.0	45	5	3	G1426.0	
6.3	1.5	5.5	45	5	3	G1426.3	
6.3	1.5	6.5	45	5	3		G5706.3
7.0	1.8	5.5	50	6	3	G1427.0	
7.3	1.8	6.1	50	6	3	G1427.3	
8.0	2.0	6.1	50	6	3	G1428.0	
8.3	2.0	6.5	50	6	3	G1428.3	
8.3	2.0	8.2	50	6	3		G5708.3
10.0	2.5	7.6	50	6	3	G14210.0	
10.4	2.5	7.6	50	6	3	G14210.4	
10.4	2.5	9.7	50	6	3		G57010.4
11.5	2.8	8.0	56	8	3	G14211.5	
12.4	2.8	8.5	56	8	3	G14212.4	
12.4	2.8	10.6	56	8	3		G57012.4
15.0	3.2	9.5	60	10	3	G14215.0	
16.5	3.2	10.5	60	10	3	G14216.5	
16.5	3.2	13.9	60	10	3		G57016.5
19.0	3.5	11.7	63	10	3	G14219.0	
20.5	3.5	13.0	63	10	3	G14220.5	
20.5	3.5	17.1	63	10	3		G57020.5
23.0	3.8	13.7	67	10	3	G14223.0	
25.0	3.8	15.5	67	10	3	G14225.0	
25.0	3.8	21.4	67	10	3		G57025.0
31.0	4.2	18.5	71	12	3	G14231.0	
31.0	4.2	24.4	71	12	3		G57031.0

- G107**
- Süllyesztőmaró hatszögletes szárral – 90°
 - Zencuitor cu coadă hexagonală - 90°
 - ALTIGEN SAPLI 90° HAVŞA FREZE
 - Countersink with hexagonal shank - 90°

G107	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2



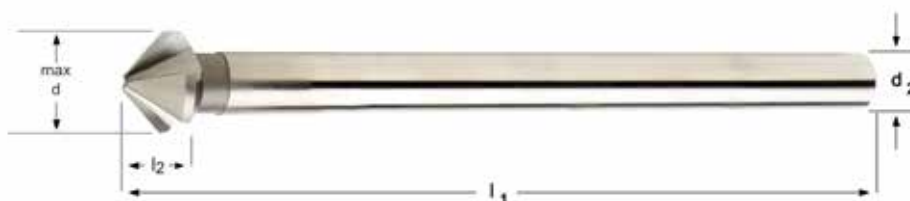
max d mm	min d mm	l_1 mm	d_2 Ø A/F mm	DIN 74	z	G107
6.3	1.5	50	1/4"	M2-M3	3	G1076.3
8.3	2.0	50	1/4"	M4	3	G1078.3
10.4	2.5	50	1/4"	M5	3	G10710.4
12.4	2.8	50	1/4"	M6	3	G10712.4
16.5	3.2	50	1/4"	M8	3	G10716.5
20.5	3.5	50	1/4"	M10	3	G10720.5

G600

- Kúpsüllyesztő, extra hosszú - 90°
- Zencuitoare extralungi - 90°
- Ekstra uzun havşa matkabı - 90°
- Countersink, Extra Long - 90°

G600	▪	1.1	1.2	1.3	1.4	1.5	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4

G600



max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₉ mm	z	G600
6.3	1.3	5.6	154	5	3	G6006.3
8.3	1.8	6.9	155	6	3	G6008.3
10.4	2.2	7.8	157	6	3	G60010.4
12.4	2.5	8.6	158	8	3	G60012.4
15.0	2.8	10.3	159	10	3	G60015.0
16.5	2.8	11.1	161	10	3	G60016.5
20.5	3.0	12.9	164	10	3	G60020.5
25.0	3.2	15.7	168	10	3	G60025.0

G132

- Kúpsüllyesztő - 90°
- Zencuitoare - 90°
- 90° Havşa Freze
- Countersink - 90°

G132	▪	1.5	1.6	3.4	4.2	4.3	5.2	5.3	6.4
	•	1.3	1.4	2.3	8.3				

G132

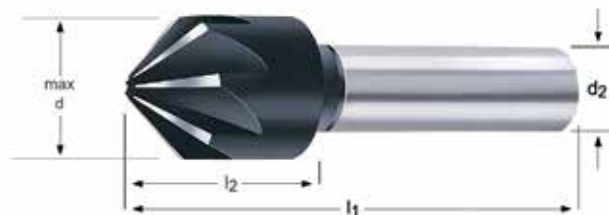
HSS



DIN
335A



90°



G132



8.00 - 20.00

max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₉ mm	z	G132
8.0	-	0.0	48	8	5	G1328.0
12.5	2.0	15.5	48	8	5	G13212.5
16.0	3.2	19.5	56	10	7	G13216.0
20.0	5.0	23.0	60	10	7	G13220.0

- G138** • Morse-kúpos szárú süllyesztő - 90°
 • Zencuitoare cu coada Morse - 90°
- G338** • Ekstra uzun havşa matkabı - 90°
 • Morse Taper Shank Countersink - 90°

G138	▪	1.1	1.2	1.3	1.4	1.5	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.1	7.2	7.3	7.4	8.1	8.2
G338	▪	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4	
	•	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1	8.2	



max d mm	min d mm	l ₂ mm	l ₁ mm	MK	z	G138	G338
25.0	3.8	15.5	106	2	3	G13825.0	G33825.0
30.0	4.2	18.5	112	2	3	G13830.0	
31.0	4.2	20.0	112	2	3	G13831.0	G33831.0
34.0	4.5	19.5	118	2	3	G13834.0	
37.0	4.8	21.7	118	2	3	G13837.0	G33837.0
40.0	10.0	20.5	140	3	3	G13840.0	G33840.0
50.0	14.0	24.1	150	3	3	G13850.0	G33850.0
63.0	16.0	28.5	180	4	3	G13863.0	G33863.0
80.0	22.0	36.0	190	4	3	G13880.0	

- G171**
- Kúpsüllyesztő - 100°
 - Zencuitoare - 100°
 - 100° Havşa Freze
 - Countersink - 100°

G171	▪	1.1	1.2	1.3	3.1	3.2	3.3	3.4	7.1	7.2	7.3	7.4								
	•	1.4	1.5	1.6	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	8.1	8.2				

G171

HSS

TAIN

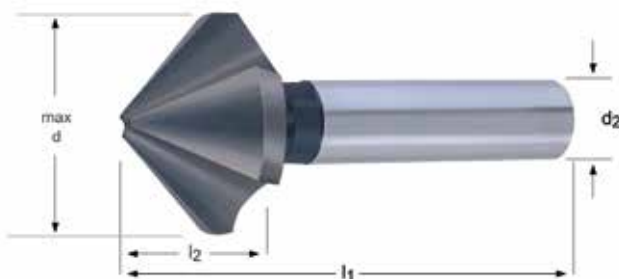
DIN 335C

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100°



max d mm	min d mm	l ₂ mm	l ₁ mm	d ₂ Øh ₃ mm	z	G171
6.3	1.5	4.5	44	5	3	G1716.3
8.3	2.0	5.5	49	6	3	G1718.3
10.4	2.5	6.6	49	6	3	G17110.4
12.4	2.8	7.0	53	8	3	G17112.4
16.5	3.2	9.0	56	10	3	G17116.5
20.5	3.5	11.0	61	10	3	G17120.5
25.0	3.8	13.5	65	10	3	G17125.0

M138

- Lemezűró
- Burghiu conic
- Konik matkap
- Conical Drill

M138	▪	1.1	1.2	1.3	1.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.1	7.2	8.1	8.2
	•	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.3	7.4					

M138



Nr.	max d mm	min d mm	l_2 mm	l_1 mm	d_2 h11 mm	M138
1	14	3	36	58	6	M1381
2	20	8	40	62	8	M1382
3	30	16	48	70	10	M1383
4	40	26	51	76	10	M1384
5	50	36	54	79	10	M1385
6	60	46	57	82	13	M1386

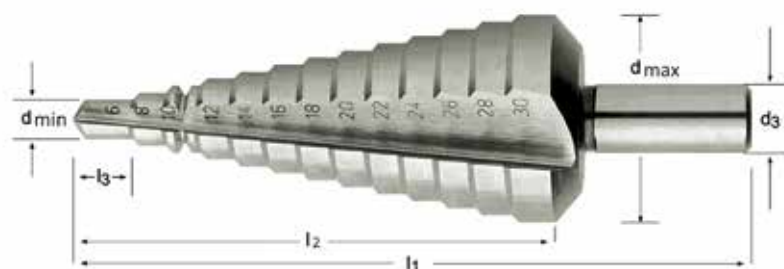
G314

- Lépcsős Lemezfúró
- Burghiu conic
- Konik matkap
- Conical Drill

G314	▪	1.1	1.2	1.3	1.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.1	7.2	8.1	8.2	
	•	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	6.4	7.3	7.4						

G314

HSS



G314

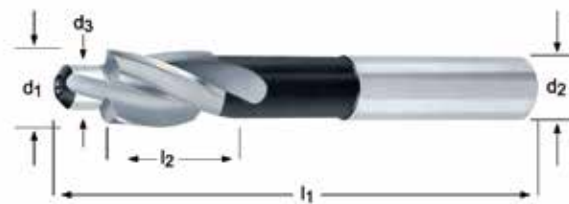


4.00 - 9.00

Nr.	d min-max mm	l ₃ mm	l ₂ mm	l ₁ mm	d ₃ Ø mm	G314
412	4.0 mm ÷ 12.0 mm x 1.0 mm	5.0	61	80	6.0	G314412
1220	12.0 mm ÷ 20.0 mm x 1.0 mm	4.0	55	76	9.0	G3141220
2030	20.0 mm ÷ 30.0 mm x 1.0 mm	4.0	67	88	12.0	G3142030
3040	30.0 mm ÷ 40.0 mm x 1.0 mm	4.0	74	98	13.0	G3143040
420	4.0 mm ÷ 20.0 mm x 2.0 mm	4.0	48	76	8.0	G314420
630	6.0 mm ÷ 30.0 mm x 2.0 mm	4.0	73	98	10.0	G314630
M	9.0 mm ÷ 36.0 mm x 3.0 mm	3.0	57	86	12.0	G314M

- G125**
- Csapos süllyesztő - 180°
 - Lamatoare - 180°
 - Silindrik havşa matkabi - 180°
 - Counterbore - 180°

G125	▪	1.1	1.2	1.3	2.1	3.1	3.2	7.1	7.2	8.1								
	•	1.4	1.5	1.6	2.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.3	7.4	8.2



d_1 $\varnothing z_3$ mm	d_3 $\varnothing e_8$ mm	M	l_1 mm	l_2 mm	d_2 $\varnothing h_9$ mm	z	G125
6.5	2.5	M 3 t	71	14	5.0	3	G1256.5X2.5 ¹⁾
6.5	3.2	M 3 f	71	14	5.0	3	G1256.5X3.2 ²⁾
6.5	3.4	M 3 m	71	14	5.0	3	G1256.5X3.4 ³⁾
8.0	3.3	M 4 t	71	14	5.0	3	G1258.0X3.3 ¹⁾
8.0	4.3	M 4 f	71	14	5.0	3	G1258.0X4.3 ²⁾
8.0	4.5	M 4 m	71	14	5.0	3	G1258.0X4.5 ³⁾
10.0	4.2	M 5 t	80	18	8.0	3	G12510.0X4.2 ¹⁾
10.0	5.3	M 5 f	80	18	8.0	3	G12510.0X5.3 ²⁾
10.0	5.5	M 5 m	80	18	8.0	3	G12510.0X5.5 ³⁾
11.0	5.0	M 6 t	80	18	8.0	3	G12511.0X5.0 ¹⁾
11.0	6.4	M 6 f	80	18	8.0	3	G12511.0X6.4 ²⁾
11.0	6.6	M 6 m	80	18	8.0	3	G12511.0X6.6 ³⁾
15.0	6.8	M 8 t	100	22	12.5	3	G12515.0X6.8 ¹⁾
15.0	8.4	M 8 f	100	22	12.5	3	G12515.0X8.4 ²⁾
15.0	9.0	M 8 m	100	22	12.5	3	G12515.0X9.0 ³⁾
18.0	8.5	M 10 t	100	22	12.5	3	G12518.0X8.5 ¹⁾
18.0	10.5	M 10 f	100	22	12.5	3	G12518.0X10.5 ²⁾
18.0	11.0	M 10 m	100	22	12.5	3	G12518.0X11.0 ³⁾
20.0	10.2	M 12 t	100	22	12.5	3	G12520.0X10.2 ¹⁾
20.0	13.0	M 12 f	100	22	12.5	3	G12520.0X13.0 ²⁾
20.0	13.5	M 12 m	100	22	12.5	3	G12520.0X13.5 ³⁾

¹⁾ t = zsákfuratokhoz / t = pentru gaura ce se fileteaza / t= for tap hole / t= kılvaaz deliđi için
²⁾ f= átmenő furatokhoz, finom illesztéssel / f= pentru gauri strapunse fine / f= boş delik için / f= for through hole fine
³⁾ m = átmenő furatokhoz, közepes illesztéssel / m = pentru treceri de suruburi precizie medii / m= boş delik ortam için / m= for through hole medium

G236

- Kúpsüllyesztő készlet
- Set zencuitoare
- Havşa Freze Seti
- Countersink set

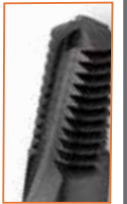
A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 A= Set modeli, B= Set içerik adedi, C= Set çapları
 A=Styles in Set, B=No. in Set, C=Diameters in Set



Set

Nr.	A	B	C	G236
1	G136	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2361
2	G136	4	6.30 mm, 10.40 mm, 16.50 mm, 20.50 mm	G2362
3	G560	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2363
4	G106	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2364
5	G506	6	6.30 mm, 8.30 mm, 10.40 mm, 12.40 mm, 16.50 mm, 20.50 mm	G2365

195 - 206



J200	199
J205	199
J210	200
J215	200
J220	201
J225	201
J235	202
J245	203
J280	204
J260	205


Menet típusok	Forma filetului	Diş formu	Thread form
Szabvány	Standard	Standart	Standard
Fúrási mélység	Adancimea	Derinlik	Depth
Anyag	Material	Malzeme	Material
Spirálszög	Unghiul spirei	Helis açısı	Helix angle
Írány	Directie	Yön	Direction
Bevonat	Acoperire	Kaplama	Coating
Szár	Coda	Şaft	Shank
Hűtés	Racire	Soğutma	Coolant
■ Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
■ Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metrii pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
Kódok	Coduri	Kodlar	Product Codes
Választék	Gama	Ürün aralığı	Range

AMG	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvözött acél	Otel aliat	Alaşımli çelik	Alloy steel
1.5	Ötvözött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvözött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvözött, edzett acél	Otel aliat, calit	Alaşımli çelik, ısıli işlemler	Alloy steel, Heat treated
1.8	Ötvözött, edzett és kopásálló acél	Otel aliat, calit	Alaşımli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Auszenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Auszenites	Feritic+austenitic	Ferritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımsız	Titanium, unalloyed
4.2	Titánium, ötvözött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
4.3	Titánium, ötvözött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımsız	Nickel, unalloyed
5.2	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
5.3	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımsız	Al, Mg, unalloyed
7.2	Al ötvözött, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımlı, Si<%0.5	Al alloyed, Si < 0.5%
7.3	Al ötvözött, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımlı, Si>%0.5 <% 10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvözött, Si > 10%	Al aliat cu Si >10%	Al alaşımlı, Si>%10 sertleştirilmiş, Al alaşımları, Mg alaşımları	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzemeler	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

	M	M	M	M	MF	MF	UNC	UNF	G	NPT
	2XD	2XD	2XD	2XD	1.5XD	1.5XD	2XD	2XD	1.5XD	
	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	J200	J205	J210	J215	J220	J225	J235	J245	J280	J260
	M4 - M16	M8 - M16	M6 - M16	M6 - M16	M6 - M24	M10 - M18	1/4 - 3/4	1/4 - 3/4	1/8 - 3"	1/8 - 2"
	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW	NEW


AMG	199	199	200	200	201	201	202	203	204	205	ISO
1.1	■170B	■170B	■175B	■175B	■170B	■170B	■170B	■170B	■170B	■170B	P 1
1.2	■170B	■170B	■175B	■175B	■170B	■170B	■170B	■170B	■170B	■170B	P 1
1.3	■140B	■140B	■145B	■145B	■140B	■140B	■140B	■140B	■140B	■140B	P 2
1.4	■130B	■130B	■135B	■135B	■130B	■130B	■130B	■130B	■130B	■130B	P 3
1.5	■100B	■100B	■105B	■105B	■100B	■100B	■100B	■100B	■100B	■100B	P 4
1.6	■80B	■80B	■85B	■85B	■80B	■80B	■80B	■80B	■80B	■80B	H 1
1.7	●50A	●50A	●50A	●50A	●50A	●50A	●50A	●50A	●50A	●50A	H 3
1.8	●30A	●30A	●30A	●30A	●30A	●30A	●30A	●30A	●30A	●30A	H 4
2.1	●50A	■50A	●50A	●50A	●50A	■50A	■50A	■50A	●50A	●50A	M 1
2.2	●40A	■40A	●40A	●40A	●40A	■40A	■40A	■40A	●40A	●40A	M 3
2.3	●30A	■30A	●30A	●30A	●30A	■30A	■30A	■30A	●30A	●30A	M 2
2.4	●25A	■25A	●25A	●25A	●25A	■25A	■25A	■25A	●25A	●25A	S 2
3.1	■150B	■150B	■155B	■155B	■150B	■150B	■150B	■150B	■150B	■150B	K 1
3.2	■130B	■130B	■135B	■135B	■130B	■130B	■130B	■130B	■130B	■130B	K 2
3.3	■150B	■150B	■155B	■155B	■150B	■150B	■150B	■150B	■150B	■150B	K 3
3.4	■120B	■120B	■125B	■125B	■120B	■120B	■120B	■120B	■120B	■120B	K 4
4.1	■170B	■170B	■175B	■175B	■170B	■170B	■170B	■170B	■170B	■170B	S 1
4.2	■80B	■80B	■80B	■80B	■80B	■80B	■80B	■80B	■80B	■80B	S 2
4.3	■50B	■50B	■50B	■50B	■50B	■50B	■50B	■50B	■50B	■50B	S 3
5.1	●250B	■250B	●250B	●255B	●250B	■250B	■250B	■250B	●250B	●250B	S 1
5.2	●40A	■40A	●40A	●40A	●40A	■40A	■40A	■40A	●40A	●40A	S 2
5.3	●25A	■25A	●25A	●25A	●25A	■25A	■25A	■25A	●25A	●25A	S 3
6.1	■400B	■400B	■405B	■405B	■400B	■400B	■400B	■400B	■400B	■400B	N 3
6.2	■400B	■400B	■405B	■405B	■400B	■400B	■400B	■400B	■400B	■400B	N 4
6.3	■400B	■400B	■405B	■405B	■400B	■400B	■400B	■400B	■400B	■400B	N 3
6.4	■60A	■60A	■60A	■60A	■60A	■60A	■60A	■60A	■60A	■60A	N 4
7.1	■800C	■800C	■805C	■805C	■800C	■800C	■800C	■800C	■800C	■800C	N 1
7.2	■800C	■800C	■805C	■805C	■800C	■800C	■800C	■800C	■800C	■800C	N 1
7.3	■700C	■700C	■705C	■705C	■700C	■700C	■700C	■700C	■700C	■700C	N 1
7.4	■340B	■340B	■345B	■345B	■340B	■340B	■340B	■340B	■340B	■340B	N 2
8.1	■340C	■340C	■345C	■345C	■340C	■340C	■340C	■340C	■340C	■340C	O
8.2	■210C	■210C	■215C	■215C	■210C	■210C	■210C	■210C	■210C	■210C	O
8.3	■180C	■180C	■185C	■185C	■180C	■180C	■180C	■180C	■180C	■180C	O
9.1											H
10.1	●200C	●200C	●210C	●205C	●200C	●200C	●200C	●200C	●200C	●200C	O

M




Ø	A		B		C	
	ap= 1 x d ₁	ap= 2 x d ₁	ap= 1 x d ₁	ap= 2 x d ₁	ap= 1 x d ₁	ap= 2 x d ₁
3,2	0,010	0,005	0,011	0,006	0,017	0,012
4,1	0,009	0,007	0,012	0,008	0,014	0,011
4,8	0,012	0,009	0,015	0,010	0,017	0,014
6,5	0,017	0,014	0,027	0,017	0,030	0,025
8,2	0,021	0,018	0,034	0,029	0,040	0,033
9,9	0,024	0,020	0,039	0,024	0,048	0,032
11,6	0,031	0,025	0,050	0,031	0,059	0,035
13,6	0,039	0,032	0,062	0,051	0,071	0,048
16	0,061	0,033	0,064	0,036	0,066	0,033
19	0,085	0,044	0,089	0,048	0,095	0,044

MF




d ₁	P	A		B		C	
		ap= 3/4 x d ₁	ap= 1,5 x d ₁	ap= 3/4 x d ₁	ap= 1,5 x d ₁	ap= 3/4 x d ₁	ap= 1,5 x d ₁
4,8	0,5	0,017	0,014	0,022	0,018	0,025	0,021
6	0,75	0,023	0,018	0,033	0,027	0,037	0,030
6	1	0,020	0,016	0,029	0,023	0,032	0,026
8	1	0,025	0,020	0,041	0,033	0,045	0,037
10	1	0,034	0,028	0,055	0,045	0,069	0,056
10	1,5	0,028	0,023	0,045	0,037	0,056	0,046
12	1	0,048	0,039	0,077	0,065	0,077	0,075
12	1,5	0,040	0,032	0,065	0,053	0,076	0,062
14	1	0,060	0,049	0,084	0,079	0,084	0,084
14	1,5	0,049	0,040	0,079	0,064	0,084	0,074
16	2	0,050	0,041	0,082	0,066	0,089	0,077
20	2	0,067	0,055	0,100	0,093	0,100	0,100

UNC




d ₁	P	A		B		C	
		ap= 1 x d ₁	ap= 2 x d ₁	ap= 1 x d ₁	ap= 2 x d ₁	ap= 1 x d ₁	ap= 2 x d ₁
4,8	20	0,003	0,003	0,012	0,006	0,029	0,014
5,5	18	0,004	0,003	0,017	0,009	0,041	0,023
7,5	16	0,008	0,005	0,029	0,016	0,056	0,043
8	14	0,008	0,006	0,031	0,018	0,060	0,049
10	13	0,009	0,007	0,040	0,032	0,071	0,071
10	12	0,008	0,006	0,038	0,029	0,071	0,069
12	11	0,009	0,007	0,036	0,026	0,077	0,077
14	10	0,010	0,008	0,060	0,043	0,084	0,084

UNF




d ₁	P	A		B		C	
		ap= 1 x d ₁	ap= 2 x d ₁	ap= 1 x d ₁	ap= 2 x d ₁	ap= 1 x d ₁	ap= 2 x d ₁
4,8	20	0,004	0,003	0,016	0,008	0,034	0,021
6	18	0,006	0,004	0,028	0,016	0,055	0,045
8	16	0,013	0,007	0,037	0,025	0,063	0,058
10	14	0,022	0,011	0,046	0,038	0,071	0,071
14	10	0,036	0,018	0,075	0,061	0,084	0,084

G

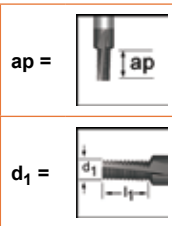


d ₁	A		B		C	
	ap= 1 x d ₁	ap= 2 x d ₁	ap= 1 x d ₁	ap= 2 x d ₁	ap= 1 x d ₁	ap= 2 x d ₁
3,2	0,010	0,005	0,011	0,006	0,017	0,012
4,1	0,009	0,007	0,012	0,008	0,014	0,011
4,8	0,012	0,009	0,015	0,010	0,017	0,014
6,5	0,017	0,014	0,027	0,017	0,030	0,025
16	0,061	0,033	0,064	0,036	0,066	0,033
19	0,085	0,044	0,089	0,048	0,095	0,044

NPT



d ₁	Ap=	A	B	C
7,9	Standard	0,026	0,044	0,069
9,9	Standard	0,029	0,046	0,070
15,9	Standard	0,053	0,087	0,089
19,9	Standard	0,064	0,1	0,1



J200

- M menetmaró spirálhorony 10°
- Freză de filete M cu canal în spirală de 10°
- M Diş Frezezi Helis Açısı 10°
- M Thread Mill Spiral Flute 10°

Belső menet
Filet interior
İç Diş
Internal Thread

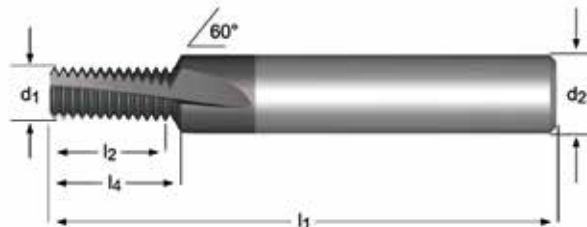
J205

- M menetmaró spirálhorony 10° - Olajvezetovel
- Freză de filete M cu canal în spirală de 10° Racire interna
- M Diş Frezezi Helis Açısı 10° Yağ Kanallı
- M Thread Mill Spiral Flute 10° Oil Feed

Belső menet
Filet interior
İç Diş
Internal Thread

J200	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3																
	•	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1										
J205	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	6.1
		6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3										
	•	1.7	1.8	5.3	10.1																

J200	M		2XD	HM				DIN 6535HA	
J205	M		2XD	HM				DIN 6535HB	



≥	P mm	d ₁ Ø mm	l ₂ mm	l ₁ mm	d ₂ Ø mm	z	l ₄ mm	J200	J205
M4	0.70	3.20	8.4	57	6	3	9.5	J2003.2X.7	
M5	0.80	4.10	11.2	57	6	3	12.1	J2004.1X.8	
M6	1.00	4.80	13.0	63	8	3	14.4	J2004.8X1.0	
M8	1.25	6.50	17.5	72	10	3	19.1	J2006.5X1.25	J2056.5X1.25
M10	1.50	8.20	21.0	83	12	3	22.8	J2008.2X1.5	J2058.2X1.50
M12	1.75	9.90	26.25	83	14	4	28.2	J2009.9X1.75	J2059.9X1.75
M14	2.00	11.60	30.0	92	16	4	32.2	J2011.6X2.0	J20511.6X2.0
M16	2.00	13.60	34.0	92	18	4	36.2	J2013.6X2.0	J20513.6X2.0

- ## J210
- M menetmaró spirálhorony 27°
 - Freză de filete M cu canal în spirală de 27°
 - M Diş Frezezi Helis Açısı 27°
 - M Thread Mill Spiral Flute 27°

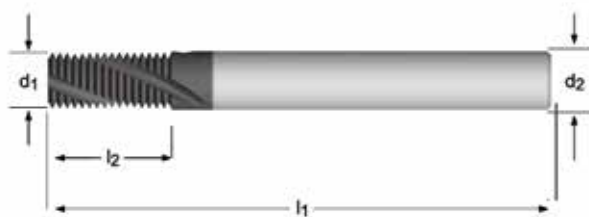
Belső menet
Filet interior
İç Diş
Internal Thread

- ## J215
- M menetmaró spirálhorony 27° - Olajvezetovel
 - Freză de filete M cu canal în spirală de 27° Racire interna
 - M Diş Frezezi Helis Açısı 27° Yağ Kanallı
 - M Thread Mill Spiral Flute 27° Oil Feed

Belső menet
Filet interior
İç Diş
Internal Thread

J210; J215	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1
	7.2	7.3	7.4	8.1	8.2	8.3												
	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1								

J210	M	DORMER	2XD	HM	$\lambda 27^\circ$		Alcrona Pro	DIN 6535HA	
J215	M	DORMER	2XD	HM	$\lambda 27^\circ$		Alcrona Pro	DIN 6535HA	



\geq	P mm	d ₁ Ø mm	l ₂ mm	l ₁ mm	d ₂ Ø mm	z	J210	J215
M6	1.00	4.50	13.0	57	6	3	J2104.5X1.0	J2154.5X1.0
M8	1.25	6.00	17.5	65	6	3	J2106.0X1.25	J2156.0X1.25
M10	1.50	7.50	21.0	72	8	3	J2107.5X1.5	J2157.5X1.5
M12	1.75	9.50	26.25	80	10	3	J2109.5X1.75	J2159.5X1.75
M14	2.00	10.00	30.0	83	10	4	J21010.0X2.0	J21510.0X2.0
M16	2.00	12.00	34.0	92	12	4	J21012.0X2.0	J21512.0X2.0

J220

- MF menetmaró spirálhorony 10°
- Freză de filete MF cu canal în spirală de 10°
- MF Diş Frezezi Helis Açısi 10°
- MF Thread Mill Spiral Flute 10°

Belső menet
Filet interior
İç Diş
Internal Thread

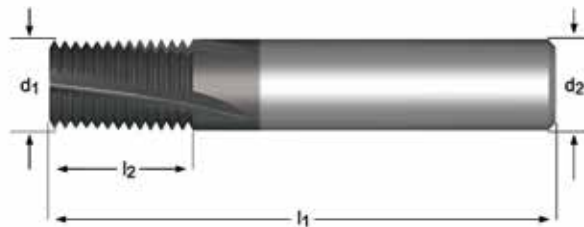
J225

- MF menetmaró spirálhorony 10° - Olajvezetovel
- Freză de filete MF cu canal în spirală de 10° Racire interna
- MF Diş Frezezi Helis Açısi 10° Yağ Kanallı
- MF Thread Mill Spiral Flute 10° Oil Feed

Belső menet
Filet interior
İç Diş
Internal Thread

J220	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3																
	•	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1										
J225	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3
		6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3									
	•	1.7	1.8	10.1																	

J220	MF		1.5XD	HM				DIN 6535HA	
J225	MF		1.5XD	HM				DIN 6535HB	



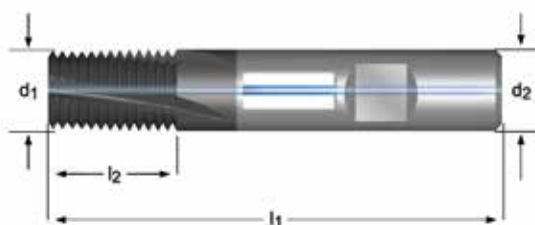
≧	P mm	d ₁ Ø mm	l ₂ mm	l ₁ mm	d ₂ Ø mm	z	J220	J225
M6	0.50	4.80	10.0	57	6	3	J2204.8X.5	
M8	0.75	6.00	12.0	57	6	3	J2206.0X.75	
M8	1.00	6.00	12.0	57	6	3	J2206.0X1.0	
M10	1.00	8.00	16.0	63	8	4	J2208.0X1.0	J2258.0X1.0
M12	1.00	10.00	20.0	72	10	4	J2210.0X1.0	J22510.0X1.0
M12	1.50	10.00	20.0	72	10	4	J2210.0X1.5	J22510.0X1.5
M14	1.00	12.00	22.0	83	12	4	J2212.0X1.0	J22512.0X1.0
M14	1.50	12.00	22.0	83	12	4	J2212.0X1.5	J22512.0X1.5
M16	1.00	14.00	26.0	83	14	5	J2214.0X1.0	J22514.0X1.0
M16	1.50	14.00	26.0	83	14	5	J2214.0X1.5	J22514.0X1.5
M18	1.50	16.00	30.0	92	16	5	J2216.0X1.5	J22516.0X1.5
M20	2.00	16.00	30.0	92	16	5	J2216.0X2.0	
M20	2.50	16.00	42.5	105	16	5	J2216.0X2.5	
M24	2.00	20.00	35.0	104	20	5	J2220.0X2.0	
M24	3.00	19.00	50.0	125	20	5	J2219.0X3.0	

J235

- UNC menetmaró spirálhorony 10° - Olajvezetovel
- Freză de filete UNC cu canal în spirală de 10° Racire interna
- UNC Diş Frezezi Helis Açısı 10° Yağ Kanallı
- UNC Thread Mill Spiral Flute 10° Oil Feed

Belső menet
Filet interior
İç Diş
Internal Thread

J235	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	6.1
		6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3										
	•	1.7	1.8	5.3	10.1																



≥	TPI	d ₁ Ø mm	l ₂ mm	l ₁ mm	d ₂ Ø mm	z	J235
1/4	20	4.80	14.0	57	6	3	J2354.8-20
5/16	18	5.50	14.0	57	6	3	J2355.5-18
3/8	16	7.50	19.0	63	8	4	J2357.5-16
7/16	14	8.00	19.0	63	8	4	J2358.0-14
1/2	13	10.00	22.0	72	10	4	J23510.0-13
9/16	12	10.00	22.0	72	10	4	J23510.0-12
5/8	11	12.00	26.0	83	12	4	J23512.0-11
3/4	10	14.00	32.0	83	14	5	J23514.0-10

J245

- UNF menetmaró spirálhorony 10° - Olajvezetovel
- Freză de filete UNF cu canal în spirală de 10° Racire interna
- UNF Diş Frezezi Helis Açısı 10° Yağ Kanallı
- UNF Thread Mill Spiral Flute 10° Oil Feed

Belső menet
Filet interior
İç Diş
Internal Thread

J245	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	6.1
		6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3										
	•	1.7	1.8	5.3	10.1																

J245

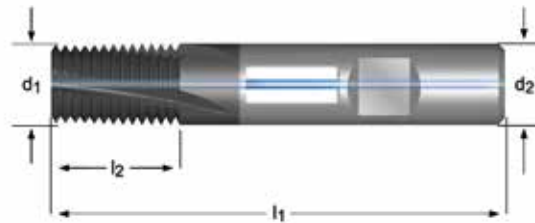
UNF

2XD

HM

λ 10°

DIN 6535HB



\geq	TPI	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	J245
1/4	28	4.80	14.0	57	6	3	J2454.8-28
5/16. 3/8	24	6.00	14.0	57	6	3	J2456.0-24
7/16. 1/2	20	8.00	19.0	63	8	4	J2458.0-20
9/16. 5/8	18	10.00	22.0	72	10	4	J24510.0-18
3/4	16	14.00	32.0	83	14	5	J24514.0-16

J280

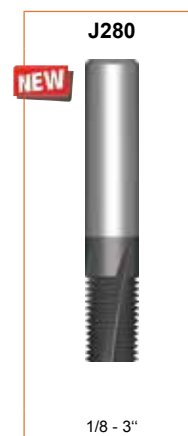
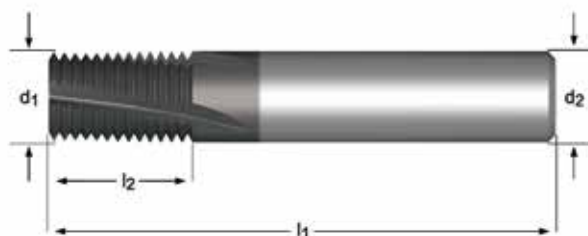
- G(BSP) menetmaró spirálhorony 10°
- Freză de filete G(BSP) cu canal în spirală de 10°
- G(BSP) Diş Frezezi Helis Açısı 10°
- G(BSP) Thread Mill Spiral Flute 10°

Belső és külső menet
Filet interior și exterior
İç ve dış diş
Internal and External Thread

J280	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3																
	•	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1										

J280

G	DORMER	1.5XD	HM	λ 10°	Alcrona Pro	DIN 6535HA
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\geq	TPI	d_1 Ø mm	l_2 mm	l_1 mm	d_2 Ø mm	z	J280
1/8	28	6.00	15.0	57	6	3	J2806.0-28
1/4	19	10.00	20.0	72	10	4	J28010.0-19
3/8	19	14.00	26.0	83	14	5	J28014.0-19
1/2. 5/8	14	16.00	30.0	92	16	5	J28016.0-14
5/8. 3/4. 7/8	14	20.00	35.0	104	20	5	J28020.0-14
1". 3"	11	25.00	45.0	121	25	6	J28025.0-11

J260

- NPT menetmaró spirálhorony 10°
- Freză de filete NPT cu canal în spirală de 10°
- NPT Diş Frezezi Helis Açısı 10°
- NPT Thread Mill Spiral Flute 10°

Belső menet
Filet interior
İç Diş
Internal Thread

J260	▪	1.1	1.2	1.3	1.4	1.5	1.6	3.1	3.2	3.3	3.4	4.1	4.2	4.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3
		7.4	8.1	8.2	8.3																
	•	1.7	1.8	2.1	2.2	2.3	2.4	5.1	5.2	5.3	10.1										

J260



N	TPI	d_1 mm	l_2 mm	l_1 mm	d_2 mm	z	J260
1/8	27	7.90	11.50	58	8	3	J2607.9-27
1/4. 3/8	18	9.90	15.92	66	10	3	J2609.9-18
1/2. 3/4	14	15.90	20.46	82	16	4	J26015.9-14
1". 2"	11.5	19.90	27.12	92	20	5	J26019.9-11.5

E000	241	E043	319	E216	243	E255	238	T200	220
E000TIN	241	E100	224	E225	281	E256	238	T201	220
E001	241	E101	224	E229	291	E258	244	T205	222
E002	254	E102	224	E237	226	E260	250	T206	222
E002TIN	254	E105	260	E238	251	E261	250	T210	220
E003	254	E108	280	E239	251	E263	244	T215	223
E011	273	E111	290	E240	239	E266	243		
E013	278	E115	301	E241	239	E268	263		
E021	285	E119	312	E242	263	E275	281		
E023	287	E200	226	E243	330	E278	291		
E031	295	E201	228	E250	226	E282	313		
E033	297	E207	244	E251	226	E286	299		
E041	316	E212	244	E252	228	E287	289		

207 - 344



E288	279	E474	253	E650	255	EX006G	246
E289	257	E500	229	E651	288	EX006H	246
E290	263	E501	229	E653	326	EX00TIN	246
E291	257	E504	229	E654	298	EX016H	246
E292	257	E513	265	E708	329	EX10	274
E293	258	E515	282	E709	328	EX10TIN	274
E294	257	E524	292	E710	324	EX11	274
E295	259	E531	302	E711	325	EX20	286
E296	259	E533	305	E712	327	EX21	286
E297	237	E534	304	E714	323	EX30	296
E298	248	E536	306	E720	328	EX31	296
E299	271	E538	308	E721	324	EX40	317
E300	276	E539	307	EP006G	235	EX41	317
E303	233	E542	309	EP006H	235	L000	336
E382	318	E544	311	EP00TIN	235	L001	337
E383	277	E545	310	EP016H	235	L002	338
E384	272	E547	314	EP10	269	L110	342
E390	228	E550	322	EP10TIN	269	L112	343
E412	249	E570	300	EP11	269	L113	333
E414	252	E600	234	EP20	284	L114	334
E422	243	E605	256	EP21	284	L115	335
E423	243	E606	242	EP30	294	L119	331
E471	240	E610	234	EP31	294	L120	339
E472	240	E620	320	EP40	315	L126	332
E473	253	E621	321	EP41	315		

AMG	Magyar	Romana	Türkçe	English
	Menet típusok	Forma filetului	Diş formu	Thread form
	Szabvány	Standard	Standart	Standard
	Tűrés	Toleranta	Tolerans	Tolerance
	Furat típus	Tip gaura	Delik Tipi	Hole Type
	Fúrási mélység	Adancimea	Derinlik	Depth
	Anyag	Material	Malzeme	Material
	Bekezdőkúp	Conul de atac	Pah	Chamfer
	Horony geometria	Geometrie canal	Helis Geometrisi	Flute geometry
	Írány	Direcție	Yön	Direction
	Bevonat	Acoperire	Kaplama	Coating
	Hűtés	Racire	Soğutma	Coolant
■	Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
■	Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
	Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metrii pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
	Kódok	Coduri	Kodlar	Product Codes
	Választék	Gama	Ürün aralığı	Range
	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvözött acél	Otel aliat	Alaşımli çelik	Alloy steel
1.5	Ötvözött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvözött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvözött, edzett acél	Otel aliat, calit	Alaşımli çelik, ısıt işlemlı	Alloy steel, Heat treated
1.8	Ötvözött, edzett és kopásálló acél	Otel aliat, calit	Alaşımli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Auszenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Auszenites	Feritic+austenitic	Ferritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımsız	Titanium, unalloyed
4.2	Titánium, ötvözött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
4.3	Titánium, ötvözött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımsız	Nickel, unalloyed
5.2	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
5.3	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistentă	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımsız	Al, Mg, unalloyed
7.2	Al ötvözött, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımlı, Si < %0.5	Al alloyed, Si < 0.5%
7.3	Al ötvözött, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımlı, Si > %0.5 < %10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvözött, Si > 10%	Al aliat cu Si >10%	Al alaşımlı, Si > %10 sertleştirilmiş. Al alaşımları, Mg alaşımları	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzeme	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
	DIN 371	DIN 37410 37412	DIN 371	DIN 37410 37412	DIN 37410 37412	DIN 2174	DIN 352	DIN 352	DIN 352	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371	DIN 376	DIN 37410 37412	
	6H	6HX	6HX	6H	6H	6HX	6H	6HX	6H	6H	6H	6H	6H	6HX	6HX	6HX	
	2XD	2.5XD	2XD	2XD	2.5XD	3XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	2XD	2XD	2XD	
	HM	HM	HM	HM	HM	HM	HSS	HSS-E	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	
	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5	C 2-3	C 2-3	C 2-3	A 6-8 C 2-3	A 6-8 C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	
	TICN	Sev 5	TICN			TICN		ST						ST	ST	TiAlN	
	T200	T201	T210	T205	T206	T215	E100	E102	E101	E200	E250	E237	E251	E201	E252	E390	
	M3 - M12	M5 - M16	M3 - M12	M3 - M12	M5 - M12	M3 - M10	M1.6 - M52	M3 - M30	M4 - M16	M2 - M10	M3 - M52	M3 - M10	M12 - M24	M3 - M10	M8 - M24	M3 - M20	
	NEW	NEW	NEW	NEW	NEW	NEW											
AMG	220	220	220	222	222	223	224	224	224	226	226	226	226	228	228	228	ISO
1.1						■60	●1	●1	●1	●12	●12	●12	●12				P 1
1.2						■60	●1	●1	●1	●10	●10	●10	●10				P 1
1.3						■60	●1	●1	●1	●8	●8	●8	●8				P 2
1.4						■40	●1	●1	●1	●6	●6	●6	●6				P 3
1.5						■30	●1	●1	●1	●5	●5	●5	●5				P 4
1.6																	H 1
1.7	■6		●6														H 3
1.8	●4		■4														H 4
2.1						■25		●1									M 1
2.2						■25		●1									M 3
2.3						■25		●1									M 2
2.4						●25											S 2
3.1	●60	■60		●40	●40		●1	●1	●1	●14	●14	●14	●14	■15	■15	■30	K 1
3.2	●30	■25		●15	●15		●1	●1	●1	●8	●8	●8	●8	■8	■8	■25	K 2
3.3		●38		■25	■25		●1	●1	●1	●12	●12	●12	●12	■15	■15	■35	K 3
3.4		●33		■15	■15		●1	●1	●1					●8	●8	●25	K 4
4.1								●1									S 1
4.2								●1									S 2
4.3								●1									S 3
5.1						■35		●1									S 1
5.2						●15		●1									S 2
5.3								●1									S 3
6.1						●40	●1	●1	●1								N 3
6.2							●1	●1	●1	●16	●16	●16	●16	●20	●20	●30	N 4
6.3						●80	●1	●1	●1	●12	●12	●12	●12				N 3
6.4	●7	●10					●1	●1	●1					●5	●5	●5	N 4
7.1						■70											N 1
7.2						■80	●1	●1	●1	●20	●20	●20	●20				N 1
7.3		●50		■35	■35	■80	●1	●1	●1	●12	●12	●12	●12				N 1
7.4	●60	■40		■30	■30		●1	●1	●1					●15	●15	●20	N 2
8.1																	O
8.2	●50	●25		●25	●25		●1	●1	●1	●8	●8	●8	●8	■10	■10	■15	O
8.3	●30	●15		●15	●15		●1	●1	●1								O
9.1																	H
10.1	●25	■25															O

	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
	ISO 529	ISO 529	ISO 529	DIN 357	ISO 2283	ISO 2283	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312		
	6H	6H	6H	6H	6H	6H	6H	6G	6H	6H	6H	6H	6H	6H	6H	6H		
	1.5XD	1.5XD	1.5XD	2XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD		
	HSS	HSS	HSS	HSS-E	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM		
				D18-20 C 2-3	C 2-3	C 2-3	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5		
											SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE		
	E500	E501	E504	E303	E600	E610	EP006H	EP006G	EP00TIN	EP016H	E297	E255	E256	E240	E241	E471		
	M1 - M56	M3 - M24	M3 - M24	M3 - M20	M3 - M30	M3 - M16	M2 - M30	M3 - M20	M3 - M30	M2 - M30	M3 - M30	M3 - M20	M3 - M20	M3 - M30	M3 - M20	M3 - M20		
AMG	229	229	229	233	234	234	235	235	235	235	237	238	238	239	239	240	ISO	
1.1	●7	●7	●14	●12	●7	●14	■25	■25	■40	■25	■25					●25	P 1	
1.2	●6	●6	●12	●10	●6	●12	■22	■22	■40	■22	■22				●22	●22	P 1	
1.3	●5	●5	●10	●8	●5	●10	■18	■18	■32	■18	■18				●18	●18	P 2	
1.4	●4	●4	●8	●6	●4	●8	■16	■16	■27	■16	●16	■16	■30		●16		P 3	
1.5	●3	●3	●6	●5	●3	●6	■10	■10	■13	■10	●10	●7	■17	●7	●10		P 4	
1.6							●5	●5	●11	●5		●4	●11				H 1	
1.7																		H 3
1.8																		H 4
2.1									■8	●7				■8	■14		M 1	
2.2									■7	●6				■7	■10		M 3	
2.3									●5	●4				■5	■6		M 2	
2.4																		S 2
3.1	●12	●12	■18	●14	●12	■18	●15	●15	●22	●15								K 1
3.2	●7	●7	■12	●8	●7	■12	●8	●8	●18	●8								K 2
3.3	●10	●10	■22	●12	●10	■22	●15	●15	●25	●15								K 3
3.4	●5	●5	●12		●5	●12	●8	●8	●18	●8								K 4
4.1							●10	●10	●15									S 1
4.2							●5	●5	●7			●2	●3					S 2
4.3																		S 3
5.1							●12	●12	●18									S 1
5.2							●5	●5	●8			●2	●3					S 2
5.3																		S 3
6.1	●4	●4			●4		■12	■12	■18		■12					●12		N 3
6.2	●10	●10	●20	●16	●10	●20	●30	●30	●45		●30					■30		N 4
6.3	●7	●7	●14	●12	●7	●14	■20	■20	■35		■20					■20		N 3
6.4	●2	●2	●4		●2	●4												N 4
7.1							■16	■16								■16		N 1
7.2	●12	●12	●24	●20	●12	●24	■35	■35								■35		N 1
7.3	●7	●7	●14	●12	●7	●14	■20	■20	■30							■20		N 1
7.4	●5	●5	●10		●5	●10	■15	■15	■22							●15		N 2
8.1							●30	●30								■25		O
8.2	●5	●5	●10	●8	●5	●10			●45									O
8.3	●3	●3	●6		●3	●6												O
9.1																		H
10.1																		O

	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
	DIN 371410 376312	ISO 529	ISO 529	ISO 529	ISO 2283	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371	DIN 376	DIN 371410 376312	DIN 371410 376312	DIN 371410 376312	
	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6G	6H	
	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	3XD	3XD	3XD	3XD	1.5XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	
	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	
	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	B 3.5-5	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	
	Super B		TN	ST						TN	TN	TN	TN			TN	
	SHARK LINE																
	E472	E000	E000TIN	E001	E606	E216	E266	E422	E423	E207	E258	E212	E263	EX006H	EX006G	EX00TIN	
	M3 - M20	M1.6 - M24	M3 - M20	M1.6 - M24	M3 - M24	M3 - M10	M12 - M24	M3 - M10	M12 - M24	M2 - M10	M4 - M36	M3 - M10	M12 - M36	M2 - M64	M3 - M20	M3 - M30	
AMG	240	241	241	241	242	243	243	243	243	244	244	244	244	246	246	246	ISO
1.1		■25	■40	■25	●20	●22	●22	●35	●35			●35	●35	■25	■25	■40	P 1
1.2	●40	■22	■40	■22	●18	■20	■20	■35	■35	●20	●20	●35	●35	■22	■22	■40	P 1
1.3	●32	■18	■32	■18	●14	■16	■16	■28	■28	■16	■16	■28	■28	■18	■18	■32	P 2
1.4		■16	■27	■16	●10	■12	■12	■24	■24	■12	■12	■24	■24	■16	■16	■27	P 3
1.5		■10	■13	■10	●5	●7	●7	●10	●10	●7	●7	●10	●10	■10	■10	■13	P 4
1.6		●5	●11	●5	●3												H 1
1.7																	H 3
1.8																	H 4
2.1			■8	●7	●6											■8	M 1
2.2			■7	●6	●4											■7	M 3
2.3			●5	●4	●3											●5	M 2
2.4																	S 2
3.1		●15	●22	●15		●12	●12	●18	●18							●22	K 1
3.2		●8	●18	●8		●7	●7	●15	●15							●18	K 2
3.3		●15	●25	●15		●10	●10	●20	●20							●25	K 3
3.4		●8	●18	●8		●5	●5	●15	●15							●18	K 4
4.1		●10	●15			●15	●15	●27	●27					●10	●10	●15	S 1
4.2		●5	●7									●10	●10	●5	●5	●7	S 2
4.3					●3	●4	●4	●5	●5			●7	●7				S 3
5.1		●12	●18		●10	●12	●12	●20	●20					●12	●12	●18	S 1
5.2		●5	●8		●4	●5	●5	●8	●8					●5	●5	●8	S 2
5.3																	S 3
6.1		■12	■18		●10	●12	●12	●18	●18								N 3
6.2	■45	■30	■45			●30	●30	●45	●45								N 4
6.3	■35	■20	■35		●15	●20	●20	●35	●35								N 3
6.4																	N 4
7.1	●35	■16			●10	●16	●16	●25	●25					■16	■16		N 1
7.2	■45	■35			●25	●35	●35	●45	●45	●30	●30	●35	●35	■35	■35		N 1
7.3	■30	■20	■30		●13	●20	●20	●30	●30	●15	●15	●20	●20	■20	■20	■30	N 1
7.4	■20	■15	■22		●10	●15	●15	●20	●20					■15	■15	■22	N 2
8.1	●30	●30			●20	●25	●25	●30	●30								O
8.2			●45														O
8.3																	O
9.1																	H
10.1																	O

	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	
	DIN 374610 376912	DIN 374610 376912	DIN 374610 376912	DIN 374610 376912	DIN 374610 376912	DIN 374610 376912	DIN 374610 376912	DIN 374610 376912	DIN 374610 376912	DIN 374610 376912	ISO 529	ISO 529	ISO 529	DORMER ISO	ISO 2283	DIN 2174	
	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6H	6HX	
	2.5XD	2XD	3XD	2.5XD	2.5XD	2.5XD	2.5XD	3XD	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	1.5XD	2XD	3XD	
	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS	HSS-E PM	HSS-E	
	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5	
	λ 45°	λ 40°	λ 48°	λ 45°	λ 45°	λ 40°	λ 40°	λ 48°	λ 35°	λ 35°	λ 45°	λ 45°	λ 45°	λ 30°	λ 40°		
	ST	Cr	TWIN Top		TWIN Top	ST	Super B	Super B		Super B		TN	ST	ST			
		SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE	SHARK LINE							
	EX016H	E298	E412	E260	E261	E238	E239	E414	E473	E474	E002	E002TIN	E003	E650	E605	E291	
	M2 - M64	M3 - M30	M3 - M30	M3 - M20	M3 - M20	M3 - M30	M3 - M20	M3 - M20	M3 - M20	M3 - M20	M2 - M24	M3 - M20	M2 - M24	M3 - M16	M3 - M20	M1.6 - M16	
			NEW					NEW									
AMG	246	248	249	250	250	251	251	252	253	253	254	254	254	255	256	257	ISO
1.1	■25	■25	■50						●25		■25	■40	■25	●25		■30	P 1
1.2	■22	■22	■50					●22	●22	●40	■22	■40	■22	●22	●18	■27	P 1
1.3	■18	■18	■35					●18	●18	●32	■18	■32	■18	●18	●14	■23	P 2
1.4	■16	●16	■30	■16	■35			●16	●27		■16	■27	■16	●15	●10	■20	P 3
1.5	■10	●10	■16	●7	■20	●7		●10	●13		■10	■13	■10		●5		P 4
1.6				●4	●11												H 1
1.7																	H 3
1.8																	H 4
2.1	■7		●14			■8	■14	■16				■8	●7		●6		M 1
2.2	■6		●10			■7	■10	■12				■7	●6		●4		M 3
2.3	●4		●6			■5	■6	■8				●5	●4		●3		M 2
2.4								■6									S 2
3.1												●22					K 1
3.2												●18		●8			K 2
3.3												●25					K 3
3.4												●18					K 4
4.1											●10	●15					S 1
4.2				●2	●3						●5	●7					S 2
4.3																	S 3
5.1											●12	●18					S 1
5.2				●2	●3						●5	●8			●4		S 2
5.3																	S 3
6.1		■12							●12								N 3
6.2		●30							■30	■45				●30			N 4
6.3		■20							■20	●35				●20			N 3
6.4																	N 4
7.1			●16						■16	●35	■16			●18	●10	■26	N 1
7.2			●16						■35	■45	■35			●35	●25	■38	N 1
7.3			●35						■20	■30	■20	■30			●13	●22	N 1
7.4			●35						●15	■20	■15	■22			●10		N 2
8.1									■25	●30				●30			O
8.2																	O
8.3																	O
9.1																	H
10.1																	O












	M	M	M	M	M	M	MF	MF	MF	MF	MF	MF	MF	MF			
DIN	2174	2174	2174	2174	2174	2174	2181	374	371	374	ISO 529	DIN 374	DIN 374	DIN 374			
Code	6HX	6HX	6HX	6HX	6GX	6GX	6H	6H	6H	6H	6H	6H	6H	6H			
Image																	
Flute	3XD	3.5XD	3.5XD	3XD	3XD	3XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD			
Material	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS	HSS-E PM	HSS-E PM	HSS-E PM			
Coating	C 2-3.5	C 2-3.5	C 2-3.5	E 1.5-2	C 2-3.5	E 1.5-2	C 2-3	C 2-3	C 2-3	C 2-3		B 3.5-5	B 3.5-5	B 3.5-5			
Image																	
Image																	
Image																	
Model	E292	E294	E289	E293	E295	E296	E105	E268	E242	E290	E513	EP10	EP10TIN	EP11	E299		
Size	M1.6 - M16	M3 - M16	M5 - M12	M3 - M16	M3 - M12	M3 - M10	M2.5 - M50	M4 - M50	M8 - M10	M12 - M24	M3 - M50	M4 - M30	M8 - M20	M4 - M30	M4 - M30		
AMG	257	257	257	258	259	259	260	263	263	263	265	269	269	269	271	ISO	
1.1	■55	■55	■55	■55	■55	■55	●1	●12	●12	●12	●7	■25	■40	■25	■25	P 1	
1.2	■50	■50	■50	■50	■50	■50	●1	●10	●10	●10	●6	■22	■40	■22	■22	P 1	
1.3	■45	■45	■45	■45	■45	■45	●1	●8	●8	●8	●5	■18	■32	■18	■18	P 2	
1.4	■40	■40	■40	■40	■40	■40	●1	●6	●6	●6	●4	■16	■27	■16	●16	P 3	
1.5	●20	●20	●20	●20	●20	●20	●1	●5	●5	●5	●3	■10	■13	■10	●10	P 4	
1.6												●5	●11	●5		H 1	
1.7																	H 3
1.8																	H 4
2.1	■18	■18	■18	■18	■18	■18						■8	●7				M 1
2.2	■15	■15	■15	■15	■15	■15						■7	●6				M 3
2.3	●10	●10	●10	●10	●10	●10						●5	●4				M 2
2.4																	S 2
3.1							●1	●14	●14	●14	●12	●15	●22	●15			K 1
3.2							●1	●8	●8	●8	●7	●8	●18	●8			K 2
3.3							●1	●12	●12	●12	●10	●15	●25	●15			K 3
3.4							●1				●5	●8	●18	●8			K 4
4.1	■35	■35	■35	■35	■35	■35						●10	●15				S 1
4.2												●5	●7				S 2
4.3																	S 3
5.1	■20	■20	■20	■20	■20	■20						●12	●18				S 1
5.2	●8	●8	●8	●8	●8	●8						●5	●8				S 2
5.3																	S 3
6.1	●25	●25	●25	●25	●25	●25	●1				●4	■12	■18		■12		N 3
6.2							●1	●16	●16	●16	●10	■30	■45		●30		N 4
6.3	●40	●40	●40	●40	●40	●40	●1	●12	●12	●12	●7	■20	■35		■20		N 3
6.4							●1				●2						N 4
7.1	■55	■55	■55	■55	■55	■55						■16					N 1
7.2	■55	■55	■55	■55	■55	■55	●1	●20	●20	●20	●12	■35					N 1
7.3	■40	■40	■40	■40	■40	■40	●1	●12	●12	●12	●7	■20	■30				N 1
7.4	●25	●25	●25	●25	●25	●25	●1				●5	■15	■22				N 2
8.1												●30					O
8.2							●1	●8	●8	●8	●5		●45				O
8.3							●1				●3						O
9.1																	H
10.1																	O

	MF	MF	MF	MF	MF	MF	MF	MF	MF	UNC	UNC	UNC	UNC	UNC	UNC	UNC	UNC	
	DIN 374	ISO 529	DIN 374	DIN 374	DIN 374	DIN 374	DIN 374	ISO 529	DIN 2174	DIN 352	DIN 371	DIN 376	ISO 529	DIN 2184-1	DIN 2184-1	ISO 529	DIN 2184-1	
	6H	6H	6H	6H	6H	6H	6H	6H	6HX	2B	2B	2B	2B	2B	2B	2B	2B	
	2.5XD	2.5XD	2.5XD	2.5XD	2.5XD	2XD	2XD	2.5XD	3XD	1.5XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD	
	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS	HSS-E PM	HSS-E PM	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	
	B 3.5-5	B 3.5-5	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5	C 2-3	C 2-3	C 2-3		B 3.5-5	B 3.5-5	B 3.5-5	C 2-3	
			$\lambda 45^\circ$	$\lambda 45^\circ$	$\lambda 45^\circ$	$\lambda 40^\circ$	$\lambda 40^\circ$	$\lambda 45^\circ$									$\lambda 45^\circ$	
	ST	ST		TN	ST	C	ST	ST	TN							ST	ST	
	SHARK LINE					SHARK LINE	SHARK LINE											
	E384	E011	EX10	EX10TIN	EX11	E300	E383	E013	E288	E108	E225	E275	E515	EP20	EP21	E021	EX20	
	M6 - M20	M4 - M24	M4 - M30	M8 - M20	M4 - M30	M4 - M30	M6 - M20	M4 - M22	M5 - M12	No.5 - 1"	No.2 - 1/4	5/16 - 1.1/2	No.1 - 2"	No.4 - 1"	No.4 - 1"	No.2 - 1"	No.4 - 1"	
									NEW									
AMG	272	273	274	274	274	276	277	278	279	280	281	281	282	284	284	285	286	ISO
1.1		■25	■25	■40	■25	■25		■25	■55	●1	●12	●12	●7	■25	■25	■25	■25	P 1
1.2		■22	■22	■40	■22	■22		■22	■50	●1	●10	●10	●6	■22	■22	■22	■22	P 1
1.3		■18	■18	■32	■18	■18		■18	■45	●1	●8	●8	●5	■18	■18	■18	■18	P 2
1.4		■16	■16	■27	■16	●16		■16	■40	●1	●6	●6	●4	■16	■16	■16	■16	P 3
1.5	●7	■10	■10	■13	■10	●10	●7	■10	●20	●1	●5	●5	●3	■10	■10	■10	■10	P 4
1.6		●5												●5	●5	●5		H 1
1.7																		H 3
1.8																		H 4
2.1	■8	●7		■8	■7		■8	●7	■18						●7	●7		M 1
2.2	■7	●6		■7	■6		■7	●6	■15						●6	●6		M 3
2.3	■5	●4		●5	●4		■5	●4	●10						●4	●4		M 2
2.4																		S 2
3.1		●15		●22						●1	●14	●14	●12	●15	●15	●15		K 1
3.2		●8		●18						●1	●8	●8	●7	●8	●8	●8		K 2
3.3		●15		●25						●1	●12	●12	●10	●15	●15	●15		K 3
3.4		●8		●18						●1			●5	●8	●8	●8		K 4
4.1			●10	●15					■35					●10	●10		●10	S 1
4.2			●5	●7										●5	●5		●5	S 2
4.3																		S 3
5.1			●12	●18					■20					●12	●12		●12	S 1
5.2			●5	●8					●8					●5	●5		●5	S 2
5.3																		S 3
6.1						■12			●25	●1			●4	■12				N 3
6.2						●30				●1	●16	●16	●10	■30				N 4
6.3						■20			●40	●1	●12	●12	●7	■20				N 3
6.4										●1			●2					N 4
7.1			■16											■16			■16	N 1
7.2			■35						■55	●1	●20	●20	●12	■35			■35	N 1
7.3			■20	■30					■40	●1	●12	●12	●7	■20			■20	N 1
7.4			■15	■22					●25	●1			●5	■15			■15	N 2
8.1														●30				O
8.2										●1	●8	●8	●5					O
8.3										●1			●3					O
9.1																		H
10.1																		O

	UNC	UNC	UNC	UNC	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UNF	UN	BSW		
	DIN 2184-1	ISO 529	DORMER DIN	DIN 2184-1	DIN 2181	DIN 371	DIN 374	ISO 529	DIN 2184-1	DIN 2184-1	ISO 529	DIN 2184-1	DIN 2184-1	ISO 529	DORMER DIN	DIN 2184-1	ISO 529	DIN 351	
	2B	2B	2B	2BX	2B	2B	2B	2B	2B	2B	2B	2B	2B	2B	Medium	2BX	2B	Medium	
	HSS-E PM	HSS-E PM	HSS	HSS-E	HSS	HSS-E PM	HSS-E PM	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS	HSS-E	HSS	HSS	
	C 2-3	C 2-3	C 2-3	C 2-3.5	C 2-3	C 2-3	C 2-3		C 2-3	C 2-3	B 3.5-5	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3.5	C 2-3	C 2-3	
	$\lambda 45^\circ$	$\lambda 45^\circ$	$\lambda 30^\circ$									$\lambda 45^\circ$	$\lambda 45^\circ$	$\lambda 45^\circ$	$\lambda 30^\circ$				
	ST	ST	ST	TN						ST	ST		ST	ST	ST	TN			
	EX21	E023	E651	E287	E111	E229	E278	E524	EP30	EP31	E031	EX30	EX31	E033	E654	E286	E570	E115	
	No.4 - 1"	No.2 - 1"	No.6 - 5/8"	No.4 - 1/2"	No.5 - 1"	No.2 - 1/4"	5/16 - 1.1/2"	No.0 - 1.1/2"	No.8 - 1"	No.8 - 1"	No.8 - 1"	No.8 - 1"	No.8 - 1"	No.8 - 1"	No.8 - 5/8"	No.4 - 1/2"	1/4 - 1.5/16"	1/8 - 1"	
			NEW												NEW				
AMG	286	287	288	289	290	291	291	292	294	294	295	296	296	297	298	299	300	301	ISO
1.1	■25	■25	●25	■55	●1	●12	●12	●7	■25	■25	■25	■25	■25	■25	●25	■55	●7	●1	P 1
1.2	■22	■22	●22	■50	●1	●10	●10	●6	■22	■22	■22	■22	■22	■22	●22	■50	●6	●1	P 1
1.3	■18	■18	●18	■45	●1	●8	●8	●5	■18	■18	■18	■18	■18	■18	●18	■45	●5	●1	P 2
1.4	■16	■16	●15	■40	●1	●6	●6	●4	■16	■16	■16	■16	■16	■16	●15	■40	●4	●1	P 3
1.5	■10	■10		●20	●1	●5	●5	●3	■10	■10	■10	■10	■10	■10		●20	●3	●1	P 4
1.6								●5	●5	●5				●5					H 1
1.7																			H 3
1.8																			H 4
2.1	■7	●7		■18					●7	●7			■7	●7		■18			M 1
2.2	■6	●6		■15					●6	●6			■6	●6		■15			M 3
2.3	●4	●4		●10					●4	●4			●4	●4		●10			M 2
2.4																			S 2
3.1					●1	●14	●14	●12	●15	●15	●15						●12	●1	K 1
3.2			●8		●1	●8	●8	●7	●8	●8	●8				●8		●7	●1	K 2
3.3					●1	●12	●12	●10	●15	●15	●15						●10	●1	K 3
3.4					●1			●5	●8	●8							●5	●1	K 4
4.1				■35					●10			●10				■35			S 1
4.2								●5				●5							S 2
4.3																			S 3
5.1				■20				●12				●12				■20			S 1
5.2				●8				●5				●5				●8			S 2
5.3																			S 3
6.1				●25	●1			●4	■12							●25	●4	●1	N 3
6.2			●30		●1	●16	●16	●10	●30						●30		●10	●1	N 4
6.3			●20	●40	●1	●12	●12	●7	■20					●20	●40	●7	●1		N 3
6.4					●1			●2									●2	●1	N 4
7.1		●18	■55						■16			■16			●18	■55			N 1
7.2		●35	■55	●1	●20	●20	●12	■35				■35		●35	■55	●12	●1		N 1
7.3			■40	●1	●12	●12	●7	■20				■20			■40	●7	●1		N 1
7.4			●25	●1			●5	■15				■15			●25	●5	●1		N 2
8.1		●30						●30							●30				O
8.2					●1	●8	●8	●5									●5	●1	O
8.3					●1			●3									●3	●1	O
9.1																			H
10.1																			O

	BSW	BSW	BSW	BSF	BSF	BSF	BA	BA	BA	G	G	G	G	G	G	G	
	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	ISO 529	DIN 5157	DIN 5156	ISO 2284	DIN 5156	DIN 5156	DORMER ISO	DIN 5156	
	Medium	Medium	Medium	Medium	Medium	Medium	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
	1.5XD	2.5XD	2XD	1.5XD	2.5XD	2XD	1.5XD	2.5XD	2XD	1.5XD	1.5XD	1.5XD	2.5XD	2.5XD	2.5XD	2.5XD	
	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E PM	HSS	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	
		B 3.5-5	C 2-3		B 3.5-5	C 2-3		B 3.5-5	C 2-3	C 2-3	C 2-3		B 3.5-5	B 3.5-5	B 3.5-5	C 2-3	

	G	G	G	EGM	EGM	Rc	NPT	NPT	NPT	NPT	NPT	NPTF	NPSF	NPSF	NPSM	PG	
	DIN 5156	DIN 5156	DORMER ISO	DORMER ISO	DORMER ISO	ISO 2284	DORMER ANSI	ANSI B94.9	ANSI B94.9	ANSI B94.9	ANSI	ANSI B94.9	ANSI B94.9	ANSI B94.9	ANSI B94.9	DIN 40432	
	Normal	Normal	Normal	6H	6H	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	
	2.5XD	2XD	2.5XD	1.5XD	2XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	1.5XD	
	HSS-E PM	HSS-E PM	HSS-E PM	HSS	HSS	HSS	HSS-E PM	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	
	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3	C 2-3		C 2-3	C 2-3	C 2-3	C 2-3		
	λ45°	λ40°	λ45°		λ40°						λ27°						
	ST	ST	ST														
		SHARK LINE															
	EX41	E382	E043	E620	E621	E550	E714	E710	E721	E711	E653	E712	E709	E720	E708	E243	
	1/8 - 1.1/2	1/8 - 1"	1/8 - 3/4	M3 - M16	M3 - M16	1/8 - 2"	1/8 - 1"	1/16 - 2"	1/8 - 1"	1/8 - 1.1/2	1/8 - 1"	1/16 - 1.1/4	1/8 - 3/4	1/8 - 3/4	1/8 - 1"	No.7 - No.36	
AMG	317	318	319	320	321	322	323	324	324	325	326	327	328	328	329	330	ISO
1.1	■25		■25	●7		●22	●4	●4	●4	●4	●25	●4	●4	●4	●4	●12	P 1
1.2	■22		■22	●6	●18	●20	●4	●4	●4	●4	●22	●4	●4	●4	●4	●10	P 1
1.3	■18		■18	●5	●14	●16	■6	■6	■6	■6	●18	■6	■6	■6	■6	●8	P 2
1.4	■16		■16	●4	●10	●12	■5	■5	■5	■5	●15	■5	■5	■5	■5	●6	P 3
1.5	■10	●7	■10	●3	●5	●7	●3	●3	●3	●3		●3	●3	●3	●3	●5	P 4
1.6			●5			●4											H 1
1.7																	H 3
1.8																	H 4
2.1	■7	■8	●7		●6	●7											M 1
2.2	■6	■7	●6		●4	●5											M 3
2.3	●4	■5	●4		●3	●7											M 2
2.4																	S 2
3.1				●12		■12	●6	●6	■6	●6		●6	●6	■6	●6	●14	K 1
3.2				●7		■7	●4	●4	■4	●4	●8	●4	●4	■4	●4	●8	K 2
3.3				●10		■10	●6	●6	■6	●6		●6	●6	■6	●6	●12	K 3
3.4				●5		■5	●4	●4	■4	●4		●4	●4	■4	●4		K 4
4.1																	S 1
4.2																	S 2
4.3																	S 3
5.1																	S 1
5.2					●4												S 2
5.3																	S 3
6.1			●4			■12											N 3
6.2			●10			●30	●11	●11	●11	●11	●30	●11	●11	●11	●11	●16	N 4
6.3			●7			●20					●20					●12	N 3
6.4			●2			●4											N 4
7.1				●10							●18						N 1
7.2				●12	●25	●35					●35					●20	N 1
7.3				●7	●13	●20	●11	●11	●11	●11		●11	●11	●11	●11	●12	N 1
7.4				●5	●10	●15	●7	●7	●7	●7		●7	●7	●7	●7		N 2
8.1							●4	●4	●4	●4	●30	●4	●4	●4	●4		O
8.2				●5		●12										●8	O
8.3				●3		●7											O
9.1																	H
10.1																	O

												ISO
	L119	L126	L113	L114	L115	L000	L001	L002	L120	L110	L112	
	Set	Set	Set	Set	Set	Set	Set	Set	Set	16.00 - 4"	BT1 - No.7	
						NEW	NEW	NEW			NEW	
AMG	331	332	333	334	335	336	337	338	339	342	343	ISO
1.1												P1
1.2												P1
1.3												P2
1.4												P3
1.5												P4
1.6												H1
1.7												H3
1.8												H4
2.1												M1
2.2												M3
2.3												M2
2.4												S2
3.1												K1
3.2												K2
3.3												K3
3.4												K4
4.1												S1
4.2												S2
4.3												S3
5.1												S1
5.2												S2
5.3												S3
6.1												N3
6.2												N4
6.3												N3
6.4												N4
7.1												N1
7.2												N1
7.3												N1
7.4												N2
8.1												O
8.2												O
8.3												O
9.1												H
10.1												O

NO1 - NO9

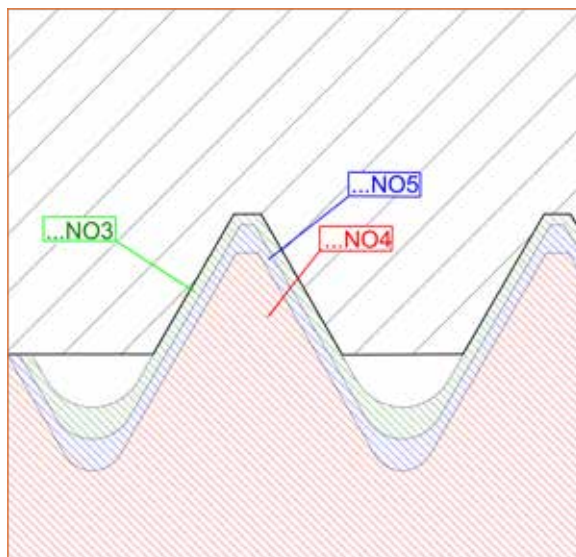
NO1 =		A 6-8	
NO2 =		B 4-6	
NO3 =		C 2-3	

ISO NO6 = NO1 + NO2 + NO3
 NO7 = NO2 + NO3 *

ANSI NO6 = NO1 (taper) + NO2 (plug) + NO3 (bottoming)

NO4 =		A 6-8	
NO5 =		B 3.5-5	

DIN NO8 = NO3 + NO4 + NO5
 ISO NO9 = NO3 + NO4



* E550
 E710 NO7 = NO3 (truncated) + NO3

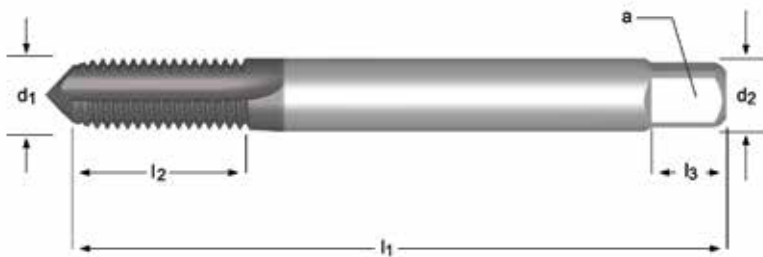
- ## T200
- M Gépi Menetfúró, egyenes hornyú
 - M Tarozi de masina, Canale drepte
 - M Düz Kanallı Makine Kılavuzu
 - M Machine Tap Straight Flute

- ## T201
- M Gépi menetfúró, egyenes horonnyal, belső hűtéssel
 - M Tarozi de mașină cu canale drepte și răcire internă
 - M Düz Kanallı Makine Kılavuzu, İçten Soğutmalı
 - M Machine Tap Straight flute, Internal Coolant


- ## T210
- M Gépi Menetfúró, egyenes hornyú
 - M Tarozi de masina, Canale drepte
 - M Düz Kanallı Makine Kılavuzu
 - M Machine Tap Straight Flute

T200	▪ 1.7	• 1.8 3.1 3.2 6.4 7.4 8.2 8.3 10.1
T201	▪ 3.1 3.2 7.4 10.1	• 3.3 3.4 6.4 7.3 8.2 8.3
T210	▪ 1.8	• 1.7

T200	M	DIN 371	6H		2XD	HM	C 2-3			TiCN	
T201	M	DIN 371≤10 376>12	6HX		2.5XD	HM	C 2-3			Super B	
T210	M	DIN 371	6HX		2XD	HM	C 2-3			TiCN	



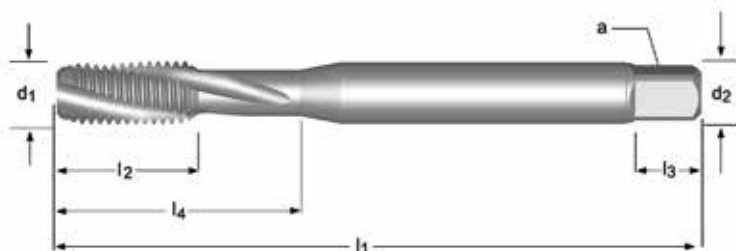
M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	T200	T201	T210
3	0.50	56	10	3.5	2.7	6	3	2.6	-	T200M3		
3	0.50	56	8	3.5	2.7	6	4	2.6	-			T210M3
4	0.70	63	11	4.5	3.4	6	5	3.4	-			T210M4
4	0.70	63	13	4.5	3.4	6	3	3.4	-	T200M4		
5	0.80	70	13.5	6.0	4.9	8	5	4.3	-			T210M5
5	0.80	70	16	6.0	4.9	8	3	4.3	-	T200M5		
5	0.80	70	16	6.0	4.9	8	4	4.3	-		T201M5	
6	1.00	80	16.5	6.0	4.9	8	5	5.1	-			T210M6
6	1.00	80	19	6.0	4.9	8	3	5.1	30	T200M6		
6	1.00	80	19	6.0	4.9	8	4	5.1	30		T201M6	
8	1.25	90	21.5	8.0	6.2	9	5	6.9	-			T210M8
8	1.25	90	22	8.0	6.2	9	3	6.9	35	T200M8		

M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	T200	T201	T210
8	1.25	90	22	8.0	6.2	9	4	6.9	35		T201M8	
10	1.50	100	24	10.0	8.0	11	3	8.7	39	T200M10		
10	1.50	100	24	10.0	8.0	11	4	8.7	39		T201M10	
10	1.50	100	27	10.0	8.0	11	5	8.7				T210M10
12	1.75	110	23	9.0	7.0	10	3	10.4	-	T200M12		
12	1.75	110	23	9.0	7.0	10	4	10.4	-		T201M12	
12	1.75	110	32	12.0	9.0	12	6	10.4				T210M12
16	2.00	110	25	12.0	9.0	12	4	14.25	-		T201M16	

- ## T205
- M Gépi Menefűró, csavart hornyú 15°
 - M Tarozi de masina cu dinti în spirala (unghi 15°)
 - M 15° Helisel Kanallı Makine Kılavuzu
 - M Machine Tap Spiral Flute 15°

- ## T206
- M Gépi Menefűró 15°-os csavart horonnyal, belső hűtéssel
 - M Tarozi de mașină cu canale în spirală la 15° și răcire internă
 - M 15° Helisel Kanallı Makine Kılavuzu ve İçten Soğutmalı
 - M Machine Tap Spiral Flute 15°, Internal Coolant

T205; T206	▪	3.3	3.4	7.3	7.4
	•	3.1	3.2	8.2	8.3



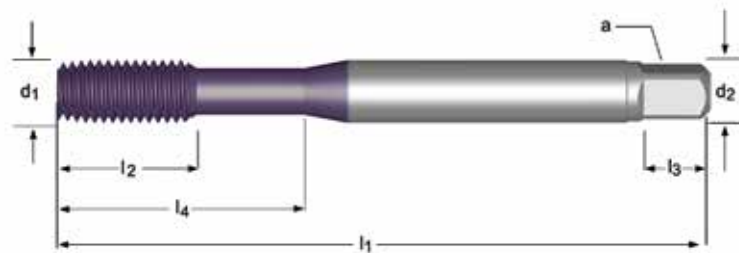
M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z		l ₄ mm	T205	T206
3	0.50	56	10	3.5	2.7	6	3	2.6	-	T205M3	
4	0.70	63	13	4.5	3.4	6	3	3.4	-	T205M4	
5	0.80	70	16	6.0	4.9	8	3	4.3	-	T205M5	T206M5
6	1.00	80	19	6.0	4.9	8	3	5.1	30	T205M6	T206M6
8	1.25	90	22	8.0	6.2	9	3	6.9	35	T205M8	T206M8
10	1.50	100	24	10.0	8.0	11	3	8.7	39	T205M10	T206M10
12	1.75	110	23	9.0	7.0	10	3	10.4	-	T205M12	T206M12

T215

- M Gépi Menetformázó
- M Tarozi de masina de deformare
- M Ovalama Kilavuzu
- M Machine Forming Tap

T215 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 2.3 5.1 7.1 7.2 7.3
 • 2.4 5.2 6.1 6.3

T215 M DIN 2174 6HX 3XD HM C 2-3.5 TiCN

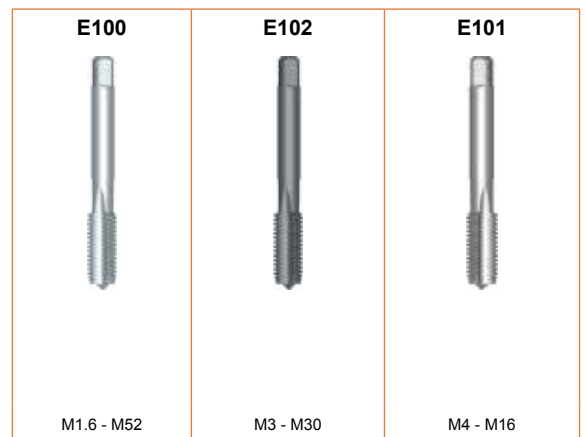
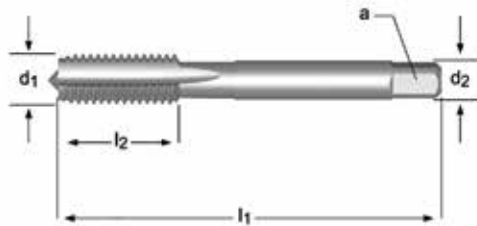


M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		l ₄ mm	T215
3	0.50	56	10	3.5	2.7	6	4	2.8	-	T215M3
4	0.70	63	13	4.5	3.4	6	5	3.7	-	T215M4
5	0.80	70	16	6.0	4.9	8	5	4.6	-	T215M5
6	1.00	80	19	6.0	4.9	8	5	5.5	30	T215M6
8	1.25	90	22	8.0	6.2	9	5	7.4	35	T215M8
10	1.50	100	24	10.0	8.0	11	5	9.3	39	T215M10

- E100** • M Kézi Menetfúró, csavarthorony
E102 • M Tarozi de mâna, Canale drepte
E101 • M Düz Kanallı El Kılavuzu
 • M Hand Tap Straight Flute


E100	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3		
E102	•	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2
		6.3	6.4	7.2	7.3	7.4	8.2	8.3													
E101	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3		

E100	M	DIN 352	6H		1.5XD	HSS	C 2-3					
E102	M	DIN 352	6HX		1.5XD	HSS-E	C 2-3					
E101	M	DIN 352	6H		1.5XD	HSS	C 2-3					



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z		E100	E102	E101
1.6	0.35	32	7	2.5	2.1	3	1.25	E100M1.6NO3		
1.6	0.35	32	7	2.5	2.1	3	1.25	E100M1.6NO8		
2	0.40	36	8	2.8	2.1	3	1.6	E100M2NO3		
2	0.40	36	8	2.8	2.1	3	1.6	E100M2NO8		
2.5	0.45	40	9	2.8	2.1	3	2.05	E100M2.5NO3		
2.5	0.45	40	9	2.8	2.1	3	2.05	E100M2.5NO8		
3	0.50	40	10	3.5	2.7	3	2.5	E100M3NO3		
3	0.50	40	10	3.5	2.7	3	2.5	E100M3NO8	E102M3NO8	¹⁾
3.5	0.60	45	10	4.0	3.0	3	2.9	E100M3.5NO3		
3.5	0.60	45	10	4.0	3.0	3	2.9	E100M3.5NO8		
4	0.70	45	12	4.5	3.4	3	3.3	E100M4NO3		E101M4NO3
4	0.70	45	12	4.5	3.4	3	3.3	E100M4NO8	E102M4NO8	¹⁾ E101M4NO8
5	0.80	50	14	6.0	4.9	3	4.2	E100M5NO3		E101M5NO3
5	0.80	50	14	6.0	4.9	3	4.2	E100M5NO8	E102M5NO8	¹⁾ E101M5NO8
6	1.00	56	16	6.0	4.9	3	5	E100M6NO3		E101M6NO3
6	1.00	56	16	6.0	4.9	3	5	E100M6NO8	E102M6NO8	¹⁾ E101M6NO8
7	1.00	56	16	6.0	4.9	3	6	E100M7NO3		
7	1.00	56	16	6.0	4.9	3	6	E100M7NO8		
8	1.25	63	19	6.0	4.9	3	6.8	E100M8NO3		E101M8NO3
8	1.25	63	19	6.0	4.9	3	6.8	E100M8NO8	E102M8NO8	¹⁾ E101M8NO8
9	1.25	63	20	7.0	5.5	3	7.8	E100M9NO3		
9	1.25	63	20	7.0	5.5	3	7.8	E100M9NO8		
10	1.50	70	22	7.0	5.5	3	8.5	E100M10NO3		E101M10NO3
10	1.50	70	22	7.0	5.5	3	8.5	E100M10NO8	E102M10NO8	¹⁾ E101M10NO8

¹⁾ No4 megvezetővel / Nr.4 cu ghidare pilot / No4 pilot kılavuzlu / No4 with pilot guide

M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z		E100	E102	E101
12	1.75	75	25	9.0	7.0	4	10.3	E100M12NO3		E101M12NO3
12	1.75	75	25	9.0	7.0	4	10.3	E100M12NO8	E102M12NO8 ¹⁾	E101M12NO8
14	2.00	80	25	11.0	9.0	4	12	E100M14NO3		E101M14NO3
14	2.00	80	25	11.0	9.0	4	12	E100M14NO8	E102M14NO8 ¹⁾	E101M14NO8
16	2.00	80	25	12.0	9.0	4	14	E100M16NO3		E101M16NO3
16	2.00	80	25	12.0	9.0	4	14	E100M16NO8	E102M16NO8 ¹⁾	E101M16NO8
18	2.50	95	32	14.0	11.0	4	15.5	E100M18NO3		
18	2.50	95	32	14.0	11.0	4	15.5	E100M18NO8	E102M18NO8 ¹⁾	
20	2.50	95	32	16.0	12.0	4	17.5	E100M20NO3		
20	2.50	95	32	16.0	12.0	4	17.5	E100M20NO8	E102M20NO8 ¹⁾	
22	2.50	100	34	18.0	14.5	4	19.5	E100M22NO3		
22	2.50	100	34	18.0	14.5	4	19.5	E100M22NO8		
24	3.00	110	38	18.0	14.5	4	21	E100M24NO3		
24	3.00	110	38	18.0	14.5	4	21	E100M24NO8	E102M24NO8 ¹⁾	
27	3.00	110	38	20.0	16.0	4	24	E100M27NO3		
27	3.00	110	38	20.0	16.0	4	24	E100M27NO8	E102M27NO8 ¹⁾	
30	3.50	125	45	22.0	18.0	4	26.5	E100M30NO3		
30	3.50	125	45	22.0	18.0	4	26.5	E100M30NO8	E102M30NO8 ¹⁾	
33	3.50	125	50	25.0	20.0	4	29.5	E100M33NO3		
33	3.50	125	50	25.0	20.0	4	29.5	E100M33NO8		
36	4.00	150	56	28.0	22.0	4	32	E100M36NO3		
36	4.00	150	56	28.0	22.0	4	32	E100M36NO8		
39	4.00	150	60	32.0	24.0	4	35	E100M39NO3		
39	4.00	150	60	32.0	24.0	4	35	E100M39NO8		
42	4.50	150	60	32.0	24.0	4	37.5	E100M42NO3		
42	4.50	150	60	32.0	24.0	4	37.5	E100M42NO8		
45	4.50	160	65	36.0	29.0	6	40.5	E100M45NO3		
45	4.50	160	65	36.0	29.0	6	40.5	E100M45NO8		
48	5.00	180	70	36.0	29.0	6	43	E100M48NO3		
48	5.00	180	70	36.0	29.0	6	43	E100M48NO8		
52	5.00	180	70	40.0	32.0	6	47	E100M52NO3		
52	5.00	180	70	40.0	32.0	6	47	E100M52NO8		



¹⁾ No4 megvezetővel / Nr.4 cu ghidare pilot / No4 pilot kılavuzlu / No4 with pilot guide

E200 E250 E237 E251

- M Gépi Menetfúró, egyenes hornyú
- M Tarozi de masina, Canale drepte
- M Düz Kanallı Makine Kilavuzu
- M Machine Tap Straight Flute

HSS-E anyagminőségéből, míg a készlet tart

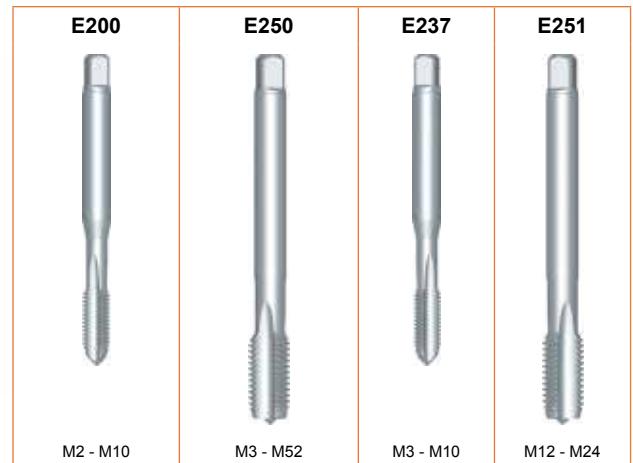
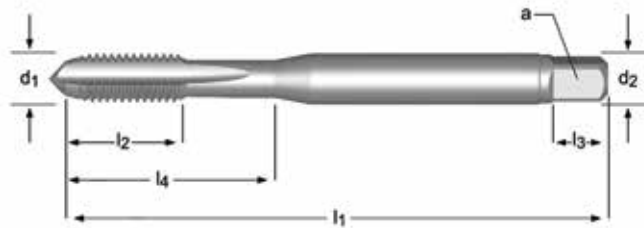
Furnizat din material HSS-E, până un nou stoc este disponibil

Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.



Supplied in HSS-E until new stock available

E200; E250; E237; E251 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E200	M	DIN 371	6H		1.5XD	HSS-E PM	A 6-8 C 2-3				
E250	M	DIN 376	6H		1.5XD	HSS-E PM	A 6-8 C 2-3				
E237	M	DIN 371	6H		1.5XD	HSS-E PM	C 2-3				
E251	M	DIN 376	6H		1.5XD	HSS-E PM	C 2-3				



M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z		l ₄ mm	E200	E250	E237	E251
2	0.40	45	6	2.8	2.1	5	3	1.6	9	E200M2			
2.5	0.45	50	8	2.8	2.1	5	3	2.05	12.5	E200M2.5			
3	0.50	56	10	2.2	2.1	5	3	2.5			E250M3		
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E200M3		E237M3	
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E200M3NO1			
4	0.70	63	12	2.8	2.1	5	3	3.3			E250M4		
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E200M4		E237M4	
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E200M4NO1			
5	0.80	70	13	3.5	2.7	6	3	4.2			E250M5		
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E200M5		E237M5	
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E200M5NO1			
6	1.00	80	15	4.5	3.4	6	3	5.0			E250M6		
6	1.00	80	15	6.0	4.9	8	3	5	30	E200M6		E237M6	
6	1.00	80	15	4.5	3.4	6	3	5.0			E250M6NO1		
6	1.00	80	15	6.0	4.9	8	3	5	30	E200M6NO1			
8	1.25	90	18	6.0	4.9	8	3	6.8			E250M8		
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E200M8		E237M8	
8	1.25	90	18	6.0	4.9	8	3	6.8			E250M8NO1		
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E200M8NO1			
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E200M10		E237M10	
10	1.50	100	20	7.0	5.5	8	3	8.5			E250M10		
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E200M10NO1			
12	1.75	110	23	9.0	7.0	10	3	10.3			E250M12		
12	1.75	110	23	9.0	7.0	10	4	10.3					E251M12

M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E200	E250	E237	E251
12	1.75	110	23	9.0	7.0	10	3	10.3			E250M12NO1		
14	2.00	110	25	11.0	9.0	12	3	12.0			E250M14		
14	2.00	110	25	11.0	9.0	12	4	12.0					E251M14
14	2.00	110	25	11.0	9.0	12	3	12.0			E250M14NO1		
16	2.00	110	25	12.0	9.0	12	3	14.0			E250M16		
16	2.00	110	25	12.0	9.0	12	4	14.0					E251M16
16	2.00	110	25	12.0	9.0	12	3	14.0			E250M16NO1		
18	2.50	125	30	14.0	11.0	14	3	15.5			E250M18		
18	2.50	125	30	14.0	11.0	14	4	15.5					E251M18
18	2.50	125	30	14.0	11.0	14	3	15.5			E250M18NO1		
20	2.50	140	30	16.0	12.0	15	3	17.5			E250M20		
20	2.50	140	30	16.0	12.0	15	4	17.5					E251M20
20	2.50	140	30	16.0	12.0	15	3	17.5			E250M20NO1		
22	2.50	140	34	18.0	14.5	17	4	19.5			E250M22		E251M22
22	2.50	140	34	18.0	14.5	17	4	19.5			E250M22NO1		
24	3.00	160	38	18.0	14.5	17	4	21.0			E250M24		E251M24
27	3.00	160	38	20.0	16.0	19	4	24.0			E250M27		
30	3.50	180	45	22.0	18.0	21	4	26.5			E250M30		
33	3.50	180	50	25.0	20.0	23	4	29.5			E250M33		
36	4.00	200	55	28.0	22.0	25	4	32.0			E250M36		
39	4.00	200	60	32.0	24.0	27	4	35.0			E250M39		
42	4.50	200	60	32.0	24.0	27	4	37.5			E250M42	¹⁾	
45	4.50	220	65	36.0	29.0	32	6	40.5			E250M45	¹⁾	
48	5.00	250	70	36.0	29.0	32	6	43.0			E250M48	¹⁾	
52	5.00	250	70	40.0	32.0	35	6	47.0			E250M52	¹⁾	

E201

• M egyenes hornyú gépi menetfúró, fehér Shark

HSS-E anyagminőségből, míg a készlet tart

E252

• M Tarozi de Masina Canale Drepte, Shark ALB

Furnizat din material HSS-E, până un nou stoc este disponibil

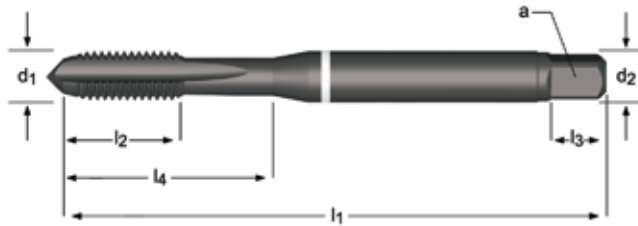
E390

• M Machine Tap Straight Flute, White Shark

Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E201; E252; E390	▪	3.1	3.2	3.3	8.2
	•	3.4	6.2	6.4	7.4

E201	M	DIN 371	6HX		2XD	HSS-E PM	C 2-3			ST	
E252	M	DIN 376	6HX		2XD	HSS-E PM	C 2-3			ST	
E390	M	DIN 371<10 376>12	6HX		2XD	HSS-E PM	C 2-3			TAIN	

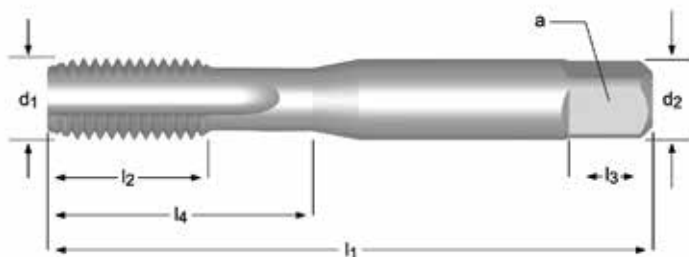


M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		l ₄ mm	E201	E252	E390
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E201M3		E390M3
4	0.70	63	12	4.5	3.4	6	4	3.3	21	E201M4		E390M4
5	0.80	70	13	6.0	4.9	8	4	4.2	25	E201M5		E390M5
6	1.00	80	15	6.0	4.9	8	4	5.0	30	E201M6		E390M6
8	1.25	90	18	6.0	4.9	8	4	6.8			E252M8	
8	1.25	90	18	8.0	6.2	9	4	6.8	35	E201M8		E390M8
10	1.50	100	20	10.0	8.0	11	4	8.5	39	E201M10		E390M10
10	1.50	100	20	7.0	5.5	8	4	8.5			E252M10	
12	1.75	110	23	9.0	7.0	10	4	10.3			E252M12	E390M12
14	2.00	110	25	11.0	9.0	12	4	12.0			E252M14	
16	2.00	110	25	12.0	9.0	12	4	14.0			E252M16	E390M16
18	2.50	125	30	14.0	11.0	14	4	15.5			E252M18	
20	2.50	140	30	16.0	12.0	15	4	17.5			E252M20	E390M20
22	2.50	140	34	18.0	14.5	17	4	19.5			E252M22	
24	3.00	160	38	18.0	14.5	17	4	21.0			E252M24	

- E500** • M Gépi Menetfúró, egyenes hornyú
E501 • M Tarozí de masina, Canale drepte
E504 • M Düz Kanallı Makine Kılavuzu
 • M Machine Tap Straight Flute



E500; E501	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3
E504	▪	3.1	3.2	3.3															
	•	1.1	1.2	1.3	1.4	1.5	3.4	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3				



E500	M	ISO 529	6H		1.5XD	HSS							
E501	M	ISO 529	6H		1.5XD	HSS							
E504	M	ISO 529	6H		1.5XD	HSS							




M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∅ a mm	l ₃ mm	z		l ₄ mm	E500	E501	E504
1	0.25	38	4.5	2.50	2.00	4	2	0.75	4.5	E500M1NO1	¹⁾	
1	0.25	38	4.5	2.50	2.00	4	2	0.75	4.5	E500M1NO2	¹⁾	
1	0.25	38	4.5	2.50	2.00	4	2	0.75	4.5	E500M1NO3	¹⁾	
1.2	0.25	38	4.5	2.50	2.00	4	2	0.95	4.5	E500M1.2NO1	¹⁾	
1.2	0.25	38	4.5	2.50	2.00	4	2	0.95	4.5	E500M1.2NO2	¹⁾	
1.2	0.25	38	4.5	2.50	2.00	4	2	0.95	4.5	E500M1.2NO3	¹⁾	
1.4	0.30	40	6	2.50	2.00	4	2	1.1	6	E500M1.4NO1	¹⁾	
1.4	0.30	40	6	2.50	2.00	4	2	1.1	6	E500M1.4NO2	¹⁾	
1.4	0.30	40	6	2.50	2.00	4	2	1.1	6	E500M1.4NO3	¹⁾	
1.6	0.35	41	8	2.50	2.00	4	2	1.25	8	E500M1.6NO1		
1.6	0.35	41	8	2.50	2.00	4	2	1.25	8	E500M1.6NO2		
1.6	0.35	41	8	2.50	2.00	4	2	1.25	8	E500M1.6NO3		
1.6	0.35	41	8	2.50	2.00	4	2	1.25	8	E500M1.6NO6		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO1		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO2		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO3		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO6		
1.7	0.35	41	8	2.50	2.00	4	2	1.35	8	E500M1.7NO8		

¹⁾

M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	E500	E501	E504
1.8	0.35	41	8	2.50	2.00	4	2	1.45	8	E500M1.8NO1		
1.8	0.35	41	8	2.50	2.00	4	2	1.45	8	E500M1.8NO2		
1.8	0.35	41	8	2.50	2.00	4	2	1.45	8	E500M1.8NO3		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO1		
2	0.45	41	8	2.50	2.00	4	3	1.55	8	E500M2X.45NO1		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO2		
2	0.45	41	8	2.50	2.00	4	3	1.55	8	E500M2X.45NO2		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO3		
2	0.45	41	8	2.50	2.00	4	3	1.55	8	E500M2X.45NO3		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO6		
2	0.40	41	8	2.50	2.00	4	3	1.6	8	E500M2NO8		
2.2	0.45	44.5	9.5	2.80	2.24	5	3	1.75	9.5	E500M2.2NO1		
2.2	0.45	44.5	9.5	2.80	2.24	5	3	1.75	9.5	E500M2.2NO2		
2.2	0.45	44.5	9.5	2.80	2.24	5	3	1.75	9.5	E500M2.2NO3		
2.3	0.45	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E500M2.3NO1		
2.3	0.45	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E500M2.3NO2		
2.3	0.45	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E500M2.3NO3		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO1		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO2		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO3		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO6		
2.5	0.45	44.5	9.5	2.80	2.24	5	3	2.05	9.5	E500M2.5NO8		
2.6	0.45	44.5	9.5	2.80	2.24	5	3	2.15	9.5	E500M2.6NO1		
2.6	0.45	44.5	9.5	2.80	2.24	5	3	2.15	9.5	E500M2.6NO2		
2.6	0.45	44.5	9.5	2.80	2.24	5	3	2.15	9.5	E500M2.6NO3		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO1	E501M3NO1	
3	0.60	48	12.5	3.15	2.50	5	3	2.4	12.5	E500M3X.6NO1		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO2	E501M3NO2	
3	0.60	48	12.5	3.15	2.50	5	3	2.4	12.5	E500M3X.6NO2		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO3	E501M3NO3	E504M3NO3
3	0.60	48	12.5	3.15	2.50	5	3	2.4	12.5	E500M3X.6NO3		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO6		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO7		
3	0.50	48	12.5	3.15	2.50	5	3	2.5	12.5	E500M3NO8		
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E500M3.5NO1		
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E500M3.5NO2		
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E500M3.5NO3		
3.5	0.60	50	14	3.55	2.80	5	3	2.9	14	E500M3.5NO6		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO1	E501M4NO1	
4	0.75	53	14	4.00	3.15	6	3	3.25	14	E500M4X.75NO1		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO2	E501M4NO2	
4	0.75	53	14	4.00	3.15	6	3	3.25	14	E500M4X.75NO2		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO3	E501M4NO3	E504M4NO3
4	0.75	53	14	4.00	3.15	6	3	3.25	14	E500M4X.75NO3		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO6		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO7		
4	0.70	53	14	4.00	3.15	6	3	3.3	14	E500M4NO8		
4.5	0.75	53	9.5	4.50	3.55	6	3	3.8	18	E500M4.5NO1		
4.5	0.75	53	9.5	4.50	3.55	6	3	3.8	18	E500M4.5NO2		
4.5	0.75	53	9.5	4.50	3.55	6	3	3.8	18	E500M4.5NO3		
4.5	0.75	53	9.5	4.50	3.55	6	3	3.8	18	E500M4.5NO6		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO1		
5	0.90	58	11	5.00	4.00	7	3	4.1	22	E500M5X.9NO1		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO2	E501M5NO2	
5	0.90	58	11	5.00	4.00	7	3	4.1	22	E500M5X.9NO2		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO3	E501M5NO3	E504M5NO3
5	0.90	58	11	5.00	4.00	7	3	4.1	22	E500M5X.9NO3		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO6		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO7		
5	0.80	58	11	5.00	4.00	7	3	4.2	22	E500M5NO8		
5.5	0.90	62	12	5.60	4.50	7	3	4.6	21	E500M5.5X.9NO1		
5.5	0.90	62	12	5.60	4.50	7	3	4.6	21	E500M5.5X.9NO2		
5.5	0.90	62	12	5.60	4.50	7	3	4.6	21	E500M5.5X.9NO3		
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO1	E501M6NO1	
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO2	E501M6NO2	
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO3	E501M6NO3	E504M6NO3
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO6		
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO7		
6	1.00	66	13	6.30	5.00	8	3	5	26	E500M6NO8		
7	1.00	66	13	7.10	5.60	8	3	6	26	E500M7NO1		

M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∅ a mm	l ₃ mm	z		l ₄ mm	E500	E501	E504
7	1.00	66	13	7.10	5.60	8	3	6	26	E500M7NO2		
7	1.00	66	13	7.10	5.60	8	3	6	26	E500M7NO3		
7	1.00	66	13	7.10	5.60	8	3	6	26	E500M7NO6		
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO1	E501M8NO1	
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO2	E501M8NO2	
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO3	E501M8NO3	E504M8NO3
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO6		
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO7		
8	1.25	72	16	8.00	6.30	9	3	6.8	29	E500M8NO8		
9	1.25	72	16	9.00	7.10	10	3	7.8	29	E500M9NO1		
9	1.25	72	16	9.00	7.10	10	3	7.8	29	E500M9NO2		
9	1.25	72	16	9.00	7.10	10	3	7.8	29	E500M9NO3		
9	1.25	72	16	9.00	7.10	10	3	7.8	29	E500M9NO6		
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO1	E501M10NO1	
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO2	E501M10NO2	
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO3	E501M10NO3	E504M10NO3
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO6		
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO7		
10	1.50	80	18	10.00	8.00	11	3	8.5	34	E500M10NO8		
11	1.50	85	19	8.00	6.30	9	3	9.5	-	E500M11NO1		
11	1.50	85	19	8.00	6.30	9	3	9.5	-	E500M11NO2		
11	1.50	85	19	8.00	6.30	9	3	9.5	-	E500M11NO3		
11	1.50	85	19	8.00	6.30	9	3	9.5	-	E500M11NO6		
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO1	E501M12NO1	
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO2	E501M12NO2	
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO3	E501M12NO3	
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO6		
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO7		
12	1.75	89	22	9.00	7.10	10	3	10.3	-	E500M12NO8		
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO1	E501M14NO1	
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO2	E501M14NO2	
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO3	E501M14NO3	
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO6		
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO7		
14	2.00	95	24	11.20	9.00	12	4	12	-	E500M14NO8		
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO1	E501M16NO1	
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO2	E501M16NO2	
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO3	E501M16NO3	
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO6		
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO7		
16	2.00	102	24	12.50	10.00	13	4	14	-	E500M16NO8		
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E500M18NO1		
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E500M18NO2		
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E500M18NO3	E501M18NO3	
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E500M18NO6		
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO1	E501M20NO1	
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO2	E501M20NO2	
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO3	E501M20NO3	
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO6		
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO7		
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E500M20NO8		
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E500M22NO1		
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E500M22NO2		
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E500M22NO3	E501M22NO3	
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E500M22NO6		
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO1		
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO2	E501M24NO2	
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO3	E501M24NO3	
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO6		
24	3.00	130	35	18.00	14.00	18	4	21	-	E500M24NO7		
27	3.00	135	35	20.00	16.00	20	4	24	-	E500M27NO1		
27	3.00	135	35	20.00	16.00	20	4	24	-	E500M27NO2		
27	3.00	135	35	20.00	16.00	20	4	24	-	E500M27NO3		
30	3.50	138	41	20.00	16.00	20	4	26.5	-	E500M30NO1		
30	3.50	138	41	20.00	16.00	20	4	26.5	-	E500M30NO2		
30	3.50	138	41	20.00	16.00	20	4	26.5	-	E500M30NO3		
33	3.50	151	41	22.40	18.00	22	4	29.5	-	E500M33NO1		
33	3.50	151	41	22.40	18.00	22	4	29.5	-	E500M33NO2		
33	3.50	151	41	22.40	18.00	22	4	29.5	-	E500M33NO3		
36	4.00	162	47	25.00	20.00	24	4	32	-	E500M36NO1		

M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	E500	E501	E504
36	4.00	162	47	25.00	20.00	24	4	32	-	E500M36NO2		
36	4.00	162	47	25.00	20.00	24	4	32	-	E500M36NO3		
39	4.00	170	47	28.00	22.40	26	4	35	-	E500M39NO1		
39	4.00	170	47	28.00	22.40	26	4	35	-	E500M39NO2		
39	4.00	170	47	28.00	22.40	26	4	35	-	E500M39NO3		
42	4.50	170	53	28.00	22.40	26	6	37.5	-	E500M42NO1		
42	4.50	170	53	28.00	22.40	26	6	37.5	-	E500M42NO2		
42	4.50	170	53	28.00	22.40	26	6	37.5	-	E500M42NO3		
45	4.50	187	54	31.50	25.00	28	6	40.5	-	E500M45NO1		
45	4.50	187	54	31.50	25.00	28	6	40.5	-	E500M45NO2		
45	4.50	187	54	31.50	25.00	28	6	40.5	-	E500M45NO3		
48	5.00	187	60	31.50	25.00	28	6	43	-	E500M48NO1		
48	5.00	187	60	31.50	25.00	28	6	43	-	E500M48NO2		
48	5.00	187	60	31.50	25.00	28	6	43	-	E500M48NO3		
52	5.00	200	60	35.50	28.00	31	6	47	-	E500M52NO3		
56	5.50	200	60	35.50	28.00	31	6	50.5	-	E500M56NO3		

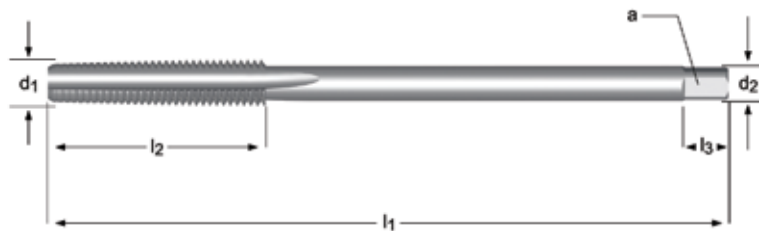


E303

- M Gépi Menetfúró, egyenes hornyú
- M Tarozi de masina, Canale drepte
- M Düz Kanallı Makine Kılavuzu
- M Machine Tap Straight Flute

E303 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E303 M DIN 357 6H 2XD HSS-E D18-20 C2-3



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z	↕	E303
3	0.50	70	22	2.2	2.1	5	3	2.5	E303M3NO1
3	0.50	70	22	2.2	2.1	5	3	2.5	E303M3NO3
4	0.70	90	25	2.8	2.1	5	3	3.3	E303M4NO1
4	0.70	90	25	2.8	2.1	5	3	3.3	E303M4NO3
5	0.80	100	28	3.5	2.7	6	3	4.2	E303M5NO1
5	0.80	100	28	3.5	2.7	6	3	4.2	E303M5NO3
6	1.00	110	32	4.5	3.4	6	3	5.0	E303M6NO1
6	1.00	110	32	4.5	3.4	6	3	5.0	E303M6NO3
8	1.25	125	40	6.0	4.9	8	3	6.8	E303M8NO1
8	1.25	125	40	6.0	4.9	8	3	6.8	E303M8NO3
10	1.50	140	45	7.0	5.5	8	3	8.5	E303M10NO1
10	1.50	140	45	7.0	5.5	8	3	8.5	E303M10NO3
12	1.75	180	50	9.0	7.0	10	3	10.3	E303M12NO1
12	1.75	180	50	9.0	7.0	10	3	10.3	E303M12NO3
14	2.00	200	56	11.0	9.0	12	3	12.0	E303M14NO1
14	2.00	200	56	11.0	9.0	12	3	12.0	E303M14NO3
16	2.00	200	63	12.0	9.0	12	3	14.0	E303M16NO1
16	2.00	200	63	12.0	9.0	12	3	14.0	E303M16NO3
20	2.50	250	70	16.0	12.0	15	3	17.5	E303M20NO1
20	2.50	250	70	16.0	12.0	15	3	17.5	E303M20NO3

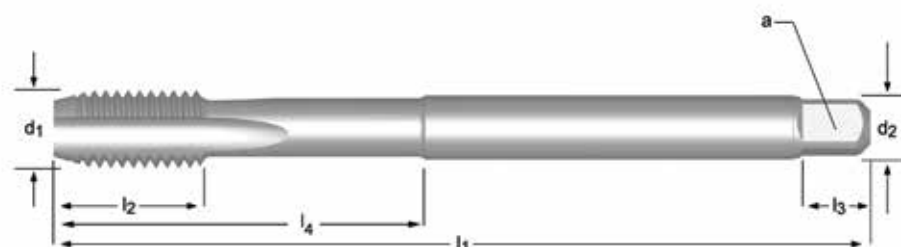


E600 • M Gépi menetfúró, extra hosszú, egyenes hornyú
E610 • M Tarozí de masina extralungí, Canale drepte
 • M Makine Kilavuzu, Ekstra Uzun Düz Helis
 • M Machine Tap, Extra Long Straight Flute

HSS-E anyagminőségéből, míg a készlet tart
 Furnizat din material HSS-E, până un nou stoc este disponibil
 Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 Supplied in HSS-E until new stock available

E600	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.1	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3		
E610	▪	3.1	3.2	3.3																	
	•	1.1	1.2	1.3	1.4	1.5	3.4	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3						

E600	M	ISO 2283	6H		1.5XD	HSS-E PM	C 2-3				
E610	M	ISO 2283	6H		1.5XD	HSS-E PM	C 2-3			TIN	



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E600	E610
3	0.50	66	9	3.15	2.50	5	3	2.5	18	E600M3NO3	E610M3NO3
4	0.70	73	12	3.15	2.50	5	3	3.3	-	E600M4NO1	
4	0.70	73	12	3.15	2.50	5	3	3.3	-	E600M4NO2	
4	0.70	73	12	3.15	2.50	5	3	3.3	-	E600M4NO3	E610M4NO3
5	0.80	79	12	4.00	3.15	6	3	4.2	-	E600M5NO1	
5	0.80	79	12	4.00	3.15	6	3	4.2	-	E600M5NO2	
5	0.80	79	12	4.00	3.15	6	3	4.2	-	E600M5NO3	E610M5NO3
6	1.00	89	14	4.50	3.55	6	3	5	-	E600M6NO1	
6	1.00	89	14	4.50	3.55	6	3	5	-	E600M6NO2	
6	1.00	89	14	4.50	3.55	6	3	5	-	E600M6NO3	E610M6NO3
8	1.25	97	17	6.30	5.00	8	3	6.8	-	E600M8NO1	
8	1.25	97	17	6.30	5.00	8	3	6.8	-	E600M8NO2	
8	1.25	97	17	6.30	5.00	8	3	6.8	-	E600M8NO3	E610M8NO3
10	1.50	108	19	8.00	6.30	9	3	8.5	-	E600M10NO1	
10	1.50	108	19	8.00	6.30	9	3	8.5	-	E600M10NO2	
10	1.50	108	19	8.00	6.30	9	3	8.5	-	E600M10NO3	E610M10NO3
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E600M12NO1	
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E600M12NO2	
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E600M12NO3	E610M12NO3
16	2.00	137	25	12.50	10.0	13	4	14	-	E600M16NO3	E610M16NO3
20	2.50	149	30	14.00	11.2	14	4	17.5	-	E600M20NO3	

EP006H
EP006G
EP00TiN
EP016H


- M Gépi Menetfúró, terelőéles HSS-E anyagminőségből, míg a készlet tart
- M Tarozi de masina cu vârî în spirala Furnizat din material HSS-E, până un nou stoc este disponibil
- M Helisel Uçlu Makine Kılavuzu Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
- M Machine Tap Spiral Point Supplied in HSS-E until new stock available

EP006H; EP006G	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1
EP00TiN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	6.1	6.3	7.3	7.4
	•	1.6	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2
EP016H	▪	1.1	1.2	1.3	1.4	1.5						
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4			

EP006H	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5				L001 337	L114 334
EP006G	M	DIN 371≤10 376≥12	6G		2.5XD	HSS-E PM	B 3.5-5					
EP00TiN	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			TiN		
EP016H	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			ST		



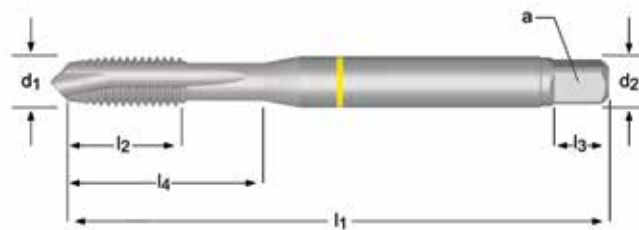
M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		l ₄ mm	EP006H	EP006G	EP00TiN	EP016H
2	0.40	50	6	2.8	2.1	5	2	1.6	9	EP00M2			EP01M2
2.5	0.45	50	8	2.8	2.1	5	2	2.1	12.5	EP00M2.5			EP01M2.5
3	0.50	56	10	2.2	1.8	4	3	2.5	18	EP00M3DIN376			EP01M3DIN376
3	0.50	56	9	3.5	2.7	6	3	2.5	18	EP00M3	EP006GM3	EP00TiNM3	EP01M3
3.5	0.60	56	11	4.0	3.0	6	3	2.9	20	EP00M3.5			EP01M3.5
4	0.70	63	12	2.8	2.1	5	3	3.3	21	EP00M4DIN376			EP01M4DIN376
4	0.70	63	12	4.5	3.4	6	3	3.3	21	EP00M4	EP006GM4	EP00TiNM4	EP01M4
4.5	0.75	70	13	6.0	4.9	8	3	3.8	25	EP00M4.5			EP01M4.5
5	0.80	70	13	3.5	2.7	6	3	4.2	25	EP00M5DIN376			EP01M5DIN376
5	0.80	70	13	6.0	4.9	8	3	4.2	25	EP00M5	EP006GM5	EP00TiNM5	EP01M5
6	1.00	80	15	4.5	3.4	6	3	5	30	EP00M6DIN376			EP01M6DIN376
6	1.00	80	15	6.0	4.9	8	3	5	30	EP00M6	EP006GM6	EP00TiNM6	EP01M6
7	1.00	80	15	7.0	5.5	8	3	6	30	EP00M7			EP01M7
8	1.25	90	18	6.0	4.9	8	3	6.8	35	EP00M8DIN376			EP01M8DIN376
8	1.25	90	18	8.0	6.2	9	3	6.8	35	EP00M8	EP006GM8	EP00TiNM8	EP01M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	EP00M10	EP006GM10	EP00TiNM10	EP01M10

M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z	 mm	l ₄ mm	EP006H	EP006G	EP00TIN	EP016H
10	1.50	100	20	7.0	5.5	8	3	8.5	-	EP00M10DIN376			EP01M10DIN376
12	1.75	110	23	9.0	7.0	10	3	10.3	-	EP00M12	EP006GM12	EP00TINM12	EP01M12
14	2.00	110	25	11.0	9.0	12	3	12	-	EP00M14		EP00TINM14	EP01M14
16	2.00	110	25	12.0	9.0	12	3	14	-	EP00M16	EP006GM16	EP00TINM16	EP01M16
18	2.50	125	30	14.0	11.0	14	4	15.5	-	EP00M18		EP00TINM18	EP01M18
20	2.50	140	30	16.0	12.0	15	4	17.5	-	EP00M20	EP006GM20	EP00TINM20	EP01M20
22	2.50	140	34	18.0	14.5	17	4	19.5	-	EP00M22		EP00TINM22	EP01M22
24	3.00	160	38	18.0	14.5	17	4	21	-	EP00M24		EP00TINM24	EP01M24
27	3.00	160	38	20.0	16.0	19	4	24	-	EP00M27		EP00TINM27	EP01M27
30	3.50	180	45	22.0	18.0	21	4	26.5	-	EP00M30		EP00TINM30	EP01M30

- E297**
- M terelőéles gépi menetfúró, sárga Shark
 - M Tarozi de Masina Varf Spiral , Shark GALBEN
 - M Helisel Uçlu Makine Kılavuzu, Sarı Shark
 - M Machine Tap Spiral Point, Yellow Shark

E297 ■ 1.1 1.2 1.3 6.1 6.3
 • 1.4 1.5 6.2

E297 M DIN 371≤10 376≥12 6H 2.5XD HSS-E PM B 3.5-5 Cr L114 334

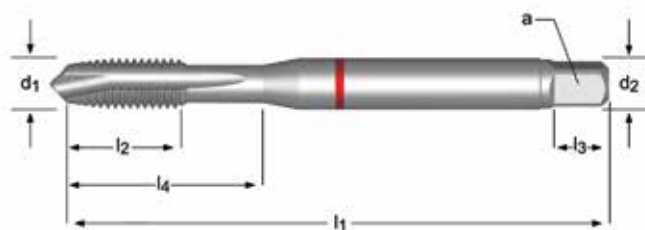


M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	E297
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E297M3
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E297M4
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E297M5
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E297M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E297M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E297M10
12	1.75	110	23	9.0	7.0	10	3	10.3	-	E297M12
14	2.00	110	25	11.0	9.0	12	3	12.0	-	E297M14
16	2.00	110	25	12.0	9.0	12	3	14.0	-	E297M16
18	2.50	125	30	14.0	11.0	14	3	15.5	-	E297M18
20	2.50	140	30	16.0	12.0	15	3	17.5	-	E297M20
22	2.50	140	34	18.0	14.5	17	4	19.5	-	E297M22
24	3.00	160	38	18.0	14.5	17	4	21.0	-	E297M24
27	3.00	160	38	20.0	16.0	19	4	24.0	-	E297M27
30	3.50	180	45	22.0	18.0	21	4	26.5	-	E297M30

- E255**
- M terelőes gépi menetfúró, piros Shark
 - M Tarozí de Masina Varf Spiral, Shark ROSU
- E256**
- M Helisel Uçlu Makine Kılavuzu, kırmızı Shark
 - M Machine Tap Spiral Point, Red Shark

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E255	▪	1.4			
	•	1.5	1.6	4.2	5.2
E256	▪	1.4	1.5		
	•	1.6	4.2	5.2	

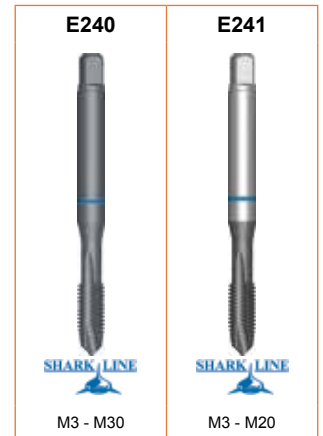
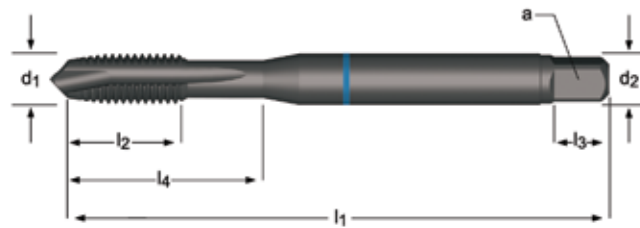


M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		l ₄ mm	E255	E256
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E255M3	E256M3
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E255M4	E256M4
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E255M5	E256M5
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E255M6	E256M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E255M8	E256M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E255M10	E256M10
12	1.75	110	23	9.0	7.0	10	3	10.3	-	E255M12	E256M12
14	2.00	110	25	11.0	9.0	12	3	12.0	-	E255M14	
16	2.00	110	25	12.0	9.0	12	3	14.0	-	E255M16	E256M16
20	2.50	140	30	16.0	12.0	15	4	17.5	-	E255M20	E256M20

- E240** • M terelőéles gépi menetfúró, kék Shark
 • M Tarozi de Masina Varf Spiral, Shark ALBASTRU
- E241** • M Helisel Uçlu Makine Kılavuzu, mavi Shark
 • M Machine Tap Spiral Point, Blue Shark

E240	▪	2.1	2.2	2.3
	•	1.5		
E241	▪	2.1	2.2	2.3
	•	1.2	1.3	1.4	1.5

E240	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			ST	
E241	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	B 3.5-5			Super B	

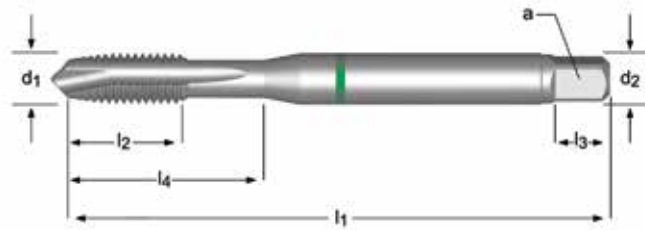


M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E240	E241
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E240M3	E241M3
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E240M4	E241M4
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E240M5	E241M5
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E240M6	E241M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E240M8	E241M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E240M10	E241M10
12	1.75	110	23	9.0	7.0	10	4	10.3	-	E240M12	E241M12
14	2.00	110	25	11.0	9.0	12	4	12.0	-	E240M14	E241M14
16	2.00	110	25	12.0	9.0	12	4	14.0	-	E240M16	E241M16
18	2.50	125	30	14.0	11.0	14	4	15.5	-	E240M18	E241M18
20	2.50	140	30	16.0	12.0	15	4	17.5	-	E240M20	E241M20
22	2.50	140	34	18.0	14.5	17	4	19.5	-	E240M22	
24	3.00	160	38	18.0	14.5	17	4	21.0	-	E240M24	
27	3.00	160	38	20.0	16.0	19	4	24.0	-	E240M27	
30	3.50	180	45	22.0	18.0	21	4	26.5	-	E240M30	

- E471**
- M terelőéles gépi menetfúró, zöld Shark
 - M Tarozel de Masina Varf Spiral , Shark VERDE
- E472**
- M Helisel Uçlu Makine Kılavuzu, yeşil Shark
 - M Machine Tap Spiral Point, Green Shark

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E471	▪	6.2	6.3	7.1	7.2	7.3	8.1
	•	1.1	1.2	1.3	6.1	7.4	
E472	▪	6.2	7.2	7.3	7.4		
	•	1.2	1.3	6.3	7.1	8.1	



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		l ₄ mm	E471	E472
3	0.50	56	9	3.5	2.7	6	2	2.5	18	E471M3	E472M3
4	0.70	63	12	4.5	3.4	6	2	3.3	21	E471M4	E472M4
5	0.80	70	13	6.0	4.9	8	2	4.2	25	E471M5	E472M5
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E471M6	E472M6
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E471M8	E472M8
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E471M10	E472M10
12	1.75	110	23	9.0	7.0	10	3	10.3	-	E471M12	E472M12
16	2.00	110	25	12.0	9.0	12	4	14.0	-	E471M16	E472M16
20	2.50	140	30	16.0	12.0	15	4	17.5	-	E471M20	E472M20

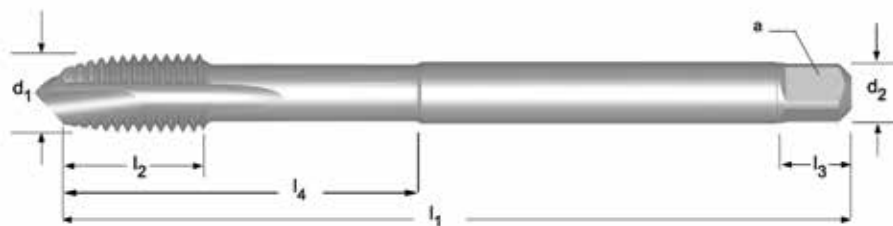
E606

- M Gépi menetfúró, extra hosszú terelőéles
- M Tarozii de masina extralungi cu vârî în spirală
- M Makine Kilavuzu, Ekstra Uzun Düz Ağızlı
- M Machine Tap, Extra Long Spiral Point

HSS-E anyagminőségű, míg a készlet tart
 Furnizat din material HSS-E, până un nou stoc este disponibil
 Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 Supplied in HSS-E until new stock available

E606 • 1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 4.3 5.1 5.2 6.1 6.3 7.1 7.2 7.3 7.4 8.1

E606 M ISO 2283 6H 2.5XD HSS-E PM B 3.5-5



E606



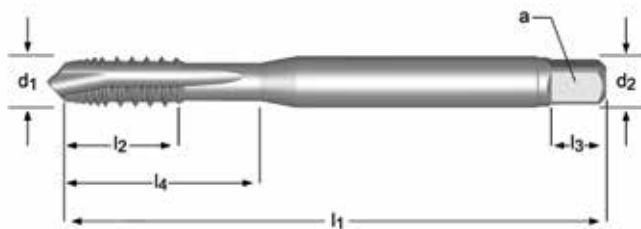
M3 - M24

M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	E606
3	0.50	66	9	3.15	2.50	5	3	2.5	18	E606M3
4	0.70	73	12	3.15	2.50	5	3	3.3	-	E606M4
5	0.80	79	12	4.00	3.15	6	3	4.2	-	E606M5
6	1.00	89	14	4.50	3.55	6	3	5	-	E606M6
8	1.25	97	17	6.30	5.00	8	3	6.8	-	E606M8
10	1.50	108	19	8.00	6.30	9	3	8.5	-	E606M10
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E606M12
14	2.00	127	25	11.20	9.00	12	3	12	-	E606M14
16	2.00	137	25	12.50	10.00	13	3	14	-	E606M16
20	2.50	149	30	14.00	11.20	14	4	17.5	-	E606M20
24	3.00	172	36	18.00	14.00	18	4	21	-	E606M24

- | | | |
|-------------|---|---|
| E216 | • M Fogkihagyásos Gépi Menetfúró | HSS-E anyagminőségből, míg a készlet tart |
| E266 | • M Tarozi de masina, dantura intrerupta cu vârî în spirala | Furnizat din material HSS-E, până un nou stoc este disponibil |
| E422 | • M Makine Kılavuzu, Adımlı Düz Ağzılı | Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir. |
| E423 | • M Machine Tap, Interrupted Threads Spiral Point | Supplied in HSS-E until new stock available |

E216; E266; E422; E423	▪	1.2	1.3	1.4														
	•	1.1	1.5	3.1	3.2	3.3	3.4	4.1	4.3	5.1	5.2	6.1	6.2	6.3	7.1	7.2		
		7.3	7.4	8.1														

E216	M	DIN 371	6H		3XD	HSS-E PM	B 3.5-5				
E266	M	DIN 376	6H		3XD	HSS-E PM	B 3.5-5				
E422	M	DIN 371	6H		3XD	HSS-E PM	B 3.5-5				
E423	M	DIN 376	6H		3XD	HSS-E PM	B 3.5-5				



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∇ a mm	l ₃ mm	z		l ₄ mm	E216	E266	E422	E423
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E216M3		E422M3	
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E216M4		E422M4	
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E216M5		E422M5	
6	1.00	80	15	6.0	4.9	8	3	5.0	30	E216M6		E422M6	
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E216M8		E422M8	
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E216M10		E422M10	
12	1.75	110	23	9.0	7.0	10	3	10.3			E266M12		E423M12
14	2.00	110	25	11.0	9.0	12	3	12.0			E266M14		E423M14
16	2.00	110	25	12.0	9.0	12	3	14.0			E266M16		E423M16
20	2.50	140	30	16.0	12.0	15	3	17.5			E266M20		E423M20
24	3.00	160	38	18.0	14.5	17	4	21.0			E266M24		E423M24

E207 • M Gépi Menetfúró, csavart hornyú 15°

HSS-E anyagminőségből, míg a készlet tart

E258 • M Tarozí de masina cu dinti în spirala (unghi 15°)

Furnizat din material HSS-E, până un nou stoc este disponibil

E212 • M 15° Helisel Kanallı Makine Kılavuzu

Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.

E263 • M Machine Tap Spiral Flute 15°

Supplied in HSS-E until new stock available

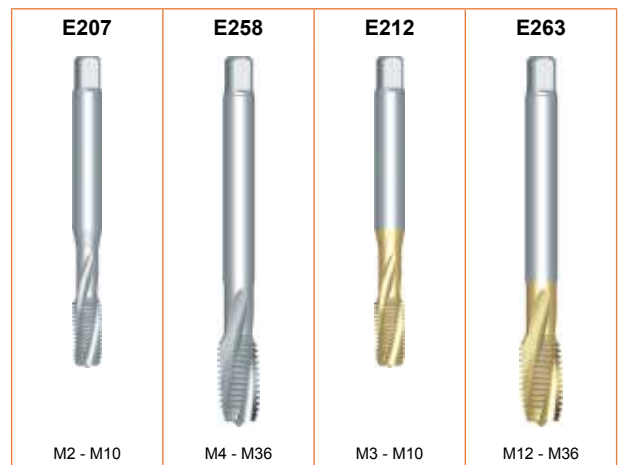
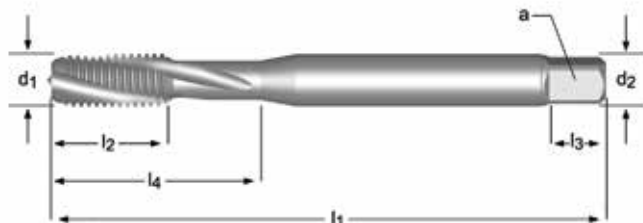
E207; E258

▪	1.3	1.4				
•	1.2	1.5	7.2	7.3		


E212; E263

▪	1.3	1.4				
•	1.1	1.2	1.5	4.2	4.3	7.2 7.3

E207	M	DIN 371	6H		1.5XD	HSS-E PM	C 2-3				
E258	M	DIN 376	6H		1.5XD	HSS-E PM	C 2-3				
E212	M	DIN 371	6H		1.5XD	HSS-E PM	C 2-3				
E263	M	DIN 376	6H		1.5XD	HSS-E PM	C 2-3				



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E207	E258	E212	E263
2	0.40	45	4	2.8	2.1	5	3	1.6	9	E207M2			
2.5	0.45	50	4	2.8	2.1	5	3	2.05	12.5	E207M2.5			
3	0.50	56	9	3.5	2.7	6	3	2.5	18	E207M3		E212M3	
4	0.70	63	12	2.8	2.1	5	3	3.3			E258M4	E212M4	
4	0.70	63	12	4.5	3.4	6	3	3.3	21	E207M4	E258M5		
5	0.80	70	13	3.5	2.7	6	3	4.2			E258M6	E212M6	
5	0.80	70	13	6.0	4.9	8	3	4.2	25	E207M5		E212M5	
6	1.00	80	15	4.5	3.4	6	3	5.0			E258M8	E212M8	
6	1.00	80	15	6.0	4.9	8	3	5	30	E207M6		E212M6	
8	1.25	90	18	6.0	4.9	8	3	6.8			E258M10	E212M10	
8	1.25	90	18	8.0	6.2	9	3	6.8	35	E207M8		E212M8	
10	1.50	100	20	10.0	8.0	11	3	8.5	39	E207M10		E212M10	
10	1.50	100	20	7.0	5.5	8	3	8.5			E258M12		E263M12
12	1.75	110	23	9.0	7.0	10	3	10.3			E258M14		E263M14
14	2.00	110	25	11.0	9.0	12	3	12.0			E258M16		E263M16
16	2.00	110	25	12.0	9.0	12	3	14.0			E258M18		E263M18
18	2.50	125	30	14.0	11.0	14	3	15.5			E258M20		E263M20
20	2.50	140	30	16.0	12.0	15	3	17.5					

M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∇ a mm	l ₃ mm	z	 mm	l ₄ mm	E207	E258	E212	E263
22	2.50	140	34	18.0	14.5	17	4	19.5			E258M22		E263M22
24	3.00	160	38	18.0	14.5	17	4	21.0			E258M24		E263M24
27	3.00	160	38	20.0	16.0	19	4	24.0			E258M27		E263M27
30	3.50	180	45	22.0	18.0	21	4	26.5			E258M30		E263M30
36	4.00	200	55	28.0	22.0	25	4	32.0			E258M36		E263M36

EX006H
EX006G
EX00TIN
EX016H


- M Gépi Menetfúró, csavart hornyú 45° HSS-E anyagminőségből, míg a készlet tart
- M Tarozi de masina cu dinti în spirala (unghi 45°) Furnizat din material HSS-E, până un nou stoc este disponibil
- M 45° Helisel Kanallı Makine Kılavuzu Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
- M Machine Tap Spiral Flute 45° Supplied in HSS-E until new stock available

EX006H; EX006G	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2					
EX00TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	7.3	7.4
	•	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2
EX016H	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2		
	•	2.3								

EX006H	M	DIN 371<10 376>12	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$			L001 337	L114 334
EX006G	M	DIN 371<10 376>12	6G		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$				
EX00TIN	M	DIN 371<10 376>12	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$		TIN		
EX016H	M	DIN 371<10 376>12	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$		ST		



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	EX006H	EX006G	EX00TIN	EX016H
2	0.40	45	4	2.8	2.1	5	3	1.6	9	EX00M2			EX01M2
2.5	0.45	50	4	2.8	2.1	5	3	2.05	12.5	EX00M2.5			EX01M2.5
3	0.50	56	6	3.5	2.7	6	3	2.5	18	EX00M3	EX00M36G	EX00TINM3	EX01M3
3.5	0.60	56	7	4.0	3.0	6	3	2.9	20	EX00M3.5			EX01M3.5
4	0.70	63	7	4.5	3.4	6	3	3.3	21	EX00M4	EX00M46G	EX00TINM4	EX01M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	EX00M5	EX00M56G	EX00TINM5	EX01M5
6	1.00	80	10	4.5	3.4	6	3	5	31	EX00M6DIN376			EX01M6DIN376
6	1.00	80	10	6.0	4.9	8	3	5	31	EX00M6	EX00M66G	EX00TINM6	EX01M6
7	1.00	80	10	7.0	5.5	8	3	6	31	EX00M7			EX01M7
8	1.25	90	12	8.0	6.2	9	3	6.8	35	EX00M8	EX00M86G	EX00TINM8	EX01M8
8	1.25	90	13	6.0	4.9	8	3	6.8	35	EX00M8DIN376			EX01M8DIN376
10	1.50	100	15	10.0	8.0	11	3	8.5	39	EX00M10	EX00M106G	EX00TINM10	EX01M10
10	1.50	100	15	7.0	5.5	8	3	8.5	39	EX00M10DIN376			EX01M10DIN376
12	1.75	110	16	9.0	7.0	10	3	10.3	-	EX00M12	EX00M126G	EX00TINM12	EX01M12
14	2.00	110	20	11.0	9.0	12	3	12	-	EX00M14	EX00M146G	EX00TINM14	EX01M14
16	2.00	110	20	12.0	9.0	12	4	14	-	EX00M16	EX00M166G	EX00TINM16	EX01M16
18	2.50	125	25	14.0	11.0	14	4	15.5	-	EX00M18		EX00TINM18	EX01M18
20	2.50	140	25	16.0	12.0	15	4	17.5	-	EX00M20	EX00M206G	EX00TINM20	EX01M20

M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		l ₄ mm	EX006H	EX006G	EX00TIN	EX016H
22	2.50	140	25	18.0	14.5	17	4	19.5	-	EX00M22		EX00TINM22	EX01M22
24	3.00	160	30	18.0	14.5	17	4	21	-	EX00M24		EX00TINM24	EX01M24
27	3.00	160	30	20.0	16.0	19	4	24	-	EX00M27		EX00TINM27	EX01M27
30	3.50	180	36	22.0	18.0	21	4	26.5	-	EX00M30		EX00TINM30	EX01M30
33	3.50	180	36	25.0	20.0	23	4	29.5	-	EX00M33			EX01M33
36	4.00	200	40	28.0	22.0	25	4	32	-	EX00M36			EX01M36
39	4.00	200	40	32.0	24.0	27	4	35	-	EX00M39			EX01M39
42	4.50	200	45	32.0	24.0	27	4	37.5	-	EX00M42	¹⁾		EX01M42 ¹⁾
48	5.00	250	50	36.0	29.0	32	4	43	-	EX00M48	¹⁾		EX01M48 ¹⁾
52	5.00	250	50	40.0	32.0	35	5	47	-	EX00M52	¹⁾		EX01M52 ¹⁾
56	5.50	250	55	40.0	32.0	35	5	50.5	-	EX00M56	¹⁾		EX01M56 ¹⁾
64	6.00	315	60	50.0	39.0	42	6	58	-	EX00M64	¹⁾		EX01M64 ¹⁾

- ## E298
- M 40° csavarthorný gépi menetfúró, sárga Shark
 - M Tarozi de Masina Canale in Spirala 40° , Shark GALBEN
 - M 40° Helisel Kanallı Makine Kılavuzu, sari Shark
 - M Machine Tap Spiral Flute 40°, Yellow Shark

E298 ■ 1.1 1.2 1.3 6.1 6.3
 • 1.4 1.5 6.2

E298 M DIN 371≤10 376>12 6H 2XD HSS-E PM C 2-3 λ40° Cr L114 334



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	E298
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E298M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E298M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E298M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E298M6
8	1.25	90	13	8.0	6.2	9	3	6.8	35	E298M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E298M10
12	1.75	110	18	9.0	7.0	10	3	10.3	-	E298M12
14	2.00	110	20	11.0	9.0	12	3	12.0	-	E298M14
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E298M16
18	2.50	125	25	14.0	11.0	14	4	15.5	-	E298M18
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E298M20
22	2.50	140	25	18.0	14.5	17	4	19.5	-	E298M22
24	3.00	160	30	18.0	14.5	17	4	21.0	-	E298M24
27	3.00	160	30	20.0	16.0	19	4	24.0	-	E298M27
30	3.50	160	36	22.0	18.0	21	4	26.5	-	E298M30

- E412**
- M 48° csavarhorthyú sárga Shark gépi menetfúró, hátrafelé kúpos
 - M Tarozi de Masina Canale in Spirala 48 °, Shark GALBEN, Conicitate Spate Canale
 - M Makine Kılavuzu 48° Helis Açılı, Ters Açılı, sari Shark
 - M Machine Tap Spiral Flute 48°, Back tapered, Yellow Shark

E412	▪	1.1	1.2	1.3	1.4	1.5	
	•	2.1	2.2	2.3	7.1	7.2	7.3

E412

M	DIN 371≤10 376≥12	6H		3XD	HSS-E PM	C 2-3	λ48°		
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M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E412
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E412M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E412M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E412M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E412M6
8	1.25	90	13	8.0	6.2	9	3	6.8	35	E412M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E412M10
12	1.75	110	18	9.0	7.0	10	3	10.3	-	E412M12
14	2.00	110	20	11.0	9.0	12	3	12.0	-	E412M14
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E412M16
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E412M20
22	2.50	140	25	18.0	14.5	17	4	19.5	-	E412M22
24	3.00	160	30	18.0	14.5	17	4	21.0	-	E412M24
27	3.00	160	30	20.0	16.0	19	4	24.0	-	E412M27
30	3.50	180	36	22.0	18.0	21	4	26.5	-	E412M30

E260 E261

- M 45° csavarhorthyú piros Shark gépi menetfúró, hátrafelé kúpos
- M Tarozi de Masina Canale in Spirala 45°, Shark ROSU, Conicitate Spate Canale
- M Makine Kılavuzu 45° Helis Açılı, Ters Açılı, Kırmızı Shark
- M Machine Tap Spiral Flute 45°, Back Tapered, Red Shark

HSS-E anyagminőségéből, míg a készlet tart

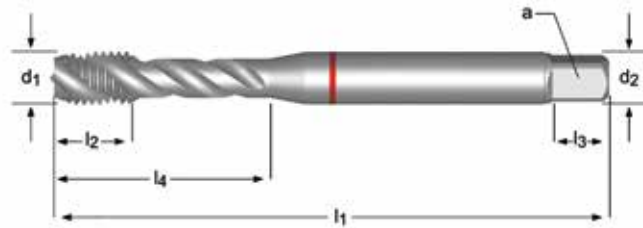
Furnizat din material HSS-E, până un nou stoc este disponibil

Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.

Supplied in HSS-E until new stock available

E260	▪	1.4			
	•	1.5	1.6	4.2	5.2
E261	▪	1.4	1.5		
	•	1.6	4.2	5.2	

E260	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3		λ45°			
E261	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3		λ45°		TiAIN Top	



M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z		l ₄ mm	E260	E261
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E260M3	E261M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E260M4	E261M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E260M5	E261M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E260M6	E261M6
8	1.25	90	12	8.0	6.2	9	3	6.8	35	E260M8	E261M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E260M10	E261M10
12	1.75	110	16	9.0	7.0	10	3	10.3	-	E260M12	E261M12
14	2.00	110	20	11.0	9.0	12	3	12.0	-	E260M14	-
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E260M16	E261M16
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E260M20	E261M20

E238

- M 40° csavarhornyú kék Shark gépi menetfúró, hátrafelé kúpos
- M Tarozi de Masina Canale in Spirala 40°, Shark ALBASTRU, Conicitate Spate Canale

E239

- M Makine Kılavuzu 40° Helis Açılı, Ters Açılı, Mavi Shark
- M Machine Tap Spiral Flute 40°, Back Tapered, Blue Shark

HSS-E anyagminőségből, míg a készlet tart

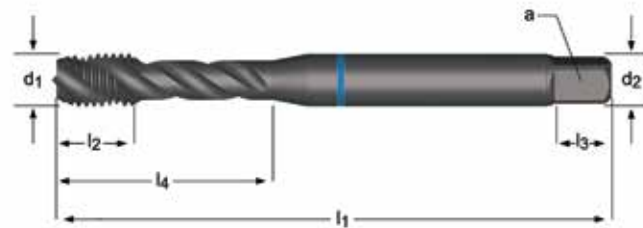
Furnizat din material HSS-E, până un nou stoc este disponibil

Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.

Supplied in HSS-E until new stock available

E238	▪	2.1	2.2	2.3	
	•	1.5			
E239	▪	2.1	2.2	2.3	
	•	1.2	1.3	1.4	1.5

E238	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3			ST	L114 334
E239	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3			Super B	



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E238	E239
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E238M3	E239M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E238M4	E239M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E238M5	E239M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E238M6	E239M6
8	1.25	90	13	8.0	6.2	9	3	6.8	33	E238M8	E239M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E238M10	E239M10
12	1.75	110	18	9.0	7.0	10	4	10.3	-	E238M12	E239M12
14	2.00	110	20	11.0	9.0	12	4	12.0	-	E238M14	E239M14
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E238M16	E239M16
18	2.50	125	25	14.0	11.0	14	4	15.5	-	E238M18	
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E238M20	E239M20
22	2.50	140	25	18.0	14.5	17	4	19.8	-	E238M22	
24	3.00	160	30	18.0	14.5	17	4	21.0	-	E238M24	
27	3.00	160	30	20.0	16.0	19	4	24.0	-	E238M27	
30	3.50	180	36	22.0	18.0	21	4	26.5	-	E238M30	

E414

- M 48° csavarhormyú kék Shark gépi menetfúró, hátrafelé kúpos
- M Tarozì de Masina Canale in Spirala 48°, Shark ALBASTRU, Conicitate Spate Canale
- M Makine Kılavuzu 48° Helis Açılı, Ters Açılı, Mavi Shark
- M Machine Tap Spiral Flute 48°, Back Tapered, Blue Shark

E414 ■ 2.1 2.2 2.3 2.4
 • 1.3 1.4 1.5

E414

M

DIN
371≤10
376≥12

6H



3XD

HSS-E
PM

C
2-3



E414

NEW



SHARK LINE

M3 - M20

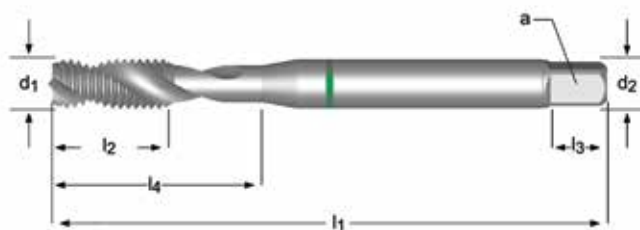
M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z		l ₄ mm	E414
3	0.50	56	6	3.5	2.7	6	3	2.5	18	E414M3
4	0.70	63	7	4.5	3.4	6	3	3.3	21	E414M4
5	0.80	70	8	6.0	4.9	8	3	4.2	25	E414M5
6	1.00	80	10	6.0	4.9	8	3	5.0	30	E414M6
8	1.25	90	13	8.0	6.2	9	3	6.8	35	E414M8
10	1.50	100	15	10.0	8.0	11	3	8.5	39	E414M10
12	1.75	110	18	9.0	7.0	10	3	10.3	-	E414M12
14	2.00	110	20	11.0	9.0	12	3	12.0	-	E414M14
16	2.00	110	20	12.0	9.0	12	4	14.0	-	E414M16
20	2.50	140	25	16.0	12.0	15	4	17.5	-	E414M20

- E473**
- M 35° csavarhornyú gépi menetfúró, zöld Shark
 - M Tarozi de Masină Canale în Spirala 35°, Shark VERDE
- E474**
- M 40° Helisel Kanallı Makine Kılavuzu, yeşil Shark
 - M Machine Tap Spiral Flute 35°, Green Shark

HSS-E anyagminőségéből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E473	▪	6.2	6.3	7.1	7.2	7.3	8.1
	•	1.1	1.2	1.3	6.1	7.4	
E474	▪	6.2	7.2	7.3	7.4		
	•	1.2	1.3	6.3	7.1	8.1	

E473	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3				
E474	M	DIN 371≤10 376≥12	6H		2.5XD	HSS-E PM	C 2-3			Super B	



M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z		l ₄ mm	E473	E474
3	0.50	56	9	3.5	2.7	6	2	2.5	18	E473M3	E474M3
4	0.70	63	12	4.5	3.4	6	2	3.3	21	E473M4	E474M4
5	0.80	70	13	6.0	4.9	8	2	4.2	25	E473M5	E474M5
6	1.00	80	15	6.0	4.9	8	2	5.0	30	E473M6	E474M6
8	1.25	90	18	8.0	6.2	9	2	6.8	35	E473M8	E474M8
10	1.50	100	20	10.0	8.0	11	2	8.5	39	E473M10	E474M10
12	1.75	110	23	9.0	7.0	10	3	10.3	-	E473M12	E474M12
16	2.00	110	25	12.0	9.0	12	3	14.0	-	E473M16	E474M16
20	2.50	140	30	16.0	12.0	15	3	17.5	-	E473M20	E474M20

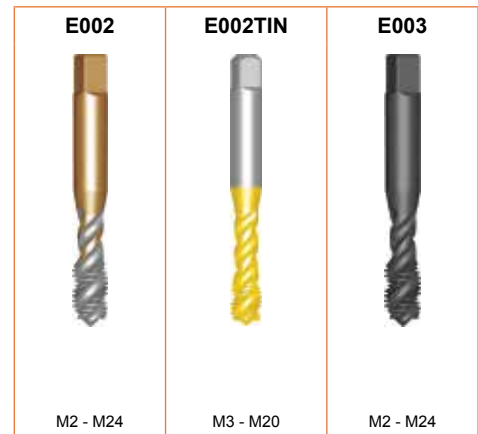
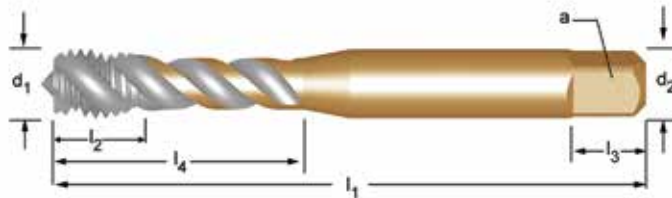
E002 E002TIN E003

- M Gépi Menetfúró, csavart hornyú 45°
- M Tarozi de masina cu dinti în spirală (unghi 45°)
- M 45° Helisel Kanallı Makine Kılavuzu
- M Machine Tap Spiral Flute 45°

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E002	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2					
E002TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	7.3	7.4
	•	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2
E003	▪	1.1	1.2	1.3	1.4	1.5				
	•	2.1	2.2	2.3						

E002	M	ISO 529	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$			
E002TIN	M	ISO 529	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$		TIN	
E003	M	ISO 529	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$		ST	



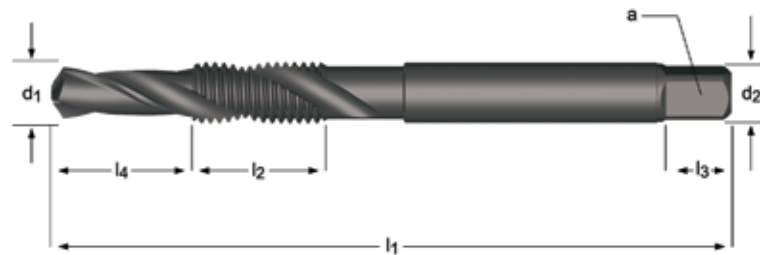
M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E002	E002TIN	E003
2	0.40	41	8	2.50	2.00	4	2	1.6	8	E002M2		E003M2
2.5	0.45	44.5	9.5	2.80	2.24	5	2	2.05	9.5	E002M2.5		E003M2.5
3	0.50	48	6	3.15	2.50	5	3	2.5	12.5	E002M3	E002TINM3	E003M3
4	0.70	53	7	4.00	3.15	6	3	3.3	19	E002M4	E002TINM4	E003M4
5	0.80	58	8	5.00	4.00	7	3	4.2	22	E002M5	E002TINM5	E003M5
6	1.00	66	10	6.30	5.00	8	3	5.0	27	E002M6	E002TINM6	E003M6
8	1.25	72	12	8.00	6.30	9	3	6.8	31	E002M8	E002TINM8	E003M8
10	1.50	80	15	10.00	8.00	11	3	8.5	35	E002M10	E002TINM10	E003M10
12	1.75	89	16	9.00	7.10	10	3	10.3	-	E002M12	E002TINM12	E003M12
14	2.00	95	18	11.20	9.00	12	3	12.0	-	E002M14		E003M14
16	2.00	102	18	12.50	10.00	13	4	14.0	-	E002M16	E002TINM16	E003M16
18	2.50	112	29	14.00	11.20	14	4	15.5	-	E002M18		E003M18
20	2.50	112	29	14.00	11.20	14	4	17.5	-	E002M20	E002TINM20	E003M20
22	2.50	118	29	16.00	12.50	16	4	19.5	-	E002M22		E003M22
24	3.00	130	35	18.00	14.00	18	4	21.0	-	E002M24		E003M24

E650

- M Kombinált Menetfúró, csavart hornyú 30°
- M Tarozi combinati, cu dinti în spirala (unghi 30°)
- M 30° Helis Açılı Kombi Kılavuz
- M Combi Taps Spiral Flute 30°

E650 • 1.1 1.2 1.3 1.4 3.2 6.2 6.3 7.1 7.2 8.1

E650 M DORMER ISO 6H 1.5XD HSS C 2-3 λ 30° ST L126 332



M	P mm	d ₁ nom mm	l ₁ mm	l ₂ mm	l ₄ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z	E650
3	0.50	2.5	56	10	6	3.15	2.5	5.0	2	E650M3
4	0.70	3.3	65	12	8	4.0	3.15	6.0	2	E650M4
5	0.80	4.2	69	15	10	5.0	4.00	7.0	2	E650M5
6	1.00	5.0	84	18	12	6.3	5.00	8.0	2	E650M6
8	1.25	6.8	96	21	16	8.0	6.30	9.0	2	E650M8
10	1.50	8.5	108	22	20	10.0	8.00	11.0	2	E650M10
12	1.75	10.2	113	29	24	9.0	7.10	10.0	2	E650M12
14	2.00	12.0	123	30	28	11.2	9.00	12.0	2	E650M14
16	2.00	14.0	134	32	32	12.5	10.00	13.0	2	E650M16

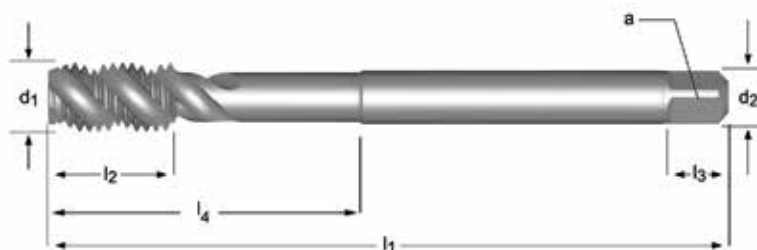
E605

- M Gépi menetfúró, extra hosszú, csavart hornyú 40°
- M Tarazi de masina extralungi cu dinti în spirala (unghi 40°)
- M Makine Kilavuzu 40° Ekstra Uzun Helis Açılı
- M Machine Tap, Extra Long Spiral Flute 40°

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E605 • 1.2 1.3 1.4 1.5 2.1 2.2 2.3 5.2 7.1 7.2 7.3 7.4

E605 M ISO 2283 6H 2XD HSS-E PM C 2-3 λ40°



E605



M3 - M20

M	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∇ a mm	l ₃ mm	z		l ₄ mm	E605
3	0.50	66	9	3.15	2.50	5	2	2.5	21	E605M3
4	0.70	73	9	4.00	3.15	6	2	3.3	22	E605M4
5	0.80	79	12	5.00	4.00	7	3	4.2	26	E605M5
6	1.00	89	12	6.30	5.00	8	3	5	29	E605M6
8	1.25	97	12	6.30	5.00	8	3	6.8	-	E605M8
10	1.50	108	14	8.00	6.30	9	3	8.5	-	E605M10
12	1.75	119	23	9.00	7.10	10	3	10.3	-	E605M12
14	2.00	127	25	11.20	9.00	12	3	12	-	E605M14
16	2.00	137	25	12.50	10.00	13	3	14	-	E605M16
20	2.50	149	30	14.00	11.20	14	3	17.5	-	E605M20

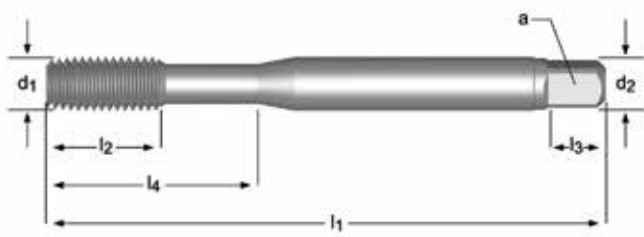
- E291**
- M Gépi Menetformázó
 - M Tarozi de masina de deformare
- E292**
- M Ovalama Kılavuzu
 - M Machine Forming Tap

- E294**
- M Gépi menetformázó kenőhoronnyal
 - M Tarozi de masina de deformare cu canale de ulei
 - M Ovalama Kılavuzu, Yağ kanallı
 - M Machine Forming Tap, Oil Grooves

- E289**
- M Gépi Menetformázó, Olajhornyokkal és Belső Hütéssel
 - M Tarozi de masina de deformare cu canale de ulei și răcire internă
 - M Ovalama Kılavuzu, Yağ Kanallı ve İçten Soğutmalı
 - M Machine Forming Tap, Oil Grooves and Internal Coolant

E291	▪	1.1	1.2	1.3	1.4	7.1	7.2						
	•	7.3											
E292; E294; E289	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3	
	•	1.5	2.3	5.2	6.1	6.3	7.4						

E291	M	DIN 2174	6HX		3XD	HSS-E	C 2-3.5				
E292	M	DIN 2174	6HX		3XD	HSS-E	C 2-3.5				
E294	M	DIN 2174	6HX		3.5XD	HSS-E	C 2-3.5				
E289	M	DIN 2174	6HX		3.5XD	HSS-E	C 2-3.5				







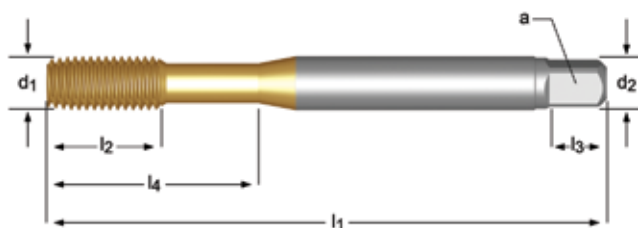
M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		l ₄ mm	E291	E292	E294	E289
1.6	0.35	40	8	2.5	2.1	5	3	1.4	-	E291M1.6	E292M1.6		
2	0.40	45	6	2.8	2.1	5	3	1.8	11	E291M2	E292M2		
2.5	0.45	50	8	2.8	2.1	5	3	2.3	12.5	E291M2.5	E292M2.5		
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E291M3	E292M3	E294M3	
3.5	0.60	56	11	4.0	3.0	6	4	3.2	20	E291M3.5	E292M3.5		
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E291M4	E292M4	E294M4	
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E291M5	E292M5	E294M5	E289M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E291M6	E292M6	E294M6	E289M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E291M8	E292M8	E294M8	E289M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E291M10	E292M10	E294M10	E289M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E291M12	E292M12	E294M12	E289M12
14	2.00	110	25	11.0	9.0	12	6	13.0	-			E294M14	
16	2.00	110	25	12.0	9.0	12	6	15.0	-	E291M16	E292M16	E294M16	

E293

- M Gépi Menetformázó
- M Tarozí de masina de deformare
- M Ovalama Kilavuzu
- M Machine Forming Tap

E293	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E293	M	DIN 2174	6HX		3XD	HSS-E	E 1.5-2				
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E293

NEW



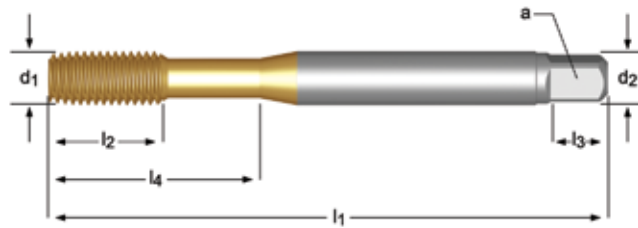
M3 - M16

M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E293
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E293M3
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E293M4
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E293M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E293M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E293M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E293M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E293M12
16	2.00	110	25	12.0	9.0	12	6	15.0	-	E293M16

- E295** • M Gépi Menetformázó
 • M Tarozí de masina de deformare
- E296** • M Ovalama Kılavuzu
 • M Machine Forming Tap

E295; E296 ■ 1.1 1.2 1.3 1.4 2.1 2.2 4.1 5.1 7.1 7.2 7.3
 • 1.5 2.3 5.2 6.1 6.3 7.4

E295	M	DIN 2174	6GX		3XD	HSS-E	C 2-3.5			TiN	
E296	M	DIN 2174	6GX		3XD	HSS-E	E 1.5-2			TiN	



M	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∇ a mm	l ₃ mm	z		l ₄ mm	E295	E296
3	0.50	56	9	3.5	2.7	6	4	2.8	18	E295M3	E296M3
3.5	0.60	56	11	4.0	3.0	6	4	3.2	20	E295M3.5	
4	0.70	63	12	4.5	3.4	6	5	3.7	21	E295M4	E296M4
5	0.80	70	13	6.0	4.9	8	5	4.6	25	E295M5	E296M5
6	1.00	80	15	6.0	4.9	8	5	5.5	30	E295M6	E296M6
8	1.25	90	18	8.0	6.2	9	5	7.4	35	E295M8	E296M8
10	1.50	100	20	10.0	8.0	11	5	9.3	39	E295M10	E296M10
12	1.75	110	23	9.0	7.0	10	5	11.2	-	E295M12	

E105

- MF Kézi Menetfúró, egyenes hornyú
- MF Tarozi de mâna, Canale drepte
- MF Düz Kanallı El Kılavuzu
- MF Hand Tap Straight Flute

E105 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E105

MF

DIN
2181

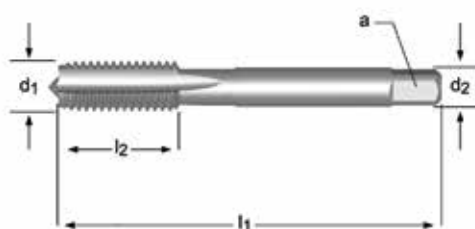
6H



1.5XD

HSS

C
2-3




E105




M2.5 - M50

MF	P mm	l_1 mm	l_2 mm	d_2 mm	\square a mm	z		E105
2.5	0.35	40	9	2.8	2.1	3	2.15	E105M2.5X.35NO3
2.5	0.35	40	9	2.8	2.1	3	2.15	E105M2.5X.35NO9
3	0.35	40	9	3.5	2.7	3	2.65	E105M3X.35NO3
3	0.35	40	9	3.5	2.7	3	2.65	E105M3X.35NO9
3.5	0.35	45	10	4.0	3.0	3	3.2	E105M3.5X.35NO3
3.5	0.35	45	10	4.0	3.0	3	3.2	E105M3.5X.35NO9
4	0.50	45	12	4.5	3.4	3	3.5	E105M4X.5NO3
4	0.50	45	12	4.5	3.4	3	3.5	E105M4X.5NO9
5	0.50	50	14	6.0	4.9	3	4.5	E105M5X.5NO3
5	0.50	50	14	6.0	4.9	3	4.5	E105M5X.5NO9
5.5	0.50	56	16	6.0	4.9	3	5	E105M5.5X.5NO9
6	0.75	56	16	6.0	4.9	3	5.3	E105M6X.75NO3
6	0.75	56	16	6.0	4.9	3	5.3	E105M6X.75NO9
7	0.75	56	16	6.0	4.9	3	6.3	E105M7X.75NO3
7	0.75	56	16	6.0	4.9	3	6.3	E105M7X.75NO9
8	0.75	56	16	6.0	4.9	3	7.3	E105M8X.75NO3
8	0.75	56	16	6.0	4.9	3	7.3	E105M8X.75NO9
8	1.00	63	19	6.0	4.9	3	7	E105M8X1.0NO3
8	1.00	63	19	6.0	4.9	3	7	E105M8X1.0NO9
9	0.75	63	19	7.0	5.5	3	8.3	E105M9X.75NO3
9	0.75	63	19	7.0	5.5	3	8.3	E105M9X.75NO9
9	1.00	63	19	7.0	5.5	3	8	E105M9X1.0NO3
9	1.00	63	19	7.0	5.5	3	8	E105M9X1.0NO9
10	0.75	63	16	7.0	5.5	3	9.3	E105M10X.75NO3
10	0.75	63	16	7.0	5.5	3	9.3	E105M10X.75NO9
10	1.00	63	16	7.0	5.5	3	9	E105M10X1.0NO3
10	1.00	63	16	7.0	5.5	3	9	E105M10X1.0NO9
10	1.25	70	22	7.0	5.5	3	8.8	E105M10X1.25NO3
10	1.25	70	22	7.0	5.5	3	8.8	E105M10X1.25NO9
11	0.75	63	15	8.0	6.2	3	10.3	E105M11X.75NO3
11	0.75	63	15	8.0	6.2	3	10.3	E105M11X.75NO9
11	1.00	63	15	8.0	6.2	3	10	E105M11X1.0NO3
11	1.00	63	15	8.0	6.2	3	10	E105M11X1.0NO9
12	1.00	70	16	9.0	7.0	3	11	E105M12X1.0NO3
12	1.00	70	16	9.0	7.0	3	11	E105M12X1.0NO9
12	1.25	70	16	9.0	7.0	3	10.8	E105M12X1.25NO3
12	1.25	70	16	9.0	7.0	3	10.8	E105M12X1.25NO9
12	1.50	70	16	9.0	7.0	3	10.5	E105M12X1.5NO3
12	1.50	70	16	9.0	7.0	3	10.5	E105M12X1.5NO9
14	1.00	70	16	11.0	9.0	4	13	E105M14X1.0NO3

NO1 - NO9
219

MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	z		E105
14	1.00	70	16	11.0	9.0	4	13	E105M14X1.0NO9
14	1.25	70	16	11.0	9.0	4	12.8	E105M14X1.25NO3
14	1.25	70	16	11.0	9.0	4	12.8	E105M14X1.25NO9
14	1.50	70	16	11.0	9.0	4	12.5	E105M14X1.5NO3
14	1.50	70	16	11.0	9.0	4	12.5	E105M14X1.5NO9
15	1.00	70	16	12.0	9.0	4	14	E105M15X1.0NO3
15	1.00	70	16	12.0	9.0	4	14	E105M15X1.0NO9
15	1.50	70	16	12.0	9.0	4	13.5	E105M15X1.5NO3
15	1.50	70	16	12.0	9.0	4	13.5	E105M15X1.5NO9
16	1.00	70	16	12.0	9.0	4	15	E105M16X1.0NO3
16	1.00	70	16	12.0	9.0	4	15	E105M16X1.0NO9
16	1.50	70	16	12.0	9.0	4	14.5	E105M16X1.5NO3
16	1.50	70	16	12.0	9.0	4	14.5	E105M16X1.5NO9
18	1.00	80	18	14.0	11.0	4	17	E105M18X1.0NO3
18	1.00	80	18	14.0	11.0	4	17	E105M18X1.0NO9
18	1.50	80	18	14.0	11.0	4	16.5	E105M18X1.5NO3
18	1.50	80	18	14.0	11.0	4	16.5	E105M18X1.5NO9
20	1.00	80	18	16.0	12.0	4	19	E105M20X1.0NO3
20	1.00	80	18	16.0	12.0	4	19	E105M20X1.0NO9
20	1.50	80	18	16.0	12.0	4	18.5	E105M20X1.5NO3
20	1.50	80	18	16.0	12.0	4	18.5	E105M20X1.5NO9
22	1.00	80	22	18.0	14.5	4	21	E105M22X1.0NO3
22	1.00	80	22	18.0	14.5	4	21	E105M22X1.0NO9
22	1.50	80	22	18.0	14.5	4	20.5	E105M22X1.5NO3
22	1.50	80	22	18.0	14.5	4	20.5	E105M22X1.5NO9
24	1.00	90	22	18.0	14.5	4	23	E105M24X1.0NO3
24	1.00	90	22	18.0	14.5	4	23	E105M24X1.0NO9
24	1.50	90	22	18.0	14.5	4	22.5	E105M24X1.5NO3
24	1.50	90	22	18.0	14.5	4	22.5	E105M24X1.5NO9
24	2.00	90	22	18.0	14.5	4	22	E105M24X2.0NO3
24	2.00	90	22	18.0	14.5	4	22	E105M24X2.0NO9
25	1.50	90	22	18.0	14.5	4	23.5	E105M25X1.5NO3
25	1.50	90	22	18.0	14.5	4	23.5	E105M25X1.5NO9
25	2.00	90	22	18.0	14.5	4	23	E105M25X2.0NO3
25	2.00	90	22	18.0	14.5	4	23	E105M25X2.0NO9
27	1.50	90	22	20.0	16.0	4	25.5	E105M27X1.5NO3
27	1.50	90	22	20.0	16.0	4	25.5	E105M27X1.5NO9
27	2.00	90	22	20.0	16.0	4	25	E105M27X2.0NO3
27	2.00	90	22	20.0	16.0	4	25	E105M27X2.0NO9
28	1.50	90	22	20.0	16.0	4	26.5	E105M28X1.5NO3
28	1.50	90	22	20.0	16.0	4	26.5	E105M28X1.5NO9
28	2.00	90	22	20.0	16.0	4	26	E105M28X2.0NO3
28	2.00	90	22	20.0	16.0	4	26	E105M28X2.0NO9
30	1.50	90	22	22.0	18.0	4	28.5	E105M30X1.5NO3
30	1.50	90	22	22.0	18.0	4	28.5	E105M30X1.5NO9
30	2.00	90	22	22.0	18.0	4	28	E105M30X2.0NO3
30	2.00	90	22	22.0	18.0	4	28	E105M30X2.0NO9
32	1.50	90	22	22.0	18.0	4	30.5	E105M32X1.5NO3
32	1.50	90	22	22.0	18.0	4	30.5	E105M32X1.5NO9
32	2.00	90	22	22.0	18.0	4	30	E105M32X2.0NO3
32	2.00	90	22	22.0	18.0	4	30	E105M32X2.0NO9
36	1.50	100	25	28.0	22.0	4	34.5	E105M36X1.5NO3
36	1.50	100	25	28.0	22.0	4	34.5	E105M36X1.5NO9
36	2.00	125	40	28.0	22.0	4	34	E105M36X2.0NO3
36	2.00	125	40	28.0	22.0	4	34	E105M36X2.0NO9
36	3.00	125	40	28.0	22.0	4	33	E105M36X3.0NO3
36	3.00	125	40	28.0	22.0	4	33	E105M36X3.0NO9
40	1.50	110	25	32.0	24.0	4	38.5	E105M40X1.5NO3
40	1.50	110	25	32.0	24.0	4	38.5	E105M40X1.5NO9
40	2.00	125	40	32.0	24.0	4	38	E105M40X2.0NO3
40	2.00	125	40	32.0	24.0	4	38	E105M40X2.0NO9
40	3.00	125	40	32.0	24.0	4	37	E105M40X3.0NO3
40	3.00	125	40	32.0	24.0	4	37	E105M40X3.0NO9
42	1.50	110	25	32.0	24.0	4	40.5	E105M42X1.5NO3
42	1.50	110	25	32.0	24.0	4	40.5	E105M42X1.5NO9
42	2.00	125	40	32.0	24.0	4	40	E105M42X2.0NO3
42	2.00	125	40	32.0	24.0	4	40	E105M42X2.0NO9
42	3.00	125	40	32.0	24.0	4	39	E105M42X3.0NO3
42	3.00	125	40	32.0	24.0	4	39	E105M42X3.0NO9
45	1.50	110	25	36.0	29.0	6	43.5	E105M45X1.5NO3



MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∅ a mm	z		E105
45	1.50	110	25	36.0	29.0	6	43.5	E105M45X1.5NO9
45	2.00	125	40	36.0	29.0	6	43	E105M45X2.0NO3
45	2.00	125	40	36.0	29.0	6	43	E105M45X2.0NO9
45	3.00	125	40	36.0	29.0	6	42	E105M45X3.0NO3
45	3.00	125	40	36.0	29.0	6	42	E105M45X3.0NO9
48	1.50	140	40	36.0	29.0	6	46.5	E105M48X1.5NO3
48	1.50	140	40	36.0	29.0	6	46.5	E105M48X1.5NO9
48	2.00	140	40	36.0	29.0	6	46	E105M48X2.0NO3
48	2.00	140	40	36.0	29.0	6	46	E105M48X2.0NO9
48	3.00	140	40	36.0	29.0	6	45	E105M48X3.0NO3
48	3.00	140	40	36.0	29.0	6	45	E105M48X3.0NO9
50	1.50	140	40	36.0	29.0	6	48.5	E105M50X1.5NO3
50	1.50	140	40	36.0	29.0	6	48.5	E105M50X1.5NO9
50	2.00	140	40	36.0	29.0	6	48	E105M50X2.0NO3
50	2.00	140	40	36.0	29.0	6	48	E105M50X2.0NO9
50	3.00	140	40	36.0	29.0	6	47	E105M50X3.0NO3
50	3.00	140	40	36.0	29.0	6	47	E105M50X3.0NO9

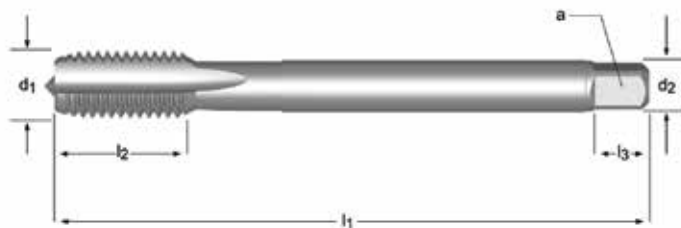


E268 E242 E290


- MF Gépi Menetfúró, egyenes hornyú HSS-E anyagminőségből, míg a készlet tart
- MF Tarozi de masina, Canale drepte Furnizat din material HSS-E, până un nou stoc este disponibil
- MF Düz Kanallı Makine Kılavuzu Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
- MF Machine Tap Straight Flute Supplied in HSS-E until new stock available

E268; E242; E290 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E268	MF	DIN 374	6H		1.5XD	HSS-E PM	C 2-3				
E242	MF	DIN 371	6H		1.5XD	HSS-E PM	C 2-3				
E290	MF	DIN 374	6H		1.5XD	HSS-E PM	C 2-3				



MF	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E268	E242	E290
4	0.50	63	10	2.8	2.1	5	3	3.5		E268M4X.5		
5	0.50	70	13	3.5	2.7	6	3	4.5		E268M5X.5		
6	0.75	80	15	4.5	3.4	6	3	5.3		E268M6X.75		
7	0.75	80	15	5.5	4.3	7	3	6.3		E268M7X.75		
8	0.75	80	15	6.0	4.9	8	3	7.3		E268M8X.75		
8	1.00	90	18	6.0	4.9	8	3	7.0		E268M8X1.0		
8	1.00	90	18	8.0	6.2	9	3	7.0	35		E242M8X1.0	
9	1.00	90	18	6.0	4.9	8	3	8.0		E268M9X1.0		
10	0.75	90	20	7.0	5.5	8	3	9.3		E268M10X.75		
10	1.00	100	20	10.0	8.0	11	3	9.0	39		E242M10X1.0	
10	1.00	90	20	7.0	5.5	8	3	9.0		E268M10X1.0		
10	1.25	100	20	7.0	5.5	8	3	8.8		E268M10X1.25		
11	1.00	90	20	8.0	6.2	9	3	10.0		E268M11X1.0		
12	1.00	100	21	9.0	7.0	10	4	11.0		E268M12X1.0		E290M12X1.0
12	1.25	100	21	9.0	7.0	10	4	10.8		E268M12X1.25		
12	1.50	100	21	9.0	7.0	10	4	10.5		E268M12X1.5		E290M12X1.5
14	1.00	100	21	11.0	9.0	12	4	13.0		E268M14X1.0		E290M14X1.0
14	1.25	100	21	11.0	9.0	12	4	12.8		E268M14X1.25		
14	1.50	100	21	11.0	9.0	12	4	12.5		E268M14X1.5		E290M14X1.5
15	1.50	100	21	12.0	9.0	12	4	13.5		E268M15X1.5		
16	1.00	100	21	12.0	9.0	12	4	15.0		E268M16X1.0		E290M16X1.0
16	1.50	100	21	12.0	9.0	12	4	14.5		E268M16X1.5		E290M16X1.5
18	1.00	110	24	14.0	11.0	14	4	17.0		E268M18X1.0		
18	1.50	110	24	14.0	11.0	14	4	16.5		E268M18X1.5		E290M18X1.5
20	1.00	125	24	16.0	12.0	15	4	19.0		E268M20X1.0		
20	1.50	125	24	16.0	12.0	15	4	18.5		E268M20X1.5		E290M20X1.5
22	1.00	125	25	18.0	14.5	17	4	21.0		E268M22X1.0		
22	1.50	125	25	18.0	14.5	17	4	20.5		E268M22X1.5		E290M22X1.5

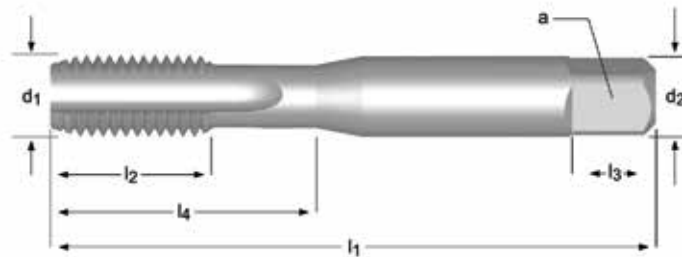
MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		l ₄ mm	E268	E242	E290
24	1.00	140	28	18.0	14.5	17	4	23.0		E268M24X1.0		
24	1.50	140	28	18.0	14.5	17	4	22.5		E268M24X1.5		E290M24X1.5
24	2.00	140	28	18.0	14.5	17	4	22.0		E268M24X2.0		
25	1.50	140	28	18.0	14.5	17	4	23.5		E268M25X1.5		
25	2.00	140	28	18.0	14.5	17	4	23.0		E268M25X2.0		
26	1.50	140	28	18.0	14.5	17	4	24.5		E268M26X1.5		
26	2.00	140	28	18.0	14.5	17	4	24.0		E268M26X2.0		
27	1.50	140	28	20.0	16.0	19	4	25.5		E268M27X1.5		
27	2.00	140	28	20.0	16.0	19	4	25.0		E268M27X2.0		
28	1.50	140	28	20.0	16.0	19	4	26.5		E268M28X1.5		
28	2.00	140	28	20.0	16.0	19	4	26.0		E268M28X2.0		
30	1.50	150	28	22.0	18.0	21	4	28.5		E268M30X1.5		
30	2.00	150	28	22.0	18.0	21	4	28.0		E268M30X2.0		
32	1.50	150	28	22.0	18.0	21	4	30.5		E268M32X1.5		
32	2.00	150	28	22.0	18.0	21	4	30.0		E268M32X2.0		
33	1.50	160	30	25.0	20.0	23	4	31.5		E268M33X1.5		
34	1.50	170	30	28.0	22.0	25	4	32.5		E268M34X1.5		
35	1.50	170	30	28.0	22.0	25	4	33.5		E268M35X1.5		
36	1.50	170	30	28.0	22.0	25	4	34.5		E268M36X1.5		
36	2.00	170	30	28.0	22.0	25	4	34.0		E268M36X2.0		
36	3.00	200	55	28.0	22.0	25	4	33.0		E268M36X3.0		
40	1.50	170	30	32.0	24.0	27	4	38.5		E268M40X1.5		
40	2.00	170	30	32.0	24.0	27	4	38.0		E268M40X2.0		
40	3.00	200	60	32.0	24.0	27	4	37.0		E268M40X3.0		
42	1.50	170	30	32.0	24.0	27	4	40.5		E268M42X1.5	¹⁾	
42	2.00	170	30	32.0	24.0	27	4	40.0		E268M42X2.0	¹⁾	
42	3.00	200	60	32.0	24.0	27	4	39.0		E268M42X3.0	¹⁾	
45	1.50	180	32	36.0	29.0	32	6	43.5		E268M45X1.5	¹⁾	
45	2.00	180	32	36.0	29.0	32	6	43.0		E268M45X2.0	¹⁾	
45	3.00	200	42	36.0	29.0	32	6	42.0		E268M45X3.0	¹⁾	
48	1.50	190	32	36.0	29.0	32	6	46.5		E268M48X1.5	¹⁾	
48	2.00	190	32	36.0	29.0	32	6	46.0		E268M48X2.0	¹⁾	
48	3.00	225	50	36.0	29.0	32	6	45.0		E268M48X3.0	¹⁾	
50	1.50	190	32	36.0	29.0	32	6	48.5		E268M50X1.5	¹⁾	
50	2.00	190	30	36.0	29.0	32	6	48.0		E268M50X2.0	¹⁾	
50	3.00	225	50	36.0	29.0	32	6	47.0		E268M50X3.0	¹⁾	

E513

- MF Gépi Menetfúró, egyenes hornyú
- MF Tarozi de masina, Canale drepte
- MF Düz Kanallı Makine Kılavuzu
- MF Machine Tap Straight Flute


E513 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3


E513 MF ISO 529 6H 1.5XD HSS




MF	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z		l ₄ mm	E513
3	0.35	48	12.5	3.15	2.50	5	3	2.65	12.5	E513M3X.35NO1
3	0.35	48	12.5	3.15	2.50	5	3	2.65	12.5	E513M3X.35NO2
3	0.35	48	12.5	3.15	2.50	5	3	2.65	12.5	E513M3X.35NO3
3.5	0.35	48	12.5	3.15	2.50	5	3	3.2	12.5	E513M3.5X.35NO3
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E513M4X.5NO1
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E513M4X.5NO2
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E513M4X.5NO3
4	0.50	53	14	4.00	3.15	6	3	3.5	14	E513M4X.5NO7
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E513M5X.5NO1
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E513M5X.5NO2
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E513M5X.5NO3
5	0.50	58	11	5.00	4.00	7	3	4.5	22	E513M5X.5NO7
5	0.75	58	11	5.00	4.00	7	3	4.3	22	E513M5X.75NO1
5	0.75	58	11	5.00	4.00	7	3	4.3	22	E513M5X.75NO2
5	0.75	58	11	5.00	4.00	7	3	4.3	22	E513M5X.75NO3
6	0.50	66	13	6.30	5.00	8	3	5.5	26	E513M6X.5NO1
6	0.50	66	13	6.30	5.00	8	3	5.5	26	E513M6X.5NO2
6	0.50	66	13	6.30	5.00	8	3	5.5	26	E513M6X.5NO3
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E513M6X.75NO1
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E513M6X.75NO2
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E513M6X.75NO3
6	0.75	66	13	6.30	5.00	8	3	5.3	26	E513M6X.75NO7
7	0.75	66	13	7.10	5.60	8	3	6.3	26	E513M7X.75NO1
7	0.75	66	13	7.10	5.60	8	3	6.3	26	E513M7X.75NO2
7	0.75	66	13	7.10	5.60	8	3	6.3	26	E513M7X.75NO3
8	0.50	72	16	8.00	6.30	9	3	7.5	29	E513M8X.5NO1
8	0.50	72	16	8.00	6.30	9	3	7.5	29	E513M8X.5NO2
8	0.50	72	16	8.00	6.30	9	3	7.5	29	E513M8X.5NO3
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E513M8X.75NO1
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E513M8X.75NO2
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E513M8X.75NO3
8	0.75	72	16	8.00	6.30	9	3	7.3	29	E513M8X.75NO7
8	1.00	72	16	8.00	6.30	9	3	7	29	E513M8X1.0NO1
8	1.00	72	16	8.00	6.30	9	3	7	29	E513M8X1.0NO2
8	1.00	72	16	8.00	6.30	9	3	7	29	E513M8X1.0NO3
8	1.00	72	16	8.00	6.30	9	3	7	29	E513M8X1.0NO7
9	0.75	72	16	9.00	7.10	10	3	8.3	29	E513M9X.75NO3
9	1.00	72	16	9.00	7.10	10	3	8	29	E513M9X1.0NO1
9	1.00	72	16	9.00	7.10	10	3	8	29	E513M9X1.0NO2
9	1.00	72	16	9.00	7.10	10	3	8	29	E513M9X1.0NO3

NO1-NO9
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MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		l ₄ mm	E513
10	0.50	80	18	10.00	8.00	11	3	9.5	34	E513M10X.5NO3
10	0.75	80	18	10.00	8.00	11	3	9.3	34	E513M10X.75NO1
10	0.75	80	18	10.00	8.00	11	3	9.3	34	E513M10X.75NO2
10	0.75	80	18	10.00	8.00	11	3	9.3	34	E513M10X.75NO3
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO1
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO2
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO3
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO6
10	1.00	80	18	10.00	8.00	11	3	9	34	E513M10X1.0NO7
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO1
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO2
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO3
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO6
10	1.25	80	18	10.00	8.00	11	3	8.8	34	E513M10X1.25NO7
11	0.75	85	19	8.00	6.30	9	3	10.3	-	E513M11X.75NO1
11	0.75	85	19	8.00	6.30	9	3	10.3	-	E513M11X.75NO2
11	0.75	85	19	8.00	6.30	9	3	10.3	-	E513M11X.75NO3
11	1.00	85	19	8.00	6.30	9	3	10	-	E513M11X1.0NO1
11	1.00	85	19	8.00	6.30	9	3	10	-	E513M11X1.0NO2
11	1.00	85	19	8.00	6.30	9	3	10	-	E513M11X1.0NO3
11	1.25	85	19	8.00	6.30	9	3	9.8	-	E513M11X1.25NO3
12	0.75	89	22	9.00	7.10	10	3	11.3	-	E513M12X.75NO3
12	1.00	89	22	9.00	7.10	10	3	11	-	E513M12X1.0NO1
12	1.00	89	22	9.00	7.10	10	3	11	-	E513M12X1.0NO2
12	1.00	89	22	9.00	7.10	10	3	11	-	E513M12X1.0NO3
12	1.00	89	22	9.00	7.10	10	3	11	-	E513M12X1.0NO7
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO1
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO2
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO3
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO6
12	1.25	89	22	9.00	7.10	10	3	10.8	-	E513M12X1.25NO7
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO1
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO2
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO3
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO6
12	1.50	89	22	9.00	7.10	10	3	10.5	-	E513M12X1.5NO7
12	1.50	89	22	9.00	7.10	10	3	11.5	-	E513M13X1.5NO3
14	1.00	95	24	11.20	9.00	12	4	13	-	E513M14X1.0NO1
14	1.00	95	24	11.20	9.00	12	4	13	-	E513M14X1.0NO2
14	1.00	95	24	11.20	9.00	12	4	13	-	E513M14X1.0NO3
14	1.00	95	24	11.20	9.00	12	4	13	-	E513M14X1.0NO7
14	1.25	95	24	11.20	9.00	12	4	12.8	-	E513M14X1.25NO1
14	1.25	95	24	11.20	9.00	12	4	12.8	-	E513M14X1.25NO2
14	1.25	95	24	11.20	9.00	12	4	12.8	-	E513M14X1.25NO3
14	1.25	95	24	11.20	9.00	12	4	12.8	-	E513M14X1.25NO6
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO1
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO2
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO3
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO6
14	1.50	95	24	11.20	9.00	12	4	12.5	-	E513M14X1.5NO7
15	1.50	95	24	11.20	9.00	12	4	13.5	-	E513M15X1.5NO2
15	1.50	95	24	11.20	9.00	12	4	13.5	-	E513M15X1.5NO3
16	1.00	102	24	12.50	10.00	13	4	15	-	E513M16X1.0NO1
16	1.00	102	24	12.50	10.00	13	4	15	-	E513M16X1.0NO2
16	1.00	102	24	12.50	10.00	13	4	15	-	E513M16X1.0NO3
16	1.00	102	24	12.50	10.00	13	4	15	-	E513M16X1.0NO7
16	1.25	102	24	12.50	10.00	13	4	14.8	-	E513M16X1.25NO3
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO1
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO2
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO3
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO6
16	1.50	102	24	12.50	10.00	13	4	14.5	-	E513M16X1.5NO7
18	1.00	112	29	14.00	11.20	14	4	17	-	E513M18X1.0NO1
18	1.00	112	29	14.00	11.20	14	4	17	-	E513M18X1.0NO2
18	1.00	112	29	14.00	11.20	14	4	17	-	E513M18X1.0NO3
18	1.00	112	29	14.00	11.20	14	4	17	-	E513M18X1.0NO7
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO1
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO2
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO3
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO6

MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	E513
18	1.50	112	29	14.00	11.20	14	4	16.5	-	E513M18X1.5NO7
18	2.00	112	29	14.00	11.20	14	4	16	-	E513M18X2.0NO1
18	2.00	112	29	14.00	11.20	14	4	16	-	E513M18X2.0NO2
18	2.00	112	29	14.00	11.20	14	4	16	-	E513M18X2.0NO3
18	2.00	112	29	14.00	11.20	14	4	16	-	E513M18X2.0NO7
20	1.00	112	29	14.00	11.20	14	4	19	-	E513M20X1.0NO1
20	1.00	112	29	14.00	11.20	14	4	19	-	E513M20X1.0NO2
20	1.00	112	29	14.00	11.20	14	4	19	-	E513M20X1.0NO3
20	1.00	112	29	14.00	11.20	14	4	19	-	E513M20X1.0NO7
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO1
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO2
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO3
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO6
20	1.50	112	29	14.00	11.20	14	4	18.5	-	E513M20X1.5NO7
20	2.00	112	29	14.00	11.20	14	4	18	-	E513M20X2.0NO1
20	2.00	112	29	14.00	11.20	14	4	18	-	E513M20X2.0NO2
20	2.00	112	29	14.00	11.20	14	4	18	-	E513M20X2.0NO3
20	2.00	112	29	14.00	11.20	14	4	18	-	E513M20X2.0NO7
22	1.00	118	29	16.00	12.50	16	4	21	-	E513M22X1.0NO2
22	1.00	118	29	16.00	12.50	16	4	21	-	E513M22X1.0NO3
22	1.00	118	29	16.00	12.50	16	4	21	-	E513M22X1.0NO7
22	1.50	118	29	16.00	12.50	16	4	20.5	-	E513M22X1.5NO1
22	1.50	118	29	16.00	12.50	16	4	20.5	-	E513M22X1.5NO2
22	1.50	118	29	16.00	12.50	16	4	20.5	-	E513M22X1.5NO3
22	1.50	118	29	16.00	12.50	16	4	20.5	-	E513M22X1.5NO7
22	2.00	118	29	16.00	12.50	16	4	20	-	E513M22X2.0NO1
22	2.00	118	29	16.00	12.50	16	4	20	-	E513M22X2.0NO2
22	2.00	118	29	16.00	12.50	16	4	20	-	E513M22X2.0NO3
22	2.00	118	29	16.00	12.50	16	4	20	-	E513M22X2.0NO7
24	1.00	130	35	18.00	14.00	18	4	23	-	E513M24X1.0NO2
24	1.00	130	35	18.00	14.00	18	4	23	-	E513M24X1.0NO3
24	1.50	130	35	18.00	14.00	18	4	22.5	-	E513M24X1.5NO1
24	1.50	130	35	18.00	14.00	18	4	22.5	-	E513M24X1.5NO2
24	1.50	130	35	18.00	14.00	18	4	22.5	-	E513M24X1.5NO3
24	1.50	130	35	18.00	14.00	18	4	22.5	-	E513M24X1.5NO7
24	2.00	130	35	18.00	14.00	18	4	22	-	E513M24X2.0NO1
24	2.00	130	35	18.00	14.00	18	4	22	-	E513M24X2.0NO2
24	2.00	130	35	18.00	14.00	18	4	22	-	E513M24X2.0NO3
24	2.00	130	35	18.00	14.00	18	4	22	-	E513M24X2.0NO7
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO1
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO2
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO3
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO6
25	1.50	130	35	18.00	14.00	18	4	23.5	-	E513M25X1.5NO7
26	1.50	130	35	18.00	14.00	18	4	24.5	-	E513M26X1.5NO2
26	1.50	130	35	18.00	14.00	18	4	24.5	-	E513M26X1.5NO3
27	1.50	135	35	20.00	16.00	20	4	25.5	-	E513M27X1.5NO2
27	1.50	135	35	20.00	16.00	20	4	25.5	-	E513M27X1.5NO3
27	2.00	135	35	20.00	16.00	20	4	25	-	E513M27X2.0NO3
28	1.50	138	35	20.00	16.00	20	4	26.5	-	E513M28X1.5NO2
28	1.50	138	35	20.00	16.00	20	4	26.5	-	E513M28X1.5NO3
30	1.50	138	41	20.00	16.00	20	4	28.5	-	E513M30X1.5NO2
30	1.50	138	41	20.00	16.00	20	4	28.5	-	E513M30X1.5NO3
30	2.00	138	41	20.00	16.00	20	4	28	-	E513M30X2.0NO2
30	2.00	138	41	20.00	16.00	20	4	28	-	E513M30X2.0NO3
32	1.50	151	41	22.40	18.00	22	4	30.5	-	E513M32X1.5NO1
32	1.50	151	41	22.40	18.00	22	4	30.5	-	E513M32X1.5NO2
32	1.50	151	41	22.40	18.00	22	4	30.5	-	E513M32X1.5NO3
33	2.00	151	41	22.40	18.00	22	4	31	-	E513M33X2.0NO2
33	2.00	151	41	22.40	18.00	22	4	31	-	E513M33X2.0NO3
35	1.50	162	47	25.00	20.00	24	4	33.5	-	E513M35X1.5NO2
35	1.50	162	47	25.00	20.00	24	4	33.5	-	E513M35X1.5NO3
36	1.50	162	47	25.00	20.00	24	4	34.5	-	E513M36X1.5NO3
36	2.00	162	47	25.00	20.00	24	4	34	-	E513M36X2.0NO2
36	2.00	162	47	25.00	20.00	24	4	34	-	E513M36X2.0NO3
36	3.00	162	47	25.00	20.00	24	4	33	-	E513M36X3.0NO2
36	3.00	162	47	25.00	20.00	24	4	33	-	E513M36X3.0NO3
39	3.00	170	47	28.00	22.40	26	4	36	-	E513M39X3.0NO2
39	3.00	170	47	28.00	22.40	26	4	36	-	E513M39X3.0NO3
40	1.50	170	53	28.00	22.40	26	6	38.5	-	E513M40X1.5NO2

MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∇ a mm	l ₃ mm	z		l ₄ mm	E513
40	1.50	170	53	28.00	22.40	26	6	38.5	-	E513M40X1.5NO3
42	1.50	170	53	28.00	22.40	26	6	40.5	-	E513M42X1.5NO2
42	1.50	170	53	28.00	22.40	26	6	40.5	-	E513M42X1.5NO3
42	3.00	170	53	28.00	22.40	26	6	39	-	E513M42X3.0NO3
45	1.50	187	54	31.50	25.00	28	6	43.5	-	E513M45X1.5NO2
45	1.50	187	54	31.50	25.00	28	6	43.5	-	E513M45X1.5NO3
48	1.50	187	60	31.50	25.00	28	6	46.5	-	E513M48X1.5NO3
48	2.00	187	60	31.50	25.00	28	6	46	-	E513M48X2.0NO3
48	3.00	187	60	31.50	25.00	28	6	45	-	E513M48X3.0NO3
50	1.50	187	60	31.50	25.00	28	6	48.5	-	E513M50X1.5NO2
50	1.50	187	60	31.50	25.00	28	6	48.5	-	E513M50X1.5NO3



EP10 EP10TIN EP11


- MF Gépi Menetfúró, terelőéles HSS-E anyagminőségből, míg a készlet tart
- MF Tarozi de masina cu vârî în spirala Furnizat din material HSS-E, până un nou stoc este disponibil
- MF Helisel Uçlu Makine Kılavuzu Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
- MF Machine Tap Spiral Point Supplied in HSS-E until new stock available

EP10	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4	
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1	
EP10TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	6.1	6.3	7.3	7.4	
	•	1.6	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.2
EP11	▪	1.1	1.2	1.3	1.4	1.5							
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4				

EP10	MF	DIN 374	6H		2.5XD	HSS-E PM	B 3.5-5				
EP10TIN	MF	DIN 374	6H		2.5XD	HSS-E PM	B 3.5-5				
EP11	MF	DIN 374	6H		2.5XD	HSS-E PM	B 3.5-5				



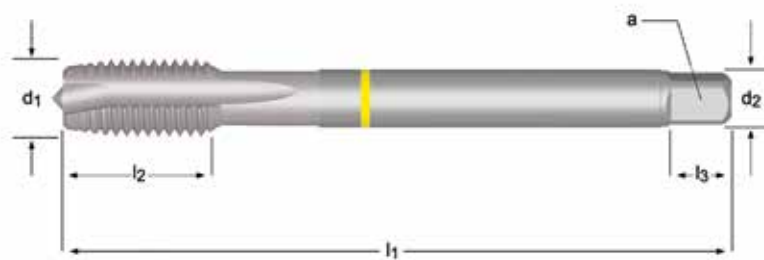
MF	P mm	l ₁ mm	l ₂ mm	d ₂ mm	□ a mm	l ₃ mm	z		EP10	EP10TIN	EP11
4	0.50	63	12	2.8	2.1	5	3	3.5	EP10M4X.5		EP11M4X.5
5	0.50	70	13	3.5	2.7	6	3	4.5	EP10M5X.5		EP11M5X.5
6	0.75	80	15	4.5	3.4	6	3	5.3	EP10M6X.75		EP11M6X.75
8	0.75	80	15	6.0	4.9	8	3	7.3	EP10M8X.75		EP11M8X.75
8	1.00	90	18	6.0	4.9	8	3	7	EP10M8X1.0	EP10TINM8X1.0	EP11M8X1.0
10	0.75	90	18	7.0	5.5	8	3	9.3	EP10M10X.75		EP11M10X.75
10	1.00	90	18	7.0	5.5	8	3	9	EP10M10X1.0	EP10TINM10X1.0	EP11M10X1.0
10	1.25	100	20	7.0	5.5	8	3	8.8	EP10M10X1.25	EP10TINM10X1.25	EP11M10X1.25
12	1.00	100	21	9.0	7.0	10	3	11	EP10M12X1.0	EP10TINM12X1.0	EP11M12X1.0
12	1.25	100	21	9.0	7.0	10	3	10.8	EP10M12X1.25	EP10TINM12X1.25	EP11M12X1.25
12	1.50	100	21	9.0	7.0	10	3	10.5	EP10M12X1.5	EP10TINM12X1.5	EP11M12X1.5
14	1.00	100	21	11.0	9.0	12	3	13	EP10M14X1.0		EP11M14X1.0
14	1.25	100	21	11.0	9.0	12	3	13	EP10M14X1.25		EP11M14X1.25
14	1.50	100	21	11.0	9.0	12	3	12.5	EP10M14X1.5	EP10TINM14X1.5	EP11M14X1.5
16	1.00	100	21	12.0	9.0	12	3	15	EP10M16X1.0		EP11M16X1.0
16	1.50	100	21	12.0	9.0	12	3	14.5	EP10M16X1.5	EP10TINM16X1.5	EP11M16X1.5
18	1.00	110	24	14.0	11.0	14	4	17	EP10M18X1.0		EP11M18X1.0
18	1.50	110	24	14.0	11.0	14	4	16.5	EP10M18X1.5	EP10TINM18X1.5	EP11M18X1.5
20	1.00	125	24	16.0	12.0	15	4	19	EP10M20X1.0		EP11M20X1.0
20	1.50	125	24	16.0	12.0	15	4	18.5	EP10M20X1.5	EP10TINM20X1.5	EP11M20X1.5

MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		EP10	EP10TIN	EP11
22	1.50	125	25	18.0	14.5	17	4	20.5	EP10M22X1.5		EP11M22X1.5
24	1.50	140	28	18.0	14.5	17	4	22.5	EP10M24X1.5		EP11M24X1.5
24	2.00	140	28	18.0	14.5	17	4	22	EP10M24X2.0		EP11M24X2.0
25	1.50	140	28	18.0	14.5	17	4	23.5	EP10M25X1.5		EP11M25X1.5
26	1.50	140	28	18.0	14.5	17	4	24.5	EP10M26X1.5		EP11M26X1.5
27	1.50	140	28	20.0	16.0	19	4	25.5	EP10M27X1.5		EP11M27X1.5
27	2.00	140	28	20.0	16.0	19	4	25	EP10M27X2.0		EP11M27X2.0
28	1.50	140	28	20.0	16.0	19	4	26.5	EP10M28X1.5		EP11M28X1.5
30	1.50	150	28	22.0	18.0	21	4	28.5	EP10M30X1.5		EP11M30X1.5
30	2.00	150	28	22.0	18.0	21	4	28	EP10M30X2.0		EP11M30X2.0

- E299**
- MF terelőéles gépi menetfúró, sárga Shark
 - MF Tarozi de Masina Varf Spiral , Shark GALBEN
 - MF Helisel Uçlu Makine Kılavuzu, sari Shark
 - MF Machine Tap Spiral Point, Yellow Shark

E299 ■ 1.1 1.2 1.3 6.1 6.3
 • 1.4 1.5 6.2

E299 MF DIN 374 6H 2.5XD HSS-E PM B 3.5-5 Cr



MF	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	E299
4	0.50	63	12	2.8	2.1	5	3	3.5	E299M4X.5
5	0.50	70	13	3.5	2.7	6	3	4.5	E299M5X.5
6	0.75	80	15	4.5	3.4	6	3	5.3	E299M6X.75
8	0.75	80	15	6.0	4.9	8	3	7.3	E299M8X.75
8	1.00	90	18	6.0	4.9	8	3	7.0	E299M8X1.0
10	0.75	90	20	7.0	5.5	8	3	9.3	E299M10X.75
10	1.00	90	20	7.0	5.5	8	3	9.0	E299M10X1.0
10	1.25	100	20	7.0	5.5	8	3	8.8	E299M10X1.25
12	1.00	100	21	9.0	7.0	10	4	11.0	E299M12X1.0
12	1.25	100	21	9.0	7.0	10	4	10.8	E299M12X1.25
12	1.50	110	21	9.0	7.0	10	4	10.5	E299M12X1.5
14	1.00	100	21	11.0	9.0	12	4	13.0	E299M14X1.0
14	1.25	100	21	11.0	9.0	12	4	12.8	E299M14X1.25
14	1.50	100	21	11.0	9.0	12	4	12.5	E299M14X1.5
16	1.00	100	21	12.0	9.0	12	4	15.0	E299M16X1.0
16	1.50	100	21	12.0	9.0	12	4	14.5	E299M16X1.5
18	1.00	110	24	14.0	11.0	14	4	17.0	E299M18X1.0
18	1.50	110	24	14.0	11.0	14	4	16.5	E299M18X1.5
20	1.50	125	24	16.0	12.0	15	4	18.5	E299M20X1.5
22	1.50	125	25	18.0	14.5	17	4	20.5	E299M22X1.5
24	1.50	140	28	18.0	14.5	17	4	22.5	E299M24X1.5
24	2.00	140	28	18.0	14.5	17	4	22.0	E299M24X2.0
27	2.00	140	28	20.0	16.0	19	4	25.0	E299M27X2.0
30	2.00	150	28	22.0	18.0	21	4	28.0	E299M30X2.0

E384

- MF terelőéles gépi menettűró, kék Shark
- MF Tarozi de Masina Varf Spiral, Shark ALBASTRU
- MF Helisel Uçlu Makine Kılavuzu, mavi Shark
- MF Machine Tap Spiral Point, Blue Shark

E384 ■ 2.1 2.2 2.3
 • 1.5

E384 MF DIN 374 6H 2.5XD HSS-E PM B 3.5-5



MF	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	E384
6	0.75	80	15	4.5	3.4	6	3	5.3	E384M6X.75
8	1.00	90	18	6.0	4.9	8	3	7.0	E384M8X1.0
10	1.00	90	20	7.0	5.5	8	3	9.0	E384M10X1.0
10	1.25	100	20	7.0	5.5	8	3	8.8	E384M10X1.25
12	1.00	100	21	9.0	7.0	10	4	11.0	E384M12X1.0
12	1.25	100	21	9.0	7.0	10	4	10.8	E384M12X1.25
12	1.50	100	21	9.0	7.0	10	4	10.5	E384M12X1.5
14	1.50	100	21	11.0	9.0	12	4	12.5	E384M14X1.5
16	1.50	100	21	12.0	9.0	12	5	14.5	E384M16X1.5
18	1.50	110	24	14.0	11.0	14	5	16.5	E384M18X1.5
20	1.50	125	24	16.0	12.0	15	5	18.5	E384M20X1.5

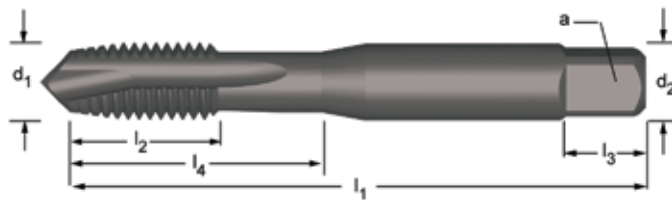
E011

- MF Gépi Menetfúró, terelőéles
- MF Tarozi de masina cu vârf în spirala
- MF Helisel Uçlu Makine Kılavuzu
- MF Machine Tap Spiral Point

HSS-E anyagminőségéből, míg a készlet tart
 Furnizat din material HSS-E, până un nou stoc este disponibil
 Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 Supplied in HSS-E until new stock available

E011	▪	1.1	1.2	1.3	1.4	1.5				
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	

E011 MF ISO 529 6H 2.5XD HSS-E PM B 3.5-5 ST



MF	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	E011
4	0.50	53	17	4.0	3.15	6	3	3.5	17	E011M4X.5
5	0.50	58	11	5.0	4.00	7	3	4.5	22	E011M5X.5
6	0.50	66	13	6.3	5.00	8	3	5.5	26	E011M6X.5
6	0.75	66	13	6.3	5.00	8	3	5.3	26	E011M6X.75
8	0.75	72	16	8.0	6.30	9	3	7.3	29	E011M8X.75
8	1.00	72	16	8.0	6.30	9	3	7.0	29	E011M8X1.0
10	1.00	80	18	10.0	8.00	11	3	9.0	34	E011M10X1.0
10	1.25	80	18	10.0	8.00	11	3	8.8	34	E011M10X1.25
12	1.00	89	22	9.0	7.10	10	3	11.0	-	E011M12X1.0
12	1.25	89	22	9.0	7.10	10	3	10.8	-	E011M12X1.25
12	1.50	89	22	9.0	7.10	10	3	10.5	-	E011M12X1.5
14	1.00	95	24	11.2	9.00	12	3	13.0	-	E011M14X1.0
14	1.25	95	24	11.2	9.00	12	3	12.8	-	E011M14X1.25
14	1.50	95	24	11.2	9.00	12	3	12.5	-	E011M14X1.5
16	1.00	102	24	12.5	10.00	13	3	15.0	-	E011M16X1.0
16	1.50	102	24	12.5	10.00	13	3	14.5	-	E011M16X1.5
18	1.00	112	29	14.0	11.20	14	4	17.0	-	E011M18X1.0
18	1.50	112	29	14.0	11.20	14	4	16.5	-	E011M18X1.5
20	1.00	112	29	14.0	11.20	14	4	19.0	-	E011M20X1.0
20	1.50	112	29	14.0	11.20	14	4	18.5	-	E011M20X1.5
20	2.00	112	29	14.0	11.20	14	4	18.0	-	E011M20X2.0
22	1.50	118	29	16.0	12.50	16	4	20.5	-	E011M22X1.5
24	1.50	130	35	18.0	14.00	18	4	22.5	-	E011M24X1.5
24	2.00	130	35	18.0	14.00	18	4	22.0	-	E011M24X2.0

EX10 EX10TIN EX11

- MF Gépi Menetfúró, csavart hornyú 45°
- MF Tarozi de masina cu dinti în spirala (unghi 45°)
- MF 45° Helisel Kanallı Makine Kılavuzu
- MF Machine Tap Spiral Flute 45°

HSS-E anyagminőségből, míg a készlet tart

Furnizat din material HSS-E, până un nou stoc este disponibil

Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.


Supplied in HSS-E until new stock available

EX10	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2					
EX10TIN	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	7.3	7.4
	•	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2
EX11	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2		
	•	2.3								

EX10	MF	DIN 374	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$			
EX10TIN	MF	DIN 374	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$			TiN
EX11	MF	DIN 374	6H		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$			ST



MF	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		EX10	EX10TIN	EX11
4	0.50	63	7	2.8	2.1	5	3	3.5	EX10M4X.50		EX11M4X.50
5	0.50	70	8	3.5	2.7	6	3	4.5	EX10M5X.50		EX11M5X.50
6	0.75	80	10	4.5	3.4	6	3	5.3	EX10M6X.75		EX11M6X.75
8	0.75	80	13	6.0	4.9	8	3	7.3	EX10M8X.75		EX11M8X.75
8	1.00	90	13	6.0	4.9	8	3	7	EX10M8X1.0	EX10TINM8X1.0	EX11M8X1.0
10	0.75	90	13	7.0	5.5	8	3	9.3	EX10M10X.75		EX11M10X.75
10	1.00	90	13	7.0	5.5	8	3	9	EX10M10X1.0	EX10TINM10X1.0	EX11M10X1.0
10	1.25	100	15	7.0	5.5	8	3	8.8	EX10M10X1.25	EX10TINM10X1.25	EX11M10X1.25
12	1.00	100	15	9.0	7.0	10	3	11	EX10M12X1.0	EX10TINM12X1.0	EX11M12X1.0
12	1.25	100	15	9.0	7.0	10	3	10.8	EX10M12X1.25	EX10TINM12X1.25	EX11M12X1.25
12	1.50	100	15	9.0	7.0	10	3	10.5	EX10M12X1.5	EX10TINM12X1.5	EX11M12X1.5
14	1.00	100	15	11.0	9.0	12	3	13	EX10M14X1.0		EX11M14X1.0
14	1.25	100	15	11.0	9.0	12	3	12.8	EX10M14X1.25		EX11M14X1.25
14	1.50	100	15	11.0	9.0	12	3	12.5	EX10M14X1.5	EX10TINM14X1.5	EX11M14X1.5
16	1.00	100	15	12.0	9.0	12	4	15	EX10M16X1.0		EX11M16X1.0
16	1.50	100	15	12.0	9.0	12	4	14.5	EX10M16X1.5	EX10TINM16X1.5	EX11M16X1.5
18	1.00	110	17	14.0	11.0	14	4	17	EX10M18X1.0		EX11M18X1.0
18	1.50	110	17	14.0	11.0	14	4	16.5	EX10M18X1.5	EX10TINM18X1.5	EX11M18X1.5

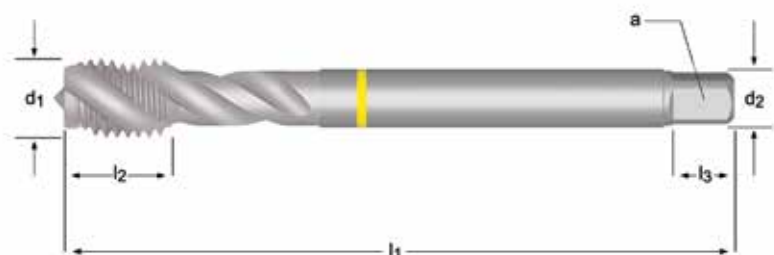
MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∇ a mm	l ₃ mm	z		EX10	EX10TIN	EX11
20	1.00	125	17	16.0	12.0	15	4	19	EX10M20X1.0		EX11M20X1.0
20	1.50	125	17	16.0	12.0	15	4	18.5	EX10M20X1.5	EX10TINM20X1.5	EX11M20X1.5
22	1.50	125	17	18.0	14.5	17	4	20.5	EX10M22X1.5		EX11M22X1.5
24	1.50	140	20	18.0	14.5	17	4	22.5	EX10M24X1.5		EX11M24X1.5
24	2.00	140	20	18.0	14.5	17	4	22	EX10M24X2.0		EX11M24X2.0
25	1.50	140	20	18.0	14.5	17	4	23.5	EX10M25X1.5		EX11M25X1.5
26	1.50	140	20	18.0	14.5	17	4	24.5	EX10M26X1.5		EX11M26X1.5
27	1.50	140	20	20.0	16.0	19	4	25.5	EX10M27X1.5		EX11M27X1.5
27	2.00	140	20	20.0	16.0	19	4	25	EX10M27X2.0		EX11M27X2.0
28	1.50	140	20	20.0	16.0	19	4	26.5	EX10M28X1.5		EX11M28X1.5
30	1.50	150	20	22.0	18.0	21	4	28.5	EX10M30X1.5		EX11M30X1.5
30	2.00	150	20	22.0	18.0	21	4	28	EX10M30X2.0		EX11M30X2.0

E300

- MF 40° csavarthornyú gépi menetfúró, sárga Shark
- MF Tarozi de Masina Canale in Spirala 40°, Shark GALBEN
- MF 40° Helisel Kanallı Makine Kilavuzu, sari Shark
- MF Machine Tap Spiral Flute 40°, Yellow Shark

E300 ■ 1.1 1.2 1.3 6.1 6.3
 • 1.4 1.5 6.2

E300 MF DIN 374 6H 2XD HSS-E PM C 2-3 λ40° Cr



MF	P mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	E300
4	0.50	63	6.5	2.8	2.1	5	3	3.5	E300M4X.5
5	0.50	70	7.5	3.5	2.7	6	3	4.5	E300M5X.5
6	0.75	80	10	4.5	3.4	6	3	5.3	E300M6X.75
8	0.75	80	13	6.0	4.9	8	3	7.3	E300M8X.75
8	1.00	90	13	6.0	4.9	8	3	7.0	E300M8X1.0
10	0.75	90	13	7.0	5.5	8	3	9.3	E300M10X.75
10	1.00	90	12	7.0	5.5	8	3	9.0	E300M10X1.0
10	1.25	100	15	7.0	5.5	8	3	8.8	E300M10X1.25
12	1.00	100	15	9.0	7.0	10	4	11.0	E300M12X1.0
12	1.25	100	13	9.0	7.0	10	4	10.8	E300M12X1.25
12	1.50	100	13	9.0	7.0	10	4	10.5	E300M12X1.5
14	1.00	100	15	11.0	9.0	12	4	13.0	E300M14X1.0
14	1.25	100	15	11.0	9.0	12	4	12.8	E300M14X1.25
14	1.50	100	15	11.0	9.0	12	4	12.5	E300M14X1.5
16	1.00	100	15	12.0	9.0	12	5	15.0	E300M16X1.0
16	1.50	100	15	12.0	9.0	12	5	14.5	E300M16X1.5
18	1.00	110	17	14.0	11.0	14	5	17.0	E300M18X1.0
18	1.50	110	17	14.0	11.0	14	5	16.5	E300M18X1.5
20	1.50	125	17	16.0	12.0	15	5	18.5	E300M20X1.5
22	1.50	125	17	18.0	14.5	17	5	20.5	E300M22X1.5
24	1.50	140	20	18.0	14.5	17	5	22.5	E300M24X1.5
24	2.00	140	20	18.0	14.5	17	5	22.0	E300M24X2.0
27	2.00	140	20	20.0	16.0	19	5	25.0	E300M27X2.0
30	2.00	150	20	22.0	18.0	21	5	28.0	E300M30X2.0

- E383**
- MF 40° csavarthornýú gépi menetfúró, kék Shark
 - MF Tarozi de Masina Canale in Spirala 40°, Shark ALBASTRU
 - MF 40° Helisel Kanallı Makine Kılavuzu, mavi Shark
 - MF Machine Tap Spiral Flute 40°, Blue Shark

E383 ■ 2.1 2.2 2.3
 • 1.5

E383 MF DIN 374 6H 2XD HSS-E PM C 2-3 λ40° ST



MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z		E383
6	0.75	80	10	4.5	3.4	6	3	5.3	E383M6X.75
8	1.00	90	13	6.0	4.9	8	3	7.0	E383M8X1.0
10	1.00	90	12	7.0	5.5	8	3	9.0	E383M10X1.0
10	1.25	100	15	7.0	5.5	8	3	8.8	E383M10X1.25
12	1.00	100	13	9.0	7.0	10	4	11.0	E383M12X1.0
12	1.25	100	13	9.0	7.0	10	4	10.8	E383M12X1.25
12	1.50	100	13	9.0	7.0	10	4	10.5	E383M12X1.5
14	1.50	100	21	11.0	9.0	12	4	12.5	E383M14X1.5
16	1.50	100	21	12.0	9.0	12	5	14.5	E383M16X1.5
18	1.50	110	24	14.0	11.0	14	5	16.5	E383M18X1.5
20	1.50	125	24	16.0	12.0	15	5	18.5	E383M20X1.5

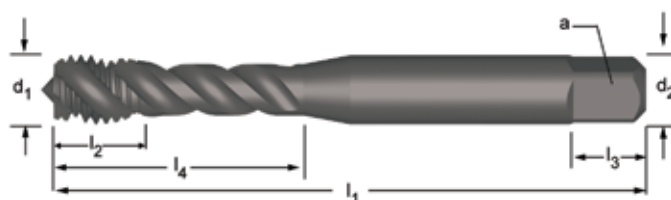
E013

- MF Gépi Menetfúró, csavart hornyú 45°
- MF Tarozi de masina cu dinti în spirala (unghi 45°)
- MF 45° Helisel Kanallı Makine Kilavuzu
- MF Machine Tap Spiral Flute 45°

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E013 ■ 1.1 1.2 1.3 1.4 1.5
• 2.1 2.2 2.3

E013 MF ISO 529 6H 2.5XD HSS-E PM C 2-3 λ45° ST



E013



M4 - M22

MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	E013
4	0.50	53	7	4.0	3.15	6	3	3.5	19	E013M4X.5
5	0.50	58	8	5.0	4.0	7	3	4.5	22	E013M5X.5
6	0.50	66	10	6.3	5.0	8	3	5.5	27	E013M6X.5
6	0.75	66	10	6.3	5.0	8	3	5.3	27	E013M6X.75
8	0.75	72	12	8.0	6.3	9	3	7.3	31	E013M8X.75
8	1.00	72	12	8.0	6.3	9	3	7.0	31	E013M8X1.0
10	1.00	80	15	10.0	8.0	11	3	9.0	35	E013M10X1.0
10	1.25	80	15	10.0	8.0	11	3	8.8	35	E013M10X1.25
12	1.00	89	16	9.0	7.1	10	3	11.0	-	E013M12X1.0
12	1.25	89	16	9.0	7.1	10	3	10.8	-	E013M12X1.25
12	1.50	89	16	9.0	7.1	10	3	10.5	-	E013M12X1.5
14	1.50	95	18	11.2	9.0	12	3	12.5	-	E013M14X1.5
16	1.00	102	18	12.5	10.0	13	4	15.0	-	E013M16X1.0
16	1.50	102	18	12.5	10.0	13	4	14.5	-	E013M16X1.5
18	1.50	112	29	14.0	11.2	14	4	16.5	-	E013M18X1.5
20	1.50	112	29	14.0	11.2	14	4	18.5	-	E013M20X1.5
22	1.50	118	29	16.0	12.5	16	4	20.5	-	E013M22X1.5

- E288**
- MF Gépi Menetformázó
 - MF Tarozi de masina de deformare
 - MF Ovalama Kilavuzu
 - MF Machine Forming Tap

E288	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E288

MF

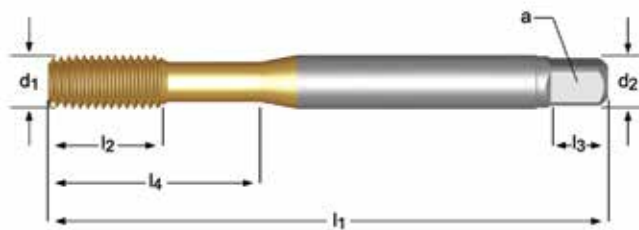
DIN 2174

6HX

3XD

HSS-E

C 2-3.5



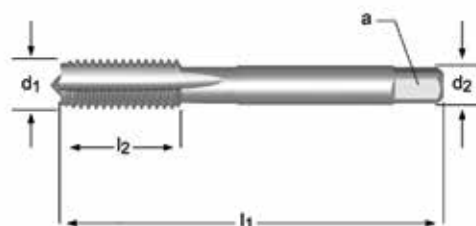
MF	P mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z	↔	l ₄ mm	E288
5	0.50	70	13	6.0	4.9	8	5	4.8	25	E288M5X.5
6	0.75	80	15	6.0	4.9	8	5	5.7	30	E288M6X.75
8	1.00	90	18	6.0	4.9	8	5	7.5	-	E288M8X1.0
10	1.00	90	20	7.0	5.5	8	5	9.5	-	E288M10X1.0
10	1.25	100	20	7.0	5.5	8	5	9.4	-	E288M10X1.25
12	1.50	100	21	9.0	7.0	10	5	11.3	-	E288M12X1.5

E108

- UNC Kézi Menetfúró, egyenes hornyú
- UNC Tarozi de mâna, Canale drepte
- UNC Düz Kanallı El Kılavuzu
- UNC Hand Tap Straight Flute

E108 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E108 **UNC** **DIN 352** **2B** **1.5XD** **HSS** **C 2-3**



E108



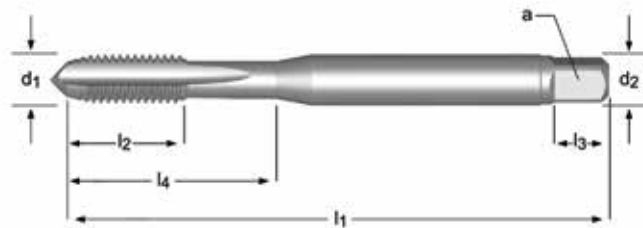
No.5 - 1"

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z		E108
5	40	3.18	45	13	4.0	3.0	3	2.65	E1085-40NO3
5	40	3.18	45	13	4.0	3.0	3	2.65	E1085-40NO8
6	32	3.51	45	10	4.0	3.0	3	2.85	E1086-32NO3
6	32	3.51	45	10	4.0	3.0	3	2.85	E1086-32NO8
8	32	4.17	50	14	6.0	4.9	3	3.5	E1088-32NO3
8	32	4.17	50	14	6.0	4.9	3	3.5	E1088-32NO8
10	24	4.83	50	14	6.0	4.9	3	3.9	E10810-24NO3
10	24	4.83	50	14	6.0	4.9	3	3.9	E10810-24NO8
12	24	5.49	56	16	6.0	4.9	3	4.5	E10812-24NO3
12	24	5.49	56	16	6.0	4.9	3	4.5	E10812-24NO8
1/4	20	6.35	56	17	6.0	4.9	3	5.1	E1081/4NO3
1/4	20	6.35	56	17	6.0	4.9	3	5.1	E1081/4NO8
5/16	18	7.94	63	19	6.0	4.9	3	6.6	E1085/16NO3
5/16	18	7.94	63	19	6.0	4.9	3	6.6	E1085/16NO8
3/8	16	9.53	70	22	7.0	5.5	3	8	E1083/8NO3
3/8	16	9.53	70	22	7.0	5.5	3	8	E1083/8NO8
7/16	14	11.11	75	30	8.0	6.2	3	9.4	E1087/16NO3
7/16	14	11.11	75	30	8.0	6.2	3	9.4	E1087/16NO8
1/2	13	12.70	75	27	9.0	7.0	3	10.8	E1081/2NO3
1/2	13	12.70	75	27	9.0	7.0	3	10.8	E1081/2NO8
9/16	12	14.29	80	30	11.0	9.0	4	12.2	E1089/16NO3
9/16	12	14.29	80	30	11.0	9.0	4	12.2	E1089/16NO8
5/8	11	15.88	80	32	12.0	9.0	4	13.5	E1085/8NO3
5/8	11	15.88	80	32	12.0	9.0	4	13.5	E1085/8NO8
3/4	10	19.05	95	34	14.0	11.0	4	16.5	E1083/4NO3
3/4	10	19.05	95	34	14.0	11.0	4	16.5	E1083/4NO8
7/8	9	22.23	110	38	18.0	14.5	4	19.5	E1087/8NO3
7/8	9	22.23	110	38	18.0	14.5	4	19.5	E1087/8NO8
1"	8	25.40	110	38	20.0	16.0	4	22.25	E1081NO8

- E225** • UNC Gépi Menetfúró, egyenes hornyú HSS-E anyagminőségből, míg a készlet tart
 • UNC Tarozí de masina, Canale drepte Furnizat din material HSS-E, până un nou stoc este disponibil
E275 • UNC Düz Kanallı Makine Kılavuzu Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 • UNC Machine Tap Straight Flute Supplied in HSS-E until new stock available

E225; E275 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E225	UNC	DIN 371	2B		1.5XD	HSS-E PM	C 2-3				
E275	UNC	DIN 376	2B		1.5XD	HSS-E PM	C 2-3				

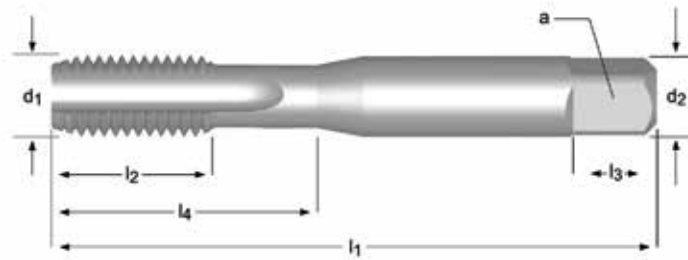



UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		l ₄ mm	E225	E275
4	40	2.845	56	9	3.5	2.7	6	3	2.35	18	E2254-40	
5	40	3.175	56	10	3.5	2.7	6	3	2.65	18	E2255-40	
6	32	3.505	56	11	4.0	3.0	6	3	2.85	20	E2256-32	
8	32	4.166	63	12	4.5	3.4	8	3	3.5	21	E2258-32	
10	24	4.826	70	13	6.0	4.9	8	3	3.9	25	E22510-24	
12	24	5.486	80	15	6.0	4.9	8	3	4.5	30	E22512-24	
1/4	20	6.350	80	16	7.0	5.5	8	3	5.1	30	E2251/4	
5/16	18	7.94	90	18	6.0	4.9	8	3	6.6			E2755/16
3/8	16	9.53	100	24	7.0	5.5	8	3	8.0			E2753/8
7/16	14	11.11	110	23	9.0	7.0	10	3	9.4			E2757/16
1/2	13	12.7	110	23	9.0	7.0	10	3	10.8			E2751/2
9/16	12	14.29	110	25	11.0	9.0	12	3	12.2			E2759/16
5/8	11	15.88	110	25	12.0	9.0	12	4	13.5			E2755/8
3/4	10	19.05	140	34	14.0	11.0	14	4	16.5			E2753/4
7/8	9	22.23	140	34	18.0	14.5	17	4	19.5			E2757/8
1"	8	25.40	160	38	20.0	16.0	19	4	22.25			E2751
1.1/8	7	28.58	180	45	22.0	18.0	21	4	25.0			E2751.1/8
1.1/4	7	31.75	180	50	25.0	20.0	23	4	28.0			E2751.1/4
1.1/2	6	38.10	200	60	32.0	24.0	27	4	34.0			E2751.1/2

E515


- UNC Gépi Menetfúró, egyenes hornyú
- UNC Tarozi de masina, Canale drepte
- UNC Düz Kanallı Makine Kilavuzu
- UNC Machine Tap Straight Flute

E515 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3



UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z		l ₄ mm	E515
1	64	1.854	41	8	2.50	2.00	4	2	1.55	8	E5151-64NO1
1	64	1.854	41	8	2.50	2.00	4	2	1.55	8	E5151-64NO2
1	64	1.854	41	8	2.50	2.00	4	2	1.55	8	E5151-64NO3
1	64	1.854	41	8	2.50	2.00	4	2	1.55	8	E5151-64NO6
2	56	2.184	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E5152-56NO1
2	56	2.184	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E5152-56NO2
2	56	2.184	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E5152-56NO3
2	56	2.184	44.5	9.5	2.80	2.24	5	3	1.85	9.5	E5152-56NO6
3	48	2.515	44.5	9.5	2.80	2.24	5	3	2.1	9.5	E5153-48NO1
3	48	2.515	44.5	9.5	2.80	2.24	5	3	2.1	9.5	E5153-48NO2
3	48	2.515	44.5	9.5	2.80	2.24	5	3	2.1	9.5	E5153-48NO3
3	48	2.515	44.5	9.5	2.80	2.24	5	3	2.1	9.5	E5153-48NO6
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E5154-40NO1
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E5154-40NO2
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E5154-40NO3
4	40	2.845	48	12.5	3.15	2.50	5	3	2.35	12.5	E5154-40NO6
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E5155-40NO1
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E5155-40NO2
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E5155-40NO3
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E5155-40NO6
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E5156-32NO1
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E5156-32NO2
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E5156-32NO3
6	32	3.505	50	14	3.55	2.80	5	3	2.85	14	E5156-32NO6
8	32	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5158-32NO1
8	32	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5158-32NO2
8	32	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5158-32NO3
8	32	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5158-32NO6
10	24	4.826	58	11	5.00	4.00	7	3	3.9	20	E51510-24NO1
10	24	4.826	58	11	5.00	4.00	7	3	3.9	20	E51510-24NO2
10	24	4.826	58	11	5.00	4.00	7	3	3.9	20	E51510-24NO3
10	24	4.826	58	11	5.00	4.00	7	3	3.9	20	E51510-24NO6
12	24	5.486	62	12	5.60	4.50	7	3	4.5	21	E51512-24NO1
12	24	5.486	62	12	5.60	4.50	7	3	4.5	21	E51512-24NO2
12	24	5.486	62	12	5.60	4.50	7	3	4.5	21	E51512-24NO3
12	24	5.486	62	12	5.60	4.50	7	3	4.5	21	E51512-24NO6
1/4	20	6.350	66	13	6.30	5.00	8	3	5.1	26	E5151/4NO1
1/4	20	6.350	66	13	6.30	5.00	8	3	5.1	26	E5151/4NO2
1/4	20	6.350	66	13	6.30	5.00	8	3	5.1	26	E5151/4NO3
1/4	20	6.350	66	13	6.30	5.00	8	3	5.1	26	E5151/4NO6
5/16	18	7.938	72	16	8.00	6.30	9	3	6.6	29	E5155/16NO1
5/16	18	7.938	72	16	8.00	6.30	9	3	6.6	29	E5155/16NO2

NO1 - NO9
219

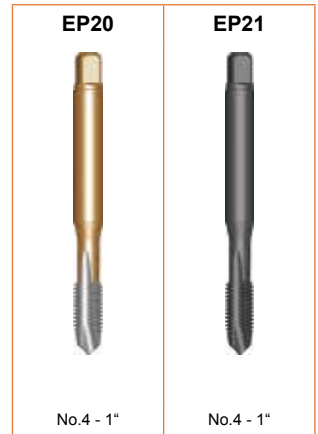
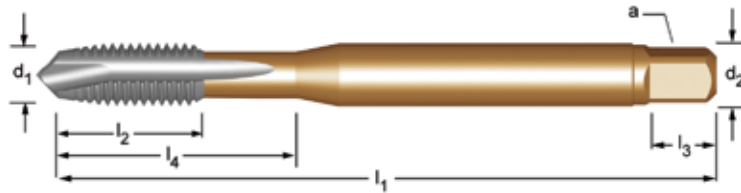
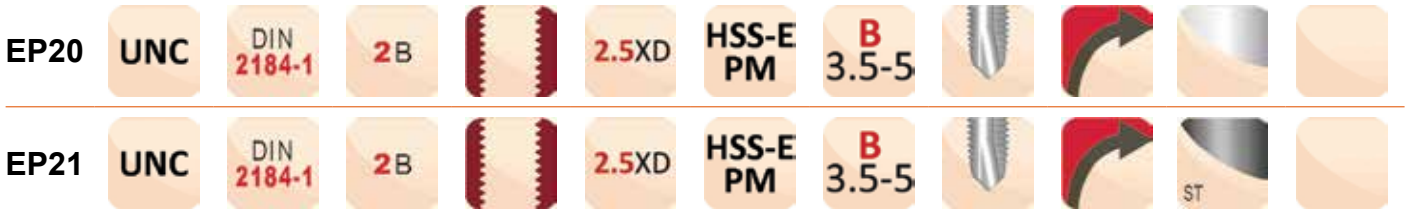
UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∇ a mm	l ₃ mm	z		l ₄ mm	E515
5/16	18	7.938	72	16	8.00	6.30	9	3	6.6	29	E5155/16NO3
5/16	18	7.938	72	16	8.00	6.30	9	3	6.6	29	E5155/16NO6
3/8	16	9.525	80	18	10.00	8.00	11	3	8	32	E5153/8NO1
3/8	16	9.525	80	18	10.00	8.00	11	3	8	32	E5153/8NO2
3/8	16	9.525	80	18	10.00	8.00	11	3	8	32	E5153/8NO3
3/8	16	9.525	80	18	10.00	8.00	11	3	8	32	E5153/8NO6
7/16	14	11.112	85	19	8.00	6.30	9	3	9.4	-	E5157/16NO1
7/16	14	11.112	85	19	8.00	6.30	9	3	9.4	-	E5157/16NO2
7/16	14	11.112	85	19	8.00	6.30	9	3	9.4	-	E5157/16NO3
7/16	14	11.112	85	19	8.00	6.30	9	3	9.4	-	E5157/16NO6
1/2	13	12.700	89	22	9.00	7.10	10	3	10.8	-	E5151/2NO1
1/2	13	12.700	89	22	9.00	7.10	10	3	10.8	-	E5151/2NO2
1/2	13	12.700	89	22	9.00	7.10	10	3	10.8	-	E5151/2NO3
1/2	13	12.700	89	22	9.00	7.10	10	3	10.8	-	E5151/2NO6
9/16	12	14.288	95	24	11.20	9.00	12	4	12.2	-	E5159/16NO1
9/16	12	14.288	95	24	11.20	9.00	12	4	12.2	-	E5159/16NO2
9/16	12	14.288	95	24	11.20	9.00	12	4	12.2	-	E5159/16NO3
9/16	12	14.288	95	24	11.20	9.00	12	4	12.2	-	E5159/16NO6
5/8	11	15.875	102	24	12.50	10.00	13	4	13.5	-	E5155/8NO1
5/8	11	15.875	102	24	12.50	10.00	13	4	13.5	-	E5155/8NO2
5/8	11	15.875	102	24	12.50	10.00	13	4	13.5	-	E5155/8NO3
5/8	11	15.875	102	24	12.50	10.00	13	4	13.5	-	E5155/8NO6
3/4	10	19.050	112	29	14.00	11.20	14	4	16.5	-	E5153/4NO1
3/4	10	19.050	112	29	14.00	11.20	14	4	16.5	-	E5153/4NO2
3/4	10	19.050	112	29	14.00	11.20	14	4	16.5	-	E5153/4NO3
3/4	10	19.050	112	29	14.00	11.20	14	4	16.5	-	E5153/4NO6
7/8	9	22.225	118	29	16.00	12.50	16	4	19.5	-	E5157/8NO1
7/8	9	22.225	118	29	16.00	12.50	16	4	19.5	-	E5157/8NO2
7/8	9	22.225	118	29	16.00	12.50	16	4	19.5	-	E5157/8NO3
7/8	9	22.225	118	29	16.00	12.50	16	4	19.5	-	E5157/8NO6
1"	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E5151NO3
1"	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E5151NO1
1"	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E5151NO2
1"	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E5151NO6
1.1/8	7	28.575	138	35	20.00	16.00	20	4	25	-	E5151.1/8NO1
1.1/8	7	28.575	138	35	20.00	16.00	20	4	25	-	E5151.1/8NO2
1.1/8	7	28.575	138	35	20.00	16.00	20	4	25	-	E5151.1/8NO3
1.1/4	7	31.750	151	41	22.40	18.00	22	4	28	-	E5151.1/4NO1
1.1/4	7	31.750	151	41	22.40	18.00	22	4	28	-	E5151.1/4NO2
1.1/4	7	31.750	151	41	22.40	18.00	22	4	28	-	E5151.1/4NO3
1.3/8	6	34.925	162	47	25.00	20.00	24	4	30.75	-	E5151.3/8NO1
1.3/8	6	34.925	162	47	25.00	20.00	24	4	30.75	-	E5151.3/8NO2
1.3/8	6	34.925	162	47	25.00	20.00	24	4	30.75	-	E5151.3/8NO3
1.1/2	6	38.100	170	47	28.00	22.40	26	4	34	-	E5151.1/2NO1
1.1/2	6	38.100	170	47	28.00	22.40	26	4	34	-	E5151.1/2NO2
1.1/2	6	38.100	170	47	28.00	22.40	26	4	34	-	E5151.1/2NO3
1.3/4	5	44.450	187	54	31.50	25.00	28	6	39.5	-	E5151.3/4NO1
1.3/4	5	44.450	187	54	31.50	25.00	28	6	39.5	-	E5151.3/4NO2
1.3/4	5	44.450	187	54	31.50	25.00	28	6	39.5	-	E5151.3/4NO3
2"	4.5	50.800	200	60	35.50	28.00	31	6	45	-	E5152NO3
2"	4.5	50.800	200	60	35.50	28.00	31	6	45	-	E5152NO1
2"	4.5	50.800	200	60	35.50	28.00	31	6	45	-	E5152NO2

EP20 EP21

- UNC Gépi Menetfűró, terelőéles
- UNC Tarozi de masina cu vârf în spirala
- UNC Helisel Uçlu Makine Kılavuzu
- UNC Machine Tap Spiral Point

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

EP20	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4	
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1	
EP21	▪	1.1	1.2	1.3	1.4	1.5							
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4				



UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z	↔	l ₄ mm	EP20	EP21
4	40	2.845	56	9	3.5	2.7	6	3	2.35	18	EP204-40	EP214-40
5	40	3.175	56	10	3.5	2.7	6	3	2.65	18	EP205-40	EP215-40
6	32	3.505	56	11	4.0	3.0	6	3	2.85	20	EP206-32	EP216-32
8	32	4.166	63	12	4.5	3.4	8	3	3.5	21	EP208-32	EP218-32
10	24	4.826	70	13	6.0	4.9	8	3	3.9	25	EP210-24	EP2110-24
12	24	5.486	80	15	6.0	4.9	8	3	4.5	30	EP212-24	EP2112-24
1/4	20	6.350	80	15	7.0	5.5	8	3	5.1	30	EP201/4	EP211/4
5/16	18	7.938	90	18	8.0	6.2	9	3	6.6	35	EP205/16	EP215/16
3/8	16	9.525	100	20	10.0	8.0	11	3	8	39	EP203/8	EP213/8
7/16	14	11.112	100	20	8.0	6.2	9	3	9.4	-	EP207/16	EP217/16
1/2	13	12.700	110	23	9.0	7.0	10	3	10.8	-	EP201/2	EP211/2
5/8	11	15.875	110	25	12.0	9.0	12	3	13.5	-	EP205/8	EP215/8
3/4	10	19.050	125	30	14.0	11.0	14	4	16.5	-	EP203/4	EP213/4
7/8	9	22.225	140	34	18.0	14.5	17	4	19.5	-	EP207/8	EP217/8
1"	8	25.400	160	38	18.0	14.5	17	4	22.25	-	EP201	EP211

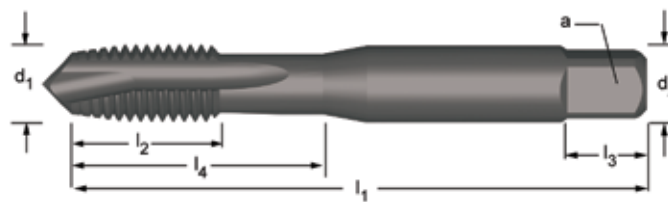
E021

- UNC Gépi Menetfúró, terelőéles
- UNC Tarozí de masina cu vârf în spirală
- UNC Helisel Uçlu Makine Kılavuzu
- UNC Machine Tap Spiral Point

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E021	▪	1.1	1.2	1.3	1.4	1.5						
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4			

E021 **UNC** **ISO 529** **2B** **2.5XD** **HSS-E PM** **B 3.5-5**



UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E021
2	56	2.184	44.5	9.5	2.80	2.24	5	2	1.85	9.5	E0212-56
4	40	2.845	48	14	3.15	2.50	5	3	2.35	14	E0214-40
5	40	3.175	48	12.5	3.15	2.50	5	3	2.65	12.5	E0215-40
6	32	3.505	50	16	3.55	2.80	5	3	2.85	16	E0216-32
8	32	4.166	53	9.5	4.50	3.55	6	3	3.50	17	E0218-32
10	24	4.826	58	11	5.00	4.00	7	3	3.90	20	E02110-24
12	24	5.486	62	12	5.60	4.50	7	3	4.50	21	E02112-24
1/4	20	6.350	66	13	6.30	5.00	8	3	5.10	26	E0211/4
5/16	18	7.938	72	16	8.00	6.30	9	3	6.60	29	E0215/16
3/8	16	9.525	80	18	10.00	8.00	11	3	8.00	32	E0213/8
7/16	14	11.112	85	19	8.00	6.30	9	3	9.40	-	E0217/16
1/2	13	12.700	89	22	9.00	7.10	10	3	10.80	-	E0211/2
5/8	11	15.875	102	24	12.50	10.00	13	3	13.50	-	E0215/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50	-	E0213/4
7/8	9	22.225	118	29	16.00	12.50	16	4	19.50	-	E0217/8
1"	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E0211

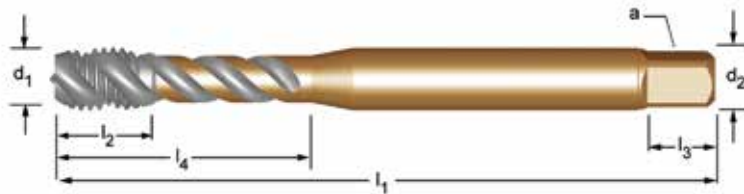
EX20 EX21

- UNC Gépi Menetfűró, csavart hornyú 45°
- UNC Tarozí de masina cu dinti în spirala (unghi 45°)
- UNC 45° Helisel Kanallı Makine Kılavuzu
- UNC Machine Tap Spiral Flute 45°

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

EX20	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2					
EX21	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2		
	•	2.3								

EX20	UNC	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3				
EX21	UNC	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3				



UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		l ₄ mm	EX20	EX21
4	40	2.845	56	6	3.5	2.7	6	3	2.35	18	EX204-40	EX214-40
5	40	3.175	56	6	3.5	2.7	6	3	2.65	18	EX205-40	EX215-40
6	32	3.505	56	7	4.0	3.0	6	3	2.85	20	EX206-32	EX216-32
8	32	4.166	63	7	4.5	3.4	8	3	3.5	21	EX208-32	EX218-32
10	24	4.826	70	8	6.0	4.9	8	3	3.9	25	EX2010-24	EX2110-24
12	24	5.486	80	10	6.0	4.9	8	3	4.5	30	EX2012-24	EX2112-24
1/4	20	6.350	80	10	7.0	5.5	8	3	5.1	30	EX201/4	EX211/4
5/16	18	7.938	90	12	8.0	6.2	9	3	6.6	35	EX205/16	EX215/16
3/8	16	9.525	100	15	10.0	8.0	11	3	8.0	39	EX203/8	EX213/8
7/16	14	11.112	100	15	8.0	6.2	9	3	9.4	-	EX207/16	EX217/16
1/2	13	12.700	110	18	9.0	7.0	10	3	10.8	-	EX201/2	EX211/2
5/8	11	15.875	110	20	12.0	9.0	12	4	13.5	-	EX205/8	EX215/8
3/4	10	19.050	125	25	14.0	11.0	14	4	16.5	-	EX203/4	EX213/4
7/8	9	22.225	140	25	18.0	14.5	17	4	19.5	-	EX207/8	EX217/8
1"	8	25.400	160	30	18.0	14.5	17	4	22.25	-	EX201	EX211

E023

- UNC Gépi Menetfúró, csavart hornyú 45°
- UNC Tarozí de masina cu dinti în spirală (unghi 45°)
- UNC 45° Helisel Kanallı Makine Kılavuzu
- UNC Machine Tap Spiral Flute 45°

HSS-E anyagminőségből, míg a készlet tart
 Furnizat din material HSS-E, până un nou stoc este disponibil
 Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 Supplied in HSS-E until new stock available

E023	▪	1.1	1.2	1.3	1.4	1.5
	•	2.1	2.2	2.3		

E023

UNC

ISO
529

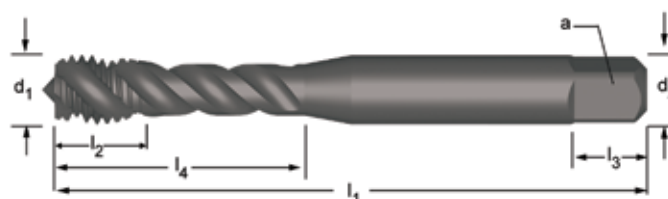
2B



2.5XD

HSS-E
PM

C
2-3



E023



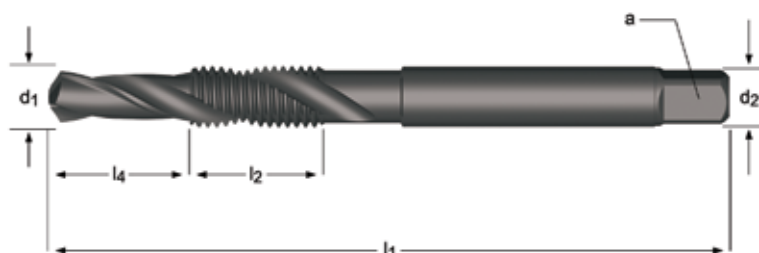
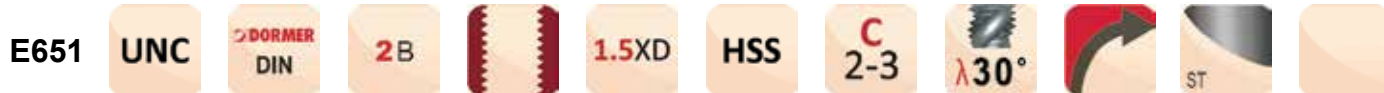
No.2 - 1"

UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∇ a mm	l ₃ mm	z		l ₄ mm	E023
2	56	2.184	44.5	9.5	2.80	2.24	5	2	1.85	9.5	E0232-56
4	40	2.845	48	6	3.15	2.50	5	3	2.35	14	E0234-40
5	40	3.175	48	6	3.15	2.50	5	3	2.65	12.5	E0235-40
6	32	3.505	50	6	3.55	2.80	5	3	2.85	16	E0236-32
8	32	4.166	53	7	4.50	3.55	6	3	3.50	17	E0238-32
10	24	4.826	58	8	5.00	4.00	7	3	3.90	20	E02310-24
12	24	5.486	62	12	5.60	4.50	7	3	4.50	21	E02312-24
1/4	20	6.350	66	10	6.30	5.00	8	3	5.10	28	E0231/4
5/16	18	7.938	72	12	8.00	6.30	9	3	6.60	31	E0235/16
3/8	16	9.525	80	15	10.00	8.00	11	3	8.00	34	E0233/8
7/16	14	11.112	85	19	8.00	6.30	9	3	9.40	-	E0237/16
1/2	13	12.700	89	19	9.00	7.10	10	3	10.80	-	E0231/2
5/8	11	15.875	102	24	12.50	10.00	13	4	13.50	-	E0235/8
3/4	10	19.050	112	29	14.00	11.20	14	4	16.50	-	E0233/4
7/8	9	22.225	118	29	16.00	12.50	16	4	19.50	-	E0237/8
1"	8	25.400	130	35	18.00	14.00	18	4	22.25	-	E0231

E651

- UNC Kombinált Menetfúró, csavart hornyú 30°
- UNC Tarozi combinati cu dinti în spirala (unghi 30°)
- UNC 30° Helis Açılı Kombi Kilavuz
- UNC Combi Taps Spiral Flute 30°

E651 • 1.1 1.2 1.3 1.4 3.2 6.2 6.3 7.1 7.2 8.1



E651



No.6 - 5/8

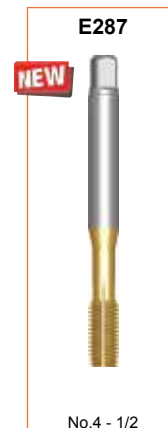
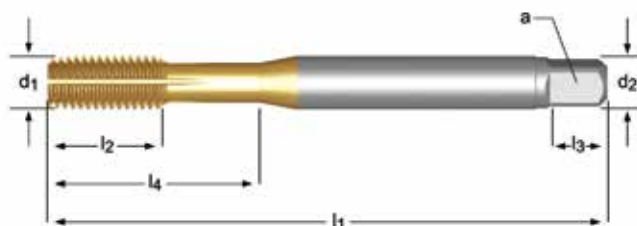
UNC	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	l ₄ mm	d ₂ Ø mm	□ a mm	z	E651
6	32	2.85	56.9	12	6.0	3.50	2.90	2	E6516-32
8	32	3.50	64.0	12	8.0	4.50	3.55	2	E6518-32
10	24	3.90	72.0	15	10.0	5.00	4.00	2	E65110-24
12	24	4.50	77.0	15	11.0	5.60	4.50	2	E65112-24
1/4	20	5.10	83.0	17	13.0	6.30	5.00	2	E6511/4
5/16	18	6.60	94.0	21	16.0	8.00	6.30	2	E6515/16
3/8	16	8.00	107.0	23	19.0	10.00	8.00	2	E6513/8
7/16	14	9.40	107.0	25	22.0	8.00	6.30	2	E6517/16
1/2	13	10.80	114.0	29	25.0	9.00	7.10	2	E6511/2
9/16	12	12.20	124.0	29	28.0	11.20	9.00	2	E6519/16
5/8	11	13.50	134.0	31	32.5	12.50	10.00	2	E6515/8

E287

- UNC Gépi Menetformázó kenőhoronnyal
- UNC Tarozi de masina de deformare cu canale de ulei
- UNC Ovalama Kilavuzu, Yağ kanallı
- UNC Machine Forming Tap, Oil Grooves

E287	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E287 **UNC** **DIN 2184-1** **2BX** **3.5XD** **HSS-E** **C 2-3.5**



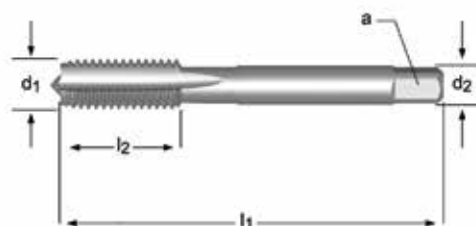
M	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E287
4	40	2.845	56	9	3.5	2.7	6	4	2.6	18	E2874-40
6	32	3.505	56	11	4.0	3.0	6	4	3.2	20	E2876-32
8	32	4.166	63	12	4.5	3.4	6	5	3.8	21	E2878-32
10	24	4.826	70	13	6.0	4.9	8	5	4.4	25	E28710-24
1/4	20	6.350	80	15	7.0	5.5	8	5	5.8	30	E2871/4
5/16	18	7.938	90	18	8.0	6.2	9	5	7.3	35	E2875/16
3/8	16	9.525	100	20	10.0	8.0	11	5	8.8	39	E2873/8
7/16	14	11.112	100	20	8.0	6.2	9	5	10.3	-	E2877/16
1/2	13	12.700	110	23	9.0	7.0	10	5	11.9	-	E2871/2

E111

- UNF Kézi Menetfúró, egyenes hornyú
- UNF Tarozi de mana, Canale drepte
- UNF Düz Kanallı El Kılavuzu
- UNF Hand Tap Straight Flute

E111 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E111 UNF DIN 2181 2B 1.5XD HSS C 2-3



E111



No.5 - 1"

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z		E111
5	44	3.18	45	13	4.0	3.0	3	2.7	E1115-44NO3
5	44	3.18	45	13	4.0	3.0	3	2.7	E1115-44NO9
6	40	3.51	45	10	4.0	3.0	3	2.95	E1116-40NO3
6	40	3.51	45	10	4.0	3.0	3	2.95	E1116-40NO9
8	36	4.17	50	14	6.0	4.9	3	3.5	E1118-36NO3
8	36	4.17	50	14	6.0	4.9	3	3.5	E1118-36NO9
10	32	4.82	50	14	6.0	4.9	3	4.1	E11110-32NO3
10	32	4.82	50	14	6.0	4.9	3	4.1	E11110-32NO9
1/4	28	6.35	56	17	6.0	4.9	3	5.5	E1111/4NO3
1/4	28	6.35	56	17	6.0	4.9	3	5.5	E1111/4NO9
5/16	24	7.94	63	19	6.0	4.9	3	6.9	E1115/16NO3
5/16	24	7.94	63	19	6.0	4.9	3	6.9	E1115/16NO9
3/8	24	9.53	63	16	7.0	5.5	3	8.5	E1113/8NO3
3/8	24	9.53	63	16	7.0	5.5	3	8.5	E1113/8NO9
7/16	20	11.11	63	15	8.0	6.2	3	9.9	E1117/16NO3
7/16	20	11.11	63	15	8.0	6.2	3	9.9	E1117/16NO9
1/2	20	12.70	70	22	9.0	7.0	3	11.5	E1111/2NO3
1/2	20	12.70	70	22	9.0	7.0	3	11.5	E1111/2NO9
9/16	18	14.29	70	16	11.0	9.0	4	12.9	E1119/16NO3
9/16	18	14.29	70	16	11.0	9.0	4	12.9	E1119/16NO9
5/8	18	15.88	70	16	12.0	9.0	4	14.5	E1115/8NO3
5/8	18	15.88	70	16	12.0	9.0	4	14.5	E1115/8NO9
3/4	16	19.05	80	22	14.0	11.0	4	17.5	E1113/4NO3
3/4	16	19.05	80	22	14.0	11.0	4	17.5	E1113/4NO9
7/8	14	22.23	90	22	18.0	14.5	4	20.4	E1117/8NO3
7/8	14	22.23	90	22	18.0	14.5	4	20.4	E1117/8NO9
1"	12	25.40	90	22	20.0	16.0	4	23.25	E1111NO3
1"	12	25.40	90	22	20.0	16.0	4	23.25	E1111NO9

NO1 - NO9
219

E229 • UNF Gépi Menetfúró, egyenes hornyú

• UNF Tarozí de masina, Canale drepte

E278 • UNF Düz Kanallı Makine Kılavuzu

• UNF Machine Tap Straight Flute

HSS-E anyagminőségéből, míg a készlet tart

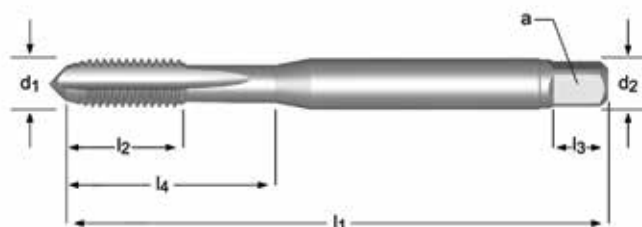
Furnizat din material HSS-E, până un nou stoc este disponibil

Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.

Supplied in HSS-E until new stock available

E229; E278 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E229	UNF	DIN 371	2B		1.5XD	HSS-E PM	C 2-3				
E278	UNF	DIN 374	2B		1.5XD	HSS-E PM	C 2-3				



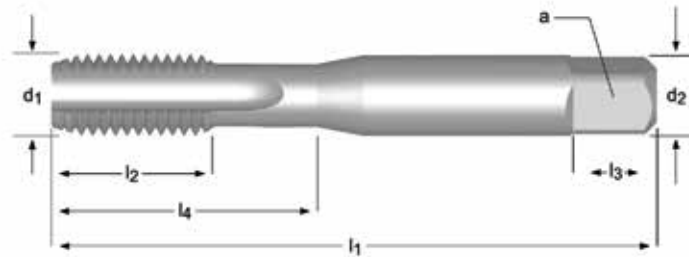
UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		l ₄ mm	E229	E278
2	64	2.184	45	7	2.8	2.1	5	3	1.9	12	E2292-64	
3	56	2.515	50	8	2.8	2.1	5	3	2.15	12.5	E2293-56	
4	48	2.845	56	9	3.5	2.7	6	3	2.4	18	E2294-48	
5	44	3.175	56	10	3.5	2.7	6	3	2.7	18	E2295-44	
6	40	3.505	56	11	4.0	3.0	6	3	2.95	20	E2296-40	
8	36	4.166	63	12	4.5	3.4	6	3	3.5	21	E2298-36	
10	32	4.826	70	13	6.0	4.9	8	3	4.1	25	E22910-32	
12	28	5.486	80	15	6.0	4.9	8	3	4.7	30	E22912-28	
1/4	28	6.350	80	15	7.0	5.5	8	3	5.5	30	E2291/4	
5/16	24	7.94	90	18	6.0	4.9	8	3	6.9			E2785/16
3/8	24	9.53	100	24	7.0	5.5	8	3	8.5			E2783/8
7/16	20	11.11	100	22	9.0	7.0	10	3	9.9			E2787/16
1/2	20	12.70	100	21	9.0	7.0	10	3	11.5			E2781/2
9/16	18	14.29	100	21	11.0	9.0	12	4	12.9			E2789/16
5/8	18	15.88	100	21	12.0	9.0	12	4	14.5			E2785/8
3/4	16	19.05	125	25	14.0	11.0	14	4	17.5			E2783/4
7/8	14	22.23	140	28	18.0	14.5	17	4	20.4			E2787/8
1"	12	25.40	140	26	18.0	14.5	17	4	23.25			E2781
1.1/8	12	28.58	150	28	22.0	18.0	21	4	26.5			E2781.1/8
1.1/4	12	31.75	150	28	25.0	20.0	23	4	29.5			E2781.1/4
1.3/8	12	34.93	170	30	28.0	22.0	25	4	32.75			E2781.3/8
1.1/2	12	38.10	170	30	32.0	24.0	27	4	36.0			E2781.1/2 ¹⁾

E524

- UNF Gépi Menetfúró, egyenes hornyú
- UNF Tarozí de masina, Canale drepte
- UNF Düz Kanallı Makine Kılavuzu
- UNF Machine Tap Straight Flute

E524 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E524 UNF ISO 529 2B 1.5XD HSS




E524



No.0 - 1.1/2

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z	↔	l ₄ mm	E524
0	80	1.524	41	7	2.50	2.00	4	2	1.25	7	E5240-80NO1
0	80	1.524	41	7	2.50	2.00	4	2	1.25	7	E5240-80NO2
0	80	1.524	41	7	2.50	2.00	4	2	1.25	7	E5240-80NO3
1	72	1.854	41	8	2.50	2.00	4	2	1.55	8	E5241-72NO1
1	72	1.854	41	8	2.50	2.00	4	2	1.55	8	E5241-72NO2
1	72	1.854	41	8	2.50	2.00	4	2	1.55	8	E5241-72NO3
2	64	2.184	44.5	9.5	2.80	2.24	5	3	1.9	9.5	E5242-64NO1
2	64	2.184	44.5	9.5	2.80	2.24	5	3	1.9	9.5	E5242-64NO2
2	64	2.184	44.5	9.5	2.80	2.24	5	3	1.9	9.5	E5242-64NO3
4	48	2.845	48	12.5	3.15	2.50	5	3	2.4	12.5	E5244-48NO1
4	48	2.845	48	12.5	3.15	2.50	5	3	2.4	12.5	E5244-48NO2
4	48	2.845	48	12.5	3.15	2.50	5	3	2.4	12.5	E5244-48NO3
5	44	3.175	48	12.5	3.15	2.50	5	3	2.7	12.5	E5245-44NO1
5	44	3.175	48	12.5	3.15	2.50	5	3	2.7	12.5	E5245-44NO2
5	44	3.175	48	12.5	3.15	2.50	5	3	2.7	12.5	E5245-44NO3
6	40	3.505	50	14	3.55	2.80	5	3	2.95	14	E5246-40NO1
6	40	3.505	50	14	3.55	2.80	5	3	2.95	14	E5246-40NO2
6	40	3.505	50	14	3.55	2.80	5	3	2.95	14	E5246-40NO3
8	36	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5248-36NO1
8	36	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5248-36NO2
8	36	4.166	53	9.5	4.50	3.55	6	3	3.5	17	E5248-36NO3
10	32	4.826	58	11	5.00	4.00	7	3	4.1	20	E52410-32NO1
10	32	4.826	58	11	5.00	4.00	7	3	4.1	20	E52410-32NO2
10	32	4.826	58	11	5.00	4.00	7	3	4.1	20	E52410-32NO3
10	32	4.826	58	11	5.00	4.00	7	3	4.1	20	E52410-32NO6
12	28	5.486	62	12	5.60	4.50	7	3	4.7	21	E52412-28NO1
12	28	5.486	62	12	5.60	4.50	7	3	4.7	21	E52412-28NO2
12	28	5.486	62	12	5.60	4.50	7	3	4.7	21	E52412-28NO3
12	28	5.486	62	12	5.60	4.50	7	3	4.7	21	E52412-28NO6
1/4	28	6.350	66	13	6.30	5.00	8	3	5.5	26	E5241/4NO1
1/4	28	6.350	66	13	6.30	5.00	8	3	5.5	26	E5241/4NO2
1/4	28	6.350	66	13	6.30	5.00	8	3	5.5	26	E5241/4NO3
1/4	28	6.350	66	13	6.30	5.00	8	3	5.5	26	E5241/4NO6
5/16	24	7.938	72	16	8.00	6.30	9	3	6.9	29	E5245/16NO1
5/16	24	7.938	72	16	8.00	6.30	9	3	6.9	29	E5245/16NO2
5/16	24	7.938	72	16	8.00	6.30	9	3	6.9	29	E5245/16NO3
5/16	24	7.938	72	16	8.00	6.30	9	3	6.9	29	E5245/16NO6
3/8	24	9.525	80	18	10.00	8.00	11	3	8.5	32	E5243/8NO1
3/8	24	9.525	80	18	10.00	8.00	11	3	8.5	32	E5243/8NO2
3/8	24	9.525	80	18	10.00	8.00	11	3	8.5	32	E5243/8NO3

NO1 - NO9
219

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E524
3/8	24	9.525	80	18	10.00	8.00	11	3	8.5	32	E5243/8NO6
7/16	20	11.112	85	19	8.00	6.30	9	3	9.9	-	E5247/16NO1
7/16	20	11.112	85	19	8.00	6.30	9	3	9.9	-	E5247/16NO2
7/16	20	11.112	85	19	8.00	6.30	9	3	9.9	-	E5247/16NO3
7/16	20	11.112	85	19	8.00	6.30	9	3	9.9	-	E5247/16NO6
1/2	20	12.700	89	22	9.00	7.10	10	3	11.5	-	E5241/2NO1
1/2	20	12.700	89	22	9.00	7.10	10	3	11.5	-	E5241/2NO2
1/2	20	12.700	89	22	9.00	7.10	10	3	11.5	-	E5241/2NO3
1/2	20	12.700	89	22	9.00	7.10	10	3	11.5	-	E5241/2NO6
9/16	18	14.288	95	24	11.20	9.00	12	4	12.9	-	E5249/16NO1
9/16	18	14.288	95	24	11.20	9.00	12	4	12.9	-	E5249/16NO2
9/16	18	14.288	95	24	11.20	9.00	12	4	12.9	-	E5249/16NO3
9/16	18	14.288	95	24	11.20	9.00	12	4	12.9	-	E5249/16NO6
5/8	18	15.875	102	24	12.50	10.00	13	4	14.5	-	E5245/8NO1
5/8	18	15.875	102	24	12.50	10.00	13	4	14.5	-	E5245/8NO2
5/8	18	15.875	102	24	12.50	10.00	13	4	14.5	-	E5245/8NO3
5/8	18	15.875	102	24	12.50	10.00	13	4	14.5	-	E5245/8NO6
3/4	16	19.050	112	29	14.00	11.20	14	4	17.5	-	E5243/4NO1
3/4	16	19.050	112	29	14.00	11.20	14	4	17.5	-	E5243/4NO2
3/4	16	19.050	112	29	14.00	11.20	14	4	17.5	-	E5243/4NO3
3/4	16	19.050	112	29	14.00	11.20	14	4	17.5	-	E5243/4NO6
7/8	14	22.225	118	29	16.00	12.50	16	4	20.4	-	E5247/8NO1
7/8	14	22.225	118	29	16.00	12.50	16	4	20.4	-	E5247/8NO2
7/8	14	22.225	118	29	16.00	12.50	16	4	20.4	-	E5247/8NO3
7/8	14	22.225	118	29	16.00	12.50	16	4	20.4	-	E5247/8NO6
1"	12	25.400	130	35	18.00	14.00	18	4	23.25	-	E5241NO1
1"	12	25.400	130	35	18.00	14.00	18	4	23.25	-	E5241NO2
1"	12	25.400	130	35	18.00	14.00	18	4	23.25	-	E5241NO3
1"	12	25.400	130	35	18.00	14.00	18	4	23.25	-	E5241NO6
1.1/8	12	28.575	138	35	20.00	16.00	20	4	26.5	-	E5241.1/8NO1
1.1/8	12	28.575	138	35	20.00	16.00	20	4	26.5	-	E5241.1/8NO2
1.1/8	12	28.575	138	35	20.00	16.00	20	4	26.5	-	E5241.1/8NO3
1.1/4	12	31.750	151	41	22.40	18.00	22	4	29.5	-	E5241.1/4NO1
1.1/4	12	31.750	151	41	22.40	18.00	22	4	29.5	-	E5241.1/4NO2
1.1/4	12	31.750	151	41	22.40	18.00	22	4	29.5	-	E5241.1/4NO3
1.3/8	12	34.925	162	47	25.00	20.00	24	4	32.75	-	E5241.3/8NO1
1.3/8	12	34.925	162	47	25.00	20.00	24	4	32.75	-	E5241.3/8NO2
1.3/8	12	34.925	162	47	25.00	20.00	24	4	32.75	-	E5241.3/8NO3
1.1/2	12	38.100	170	47	28.00	22.40	26	4	36	-	E5241.1/2NO1
1.1/2	12	38.100	170	47	28.00	22.40	26	4	36	-	E5241.1/2NO2
1.1/2	12	38.100	170	47	28.00	22.40	26	4	36	-	E5241.1/2NO3



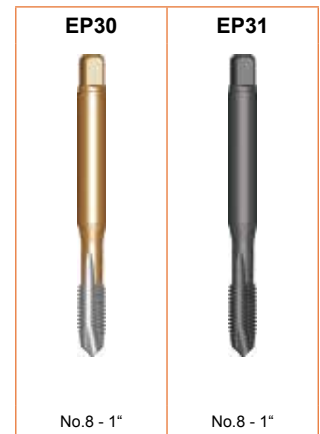
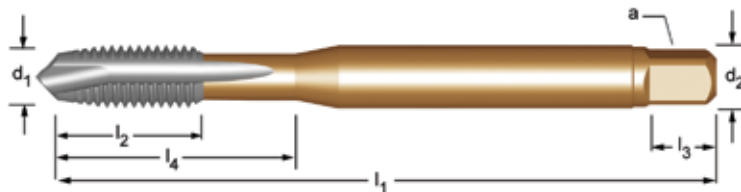
EP30 EP31

- UNF Gépi Menetfúró, terelőéles
- UNF Tarozí de masina cu vârf în spirală
- UNF Helisel Uçlu Makine Kılavuzu
- UNF Machine Tap Spiral Point

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

EP30	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4	
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1	
EP31	▪	1.1	1.2	1.3	1.4	1.5							
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4				

EP30	UNF	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3				
EP31	UNF	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3				ST



UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	EP30	EP31
8	36	4.166	63	12	4.5	3.4	8	3	3.5	21	EP308-36	EP318-36
10	32	4.826	70	13	6.0	4.9	8	3	4.1	25	EP3010-32	EP3110-32
1/4	28	6.350	80	15	7.0	5.5	8	3	5.5	30	EP301/4	EP311/4
5/16	24	7.938	90	18	8.0	6.2	9	3	6.9	35	EP305/16	EP315/16
3/8	24	9.525	100	20	10.0	8.0	11	3	8.5	39	EP303/8	EP313/8
7/16	20	11.112	100	20	8.0	6.2	9	3	9.9	-	EP307/16	EP317/16
1/2	20	12.700	110	23	9.0	7.0	10	3	11.5	-	EP301/2	EP311/2
5/8	18	15.875	110	25	12.0	9.0	12	3	14.5	-	EP305/8	EP315/8
3/4	16	19.050	125	30	14.0	11.0	14	4	17.5	-	EP303/4	EP313/4
7/8	14	22.225	140	34	18.0	14.5	17	4	20.4	-	EP307/8	EP317/8
1"	12	25.400	160	38	18.0	14.5	17	4	23.25	-	EP301	EP311

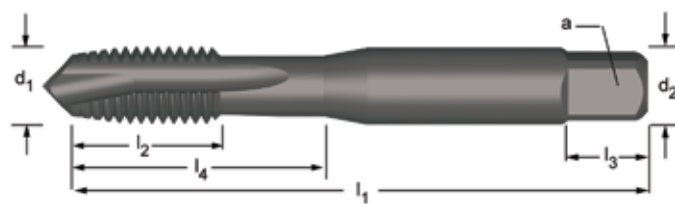
E031

- UNF Gépi Menetfúró, terelőéles
- UNF Tarozí de masina cu vârf în spirala
- UNF Helisel Uçlu Makine Kılavuzu
- UNF Machine Tap Spiral Point

HSS-E anyagminőségűből, míg a készlet tart
 Furnizat din material HSS-E, până un nou stoc este disponibil
 Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 Supplied in HSS-E until new stock available

E031	▪	1.1	1.2	1.3	1.4	1.5						
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4			

E031	UNF	ISO 529	2B		2.5XD	HSS-E PM	B 3.5-5					
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UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E031
8	36	4.166	53	9.5	4.5	3.55	6	3	3.50	17	E0318-36
10	32	4.826	58	11	5.0	4.00	7	3	4.10	20	E03110-32
1/4	28	6.350	66	13	6.3	5.00	8	3	5.50	26	E0311/4
5/16	24	7.938	72	16	8.0	6.30	9	3	6.90	29	E0315/16
3/8	24	9.525	80	18	10.0	8.00	11	3	8.50	32	E0313/8
7/16	20	11.112	85	19	8.0	6.30	9	3	9.90	-	E0317/16
1/2	20	12.700	89	22	9.0	7.10	10	3	11.50	-	E0311/2
9/16	18	14.288	95	24	11.2	9.00	12	3	12.90	-	E0319/16
5/8	18	15.875	102	24	12.5	10.00	13	3	14.50	-	E0315/8
3/4	16	19.050	112	29	14.0	11.20	14	4	17.50	-	E0313/4
7/8	14	22.225	118	29	16.0	12.50	16	4	20.40	-	E0317/8
1"	12	25.400	130	35	18.0	14.00	18	4	23.25	-	E0311

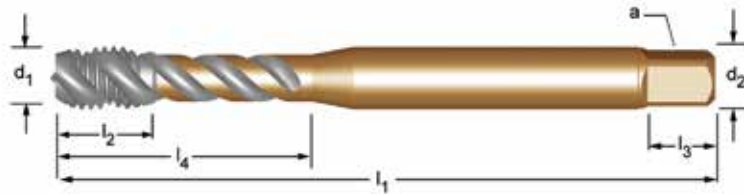
EX30 EX31


- UNF Gépi Menetfúró, csavart hornyú 45°
- UNF Tarozí de masina cu dinti în spirala (unghi 45°)
- UNF 45° Helisel Kanallı Makine Kılavuzu
- UNF Machine Tap Spiral Flute 45°

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

EX30	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2					
EX31	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2		
	•	2.3								

EX30	UNF	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3				
EX31	UNF	DIN 2184-1	2B		2.5XD	HSS-E PM	C 2-3				



UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		l ₄ mm	EX30	EX31
8	36	4.166	63	7	4.5	3.4	8	3	3.5	21	EX308-36	EX318-36
10	32	4.826	70	8	6.0	4.9	8	3	4.1	25	EX3010-32	EX3110-32
1/4	28	6.350	80	10	7.0	5.5	8	3	5.5	30	EX301/4	EX311/4
5/16	24	7.938	90	12	8.0	6.2	9	3	6.9	35	EX305/16	EX315/16
3/8	24	9.525	100	15	10.0	8.0	11	3	8.5	39	EX303/8	EX313/8
7/16	20	11.112	100	15	8.0	6.2	9	3	9.9	-	EX307/16	EX317/16
1/2	20	12.700	110	18	9.0	7.0	10	3	11.5	-	EX301/2	EX311/2
5/8	18	15.875	110	20	12.0	9.0	12	4	14.5	-	EX305/8	EX315/8
3/4	16	19.050	125	25	14.0	11.0	14	4	17.5	-	EX303/4	EX313/4
7/8	14	22.225	140	25	18.0	14.5	17	4	20.4	-	EX307/8	EX317/8
1"	12	25.400	160	30	18.0	14.5	17	4	23.25	-	EX301	EX311

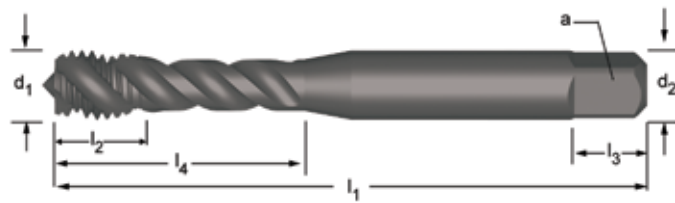
E033

- UNF Gépi Menetfúró, csavart hornyú 45°
- UNF Tarozí de masina cu dinti în spirala (unghi 45°)
- UNF 45° Helisel Kanallı Makine Kılavuzu
- UNF Machine Tap Spiral Flute 45°

HSS-E anyagminőségből, míg a készlet tart
 Furnizat din material HSS-E, până un nou stoc este disponibil
 Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 Supplied in HSS-E until new stock available

E033	▪	1.1	1.2	1.3	1.4	1.5
		1.6	2.1	2.2	2.3	

E033 UNF ISO 529 2B 2.5XD HSS-E PM C 2-3 λ45° ST

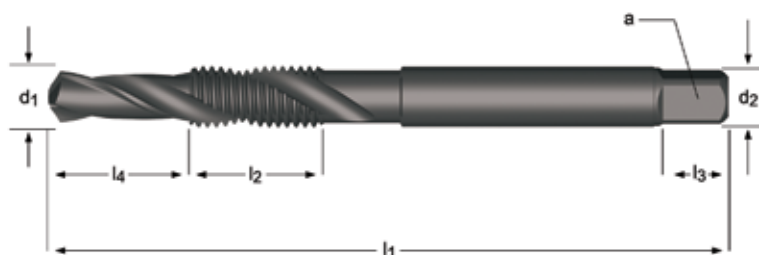


UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		l ₄ mm	E033
8	36	4.166	53	7	4.5	3.55	6	3	3.50	17	E0338-36
10	32	4.826	58	8	5.0	4.00	7	3	4.10	20	E03310-32
1/4	28	6.350	66	10	6.3	5.00	8	3	5.50	28	E0331/4
5/16	24	7.938	72	12	8.0	6.30	9	3	6.90	31	E0335/16
3/8	24	9.525	80	15	10.0	8.00	11	3	8.50	34	E0333/8
7/16	20	11.112	85	19	8.0	6.30	9	3	9.90	-	E0337/16
1/2	20	12.700	89	22	9.0	7.10	10	3	11.50	-	E0331/2
9/16	18	14.288	95	24	11.2	9.00	12	3	12.90	-	E0339/16
5/8	18	15.875	102	24	12.5	10.00	13	4	14.50	-	E0335/8
3/4	16	19.050	112	29	14.0	11.20	14	4	17.50	-	E0333/4
7/8	14	22.225	118	29	16.0	12.50	16	4	20.40	-	E0337/8
1"	12	25.400	130	35	18.0	14.00	18	4	23.25	-	E0331

E654

- UNF Kombinált Menetfűró, csavart hornyú 30°
- UNF Tarozi combinati cu dinti în spirala (unghi 30°)
- UNF 30° Helis Açılı Kombi Kılavuz
- UNF Combi Taps Spiral Flute 30°

E654 • 1.1 1.2 1.3 1.4 3.2 6.2 6.3 7.1 7.2 8.1



E654



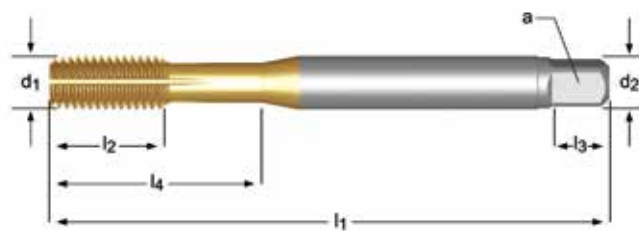
No.8 - 5/8

UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	l ₄ mm	d ₂ ∅ mm	∠ a mm	z	E654
8	36	3.50	64	13	8	4.5	3.55	2	E6548-36
10	32	4.10	72	16	10	5.0	4.00	2	E65410-32
12	28	4.70	77	17	11	5.6	4.50	2	E65412-28
1/4	28	5.50	83	19	13	6.3	5.00	2	E6541/4
5/16	24	6.90	94	22	16	8.0	6.30	2	E6545/16
3/8	24	8.50	104	24	19	10.0	8.00	2	E6543/8
7/16	20	9.90	107	25	22	8.0	6.30	2	E6547/16
1/2	20	11.50	114	29	25	9.0	7.10	2	E6541/2
5/8	18	14.50	134	32	32	12.5	10.00	2	E6545/8

- E286**
- UNF Gépi Menetformázó kenőhoronnyal
 - UNF Tarozi de masina de deformare cu canale de ulei
 - UNF Ovalama Kilavuzu, Yağ kanallı
 - UNF Machine Forming Tap, Oil Grooves

E286	▪	1.1	1.2	1.3	1.4	2.1	2.2	4.1	5.1	7.1	7.2	7.3
	•	1.5	2.3	5.2	6.1	6.3	7.4					

E286 UNF DIN 2184-1 2BX 3.5XD HSS-E C 2-3.5



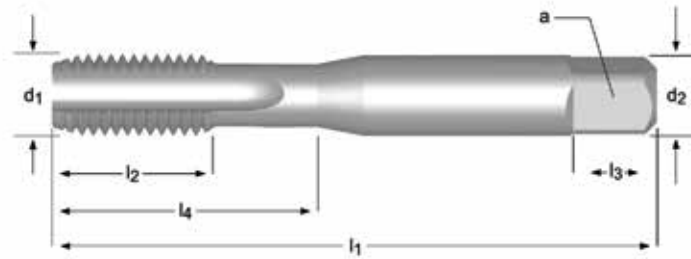
UNF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	l ₃ mm	z		l ₄ mm	E286
4	48	2.845	56	9	3.5	2.7	6	4	2.6	18	E2864-48
6	40	3.505	56	11	4.0	3.0	6	4	3.2	20	E2866-40
8	36	4.166	63	12	4.5	3.4	6	5	3.9	21	E2868-36
10	32	4.826	70	13	6.0	4.9	8	5	4.5	25	E28610-32
1/4	28	6.350	80	15	7.0	5.5	8	5	6.0	30	E2861/4
5/16	24	7.938	90	18	8.0	6.2	9	5	7.5	35	E2865/16
3/8	24	9.525	100	20	10.0	8.0	11	5	9.1	39	E2863/8
7/16	20	11.112	100	20	8.0	6.2	9	5	10.6	-	E2867/16
1/2	20	12.700	100	21	9.0	7.0	10	5	12.1	-	E2861/2

E570

- UN Gépi Menetfúró, egyenes hornyú
- UN Tarozi de masina, Canale drepte
- UN Düz Kanallı Makine Kilavuzu
- UN Machine Tap Straight Flute

E570 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E570 UN ISO 529 2B 1.5XD HSS C 2-3



E570



1/4 - 1.5/16

UN	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z	↔	l ₄ mm	E570
1/4	32	6.350	66	13	6.3	5.00	3	5.6	26	E5701/4X32NO3
1/4	36	6.350	66	13	6.3	5.00	3	5.7	26	E5701/4X36NO3
1/4	40	6.350	66	13	6.3	5.00	3	5.7	26	E5701/4X40NO3
5/16	32	7.938	72	16	8.0	6.30	3	7.2	29	E5705/16X32NO3
3/8	32	9.525	80	18	10.0	8.00	3	8.8	32	E5703/8X32NO3
7/16	24	11.112	85	19	8.0	6.30	3	10	-	E5707/16X24NO3
7/16	28	11.112	85	19	8.0	6.30	3	10.2	-	E5707/16X28NO3
1/2	28	12.700	89	22	9.0	7.10	3	11.8	-	E5701/2X28NO3
9/16	24	14.288	95	24	11.2	9.00	4	13.25	-	E5709/16X24NO3
5/8	24	15.875	102	24	12.5	10.00	4	14.8	-	E5705/8X24NO3
3/4	20	19.050	112	29	14.0	11.20	4	17.8	-	E5703/4X20NO3
7/8	20	22.225	118	30	16.0	12.50	4	21	-	E5707/8X20NO3
1"	14	25.400	130	36	18.0	14.00	4	23.5	-	E5701X14NO3
1.1/16	12	26.988	127	37	20.0	16.00	4	24.75	-	E5701.1/16X12NO3
1.1/8	8	28.575	138	35	20.0	16.00	4	25.5	-	E5701.1/8X8NO3
1.3/16	12	30.163	137	37	22.4	18.00	4	28	-	E5701.3/16X12NO3
1.1/4	8	31.750	151	41	22.4	18.00	4	28.5	-	E5701.1/4X8NO3
1.5/16	12	33.338	137	37	22.4	18.00	4	31.25	-	E5701.5/16X12NO3

NO1-NO9

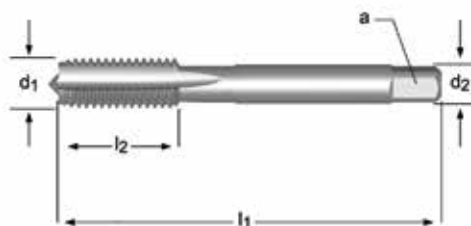
219

E115

- BSW Kézi Menetfúró, egyenes hornyú
- BSW Tarozí de mâna, Canale drepte
- BSW Düz Kanallı El Kılavuzu
- BSW Hand Tap Straight Flute

E115 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E115 BSW DIN 351 Medium 1.5XD HSS C 2-3



E115



1/8 - 1"

BSW	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∟ a mm	z	↔	E115
1/8	40	3.175	40	10	3.5	2.7	3	2.55	E1151/8NO3
1/8	40	3.175	40	10	3.5	2.7	3	2.55	E1151/8NO8
5/32	32	3.969	45	12	4.5	3.4	3	3.2	E1155/32NO3
5/32	32	3.969	45	12	4.5	3.4	3	3.2	E1155/32NO8
3/16	24	4.763	50	16	5.5	4.3	3	3.7	E1153/16NO3
3/16	24	4.763	50	16	5.5	4.3	3	3.7	E1153/16NO8
1/4	20	6.350	56	17	6.0	4.9	3	5.1	E1151/4NO3
1/4	20	6.350	56	17	6.0	4.9	3	5.1	E1151/4NO8
5/16	18	7.938	63	25	6.0	4.9	3	6.5	E1155/16NO3
5/16	18	7.938	63	25	6.0	4.9	3	6.5	E1155/16NO8
3/8	16	9.525	70	22	7.0	5.5	3	7.9	E1153/8NO3
3/8	16	9.525	70	22	7.0	5.5	3	7.9	E1153/8NO8
7/16	14	11.113	75	30	8.0	6.2	3	9.2	E1157/16NO3
7/16	14	11.113	75	30	8.0	6.2	3	9.2	E1157/16NO8
1/2	12	12.700	80	30	9.0	7.0	3	10.5	E1151/2NO3
1/2	12	12.700	80	30	9.0	7.0	3	10.5	E1151/2NO8
9/16	12	14.288	80	30	11.0	9.0	4	12	E1159/16NO3
9/16	12	14.288	80	30	11.0	9.0	4	12	E1159/16NO8
5/8	11	15.875	90	36	12.0	9.0	4	13.5	E1155/8NO3
5/8	11	15.875	90	36	12.0	9.0	4	13.5	E1155/8NO8
3/4	10	19.050	105	40	14.0	11.0	4	16.5	E1153/4NO3
3/4	10	19.050	105	40	14.0	11.0	4	16.5	E1153/4NO8
7/8	9	22.225	110	45	18.0	14.5	4	19.25	E1157/8NO3
7/8	9	22.225	110	45	18.0	14.5	4	19.25	E1157/8NO8
1"	8	25.400	110	50	20.0	16.0	4	22	E1151NO3
1"	8	25.400	110	50	20.0	16.0	4	22	E1151NO8

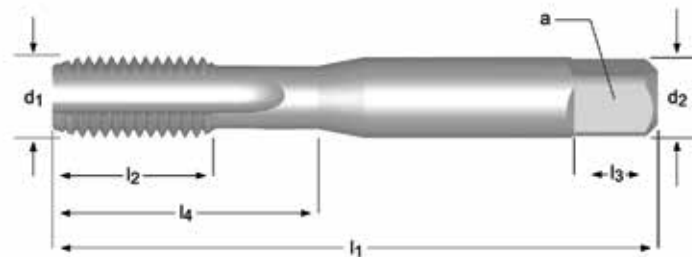
NO1 - NO9
219

E531

- BSW Gépi Menetfúró, egyenes hornyú
- BSW Tarozí de masina, Canale drepte
- BSW Düz Kanallı Makine Kılavuzu
- BSW Machine Tap Straight Flute

E531 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E531 BSW ISO 529 Medium 1.5XD HSS




E531



1/8 - 1"

BSW	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z		l ₄ mm	E531
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5311/8NO1
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5311/8NO2
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5311/8NO3
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5311/8NO6
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5315/32NO1
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5315/32NO2
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5315/32NO3
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5315/32NO6
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5313/16NO1
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5313/16NO2
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5313/16NO3
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5313/16NO6
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5311/4NO1
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5311/4NO2
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5311/4NO3
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5311/4NO6
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5315/16NO1
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5315/16NO2
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5315/16NO3
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5315/16NO6
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5313/8NO1
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5313/8NO2
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5313/8NO3
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5313/8NO6
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5317/16NO1
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5317/16NO2
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5317/16NO3
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5317/16NO6
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5311/2NO1
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5311/2NO2
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5311/2NO3
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5311/2NO6
5/8	11	15.875	102	24	12.50	10.00	4	13.5	-	E5315/8NO1
5/8	11	15.875	102	24	12.50	10.00	4	13.5	-	E5315/8NO2
5/8	11	15.875	102	24	12.50	10.00	4	13.5	-	E5315/8NO3
5/8	11	15.875	102	24	12.50	10.00	4	13.5	-	E5315/8NO6
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5313/4NO1
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5313/4NO2
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5313/4NO3
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5313/4NO6

NO1-NO9
219

BSW	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	z		l ₄ mm	E531
1"	8	25.400	130	35	18.00	14.00	4	22	-	E5311NO1
1"	8	25.400	130	35	18.00	14.00	4	22	-	E5311NO2
1"	8	25.400	130	35	18.00	14.00	4	22	-	E5311NO3
1"	8	25.400	130	35	18.00	14.00	4	22	-	E5311NO6



E534

- BSW Gépi Menetfúró, terelőéles
- BSW Tarozi de masina cu vârî în spirala
- BSW Helisel Uçlu Makine Kılavuzu
- BSW Machine Tap Spiral Point

E534	▪	1.1	1.2	1.3	1.4	2.1	2.2	2.3						
	•	1.5	1.6	4.3	5.1	5.2	6.1	6.3	7.1	7.2	7.3	7.4	8.1	

E534	BSW	ISO 529	Medium		2.5XD	HSS	B 3.5-5			ST	
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E534



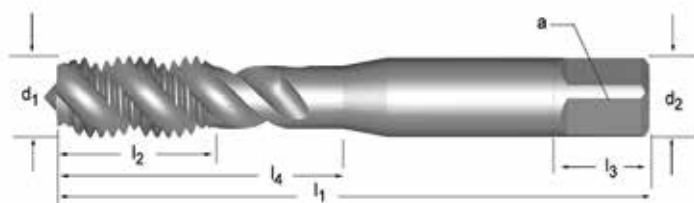
1/8 - 3/4

BSW	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	a mm	z		l ₄ mm	E534
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5341/8
5/32	32	3.969	53	14	4.00	3.15	3	3.2	14	E5345/32
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5343/16
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5341/4
5/16	18	7.938	72	16	8.00	6.30	3	6.5	29	E5345/16
3/8	16	9.525	80	18	10.00	8.00	3	7.9	32	E5343/8
7/16	14	11.112	85	19	8.00	6.30	3	9.2	-	E5347/16
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5341/2
5/8	11	15.875	102	24	12.50	10.00	3	13.5	-	E5345/8
3/4	10	19.050	112	29	14.00	11.20	4	16.5	-	E5343/4

- # E533
- BSW Gépi Menetfúró, csavart hornyú 40°
 - BSW Tarozi de masina cu dinti în spirala (unghi 40°)
 - BSW 40° Helisel Kanallı Makine Kılavuzu
 - BSW Machine Tap Spiral Flute 40°

E533	▪	1.2	1.3	1.4	2.1	2.2	2.3
	•	1.5	5.2	7.1	7.2	7.3	7.4

E533 **BSW** **ISO 529** Medium **HSS** **C 2-3** $\lambda 40^\circ$



BSW	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z		l ₄ mm	E533
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5331/8 ³⁾
1/8	40	3.175	48	12.5	3.15	2.50	3	2.55	12.5	E5331/8BLUE
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5333/16 ³⁾
3/16	24	4.763	58	11	5.00	4.00	3	3.7	20	E5333/16BLUE
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5331/4 ³⁾
1/4	20	6.350	66	13	6.30	5.00	3	5.1	26	E5331/4BLUE
5/16	18	7.938	72	16	8.00	6.30	3	6.5	31	E5335/16 ³⁾
5/16	18	7.938	72	16	8.00	6.30	3	6.5	31	E5335/16BLUE
3/8	16	9.525	80	18	10.00	8.00	3	7.9	34	E5333/8 ³⁾
3/8	16	9.525	80	18	10.00	8.00	3	7.9	34	E5333/8BLUE
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5331/2 ³⁾
1/2	12	12.700	89	22	9.00	7.10	3	10.5	-	E5331/2BLUE
5/8	11	15.875	102	24	12.50	10.00	3	13.5	-	E5335/8 ³⁾
5/8	11	15.875	102	24	12.50	10.00	3	13.5	-	E5335/8BLUE
3/4	10	19.050	112	29	14.00	11.20	3	16.5	-	E5333/4 ³⁾
3/4	10	19.050	112	29	14.00	11.20	3	16.5	-	E5333/4BLUE

³⁾ Fényes / Lucios / Parlak Yüzey / Bright Finish

E536

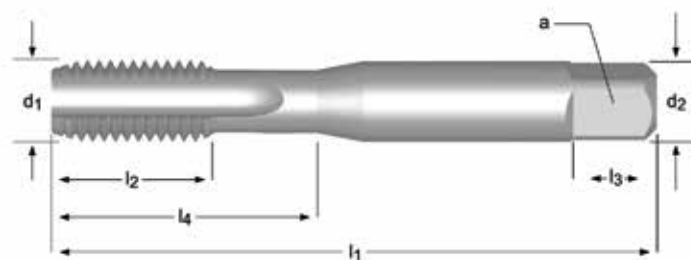
- BSF Gépi Menetfúró, egyenes hornyú
- BSF Tarozi de masina, Canale drepte
- BSF Düz Kanallı Makine Kılavuzu
- BSF Machine Tap Straight Flute


E536 ■ **6.1**

• **1.1 1.2 1.3 1.4 1.5 1.6 2.1 2.2 2.3 3.1 3.2 3.3 3.4 6.2 6.3 6.4 7.2 7.3 7.4 8.2**

8.3

E536 **BSF** **ISO 529** **Medium**  **1.5XD** **HSS**    



BSF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z		l ₄ mm	E536
3/16	32	4.76	58	12	5.0	4.0	3	4	20	E5363/16NO1
3/16	32	4.76	58	12	5.0	4.0	3	4	20	E5363/16NO2
3/16	32	4.76	58	12	5.0	4.0	3	4	20	E5363/16NO3
3/16	32	4.76	58	12	5.0	4.0	3	4	20	E5363/16NO6
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5361/4NO1
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5361/4NO2
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5361/4NO3
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5361/4NO6
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5365/16NO1
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5365/16NO2
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5365/16NO3
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5365/16NO6
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5363/8NO1
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5363/8NO2
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5363/8NO3
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5363/8NO6
7/16	18	11.11	85	20	8.0	6.3	3	9.7	-	E5367/16NO1
7/16	18	11.11	85	20	8.0	6.3	3	9.7	-	E5367/16NO2
7/16	18	11.11	85	20	8.0	6.3	3	9.7	-	E5367/16NO3
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5361/2NO1
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5361/2NO2
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5361/2NO3
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5361/2NO6
9/16	16	14.28	95	25	11.2	9.0	4	12.7	-	E5369/16NO1
9/16	16	14.28	95	25	11.2	9.0	4	12.7	-	E5369/16NO2
9/16	16	14.28	95	25	11.2	9.0	4	12.7	-	E5369/16NO3
5/8	14	15.88	102	25	12.5	10.0	4	14	-	E5365/8NO1
5/8	14	15.88	102	25	12.5	10.0	4	14	-	E5365/8NO2
5/8	14	15.88	102	25	12.5	10.0	4	14	-	E5365/8NO3
3/4	12	19.05	112	30	14.0	11.2	4	17	-	E5363/4NO1
3/4	12	19.05	112	30	14.0	11.2	4	17	-	E5363/4NO2
3/4	12	19.05	112	30	14.0	11.2	4	17	-	E5363/4NO3
7/8	11	22.23	118	30	16.0	12.5	4	19.75	-	E5367/8NO1
7/8	11	22.23	118	30	16.0	12.5	4	19.75	-	E5367/8NO2
7/8	11	22.23	118	30	16.0	12.5	4	19.75	-	E5367/8NO3
7/8	11	22.23	118	30	16.0	12.5	4	19.75	-	E5367/8NO6
1"	10	25.40	130	36	18.0	14.0	4	22.75	-	E5361NO1
1"	10	25.40	130	36	18.0	14.0	4	22.75	-	E5361NO2
1"	10	25.40	130	36	18.0	14.0	4	22.75	-	E5361NO3



- E539**
- BSF Gépi Menetfúró, terelőéles
 - BSF Tarozi de masina cu vârî în spirala
 - BSF Helisel Uçlu Makine Kılavuzu
 - BSF Machine Tap Spiral Point

E539	▪	1.1	1.2	1.3	1.4	2.1	2.2	2.3					
	•	1.5	1.6	4.3	5.1	5.2	6.1	6.3	7.1	7.2	7.3	7.4	8.1

E539 **BSF** **ISO 529** Medium 2.5XD **HSS** **B 3.5-5**



BSF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	z		l ₄ mm	E539
1/4	26	6.35	66	14	6.3	5.0	3	5.3	26	E5391/4
5/16	22	7.94	72	18	8.0	6.3	3	6.8	29	E5395/16
3/8	20	9.53	80	20	10.0	8.0	3	8.3	32	E5393/8
1/2	16	12.70	89	23	9.0	7.1	3	11	-	E5391/2

E538

- BSF Gépi Menetfúró, csavart hornyú 40°
- BSF Tarozi de masina cu dinti în spirala (unghi 40°)
- BSF 40° Helisel Kanallı Makine Kılavuzu
- BSF Machine Tap Spiral Flute 40°

E538	▪	1.2	1.3	1.4	2.1	2.2	2.3
	•	1.5	5.2	7.1	7.2	7.3	7.4


E538 **BSF** **ISO 529** Medium  **2XD** **HSS** **C 2-3**  **λ 40°**  **ST**



E538



1/4 - 1/2

BSF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	z		l ₄ mm	E538
1/4	26	6.350	66	13	6.3	5.00	3	5.3	26	E5381/4 ³⁾
1/4	26	6.350	66	13	6.3	5.00	3	5.3	26	E5381/4BLUE
5/16	22	7.938	72	16	8.0	6.30	3	6.8	31	E5385/16 ³⁾
5/16	22	7.938	72	16	8.0	6.30	3	6.8	31	E5385/16BLUE
3/8	20	9.525	80	18	10.0	8.00	3	8.3	34	E5383/8 ³⁾
3/8	20	9.525	80	18	10.0	8.00	3	8.3	34	E5383/8BLUE
1/2	16	12.700	89	22	9.0	7.10	3	11	-	E5381/2 ³⁾
1/2	16	12.700	89	22	9.0	7.10	3	11	-	E5381/2BLUE

E542

- BA Gépi Menetfúró, egyenes hornyú
- BA Tarozi de masina, Canale drepte
- BA Düz Kanallı Makine Kılavuzu
- BA Machine Tap Straight Flute

E542 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E542

BA

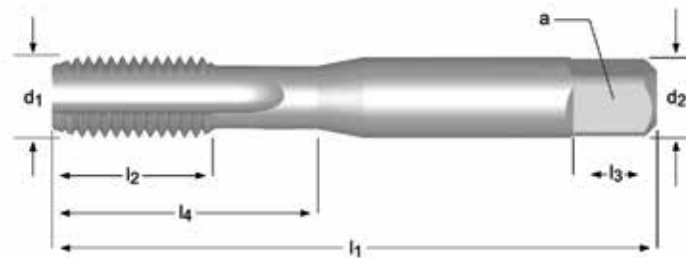
ISO
529

Normal



1.5XD

HSS



E542



No.10 - No.0

BA	P mm	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E542
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E542BA10NO1
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E542BA10NO2
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E542BA10NO3
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E542BA10NO6
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E542BA8NO1
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E542BA8NO2
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E542BA8NO3
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E542BA8NO6
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E542BA6NO1
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E542BA6NO2
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E542BA6NO3
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E542BA6NO6
BA 5	0.59	3.20	48	14.5	3.15	2.5	5	3	2.65	14.5	E542BA5NO1
BA 5	0.59	3.20	48	14.5	3.15	2.5	5	3	2.65	14.5	E542BA5NO2
BA 5	0.59	3.20	48	14.5	3.15	2.5	5	3	2.65	14.5	E542BA5NO3
BA 5	0.59	3.20	48	14.5	3.15	2.5	5	3	2.65	14.5	E542BA5NO6
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E542BA4NO1
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E542BA4NO2
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E542BA4NO3
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E542BA4NO6
BA 3	0.73	4.10	53	10.0	4.50	3.5	6	3	3.4	17	E542BA3NO1
BA 3	0.73	4.10	53	10.0	4.50	3.5	6	3	3.4	17	E542BA3NO2
BA 3	0.73	4.10	53	10.0	4.50	3.5	6	3	3.4	17	E542BA3NO3
BA 3	0.73	4.10	53	10.0	4.50	3.5	6	3	3.4	17	E542BA3NO6
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E542BA2NO1
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E542BA2NO2
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E542BA2NO3
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E542BA2NO6
BA 0	1.00	6.00	66	14.0	6.30	5.0	8	3	5.1	26	E542BA0NO1
BA 0	1.00	6.00	66	14.0	6.30	5.0	8	3	5.1	26	E542BA0NO2
BA 0	1.00	6.00	66	14.0	6.30	5.0	8	3	5.1	26	E542BA0NO3
BA 0	1.00	6.00	66	14.0	6.30	5.0	8	3	5.1	26	E542BA0NO6






NO1 - NO9

219

E545

- BA Gépi Menetfúró, terelőéles
- BA Tarozi de masina cu vâr în spirala
- BA Helisel Uçlu Makine Kilavuzu
- BA Machine Tap Spiral Point

E545	▪	1.1	1.2	1.3	1.4											
	•	1.5	1.6	2.1	2.2	2.3	4.3	5.1	5.2	6.1	6.3	7.1	7.2	7.3	7.4	8.1


E545 **BA** **ISO 529** Normal  **2.5XD** **HSS** **B** 3.5-5    



E545



No.10 - No.2

BA	P mm	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z		l ₄ mm	E545
BA10	0.35	1.70	41	7.0	2.50	2.0	4	2	1.3	7	E545BA10
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	3	1.8	9.5	E545BA8
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	3	2.3	9.5	E545BA6
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E545BA4
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E545BA2

E544

- BA Gépi Menetfúró, csavart hornyú 40°
- BA Tarozi de masina cu dinti în spirala (unghi 40°)
- BA 40° Helisel Kanallı Makine Kılavuzu
- BA Machine Tap Spiral Flute 40°

E544	▪	1.2	1.3	1.4	2.1	2.2	2.3
	•	1.5	5.2	7.1	7.2	7.3	7.4

E544

BA

ISO
529

Normal



2XD

HSS

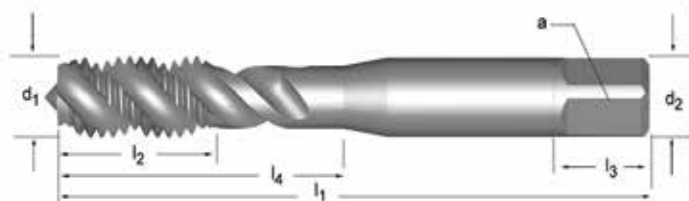
C
2-3



E544



No.8 - No.2



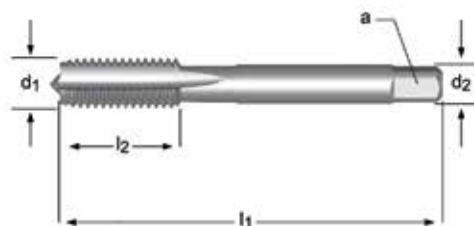
BA	P mm	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		l ₄ mm	E544
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	2	1.8	9.5	E544BA8 ³⁾
BA 8	0.43	2.20	44.5	9.5	2.80	2.2	5	2	1.8	9.5	E544BA8BLUE
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	2	2.3	9.5	E544BA6 ³⁾
BA 6	0.53	2.80	44.5	9.5	2.80	2.2	5	2	2.3	9.5	E544BA6BLUE
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E544BA4 ³⁾
BA 4	0.66	3.60	50	16.5	3.55	2.8	5	3	3	16.5	E544BA4BLUE
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E544BA2 ³⁾
BA 2	0.81	4.70	58	12.0	5.00	4.0	7	3	4	20	E544BA2BLUE

³⁾ Fényes / Lucios / Parlak Yüzey / Bright Finish

- E119**
- G(BSP) Kézi Menetfúró, egyenes hornyú
 - G(BSP) Tarozí de mâna, Canale drepte
 - G(BSP) Düz Kanallı El Kılavuzu
 - G(BSP) Hand Tap Straight Flute

E119 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3

E119 G DIN 5157 Normal 1.5XD HSS C 2-3



G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∇ a mm	z	↔	E119
1/8	28	9.73	63	15	7.0	5.5	3	8.8	E1191/8NO3
1/8	28	9.73	63	15	7.0	5.5	3	8.8	E1191/8NO9
1/4	19	13.16	70	16	11.0	9.0	4	11.8	E1191/4NO3
1/4	19	13.16	70	16	11.0	9.0	4	11.8	E1191/4NO9
3/8	19	16.66	70	16	12.0	9.0	4	15.25	E1193/8NO3
3/8	19	16.66	70	16	12.0	9.0	4	15.25	E1193/8NO9
1/2	14	20.96	80	18	16.0	12.0	4	19	E1191/2NO3
1/2	14	20.96	80	18	16.0	12.0	4	19	E1191/2NO9
5/8	14	22.91	80	22	18.0	14.5	4	21	E1195/8NO3
5/8	14	22.91	80	22	18.0	14.5	4	21	E1195/8NO9
3/4	14	26.44	90	22	20.0	16.0	4	24.5	E1193/4NO3
3/4	14	26.44	90	22	20.0	16.0	4	24.5	E1193/4NO9
7/8	14	30.20	90	22	22.0	18.0	6	28.25	E1197/8NO3
7/8	14	30.20	90	22	22.0	18.0	6	28.25	E1197/8NO9
1"	11	33.25	100	25	25.0	20.0	6	30.75	E1191NO3
1"	11	33.25	100	25	25.0	20.0	6	30.75	E1191NO9
1.1/8	11	37.90	125	40	28.0	22.0	6	35	E1191.1/8NO3
1.1/8	11	37.90	125	40	28.0	22.0	6	35	E1191.1/8NO9
1.1/4	11	41.91	125	40	32.0	24.0	6	39.5	E1191.1/4NO3
1.1/4	11	41.91	125	40	32.0	24.0	6	39.5	E1191.1/4NO9
1.1/2	11	47.80	140	40	36.0	29.0	6	45	E1191.1/2NO3
1.1/2	11	47.80	140	40	36.0	29.0	6	45	E1191.1/2NO9
1.3/4	11	53.75	140	40	40.0	32.0	6	51	E1191.3/4NO3
1.3/4	11	53.75	140	40	40.0	32.0	6	51	E1191.3/4NO9
2"	11	59.61	160	40	45.0	35.0	6	57	E1192NO3
2"	11	59.61	160	40	45.0	35.0	6	57	E1192NO9
2.1/4	11	65.71	160	40	50.0	39.0	6	63	E1192.1/4NO3
2.1/4	11	65.71	160	40	50.0	39.0	6	63	E1192.1/4NO9
2.1/2	11	75.18	160	40	50.0	39.0	6	72.5	E1192.1/2NO3
2.1/2	11	75.18	160	40	50.0	39.0	6	72.5	E1192.1/2NO9
2.3/4	11	81.53	160	40	50.0	39.0	8	79	E1192.3/4NO3
2.3/4	11	81.53	160	40	50.0	39.0	8	79	E1192.3/4NO9
3"	11	87.88	160	40	50.0	39.0	8	85.5	E1193NO3
3"	11	87.88	160	40	50.0	39.0	8	85.5	E1193NO9

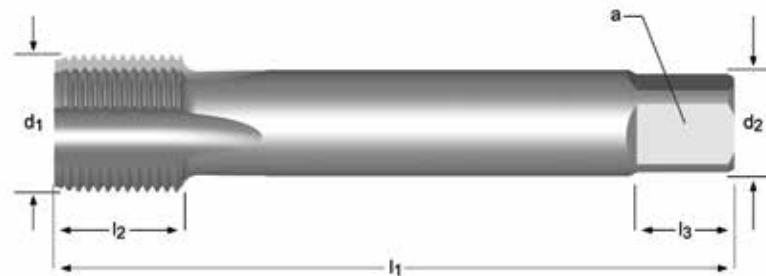
E282

- G(BSP) Gépi Menetfúró, egyenes hornyú
- G(BSP) Tarozi de masina, Canale drepte
- G(BSP) Düz Kanallı Makine Kılavuzu
- G(BSP) Machine Tap Straight Flute

HSS-E anyagminőségből, míg a készlet tart
 Furnizat din material HSS-E, până un nou stoc este disponibil
 Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 Supplied in HSS-E until new stock available

E282 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2

E282 **G** **DIN 5156** Normal **1.5XD** **HSS-E PM** **C 2-3**

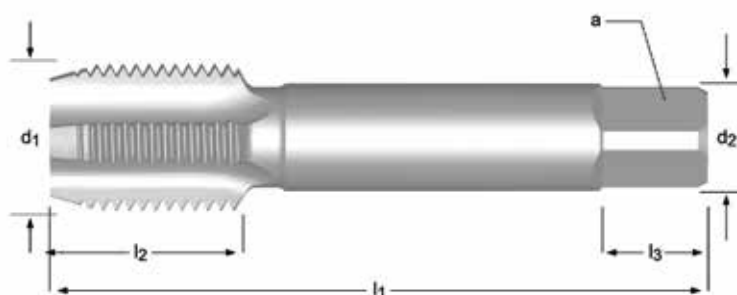


G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∇ a mm	l ₃ mm	z		E282
1/8	28	9.73	90	20	7.0	5.5	8	3	8.8	E2821/8
1/4	19	13.16	100	21	11.0	9.0	12	4	11.8	E2821/4
3/8	19	16.66	100	21	12.0	9.0	12	4	15.25	E2823/8
1/2	14	20.96	125	24	16.0	12.0	15	4	19.0	E2821/2
3/4	14	26.44	140	28	20.0	16.0	19	4	24.5	E2823/4
1"	11	33.25	160	30	25.0	20.0	23	4	30.75	E2821
1.1/4	11	41.91	170	30	32.0	24.0	27	4	39.5	E2821.1/4 ¹⁾
1.1/2	11	47.80	190	32	36.0	29.0	32	6	45.0	E2821.1/2 ¹⁾

E547

- G(BSP) Gépi Menetfúró, egyenes hornyú
- G(BSP) Tarozi de masina, Canale drepte
- G(BSP) Düz Kanallı Makine Kılavuzu
- G(BSP) Machine Tap Straight Flute


E547 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3



E547



1/8 - 2"

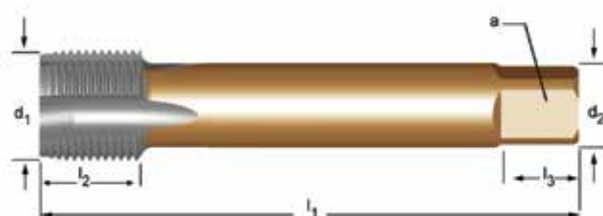
G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		E547
1/8	28	9.728	59	15	8.0	8.0	9	4	8.8	E5471/8NO1
1/8	28	9.728	59	15	8.0	6.3	9	4	8.8	E5471/8NO2
1/8	28	9.728	59	15	8.0	6.3	9	4	8.8	E5471/8NO3
1/8	28	9.728	59	15	8.0	6.3	9	4	8.8	E5471/8NO7
1/4	19	13.157	67	19	10.0	8.0	11	4	11.8	E5471/4NO1
1/4	19	13.157	67	19	10.0	8.0	11	4	11.8	E5471/4NO2
1/4	19	13.157	67	19	10.0	8.0	11	4	11.8	E5471/4NO3
1/4	19	13.157	67	19	10.0	8.0	11	4	11.8	E5471/4NO7
3/8	19	16.662	75	21	12.5	10.0	13	4	15.25	E5473/8NO1
3/8	19	16.662	75	21	12.5	10.0	13	4	15.25	E5473/8NO2
3/8	19	16.662	75	21	12.5	10.0	13	4	15.25	E5473/8NO3
3/8	19	16.662	75	21	12.5	10.0	13	4	15.25	E5473/8NO7
1/2	14	20.955	87	26	16.0	12.5	16	4	19	E5471/2NO1
1/2	14	20.955	87	26	16.0	12.5	16	4	19	E5471/2NO2
1/2	14	20.955	87	26	16.0	12.5	16	4	19	E5471/2NO3
1/2	14	20.955	87	26	16.0	12.5	16	4	19	E5471/2NO7
5/8	14	22.911	91	26	18.0	14.0	18	4	21	E5475/8NO1
5/8	14	22.911	91	26	18.0	14.0	18	4	21	E5475/8NO2
5/8	14	22.911	91	26	18.0	14.0	18	4	21	E5475/8NO3
5/8	14	22.911	91	26	18.0	14.0	18	4	21	E5475/8NO7
3/4	14	26.441	96	28	20.0	16.0	20	4	24.5	E5473/4NO1
3/4	14	26.441	96	28	20.0	16.0	20	4	24.5	E5473/4NO2
3/4	14	26.441	96	28	20.0	16.0	20	4	24.5	E5473/4NO3
3/4	14	26.441	96	28	20.0	16.0	20	4	24.5	E5473/4NO7
7/8	14	30.201	102	29	22.4	18.0	22	4	28.25	E5477/8NO1
7/8	14	30.201	102	29	22.4	18.0	22	4	28.25	E5477/8NO2
7/8	14	30.201	102	29	22.4	18.0	22	4	28.25	E5477/8NO3
1"	11	33.249	109	33	25.0	20.0	24	4	30.75	E5471NO1
1"	11	33.249	109	33	25.0	20.0	24	4	30.75	E5471NO2
1"	11	33.249	109	33	25.0	20.0	24	4	30.75	E5471NO3
1.1/4	11	41.910	119	36	31.5	25.0	28	6	39.5	E5471.1/4NO1
1.1/4	11	41.910	119	36	31.5	25.0	28	6	39.5	E5471.1/4NO2
1.1/4	11	41.910	119	36	31.5	25.0	28	6	39.5	E5471.1/4NO3
1.1/2	11	47.803	125	37	35.5	28.0	31	6	45	E5471.1/2NO1
1.1/2	11	47.803	125	37	35.5	28.0	31	6	45	E5471.1/2NO2
1.1/2	11	47.803	125	37	35.5	28.0	31	6	45	E5471.1/2NO3
2"	11	59.614	140	41	40.0	31.5	34	6	57	E5472NO1
2"	11	59.614	140	41	40.0	31.5	34	6	57	E5472NO2
2"	11	59.614	140	41	40.0	31.5	34	6	57	E5472NO3

EP40 EP41

- G(BSP) Gépi Menetfúró, terelőéles HSS-E anyagminőségből, míg a készlet tart
- G(BSP) Tarozí de masina cu vârf în spirală Furnizat din material HSS-E, până un nou stoc este disponibil
- G(BSP) Helisel Uçlu Makine Kılavuzu Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
- G(BSP) Machine Tap Spiral Point Supplied in HSS-E until new stock available

EP40	▪	1.1	1.2	1.3	1.4	1.5	6.1	6.3	7.1	7.2	7.3	7.4	
	•	1.6	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.2	8.1	
EP41	▪	1.1	1.2	1.3	1.4	1.5							
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4				

EP40	G	DIN 5156	Normal		2.5XD	HSS-E PM	B 3.5-5				
EP41	G	DIN 5156	Normal		2.5XD	HSS-E PM	B 3.5-5				



G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		EP40	EP41
1/8	28	9.728	90	18	7.0	5.5	8	3	8.8	EP401/8	EP411/8
1/4	19	13.157	100	21	11.0	9.0	12	3	11.8	EP401/4	EP411/4
3/8	19	16.662	100	21	12.0	9.0	12	4	15.25	EP403/8	EP413/8
1/2	14	20.955	125	24	16.0	12.0	15	4	19.0	EP401/2	EP411/2
5/8	14	22.911	125	24	18.0	14.5	17	4	21	EP405/8	EP415/8
3/4	14	26.441	140	28	20.0	16.0	19	4	24.5	EP403/4	EP413/4
7/8	14	30.201	150	28	22.0	18.0	21	4	28.25	EP407/8	EP417/8
1"	11	33.249	160	30	25.0	20.0	23	4	30.75	EP401	EP411

E041

- G(BSP) Gépi Menetfúró, terelőéles
- G(BSP) Tarozi de masina cu vârî în spirala
- G(BSP) Helisel Uçlu Makine Kılavuzu
- G(BSP) Machine Tap Spiral Point

HSS-E anyagminőségéből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

E041	▪	1.1	1.2	1.3	1.4	1.5				
	•	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	

E041



E041



1/8 - 3/4

G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z		E041
1/8	28	9.728	90	15	8.0	6.3	9	3	8.80	E0411/8
1/4	19	13.157	100	19	10.0	8.0	11	3	11.80	E0411/4
3/8	19	16.662	100	21	12.5	10.0	13	3	15.25	E0413/8
1/2	14	20.955	125	26	16.0	12.5	16	4	19.00	E0411/2
3/4	14	26.441	140	28	20.0	16.0	20	4	24.50	E0413/4

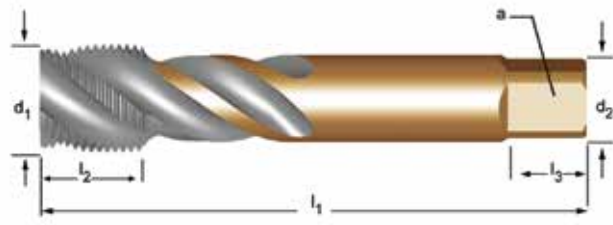
EX40 EX41

- G(BSP) Gépi Menetfúró, csavart hornyú 45°
- G(BSP) Tarozí de masina cu dinti în spirala (unghi 45°)
- G(BSP) 45° Helisel Kanallı Makine Kılavuzu
- G(BSP) Machine Tap Spiral Flute 45°

HSS-E anyagminőségből, míg a készlet tart
Furnizat din material HSS-E, până un nou stoc este disponibil
Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
Supplied in HSS-E until new stock available

EX40	▪	1.1	1.2	1.3	1.4	1.5	7.1	7.2	7.3	7.4
	•	4.1	4.2	5.1	5.2	8.1				
EX41	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2		
	•	2.3								

EX40	G	DIN 5156	Normal		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$			
EX41	G	DIN 5156	Normal		2.5XD	HSS-E PM	C 2-3	$\lambda 45^\circ$		ST	



G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		EX40	EX41
1/8	28	9.728	90	13	7.0	5.5	8	3	8.8	EX401/8	EX411/8
1/4	19	13.157	100	15	11.0	9.0	12	3	11.8	EX401/4	EX411/4
3/8	19	16.662	100	15	12.0	9.0	12	4	15.25	EX403/8	EX413/8
1/2	14	20.955	125	18	16.0	12.0	15	4	19.0	EX401/2	EX411/2
5/8	14	22.911	125	18	18.0	14.5	17	4	21	EX405/8	EX415/8
3/4	14	26.441	140	20	20.0	16.0	19	4	24.5	EX403/4	EX413/4
7/8	14	30.201	150	20	22.0	18.0	21	4	28.25	EX407/8	EX417/8
1"	11	33.249	160	22	25.0	20.0	23	4	30.75	EX401	EX411
1.1/8	11	37.897	170	22	28.0	22.0	25	4	35	EX401.1/8	EX411.1/8
1.1/4	11	41.910	170	22	32.0	24.0	27	4	39.5	EX401.1/4	¹⁾ EX411.1/4
1.1/2	11	47.803	190	23	36.0	29.0	32	4	45	EX401.1/2	¹⁾ EX411.1/2

E382

- G(BSP) 40° csavarthornjú gépi menetfúró, kék Shark
- G(BSP) Tarozi de Masina Canale in Spirala 40°, Shark ALBASTRU
- G(BSP) 40° Helisel Kanallı Makine Kılavuzu, mavi Shark
- G(BSP) Machine Tap Spiral Flute 40°, Blue Shark

E382 ■ 2.1 2.2 2.3
 • 1.5

E382 G DIN 5156 Normal 2XD HSS-E PM C 2-3 λ40° ST



G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z	↔	E382
1/8	28	9.73	90	12	7.0	5.5	8	3	8.8	E3821/8
1/4	19	13.16	100	15	11.0	9.0	12	4	11.8	E3821/4
3/8	19	16.66	100	15	12.0	9.0	12	4	15.25	E3823/8
1/2	14	20.96	125	24	16.0	12.0	15	4	19.0	E3821/2
3/4	14	26.44	140	20	20.0	16.0	19	4	24.5	E3823/4
1"	11	33.25	160	24	25.0	20.0	23	4	30.75	E3821

E043

- G(BSP) Gépi Menetfúró, csavart hornyú 45°
- G(BSP) Tarozi de masina cu dinti în spirala (unghi 45°)
- G(BSP) 45° Helisel Kanallı Makine Kılavuzu
- G(BSP) Machine Tap Spiral Flute 45°

HSS-E anyagminőségéből, míg a készlet tart
 Furnizat din material HSS-E, până un nou stoc este disponibil
 Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
 Supplied in HSS-E until new stock available

E043	▪	1.1	1.2	1.3	1.4	1.5
		1.6	2.1	2.2	2.3	

E043 **G** **Normal** **HSS-E PM** **C 2-3**

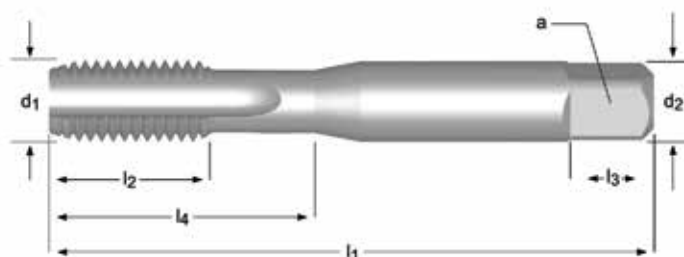
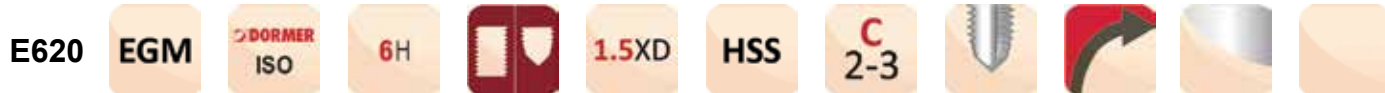


G(BSP)	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z		E043
1/8	28	9.728	90	15	8.0	6.3	9	3	8.80	E0431/8
1/4	19	13.157	100	19	10.0	8.0	11	3	11.80	E0431/4
3/8	19	16.662	100	21	12.5	10.0	13	4	15.25	E0433/8
1/2	14	20.955	125	26	16.0	12.5	16	4	19.00	E0431/2
3/4	14	26.441	140	28	20.0	16.0	20	4	24.50	E0433/4

E620

- EGM Gépi Menetfúró, egyenes hornyú
- EGM Tarozí de masina, Canale drepte
- EGM Düz Kanallı Makine Kılavuzu
- EGM Machine Tap Straight Flute

E620 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 3.4 6.1 6.2 6.3 6.4 7.2 7.3 7.4 8.2 8.3



E620



M3 - M16

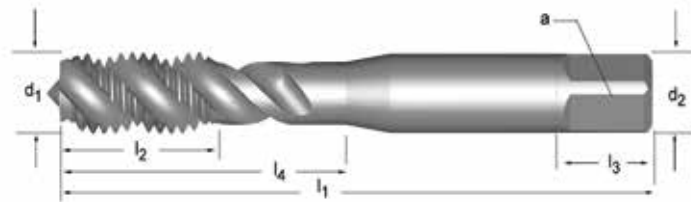
M	P mm	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	l ₄ mm	E620
3	0.50	3.65	53	14	4.0	3.15	6	3	3.2	14	E620M3
4	0.70	4.91	58	11	5.0	4.00	7	3	4.2	20	E620M4
5	0.80	6.04	66	13	6.3	5.00	8	3	5.2	26	E620M5
6	1.00	7.30	72	16	8.0	6.30	9	3	6.3	29	E620M6
8	1.25	9.62	80	18	10.0	8.00	11	3	8.4	32	E620M8
10	1.50	11.95	89	22	9.0	7.10	10	3	10.5	-	E620M10
12	1.75	14.27	95	24	11.2	9.00	12	4	12.5	-	E620M12
14	2.00	16.60	112	29	14.0	11.20	14	4	14.5	-	E620M14
16	2.00	18.60	112	29	14.0	11.20	14	4	16.5	-	E620M16

E621

- EGM Gépi Menetfúró, csavart hornyú 40°
- EGM Tarozi de masina cu dinti în spirala (unghi 40°)
- EGM 40° Helisel Kanallı Makine Kılavuzu
- EGM Machine Tap Spiral Flute 40°

E621 • 1.2 1.3 1.4 1.5 2.1 2.2 2.3 5.2 7.1 7.2 7.3 7.4

E621 EGM DORMER ISO 6H 2XD HSS C 2-3 λ40°



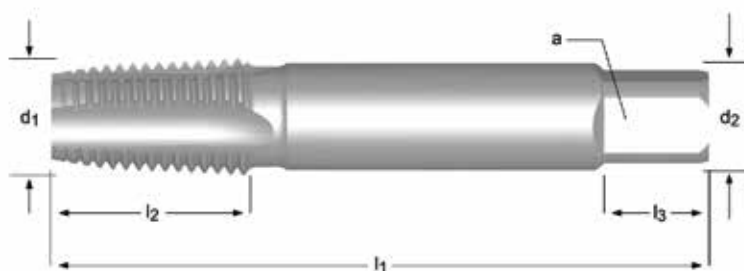
M	P mm	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z	↔	l ₄ mm	E621
3	0.50	3.65	53	14	4.00	3.15	6	3	3.2	14	E621M3
4	0.70	4.91	58	11	5.00	4.00	7	3	4.2	20	E621M4
5	0.80	6.04	66	13	6.30	5.00	8	3	5.2	26	E621M5
6	1.00	7.3	72	16	8.00	6.30	9	3	6.3	31	E621M6
8	1.25	9.62	80	18	10.00	8.00	11	3	8.4	34	E621M8
10	1.50	11.95	89	22	9.00	7.10	10	3	10.5	-	E621M10
12	1.75	14.27	95	24	11.20	9.00	12	3	12.5	-	E621M12
14	2.00	16.6	112	29	14.00	11.20	14	3	14.5	-	E621M14
16	2.00	18.6	112	29	14.00	11.20	14	3	16.5	-	E621M16

E550

- Rc Gépi Menetfúró, egyenes hornyú
- Rc Tarozi de masina, Canale drepte
- Rc Düz Kanallı Makine Kılavuzu
- Rc Machine Tap Straight Flute

E550	▪	3.1	3.2	3.3	3.4	6.1												
	•	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	6.2	6.3	6.4	7.2	7.3	7.4	8.2	8.3

E550	Rc	ISO 2284	Normal		1.5XD	HSS	C 2-3				
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Rc	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z		E550
1/8	28	9.728	59	15	8.0	6.3	9	3	8.4	E5501/8
1/8	28	9.728	59	15	8.0	6.3	9	3	8.4	E5501/8NO7
1/4	19	13.157	67	19	10.0	8.0	11	3	11.2	E5501/4
1/4	19	13.157	67	19	10.0	8.0	11	3	11.2	E5501/4NO7
3/8	19	16.662	75	21	12.5	10.0	13	3	14.75	E5503/8
3/8	19	16.662	75	21	12.5	10.0	13	3	14.75	E5503/8NO7
1/2	14	20.955	87	26	16.0	12.5	16	5	18.25	E5501/2
1/2	14	20.955	87	26	16.0	12.5	16	5	18.25	E5501/2NO7
3/4	14	26.441	96	28	20.0	16.0	20	5	23.75	E5503/4
3/4	14	26.441	96	28	20.0	16.0	20	5	23.75	E5503/4NO7
1"	11	33.249	109	33	25.0	20.0	24	5	30	E5501
1.1/4	11	41.910	119	36	31.5	25.0	28	5	38.5	E5501.1/4
1.1/2	11	47.803	125	37	35.5	28.0	31	7	44.5	E5501.1/2
2"	11	59.614	140	41	40.0	31.5	34	7	56	E5502

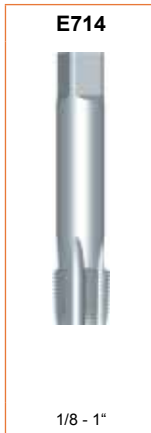
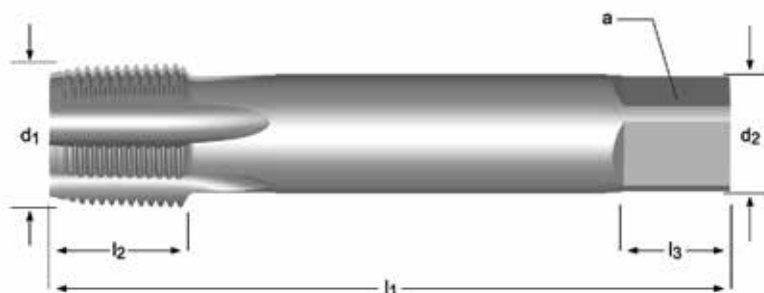
NO1 - NO9
219

E714

- NPT Gépi Menetfúró, egyenes hornyú HSS-E anyagminőségből, míg a készlet tart
- NPT Tarozí de masina, Canale drepte Furnizat din material HSS-E, până un nou stoc este disponibil
- NPT Düz Kanallı Makine Kilavuzu Yeni stoklar mevcut olana kadar HSS-E olarak teslim edilir.
- NPT Machine Tap Straight Flute Supplied in HSS-E until new stock available

E714 ■ 1.3 1.4
 • 1.1 1.2 1.5 3.1 3.2 3.3 3.4 6.2 7.3 7.4 8.1

E714 NPT DORMER ANSI Normal 1.5XD HSS-E PM C 2-3

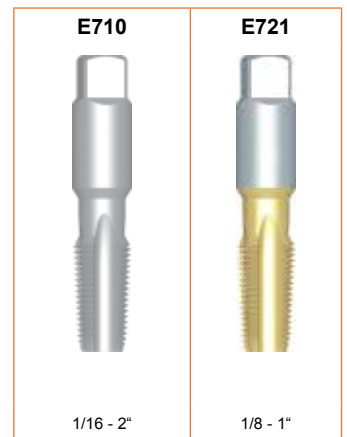
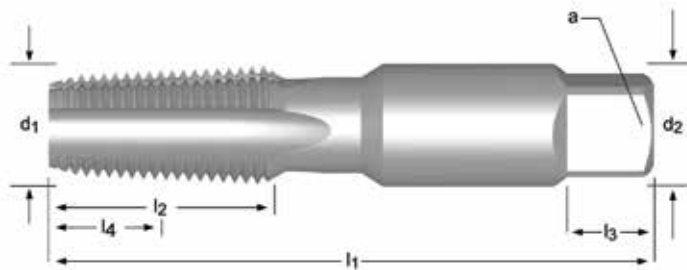


NPT	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	a mm	l ₃ mm	z	↔	E714
1/8	27	10.23	90	14	11.0	9.0	12	3	8.5	E7141/8
1/4	18	13.60	100	20	14.0	11.0	14	3	11	E7141/4
3/8	18	17.04	110	20	16.0	12.0	15	4	14.5	E7143/8
1/2	14	21.20	125	26	18.0	14.5	17	4	18	E7141/2
3/4	14	26.54	140	26	22.0	18.0	21	5	23	E7143/4
1"	11.5	33.20	150	31	28.0	22.0	25	5	29	E7141

- E710** • NPT Gépi Menetfúró, egyenes hornyú
 • NPT Tarozi de masina, Canale drepte
- E721** • NPT Düz Kanallı Makine Kılavuzu
 • NPT Machine Tap Straight Flute

E710	•	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	6.2	7.3	7.4	8.1
E721	▪	1.3	1.4	3.1	3.2	3.3	3.4							
	•	1.1	1.2	1.5	6.2	7.3	7.4	8.1						

E710	NPT	ANSI B94.9	Normal		1.5XD	HSS	C 2-3				
E721	NPT	ANSI B94.9	Normal		1.5XD	HSS	C 2-3			TIN	



NPT	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	l ₄ mm	d ₂ Ø mm	a mm	l ₃ mm	z		E710	E721
1/16	27	7.94	65	17	11.7	8.1	6.0	8	4	6.3	E7101/16NO3	
1/8	27	10.29	70	19	11.9	11.1	8.3	10	4	8.5	E7101/8	E7211/8
1/8	27	10.29	70	19	11.9	11.1	8.3	10	4	8.5	E7101/8NO7	
1/4	18	13.72	75	27	17.6	14.3	10.7	11	4	11.0	E7101/4	E7211/4
1/4	18	13.72	75	27	17.6	14.3	10.7	11	4	11.0	E7101/4NO7	
3/8	18	17.15	80	27	19.5	17.8	13.5	13	4	14.5	E7103/8	E7213/8
3/8	18	17.15	80	27	19.5	17.8	13.5	13	4	14.5	E7103/8NO7	
1/2	14	21.34	100	35	22.7	17.5	13.1	16	4	18.0	E7101/2	E7211/2
1/2	14	21.34	100	35	22.7	17.5	13.1	16	4	18.0	E7101/2NO7	
3/4	14	26.67	105	35	24.4	23.0	17.2	17	5	23.0	E7103/4	E7213/4
3/4	14	26.67	105	35	24.4	23.0	17.2	17	5	23.0	E7103/4NO7	
1"	11.5	33.40	115	43	29.4	28.6	21.4	21	5	29.0	E7101	E7211
1.1/4	11.5	42.16	125	43	27.7	33.3	25.0	24	5	38.0	E7101.1/4	
1.1/2	11.5	48.26	135	43	28.9	38.1	28.6	25	7	44.0	E7101.1/2	
2"	11.5	60.33	145	43	26.6	47.6	35.7	29	7	56.0	E7102	

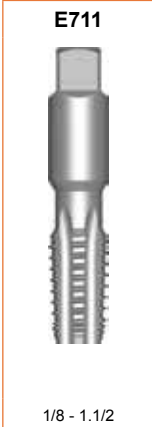
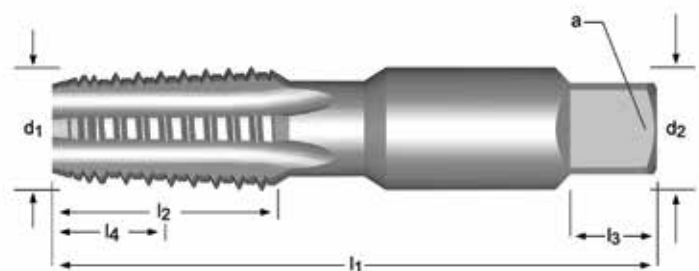
NO1 - NO9
219

E711

- NPT Fogkihagyásos Gépi Menetfúró
- NPT Tarozi de masina, dantura intrerupta, Canale drepte
- NPT Makine Kılavuzu, Adımlı Düz Helis
- NPT Machine Tap, Interrupted Threads Straight Flute

E711 ■ **1.3 1.4**
 • **1.1 1.2 1.5 3.1 3.2 3.3 3.4 6.2 7.3 7.4 8.1**

E711 **NPT** **ANSI B94.9** **Normal** **1.5XD** **HSS** **C 2-3**



NPT	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	l ₄ mm	d ₂ ∅ mm	□ a mm	l ₃ mm	z		E711
1/8	27	10.29	70	19	11.9	11.1	8.3	10	5	8.5	E7111/8
1/4	18	13.72	75	27	17.6	14.3	10.7	11	5	11.0	E7111/4
3/8	18	17.15	80	27	19.5	17.8	13.5	13	5	14.5	E7113/8
1/2	14	21.33	100	35	22.7	17.5	13.1	16	5	18.0	E7111/2
3/4	14	26.67	105	35	24.4	23.0	17.2	17	5	23.0	E7113/4
1"	11.5	33.40	115	43	29.4	28.6	21.4	21	5	29.0	E7111
1.1/2	11.5	48.26	135	43	28.9	38.1	28.6	25	7	44.0	E7111.1/2

E653

- NPT Kombinált Menetfűró, csavart hornyú 27°
- NPT Tarozi combinati cu dinti în spirala (unghi 27°)
- NPT 27° Helis Açılı Kombine Kılavuz
- NPT Combi Taps Spiral Flute 27°

E653 • 1.1 1.2 1.3 1.4 3.2 6.2 6.3 7.1 7.2 8.1

E653

NPT

ANSI

Normal

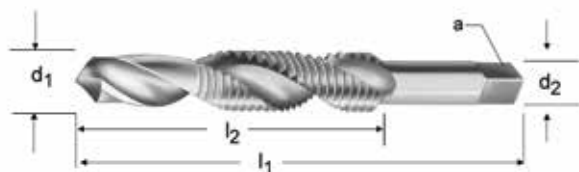


1.5XD

HSS



λ27°



E653



1/8 - 1"

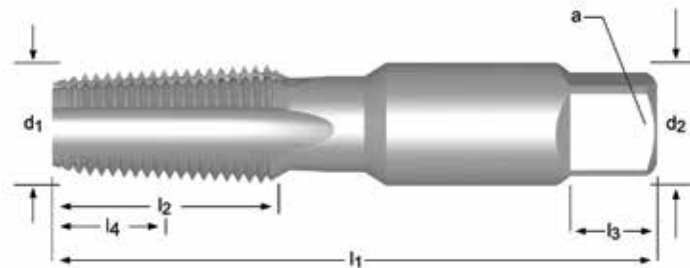
NPT	TPI	d ₁ nom Inch	l ₁ Inch	l ₂ Inch	d ₂ ∅ Inch	∠ a Inch	z	E653
1/8	27	0.3346	2.7/8	3/4	0.4370	0.3280	2	E6531/8
1/4	18	0.4331	3.5/16	1.1/16	0.5620	0.4210	2	E6531/4
3/8	18	0.5709	3.1/2	1.1/16	0.7000	0.5310	2	E6533/8
1/2	14	0.7087	4.3/8	1.3/8	0.6870	0.5150	2	E6531/2
3/4	14	0.9055	4.9/16	1.3/8	0.9060	0.6790	2	E6533/4
1"	11.5	1.1417	5.3/8	1.3/4	1.1250	0.8430	2	E6531

E712

- NPTF Gépi Menetfúró, csavarthorony
- NPTF Tarozi de masina, Canale drepte
- NPTF Düz Kanallı Makine Kilavuzu
- NPTF Machine Tap Straight Flute

E712 ■ 1.3 1.4
 • 1.1 1.2 1.5 3.1 3.2 3.3 3.4 6.2 7.3 7.4 8.1

E712 NPTF ANSI B94.9 Normal 1.5XD HSS C 2-3



NPTF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	l ₄ mm	d ₂ ∅ mm	∠ a mm	l ₃ mm	z		E712
1/16	27	7.94	65	17	11.7	8.1	6.0	8	4	6.20	E7121/16
1/8	27	10.29	70	19	11.9	11.1	8.3	10	4	8.40	E7121/8
1/4	18	13.72	75	27	17.6	14.3	10.7	11	4	10.90	E7121/4
3/8	18	17.15	80	27	19.5	17.8	13.5	13	4	14.25	E7123/8
1/2	14	21.34	100	35	22.7	17.5	13.1	16	4	17.75	E7121/2
3/4	14	26.67	105	35	24.4	23.0	17.2	17	5	23.00	E7123/4
1"	11.5	33.40	115	43	29.4	28.6	21.4	21	5	29.00	E7121
1.1/4	11.5	42.16	125	43	27.7	33.4	24.9	23	5	37.75	E7121.1/4








E709

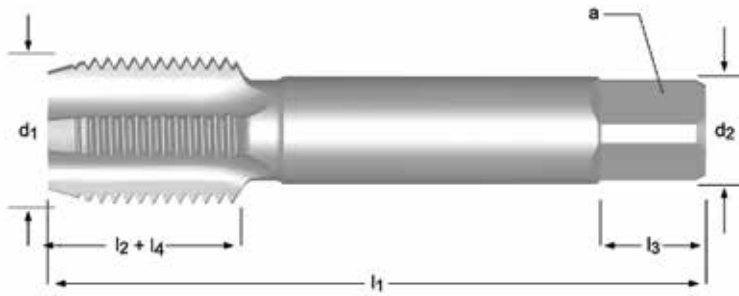
- NPSF Gépi Menetfúró, egyenes hornyú
- NPSF Tarozi de masina, Canale drepte


E720

- NPSF Düz Kanallı Makine Kılavuzu
- NPSF Machine Tap Straight Flute

E709	▪	1.3	1.4									
	•	1.1	1.2	1.5	3.1	3.2	3.3	3.4	6.2	7.3	7.4	8.1
E720	▪	1.3	1.4	3.1	3.2	3.3	3.4					
	•	1.1	1.2	1.5	6.2	7.3	7.4	8.1				

E709	NPSF	ANSI B94.9	Normal		1.5XD	HSS	C 2-3				
E720	NPSF	ANSI B94.9	Normal		1.5XD	HSS	C 2-3			 TIN	



NPSF	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	l ₄ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z		E709	E720
1/8	27	10.29	70	19	19	11.1	8.3	10	4	8.70	E7091/8	E7201/8NO3
1/4	18	13.72	75	27	27	14.3	10.7	11	4	11.30	E7091/4	E7201/4NO3
3/8	18	17.15	80	27	27	17.8	13.5	13	4	14.75	E7093/8	E7203/8NO3
1/2	14	21.34	100	35	-	17.5	13.1	16	4	18.25	E7091/2	E7201/2NO3
3/4	14	26.67	105	35	-	23.0	17.2	17	5	23.50	E7093/4	E7203/4NO3

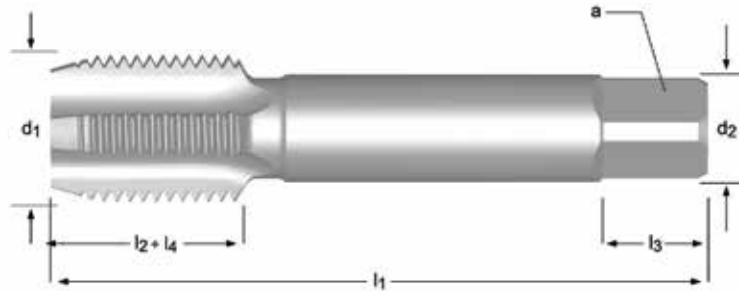
N01 - N09
219

E708

- NPSM Gépi Menetfúró, egyenes hornyú
- NPSM Tarozi de masina, Canale drepte
- NPSM Düz Kanallı Makine Kılavuzu
- NPSM Machine Tap Straight Flute

E708 ■ 1.3 1.4
 • 1.1 1.2 1.5 3.1 3.2 3.3 3.4 6.2 7.3 7.4 8.1

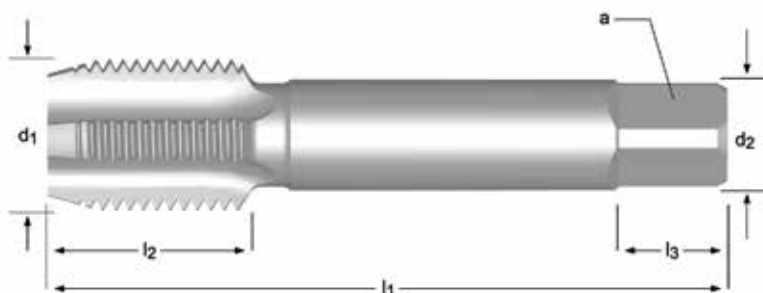
E708 NPSM ANSI B94.9 Normal 1.5XD HSS C 2-3



NPSM	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	l ₄ mm	d ₂ Ø mm	□ a mm	l ₃ mm	z	↔	E708
1/8	27	10.29	70	19	19	11.1	8.3	10	4	9.1	E7081/8
1/4	18	13.72	75	27	27	14.3	10.7	11	4	12.0	E7081/4
3/8	18	17.15	80	27	27	17.8	13.5	13	4	15.5	E7083/8
1/2	14	21.33	100	35	-	17.5	13.1	16	4	19.0	E7081/2
3/4	14	26.67	105	35	-	23.0	17.2	17	5	24.5	E7083/4
1"	11.5	33.40	115	43	-	28.6	21.4	21	5	30.5	E7081

- E243**
- PG Gépi Menetfúró, egyenes hornyú
 - PG Tarozi de masina, Canale drepte
 - PG Düz Kanallı Makine Kilavuzu
 - PG Machine Tap Straight Flute

E243 • 1.1 1.2 1.3 1.4 1.5 3.1 3.2 3.3 6.2 6.3 7.2 7.3 8.2



E243



No.7 - No.36

PG	TPI	d ₁ nom mm	l ₁ mm	l ₂ mm	d ₂ Ø mm	∠ a mm	l ₃ mm	z	↔	E243
7	20	12.5	70	22	9.0	7.0	10	4	11.4	E243PG7NO2
7	20	12.5	70	22	9.0	7.0	10	4	11.4	E243PG7NO3
9	18	15.2	70	22	12.0	9.0	12	4	13.9	E243PG9NO2
9	18	15.2	70	22	12.0	9.0	12	4	13.9	E243PG9NO3
11	18	18.6	80	22	14.0	11.0	14	4	17.25	E243PG11NO2
11	18	18.6	80	22	14.0	11.0	14	4	17.25	E243PG11NO3
13.5	18	20.4	80	22	16.0	12.0	15	4	19	E243PG13.5NO2
13.5	18	20.4	80	22	16.0	12.0	15	4	19	E243PG13.5NO3
16	18	22.5	80	22	18.0	14.5	17	4	21.25	E243PG16NO2
16	18	22.5	80	22	18.0	14.5	17	4	21.25	E243PG16NO3
21	16	28.3	90	22	22.0	18.0	21	4	27	E243PG21NO2
21	16	28.3	90	22	22.0	18.0	21	4	27	E243PG21NO3
29	16	37.0	100	25	28.0	22.0	25	6	35.5	E243PG29NO2
29	16	37.0	100	25	28.0	22.0	25	6	35.5	E243PG29NO3
36	16	47.0	140	32	36.0	29.0	32	6	45.5	E243PG36NO2
36	16	47.0	140	32	36.0	29.0	32	6	45.5	E243PG36NO3

NO1 - NO9

219

L119

- M Gépi Menetfúró készlet
- Set M Tarozi de Masina
- Metrki Kılavuz Seti
- Metric Coarse Taps Set

A=Típusok a készletben, B=Száma a készletben, M=Menetfúró Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, M=Diametre de tarozi în Set
 A= Set modeli, B= Set içerik adedi, M= Kılavuz Set çapları
 A=Styles in Set, B=No. in Set, M=Tap diameters in Set



Set	A	B	M	L119
Nr.17	E100	21	E100M3NO8, E100M4NO8, E100M5NO8, E100M6NO8, E100M8NO8, E100M10NO8, E100M12NO8	L11917

L126

- Kombinált Menetfúró készlet
- Set tarozi combinati
- Kombi Kılavuz Seti
- Combi Taps Set

A=Típusok a készletben, B=Száma a készletben, M=Menetfúró Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, M=Diametre de tarozi în Set
 A= Set modeli, B= Set içerik adedi, M= Kılavuz Set çapları
 A=Styles in Set, B=No. in Set, M=Tap diameters in Set



Set	A	B	M	L126
650	E650	6	E650M4, E650M5, E650M6, E650M8, E650M10, E650M12	L126650

L113

- ISO menetfúró-csigafúró készlet
- Set de burghie-tarozii conform standard ISO
- ISO Kılavuz-Matkap Seti
- ISO Tap-Drill Set

A=Típusok a készletben, B=Száma a készletben, M= Menetfúró Átmérők a készletben, D= Fúró átmérők a készletben

A=tipuri în set, B=Nr. în Set, M=Diametre de tarozii în Set, D= Diametre de burghiu în Set

A= Set modeli, B= Set içerik adedi, M= Kılavuz çapları, D=Matkap çaplar

A= Styles in Set, B= No. in Set, M= Tap diameters in Set, D= Drill diameters in Set



Set	A	B	M	D	L113
Nr.201	E000 + A002	14	E000M3, E000M4, E000M5, E000M6, E000M8, E000M10, E000M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L113201
Nr.202	E001 + A002	14	E001M3, E001M4, E001M5, E001M6, E001M8, E001M10, E001M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L113202
Nr.203	E002 + A002	14	E002M3, E002M4, E002M5, E002M6, E002M8, E002M10, E002M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L113203
Nr.204	E003 + A002	14	E003M3, E003M4, E003M5, E003M6, E003M8, E003M10, E003M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L113204

L114

- DIN menetfúró-csigafúró készlet
- Set de burghie-tarozii conform standard DIN
- DIN Kılavuz-Matkap Seti
- DIN Tap-Drill Set

A=Típusok a készletben, B=Száma a készletben, M= Menetfúró Átmérők a készletben, D= Fúró átmérők a készletben

A=tipuri în set, B=Nr. în Set, M=Diametre de tarozii în Set, D= Diametre de burghiu în Set

A= Set modeli, B= Set içerik adedi, M= Kılavuz çapları, D=Matkap çaplar





A= Styles in Set, B= No. in Set, M= Tap diameters in Set, D= Drill diameters in Set



L114



Set

Set	A	B	M	D	L114
Nr.301	EP006H + A002	14	EP00M3, EP00M4, EP00M5, EP00M6, EP00M8, EP00M10, EP00M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L114301
Nr.302	EX006H + A002	14	EX00M3, EX00M4, EX00M5, EX00M6, EX00M8, EX00M10, EX00M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L114302
Nr.303	E297 + A002 	14	E297M3, E297M4, E297M5, E297M6, E297M8, E297M10, E297M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L114303
Nr.304	E298 + A002 	14	E298M3, E298M4, E298M5, E298M6, E298M8, E298M10, E298M12	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L114304
Nr.305	E238 + A108 	14	E238M3, E238M4, E238M5, E238M6, E238M8, E238M10, E238M12	A1082.5, A1083.3, A1084.2, A1085.0, A1086.8, A1088.5, A10810.2	L114305
Nr.306	E240 + A108 	14	E240M3, E240M4, E240M5, E240M6, E240M8, E240M10, E240M12	A1082.5, A1083.3, A1084.2, A1085.0, A1086.8, A1088.5, A10810.2	L114306

L115

- Csigafúró-kézi menetfúró készletek
- Set de burghie-tarozii de mâna
- El kılavuzu-Matkap Seti
- Hand Tap-Drill Set

A=Típusok a készletben, B=Száma a készletben, M= Menetfúró Átmérők a készletben, D= Fúró átmérők a készletben

A=tipuri în set, B=Nr. în Set, M=Diametre de tarozii în Set, D= Diametre de burghiu în Set

A= Set modeli, B= Set içerik adedi, M= Kılavuz çapları, D=Matkap çaplar

A= Styles in Set, B= No. in Set, M= Tap diameters in Set, D= Drill diameters in Set



Set	A	B	M	D	L115
Nr.100	E500 + A022	21	E500M3NO2, E500M3NO3, E500M4NO2, E500M4NO3, E500M5NO2, E500M5NO3, E500M6NO2, E500M6NO3, E500M8NO2, E500M8NO3, E500M10NO2, E500M10NO3, E500M12NO2, E500M12NO3	A0222.5, A0223.3, A0224.2, A0225.0, A0226.8, A0228.5, A02210.2	L115100
Nr.101	E500 + A002	14	E500M3NO3, E500M4NO3, E500M5NO3, E500M6NO3, E500M8NO3, E500M10NO3, E500M12NO3	A0022.5, A0023.3, A0024.2, A0025.0, A0026.8, A0028.5, A00210.2	L115101

L000

- Kézi menetfúrókészlet (2 darabos)
- Set de burghie cu tarod pentru filetare manuală (2 bucăți)
- El kılavuzu-Matkap Seti (2 Adet)
- Hand Tap-Drill Set (2 Piece)

A=Típusok a készletben, B=Száma a készletben, M= Menetfúró Átmérők a készletben, D= Fúró átmérők a készletben

A=tipuri în set, B=Nr. în Set, M=Diametre de tarozi în Set, D= Diametre de burghiu în Set

A= Set modeli, B= Set içerik adedi, M= Kılavuz çapları, D=Matkap çaplar

A= Styles in Set, B= No. in Set, M= Tap diameters in Set, D= Drill diameters in Set



Nr.	A	B	M	D	L000
Nr.1	E500 + A002	2	E500M3NO2	A0022.5	L000E500M3NO2XA002
Nr.2	E500 + A002	2	E500M4NO2	A0023.3	L000E500M4NO2XA002
Nr.3	E500 + A002	2	E500M5NO2	A0024.2	L000E500M5NO2XA002
Nr.4	E500 + A002	2	E500M6NO2	A0025.0	L000E500M6NO2XA002
Nr.5	E500 + A002	2	E500M8NO2	A0026.8	L000E500M8NO2XA002
Nr.6	E500 + A002	2	E500M10NO2	A0028.5	L000E500M10NO2XA002
Nr.7	E500 + A002	2	E500M12NO2	A00210.2	L000E500M12NO2XA002
Nr.8	E500 + A002	2	E500M3NO3	A0022.5	L000E500M3NO3XA002
Nr.9	E500 + A002	2	E500M4NO3	A0023.3	L000E500M4NO3XA002
Nr.10	E500 + A002	2	E500M5NO3	A0024.2	L000E500M5NO3XA002
Nr.11	E500 + A002	2	E500M6NO3	A0025.0	L000E500M6NO3XA002
Nr.12	E500 + A002	2	E500M8NO3	A0026.8	L000E500M8NO3XA002
Nr.13	E500 + A002	2	E500M10NO3	A0028.5	L000E500M10NO3XA002
Nr.14	E500 + A002	2	E500M12NO3	A00210.2	L000E500M12NO3XA002

L001

- DIN menetfúrókészlet (2 darabos)
- Set de burghie cu tarod DIN (2 bucăți)
- DIN Kılavuz-Matkap Seti (2 Adet)
- DIN Tap-Drill Set (2 Piece)

A=Típusok a készletben, B=Száma a készletben, M= Menetfúró Átmérők a készletben, D= Fúró átmérők a készletben

A=tipuri în set, B=Nr. în Set, M=Diametre de tarozi în Set, D= Diametre de burghiu în Set

A= Set modeli, B= Set içerik adedi, M= Kılavuz çapları, D=Matkap çaplar

A= Styles in Set, B= No. in Set, M= Tap diameters in Set, D= Drill diameters in Set



Nr.	A	B	M	D	L001
Nr.1	EP006H + A002	2	EP00M3	A0022.5	L001EP00M3XA002
Nr.2	EP006H + A002	2	EP00M4	A0023.3	L001EP00M4XA002
Nr.3	EP006H + A002	2	EP00M5	A0024.2	L001EP00M5XA002
Nr.4	EP006H + A002	2	EP00M6	A0025.0	L001EP00M6XA002
Nr.5	EP006H + A002	2	EP00M8	A0026.8	L001EP00M8XA002
Nr.6	EP006H + A002	2	EP00M10	A0028.5	L001EP00M10XA002
Nr.7	EP006H + A002	2	EP00M12	A00210.2	L001EP00M12XA002
Nr.8	EX006H + A002	2	EX00M3	A0022.5	L001EX00M3XA002
Nr.9	EX006H + A002	2	EX00M4	A0023.3	L001EX00M4XA002
Nr.10	EX006H + A002	2	EX00M5	A0024.2	L001EX00M5XA002
Nr.11	EX006H + A002	2	EX00M6	A0025.0	L001EX00M6XA002
Nr.12	EX006H + A002	2	EX00M8	A0026.8	L001EX00M8XA002
Nr.13	EX006H + A002	2	EX00M10	A0028.5	L001EX00M10XA002
Nr.14	EX006H + A002	2	EX00M12	A00210.2	L001EX00M12XA002

L002

- ISO menetfúrókészlet (2 darabos)
- Set de burghie cu tarod ISO (2 bucăți)
- ISO Kılavuz-Matkap Seti (2 Adet)
- ISO Tap-Drill Set (2 Piece)

A=Típusok a készletben, B=Száma a készletben, M= Menetfúró Átmérők a készletben, D= Fúró átmérők a készletben

A=tipuri în set, B=Nr. în Set, M=Diametre de tarozi în Set, D= Diametre de burghiu în Set

A= Set modeli, B= Set içerik adedi, M= Kılavuz çapları, D=Matkap çaplar

A= Styles in Set, B= No. in Set, M= Tap diameters in Set, D= Drill diameters in Set



Nr.	A	B	M	D	L002
Nr.1	E000 + A002	2	E000M3	A0022.5	L002E000M3XA002
Nr.2	E000 + A002	2	E000M4	A0023.3	L002E000M4XA002
Nr.3	E000 + A002	2	E000M5	A0024.2	L002E000M5XA002
Nr.4	E000 + A002	2	E000M6	A0025.0	L002E000M6XA002
Nr.5	E000 + A002	2	E000M8	A0026.8	L002E000M8XA002
Nr.6	E000 + A002	2	E000M10	A0028.5	L002E000M10XA002
Nr.7	E000 + A002	2	E000M12	A00210.2	L002E000M12XA002
Nr.8	E002 + A002	2	E002M3	A0022.5	L002E002M3XA002
Nr.9	E002 + A002	2	E002M4	A0023.3	L002E002M4XA002
Nr.10	E002 + A002	2	E002M5	A0024.2	L002E002M5XA002
Nr.11	E002 + A002	2	E002M6	A0025.0	L002E002M6XA002
Nr.12	E002 + A002	2	E002M8	A0026.8	L002E002M8XA002
Nr.13	E002 + A002	2	E002M10	A0028.5	L002E002M10XA002
Nr.14	E002 + A002	2	E002M12	A00210.2	L002E002M12XA002

L120

- Menetkészítő készlet
- Trusa filetare
- Diş Çekme Ekipman Seti
- Threading Equipment Set

A=Típusok a készletben, B=Száma a készletben, M= Menetfúró Átmérők a készletben, F= Menetmetsző Átmérők a készletben, L112= Menetfúró hajtóvas, L110= Menetmetsző hajtókar a készletben

A=tipuri în set, B=Nr. în Set, M=Diametre de tarozi în Set, F= Diametre de filiere în Set, L112= Port-tarod reglabil în Set, L110= Portfiliera pentru filiere rotunde în Set

A=Set modeli, B= Set içerik seti, M=Kılavuz çapları, F= Pafta çapları, L112= Kılavuz anahtarları, L110: Pafta

A= Styles in Set, B= No. in Set, M= Tap diameters in Set, F= Die diameters in Set, L112= Tap wrenches in Set, L110= Die stocks in Set



Set	A	B	M	F	L112	L110	L120
21	E100 + F100 + L112 + L110	21	E100M3NO8, E100M4NO8, E100M5NO8, E100M6NO8, E100M8NO8, E100M10NO8, E100M12NO8	F100M3, F100M4, F100M5, F100M6, F100M8, F100M10, F100M12	L112NO1.1/2, L112NO3	L1102A, L1102B, L1103, L1104, L1105	L12021
30	E100 + F100 + L112 + L110	30	E100M3NO8, E100M4NO8, E100M5NO8, E100M6NO8, E100M8NO8, E100M10NO8, E100M12NO8, E100M14NO8, E100M16NO8, E100M18NO8, E100M20NO8	F100M3, F100M4, F100M5, F100M6, F100M8, F100M10, F100M12, F100M14, F100M16, F100M18, F100M20	L112NO1.1/2, L112NO4	L1102A, L1102B, L1103, L1104, L1105, L1106	L12030
HS-2M	E500 + F300 + L112 + L110	23	E500M2NO1, E500M2NO3, E500M2.5NO1, E500M2.5NO3, E500M3NO1, E500M3NO3, E500M3.5NO1, E500M3.5NO3, E500M4NO1, E500M4NO3, E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3	F300M2X13/16, F300M2.5X13/16, F300M3X13/16, F300M3.5X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16	L112BT1	L11013/16	L1202M
HS-4M	E500 + F300 + L112 + L110	32	E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3, E500M7NO1, E500M7NO3, E500M8NO1, E500M8NO3, E500M9NO1, E500M9NO3, E500M10NO1, E500M10NO3, E500M11NO1, E500M11NO3, E500M12NO1, E500M12NO3	F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1.5/16, F300M9X1.5/16, F300M10X1.5/16, F300M11X1.5/16, F300M12X1.5/16, F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1.5/16, F300M9X1.5/16	L112BT2	L11013/16, L1101.5/16	L1204M

Set	A	B	M	F	L112	L110	L120
HS-8M	E500 + F300 + L112 + L110	17	E500M2NO1, E500M2NO3, E500M3NO1, E500M3NO3, E500M4NO1, E500M4NO3, E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3	F300M2X13/16, F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16	L112BT1	L11013/16	L1208M
HS-10M	E500 + F300 + L112 + L110	27	E500M3NO1, E500M3NO3, E500M4NO1, E500M4NO3, E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3, E500M7NO1, E500M7NO3, E500M8NO1, E500M8NO3, E500M9NO1, E500M9NO3, E500M10NO1, E500M10NO3	F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X1, F300M7X1, F300M8X1, F300M9X1, F300M10X1	L112BT2	L11013/16, L1101INCH	L12010M
HS-12M	E500 + F300 + L112 + L110	35	E500M2NO1, E500M2NO3, E500M3NO1, E500M3NO3, E500M4NO1, E500M4NO3, E500M5NO1, E500M5NO3, E500M6NO1, E500M6NO3, E500M7NO1, E500M7NO3, E500M8NO1, E500M8NO3, E500M9NO1, E500M9NO3, E500M10NO1, E500M10NO3, E500M12NO1, E500M12NO3	F300M2X13/16, F300M3X13/16, F300M4X13/16, F300M5X13/16, F300M6X13/16, F300M7X13/16, F300M8X1, F300M9X1, F300M10X1, F300M12X1.5/16	L112BT1, L112BT2	L11013/16, L1101INCH, L1101.5/16	L12012M
HS-14M	E500 + F300 + L112 + L110	34	E500M6NO1, E500M6NO3, E500M7NO1, E500M7NO3, E500M8NO1, E500M8NO3, E500M9NO1, E500M9NO3, E500M10NO1, E500M10NO3, E500M12NO1, E500M12NO3, E500M14NO1, E500M14NO3, E500M16NO1, E500M16NO3, E500M18NO1, E500M18NO3, E500M20NO1, E500M20NO3	F300M6X1, F300M7X1, F300M8X1, F300M9X1, F300M10X1, F300M12X1.5/16, F300M14X1.5/16, F300M16X1.1/2, F300M18X1.1/2, F300M20X1.1/2	L112NO3	L1101INCH, L1101.5/16, L1101.1/2	L12014M
HS-30UNC	E515 + F320 + L112 + L110	18	E5151/2NO1, E5151/2NO3, E5151/4NO1, E5151/4NO3, E5155/16NO1, E5155/16NO3, E5153/8NO1, E5153/8NO3, E5157/16NO1, E5157/16NO3	F3201/4X1, F3205/16X1, F3207/16X1.5/16, F3203/8X1, F3201/2X1.5/16	L112BT2	L1101INCH, L1101.5/16	L12030UNC
HS-32UNC	E515 + F320 + L112 + L110	27	E5151/2NO1, E5151/2NO3, E5151/4NO1, E5151/4NO3, E5155/16NO1, E5155/16NO3, E5153/8NO1, E5153/8NO3, E5157/16NO1, E5157/16NO3, E5155/8NO1, E5155/8NO3, E5153/4NO1, E5153/4NO3	F3201/4X1, F3205/16X1, F3207/16X1.5/16, F3203/8X1, F3207/16X1.1/2, F3201/2X1.5/16, F3201/2X1.1/2, F3205/8X1.1/2, F3203/4X1.1/2	L112BT2, L112NO3	L1101INCH, L1101.1/2	L12032UNC

Set	A	B	M	F	L112	L110	L120
HS-24UNF	E524 + F330 + L112 + L110	18	E5241/2NO1, E5241/2NO3, E5241/4NO1, E5241/4NO3, E5245/16NO1, E5245/16NO3, E5243/8NO1, E5243/8NO3, E5247/16NO1, E5247/16NO3	F3301/4X1, F3305/16X1, F3307/16X1.5/16, F3303/8X1, F3301/2X1.5/16	L112BT2	L1101INCH, L1101.5/16	L12024UNF
HS-26UNF	E524 + F330 + L112 + L110	25	E5241/2NO1, E5241/2NO3, E5241/4NO1, E5241/4NO3, E5245/16NO1, E5245/16NO3, E5243/8NO1, E5243/8NO3, E5247/16NO1, E5247/16NO3, E5245/8NO1, E5245/8NO3, E5243/4NO1, E5243/4NO3	F3301/4X1, F3305/16X1, F3303/8X1, F3307/16X1.1/2, F3301/2X1.1/2, F3305/8X1.1/2, F3303/4X1.1/2	L112BT2, L112NO3	L1101INCH, L1101.1/2	L12026UNF

L110

- Menetmetsző hajtókar
- Portfiliera pentru filiere rotunde
- Pafta
- Die Stocks



Nr.	Ø x H	L110
1"	16 x 5	L1101
2a	20 x 5	L1102A
2b	20 x 7	L1102B
3	25 x 9	L1103
4"	30 x 11	L1104
5	38 x 14	L1105
5f	38 x 10	L1105F
6	45 x 18	L1106
6f	45 x 14	L1106F
7	55 x 22	L1107
7f	55 x 16	L1107F
8	65 x 25	L1108
8f	65 x 18	L1108F
9	75 x 30	L1109
9f	75 x 20	L1109F
10	90 x 36	L11010
10f	90 x 22	L11010F
	13/16 x 1/4	L11013/16
	1 x 3/8	L1101INCH
	1.5/16 x 7/16	L1101.5/16
	1.1/2 x 1/2	L1101.1/2
	2 x 5/8	L1102INCH
	2.1/4 x 11/16	L1102.1/4
	3 x 7/8	L1103INCH
	4 x 1	L1104INCH

L112

- Menetfúró hajtókar, Állítható
- Port-tarod reglabil
- Kılavuz anahtarlar
- Tap Wrenches



Nr.	l ₁ mm	∅ a mm	∅ a Inch	Tap Range (M)	Tap Range (Inch)	L112
BT1	105	1.0 - 6.5	0.0394 - 0.2559	M1 - M8	No. 0 - 5/16	L112BT1
BT2	162	1.0 - 10.0	0.0394 - 0.3937	M1 - M14	No. 0 - 5/8	L112BT2
0	130	2.0 - 5.0	0.0787 - 0.1969	M1 - M5	No. 0 - 1/4	L112NO0
1.1/2	205	2.1 - 8.0	0.0827 - 0.3150	M2.2 - M12	No. 0 - 1/2	L112NO1.1/2
3	380	4.9 - 12.0	0.1929 - 0.4724	M5 - M20	5/16 - 3/4	L112NO3
4	500	5.5 - 16.0	0.2165 - 0.6299	M7 - M30	5/16 - 1"	L112NO4
6	1000	11.0 - 24.0	0.4331 - 0.9449	M18 - M42	3/4 - 1.1/2	L112NO6
7	1250	16.0 - 32.0	0.6299 - 1.2598	M27 - M48	1.1/8 - 2"	L112NO7

345 - 366



F100	349
F108	349
F110	350
F120	351
F130	352
F140	353
F150	354
F170	355
F180	356
F190	357
F201	349
F202	363
F272	366
F300	358
F302	364
F310	359
F312	365
F320	360
F330	361
F370	362

Menet típusok	Forma filetului	Diş formu	Thread form
Szabvány	Standard	Standart	Standard
Tűrés	Toleranta	Tolerans	Tolerance
Bekezdőkúp	Conul de atac	Pah	Chamfer
Anyag	Material	Malzeme	Material
Írány	Direcție	Yön	Direction
Bevonat	Acoperire	Kaplama	Coating
■ Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
■ Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metrii pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
Kódok	Coduri	Kodlar	Product Codes
Választék	Gama	Ürün aralığı	Range

AMG	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvözött acél	Otel aliat	Alaşimli çelik	Alloy steel
1.5	Ötvözött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşimli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvözött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşimli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvözött, edzett acél	Otel aliat, calit	Alaşimli çelik, ısıtılı işlemli	Alloy steel, Heat treated
1.8	Ötvözött, edzett és kopásálló acél	Otel aliat, calit	Alaşimli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Auszenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Auszenites	Feritic+austenitic	Ferritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımsız	Titanium, unalloyed
4.2	Titánium, ötvözött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
4.3	Titánium, ötvözött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımsız	Nickel, unalloyed
5.2	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
5.3	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımsız	Al, Mg, unalloyed
7.2	Al ötvözött, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımlı, Si<%0.5	Al alloyed, Si < 0.5%
7.3	Al ötvözött, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımlı, Si, >%0.5 <%10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvözött, Si > 10%	Al aliat cu Si >10%	Al alaşımlı, Si>%10 sertleştirilmiş, Al alaşımları, Mg alaşımları	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzemesler	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

M	M	M	MF	UNC	UNF	BSW	BSF	G	NPT	PG
ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568	ISO 2568
6g	6g	6g	6g	2A	2A	Medium	Medium	Class A	Normal	Normal
1.75XP	1.75XP	2.25XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP
HSS	HSS	HSS-E	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS



F100	F201	F108	F110	F120	F130	F140	F150	F170	F180	F190
M2 - M42	M3 - M20	M2 - M20	M4 - M40	No.8 - 1"	No.10 - 1"	1/8 - 1"	3/16 - 1/2	1/8 - 2"	1/8 - 1"	No.7 - No.36

AMG	349	349	349	350	351	352	353	354	355	356	357	ISO
1.1	■8	■8	●8	■8	■8	■8	■8	■8	■8	■8	■8	P 1
1.2	■7	■7	●7	■7	■7	■7	■7	■7	■7	■7	■7	P 1
1.3	■6	■6	■6	■6	■6	■6	■6	■6	■6	■6	■6	P 2
1.4	●5	●5	■5	●5	●5	●5	●5	●5	●5	●5	●5	P 3
1.5			●4									P 4
1.6												H 1
1.7												H 3
1.8												H 4
2.1	●4	●4	■4	●4	●4	●4	●4	●4	●4	●4	●4	M 1
2.2	●2	●2	■2	●2	●2	●2	●2	●2	●2	●2	●2	M 3
2.3			●1									M 2
2.4												S 2
3.1	■8	■8	■8	■8	■8	■8	■8	■8	■8	■8	■8	K 1
3.2	■7	■7	■7	■7	■7	■7	■7	■7	■7	■7	■7	K 2
3.3	■6	■6	■6	■6	■6	■6	■6	■6	■6	■6	■6	K 3
3.4	●5	●5	●5	●5	●5	●5	●5	●5	●5	●5	●5	K 4
4.1			●2									S 1
4.2												S 2
4.3	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 3
5.1	●9	●9	●9	●9	●9	●9	●9	●9	●9	●9	●9	S 1
5.2	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 2
5.3	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 3
6.1	●9	●9	●9	●9	●9	●9	●9	●9	●9	●9	●9	N 3
6.2	●8	●8	●8	●8	●8	●8	●8	●8	●8	●8	●8	N 4
6.3	●7	●7	●7	●7	●7	●7	●7	●7	●7	●7	●7	N 3
6.4			●2									N 4
7.1	■10	■10	■10	■10	■10	■10	■10	■10	■10	■10	■10	N 1
7.2	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	N 1
7.3	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	■15	N 1
7.4	●10	●10	●10	●10	●10	●10	●10	●10	●10	●10	●10	N 2
8.1	●15	●15	●15	●15	●15	●15	●15	●15	●15	●15	●15	O
8.2	●10	●10	●10	●10	●10	●10	●10	●10	●10	●10	●10	O
8.3	●5	●5	●5	●5	●5	●5	●5	●5	●5	●5	●5	O
9.1												H
10.1												O

	M	MF	UNC	UNF	G	M	M	MF	G
	BS 1127: 1950	BS 1127: 1950	BS 1127: 1950	BS 1127: 1950	BS 1127: 1950	DIN 382	BS 1127: 1950	BS 1127: 1950	DIN 382
						6g	6g	6g	Class A
	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP	1.75XP
	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS	HSS

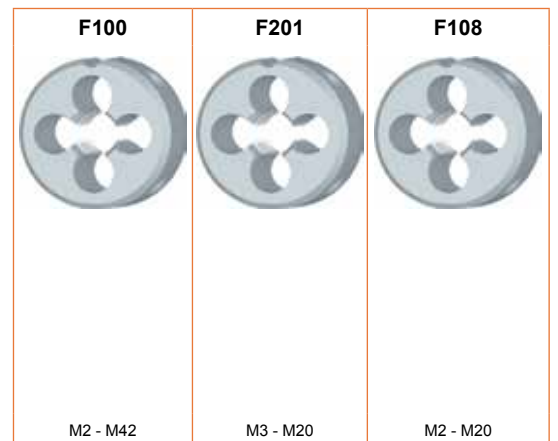
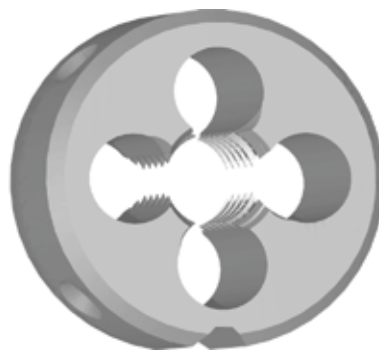
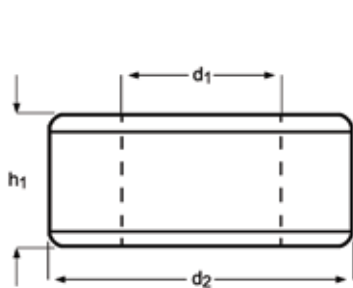


	F300	F310	F320	F330	F370	F202	F302	F312	F272	
	M2 - M36	M3 - M30	No.4 - 1.1/4	No.4 - 1.1/2	1/8 - 1.1/2	M3 - M36	M3 - M36	M8 - M24	1/8 - 1.1/2	
AMG	358	359	360	361	362	363	364	365	366	ISO
1.1	■8	■8	■8	■8	■8	■8	■8	■8	■8	P 1
1.2	■7	■7	■7	■7	■7	■7	■7	■7	■7	P 1
1.3	■6	■6	■6	■6	■6	■6	■6	■6	■6	P 2
1.4	●5	●5	●5	●5	●5	●5	●5	●5	●5	P 3
1.5										P 4
1.6										H 1
1.7										H 3
1.8										H 4
2.1	●4	●4	●4	●4	●4	●4	●4	●4	●4	M 1
2.2	●2	●2	●2	●2	●2	●2	●2	●2	●2	M 3
2.3										M 2
2.4										S 2
3.1	■8	■8	■8	■8	■8	■8	■8	■8	■8	K 1
3.2	■7	■7	■7	■7	■7	■7	■7	■7	■7	K 2
3.3	■6	■6	■6	■6	■6	■6	■6	■6	■6	K 3
3.4	●5	●5	●5	●5	●5	●5	●5	●5	●5	K 4
4.1										S 1
4.2										S 2
4.3	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 3
5.1	●9	●9	●9	●9	●9	●9	●9	●9	●9	S 1
5.2	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 2
5.3	●2	●2	●2	●2	●2	●2	●2	●2	●2	S 3
6.1	●9	●9	●9	●9	●9	●9	●9	●9	●9	N 3
6.2	●8	●8	●8	●8	●8	●8	●8	●8	●8	N 4
6.3	●7	●7	●7	●7	●7	●7	●7	●7	●7	N 3
6.4										N 4
7.1	■10	■10	■10	■10	■10	■10	■10	■10	■10	N 1
7.2	■15	■15	■15	■15	■15	■15	■15	■15	■15	N 1
7.3	■15	■15	■15	■15	■15	■15	■15	■15	■15	N 1
7.4	●10	●10	●10	●10	●10	●10	●10	●10	●10	N 2
8.1	●15	●15	●15	●15	●15	●15	●15	●15	●15	O
8.2	●10	●10	●10	●10	●10	●10	●10	●10	●10	O
8.3	●5	●5	●5	●5	●5	●5	●5	●5	●5	O
9.1										H
10.1										O

- F100** • M Menetmetsző
F201 • M Filiere
F108 • M Gun ağızlı pafta
 • M Gun Nosed Die

F100; F201	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3								
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3		
F108	▪	1.3	1.4	2.1	2.2	3.1	3.2	3.3	7.1	7.2	7.3							
	•	1.1	1.2	1.5	2.3	3.4	4.1	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.4	8.1	8.2	8.3

F100	M	ISO 2568	6g	1.75XP	HSS			
F201	M	ISO 2568	6g	1.75XP	HSS			
F108	M	ISO 2568	6g	2.25XP	HSS-E			



M	P mm	d ₂ Ø mm	h ₁ mm	F100	F201	F108
2	0.40	16	5	F100M2 ¹⁾		F108M2 ¹⁾
2.5	0.45	16	5	F100M2.5 ¹⁾		F108M2.5 ¹⁾
2.6	0.45	16	5	F100M2.6 ¹⁾		
3	0.50	20	5	F100M3	F201M3	F108M3
3.5	0.60	20	5	F100M3.5		
4	0.70	20	5	F100M4	F201M4	F108M4
4.5	0.75	20	7	F100M4.5		
5	0.80	20	7	F100M5	F201M5	F108M5
6	1.00	20	7	F100M6	F201M6	F108M6
7	1.00	25	9	F100M7		
8	1.25	25	9	F100M8	F201M8	F108M8
9	1.25	25	9	F100M9		
10	1.50	30	11	F100M10	F201M10	F108M10
11	1.50	30	11	F100M11		
12	1.75	38	14	F100M12	F201M12	F108M12
14	2.00	38	14	F100M14	F201M14	F108M14
16	2.00	45	18	F100M16	F201M16	F108M16
18	2.50	45	18	F100M18	F201M18	F108M18
20	2.50	45	18	F100M20	F201M20	F108M20
22	2.50	55	22	F100M22		
24	3.00	55	22	F100M24		
27	3.00	65	25	F100M27		
30	3.50	65	25	F100M30		
33	3.50	65	25	F100M33		
36	4.00	65	25	F100M36		
39	4.00	75	30	F100M39		
42	4.50	75	30	F100M42		

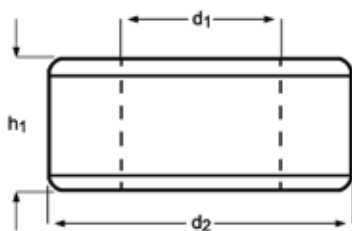
¹⁾ Terelőél nélkül / fara supra-ascutire / Normal pafta / without gun-nose

F110

- MF Menetmetsző
- MF Filiere
- MF Gun ağızlı pafta
- MF Gun Nosed Die

F110	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F110 **MF** **ISO 2568** **6g** **1.75XP** **HSS**  



M4 - M40

MF	P mm	d ₂ Ø mm	h ₁ mm	F110
4	0.50	20	5	F110M4X.5
5	0.50	20	5	F110M5X.5
6	0.75	20	7	F110M6X.75
7	0.75	25	9	F110M7X.75
8	0.75	25	9	F110M8X.75
8	1.00	25	9	F110M8X1.0
9	1.00	25	9	F110M9X1.0
10	0.75	30	11	F110M10X.75
10	1.00	30	11	F110M10X1.0
10	1.25	30	11	F110M10X1.25
11	1.00	30	11	F110M11X1.0
12	1.00	38	10	F110M12X1.0
12	1.25	38	10	F110M12X1.25
12	1.50	38	10	F110M12X1.5
13	1.00	38	10	F110M13X1.0
14	1.00	38	10	F110M14X1.0
14	1.25	38	10	F110M14X1.25
14	1.50	38	10	F110M14X1.5
15	1.00	38	10	F110M15X1.0
15	1.50	38	10	F110M15X1.5
16	1.00	45	14	F110M16X1.0
16	1.50	45	14	F110M16X1.5
18	1.00	45	14	F110M18X1.0
18	1.50	45	14	F110M18X1.5
20	1.00	45	14	F110M20X1.0
20	1.50	45	14	F110M20X1.5
22	1.00	55	16	F110M22X1.0
22	1.50	55	16	F110M22X1.5
24	1.00	55	16	F110M24X1.0
24	1.50	55	16	F110M24X1.5
24	2.00	55	16	F110M24X2.0
25	1.50	55	16	F110M25X1.5
26	1.50	55	16	F110M26X1.5
27	1.50	65	18	F110M27X1.5
27	2.00	65	18	F110M27X2.0
28	1.50	65	18	F110M28X1.5
30	1.50	65	18	F110M30X1.5
32	1.50	65	18	F110M32X1.5
35	1.50	65	18	F110M35X1.5
36	1.50	65	18	F110M36X1.5
40	1.50	75	20	F110M40X1.5

F120

- UNC Menetmetsző
- UNC Filiere
- UNC Gun ajízli pafta
- UNC Gun Nosed Die

F120	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F120

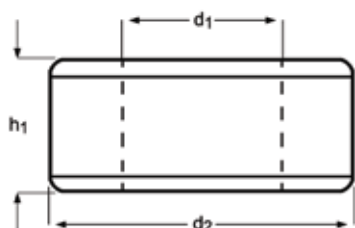
UNC

ISO
2568

2A

1.75XP

HSS



F120



No.8 - 1"

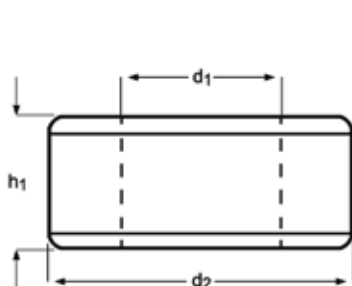
UNC	TPI	d ₁ nom mm	d ₂ ∅ mm	h ₁ mm	F120
8	32	4.17	20	7	F1208-32
10	24	4.83	20	7	F12010-24
1/4	20	6.35	20	7	F1201/4
5/16	18	7.94	25	9	F1205/16
3/8	16	9.53	30	11	F1203/8
7/16	14	11.11	30	11	F1207/16
1/2	13	12.70	38	14	F1201/2
9/16	12	14.29	38	14	F1209/16
5/8	11	15.88	45	18	F1205/8
3/4	10	19.05	45	18	F1203/4
7/8	9	22.23	55	22	F1207/8
1"	8	25.40	55	22	F1201

- F130**
- UNF Menetmetsző
 - UNF Filiere
 - UNF Gun ağızlı pafta
 - UNF Gun Nosed Die

F130	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F130

UNF ISO 2568 2A 1.75XP HSS



UNF	TPI	d_1 nom mm	d_2 \emptyset mm	h_1 mm	F130
10	32	4.83	20	7	F13010-32
1/4	28	6.35	20	7	F1301/4
5/16	24	7.94	25	9	F1305/16
3/8	24	9.53	30	11	F1303/8
7/16	20	11.11	30	11	F1307/16
1/2	20	12.70	38	10	F1301/2
9/16	18	14.29	38	10	F1309/16
5/8	18	15.88	45	14	F1305/8
3/4	16	19.05	45	14	F1303/4
7/8	14	22.23	55	16	F1307/8
1"	12	25.40	55	16	F1301

F140

- BSW Menetmetsző
- BSW Filiere
- BSW Gun ağızlı pafta
- BSW Gun Nosed Die

F140	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3								
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3		

F140

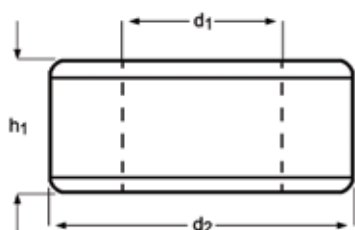
BSW

ISO
2568

Medium

1.75XP

HSS



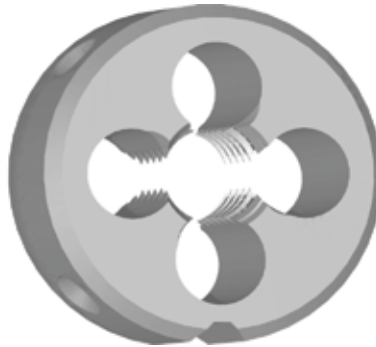
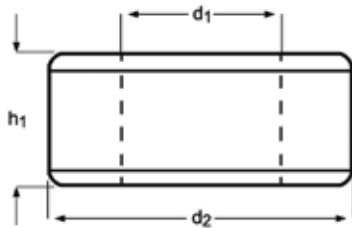
BSW	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F140
1/8	40	3.17	20	5	F1401/8
3/16	24	4.76	20	7	F1403/16
1/4	20	6.35	20	7	F1401/4
5/16	18	7.94	25	9	F1405/16
3/8	16	9.53	30	11	F1403/8
7/16	14	11.11	30	11	F1407/16
1/2	12	12.70	38	14	F1401/2
5/8	11	15.88	45	18	F1405/8
3/4	10	19.05	45	18	F1403/4
7/8	9	22.23	55	22	F1407/8
1"	8	25.40	55	22	F1401

- BSF Menetmetsző
- BSF Filiere
- BSF Gun ağızlı pafta
- BSF Gun Nosed Die

F150

F150	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F150 **BSF** **ISO 2568** Medium **1.75XP** **HSS**  




3/16 - 1/2

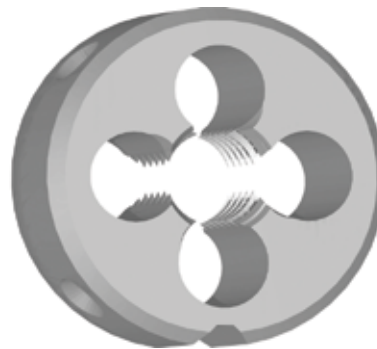
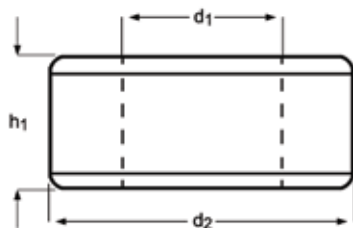
BSF	TPI	d_1 nom mm	d_2 \emptyset mm	h_1 mm	F150
3/16	32	4.76	20	7	F1503/16
1/4	26	6.35	20	7	F1501/4
5/16	22	7.94	25	9	F1505/16
3/8	20	9.53	30	11	F1503/8
7/16	18	11.11	30	11	F1507/16
1/2	16	12.70	38	10	F1501/2

F170

- G(BSP) Menetmetsző
- G(BSP) Filiere
- G(BSP) Gun ağızlı pafta
- G(BSP) Gun Nosed Die

F170	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F170 **G** **ISO 2568** **Class A** **1.75XP** **HSS**  



G(BSP)	TPI	d_1 nom mm	d_2 \emptyset mm	h_1 mm	F170
1/8	28	9.73	30	11	F1701/8
1/4	19	13.16	38	10	F1701/4
3/8	19	16.66	45	14	F1703/8
1/2	14	20.96	45	14	F1701/2
5/8	14	22.91	55	16	F1705/8
3/4	14	26.44	55	16	F1703/4
7/8	14	30.20	65	18	F1707/8
1"	11	33.25	65	18	F1701
1.1/8	11	37.89	75	20	F1701.1/8
1.1/4	11	41.91	75	20	F1701.1/4
1.1/2	11	47.80	90	22	F1701.1/2
2"	11	59.61	105	22	F1702

F180

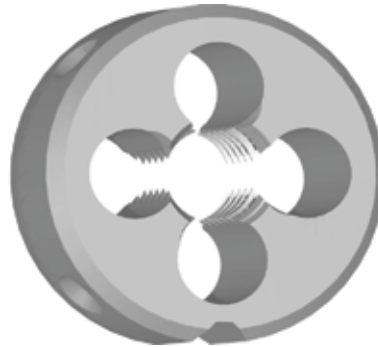
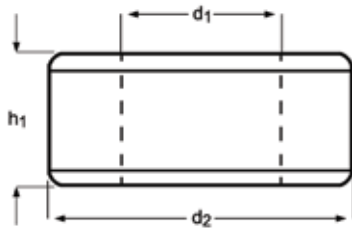
- NPT Menetmetsző
- NPT Filiere
- NPT Gun ağızlı pafta
- NPT Gun Nosed Die

F180	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F180

NPT
ISO 2568
Normal
1.75XP
HSS





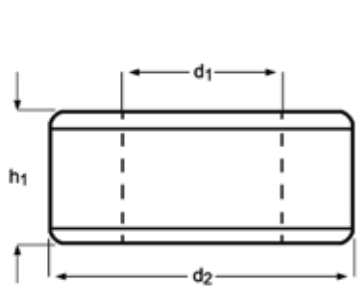
NPT	TPI	d_1 nom mm	d_2 Ø mm	h_1 mm	F180
1/8	27	9.49	30	11	F1801/8
1/4	18	12.49	38	14	F1801/4
3/8	18	15.93	45	14	F1803/8
1/2	14	19.77	45	18	F1801/2
3/4	14	25.12	55	22	F1803/4
1"	11.5	31.46	65	25	F1801

F190

- PG Menetmetsző
- PG Filiere
- PG Gun ağızlı pafta
- PG Gun Nosed Die

F190	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3								
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3		

F190 **PG** **ISO 2568** Normal **1.75XP** **HSS**



PG	TPI	d_1 nom mm	d_2 \emptyset mm	h_1 mm	F190
7	20	12.5	38	10	F190PG7
9	18	15.2	38	10	F190PG9
11	18	18.6	45	14	F190PG11
13.5	18	20.4	45	14	F190PG13.5
16	18	22.5	55	16	F190PG16
21	16	28.3	65	18	F190PG21
29	16	37.0	65	18	F190PG29
36	16	47.0	90	22	F190PG36

F300

- M Állítható menetmetsző
- M Filiera reglabila
- M Ayarlanabilir pafta
- M Adjustable Dies

F300	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F300

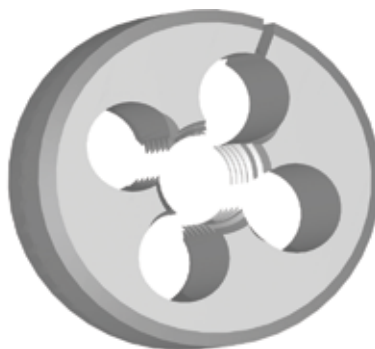
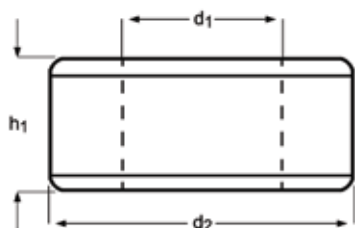
M

BS
1127:
1950

1.75XP

HSS

L 120
339



M2 - M36

M	P mm	d ₂ Ø Inch	h ₁ Inch	F300
2	0.40	13/16	1/4	F300M2X13/16
2.5	0.45	13/16	1/4	F300M2.5X13/16
3	0.50	13/16	1/4	F300M3X13/16
3.5	0.60	13/16	1/4	F300M3.5X13/16
4	0.70	13/16	1/4	F300M4X13/16
5	0.80	13/16	1/4	F300M5X13/16
5	0.80	1"	3/8	F300M5X1
6	1.00	13/16	1/4	F300M6X13/16
6	1.00	1"	3/8	F300M6X1
6	1.00	1.5/16	7/16	F300M6X1.5/16
7	1.00	13/16	1/4	F300M7X13/16
7	1.00	1"	3/8	F300M7X1
8	1.25	1"	3/8	F300M8X1
8	1.25	1.5/16	7/16	F300M8X1.5/16
9	1.25	1"	3/8	F300M9X1
9	1.25	1.5/16	7/16	F300M9X1.5/16
10	1.50	1"	3/8	F300M10X1
10	1.50	1.5/16	7/16	F300M10X1.5/16
10	1.50	1.1/2	1/2	F300M10X1.1/2
11	1.50	1.5/16	7/16	F300M11X1.5/16
12	1.75	1.5/16	7/16	F300M12X1.5/16
12	1.75	1.1/2	1/2	F300M12X1.1/2
14	2.00	1.5/16	7/16	F300M14X1.5/16
14	2.00	1.1/2	1/2	F300M14X1.1/2
16	2.00	1.1/2	1/2	F300M16X1.1/2
16	2.00	2"	5/8	F300M16X2
18	2.50	1.1/2	1/2	F300M18X1.1/2
18	2.50	2"	5/8	F300M18X2
20	2.50	1.1/2	1/2	F300M20X1.1/2
20	2.50	2"	5/8	F300M20X2
22	2.50	2"	5/8	F300M22X2
24	3.00	2"	5/8	F300M24X2
27	3.00	3"	7/8	F300M27X3
30	3.50	3"	7/8	F300M30X3
36	4.00	3"	7/8	F300M36X3

F310

- MF Állítható menetmetsző
- MF Filiera regglabila
- MF Ayartanabilir pafta
- MF Adjustable Dies

F310	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

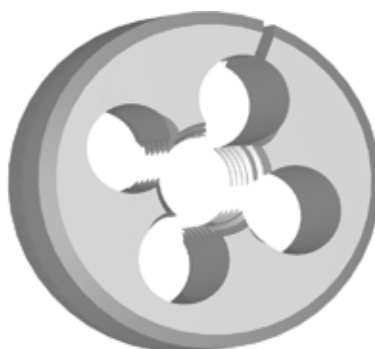
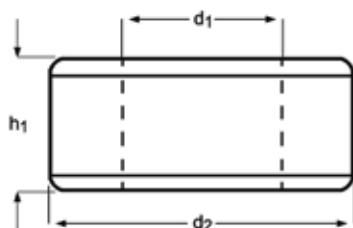
F310

MF

BS
1127:
1950

1.75XP

HSS



F310



M3 - M30

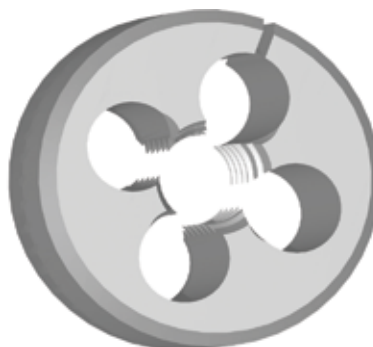
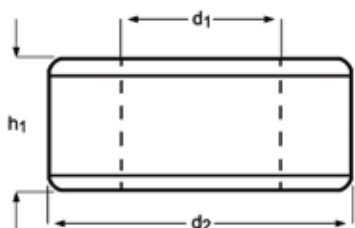
MF	P mm	d ₂ Ø Inch	h ₁ Inch	F310
3	0.35	13/16	1/4	F310M3X.35X13/16
4	0.50	13/16	1/4	F310M4X.5X13/16
4	0.75	13/16	1/4	F310M4X.75X13/16
5	0.50	13/16	1/4	F310M5X.5X13/16
5	0.90	13/16	1/4	F310M5X.9X13/16
6	0.75	13/16	1/4	F310M6X.75X13/16
8	0.75	1"	3/8	F310M8X.75X1
8	1.00	1"	3/8	F310M8X1.0X1
9	1.00	1"	3/8	F310M9X1.0X1
10	0.75	1"	3/8	F310M10X.75X1
10	1.00	1"	3/8	F310M10X1.0X1
10	1.25	1"	3/8	F310M10X1.25X1
10	1.25	1.5/16	7/16	F310M10X1.25X1.5/16
12	1.00	1.5/16	7/16	F310M12X1.0X1.5/16
12	1.25	1.5/16	7/16	F310M12X1.25X1.5/16
12	1.50	1.5/16	7/16	F310M12X1.5X1.5/16
14	1.25	1.5/16	7/16	F310M14X1.25X1.5/16
14	1.50	1.5/16	7/16	F310M14X1.5X1.5/16
16	1.00	1.1/2	1/2	F310M16X1.0X1.1/2
16	1.50	1.1/2	1/2	F310M16X1.5X1.1/2
18	1.50	1.1/2	1/2	F310M18X1.5X1.1/2
20	1.00	1.1/2	1/2	F310M20X1.0X1.1/2
20	1.50	2"	5/8	F310M20X1.5X2
20	2.00	1.1/2	1/2	F310M20X2.0X1.1/2
22	1.50	2"	5/8	F310M22X1.5X2
24	1.50	2"	5/8	F310M24X1.5X2
24	2.00	2"	5/8	F310M24X2.0X2
25	1.50	2"	5/8	F310M25X1.5X2
27	2.00	2.1/4	11/16	F310M27X2.0X2.1/4
30	2.00	2.1/4	11/16	F310M30X2.0X2.1/4

F320

- UNC Állítható menetmetsző
- UNC Filiera reglabila
- UNC Ayarlanabilir pafta
- UNC Adjustable Dies

F320	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3								
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3		

F320 **UNC** **BS 1127: 1950** **1.75XP** **HSS**   



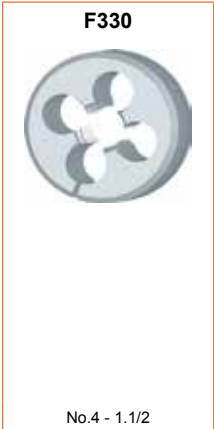
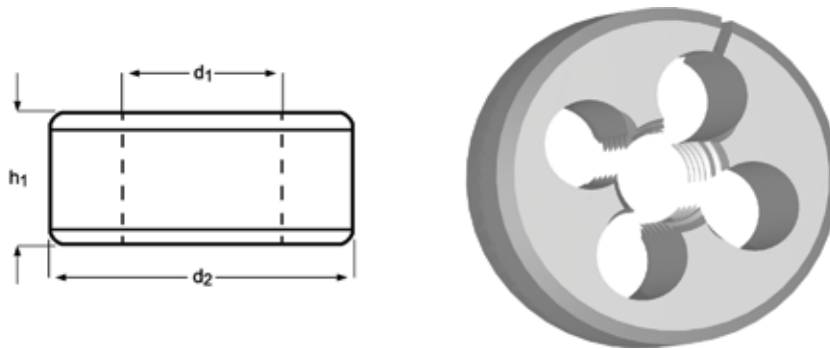
UNC	TPI	d_1 nom mm	d_2 Ø Inch	h_1 Inch	F320
4	40	2.85	13/16	1/4	F3204-40X13/16
5	40	3.18	13/16	1/4	F3205-40X13/16
6	32	3.51	13/16	1/4	F3206-32X13/16
8	32	4.17	13/16	1/4	F3208-32X13/16
8	32	4.17	1"	3/8	F3208-32X1
10	24	4.83	13/16	1/4	F32010-24X13/16
10	24	4.83	1"	3/8	F32010-24X1
12	24	5.49	13/16	1/4	F32012-24X13/16
1/4	20	6.35	13/16	1/4	F3201/4X13/16
1/4	20	6.35	1"	3/8	F3201/4X1
1/4	20	6.35	1.5/16	7/16	F3201/4X1.5/16
1/4	20	6.35	1.1/2	1/2	F3201/4X1.1/2
5/16	18	7.94	1"	3/8	F3205/16X1
5/16	18	7.94	1.1/2	1/2	F3205/16X1.1/2
3/8	16	9.53	1"	3/8	F3203/8X1
3/8	16	9.53	1.5/16	7/16	F3203/8X1.5/16
3/8	16	9.53	1.1/2	1/2	F3203/8X1.1/2
7/16	14	11.11	1.5/16	7/16	F3207/16X1.5/16
7/16	14	11.11	1.1/2	1/2	F3207/16X1.1/2
1/2	13	12.70	1.5/16	7/16	F3201/2X1.5/16
1/2	13	12.70	1.1/2	1/2	F3201/2X1.1/2
1/2	13	12.70	2"	5/8	F3201/2X2
9/16	12	14.29	1.1/2	1/2	F3209/16X1.1/2
5/8	11	15.88	1.1/2	1/2	F3205/8X1.1/2
5/8	11	15.88	2"	5/8	F3205/8X2
3/4	10	19.05	1.1/2	1/2	F3203/4X1.1/2
3/4	10	19.05	2"	5/8	F3203/4X2
7/8	9	22.23	2"	5/8	F3207/8X2
1"	8	25.40	2"	5/8	F3201X2
1.1/8	7	28.58	3"	7/8	F3201.1/8X3
1.1/4	7	31.75	3"	7/8	F3201.1/4X3

F330

- UNF Állítható menetmetsző
- UNF Filiera reglabila
- UNF Ayarlanabilir pafta
- UNF Adjustable Dies

F330	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3								
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3		

F330 **UNF** **BS 1127: 1950** **1.75XP** **HSS**



UNF	TPI	d ₁ nom mm	d ₂ Ø Inch	h ₁ Inch	F330
4	48	2.85	13/16	1/4	F3304-48X13/16
5	44	3.18	13/16	1/4	F3305-44X13/16
6	40	3.51	13/16	1/4	F3306-40X13/16
8	36	4.17	13/16	1/4	F3308-36X13/16
10	32	4.83	13/16	1/4	F33010-32X13/16
10	32	4.83	1"	3/8	F33010-32X1
12	28	5.49	13/16	1/4	F33012-28X13/16
1/4	28	6.35	13/16	1/4	F3301/4X13/16
1/4	28	6.35	1"	3/8	F3301/4X1
1/4	28	6.35	1.1/2	1/2	F3301/4X1.1/2
5/16	24	7.94	1"	3/8	F3305/16X1
5/16	24	7.94	1.5/16	7/16	F3305/16X1.5/16
5/16	24	7.94	1.1/2	1/2	F3305/16X1.1/2
3/8	24	9.53	1"	3/8	F3303/8X1
3/8	24	9.53	1.5/16	7/16	F3303/8X1.5/16
3/8	24	9.53	1.1/2	1/2	F3303/8X1.1/2
7/16	20	11.11	1"	3/8	F3307/16X1
7/16	20	11.11	1.5/16	7/16	F3307/16X1.5/16
7/16	20	11.11	1.1/2	1/2	F3307/16X1.1/2
1/2	20	12.70	1.5/16	7/16	F3301/2X1.5/16
1/2	20	12.70	1.1/2	1/2	F3301/2X1.1/2
9/16	18	14.29	1.5/16	7/16	F3309/16X1.5/16
9/16	18	14.29	1.1/2	1/2	F3309/16X1.1/2
5/8	18	15.88	1.1/2	1/2	F3305/8X1.1/2
5/8	18	15.88	2"	5/8	F3305/8X2
3/4	16	19.05	1.1/2	1/2	F3303/4X1.1/2
3/4	16	19.05	2"	5/8	F3303/4X2
7/8	14	22.23	2"	5/8	F3307/8X2
1"	12	25.40	2"	5/8	F3301X2
1.1/8	12	28.58	3"	7/8	F3301.1/8X3
1.1/4	12	31.75	3"	7/8	F3301.1/4X3
1.1/2	12	38.10	3"	7/8	F3301.1/2X3

- F370**
- G(BSP) Állítható menetmetsző
 - G(BSP) Filiera reglabila
 - G(BSP) Ayarlanabilir pafta
 - G(BSP) Adjustable Dies

F370	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

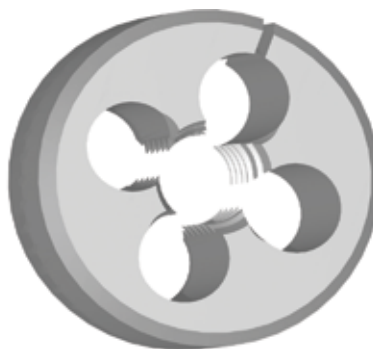
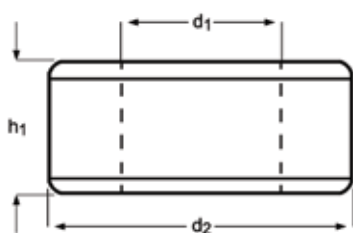
F370

G

BS
1127:
1950

1.75XP

HSS



G(BSP)	TPI	d_1 nom mm	d_2 \emptyset Inch	h_1 Inch	F370
1/8	28	9.73	1"	3/8	F3701/8X1
1/4	19	13.16	1.5/16	7/16	F3701/4X1.5/16
3/8	19	16.66	1.1/2	1/2	F3703/8X1.1/2
1/2	14	20.96	2"	5/8	F3701/2X2
5/8	14	22.91	2"	5/8	F3705/8X2
3/4	14	26.44	2"	5/8	F3703/4X2
7/8	14	30.20	2.1/4	11/16	F3707/8X2.1/4
1"	11	33.25	2.1/4	11/16	F3701X2.1/4
1.1/4	11	41.91	3"	7/8	F3701.1/4X3
1.1/2	11	47.80	4"	1"	F3701.1/2X4

F202

- M Menetmetsző anya
- M Filiere hexagonale
- M Altköşe pafta
- M Dienuts

F202	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F202

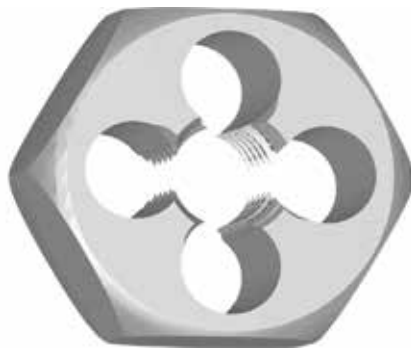
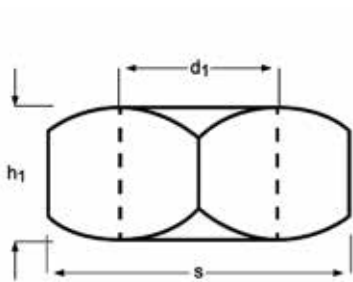
M

DIN
382

6g

1.75XP

HSS



M	P mm	S mm	h ₁ mm	F202
3	0.50	19	5	F202M3
4	0.70	19	5	F202M4
5	0.80	19	7	F202M5
6	1.00	19	7	F202M6
7	1.00	22	9	F202M7
8	1.25	22	9	F202M8
10	1.50	27	11	F202M10
12	1.75	36	14	F202M12
14	2.00	36	14	F202M14
16	2.00	41	18	F202M16
18	2.50	41	18	F202M18
20	2.50	41	18	F202M20
22	2.50	50	22	F202M22
24	3.00	50	22	F202M24
27	3.00	60	25	F202M27
30	3.50	60	25	F202M30
36	4.00	60	25	F202M36

F302

- M Menetmetsző anya
- M Filiere hexagonale
- M Altıköşe pafta
- M Dienuts

F302	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F302

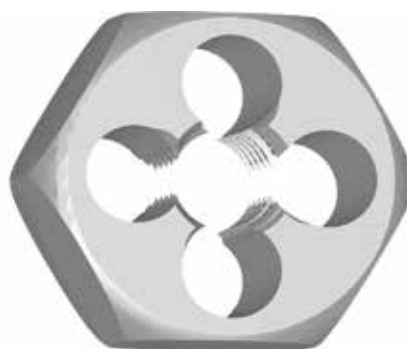
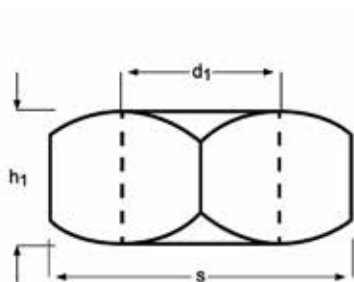
M

BS
1127:
1950

6g

1.75XP

HSS





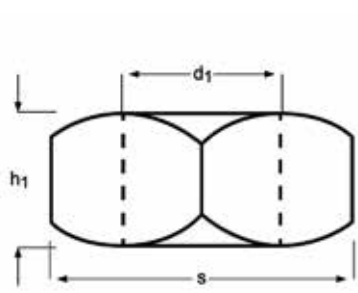
M	P mm	S decimal Inch	h ₁ Inch	F302
3	0.50	0.7100	1/4	F302M3
4	0.70	0.7100	1/4	F302M4
5	0.80	0.7100	1/4	F302M5
6	1.00	0.7100	1/4	F302M6
7	1.00	0.8200	5/16	F302M7
8	1.25	0.8200	5/16	F302M8
10	1.50	0.9200	3/8	F302M10
11	1.50	1.0100	7/16	F302M11
12	1.75	1.1000	1/2	F302M12
14	2.00	1.3000	5/8	F302M14
16	2.00	1.3000	5/8	F302M16
18	2.50	1.4800	11/16	F302M18
20	2.50	1.4800	11/16	F302M20
22	2.50	1.6700	13/16	F302M22
24	3.00	2.0500	15/16	F302M24
27	3.00	2.2200	1.1/16	F302M27
30	3.50	2.2200	1.1/16	F302M30
33	3.50	2.5800	1.1/8	F302M33
36	4.00	2.7600	1.1/4	F302M36

F312

- MF Menetmetsző anyja
- MF Filiere hexagonale
- MF Altıköşe pafta
- MF Dienüts

F312	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3								
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3		

F312 MF BS 1127: 1950 6g 1.75XP HSS  




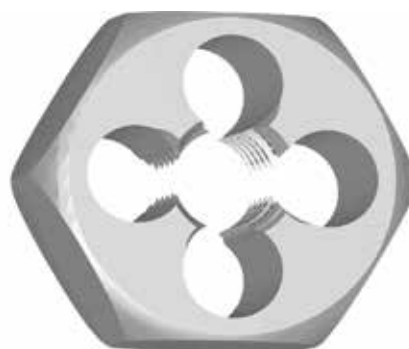
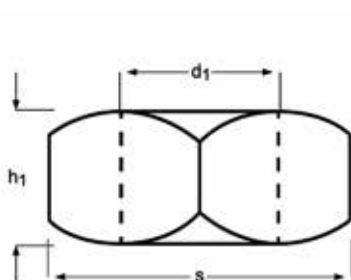
MF	P mm	S decimal Inch	h ₁ Inch	F312
8	0.75	0.8200	5/16	F312M8X.75
8	1.00	0.8200	5/16	F312M8X1.0
10	1.00	0.9200	3/8	F312M10X1.0
10	1.25	0.9200	3/8	F312M10X1.25
12	1.00	1.0100	7/16	F312M12X1.0
12	1.25	1.0100	7/16	F312M12X1.25
12	1.50	1.0100	7/16	F312M12X1.5
14	1.50	1.3000	5/8	F312M14X1.5
16	1.50	1.3000	5/8	F312M16X1.5
18	1.50	1.4800	11/16	F312M18X1.5
20	1.50	1.4800	11/16	F312M20X1.5
22	1.50	1.6700	13/16	F312M22X1.5
24	1.50	2.0500	15/16	F312M24X1.5
24	2.00	2.0500	15/16	F312M24X2.0

F272

- G(BSP) Menetmetsző anya
- G(BSP) Filiere hexagonale
- G(BSP) Altıköşe pafta
- G(BSP) Dienuts

F272	▪	1.1	1.2	1.3	3.1	3.2	3.3	7.1	7.2	7.3						
	•	1.4	2.1	2.2	3.4	4.3	5.1	5.2	5.3	6.1	6.2	6.3	7.4	8.1	8.2	8.3

F272 **G** **DIN 382** **Class A** **1.75XP** **HSS**  



G(BSP)	TPI	d_1 nom mm	S mm	h_1 mm	F272
1/8	28	9.73	27	11	F2721/8
1/4	19	13.16	36	10	F2721/4
3/8	19	16.66	41	14	F2723/8
1/2	14	20.96	41	14	F2721/2
3/4	14	26.44	60	18	F2723/4
1"	11	33.25	60	18	F2721
1.1/4	11	41.91	70	20	F2721.1/4
1.1/2	11	47.80	85	22	F2721.1/2

S216	405	S525	411	S715	395	S812HA	385
S217	407	S526	412	S716	403	S812HB	385
S218	408	S527	413	S717	407	S813HA	388
S219	401	S529	427	S718	408	S813HB	388
S225	411	S531	428	S739	435	S814HA	402
S226	412	S533	429	S740	435	S814HB	402
S227	413	S534	431	S741	435	S822	386
S229	424	S535	432	S761	409	S823	389
S231	425	S536	423	S763	419	S902	391
S233	426	S610	398	S765	414	S903	393
S260	409	S611	399	S766	410	S904	406
S262	420	S612	404	S767	422	S922	391
S264	415	S629	434	S802HA	384	S933	393
S501	430	S637	396	S802HB	384	S944	406
S511	433	S638	397	S803HA	387	S991	437
S521	417	S710	390	S803HB	387		
S523	418	S713	392	S804HA	400		
S524	416	S714	394	S804HB	400		

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C110	438	C333	458	C511	470	C922	460
C122	449	C336	447	C700	483	C944	464
C123	440	C346	450	C710	482	C948	464
C126	438	C352	445	C800	471	D200	484
C135	442	C353	443	C801	474	D400	493
C139	440	C358	447	C810	472	D402	494
C159	446	C359	458	C820	476	D420	493
C166	457	C367	444	C822	475	D422	494
C167	448	C400	466	C825	473	D745	486
C169	446	C403	467	C830	480	D747	488
C246	453	C407	463	C831	481	D750	492
C247	453	C413	466	C835	479	D751	492
C273	455	C428	461	C837	478	D752	491
C295	455	C429	467	C903	452	D753	491
C299	451	C492	462	C907	451	D763	484
C305	445	C500	468	C908	463		
C306	443	C503	469	C920	452		
C324	459	C505	469	C921	465		















































































Anyag	Material	Malzeme	Material
Alkalmazás	Aplicatie	Uygulama	Application
Típus	Tip gaura	Tip	Type
Élek száma	Nr.dinti (z)	ağız (z)	teeth (z)
Vágóhossz	Lungime tais	Kesme Boyu	Cut length
Spirálszög/Homlokszög	Unghiul spirei/ Unghi de degajare	Helis açısı / Boşluk açısı	Helix angle/ Rake angle
Szár	Coadă	Şaft	Shank
Bevonat	Acoperire	Kaplama	Coating
Tűrés	Toleranta	Tolerans	Tolerance
Írány	Direcție	Yön	Direction
Szabvány	Standard	Standart	Standard
■ Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
● Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metrii pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
Kódok	Coduri	Kodlar	Product Codes
Választék	Gama	Ürün aralığı	Range

AMG	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvözött acél	Otel aliat	Alaşımlı çelik	Alloy steel
1.5	Ötvözött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımlı çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvözött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımlı çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvözött, edzett acél	Otel aliat, calit	Alaşımlı çelik, ısıl işlemli	Alloy steel, Heat treated
1.8	Ötvözött, edzett és kopásálló acél	Otel aliat, calit	Alaşımlı çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Ausstenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Auszstenites	Feritic+austenitic	Ferritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımsız	Titanium, unalloyed
4.2	Titánium, ötvözött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
4.3	Titánium, ötvözött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımsız	Nickel, unalloyed
5.2	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
5.3	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımsız	Al, Mg, unalloyed
7.2	Al ötvözött, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımlı, Si<0.5	Al alloyed, Si < 0.5%
7.3	Al ötvözött, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımlı, Si, >0.5 <10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvözött, Si > 10%	Al aliat cu Si >10%	Al alaşımlı, Si>10 sertleştirilmiş. Al alaşımları, Mg alaşımları	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzemeler	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

		HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM		
		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
		Z 2	Z 2	Z 2	Z 2	Z 2	Z 3	Z 3	Z 3	Z 3	Z 2	Z 2	Z 2	Z 3	Z 3	Z 3		
		$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 28^\circ$ $\gamma 9^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 12^\circ$	$\lambda 30^\circ$ $\gamma 12^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 12^\circ$	$\lambda 30^\circ$ $\gamma 12^\circ$		
		DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HB		
		Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona	Alcona		
		DIN 6527K	DIN 6527K	DIN 6527L	DIN 6527L	DORNER	DIN 6527K	DIN 6527K	DIN 6527L	DIN 6527L	DORNER	DORNER	DORNER	DORNER	DORNER	DORNER		
		S802HA	S802HB	S812HA	S812HB	S822	S803HA	S803HB	S813HA	S813HB	S823	S710	S902	S922	S713	S903	S933	
		1.00 - 20.00	1.80 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	1.00 - 20.00	1.80 - 20.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00	1.00 - 20.00	2.00 - 20.00	2.00 - 20.00	1.50 - 20.00	2.00 - 20.00	2.00 - 20.00	
AMG		384	384	385	385	386	387	387	388	388	389	390	391	391	392	393	393	ISO
1.1		260B	260B	210B	210B	180B	260B	260B	210B	210B	180B	140C	65B	95B	140C	65B	95B	P 1
1.2		260B	260B	210B	210B	180B	260B	260B	210B	210B	180B	140C	65B	95B	140C	65B	95B	P 1
1.3		155B	155B	125B	125B	110B	155B	155B	125B	125B	110B	130C	55B	80B	130C	55B	80B	P 2
1.4		155B	155B	125B	125B	110B	155B	155B	125B	125B	110B	130C	50B	75B	130C	50B	75B	P 3
1.5		115B	115B	90B	90B	80B	115B	115B	90B	90B	80B	120C	30B	45B	120C	30B	45B	P 4
1.6		90B	90B	75B	75B	65B	90B	90B	75B	75B	65B			30B				H 1
1.7																		H 3
1.8																		H 4
2.1		105A	105A	75A	75A	70A	105A	105A	85A	85A	70A	80B			80B			M 1
2.2		70A	70A	55A	55A	50A	70A	70A	55A	55A	50A	70B			70B			M 3
2.3		70A	70A	55A	55A	50A	70A	70A	55A	55A	50A							M 2
2.4		50A	50A				50A	50A										S 2
3.1		180B	180B	145B	145B	125B	180B	180B	145B	145B	125B	170C	55B	80B	170C	55B	80B	K 1
3.2		110B	110B	85B	85B	75B	110B	110B	85B	85B	75B	150C	30B	45B	150C	30B	45B	K 2
3.3		145B	145B	115B	115B	100B	145B	145B	115B	115B	100B	130C	55B	80B	130C	55B	80B	K 3
3.4		95B	95B	75B	75B	65B	95B	95B	75B	75B	65B	120C	30B	45B	120C	30B	45B	K 4
4.1		170B	170B	140B	140B	120B	170B	170B	140B	140B	120B	70B	65B	95B	65B	95B	95B	S 1
4.2		115B	115B	90B	90B	80B	115B	115B	90B	90B	80B	70B	30B	45B	70B	30B	45B	S 2
4.3													15B	20B		15B	20B	S 3
5.1		165B	165B	130B	130B	115B	165B	165B	130B	130B	115B	70B	65B	95B	65B	95B	95B	S 1
5.2		35A	35A	25A	25A	25A	35A	35A	25A	25A	25A				70B			S 2
5.3																		S 3
6.1		320C	320C	255C	255C	220C	320C	320C	255C	255C	220C		110C	155C		110C	155C	N 3
6.2		320C	320C	255C	255C	220C	320C	320C	255C	255C	220C		110C	155C		110C	155C	N 4
6.3		320C	320C	255C	255C	220C	320C	320C	255C	255C	220C		110C	155C		110C	155C	N 3
6.4		40B	40B	30C	30C	25B	40B	40B	30C	30C	25B		15B	20B		15B	20B	N 4
7.1		800C	800C	640C	640C	550C	800C	800C	640C	640C	550C		275C	390C		275C	390C	N 1
7.2		800C	800C	640C	640C	550C	800C	800C	640C	640C	550C		275C	390C		275C	390C	N 1
7.3		480C	480C	380C	380C	330C	480C	480C	380C	380C	330C		165C	235C		165C	235C	N 1
7.4		240B	240B	190B	190B	160B	240B	240B	190B	190B	160B							N 2
8.1		320C	320C	255C	255C	245C	320C	320C	255C	255C	245C		110C	155C		110C	155C	O
8.2		320C	320C	255C	255C	245C	320C	320C	255C	255C	245C		110C	155C		110C	155C	O
8.3													30B	45B		30B	45B	O
9.1																		H
10.1																		O

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM			
	N	N	W	W	W	W	N	N	N	N	N	N	N	N	N	N		
	Z 3	Z 3	Z 1	Z 2	Z 2	Z 2	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4	Z 4		
	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 25^\circ$ $\gamma 20^\circ$	$\lambda 30^\circ$ $\gamma 20^\circ$	$\lambda 30^\circ$ $\gamma 20^\circ$	$\lambda 30^\circ$ $\gamma 20^\circ$	$\lambda 34^\circ$ $\gamma 9^\circ$	$\lambda 34^\circ$ $\gamma 9^\circ$	$\lambda 40^\circ$ $\gamma 3^\circ$	$\lambda 34^\circ$ $\gamma 9^\circ$	$\lambda 34^\circ$ $\gamma 9^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 3^\circ$	$\lambda 30^\circ$ $\gamma 12^\circ$	$\lambda 30^\circ$ $\gamma 12^\circ$		
	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB	DIN 6535HA	DIN 6535HA	DIN 6535HA	DIN 6535HB		
	ADN	ADN	Hi	Hi	Hi	Hi	Alcona	Alcona	ATN	Alcona	Alcona	ADN	Diamond	ATN		TAN		
	h9	h9	h9	h9	h9	h9	h10	h10	h9	h10	h10	h9	h9	h9	h12	h12		
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DIN 6527K	DIN 6527K	DORMER	DIN 6527L	DIN 6527L	DORMER	DORMER	DORMER	DORMER	DORMER		
	S714	S715	S637	S638	S610	S611	S804HA	S804HB	S219	S814HA	S814HB	S716	S612	S216	S904	S944		
	3.00 - 20.00	3.00 - 20.00	2.00 - 12.00	6.20 - 20.30	3.00 - 20.00	6.00 - 20.00	2.00 - 25.00	2.00 - 25.00	3.00 - 20.00	2.00 - 25.00	2.00 - 25.00	2.00 - 20.00	1.00 - 12.00	2.00 - 20.00	2.00 - 20.00	2.00 - 20.00		
AMG	394	395	396	397	398	399	400	400	401	402	402	403	404	405	406	406	ISO	
1.1	■110C	■70C					■360B	■360B		■270B	■270B	■140C			■95B	■140B	P 1	
1.2	■110C	■70C					■300B	■300B		■225B	■225B	■140C			■95B	■140B	P 1	
1.3	■100C	■65C					■230B	■230B		■175B	■175B	■130C			■80B	■120B	P 2	
1.4	■100C	■65C					■230B	■230B		■175B	■175B	■130C			■70B	■105B	P 3	
1.5	■95C	■60C					■165B	■165B		■125B	■125B	■120C			■55B	■80B	P 4	
1.6							■130B	■130B	■90C	●100B	●100B			■90C	●30B	●45B	H 1	
1.7																	H 3	
1.8																	H 4	
2.1	■65B	■40B					■165A	■165A		■125A	■125A	■80B					M 1	
2.2	■55B	■35B					■110A	■110A		●85A	●85A	■70B					M 3	
2.3							■110A	■110A	■70B	●85A	●85A				■70B		M 2	
2.4							●75A	●75A	■50B						■50B		S 2	
3.1	■135C	■85C					■275B	■275B		■205B	■205B	■170C			■80B	■120B	K 1	
3.2	■120C	■75C					■165B	■165B		■125B	■125B	■150C			●55B	■80B	K 2	
3.3	■100C	■65C					■165B	■165B		■125B	■125B	■130C			■70B	■105B	K 3	
3.4	■95C	■60C					■135B	■135B		■105B	■105B	■120C			●55B	■80B	K 4	
4.1							●275B	●275B		●205B	●205B				■95B	■140B	S 1	
4.2	■55B	■35B					●140B	●140B		●105B	●105B	■70B			●40B	●60B	S 2	
4.3									■50B						■50B	●30B	●45B	S 3
5.1							●275B	●275B		●205B	●205B				■135B	■200B	S 1	
5.2	■55B	■35B					●55A	●55A		●40A	●40A	■70B			●30A	●45A	S 2	
5.3									■50B						■50B	●25A	●35A	S 3
6.1	●200E	●125E	■350E	■400E	■350E	■280E	●320C	●320C		●255C	●255C				■110C	■155C	N 3	
6.2	●190E	●115E	■300E	■345E	■300E	■240E	■320C	■320C		■255C	■255C				■110C	■155C	N 4	
6.3	●175E	●110E	■250E	■290E	■250E	■200E	■320C	■320C		■255C	■255C				■110C	■155C	N 3	
6.4	●160E	●100E	■200E	■230E	■200E	■160E	■40B	■40B		■32C	■32C				●15B	●20B	N 4	
7.1	●200E	●125E	■600E	■690E	■600E	■480E	●800C	●800C		●640C	●640C				●275C	●390C	N 1	
7.2	●190E	●115E	■500E	■575E	■500E	■400E	●800C	●800C		●640C	●640C				●275C	●390C	N 1	
7.3	●175E	●110E	■400E	■460E	■400E	■320E	●480C	●480C		●380C	●380C				●165C	●235C	N 1	
7.4	●160E	●100E	■350E	■400E	■350E	■280E	●240B	●240B		●190B	●190B						N 2	
8.1			■800E	■980E	■800E	■640E	●320C	●320C		●255C	●255C				●110C	●155C	O	
8.2			■800E	■980E	■800E	■640E	●320C	●320C		●255C	●255C				●110C	●155C	O	
8.3															●55B	●80B	O	
9.1																	H	
10.1															■350A		O	

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM
	N	N	N	N	N	N	N	N	N	N	N	N	NR	NR	N	N	N	N
	Z ₄	Z ₄	Z ₄	Z ₄	Z ₄	Z ₄	Z ₄	Z ₆₋₈	Z ₆₋₈	Z ₆₋₈	Z ₆₋₈	Z ₆₋₈	Z ₆₋₈	Z ₄	Z ₄	Z ₄	Z ₄	
	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 3^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 3^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 4^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 50^\circ$ $\gamma 3^\circ$	$\lambda 50^\circ$ $\gamma 26^\circ$	$\lambda 50^\circ$ $\gamma 3^\circ$	$\lambda 50^\circ$ $\gamma 26^\circ$	$\lambda 50^\circ$ $\gamma 3^\circ$	$\lambda 50^\circ$ $\gamma 26^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 4^\circ$	$\lambda 40^\circ$ $\gamma 6^\circ$	$\lambda 45^\circ$ $\gamma 10^\circ$	
	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HB	DIN 6935HB	DIN 6935HA	DIN 6935HA
	ACN	NTN	ACN	NTN	ACN	ACN	TGN	NTN	TGN	NTN	TGN	NTN	TGN	ACN	ACN	TGN	TGN	
	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	
	S717	S217	S718	S218	S761	S260	S766	S225	S525	S226	S526	S227	S527	S765	S264	S524	S521	
	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	4.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	6.00 - 20.00	3.00 - 20.00	6.00 - 20.00	6.00 - 20.00	3.00 - 16.00	3.00 - 16.00	
AMG	407	407	408	408	409	409	410	411	411	412	412	413	413	414	415	416	417	ISO
1.1	■110C		■70C		■140D		■140D		■140D					■140D				P 1
1.2	■110C		■70C		■140D		■140D		■140D					■140D				P 1
1.3	■100C		■65C		■130D		■130D		■130D					■130D				P 2
1.4	■100C		■65C		■130D		■130D		■130D					■130D				P 3
1.5	■95C		■60C		■120D		■120D							■120D				P 4
1.6		■72C		■45C		■110D		■90C		■72C		■45C			■110D			H 1
1.7						■85B			■70A ■50A		■56A ■40A		■35A ■25A		■85B	■56A ■40A	■70A ■50A	H 3 H 4
1.8																		
2.1	■65B		■40B		■80C		■80C							■80C				M 1
2.2	■55B		■35B		■70C		■70C							■70C				M 3
2.3		■56B		■35B		■70C		■70B		■56B		■35B			■70C			M 2
2.4		■40B		■25B		■50C		■50B		■40B		■25B			■50C			S 2
3.1	■135C		■85C		■170D		■170D							■170D				K 1
3.2	■120C		■75C		■150D		■150D							■150D				K 2
3.3	■100C		■65C		■130D		■130D							■130D				K 3
3.4	■95C		■60C		■120D		■120D							■120D				K 4
4.1																		S 1
4.2	■55B		■35B		■70C		■70C							■70C				S 2
4.3		■40B		■25B		■50C		■50B		■40B		■25B			■50C			S 3
5.1																		S 1
5.2	■55B		■35B		■70C		■70C							■70C				S 2
5.3		■40B		■25B		■50C		■50B		■40B		■25B			■50C			S 3
6.1	●200E		●125E															N 3
6.2	●190E		●115E															N 4
6.3	●175E		●110E															N 3
6.4	●160E		●100E															N 4
7.1	●200E		●125E															N 1
7.2	●190E		●115E															N 1
7.3	●175E		●110E															N 1
7.4	●160E		●100E															N 2
8.1																		O
8.2																		O
8.3																		O
9.1																		H
10.1																		O

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM				
																						
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	W	N	N	N				
	Z 4	Z 4	Z 4	Z 4	Z 4-6	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 2	Z 4	Z 4	Z 4	Z 2	Z 2	Z 2				
																						
	$\lambda 40^\circ$ $\gamma 6^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 4^\circ$	$\lambda \neq$ $\gamma 10^\circ$	$\lambda 25^\circ$ $\gamma 0^\circ$	$\lambda 30^\circ$ $\gamma 3^\circ$	$\lambda 30^\circ$ $\gamma 3^\circ$	$\lambda 30^\circ$ $\gamma 3^\circ$	$\lambda 30^\circ$ $\gamma 3^\circ$	$\lambda 30^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 10^\circ$	$\lambda 30^\circ$ $\gamma 15^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$	$\lambda 40^\circ$ $\gamma 10^\circ$		
	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA	DIN 6935HA		
	TGN	ADN	ADN	TGN	TGN	TGN	TGN	TGN	TGN	TGN	TGN	TGN	TGN	TGN	X-CED	TGN	TGN	X-CED	H	ATN	ATN	ATN
	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9	h9
																						
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
																						
	S523	S763	S262	S767	S536	S229	S231	S233	S529	S531	S533	S501	S534	S535	S511	S629	S739	S740	S741			
	1.50 - 16.00	3.00 - 20.00	3.00 - 20.00	4.00 - 20.00	6.00 - 12.00	1.50 - 16.00	1.50 - 16.00	2.00 - 16.00	1.50 - 16.00	1.50 - 16.00	2.00 - 16.00	1.00 - 16.00	3.00 - 16.00	3.00 - 16.00	3.00 - 16.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00	3.00 - 20.00			
AMG	418	419	420	422	423	424	425	426	427	428	429	430	431	432	433	434	435	435	435	ISO		
1.1		■140D		■140D								■181B			■230B		■140C	■140C	■140C	P 1		
1.2		■140D		■140D								■181B			■140C		■140C	■140C	■140C	P 1		
1.3		■130D		■130D								■118B			■153B		■130C	■130C	■130C	P 2		
1.4		■130D		■130D								■118B			■153B		■130C	■130C	■130C	P 3		
1.5		■120D		■120D								■90B			■115B		■120C	■120C	■120C	P 4		
1.6			■110D			■630C	■500C	■315C				■72B			■92B					H 1		
1.7	■70A		■85B			■105E			■330A	■260A	■165A	●45A	■330A	■260A	●61A					H 3		
1.8	■50A				■75E				■280A	■225A	■140A		■280A	■225A						H 4		
2.1		■80C		■80C								■81A			■115A		■80B	■80B	■80B	M 1		
2.2		■70C		■70C								■54A			■76A		■70B	■70B	■70B	M 3		
2.3			■70C			■540B	■430B	■270B				■54A			■76A					M 2		
2.4			■50C			■315B	■250B	■155B												S 2		
3.1		■170D		■170D								■136B			■192B		■170C	■170C	■170C	K 1		
3.2		■150D		■150D								■81B			■115B		■155C	■155C	■155C	K 2		
3.3		■130D		■130D								■109B			■115B		■145C	■145C	■145C	K 3		
3.4		■120D		■120D								■72B			■96B		■130C	■130C	■130C	K 4		
4.1												■136B			■192B					S 1		
4.2		■70C		■70C								■90B			■96B		■70B	■70B	■70B	S 2		
4.3			■50C			■315B	■250B	■155B				■45B			■61B					S 3		
5.1												■136B			■192B					S 1		
5.2		■70C		■70C								■27A			■38A		■70B	■70B	■70B	S 2		
5.3			■50C			■315B	■250B	■155B				■22A			■30A					S 3		
6.1												■363C			●384C	■350E	■250E	■250E	■250E	N 3		
6.2												■363C			●384C	■300E	■235E	■235E	■235E	N 4		
6.3												■363C			●384C	■250E	■220E	■220E	■220E	N 3		
6.4												■54B			●61B	■200E	■200E	■200E	■200E	N 4		
7.1												■950C			●950C	■600E	■250E	■250E	■250E	N 1		
7.2												■950C			●950C	■500E	■235E	■235E	■235E	N 1		
7.3												■681C			■576C	■400E	■220E	■220E	■220E	N 1		
7.4												■363B			■307B	■350E	■200E	■200E	■200E	N 2		
8.1												■318C			●307C	■800E				O		
8.2												■318C			■307C	■800E				O		
8.3												■318B			■307B					O		
9.1												■5A			■9A					H		
10.1																				O		

		HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS-E	HSS-E PM	HSS-E PM	HSS-E		
		N	N	N	N	N	N	N	N	N	N	W	W	W	W	N	
		Z ₂	Z ₂	Z ₂	Z ₂	Z ₂	Z ₃	Z ₃	Z ₃	Z ₃	Z ₃	Z ₂	Z ₂	Z ₃	Z ₃	Z ₂	
		30° 12°	30° 12°	30° 12°	30° 12°	30° 12°	30° 12°	30° 12°	30° 12°	30° 12°	30° 12°	40° 20°	40° 20°	40° 25°	40° 25°	40° 25°	30° 12°
		DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835A
		TiCN	TiCN	TiCN	TiCN	TiCN	Alcova	Alcova	Alcova	Alcova	TiCN	TiCN	Alcova	Alcova	Alcova	Alcova	Alcova
		e8	e8	e8	e8	e8	e8 h10	e8 h10	e8	e8	e8	e8	e8	e8	k10	k10	js14
		DIN 327D	DIN 327D	DIN 844K	DIN 844K	DIN 327D	DIN 327D	DIN 327D	DIN 327D	DIN 844K	DIN 844K	DIN 844K	DIN 844K	DIN 844K	DIN 844K	DIN 844K	DIN 844K
S991		C110	C126	C123	C139	C135	C306	C353	C367	C305	C352	C159	C169	C336	C358	C167	
Set		1.00 - 50.00	1.00 - 30.00	1/16 - 40.00	2.00 - 30.00	2.00 - 20.00	3.00 - 30.00	3.00 - 30.00	2.00 - 20.00	2.00 - 32.00	3.00 - 20.00	2.00 - 20.00	2.00 - 12.00	10.00 - 30.00	10.00 - 30.00	6.00 - 16.00	
AMG		438	438	440	440	442	443	443	444	445	445	446	446	447	447	448	ISO
1.1		■60A	■135A	■55A	■120A	■50A	●53A	●145A	■146A	●56A	●135A	■50A	■100A	●55A	●133A	■50A	P 1
1.2		■50A	■105A	■45A	■95A	■40A	■49A	■120A	■117A	■44A	■105A	■80A	■80A	●44A	■106A	■40A	P 1
1.3		●40B	■95B	■40B	■85B	●35B	■41B	■100B	■102B	■39B	■95B	●35B	●70B	●38B	●93B	●35B	P 2
1.4		●35B	■80B	■35B	■70B	●30B	●35B	■85B	●87B	●33B	■80B					●30B	P 3
1.5			●55C		●50C			■60C			■55C						P 4
1.6			●25C		●20C			●25C			●25C						H 1
1.7																	H 3
1.8																	H 4
2.1		●30F	●45F	●25F	●45F	●25F	●26F	●50F	■67F	●26F	●50F	●23F	●34F	●25F	●48F	●25F	M 1
2.2								●45F	■55F	●40F	●19F	●29F	●21F	●40F			M 3
2.3			●25F		●25F			●30F	■35F	●25F	●18F			●26F			M 2
2.4								■25F									S 2
3.1		●35A	■60A	●30A	■55A	●30A	●32A	■65A		●30A	■60A					●30A	K 1
3.2		●30A	■50A	●25A	■45A	●25A	●27A	■55A		●25A	■50A					●25A	K 2
3.3		●50B	■90B	●45B	■80B	●40B	●48B	■95B		●45B	■90B					●40B	K 3
3.4		●30B	■55B	●30B	■50B	●25B	●30B	■60B		●27B	■55B					●25B	K 4
4.1		■35D	■45D	■30D	■45D	■30D	■33D	■50D	●50D	■29D	■45D	●28D	●36D	●30D	●46D	●30D	S 1
4.2		●25D	■40D	●25D	■35D	●25D	●26D	■40D		●24D	■35D		●29D		●37D	●25D	S 2
4.3			●15D		●15D			●20D			●15D						S 3
5.1		■60D	■130D	■50D	■115D	■50D	■58D	■140D	●140D	■51D	■125D	●48D	●96D	●52D	●127	■50D	S 1
5.2		●15C	■25C	●15C	■25C	●15C	●15C	■30C		■13C	■25C		●19D		●27	●15C	S 2
5.3			●10D		●10D			●15D		●10D							S 3
6.1		■85C	■190C	■80C	■170C	■70C	■110C	■210C	■209C	■100C	■190C	■100C	■200C	■100C	■240C	■75C	N 3
6.2		■85C	■190C	■80C	■170C	■70C	■110C	■210C	■209C	■100C	■190C	■100C	■200C	■100C	■240C	■75C	N 4
6.3		■85C	■190C	■80C	■170C	■70C	■110C	■210C	■209C	■100C	■190C	■100C	■200C	■100C	■240C	■75C	N 3
6.4			●25C		●25C			●30C		●25C							N 4
7.1		●220E	●480E	●200E	●435E	●180E		■528E			■250E	■500E	■250E	■600E	●200E		N 1
7.2		●220E	●480E	●200E	●435E	●180E	●219E	●530E	●528E	●198E	●480E	■250E	■500E	■250E	■600E	●200E	N 1
7.3		●85E	●190E	●80E	●170E	●70E	●86E	●210E	●209E	●79E	●190E	■100E	■200E	■100E	■240E	●75E	N 1
7.4			●95A		●85A			●105A		●95A					■120A		N 2
8.1		●90C	●190C	●80C	●175C	●70C	●72C	●210C	●209C	●65C	●190C	■100C	■200C	■100E	■240A	●80C	O
8.2												■100C	■200C	■100E	■240A		O
8.3																	O
9.1																	H
10.1																	O

	HSS-E	HSS-E	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	
	N	N	N	N	N	N	N	N	N	N	W	W	W	HRA	HRA	HRA	HRA
	Z 2	Z 3	Z 3-5	Z 3-6	Z 3-5	Z 3-5	Z 4-8	Z 4-6	Z 4-6	Z 4-6	Z 2	Z 3	Z 3	Z 3	Z 3-4	Z 4-6	Z 3-6
	$\lambda 30^\circ$ $\nu 12^\circ$	$\lambda 30^\circ$ $\nu 12^\circ$	$\lambda 45^\circ$ $\nu 12^\circ$	$\lambda 45^\circ$ $\nu 12^\circ$	$\lambda 45^\circ$ $\nu 12^\circ$	$\lambda 45^\circ$ $\nu 12^\circ$	$\lambda 30^\circ$ $\nu 12^\circ$	$\lambda 30^\circ$ $\nu 12^\circ$	$\lambda 30^\circ$ $\nu 12^\circ$	$\lambda 30^\circ$ $\nu 12^\circ$	$\lambda 40^\circ$ $\nu 20^\circ$	$\lambda 40^\circ$ $\nu 25^\circ$	$\lambda 40^\circ$ $\nu 25^\circ$	$\lambda 35^\circ$ $\nu 12^\circ$	$\lambda 35^\circ$ $\nu 12^\circ$	$\lambda 35^\circ$ $\nu 12^\circ$	$\lambda 35^\circ$ $\nu 12^\circ$
	DIN 1835A	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B
	e8	e8	k10	k10	k10	k10	k10	k10	k10	k10	e8	k10	k10	k12	k12	k12	k12
	DIN 844L	DIN 844K	DIN 844K	DIN 844L	DIN 844L	DIN 844K	DIN 844K	DIN 844L	DIN 844L	DIN 844L	DIN 844L	DIN 844L	DIN 844L	DIN 327D	DIN 844K	DIN 844K	DIN 844L
	C122	C346	C299	C907	C903	C920	C247	C246	C273	C295	C166	C333	C359	C324	C922	C428	C492
	5.00 - 30.00	3.00 - 20.00	3.00 - 25.00	3.00 - 32.00	6.00 - 25.00	6.00 - 25.00	2.00 - 50.00	2.00 - 25.00	2.00 - 40.00	2.00 - 40.00	6.00 - 12.00	10.00 - 30.00	10.00 - 30.00	8.00 - 30.00	6.00 - 32.00	6.00 - 40.00	6.00 - 30.00

AMG	449	450	451	451	452	452	453	453	455	455	457	458	458	459	460	461	462	ISO
1.1	■45A	●45A					■55S	■120S	■50S	■110S	■45A							P 1
1.2	■36A	■35A					■45S	■95S	■50S	■85S	●36A							P 1
1.3	●31B	●30B	■37T	■95T	■35T	■85T	■40T	■85T	■35T	■75T	●31B			●100H	●95H	●93H	■83H	P 2
1.4	●27B	●25B	■33T	■80T	■29T	■70T	●35T	■70T	●30T	■65T				●85H	■80H	■79H	■71H	P 3
1.5			■22U	■55U	■20U	■50U		●50U		●45U				■60I	■55I	■54I	■49I	P 4
1.6			●10U	■25U	●9U	■20U		●20U		●20U				■25I	■25I	■24I	■21I	H 1
1.7																		H 3
1.8																		H 4
2.1	●20F	●20F	■26Y	■50Y	■23Y	■45Y	●25Y	●45Y	●10Y	●40Y	●20F			■50L	■50L	■48L	■43L	M 1
2.2			●21Y	■40Y	●18Y	■35Y				●17F				■45L	■40L	■40L	■36L	M 3
2.3			■13Y	■25Y	■13Y	■25Y		●25Y		●20Y				■30L	■25L	■26L	■23L	M 2
2.4																		S 2
3.1	●25A	●25A	■30S	■60S	■27S	■55S	●30S	■55S	●25S	■50S				■65G	■60G	■61G	■55G	K 1
3.2	●20A	●20A	■25S	■50S	■22S	■45S	●25S	■45S	●20S	■40S				■55G	■50G	■50G	■45G	K 2
3.3	●36B	●35B	■45T	■90T	■39T	■80T	●45T	■79T	●40T	■70T				■95H	■90H	■88H	■79H	K 3
3.4	●22B	●20B	■27T	■65T	■24T	■50T	●25T	■49T	●25T	■45T				■60H	■55H	■55H	■49H	K 4
4.1	●25D	■25D	●29V	●45V	●26V	●40V	■30V	■43V	■25V	■40V	●25D			●50J	●45J	●46J	●41J	S 1
4.2	●20D	●20D	■57V	■85V	■23V	■35V	●25V	■35V	●20V	■30V				●40J	■35J	■37J	■34J	S 2
4.3			■10V	■15V	■10V	■15V		●15V		●15V				■20J	■15J	■16J	■15J	S 3
5.1	■43D	■45D	■51V	■125V	■47V	■115V	■50V	■116V	■45V	■105V	●43D			●140J	●125J	●127J	●114J	S 1
5.2	●11C	●10C	■13U	■25U	■13U	■25U	●15U	■24U	●10U	■20U				■30I	■25I	■27I	■24I	S 2
5.3			■5V	■10V	■5V	■10V		●10V		●10V				■15J	■10J	■11J	■10J	S 3
6.1	■112C	■70C					■80U	■170U	■70U	■155U	■90C	■90C	■215C					N 3
6.2	■112C	■70C	■100U	■190U	■89U	■170U	■80U	■170U	■70U	■155U	■90C	■90C	■215C	■210I	■190I	■190I	■170I	N 4
6.3	■112C	■70C					■80U	■170U	■70U	■155U	■90C	■90C	■215C					N 3
6.4								●25U		●20U				●30I	●25I	●25I	●23I	N 4
7.1	●270E	●180E					●200X	●435X	●180X	●390X	■225E	■225E	■540E					N 1
7.2	●270E	●180E					●200X	●435X	●180X	●390X	■225E	■225E	■540E					N 1
7.3	●81E						●80X	●170X	●70X	●155X	■90E	■90E	■215E					N 1
7.4			■39S	■95S	■35S	■85S		●85S		●75S			■110A	■105G	■95G	■95G	■85G	N 2
8.1	●112C	●70C					●80U	●175U	●70U	●155U	■90C	■90E	■215A					O
8.2											■90C	■90E	■215A					O
8.3																		O
9.1																		H
10.1																		O

	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E PM	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E	HSS	HSS-E		
	NRA	NRA	NRA	NRA	FS	NF	NF	NF	NF	N	N	N	N	N	N		
	Z 4-6	Z 4-6	Z 4-6	Z 4-6	Z 3-6	Z 4-6	Z 4-6	Z 4-6	Z 4-6	Z 2	Z 2	Z 2	Z 2	Z 6-8	Z 8-12		
	λ 35° V12°	λ 35° V12°	λ 35° V12°	λ 35° V12°	λ 45° V12°	λ 30° V12°	λ 30° V12°	λ 30° V12°	λ 30° V12°	λ 30° V12°	λ 30° V12°	λ 30° V12°	λ 30° V12°	λ 15° V10°	λ 12° V10°		
	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B		
	k12	k12	k12	k12	k10	k12	k12	k12	k12	e8	e8	e8	e8	d11	js16		
	DIN 844K	DIN 844K	DIN 844L	DIN 844L	DIN 844K	DIN 844K	DIN 844K	DIN 844L	DIN 844L	DIN 327D	DIN 327D	DIN 844K	DIN 327D	DIN 851	DIN 844K		
	C407	C908	C944	C948	C921	C400	C413	C403	C429	C500	C503	C505	C511	C800	C810		
	6.00 - 32.00	6.00 - 40.00	6.00 - 40.00	6.00 - 32.00	6.00 - 32.00	6.00 - 50.00	6.00 - 32.00	10.00 - 50.00	10.00 - 32.00	2.00 - 25.00	2.00 - 25.00	3.00 - 30.00	3.00 - 20.00	11.00 - 50.00	12.50 - 40.00		
AMG	463	463	464	464	465	466	466	467	467	468	469	469	470	471	472	473	ISO
1.1	■55G					●50G	●100G	●45G	●90G	■55S	■110S	■50S	■50S	■35P	■25P	■35P	P 1
1.2	■44G					■40G	■80G	■35G	■70G	■45S	■90S	■40S	■40S	■35P	■25P	■30P	P 1
1.3	■38H	■93H	■34H	■83H	■96N	■35H	■70H	■30H	■65H	●40T	■75T	●35T	●35T	■30O	■20O	■30O	P 2
1.4	■33H	■79H	■29H	■71H	■80N	●30H	●60H	●25H	■55H	●35T	●65T	●30T	●30T	■25O	●15O	■20O	P 3
1.5	■22I	■54I	■20I	■49I	■55O	●40I	●22I	●35I	●45U	●45U	●20U		■20N	●10N	■15N	■20N	P 4
1.6	●10I	●24I	●9I	■21I	■25O	●20I	●15I		●20U				■15N	●10N	■10N	■10N	H 1
1.7																	H 3
1.8																	H 4
2.1	■25L	■48L	■22L	■43L	■50R	●25L	●35L	●20L	●30L	●25Y	●35Y	●25Y	●25Y	■20M	■15M	■15M	M 1
2.2	●21L	■40L	●19L	■36L	■40R									■15M	●10M	■10M	M 3
2.3	■13L	■26L	■12L	■23L	■25R		●20L		●15L		●20Y			■10M	●10M	■10M	M 2
2.4																	S 2
3.1	■30G	■61G	■27G	■55G	■60M	●30G	■45G	●25G	■40G	●30S	■50S	●30S	●30S	■20P	■20P	■25P	K 1
3.2	■25G	■50G	■22G	■45G	■50M	●25G	■35G	●20G	■35G	●25S	■40S	●25S	●25S	■20P	■20P	■20P	K 2
3.3	■44H	■88H	■39H	■79H	■90N	●40H	■65H	■35H	■55H	●45T	■70T	●40T	●40T	■30O	■20O	■30O	K 3
3.4	■27H	■55H	■24H	■49H	■55N	●25H	■40H	●20H	■35H	●30T	■45T	●25T	●25T	■20O	■10O	■20O	K 4
4.1	●30J	●46J	●27J	●41J	●45P	●30J	■35J	●25J	●30J	■30V	■40V	■30V	■30V	■30P	■20P	■35P	S 1
4.2	■25J	■37J	■22J	■34J	■35P	●25J	■30J	●20J	■25J	●25V	■30V	●25V	●25V	■20P	●15P	■20P	S 2
4.3	■11J	■16J	■10J	■15J	■15P	●10J	●10J	●10J	●10J	●14V				■10O	●5O	■10O	S 3
5.1	●52J	●127J	●47J	●114J	●130P	●50J	●95J	●45J	●85J	■50V	■105V	■50V	■50V	■35P	■25P	■35P	S 1
5.2	■14I	■27I	■12I	■24I	■30O	●15I	■20I	●10I	■15I	●15U	●20V	●15U	●15U	■10O	●5O	■5O	S 2
5.3	■6J	■11J	■5J	■10J	■10P	●10J	●10J	●10J	●10J	●10V				■5N	●5N	■5N	S 3
6.1						●70I	●140I	●65I	●125I	■85U	■170U	■80U	■80U	■100Q	■50Q	■30Q	N 3
6.2						■70I	■140I	■65I	■125I	■85U	■170U	■80U	■80U	■100P	■55P	■35P	N 4
6.3						■70I	■140I	■65I	■125I	■85U	■170U	■80U	■80U	■35P	■20P	■35P	N 3
6.4	●13I	●25I	●12I	●23I	●25O	●20I	●20I	●15I		●25V				■15O	■5O	■10O	N 4
7.1										●220X	●435X	●200X	●200X	■250R	■60R	■70R	N 1
7.2						●180K	●360K	●160K	●325K	●220X	●435X	●200X	●200X	■250R	■50R	■70R	N 1
7.3						●70K	●140K	●65K	●125K	●85X	●170X	●80X	●80X	■65R	■30R	■30R	N 1
7.4	●39G	●95G	■35G	■85G	■95M	●70G	●65G	●65G	●65G	●85S	●85S			■45Q	●20Q	■20Q	N 2
8.1						●70I	●145I	●65I	●130I	●90U	●175U	●80U	●80U	■100R	●50R	■35R	O
8.2																	O
8.3																	O
9.1																	H
10.1														■45Q	●20Q	■20Q	O

	HSS-E	HSS-E	HSS	HSS	HSS	HSS-E	HSS-E	HSS	HSS-E	HSS-E	
	Z 6-8	Z 6-12	Z 6-12	Z 6-8	Z 6-8	Z 10-12	Z 10-12	Z 4	Z 4-6	Z 16-30	
	DIN 1835B	DIN 1835	DIN 1835D	DIN 1835D	DIN 1835D	DIN 1835B	DIN 1835B	DIN 1835B	DIN 1835B		
	C801	C822	C820	C837	C835	C830	C831	C710	C700	D200	
	16.00 - 32.00	4.50 - 45.50	10.50 - 45.50	13.00 - 38.00	1/2 - 1.1/2	12.00 - 32.00	12.00 - 32.00	1/16 - 1/2	1.00 - 20.00	50.00 - 200.00	
AMG	474	475	476	478	479	480	481	482	483	484	ISO
1.1	■40P	■40P	■25P	■20P	■20P	■30P	■30P	■20P	■35P	■45P	P 1
1.2	■40P	■40P	■25P	■20P	■20P	■30P	■30P	■20P	■35P	■40P	P 1
1.3	■30O	■30O	■20O	■15O	■15O	■25O	■25O	■15O	■25O	■35P	P 2
1.4	■25O	■25O	■20O	■15O	■15O	■20O	■20O	■15O	■25O	■30P	P 3
1.5	■20N	■20N	●10N	●10N	●10N	■15N	■15N	●10N	■15N	■20P	P 4
1.6	■15N	■15N	●10N	●5N	●5N	■10N	■10N	●10N	■15N	■10P	H 1
1.7											H 3
1.8											H 4
2.1	■25M	■25M	■15M	■10M	■10M	■20M	■20M	■15M	■20M	■30P	M 1
2.2	■15M	■15M	■10M	●10M	●10M	■15M	■15M	■10M	■15M	■20P	M 3
2.3	■15M	■15M	●10M	●5M	●5M	■10M	■10M	●5M	■10M	■10Q	M 2
2.4											S 2
3.1	■25P	■25P	■20P	■15P	■15P	■20P	■20P	■20P	■20P	■30Q	K 1
3.2	■20P	■20P	■20P	■15P	■15P	■15P	■15P	■15P	■15P	■25Q	K 2
3.3	■35O	■30O	■20O	■15O	■15O	■25O	■25O	■15O	■25O	■40Q	K 3
3.4	■20O	■20O	■15O	■10O	■10O	■15O	■15O	■10O	■15O	■25Q	K 4
4.1	■30P	■30P	■20P	■15P	■15P	■25P	■25P	■15P	■25P	■30N	S 1
4.2	■20P	■20P	●15P	●10P	●10P	■15P	■15P	■10P	■20P	■20O	S 2
4.3	■10O	■10O	●10O	●5O	●5O	■10O	■10O	●5O	■10O	■15O	S 3
5.1	■40P	■35P	■25P	■20P	■20P	■30P	■30P	■20P	■35P	■40P	S 1
5.2	■10O	■10O	●5O	●5O	●5O	■10O	■10O	●5O	■10O	■15O	S 2
5.3	■5N	■5N	●5N	●5N	●5N	■5N	■5N	●5N	■5N	■10M	S 3
6.1	■110Q	■100Q	■50Q	■40Q	■40Q	■90Q	■90Q	■40Q	■90Q	■150P	N 3
6.2	■110P	■100P	■55P	■45P	■45P	■90P	■90P	■45P	■90P	■150P	N 4
6.3	■40P	■100P	■55P	■15P	■15P	■75P	■75P	■45P	■90P	■150P	N 3
6.4	■15O	■15O	●5O	●5O	●5O	■10O	■10O	●5O	■15O	■15M	N 4
7.1	■275R	■260R	■65R	■50R	■50R	■190R	■190R	■55R	■245R	■400Q	N 1
7.2	■275R	■260R	■50R	■40R	■40R	■190R	■190R	■40R	■230R	■400Q	N 1
7.3	■70R	■66R	■35R	■25R	■25R	■55R	■55R	■25R	■60R	■100Q	N 1
7.4	■45Q	■44Q	●20Q	●17Q	●17Q	■35Q	■35Q	●15Q	■40Q	■70Q	N 2
8.1	■110R	■100R	●50R	●40R	●40R	■75R	■75R			■150M	O
8.2											O
8.3											O
9.1											H
10.1	■45Q	■45Q	●20Q			■35Q	■35Q	●15Q	■40Q		O

	HSS-E	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E	
	Z 28-44	Z 28-100	Z 40-200	Z 80-180	Z 100-140	Z 128-220	Z 180-350	Z 8-12	
	$\lambda 15^\circ$ $\gamma 10^\circ$	$\gamma 15^\circ$	$\gamma 5^\circ$	$\gamma 18^\circ$	$\gamma 18^\circ$	$\gamma 18^\circ$	$\gamma 18^\circ$	$\lambda 30^\circ$ $\gamma 12^\circ$	
	js16			IST	IST	IST	IST	js16	
	DIN 885A	DIN 1838	DIN 1837	DORMER	DORMER	DORMER	DORMER	DIN 1880	
	D763	D745	D747	D752	D753	D750	D751	D400	
	63.00 - 125.00	50.00 - 315.00	32.00 - 315.00	200.00 - 350.00	250.00 - 350.00	200.00 - 350.00	200.00 - 350.00	40.00 - 100.00	
AMG	484	486	488	491	491	492	492	493	ISO
1.1	■45P	■40R	■40R	■40R	■40R	■40R	■40R	■40J	P 1
1.2	■40P	■30R	■30R	■30R	■30R	■30R	■30R	■40J	P 1
1.3	■35P	■30R	■30R	■30R	■30R	■30R	■30R	■30I	P 2
1.4	■30P	■20S	■20S	■20S	■20S	■20S	■20S	■25I	P 3
1.5	■20P							●20H	P 4
1.6	■10P							●15H	H 1
1.7									H 3
1.8									H 4
2.1	■30P	●10S	●10S	●10S	●10S	●10S	●10S	■25H	M 1
2.2	■20P	●10S	●10S	●10S	●10S	●10S	●10S	●15G	M 3
2.3	■10Q							■10G	M 2
2.4									S 2
3.1	■30Q	■40R	■40R	■40R	■40R	■40R	■40R	■20J	K 1
3.2	■25Q	■40R	■40R	■40R	■40R	■40R	■40R	■20J	K 2
3.3	■40Q	■30R	■30R	■30R	■30R	■30R	■30R	■30I	K 3
3.4	■25Q							■20I	K 4
4.1	■30N							■30J	S 1
4.2	■20O							●20I	S 2
4.3	■15O							●10I	S 3
5.1	■40P							■35J	S 1
5.2	■15O							●10I	S 2
5.3	■10M							●5H	S 3
6.1	■150P	■200R	■200R	■200R	■200R	■200R	■200R	■105M	N 3
6.2	■150P	■200T	■200T	■200T	■200T	■200T	■200T	■105K	N 4
6.3	■150P	■200T	■200T	■200T	■200T	■200T	■200T	■35K	N 3
6.4	■15M							●15H	N 4
7.1	■400Q	■600T	■600T	■600T	■600T	■600T	■600T	●260N	N 1
7.2	■400Q	■500T	■500T	■500T	■500T	■500T	■500T	■260N	N 1
7.3	■100Q	■500T	■500T	■500T	■500T	■500T	■500T	■65N	N 1
7.4	■70Q							●45L	N 2
8.1	■150M	■60T	■60T	■60T	■60T	■60T	■60T	●105N	O
8.2								●30N	O
8.3								●5L	O
9.1									H
10.1								●45K	O

	HSS-E	HSS-E	HSS-E
	N	NR	NR
	Z 8-12	Z 6-10	Z 6-10
	$\lambda 30^\circ$ $\nu 12^\circ$	$\lambda 30^\circ$ $\nu 12^\circ$	$\lambda 30^\circ$ $\nu 12^\circ$
	TCN		TCN
	js16	js16	js16
	DIN 1880	DIN 1880	DIN 1880
	D420	D402	D422
	40.00 - 100.00	40.00 - 100.00	40.00 - 100.00

AMG	493	494	494	ISO
1.1	■75J	■40J	■75J	P 1
1.2	■75J	■40J	■75J	P 1
1.3	■65I	■30I	■65I	P 2
1.4	■50I	■25I	■50I	P 3
1.5	■35H	●20H	■35H	P 4
1.6	■30H	●15H	■30H	H 1
1.7				H 3
1.8				H 4
2.1	■35H	■25H	■35H	M 1
2.2	■30G	●15G	■30G	M 3
2.3	■20G	■10G	■20G	M 2
2.4				S 2
3.1	■35J	■20J	■35J	K 1
3.2	■30J	■20J	■30J	K 2
3.3	■50I	■30I	■50I	K 3
3.4	■30I	■20I	■30I	K 4
4.1	■35J	■30J	■35J	S 1
4.2	■25I	●20I	■25I	S 2
4.3	■15I	●10I	■15I	S 3
5.1	■75J	■35J	■75J	S 1
5.2	■20I	●10I	■20I	S 2
5.3	■10H	●5H	■10H	S 3
6.1	■150M	■105M	■150M	N 3
6.2	■150K	■105K	■150K	N 4
6.3	■50K	■35K	■50K	N 3
6.4	■20H	●15H	■20H	N 4
7.1	●260N	●260N	●260N	N 1
7.2	■260N	■260N	■260N	N 1
7.3	■135N	■65N	■135N	N 1
7.4	■75L	●45L	■75L	N 2
8.1	■120N	●105N	■120N	O
8.2	●60N	●30N	●60N	O
8.3	●15L	●5L	●15L	O
9.1				H
10.1	■125K	●45K	■125K	O

HM

Z	Z	Z	Z	Z	Ae	Ap		f_z	ϕ [mm]	fz [mm/Z] $\pm 25\%$
1	2	3	4	>4	(x ϕ)	(x ϕ)				
									ϕ	
									1	
									2	
									3	
									4	
									5	
									6	
									8	
									10	
									12	
									14	
									16	
									18	
									20	
									A	0.012 0.024 0.035 0.045 0.055 0.065 0.080 0.093 0.107 0.121 0.134 0.149 0.162
									B	0.016 0.032 0.047 0.061 0.074 0.087 0.107 0.124 0.143 0.162 0.179 0.198 0.216
									C	0.020 0.040 0.058 0.076 0.092 0.108 0.134 0.156 0.179 0.202 0.224 0.248 0.271
									D	0.024 0.048 0.070 0.091 0.111 0.130 0.160 0.187 0.214 0.242 0.268 0.297 0.325
									E	0.028 0.056 0.081 0.106 0.129 0.152 0.187 0.218 0.250 0.283 0.313 0.347 0.379
									F	0.032 0.064 0.093 0.121 0.148 0.173 0.214 0.249 0.286 0.323 0.358 0.396 0.433
									G	0.037 0.071 0.105 0.136 0.166 0.195 0.240 0.280 0.321 0.364 0.403 0.446 0.487
									H	0.041 0.079 0.116 0.152 0.185 0.216 0.267 0.311 0.357 0.404 0.447 0.495 0.541
									ϕ	
									1	
									2	
									3	
									4	
									5	
									6	
									8	
									10	
									12	
									14	
									16	
									18	
									20	
									A	0.010 0.019 0.028 0.036 0.044 0.052 0.064 0.074 0.085 0.096 0.107 0.118 0.129
									B	0.013 0.025 0.037 0.048 0.059 0.069 0.085 0.099 0.114 0.128 0.142 0.157 0.172
									C	0.016 0.032 0.046 0.060 0.073 0.086 0.106 0.124 0.142 0.161 0.178 0.197 0.215
									D	0.019 0.038 0.055 0.072 0.088 0.103 0.127 0.148 0.170 0.193 0.213 0.236 0.258
									E	0.023 0.044 0.065 0.084 0.103 0.120 0.149 0.173 0.199 0.225 0.249 0.276 0.301
									F	0.026 0.050 0.074 0.096 0.118 0.138 0.170 0.198 0.227 0.257 0.284 0.315 0.344
									G	0.029 0.057 0.083 0.108 0.132 0.155 0.191 0.223 0.256 0.289 0.320 0.354 0.387
									H	0.032 0.063 0.092 0.120 0.147 0.172 0.212 0.247 0.284 0.321 0.356 0.394 0.430
									ϕ	
									1	
									2	
									3	
									4	
									5	
									6	
									8	
									10	
									12	
									14	
									16	
									18	
									20	
									A	0.007 0.014 0.021 0.027 0.033 0.038 0.047 0.055 0.063 0.071 0.079 0.087 0.095
									B	0.010 0.019 0.027 0.036 0.043 0.051 0.063 0.073 0.084 0.095 0.105 0.116 0.127
									C	0.012 0.023 0.034 0.045 0.054 0.064 0.078 0.091 0.105 0.119 0.132 0.146 0.159
									D	0.014 0.028 0.041 0.053 0.065 0.076 0.094 0.110 0.126 0.143 0.158 0.175 0.191
									E	0.017 0.033 0.048 0.062 0.076 0.089 0.110 0.128 0.147 0.166 0.184 0.204 0.223
									F	0.019 0.037 0.055 0.071 0.087 0.102 0.126 0.146 0.168 0.190 0.210 0.233 0.255
									G	0.021 0.042 0.062 0.080 0.098 0.115 0.141 0.165 0.189 0.214 0.237 0.262 0.286
									H	0.024 0.047 0.068 0.089 0.109 0.127 0.157 0.183 0.210 0.238 0.263 0.291 0.318
									ϕ	
									1	
									2	
									3	
									4	
									5	
									6	
									8	
									10	
									12	
									14	
									16	
									18	
									20	
									A	0.005 0.010 0.015 0.019 0.024 0.028 0.034 0.040 0.046 0.052 0.058 0.064 0.070
									B	0.007 0.014 0.020 0.026 0.032 0.037 0.046 0.053 0.061 0.069 0.077 0.085 0.093
									C	0.009 0.017 0.025 0.032 0.040 0.046 0.057 0.067 0.077 0.087 0.096 0.106 0.116
									D	0.010 0.020 0.030 0.039 0.048 0.056 0.069 0.080 0.092 0.104 0.115 0.127 0.139
									E	0.012 0.024 0.035 0.045 0.055 0.065 0.080 0.093 0.107 0.121 0.134 0.149 0.162
									F	0.014 0.027 0.040 0.052 0.063 0.074 0.092 0.107 0.122 0.138 0.153 0.170 0.185
									G	0.016 0.031 0.045 0.058 0.071 0.083 0.103 0.120 0.138 0.156 0.173 0.191 0.209
									H	0.017 0.034 0.050 0.065 0.079 0.093 0.114 0.133 0.153 0.173 0.192 0.212 0.232
									ϕ	
									1	
									2	
									3	
									4	
									5	
									6	
									8	
									10	
									12	
									14	
									16	
									18	
									20	
									A	0.004 0.008 0.011 0.015 0.018 0.021 0.026 0.031 0.035 0.040 0.044 0.049 0.053
									B	0.005 0.010 0.015 0.020 0.024 0.028 0.035 0.041 0.047 0.053 0.059 0.065 0.071
									C	0.007 0.013 0.019 0.025 0.030 0.035 0.044 0.051 0.058 0.066 0.073 0.081 0.089
									D	0.008 0.016 0.023 0.030 0.036 0.043 0.052 0.061 0.070 0.079 0.088 0.097 0.106
									E	0.009 0.018 0.027 0.035 0.042 0.050 0.061 0.071 0.082 0.093 0.103 0.114 0.124
									F	0.011 0.021 0.030 0.040 0.048 0.057 0.070 0.082 0.094 0.106 0.117 0.130 0.142
									G	0.012 0.023 0.034 0.045 0.054 0.064 0.079 0.092 0.105 0.119 0.132 0.146 0.159
									H	0.013 0.026 0.038 0.050 0.061 0.071 0.087 0.102 0.117 0.132 0.146 0.162 0.177

Kiváló
 Excelent
 műkemmel
 Excellent

Jó
 Bun
 lyi
 Good

HM

Z Z Z Z Z
1 2 3 4 >4

A_e A_p
(x Ø) (x Ø)



∅ [mm] fz [mm/Z] ± 25 %

∅ 1 2 3 4 5 6 8 10 12 14 16 18 20

	A	0.003	0.006	0.009	0.012	0.014	0.017	0.021	0.024	0.028	0.032	0.035	0.039	0.042
	B	0.004	0.008	0.012	0.016	0.019	0.023	0.028	0.033	0.037	0.042	0.047	0.052	0.057
	C	0.005	0.010	0.015	0.020	0.024	0.028	0.035	0.041	0.047	0.053	0.058	0.065	0.071
	D	0.006	0.012	0.018	0.024	0.029	0.034	0.042	0.049	0.056	0.063	0.070	0.078	0.085
	E	0.007	0.015	0.021	0.028	0.034	0.040	0.049	0.057	0.065	0.074	0.082	0.091	0.099
	F	0.008	0.017	0.024	0.032	0.039	0.045	0.056	0.065	0.075	0.084	0.093	0.103	0.113
	G	0.010	0.019	0.027	0.036	0.043	0.051	0.063	0.073	0.084	0.095	0.105	0.116	0.127
	H	0.011	0.021	0.030	0.040	0.048	0.057	0.070	0.081	0.093	0.106	0.117	0.129	0.141

	A	0.003	0.005	0.007	0.010	0.012	0.014	0.017	0.020	0.022	0.025	0.028	0.031	0.034
	B	0.003	0.007	0.010	0.013	0.015	0.018	0.022	0.026	0.030	0.034	0.037	0.041	0.045
	C	0.004	0.008	0.012	0.016	0.019	0.023	0.028	0.033	0.037	0.042	0.047	0.052	0.057
	D	0.005	0.010	0.015	0.019	0.023	0.027	0.033	0.039	0.045	0.051	0.056	0.062	0.068
	E	0.006	0.012	0.017	0.022	0.027	0.032	0.039	0.046	0.052	0.059	0.065	0.072	0.079
	F	0.007	0.013	0.019	0.025	0.031	0.036	0.045	0.052	0.060	0.068	0.075	0.083	0.090
	G	0.008	0.015	0.022	0.029	0.035	0.041	0.050	0.059	0.067	0.076	0.084	0.093	0.102
	H	0.008	0.017	0.024	0.032	0.039	0.045	0.056	0.065	0.075	0.084	0.093	0.103	0.113

	A	0.004	0.008	0.012	0.016	0.020	0.023	0.029	0.033	0.038	0.043	0.048	0.053	0.058
	B	0.006	0.011	0.017	0.022	0.026	0.031	0.038	0.044	0.051	0.058	0.064	0.071	0.077
	C	0.007	0.014	0.021	0.027	0.033	0.039	0.048	0.056	0.064	0.072	0.080	0.088	0.097
	D	0.009	0.017	0.025	0.032	0.040	0.046	0.057	0.067	0.076	0.086	0.096	0.106	0.116
	E	0.010	0.020	0.029	0.038	0.046	0.054	0.067	0.078	0.089	0.101	0.112	0.124	0.135
	F	0.012	0.023	0.033	0.043	0.053	0.062	0.076	0.089	0.102	0.115	0.128	0.141	0.154
	G	0.013	0.025	0.037	0.049	0.059	0.069	0.086	0.100	0.115	0.130	0.144	0.159	0.174
	H	0.014	0.028	0.042	0.054	0.066	0.077	0.095	0.111	0.127	0.144	0.160	0.177	0.193

■ Kiváló
Excelent
mükemmel
Excellent

● Jó
Bun
lyi
Good

HSS HSS-E HSS-E PM

Z 2	Z 3	Z 4	Z >4	Ø	Ae (x Ø)	Ap (x Ø)		Ø [mm] fz [mm/Z] ± 25 %																						
								1	2	3	4	5	6	8	10	12	14	16	18	20	22	25	28	30	32	36	40	50		
■	●			A	0.004	0.008	0.013	0.017	0.024	0.029	0.043	0.060	0.072	0.084	0.096	0.097	0.096	0.099	0.105	0.109	0.108	0.106	0.108	0.108	0.105					
				B	0.004	0.007	0.012	0.015	0.022	0.026	0.039	0.054	0.065	0.076	0.086	0.087	0.086	0.089	0.095	0.098	0.097	0.095	0.097	0.097	0.095	0.097	0.097	0.095		
				C	0.003	0.006	0.011	0.014	0.019	0.023	0.035	0.049	0.058	0.068	0.078	0.079	0.078	0.080	0.085	0.088	0.087	0.086	0.087	0.087	0.085	0.087	0.087	0.085	0.087	0.085
				D	0.004	0.007	0.011	0.014	0.020	0.024	0.037	0.051	0.061	0.071	0.081	0.082	0.081	0.084	0.089	0.099	0.091	0.097	0.091	0.101	0.101	0.091	0.101	0.101	0.091	0.101
				E	0.007	0.012	0.018	0.024	0.035	0.042	0.063	0.087	0.105	0.122	0.140	0.141	0.140	0.144	0.153	0.171	0.157	0.168	0.157	0.175	0.175	0.157	0.175	0.175	0.157	0.175
				F	0.007	0.009	0.013	0.018	0.021	0.025	0.033	0.041	0.050	0.055	0.064	0.072	0.079	0.079	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085	0.085
■	■			G						0.026	0.034	0.036	0.043	0.050	0.057	0.064	0.071	0.071	0.054	0.053	0.054	0.053	0.056	0.057	0.060					
				H						0.023	0.031	0.032	0.039	0.045	0.051	0.058	0.064	0.064	0.049	0.048	0.049	0.048	0.048	0.050	0.051	0.054				
				I						0.021	0.028	0.029	0.035	0.041	0.046	0.052	0.058	0.058	0.044	0.043	0.044	0.043	0.043	0.045	0.046	0.049				
				J						0.024	0.031	0.033	0.039	0.046	0.052	0.059	0.065	0.065	0.049	0.049	0.049	0.049	0.049	0.051	0.052	0.055				
				K						0.035	0.047	0.065	0.079	0.092	0.105	0.088	0.098	0.097	0.110	0.110	0.110	0.110	0.110	0.115	0.118	0.123				
				L						0.010	0.013	0.017	0.020	0.025	0.028	0.030	0.032	0.033	0.034	0.036	0.038	0.039	0.040	0.042	0.042					
■	■	●			M	0.008	0.012	0.018	0.023	0.031	0.041	0.057	0.069	0.080	0.091	0.103	0.114	0.090	0.103	0.085	0.091	0.097	0.110	0.107	0.086					
					N	0.007	0.011	0.016	0.021	0.028	0.037	0.051	0.062	0.072	0.082	0.093	0.103	0.081	0.093	0.077	0.082	0.087	0.099	0.096	0.077					
					O	0.006	0.010	0.015	0.019	0.025	0.033	0.046	0.056	0.065	0.074	0.083	0.092	0.073	0.083	0.069	0.074	0.079	0.089	0.087	0.070					
					P	0.007	0.010	0.016	0.020	0.027	0.035	0.049	0.059	0.069	0.079	0.088	0.098	0.078	0.088	0.073	0.079	0.084	0.094	0.092	0.074					
					Q	0.009	0.014	0.021	0.026	0.036	0.048	0.066	0.079	0.092	0.106	0.089	0.099	0.098	0.111	0.111	0.119	0.127	0.143	0.139	0.148					
					R	0.012	0.016	0.020	0.025	0.029	0.038	0.047	0.056	0.065	0.073	0.083	0.092	0.092	0.092	0.092	0.092	0.092	0.104	0.104	0.108	0.108				
■			S	0.010	0.015	0.023	0.029	0.039	0.051	0.071	0.086	0.100	0.114	0.129	0.143	0.113	0.129	0.107	0.114	0.122	0.137	0.133	0.107							
			T	0.009	0.014	0.021	0.026	0.035	0.046	0.064	0.077	0.090	0.103	0.116	0.129	0.102	0.116	0.096	0.103	0.110	0.123	0.120	0.096							
			U	0.008	0.012	0.019	0.023	0.032	0.041	0.058	0.070	0.081	0.092	0.104	0.116	0.092	0.104	0.087	0.092	0.099	0.111	0.108	0.087							
			V	0.009	0.013	0.020	0.025	0.033	0.044	0.061	0.074	0.086	0.098	0.110	0.123	0.097	0.110	0.092	0.098	0.105	0.118	0.115	0.092							
			X	0.012	0.017	0.026	0.033	0.045	0.059	0.082	0.099	0.115	0.132	0.111	0.124	0.122	0.139	0.139	0.148	0.158	0.178	0.173	0.186							
			Y	0.015	0.020	0.025	0.031	0.036	0.047	0.059	0.070	0.081	0.092	0.104	0.115	0.115	0.115	0.115	0.115	0.115	0.130	0.130	0.136	0.136						

■ Kiváló
Excelent
mükemmel
Excellent

● Jó
Bun
lyi
Good

HSS HSS-E HSS-E PM

Ø	fz	Ø [mm] fz [mm/Z] ± 25 %															
		10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
C800 C801 C810 C820 C822 C825		M	0.017	0.022	0.036	0.038	0.041	0.044	0.045	0.047							
	N	0.022	0.027	0.045	0.046	0.052	0.058	0.06	0.062								
	O	0.025	0.03	0.052	0.055	0.056	0.058	0.06	0.062								
	P	0.030	0.043	0.063	0.064	0.062	0.068	0.07	0.072								
	Q	0.045	0.048	0.063	0.064	0.066	0.068	0.07	0.072								
	R	0.055	0.07	0.115	0.119	0.123	0.126	0.128	0.13								

Ø	fz	Ø [mm] fz [mm/Z] ± 25 %															
		10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
C830 C835 C837 C831		M	0.036	0.045	0.057	0.064	0.074	0.084									
	N	0.048	0.058	0.073	0.084	0.095	0.105										
	O	0.052	0.063	0.081	0.092	0.103	0.114										
	P	0.059	0.071	0.089	0.1	0.112	0.125										
	Q	0.072	0.088	0.106	0.12	0.133	0.147										
	R	0.079	0.095	0.114	0.13	0.143	0.157										

Ø	fz	Ø [mm] fz [mm/Z] ± 25 %															
		10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
C700 C710		M	0.03	0.03	0.04	0.04	0.05	0.05	0.05								
	N	0.04	0.04	0.04	0.05	0.06	0.07										
	O	0.04	0.04	0.05	0.06	0.07	0.08										
	P	0.04	0.04	0.05	0.07	0.08	0.08										
	Q	0.05	0.05	0.07	0.08	0.09	0.10										
	R	0.06	0.06	0.07	0.09	0.10	0.11										

Ø	fz	Ø [mm] fz [mm/Z] ± 25 %															
		10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
D745 D747 D750 D751 D752 D753		R				0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040
	S					0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020	0.020
	T					0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060

Ø	fz	Ø [mm] fz [mm/Z] ± 25 %															
		10	12	16	20	25	32	38	50	63	80	100	125	160	200	300	350
D200 D763		M						0.040	0.050	0.060	0.070	0.080	0.090	0.100	0.105	0.110	0.115
	N							0.060	0.070	0.080	0.090	0.100	0.105	0.110	0.115	0.120	0.125
	O							0.070	0.080	0.090	0.100	0.105	0.110	0.115	0.120	0.125	0.130
	P							0.080	0.090	0.095	0.110	0.115	0.115	0.125	0.135		
	Q							0.090	0.100	0.105	0.110	0.115	0.125	0.135			

Ø	fz	Ø [mm] fz [mm/Z] ± 25 %															
		40	50	60	80	100	125										
D402 D422		G	0.042	0.049	0.040	0.047	0.040	0.037									
	H	0.050	0.059	0.047	0.055	0.048	0.044										
	I	0.062	0.071	0.058	0.066	0.058	0.054										
	J	0.082	0.095	0.078	0.090	0.078	0.073										
	K	0.118	0.140	0.110	0.130	0.110	0.103										
	L	0.145	0.171	0.136	0.160	0.136	0.127										
	M	0.185	0.160	0.170	0.200	0.170	0.160										
	N	0.270	0.320	0.250	0.290	0.250	0.230										

Ø	fz	Ø [mm] fz [mm/Z] ± 25 %															
		40	50	60	80	100											
D400 D420		G	0.042	0.049	0.040	0.047	0.040										
	H	0.050	0.059	0.047	0.055	0.048											
	I	0.062	0.071	0.058	0.066	0.058											
	J	0.082	0.095	0.078	0.090	0.078											
	K	0.118	0.140	0.110	0.130	0.110											
	L	0.145	0.171	0.136	0.160	0.136											
	M	0.185	0.160	0.170	0.200	0.170											
	N	0.270	0.320	0.250	0.290	0.250											

 D750 D751 D752 D753	Fogosztás választó Alegere Pasul Dintilor Diş Hatve Tercihi Tooth Pitch Choice									
	 t (mm)						 Ø (mm)			
	<1.0 mm	1.0 - 1.5 mm	1.5 - 2.0 mm	2.0 - 3.0 mm	3.0 - 4.0 mm	>4.0 mm	10 - 20 mm	20 - 40 mm	40 - 60 mm	
1.1	3	4	5	5	6	7	5	8		P 1
1.2	3	4	4	5	6	7	5	6		P 1
1.3	3	4	4	5	6	7	5	6		P 2
1.4	3	4	4	5	6	7	5	6		P 3
1.5	3	3	4	5	5	6	5	6	8	P 4
1.6										H 1
1.7										H 3
1.8										H 4
2.1	3	4	5	5	6	6	5	6	8	M 1
2.2	3	4	5	5	6	6	5	6	8	M 3
2.3	3	4	5	5	6	6	5	6	8	M 2
2.4	3	4	5	5	6	6	5	6	8	S 2
3.1							6	8		K 1
3.2							6	8		K 2
3.3							6	8		K 3
3.4							6	8		K 4
4.1										S 1
4.2										S 2
4.3										S 3
5.1										S 1
5.2										S 2
5.3										S 3
6.1	4	5	6	7	8	8	6	8		N 3
6.2	4	5	6	7	8	8	8			N 4
6.3	4	5	6	7	8	8	8			N 3
6.4	4	5	6	7	8	8	6	8		N 4
7.1	4	5	6	7	8	8	6	8		N 1
7.2	4	5	6	7	8	8	6	8		N 1
7.3	4	5	6	7	8	8	6	8		N 1
7.4	4	5	6	7	8	8	6	8		N 2
8.1										O
8.2										O
8.3										O
9.1										H
10.1										O

	Cső Tub gol İçi boş boru Hollow tube		Tömör keresztmetszet Sectiune solid Yekpare kesit Solid section
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S802HA • Hosszlyukmaró
• Freze deget

S802HB • Kanal Frezesi
• Slot Drill

S802HA; S802HB	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	6.2	6.3	6.4	7.2	7.3	7.4
	2.3	2.4	4.1	4.2	5.1	5.2	6.1	7.1	8.1	8.2								

S802HA	HM		N	Z 2		λ 28° γ 9°	DIN 6535HA	Alcrona			DIN 6527K
S802HB	HM		N	Z 2		λ 28° γ 9°	DIN 6535HB	Alcrona			DIN 6527K



d ₁ Ø mm	Ch ±0.03x45° mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	S802HA	S802HB
1.00	-	3	3	38	2	S802HA1.0	
1.50	-	3	3	38	2	S802HA1.5	
1.80	-	6	3	50	2	S802HA1.8	S802HB1.8
2.00	-	6	3	50	2	S802HA2.0	S802HB2.0
2.50	0.08	6	3	50	2	S802HA2.5	S802HB2.5
2.80	0.08	6	4	50	2	S802HA2.8	S802HB2.8
3.00	0.08	6	4	50	2	S802HA3.0	S802HB3.0
3.50	0.08	6	4	50	2	S802HA3.5	S802HB3.5
3.80	0.08	6	5	54	2	S802HA3.8	S802HB3.8
4.00	0.13	6	5	54	2	S802HA4.0	S802HB4.0
4.50	0.13	6	5	54	2	S802HA4.5	S802HB4.5
4.80	0.13	6	6	54	2	S802HA4.8	S802HB4.8
5.00	0.13	6	6	54	2	S802HA5.0	S802HB5.0
5.75	0.13	6	7	54	2	S802HA5.75	S802HB5.75
6.00	0.13	6	7	54	2	S802HA6.0	S802HB6.0
6.75	0.13	8	8	58	2	S802HA6.75	S802HB6.75
7.00	0.13	8	8	58	2	S802HA7.0	S802HB7.0
7.75	0.13	8	9	58	2	S802HA7.75	S802HB7.75
8.00	0.20	8	9	58	2	S802HA8.0	S802HB8.0 ¹⁾
9.00	0.20	10	10	66	2	S802HA9.0	S802HB9.0 ¹⁾
9.70	0.20	10	11	66	2	S802HA9.7	S802HB9.7 ¹⁾
10.00	0.20	10	11	66	2	S802HA10.0	S802HB10.0 ¹⁾
11.70	0.20	12	12	73	2	S802HA11.7	S802HB11.7 ¹⁾
12.00	0.20	12	12	73	2	S802HA12.0	S802HB12.0 ¹⁾
13.70	0.20	14	14	75	2	S802HA13.7	S802HB13.7 ¹⁾
14.00	0.20	14	14	75	2	S802HA14.0	S802HB14.0 ¹⁾
15.70	0.20	16	16	82	2	S802HA15.7	S802HB15.7 ¹⁾
16.00	0.20	16	16	82	2	S802HA16.0	S802HB16.0 ¹⁾
17.70	0.20	18	18	84	2	S802HA17.7	S802HB17.7 ¹⁾
18.00	0.20	18	18	84	2	S802HA18.0	S802HB18.0 ¹⁾
19.70	0.30	20	20	92	2	S802HA19.7	S802HB19.7 ¹⁾
20.00	0.30	20	20	92	2	S802HA20.0	S802HB20.0 ¹⁾

S812HA • Hosszlyukmaró
• Freze deget

S812HB • Kanal Frezesi
• Slot Drill

S812HA; S812HB	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2
	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2							

S812HA	HM		N	Z 2		λ 28° γ 9°	DIN 6535HA			DIN 6527L
S812HB	HM		N	Z 2		λ 28° γ 9°	DIN 6535HB			DIN 6527L



d_1 \varnothing mm	Ch $\pm 0.03 \times 45^\circ$ mm	d_2 $\varnothing h_8$ mm	l_2 mm	l_1 mm	z	S812HA	S812HB
2.00	-	6	6	57	2	S812HA2.0	S812HB2.0
2.50	0.08	6	7	57	2	S812HA2.5	S812HB2.5
3.00	0.08	6	7	57	2	S812HA3.0	S812HB3.0
3.50	0.08	6	7	57	2	S812HA3.5	S812HB3.5
4.00	0.13	6	8	57	2	S812HA4.0	S812HB4.0
4.50	0.13	6	8	57	2	S812HA4.5	S812HB4.5
5.00	0.13	6	10	57	2	S812HA5.0	S812HB5.0
6.00	0.13	6	10	57	2	S812HA6.0	S812HB6.0
7.00	0.13	8	13	63	2	S812HA7.0	S812HB7.0
8.00	0.20	8	16	63	2	S812HA8.0	S812HB8.0 ¹⁾
9.00	0.20	10	16	72	2	S812HA9.0	S812HB9.0 ¹⁾
10.00	0.20	10	19	72	2	S812HA10.0	S812HB10.0 ¹⁾
12.00	0.20	12	22	83	2	S812HA12.0	S812HB12.0 ¹⁾
14.00	0.20	14	22	83	2	S812HA14.0	S812HB14.0 ¹⁾
16.00	0.20	16	26	92	2	S812HA16.0	S812HB16.0 ¹⁾
18.00	0.20	18	26	92	2	S812HA18.0	S812HB18.0 ¹⁾
20.00	0.30	20	32	104	2	S812HA20.0	S812HB20.0 ¹⁾

¹⁾ Ch $\pm 0.05 \times 45^\circ$ mm

S822

- Hosszlyukmaró
- Freze deget
- Kanal Frezesi
- Slot Drill

S822	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	6.4	7.1	7.2	7.3	7.4	8.1	8.2													

S822

- HM
- P9
- N
- Z 2
- λ 28°
- γ 9°
- DIN 6535HA
- Alcrona
- DORMER



d_1 \varnothing mm	Ch $\pm 0.03 \times 45^\circ$ mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	S822
2.00	-	6	8	57	2	S8222.0
2.50	0.08	6	12	57	2	S8222.5
3.00	0.08	6	12	57	2	S8223.0
4.00	0.13	6	14	57	2	S8224.0
5.00	0.13	6	16	57	2	S8225.0
6.00	0.13	6	19	57	2	S8226.0
7.00	0.13	8	19	63	2	S8227.0
8.00	0.20	8	19	63	2	S8228.0 ¹⁾
9.00	0.20	10	21	72	2	S8229.0 ¹⁾
10.00	0.20	10	22	72	2	S82210.0 ¹⁾
12.00	0.20	12	25	83	2	S82212.0 ¹⁾
14.00	0.20	14	30	83	2	S82214.0 ¹⁾
16.00	0.20	16	32	92	2	S82216.0 ¹⁾
18.00	0.20	18	32	92	2	S82218.0 ¹⁾
20.00	0.30	20	38	104	2	S82220.0 ¹⁾

S803HA • Hosszlyukmaró
• Freze deget

S803HB • Kanal Frezesi
• Slot Drill

S803HA; S803HB	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	6.2	6.3	6.4	7.2	7.3	7.4
	•	2.3	2.4	4.1	4.2	5.1	5.2	6.1	7.1	8.1	8.2								

S803HA	HM		N	Z 3		λ 28° γ 9°	DIN 6535HA	Alcrona			DIN 6527K
S803HB	HM		N	Z 3		λ 28° γ 9°	DIN 6535HB	Alcrona			DIN 6527K



d ₁ Ø mm	Ch ±0.03x45° mm	d ₂ Ø _{h6} mm	l ₂ mm	l ₁ mm	z	S803HA	S803HB
1.00	-	3	3	38	3	S803HA1.0	
1.50	-	3	3	38	3	S803HA1.5	
1.80	-	6	3	50	3	S803HA1.8	S803HB1.8
2.00	-	6	3	50	3	S803HA2.0	S803HB2.0
2.50	0.08	6	3	50	3	S803HA2.5	S803HB2.5
2.80	0.08	6	4	50	3	S803HA2.8	S803HB2.8
3.00	0.08	6	4	50	3	S803HA3.0	S803HB3.0
3.50	0.08	6	4	50	3	S803HA3.5	S803HB3.5
3.80	0.08	6	5	54	3	S803HA3.8	S803HB3.8
4.00	0.13	6	5	54	3	S803HA4.0	S803HB4.0
4.50	0.13	6	5	54	3	S803HA4.5	S803HB4.5
4.80	0.13	6	6	54	3	S803HA4.8	S803HB4.8
5.00	0.13	6	6	54	3	S803HA5.0	S803HB5.0
5.75	0.13	6	7	54	3	S803HA5.75	S803HB5.75
6.00	0.13	6	7	54	3	S803HA6.0	S803HB6.0
6.75	0.13	8	8	58	3	S803HA6.75	S803HB6.75
7.00	0.13	8	8	58	3	S803HA7.0	S803HB7.0
7.75	0.13	8	9	58	3	S803HA7.75	S803HB7.75
8.00	0.20	8	9	58	3	S803HA8.0	S803HB8.0 ¹⁾
9.00	0.20	10	10	66	3	S803HA9.0	S803HB9.0 ¹⁾
9.70	0.20	10	11	66	3	S803HA9.7	S803HB9.7 ¹⁾
10.00	0.20	10	11	66	3	S803HA10.0	S803HB10.0 ¹⁾
11.70	0.20	12	12	73	3	S803HA11.7	S803HB11.7 ¹⁾
12.00	0.20	12	12	73	3	S803HA12.0	S803HB12.0 ¹⁾
13.70	0.20	14	14	75	3	S803HA13.7	S803HB13.7 ¹⁾
14.00	0.20	14	14	75	3	S803HA14.0	S803HB14.0 ¹⁾
15.70	0.20	16	16	82	3	S803HA15.7	S803HB15.7 ¹⁾
16.00	0.20	16	16	82	3	S803HA16.0	S803HB16.0 ¹⁾
17.70	0.20	18	18	84	3	S803HA17.7	S803HB17.7 ¹⁾
18.00	0.20	18	18	84	3	S803HA18.0	S803HB18.0 ¹⁾
19.70	0.30	20	20	92	3	S803HA19.7	S803HB19.7 ¹⁾
20.00	0.30	20	20	92	3	S803HA20.0	S803HB20.0 ¹⁾

¹⁾ Ch ± 0.05x45° mm

S813HA • Hosszlyukmaró
• Freze deget

S813HB • Kanal Frezesi
• Slot Drill

S813HA; S813HB	▪	1.1	1.2	1.3	1.4	1.5	2.1	3.1	3.2	3.3	3.4	6.2	6.3	6.4	7.2	7.3	7.4
	•	1.6	2.2	2.3	4.1	4.2	5.1	5.2	6.1	7.1	8.1	8.2					

S813HA	HM		N	Z 3		λ 28° γ 9°	DIN 6535HA				DIN 6527L
S813HB	HM		N	Z 3		λ 28° γ 9°	DIN 6535HB				DIN 6527L



d_1 \emptyset mm	Ch $\pm 0.03 \times 45^\circ$ mm	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	z	S813HA	S813HB
2.00	0.00	6	6	57	3	S813HA2.0	S813HB2.0
2.50	0.08	6	7	57	3	S813HA2.5	S813HB2.5
3.00	0.08	6	7	57	3	S813HA3.0	S813HB3.0
3.50	0.08	6	7	57	3	S813HA3.5	S813HB3.5
4.00	0.13	6	8	57	3	S813HA4.0	S813HB4.0
4.50	0.13	6	8	57	3	S813HA4.5	S813HB4.5
5.00	0.13	6	10	57	3	S813HA5.0	S813HB5.0
6.00	0.13	6	10	57	3	S813HA6.0	S813HB6.0
7.00	0.13	8	13	63	3	S813HA7.0	S813HB7.0
8.00	0.20	8	16	63	3	S813HA8.0	¹⁾ S813HB8.0
9.00	0.20	10	16	72	3	S813HA9.0	¹⁾ S813HB9.0
10.00	0.20	10	19	72	3	S813HA10.0	¹⁾ S813HB10.0
12.00	0.20	12	22	83	3	S813HA12.0	¹⁾ S813HB12.0
14.00	0.20	14	22	83	3	S813HA14.0	¹⁾ S813HB14.0
16.00	0.20	16	26	92	3	S813HA16.0	¹⁾ S813HB16.0
18.00	0.20	18	26	92	3	S813HA18.0	¹⁾ S813HB18.0
20.00	0.30	20	32	104	3	S813HA20.0	¹⁾ S813HB20.0

S823

- Hosszlyukmaró
- Freze deget
- Kanal Frezesi
- Slot Drill

S823	▪	1.1	1.2	1.3	1.4	1.5	2.1	3.1	3.2	3.3	3.4	6.2	6.3	6.4	7.2	7.3	7.4	
	•	1.6	2.2	2.3	4.1	4.2	5.1	5.2	6.1	7.1	8.1	8.2						

S823

HM

N

Z
3

λ 28°
 γ 9°

DIN
6535HA



d_1 \varnothing mm	Ch $\pm 0.03 \times 45^\circ$ mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	S823
2.00	-	6	8	57	3	S8232.0
2.50	0.08	6	12	57	3	S8232.5
3.00	0.08	6	12	57	3	S8233.0
4.00	0.13	6	14	57	3	S8234.0
5.00	0.13	6	16	57	3	S8235.0
6.00	0.13	6	19	57	3	S8236.0
7.00	0.13	8	19	63	3	S8237.0
8.00	0.20	8	19	63	3	S8238.0 ¹⁾
9.00	0.20	10	21	72	3	S8239.0 ¹⁾
10.00	0.20	10	22	72	3	S82310.0 ¹⁾
12.00	0.20	12	25	83	3	S82312.0 ¹⁾
14.00	0.20	14	30	83	3	S82314.0 ¹⁾
16.00	0.20	16	32	92	3	S82316.0 ¹⁾
18.00	0.20	18	32	92	3	S82318.0 ¹⁾
20.00	0.30	20	38	104	3	S82320.0 ¹⁾

¹⁾ Ch $\pm 0.05 \times 45^\circ$ mm

S710

- Ujjmaró
- Freze cilindrice
- Parmak Freze
- End Mill

S710 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2



S710



1.00 - 20.00

d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S710
1.00	3	3	50	2	S7101.0
1.50	3	4.5	50	2	S7101.5
2.00	3	6.5	50	2	S7102.0
2.50	3	6.5	50	2	S7102.5
3.00	6	9	50	2	S7103.0
4.00	6	12	50	2	S7104.0
5.00	6	15	50	2	S7105.0
6.00	6	20	60	2	S7106.0
8.00	8	20	64	2	S7108.0
10.00	10	22	75	2	S71010.0
12.00	12	25	75	2	S71012.0
14.00	14	32	90	2	S71014.0
16.00	16	32	90	2	S71016.0
20.00	20	38	100	2	S71020.0

S902 • Ujjmaró
• Freze cilindrice

S922 • Parmak Freze
• End Mill

S902	▪	1.1	1.2	1.3	1.4	3.1	3.3	4.1	5.1	6.1	6.2	6.3			
	•	1.5	3.2	3.4	4.2	4.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3		
S922	▪	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3
	•	1.6	4.2	4.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3				

S902	HM		N	Z 2		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 6535HA		h10			
S922	HM		N	Z 2		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 6535HB	TiAlN	h10			



d ₁ Ø mm	Ch ±0.03x45° mm	d ₂ Ø _{h₆} mm	l ₂ mm	l ₁ mm	z	S902	S922
2.00	0.08	3	6	38	2	S9022.0	S9222.0 ²⁾
2.50	0.08	3	9	38	2	S9022.5	S9222.5 ²⁾
3.00	0.08	3	12	38	2	S9023.0	S9223.0 ²⁾
4.00	0.08	4	14	50	2	S9024.0	S9224.0 ²⁾
5.00	0.13	5	16	50	2	S9025.0	S9225.0 ²⁾
6.00	0.13	6	19	57	2	S9026.0	S9226.0
7.00	0.13	8	19	63	2	S9027.0	S9227.0
8.00	0.13	8	19	63	2	S9028.0	S9228.0
9.00	0.13	10	21	72	2	S9029.0	S9229.0
10.00	0.18	10	22	72	2	S90210.0	S92210.0
12.00	0.20	12	25	73	2	S90212.0	S92212.0 ¹⁾
14.00	0.20	14	30	83	2	S90214.0	S92214.0 ¹⁾
16.00	0.20	16	32	92	2	S90216.0	S92216.0 ¹⁾
18.00	0.20	18	32	92	2	S90218.0	S92218.0 ¹⁾
20.00	0.30	20	38	104	2	S90220.0	S92220.0 ¹⁾

¹⁾ Ch ± 0.05x45° mm

²⁾ Hengeres szár / Coadă cilindrică / silindirik şaftlı / Cylindrical shank

S713

- Ujjmaró
- Freze cilindrice
- Parmak Freze
- End Mill

S713 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2



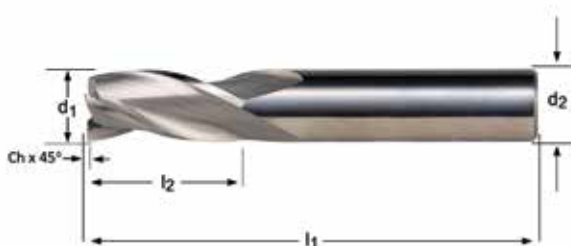
d_1 \varnothing mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	S713
1.50	4	4.5	40	3	S7131.5
2.00	4	6.5	40	3	S7132.0
3.00	3	9	40	3	S7133.0
4.00	4	12	50	3	S7134.0
5.00	5	15	50	3	S7135.0
6.00	6	16	50	3	S7136.0
8.00	8	20	64	3	S7138.0
10.00	10	22	70	3	S71310.0
12.00	12	25	75	3	S71312.0
14.00	14	32	90	3	S71314.0
16.00	16	32	90	3	S71316.0
18.00	18	38	100	3	S71318.0
20.00	20	38	100	3	S71320.0

S903 • Ujjmaró
• Freze cilindrice

S933 • Parmak Freze
• End Mill

S903	▪	1.1	1.2	1.3	1.4	3.1	3.3	4.1	5.1	6.1	6.2	6.3			
	•	1.5	3.2	3.4	4.2	4.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3		
S933	▪	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3
	•	1.6	4.2	4.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3				

S903	HM		N	Z 3		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 6535HA		h10	
S933	HM		N	Z 3		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 6535HB	TiAlN	h10	S991 437



d_1 Ø mm	Ch $\pm 0.03 \times 45^\circ$ mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S903	S933
2.00	0.08	3	6	38	3	S9032.0	S9332.0 ²⁾
2.50	0.08	3	9	38	3	S9032.5	S9332.5 ²⁾
3.00	0.08	3	12	38	3	S9033.0	S9333.0 ²⁾
4.00	0.08	4	14	50	3	S9034.0	S9334.0 ²⁾
5.00	0.13	5	16	50	3	S9035.0	S9335.0 ²⁾
6.00	0.13	6	19	57	3	S9036.0	S9336.0
7.00	0.13	8	19	63	3	S9037.0	S9337.0
8.00	0.13	8	19	63	3	S9038.0	S9338.0
9.00	0.13	10	21	72	3	S9039.0	S9339.0
10.00	0.20	10	22	72	3	S90310.0	S93310.0 ¹⁾
12.00	0.20	12	25	73	3	S90312.0	S93312.0 ¹⁾
14.00	0.20	14	30	83	3	S90314.0	S93314.0 ¹⁾
16.00	0.20	16	32	92	3	S90316.0	S93316.0 ¹⁾
18.00	0.20	18	32	92	3	S90318.0	S93318.0 ¹⁾
20.00	0.30	20	38	104	3	S90320.0	S93320.0 ¹⁾

¹⁾ Ch $\pm 0.05 \times 45^\circ$ mm

²⁾ Hengeres szár / Coadă cilindrică / silindirik şaftlı / Cylindrical shank

S714

- Ujjaró
- Freze cilindrice
- Parmak Freze
- End Mill

S714	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2
	•	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4					

S714 **HM**  **N**   $\lambda 40^\circ$ $\gamma 10^\circ$   **h9**  



S714



3.00 - 20.00

d_1 \varnothing mm	d_2 $\varnothing h_9$ mm	l_2 mm	l_1 mm	z	S714
3.00	3	19	60	3	S7143.0
4.00	4	19	60	3	S7144.0
5.00	5	19	60	3	S7145.0
6.00	6	31	75	3	S7146.0
8.00	8	31	75	3	S7148.0
10.00	10	31	75	3	S71410.0
12.00	12	50	100	3	S71412.0
14.00	14	57	125	3	S71414.0
16.00	16	57	125	3	S71416.0
18.00	18	57	125	3	S71418.0
20.00	20	57	125	3	S71420.0

S715

- Ujjaró
- Freze cilindrice
- Parmak Freze
- End Mill

S715	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2
	•	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4					

S715 **HM** **N** $\lambda 40^\circ$ $\gamma 10^\circ$ **h9**



d_1 \varnothing mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	S715
3.00	3	25	100	3	S7153.0
4.00	4	31	100	3	S7154.0
5.00	5	31	100	3	S7155.0
6.00	6	38	100	3	S7156.0
8.00	8	41	100	3	S7158.0
10.00	10	57	125	3	S71510.0
12.00	12	75	150	3	S71512.0
14.00	14	75	150	3	S71514.0
16.00	16	75	150	3	S71516.0
18.00	18	75	150	3	S71518.0
20.00	20	75	150	3	S71520.0

S637

- Ujjaró
- Freze cilindrice
- Parmak Freze
- End Mill

S637 ■ 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2



S637



2.00 - 12.00

d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S637
2.00	2	10	40	1	S6372.0
3.00	3	12	40	1	S6373.0
4.00	4	15	50	1	S6374.0
5.00	5	16	50	1	S6375.0
6.00	6	20	60	1	S6376.0
8.00	8	22	63	1	S6378.0
10.00	10	25	72	1	S63710.0
12.00	12	30	83	1	S63712.0

S638

- Ujjmaró
- Freze cilindrice
- Parmak Freze
- End Mill

- Csökkentett szár
- Coada detalonata
- Inceltılmış şaft
- Reduced shank

S638 ■ 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

S638 **HM** **W** **Z 2** **λ 30°** **γ 20°** **DIN 6535HA** **h9** **DORMER**

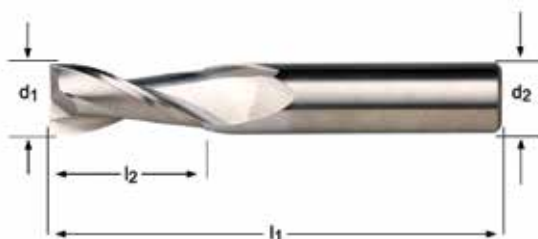


d_1 Ø mm	r ±0.02 mm	d_2 Ø h_6 mm	l_2 mm	l_1 mm	z	S638
6.20	0.10	6	8	100	2	S6386.2
8.20	0.10	8	10	100	2	S6388.2
10.30	0.10	10	14	125	2	S63810.3
12.30	0.10	12	16	125	2	S63812.3
16.30	0.10	16	20	125	2	S63816.3
20.30	0.10	20	25	125	2	S63820.3

S610

- Ujjmaró
- Freze cilindrice
- Parmak Freze
- End Mill

S610 ■ 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2



d_1 Ø mm	r ±0.02 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S610
3.00	0.10	3	9	40	2	S6103.0XD3
3.00	0.10	6	9	50	2	S6103.0XD6
4.00	0.10	4	12	50	2	S6104.0XD4
4.00	0.10	6	12	50	2	S6104.0XD6
5.00	0.10	6	15	50	2	S6105.0
6.00	0.10	6	20	50	2	S6106.0
8.00	0.10	8	20	64	2	S6108.0
10.00	0.10	10	22	75	2	S61010.0
12.00	0.10	12	25	75	2	S61012.0
14.00	0.10	14	32	90	2	S61014.0
16.00	0.10	16	32	90	2	S61016.0
20.00	0.10	20	38	100	2	S61020.0

S611

- Ujjaró
- Freze cilindrice
- Parmak Freze
- End Mill

S611 ■ 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2

S611 **HM** **W** **Z 2** **λ 30°** **γ 20°** **DIN 6535HA** **h9** **DORMER**



d_1 ∅ mm	r ±0.02 mm	d_2 ∅ _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 ∅ mm	S611
6.00	0.10	6	16	80	2	40.0	5.5	S6116.0
8.00	0.10	8	20	80	2	40.0	7.4	S6118.0
10.00	0.10	10	22	100	2	60.0	9.2	S61110.0
12.00	0.10	12	25	100	2	60.0	11.0	S61112.0
14.00	0.10	14	32	125	2	75.0	13.0	S61114.0
16.00	0.10	16	32	125	2	75.0	15.0	S61116.0
20.00	0.10	20	38	125	2	75.0	19.0	S61120.0

S804HA • Ujjaró
• Freze cilindrice

S804HB • Parmak Freze
• End Mill

S804HA; S804HB	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	3.1	3.2	3.3	3.4	6.2	6.3	6.4
	•	2.3	2.4	4.1	4.2	5.1	5.2	6.1	7.1	7.2	7.3	7.4	8.1	8.2		

S804HA	HM		N	Z 4		λ 34° γ 9°	DIN 6535HA	Alcrona	h10		DIN 6527K
S804HB	HM		N	Z 4		λ 34° γ 9°	DIN 6535HB	Alcrona	h10		DIN 6527K



d ₁ Ø mm	Ch ±0.03x45° mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	S804HA	S804HB
2.00	-	6	4	50	4	S804HA2.0	S804HB2.0
3.00	0.08	6	5	50	4	S804HA3.0	S804HB3.0
4.00	0.13	6	8	54	4	S804HA4.0	S804HB4.0
5.00	0.13	6	9	54	4	S804HA5.0	S804HB5.0
6.00	0.13	6	10	54	4	S804HA6.0	S804HB6.0
8.00	0.13	8	12	58	4	S804HA8.0	S804HB8.0
10.00	0.20	10	14	66	4	S804HA10.0	S804HB10.0 ¹⁾
12.00	0.20	12	16	73	4	S804HA12.0	S804HB12.0 ¹⁾
16.00	0.20	16	22	82	4	S804HA16.0	S804HB16.0 ¹⁾
20.00	0.30	20	26	92	4	S804HA20.0	S804HB20.0 ¹⁾
25.00	0.30	25	32	121	4	S804HA25.0	S804HB25.0 ¹⁾

¹⁾ Ch ± 0.05x45° mm
400

S219

- Ujjmaró
- Freze cilindrice
- Parmak Freze
- End Mill

S219 ■ 1.6 2.3 2.4 4.3 5.3

S219 **HM** **N** **Z 4** **$\lambda 40^\circ$** **$\gamma 3^\circ$** **DIN 6535HA** **AITIN** **h9** **DORMER**



d_1 \varnothing mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 \varnothing mm	S219
3.00	3	5	60	4	30.0	2.8	S2193.0
4.00	4	8	60	4	32.0	3.7	S2194.0
5.00	5	9	60	4	32.0	4.6	S2195.0
6.00	6	10	75	4	40.0	5.5	S2196.0
8.00	8	12	75	4	40.0	7.4	S2198.0
10.00	10	14	75	4	40.0	9.2	S21910.0
12.00	12	16	100	4	60.0	11.0	S21912.0
14.00	14	22	125	4	85.0	13.0	S21914.0
16.00	16	22	125	4	85.0	15.0	S21916.0
18.00	18	26	125	4	85.0	17.0	S21918.0
20.00	20	26	125	4	85.0	19.0	S21920.0

S814HA • Ujmaró
• Freze cilindrice

S814HB • Parmak Freze
• End Mill

S814HA; S814HB	▪	1.1	1.2	1.3	1.4	1.5	2.1	3.1	3.2	3.3	3.4	6.2	6.3	6.4
	•	1.6	2.2	2.3	4.1	4.2	5.1	5.2	6.1	7.1	7.2	7.3	7.4	8.1	8.2

S814HA	HM		N	Z 4		λ 34° γ 9°	DIN 6535HA	Alcrona	h10		DIN 6527L
S814HB	HM		N	Z 4		λ 34° γ 9°	DIN 6535HB	Alcrona	h10		DIN 6527L



d_1 Ø mm	Ch $\pm 0.03 \times 45^\circ$ mm	d_2 Ø h_6 mm	l_2 mm	l_1 mm	z	S814HA	S814HB
2.00	0.00	6	7	57	4	S814HA2.0	S814HB2.0
3.00	0.08	6	8	57	4	S814HA3.0	S814HB3.0
4.00	0.13	6	11	57	4	S814HA4.0	S814HB4.0
5.00	0.13	6	13	57	4	S814HA5.0	S814HB5.0
6.00	0.13	6	13	57	4	S814HA6.0	S814HB6.0
8.00	0.13	8	19	63	4	S814HA8.0	S814HB8.0
10.00	0.20	10	22	72	4	S814HA10.0	S814HB10.0 ¹⁾
12.00	0.20	12	26	83	4	S814HA12.0	S814HB12.0 ¹⁾
16.00	0.20	16	32	92	4	S814HA16.0	S814HB16.0 ¹⁾
20.00	0.30	20	38	104	4	S814HA20.0	S814HB20.0 ¹⁾
25.00	0.30	25	45	121	4	S814HA25.0	S814HB25.0 ¹⁾

¹⁾ Ch $\pm 0.05 \times 45^\circ$ mm
402

S716

- Ujjmaró
- Freze cilindrice
- Parmak Freze
- End Mill

S716 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2

S716 **HM** **N** **Z 4** **λ 40°**
γ 10° **h9**



d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S716
2.00	4	6.5	50	4	S7162.0
3.00	3	9	50	4	S7163.0
4.00	4	12	50	4	S7164.0
5.00	5	15	50	4	S7165.0
6.00	6	16	50	4	S7166.0
8.00	8	20	64	4	S7168.0
10.00	10	22	70	4	S71610.0
12.00	12	25	75	4	S71612.0
14.00	14	32	90	4	S71614.0
16.00	16	32	90	4	S71616.0
18.00	18	38	100	4	S71618.0
20.00	20	38	100	4	S71620.0

S612

- Ujjmaró
- Freze cilindrice
- Parmak Freze
- End Mill

S612 ■ 10.1

S612 **HM**  **N**   $\lambda 40^\circ$
 $\gamma 10^\circ$   **h9**  



S612



1.00 - 12.00

d_1 \varnothing mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	S612
1.00	3	3	50	4	S6121.0
1.50	3	4.5	50	4	S6121.5
2.00	3	6.5	50	4	S6122.0
2.50	3	6.5	50	4	S6122.5
3.00	3	9	50	4	S6123.0
4.00	4	12	50	4	S6124.0
5.00	5	15	50	4	S6125.0
6.00	6	20	60	4	S6126.0
8.00	8	20	64	4	S6128.0
10.00	10	22	70	4	S61210.0
12.00	12	25	75	4	S61212.0

S216

- Ujjmaró
- Freze cilindrice
- Parmak Freze
- End Mill

S216 ■ 1.6 2.3 2.4 4.3 5.3

S216 **HM** **N** **Z 4** **λ40° γ3°** **AITN** **h9**



S216



2.00 - 20.00

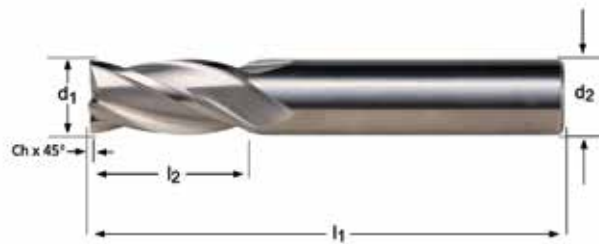
d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S216
2.00	4	6.5	40	4	S2162.0
3.00	3	9	40	4	S2163.0XD3
3.00	6	9	50	4	S2163.0XD6
4.00	4	12	50	4	S2164.0XD4
4.00	6	12	50	4	S2164.0XD6
5.00	5	15	50	4	S2165.0
6.00	6	16	50	4	S2166.0
8.00	8	20	64	4	S2168.0
10.00	10	22	70	4	S21610.0
12.00	12	25	75	4	S21612.0
14.00	14	32	90	4	S21614.0
16.00	16	32	90	4	S21616.0
18.00	18	38	100	4	S21618.0
20.00	20	38	100	4	S21620.0

S904 • Ujjmaró
• Freze cilindrice

S944 • Parmak Freze
• End Mill

S904	▪	1.1	1.2	1.3	1.4	3.1	3.3	4.1	5.1	6.1	6.2	6.3					
	•	1.5	1.6	3.2	3.4	4.2	4.3	5.2	5.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3	
S944	▪	1.1	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3		
	•	1.6	4.2	4.3	5.2	5.3	6.4	7.1	7.2	7.3	8.1	8.2	8.3				

S904	HM		N	Z 4		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 6535HA		h12			
S944	HM		N	Z 4		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 6535HB	TiAIN	h12			S991 437



d ₁ Ø mm	Ch ±0.03x45° mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	S904	S944
2.00	0.08	3	6	38	4	S9042.0	S9442.0 ²⁾
2.50	0.08	3	9	38	4	S9042.5	S9442.5 ²⁾
3.00	0.08	3	12	38	4	S9043.0	S9443.0 ²⁾
4.00	0.08	4	14	50	4	S9044.0	S9444.0 ²⁾
5.00	0.13	5	16	50	4	S9045.0	S9445.0 ²⁾
6.00	0.13	6	19	57	4	S9046.0	S9446.0
7.00	0.13	8	19	63	4	S9047.0	S9447.0
8.00	0.13	8	19	63	4	S9048.0	S9448.0
9.00	0.13	10	21	72	4	S9049.0	S9449.0
10.00	0.20	10	22	72	4	S90410.0	S94410.0 ¹⁾
12.00	0.20	12	25	73	4	S90412.0	S94412.0 ¹⁾
14.00	0.20	14	30	83	4	S90414.0	S94414.0 ¹⁾
16.00	0.20	16	32	92	4	S90416.0	S94416.0 ¹⁾
18.00	0.20	18	32	92	4	S90418.0	S94418.0 ¹⁾
20.00	0.30	20	38	104	4	S90420.0	S94420.0 ¹⁾

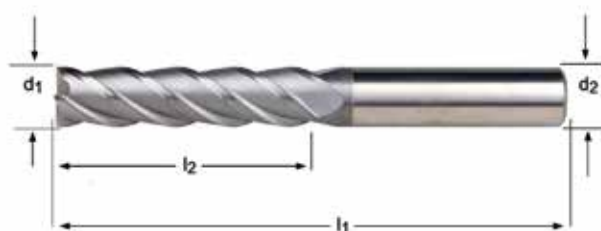
¹⁾ Ch ± 0.05x45° mm

²⁾ Hengeres szár / Coada cilindrica / Cylindrical shank / Cylindrical shank

- S717** • Ujjmaró
• Freze cilindrice
- S217** • Parmak Freze
• End Mill

S717	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2	
	•	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4						
S217	▪	1.6	2.3	2.4	4.3	5.3									

S717	HM		N	Z 4		$\lambda 40^\circ$ $\gamma 10^\circ$	DIN 6535HA	AlCrN	h9		
S217	HM		N	Z 4		$\lambda 40^\circ$ $\gamma 3^\circ$	DIN 6535HA	AlTiN	h9		



d_1 \emptyset mm	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	z	S717	S217
3.00	3	19	60	4	S7173.0	S2173.0XD3
3.00	6	19	75	4		S2173.0XD6
4.00	4	19	60	4	S7174.0	S2174.0XD4
4.00	6	19	75	4		S2174.0XD6
5.00	5	19	60	4	S7175.0	S2175.0
6.00	6	31	75	4	S7176.0	S2176.0
8.00	8	31	75	4	S7178.0	S2178.0
10.00	10	31	75	4	S71710.0	S21710.0
12.00	12	50	100	4	S71712.0	S21712.0
14.00	14	57	125	4	S71714.0	S21714.0
16.00	16	57	125	4	S71716.0	S21716.0
18.00	18	57	125	4	S71718.0	S21718.0
20.00	20	57	125	4	S71720.0	S21720.0

- S718** • Ujjaró
• Freze cilindrice
- S218** • Parmak Freze
• End Mill

S718	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2
	•	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4					
S218	▪	1.6	2.3	2.4	4.3	5.3								

S718	HM		N	Z 4		$\lambda 40^\circ$ $\gamma 10^\circ$	DIN 6535HA	AlCrN	h9	
S218	HM		N	Z 4		$\lambda 40^\circ$ $\gamma 3^\circ$	DIN 6535HA	AlTiN	h9	



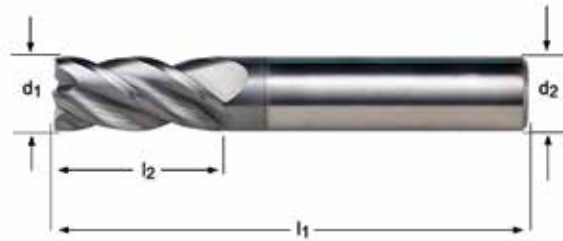
d_1 \emptyset mm	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	z	S718	S218
3.00	3	25	100	4	S7183.0	S2183.0
4.00	4	31	100	4	S7184.0	S2184.0
5.00	5	31	100	4	S7185.0	S2185.0
6.00	6	38	100	4	S7186.0	S2186.0
8.00	8	41	100	4	S7188.0	S2188.0
10.00	10	57	125	4	S71810.0	S21810.0
12.00	12	75	150	4	S71812.0	S21812.0
14.00	14	75	150	4	S71814.0	S21814.0
16.00	16	75	150	4	S71816.0	S21816.0
18.00	18	75	150	4	S71818.0	S21818.0
20.00	20	75	150	4	S71820.0	S21820.0

S761 • Ujjmaró
• Freze cilindrice

S260 • Parmak Freze
• End Mill

S761	▪	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2
S260	▪	1.6	1.7	2.3	2.4	4.3	5.3							

S761	HM		N	Z 4		$\lambda 40^\circ$ $\gamma 10^\circ$	DIN 6535HA		h9	
S260	HM		N	Z 4		$\lambda 40^\circ$ $\gamma 4^\circ$	DIN 6535HA		h9	

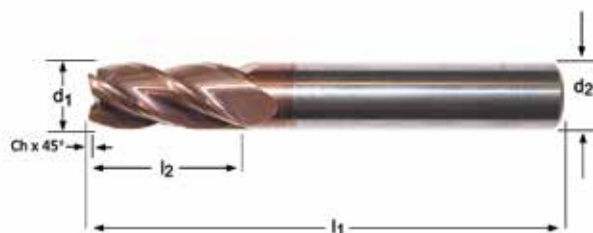


d_1 \varnothing mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	S761	S260
3.00	6	9	57	4	S7613.0	S2603.0
4.00	6	12	57	4	S7614.0	S2604.0
5.00	6	13	57	4	S7615.0	S2605.0
6.00	6	13	57	4	S7616.0	S2606.0
8.00	8	20	64	4	S7618.0	S2608.0
10.00	10	22	72	4	S76110.0	S26010.0
12.00	12	26	83	4	S76112.0	S26012.0
14.00	14	32	83	4	S76114.0	S26014.0
16.00	16	32	92	4	S76116.0	S26016.0
18.00	18	38	92	4		S26018.0
20.00	20	38	104	4	S76120.0	S26020.0

S766

- Ujjaró
- Freze cilindrice
- Parmak Freze
- End Mill

S766 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2



S766



4.00 - 20.00

d_1 Ø mm	Ch $\pm 0.02 \times 45^\circ$ mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S766
4.00	0.10	6	11	57	4	S7664.0
5.00	0.10	6	13	57	4	S7665.0
6.00	0.10	6	13	57	4	S7666.0
8.00	0.20	8	20	64	4	S7668.0
10.00	0.20	10	22	72	4	S76610.0
12.00	0.20	12	26	83	4	S76612.0
14.00	0.30	14	26	83	4	S76614.0
16.00	0.30	16	32	92	4	S76616.0
20.00	0.40	20	38	104	4	S76620.0

- S225** • Simító ujjmaró
• Freza finisare
- S525** • Finiş
• Finishing End Mill

S225	▪	1.6	2.3	2.4	4.3	5.3
S525	▪	1.7	1.8			

S225	HM		N	Z 6-8		$\lambda 50^\circ$ $\gamma 3^\circ$	DIN 6535HA		h9		
S525	HM		N	Z 6-8		$\lambda 50^\circ$ $\gamma -26^\circ$	DIN 6535HA		h9		



d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S225	S525
3.00	6	8	50	6	20.0	2.8	S2253.0	S5253.0
4.00	6	11	50	6	20.0	3.7	S2254.0	S5254.0
6.00	6	15	50	6	20.0	5.5	S2256.0	S5256.0
8.00	8	20	64	6	30.0	7.4	S2258.0	S5258.0
10.00	10	22	70	6	32.0	9.2	S22510.0	S52510.0
12.00	12	25	75	6	37.0	11.0	S22512.0	S52512.0
14.00	14	30	90	6	44.0	13.0	S22514.0	S52514.0
16.00	16	30	90	8	46.0	15.0	S22516.0	S52516.0
18.00	18	35	100	8	53.0	17.0	S22518.0	S52518.0
20.00	20	38	100	8	58.0	19.0	S22520.0	S52520.0

- S226** • Simító ujjmaró
• Freza finisare
- S526** • Finiş
• Finishing End Mill

S226	▪	1.6	2.3	2.4	4.3	5.3
S526	▪	1.7	1.8			

S226	HM		N	Z 6-8		$\lambda 50^\circ$ $\gamma 3^\circ$	DIN 6535HA	 AlTiN	h9		
S526	HM		N	Z 6-8		$\lambda 50^\circ$ $\gamma -26^\circ$	DIN 6535HA	 TiSiN	h9		



d_1 Ø mm	d_2 Ø _{h9} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S226	S526
3.00	6	19	75	6	30.0	2.8	S2263.0	S5263.0
4.00	6	19	75	6	32.0	3.7	S2264.0	S5264.0
6.00	6	31	75	6	40.0	5.5	S2266.0	S5266.0
8.00	8	31	75	6	40.0	7.4	S2268.0	S5268.0
10.00	10	45	100	6	60.0	9.2	S22610.0	S52610.0
12.00	12	50	100	6	60.0	11.0	S22612.0	S52612.0
14.00	14	57	125	6	85.0	13.0	S22614.0	S52614.0
16.00	16	57	125	8	85.0	15.0	S22616.0	S52616.0
18.00	18	57	125	8	85.0	17.0	S22618.0	S52618.0
20.00	20	57	125	8	85.0	19.0	S22620.0	S52620.0

- S227** • Simító ujjmaró
• Freza finisare
- S527** • Finiş
• Finishing End Mill

S227	▪	1.6	2.3	2.4	4.3	5.3
S527	▪	1.7	1.8			

S227	HM		N	Z 6-8		$\lambda 50^\circ$ $\gamma 3^\circ$	DIN 6535HA	AITN	h9		
S527	HM		N	Z 6-8		$\lambda 50^\circ$ $\gamma -26^\circ$	DIN 6535HA	TiSiN	h9		



d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S227	S527
3.00	6	25	100	6	60.0	2.8		S5273.0
4.00	6	31	100	6	60.0	3.7		S5274.0
6.00	6	38	100	6	60.0	5.5	S2276.0	S5276.0
8.00	8	41	100	6	60.0	7.4	S2278.0	S5278.0
10.00	10	57	125	6	85.0	9.2	S22710.0	S52710.0
12.00	12	75	150	6	110.0	11.0	S22712.0	S52712.0
14.00	14	75	150	6	110.0	13.0	S22714.0	S52714.0
16.00	16	75	150	8	110.0	15.0	S22716.0	S52716.0
18.00	18	75	150	8	110.0	17.0	S22718.0	S52718.0
20.00	20	75	150	8	110.0	19.0	S22720.0	S52720.0

- S765**
- Nagyló Ujjmaró
 - Freze cilindro-frontale pentru degrosare
 - Kaba
 - Roughing End Mill

S765 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2



S765



6.00 - 20.00

d_1 Ø mm	Ch ±0.02x45° mm	d_2 Ø h_5 mm	l_2 mm	l_1 mm	z	S765
6.00	0.10	6	16	50	4	S7656.0
8.00	0.20	8	20	64	4	S7658.0
10.00	0.20	10	22	70	4	S76510.0
12.00	0.20	12	26	75	4	S76512.0
14.00	0.30	14	32	90	4	S76514.0
16.00	0.30	16	32	90	4	S76516.0
18.00	0.30	18	38	100	4	S76518.0
20.00	0.40	20	38	100	4	S76520.0

S264

- Nagyoló Ujjmaró
- Freze cilindro-frontale pentru degrosare
- Kaba
- Roughing End Mill

S264 ■ 1.6 1.7 2.3 2.4 4.3 5.3

S264 **HM** **NR** **Z 4** $\lambda 40^\circ$ $\gamma 4^\circ$ **DIN 6535HB** **AlCrN** **h9** **DORMER**

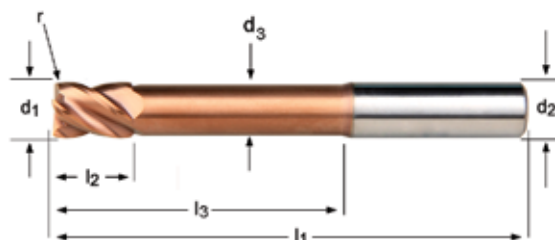


d_1 Ø mm	Ch $\pm 0.02 \times 45^\circ$ mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S264
6.00	0.10	6	13	57	4	S2646.0
8.00	0.20	8	20	64	4	S2648.0
10.00	0.20	10	22	72	4	S26410.0
12.00	0.20	12	26	83	4	S26412.0
14.00	0.30	14	26	83	4	S26414.0
16.00	0.30	16	32	92	4	S26416.0
18.00	0.30	18	32	92	4	S26418.0
20.00	0.40	20	38	104	4	S26420.0

S524

- Ujjmaró rádiusszal
- Freze cilindro-frontala cu raza
- Köşe radyuslu
- Corner Radius End Mill

S524 ■ 1.7 1.8



S524



3.00 - 16.00

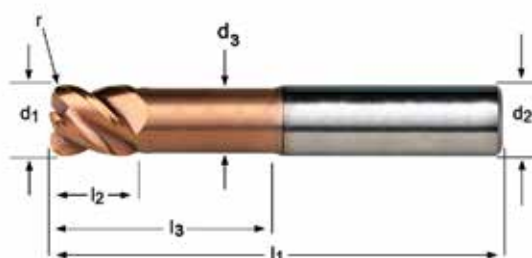
d_1 Ø mm	r ±0.01 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S524
3.00	0.30	6	5	75	4	30.0	2.8	S5243.0XR0.3
4.00	0.30	6	8	75	4	32.0	3.7	S5244.0XR0.3
4.00	0.50	6	8	75	4	32.0	3.7	S5244.0XR0.5
5.00	0.30	6	9	75	4	32.0	4.6	S5245.0XR0.3
5.00	0.50	6	9	75	4	32.0	4.6	S5245.0XR0.5
6.00	0.30	6	10	75	4	40.0	5.5	S5246.0XR0.3
6.00	0.50	6	10	75	4	40.0	5.5	S5246.0XR0.5
6.00	1.00	6	10	75	4	40.0	5.5	S5246.0XR1.0
8.00	0.30	8	12	75	4	40.0	7.4	S5248.0XR0.3
8.00	0.50	8	12	75	4	40.0	7.4	S5248.0XR0.5
8.00	1.00	8	12	75	4	40.0	7.4	S5248.0XR1.0
10.00	0.50	10	14	75	4	40.0	9.2	S52410.0XR0.5
10.00	1.00	10	14	75	4	40.0	9.2	S52410.0XR1.0
10.00	2.00	10	14	75	4	40.0	9.2	S52410.0XR2.0
12.00	0.50	12	16	100	4	60.0	11.0	S52412.0XR0.5
12.00	1.00	12	16	100	4	60.0	11.0	S52412.0XR1.0
12.00	2.00	12	16	100	4	60.0	11.0	S52412.0XR2.0
16.00	0.50	16	22	125	4	85.0	15.0	S52416.0XR0.5
16.00	1.00	16	22	125	4	85.0	15.0	S52416.0XR1.0
16.00	2.00	16	22	125	4	85.0	15.0	S52416.0XR2.0
16.00	3.00	16	22	125	4	85.0	15.0	S52416.0XR3.0

S521

- Ujjmaró rádiusszal
- Freze cilindro-frontala cu raza
- Köşe radyuslu
- Corner Radius End Mill

S521 ■ 1.7 1.8

S521 **HM** **N** **Z 4** **$\lambda 45^\circ$** **$\gamma -10^\circ$** **TiSiN** **h9**

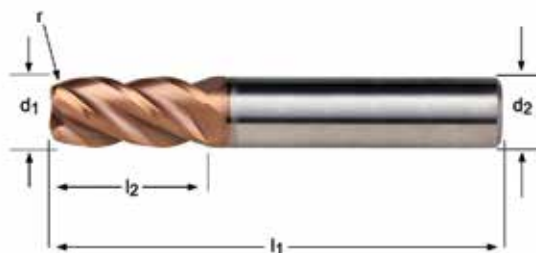


d_1 Ø mm	r ±0.01 mm	d_2 Ø _{h₆} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S521
3.00	0.30	6	4	60	4	14.0	2.8	S5213.0XR0.3
4.00	0.30	6	5	60	4	16.0	3.7	S5214.0XR0.3
4.00	0.50	6	5	60	4	16.0	3.7	S5214.0XR0.5
5.00	0.30	6	6	60	4	18.0	4.6	S5215.0XR0.3
5.00	0.50	6	6	60	4	18.0	4.6	S5215.0XR0.5
6.00	0.50	6	7	60	4	20.0	5.5	S5216.0XR0.5
6.00	1.00	6	7	60	4	20.0	5.5	S5216.0XR1.0
8.00	0.50	8	9	64	4	26.0	7.4	S5218.0XR0.5
8.00	1.00	8	9	64	4	26.0	7.4	S5218.0XR1.0
10.00	1.00	10	11	70	4	31.0	9.2	S52110.0XR1.0
10.00	2.00	10	11	70	4	31.0	9.2	S52110.0XR2.0
12.00	1.00	12	13	75	4	37.0	11.0	S52112.0XR1.0
12.00	2.00	12	13	75	4	37.0	11.0	S52112.0XR2.0
16.00	1.00	16	17	90	4	43.0	15.0	S52116.0XR1.0
16.00	2.00	16	17	90	4	43.0	15.0	S52116.0XR2.0
16.00	3.00	16	17	90	4	43.0	15.0	S52116.0XR3.0

S523

- Ujjmaró rádiusszal
- Freze cilindro-frontala cu raza
- Köşe radyuslu
- Corner Radius End Mill

S523 ■ 1.7 1.8



d_1 Ø mm	r ±0.01 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S523
1.50	0.20	6	4.5	50	4	S5231.5XR0.2
2.00	0.20	6	6.5	50	4	S5232.0XR0.2
3.00	0.20	3	9	50	4	S5233.0XR0.2XD3
3.00	0.30	3	9	50	4	S5233.0XR0.3XD3
3.00	0.20	6	9	50	4	S5233.0XR0.2XD6
3.00	0.30	6	9	50	4	S5233.0XR0.3XD6
3.00	0.50	6	9	50	4	S5233.0XR0.5XD6
4.00	0.30	4	12	50	4	S5234.0XR0.3XD4
4.00	0.50	4	12	50	4	S5234.0XR0.5XD4
4.00	0.30	6	12	50	4	S5234.0XR0.3XD6
4.00	0.50	6	12	50	4	S5234.0XR0.5XD6
5.00	0.30	5	15	50	4	S5235.0XR0.3XD5
5.00	0.50	5	15	50	4	S5235.0XR0.5XD5
5.00	0.30	6	15	50	4	S5235.0XR0.3XD6
5.00	0.50	6	15	50	4	S5235.0XR0.5XD6
6.00	0.30	6	16	50	4	S5236.0XR0.3
6.00	0.50	6	16	50	4	S5236.0XR0.5
6.00	1.00	6	16	50	4	S5236.0XR1.0
8.00	0.30	8	20	64	4	S5238.0XR0.3
8.00	0.50	8	20	64	4	S5238.0XR0.5
8.00	1.00	8	20	64	4	S5238.0XR1.0
8.00	2.00	8	20	64	4	S5238.0XR2.0
10.00	0.50	10	22	70	4	S52310.0XR0.5
10.00	1.00	10	22	70	4	S52310.0XR1.0
10.00	1.50	10	22	70	4	S52310.0XR1.5
10.00	2.00	10	22	70	4	S52310.0XR2.0
12.00	0.50	12	25	75	4	S52312.0XR0.5
12.00	1.00	12	25	75	4	S52312.0XR1.0
12.00	2.00	12	25	75	4	S52312.0XR2.0
12.00	3.00	12	25	75	4	S52312.0XR3.0
16.00	0.50	16	32	90	4	S52316.0XR0.5
16.00	1.00	16	32	90	4	S52316.0XR1.0
16.00	2.00	16	32	90	4	S52316.0XR2.0
16.00	3.00	16	32	90	4	S52316.0XR3.0

S763

- Ujjmaró rádiusszal
- Freze cilindro-frontala cu raza
- Köşe Radyüzlü Parmak Freze
- Corner Radius End Mill

S763 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2

S763 **HM** **N** **h9**



S763



3.00 - 20.00

d_1 Ø mm	r ±0.01 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S763
3.00	0.30	3	9	40	4	S7633.0XR0.3
4.00	0.30	4	12	50	4	S7634.0XR0.3
4.00	0.50	4	12	50	4	S7634.0XR0.5
5.00	0.30	5	15	50	4	S7635.0XR0.3
5.00	0.50	5	15	50	4	S7635.0XR0.5
6.00	0.50	6	16	50	4	S7636.0XR0.5
6.00	1.00	6	16	50	4	S7636.0XR1.0
8.00	0.50	8	20	64	4	S7638.0XR0.5
8.00	1.00	8	20	64	4	S7638.0XR1.0
10.00	0.50	10	22	70	4	S76310.0XR0.5
10.00	1.00	10	22	70	4	S76310.0XR1.0
10.00	2.00	10	22	70	4	S76310.0XR2.0
12.00	1.00	12	25	75	4	S76312.0XR1.0
12.00	2.00	12	25	75	4	S76312.0XR2.0
12.00	3.00	12	25	75	4	S76312.0XR3.0
14.00	1.50	14	32	90	4	S76314.0XR1.5
16.00	1.00	16	32	90	4	S76316.0XR1.0
16.00	2.00	16	32	90	4	S76316.0XR2.0
16.00	3.00	16	32	90	4	S76316.0XR3.0
18.00	2.00	18	38	100	4	S76318.0XR2.0
20.00	3.00	20	38	100	4	S76320.0XR3.0

S262

- Ujjmaró rádiusszal
- Freze cilindro-frontala cu raza
- Köşe radyuslu
- Corner Radius End Mill

S262 ■ 1.6 1.7 2.3 2.4 4.3 5.3



S262



3.00 - 20.00

d_1 Ø mm	r ±0.01 mm	d_2 Ø h_6 mm	l_2 mm	l_1 mm	z	S262
3.00	0.30	6	9	50	4	S2623.0XR0.3
3.00	0.50	6	9	50	4	S2623.0XR0.5
4.00	0.30	6	12	57	4	S2624.0XR0.3
4.00	0.50	6	12	57	4	S2624.0XR0.5
4.00	1.00	6	12	57	4	S2624.0XR1.0
5.00	0.30	6	15	57	4	S2625.0XR0.3
5.00	0.50	6	15	57	4	S2625.0XR0.5
6.00	0.30	6	16	57	4	S2626.0XR0.3
6.00	0.50	6	16	57	4	S2626.0XR0.5
6.00	1.00	6	16	57	4	S2626.0XR1.0
8.00	0.30	8	20	64	4	S2628.0XR0.3
8.00	0.50	8	20	64	4	S2628.0XR0.5
8.00	1.00	8	20	64	4	S2628.0XR1.0
8.00	1.50	8	20	64	4	S2628.0XR1.5
8.00	2.00	8	20	64	4	S2628.0XR2.0
10.00	0.30	10	22	72	4	S26210.0XR0.3
10.00	0.50	10	22	72	4	S26210.0XR0.5
10.00	1.00	10	22	72	4	S26210.0XR1.0
10.00	1.50	10	22	72	4	S26210.0XR1.5
10.00	2.00	10	22	72	4	S26210.0XR2.0
12.00	0.30	12	26	83	4	S26212.0XR0.3
12.00	0.50	12	26	83	4	S26212.0XR0.5
12.00	1.00	12	26	83	4	S26212.0XR1.0
12.00	2.00	12	26	83	4	S26212.0XR2.0
12.00	2.50	12	26	83	4	S26212.0XR2.5
12.00	3.00	12	26	83	4	S26212.0XR3.0
14.00	0.30	14	32	83	4	S26214.0XR0.3
14.00	0.50	14	32	83	4	S26214.0XR0.5
14.00	1.00	14	32	83	4	S26214.0XR1.0
14.00	2.00	14	32	83	4	S26214.0XR2.0
14.00	3.00	14	32	83	4	S26214.0XR3.0
16.00	0.30	16	32	92	4	S26216.0XR0.3
16.00	0.50	16	32	92	4	S26216.0XR0.5
16.00	1.00	16	32	92	4	S26216.0XR1.0
16.00	2.00	16	32	92	4	S26216.0XR2.0
16.00	2.50	16	32	92	4	S26216.0XR2.5
16.00	3.00	16	32	92	4	S26216.0XR3.0
16.00	4.00	16	32	92	4	S26216.0XR4.0
18.00	0.30	18	38	92	4	S26218.0XR0.3
18.00	0.50	18	38	92	4	S26218.0XR0.5

d_1 Ø mm	r ±0.01 mm	d_2 Ø _{h₅} mm	l_2 mm	l_1 mm	z	S262
18.00	1.00	18	38	92	4	S26218.0XR1.0
18.00	2.00	18	38	92	4	S26218.0XR2.0
18.00	3.00	18	38	92	4	S26218.0XR3.0
20.00	0.30	20	38	104	4	S26220.0XR0.3
20.00	0.50	20	38	104	4	S26220.0XR0.5
20.00	1.00	20	38	104	4	S26220.0XR1.0
20.00	2.00	20	38	104	4	S26220.0XR2.0
20.00	2.50	20	38	104	4	S26220.0XR2.5
20.00	3.00	20	38	104	4	S26220.0XR3.0
20.00	4.00	20	38	104	4	S26220.0XR4.0

S767

- Ujjmaró rádiusszal
- Freze cilindro-frontala cu raza
- Kőse radyuslu
- Corner Radius End Mill

S767 ■ 1.1 1.2 1.3 1.4 1.5 2.1 2.2 3.1 3.2 3.3 3.4 4.2 5.2



S767



4.00 - 20.00

d_1 Ø mm	r ±0.01 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S767
4.00	0.30	6	11	57	4	S7674.0XR0.3
4.00	0.50	6	11	57	4	S7674.0XR0.5
5.00	0.30	6	13	57	4	S7675.0XR0.3
5.00	0.50	6	13	57	4	S7675.0XR0.5
6.00	0.30	6	13	57	4	S7676.0XR0.3
6.00	0.50	6	13	57	4	S7676.0XR0.5
6.00	1.00	6	13	57	4	S7676.0XR1.0
8.00	0.30	8	20	64	4	S7678.0XR0.3
8.00	0.50	8	20	64	4	S7678.0XR0.5
8.00	1.00	8	20	64	4	S7678.0XR1.0
10.00	0.30	10	22	72	4	S76710.0XR0.3
10.00	0.50	10	22	72	4	S76710.0XR0.5
10.00	1.00	10	22	72	4	S76710.0XR1.0
12.00	0.30	12	26	83	4	S76712.0XR0.3
12.00	0.50	12	26	83	4	S76712.0XR0.5
12.00	1.00	12	26	83	4	S76712.0XR1.0
12.00	2.00	12	26	83	4	S76712.0XR2.0
16.00	0.30	16	32	92	4	S76716.0XR0.3
16.00	0.50	16	32	92	4	S76716.0XR0.5
16.00	1.00	16	32	92	4	S76716.0XR1.0
16.00	2.00	16	32	92	4	S76716.0XR2.0
20.00	0.30	20	38	104	4	S76720.0XR0.3
20.00	0.50	20	38	104	4	S76720.0XR0.5
20.00	1.00	20	38	104	4	S76720.0XR1.0
20.00	2.00	20	38	104	4	S76720.0XR2.0

S536

- Nagy előtolású maró
- Freza pentru avans rapid
- Hızlı ilerleme
- High Feed End Mill

S536 ■ 1.7 1.8

S536 **HM** **N** **Z 4-6** **$\lambda 25^\circ$**
 $\gamma 0^\circ$ **DIN 6535HA** **TISIN** **h9**



S536



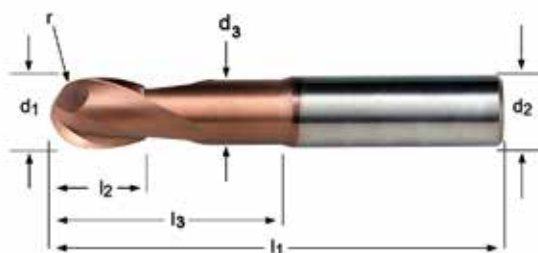
6.00 - 12.00

d_1 \emptyset mm	r ± 0.01 mm	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	z	S536
6.00	1.00	6	6	60	4	S5366.0XR1.0
8.00	2.00	8	8	64	6	S5368.0XR2.0
10.00	2.00	10	10	75	6	S53610.0XR2.0
12.00	2.00	12	12	75	6	S53612.0XR2.0

S229

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S229 ■ 1.6 2.3 2.4 4.3 5.3



d_1 Ø mm	r +0/-0.02 mm	d_2 Øh ₆ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S229
1.50	0.75	4	3	50	2	6.0	1.4	S2291.5XD4
2.00	1.00	3	4	50	2	8.0	1.9	S2292.0XD3
2.00	1.00	4	4	50	2	8.0	1.9	S2292.0XD4
3.00	1.50	3	5	50	2	14.0	2.8	S2293.0XD3
3.00	1.50	6	5	50	2	14.0	2.8	S2293.0XD6
4.00	2.00	4	8	50	2	20.0	3.7	S2294.0XD4
4.00	2.00	6	8	50	2	20.0	3.7	S2294.0XD6
5.00	2.50	5	9	50	2	20.0	4.6	S2295.0XD5
5.00	2.50	6	9	50	2	20.0	4.6	S2295.0XD6
6.00	3.00	6	10	50	2	20.0	5.5	S2296.0
8.00	4.00	8	12	64	2	30.0	7.4	S2298.0
10.00	5.00	10	14	70	2	32.0	9.2	S22910.0
12.00	6.00	12	16	75	2	38.0	11.0	S22912.0
14.00	7.00	14	32	90	2	44.0	13.0	S22914.0
16.00	8.00	16	32	90	2	46.0	15.0	S22916.0

S231

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küre Parmak Freze
- Ball-Nosed End Mill

S231 ■ 1.6 2.3 2.4 4.3 5.3

S231 **HM** **N** **Z 2** **λ 30°** **γ 3°** **TiSiN** **h9**



S231



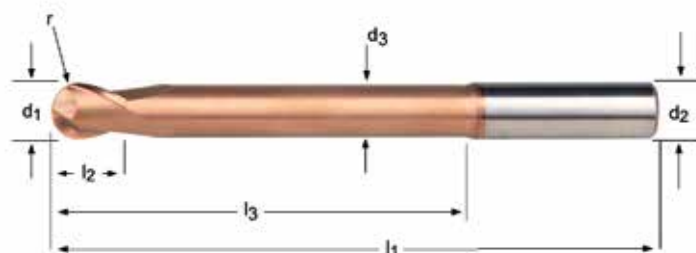
1.50 - 16.00

d_1 Ø mm	r +0/-0.02 mm	d_2 Ø _{h₆} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S231
1.50	0.75	4	3	75	2	10.0	1.4	S2311.5XD4
2.00	1.00	3	4	60	2	14.0	1.9	S2312.0XD3
2.00	1.00	4	4	75	2	14.0	1.9	S2312.0XD4
3.00	1.50	3	5	60	2	21.0	2.8	S2313.0XD3
3.00	1.50	6	5	75	2	21.0	2.8	S2313.0XD6
4.00	2.00	4	8	60	2	28.0	3.7	S2314.0XD4
4.00	2.00	6	8	75	2	28.0	3.7	S2314.0XD6
5.00	2.50	5	9	60	2	32.0	4.6	S2315.0
6.00	3.00	6	10	75	2	40.0	5.5	S2316.0
8.00	4.00	8	10	75	2	40.0	7.4	S2318.0
10.00	5.00	10	12	75	2	40.0	9.2	S23110.0
12.00	6.00	12	16	100	2	60.0	11.0	S23112.0
14.00	7.00	14	32	125	2	80.0	13.0	S23114.0
16.00	8.00	16	32	125	2	80.0	15.0	S23116.0

S233

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S233 ■ 1.6 2.3 2.4 4.3 5.3



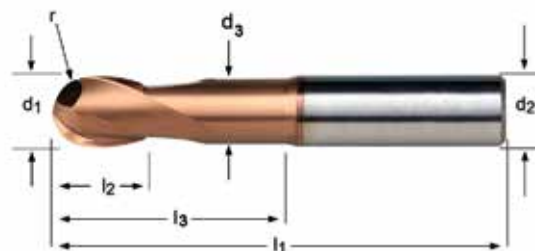
d_1 Ø mm	r +0/-0.02 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S233
2.00	1.00	3	4	100	2	20.0	1.9	S2332.0XD3
2.00	1.00	4	4	100	2	20.0	1.9	S2332.0XD4
3.00	1.50	3	5	100	2	30.0	2.8	S2333.0XD3
3.00	1.50	6	5	100	2	30.0	2.8	S2333.0XD6
4.00	2.00	4	8	100	2	40.0	3.7	S2334.0XD4
4.00	2.00	6	8	100	2	40.0	3.7	S2334.0XD6
5.00	2.50	5	9	100	2	50.0	4.6	S2335.0
6.00	3.00	6	10	100	2	60.0	5.5	S2336.0
8.00	4.00	8	12	100	2	60.0	7.4	S2338.0
10.00	5.00	10	14	125	2	85.0	9.2	S23310.0
12.00	6.00	12	16	125	2	85.0	11.0	S23312.0
14.00	7.00	14	32	150	2	110.0	13.0	S23314.0
16.00	8.00	16	32	150	2	110.0	15.0	S23316.0

S529

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S529 ■ 1.7 1.8

S529 **HM** **N** $\lambda 30^\circ$ $\gamma -10^\circ$ **h9**



S529



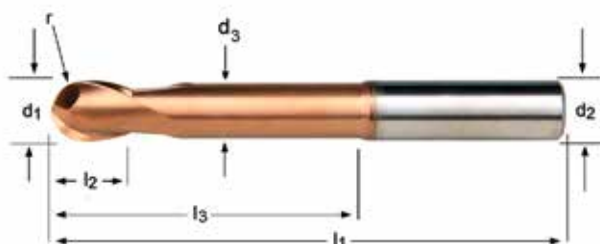
1.50 - 16.00

d_1 Ø mm	r +0/-0.02 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S529
1.50	0.75	6	3	50	2	6.0	1.4	S5291.5
2.00	1.00	4	4	50	2	8.0	1.9	S5292.0XD4
2.00	1.00	6	4	50	2	8.0	1.9	S5292.0XD6
3.00	1.50	3	5	50	2	14.0	2.8	S5293.0XD3
3.00	1.50	6	5	50	2	14.0	2.8	S5293.0XD6
4.00	2.00	4	8	50	2	20.0	3.7	S5294.0XD4
4.00	2.00	6	8	50	2	20.0	3.7	S5294.0XD6
5.00	2.50	5	9	50	2	20.0	4.6	S5295.0XD5
5.00	2.50	6	9	50	2	20.0	4.6	S5295.0XD6
6.00	3.00	6	10	50	2	20.0	5.5	S5296.0
8.00	4.00	8	12	64	2	30.0	7.4	S5298.0
10.00	5.00	10	14	70	2	32.0	9.2	S52910.0
12.00	6.00	12	16	75	2	38.0	11.0	S52912.0
14.00	7.00	14	32	90	2	44.0	13.0	S52914.0
16.00	8.00	16	32	90	2	46.0	15.0	S52916.0

S531

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S531 ■ 1.7 1.8



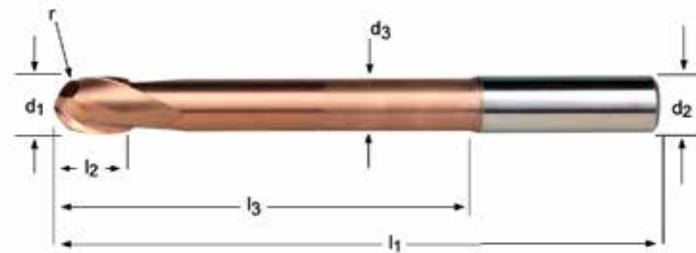
d_1 Ø mm	r +0/-0.02 mm	d_2 Ø h_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S531
1.50	0.75	6	3	75	2	10.0	1.4	S5311.5
2.00	1.00	4	4	75	2	14.0	1.9	S5312.0XD4
2.00	1.00	6	4	75	2	14.0	1.9	S5312.0XD6
3.00	1.50	3	5	60	2	21.0	2.8	S5313.0XD3
3.00	1.50	6	5	75	2	21.0	2.8	S5313.0XD6
4.00	2.00	4	8	60	2	28.0	3.7	S5314.0XD4
4.00	2.00	6	8	75	2	28.0	3.7	S5314.0XD6
5.00	2.50	5	9	60	2	32.0	4.6	S5315.0XD5
5.00	2.50	6	9	75	2	32.0	4.6	S5315.0XD6
6.00	3.00	6	10	75	2	40.0	5.5	S5316.0
8.00	4.00	8	12	75	2	40.0	7.4	S5318.0
10.00	5.00	10	14	75	2	40.0	9.2	S53110.0
12.00	6.00	12	16	100	2	60.0	11.0	S53112.0
14.00	7.00	14	32	125	2	80.0	13.0	S53114.0
16.00	8.00	16	32	125	2	80.0	15.0	S53116.0

S533

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S533 ■ 1.7 1.8

S533 **HM** **N** **Z 2** **λ 30°** **γ -10°** **DIN 6535HA** **TISIN** **h9**



d_1 Ø mm	r +0/-0.02 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S533
2.00	1.00	4	4	100	2	20.0	1.9	S5332.0XD4
2.00	1.00	6	4	100	2	20.0	1.9	S5332.0XD6
3.00	1.50	4	5	100	2	30.0	2.8	S5333.0XD4
3.00	1.50	6	5	100	2	30.0	2.8	S5333.0XD6
4.00	2.00	4	8	100	2	40.0	3.7	S5334.0XD4
4.00	2.00	6	8	100	2	40.0	3.7	S5334.0XD6
5.00	2.50	5	9	100	2	50.0	4.6	S5335.0XD5
5.00	2.50	6	9	100	2	50.0	4.6	S5335.0XD6
6.00	3.00	6	10	100	2	60.0	5.5	S5336.0
8.00	4.00	8	12	100	2	60.0	7.4	S5338.0
10.00	5.00	10	14	125	2	85.0	9.2	S53310.0
12.00	6.00	12	16	125	2	85.0	11.0	S53312.0
14.00	7.00	14	32	150	2	110.0	13.0	S53314.0
16.00	8.00	16	32	150	2	110.0	15.0	S53316.0

S501

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S501	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1		
		6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	8.2	8.3	9.1											
	•	1.7																					

S501

HM



N

Z
2



$\lambda 30^\circ$
 $\gamma 10^\circ$

DIN 6535HA

X-CEED

h9



DORMER



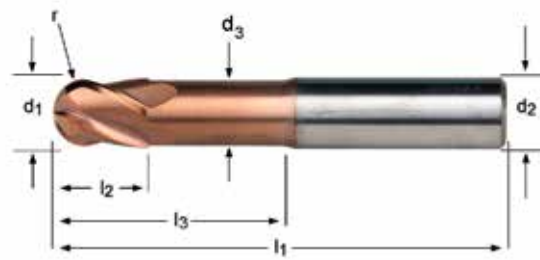
d_1 Ø mm	r ±0.01 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	S501
1.00	0.50	3	3	38	2	S5011.0
1.50	0.75	3	3	38	2	S5011.5
2.00	1.00	3	6	38	2	S5012.0
2.50	1.25	3	7	38	2	S5012.5
3.00	1.50	3	7	38	2	S5013.0
4.00	2.00	6	8	57	2	S5014.0
5.00	2.50	6	10	57	2	S5015.0
6.00	3.00	6	10	57	2	S5016.0
7.00	3.50	8	13	63	2	S5017.0
8.00	4.00	8	16	63	2	S5018.0
9.00	4.50	10	16	72	2	S5019.0
10.00	5.00	10	19	72	2	S50110.0
12.00	6.00	12	22	83	2	S50112.0
16.00	8.00	16	26	92	2	S50116.0

S534

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S534 ■ 1.7 1.8

S534 **HM** **N** **Z 4** **$\lambda 30^\circ$**
 $\gamma -10^\circ$ **DIN 6535HA** **TISIN** **h9**

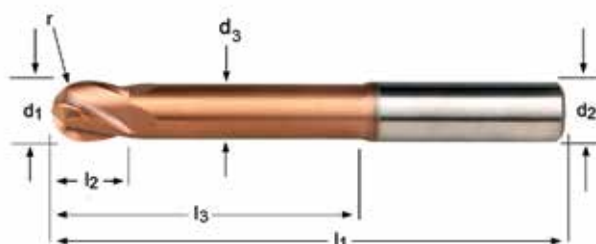


d_1 \emptyset mm	r +0/-0.02 mm	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 \emptyset mm	S534
3.00	1.50	6	5	50	4	14.0	2.8	S5343.0
4.00	2.00	6	8	50	4	20.0	3.7	S5344.0
5.00	2.50	6	9	50	4	20.0	4.6	S5345.0
6.00	3.00	6	10	50	4	20.0	5.5	S5346.0
8.00	4.00	8	12	64	4	30.0	7.4	S5348.0
10.00	5.00	10	14	70	4	32.0	9.2	S53410.0
12.00	6.00	12	16	75	4	38.0	11.0	S53412.0
14.00	7.00	14	32	90	4	44.0	13.0	S53414.0
16.00	8.00	16	32	90	4	46.0	15.0	S53416.0

S535

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S535 ■ 1.7 1.8



S535



3.00 - 16.00

d_1 Ø mm	r +0/-0.02 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	S535
3.00	1.50	6	5	75	4	21.0	2.8	S5353.0
4.00	2.00	6	8	75	4	28.0	3.7	S5354.0
5.00	2.50	6	9	75	4	32.0	4.6	S5355.0
6.00	3.00	6	10	75	4	40.0	5.5	S5356.0
8.00	4.00	8	12	75	4	40.0	7.4	S5358.0
10.00	5.00	10	14	75	4	40.0	9.2	S53510.0
12.00	6.00	12	16	100	4	60.0	11.0	S53512.0
14.00	7.00	14	32	125	4	80.0	13.0	S53514.0
16.00	8.00	16	32	125	4	80.0	15.0	S53516.0

S511

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S511	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	7.3
		7.4	8.2	8.3	9.1																
	•	1.7	6.1	6.2	6.3	6.4	7.1	7.2	8.1												

S511 **HM** **N** $\lambda 30^\circ$ $\gamma 10^\circ$ **h9**



d_1 \varnothing mm	r ± 0.01 mm	d_2 $\varnothing h_6$ mm	l_2 mm	l_1 mm	z	S511
3.00	1.50	6	8	80	4	S5113.0
4.00	2.00	6	11	80	4	S5114.0
5.00	2.50	6	13	80	4	S5115.0
6.00	3.00	6	13	80	4	S5116.0
7.00	3.50	8	16	100	4	S5117.0
8.00	4.00	8	19	100	4	S5118.0
9.00	4.50	10	19	100	4	S5119.0
10.00	5.00	10	22	100	4	S51110.0
12.00	6.00	12	26	100	4	S51112.0
16.00	8.00	16	32	100	4	S51116.0

S629

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

S629 ■ 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4 8.1 8.2



S629



3.00 - 20.00

d_1 ∅ mm	r +0/-0.02 mm	d_2 ∅ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 ∅ mm	S629
3.00	1.50	6	5	57	2	20.0	2.8	S6293.0
4.00	2.00	6	6	57	2	20.0	3.7	S6294.0
5.00	2.50	6	7	57	2	20.0	4.6	S6295.0
6.00	3.00	6	8	57	2	20.0	5.5	S6296.0
8.00	4.00	8	10	64	2	25.0	7.4	S6298.0
10.00	5.00	10	12	75	2	35.0	9.2	S62910.0
12.00	6.00	12	14	75	2	35.0	11.0	S62912.0
16.00	8.00	16	18	90	2	45.0	15.0	S62916.0
20.00	10.00	20	22	100	2	50.0	19.0	S62920.0

S739

- Letörő maró - 60°
- Freza sanfrenare - 60°
- Pah Kırıcı Parmak Freze - 60°
- Chamfering End Mill - 60°

S740

- Letörő maró - 90°
- Freza sanfrenare - 90°
- Pah Kırıcı Parmak Freze - 90°
- Chamfering End Mill - 90°

S741


- Letörő maró - 120°
- Freza sanfrenare - 120°
- Pah Kırıcı Parmak Freze - 120°
- Chamfering End Mill - 120°

S739; S740; S741	1.1	1.2	1.3	1.4	1.5	2.1	2.2	3.1	3.2	3.3	3.4	4.2	5.2	6.1	6.2	6.3	6.4
	7.1	7.2	7.3	7.4													

S739	HM		N	Z 2		$\lambda 40^\circ$ $\gamma 10^\circ$	DIN 6535HA		h9	
S740	HM		N	Z 2		$\lambda 40^\circ$ $\gamma 10^\circ$	DIN 6535HA		h9	
S741	HM		N	Z 2		$\lambda 40^\circ$ $\gamma 10^\circ$	DIN 6535HA		h9	



	d ₁ Ø mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	S739	S740	S741
60°	3.00	3	9	40	2	S7393.0		
90°	3.00	3	9	40	2		S7403.0	
120°	3.00	3	9	40	2			S7413.0
60°	4.00	4	12	50	2	S7394.0		
90°	4.00	4	12	50	2		S7404.0	
120°	4.00	4	12	50	2			S7414.0
60°	5.00	5	15	50	2	S7395.0		
90°	5.00	5	15	50	2		S7405.0	
120°	5.00	5	15	50	2			S7415.0
60°	6.00	6	16	50	2	S7396.0		
90°	6.00	6	16	50	2		S7406.0	
120°	6.00	6	16	50	2			S7416.0
60°	8.00	8	20	64	2	S7398.0		
90°	8.00	8	20	64	2		S7408.0	
120°	8.00	8	20	64	2			S7418.0
60°	10.00	10	22	70	2	S73910.0		
90°	10.00	10	22	70	2		S74010.0	
120°	10.00	10	22	70	2			S74110.0

	d ₁ ∅ mm	d ₂ ∅h _s mm	l ₂ mm	l ₁ mm	z	S739	S740	S741
60°	12.00	12	25	75	2	S73912.0		
90°	12.00	12	25	75	2		S74012.0	
120°	12.00	12	25	75	2			S74112.0
60°	16.00	16	32	90	2	S73916.0		
90°	16.00	16	32	90	2		S74016.0	
120°	16.00	16	32	90	2			S74116.0
60°	20.00	20	38	100	2	S73920.0		
90°	20.00	20	38	100	2		S74020.0	
120°	20.00	20	38	100	2			S74120.0

S991

- Tömör keményfém maró készlet
- Set freze carbura
- Karbür Freze seti
- Solid Carbide Cutter Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben
 A=tipuri în set, B=Nr. în Set, C=Diametre în Set
 A= Set modeli, B= Set içerik adedi, C= Set çapları
 A=Styles in Set, B=No. in Set, C=Diameters in Set



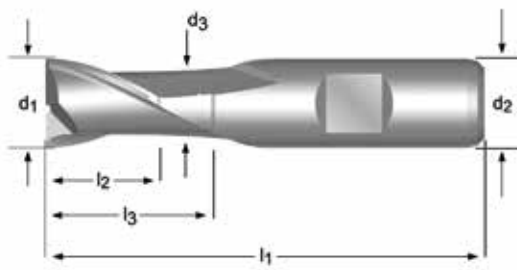
Nr.	A	B	C	S991
922	S922	6	Ø 3.00 mm, 4.00 mm, 5.00 mm, 6.00 mm, 8.00 mm, 10.00 mm	S991SET922
933	S933	6	Ø 3.00 mm, 4.00 mm, 5.00 mm, 6.00 mm, 8.00 mm, 10.00 mm	S991SET933
944	S944	6	Ø 3.00 mm, 4.00 mm, 5.00 mm, 6.00 mm, 8.00 mm, 10.00 mm	S991SET944

C110 • Hosszlyukmaró • Freze deget

C126 • Kanal Frezesi • Slot Drill

C110	▪	1.1	1.2	4.1	5.1	6.1	6.2	6.3										
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1				
C126	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3		
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1					

C110	HSS-E PM		N	Z 2		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B		e8		DIN 327D
C126	HSS-E PM		N	Z 2		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B	TiCN	e8		DIN 327D



d ₁ Ø Inch	d ₁ Ø mm	d ₂ Ø _{h6} mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C110	C126
	1.00	6	2.5	47	2	-	-	C1101.0	C1261.0
	1.50	6	3	47	2	-	-	C1101.5	C1261.5
1/16	1.59	6	3	47	2	-	-	C1101/16	
	1.80	6	4	48	2	-	-	C1101.8	
	2.00	6	4	48	2	-	-	C1102.0	C1262.0
3/32	2.38	6	5	49	2	-	-	C1103/32	
	2.50	6	5	49	2	-	-	C1102.5	C1262.5
	2.80	6	5	49	2	-	-	C1102.8	
	3.00	6	5	49	2	-	-	C1103.0	C1263.0
1/8	3.18	6	6	50	2	-	-	C1101/8	
	3.50	6	6	50	2	-	-	C1103.5	C1263.5
	3.80	6	7	51	2	-	-	C1103.8	
	4.00	6	7	51	2	-	-	C1104.0	C1264.0
	4.50	6	7	51	2	-	-	C1104.5	C1264.5
3/16	4.76	6	8	52	2	-	-	C1103/16	
	4.80	6	8	52	2	-	-	C1104.8	¹⁾²⁾
	5.00	6	8	52	2	-	-	C1105.0	C1265.0
	5.50	6	8	52	2	-	-	C1105.5	C1265.5
	5.75	6	8	52	2	-	-	C1105.75	¹⁾²⁾
	6.00	6	8	52	2	-	-	C1106.0	C1266.0
1/4	6.35	10	10	60	2	-	-	C1101/4	
	6.50	10	10	60	2	-	-	C1106.5	C1266.5
	6.75	10	10	60	2	-	-	C1106.75	
	7.00	10	10	60	2	-	-	C1107.0	C1267.0
	7.50	10	10	60	2	-	-	C1107.5	C1267.5
	7.75	10	11	61	2	-	-	C1107.75	¹⁾²⁾
5/16	7.94	10	11	61	2	-	-	C1105/16	
	8.00	10	11	61	2	-	-	C1108.0	C1268.0

¹⁾ az átmérő tűrése h10 / toleranta diametrului h10 / çap toleransı h10 / diameter tolerance h10
²⁾ ≠ P9 turés / ≠ P9 toleranta / slot P9 toleransı değil / slot not in P9 tolerance

d ₁ Ø Inch	d ₁ Ø mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C110	C126
	8.50	10	11	61	2	-	-	C1108.5	C1268.5
	9.00	10	11	61	2	-	-	C1109.0	C1269.0
	9.50	10	11	61	2	-	-	C1109.5	C1269.5
3/8	9.52	10	13	63	2	22.5	9.5	C1103/8	
	9.70	10	13	63	2	22.5	9.5	C1109.7	¹⁾²⁾
	10.00	10	13	63	2	22.5	9.5	C11010.0	C12610.0
13/32	10.32	12	13	70	2	-	-	C11013/32	
	10.50	12	13	70	2	-	-	C11010.5	C12610.5
	11.00	12	13	70	2	-	-	C11011.0	C12611.0
7/16	11.11	12	13	70	2	-	-	C1107/16	
	11.50	12	13	70	2	-	-	C11011.5	C12611.5
	11.70	12	16	73	2	27.5	11.5	C11011.7	¹⁾²⁾
	12.00	12	16	73	2	27.5	11.5	C11012.0	C12612.0
	12.50	12	16	73	2	27.5	11.5	C11012.5	C12612.5
1/2	12.70	12	16	73	2	27.5	11.5	C1101/2	
	13.00	12	16	73	2	27.5	11.5	C11013.0	C12613.0
17/32	13.49	12	16	73	2	27.5	11.5	C11017/32	
	13.70	12	16	73	2	27.5	11.5	C11013.7	¹⁾²⁾
	14.00	12	16	73	2	27.5	11.5	C11014.0	C12614.0
9/16	14.29	12	16	73	2	27.5	11.5	C1109/16	
	15.00	12	16	73	2	27.5	11.5	C11015.0	C12615.0
	15.70	16	19	79	2	30.5	15.5	C11015.7	¹⁾²⁾
5/8	15.88	16	19	79	2	30.5	15.5	C1105/8	
	16.00	16	19	79	2	30.5	15.5	C11016.0	C12616.0
	17.00	16	19	79	2	30.5	15.5	C11017.0	
11/16	17.46	16	19	79	2	30.5	15.5	C11011/16	
	17.70	16	19	79	2	30.5	15.5	C11017.7	
	18.00	16	19	79	2	30.5	15.5	C11018.0	C12618.0
	19.00	16	19	79	2	30.5	15.5	C11019.0	
3/4	19.05	20	22	88	2	37.5	18.5	C1103/4	
	19.70	20	22	88	2	37.5	19.5	C11019.7	
	20.00	20	22	88	2	37.5	19.5	C11020.0	C12620.0
	21.70	20	22	88	2	37.5	19.5	C11021.7	
	22.00	20	22	88	2	37.5	19.5	C11022.0	C12622.0
7/8	22.22	20	22	88	2	37.5	19.5	C1107/8	
	24.00	25	26	102	2	45.5	23.5	C11024.0	C12624.0
	24.70	25	26	102	2	45.5	24.5	C11024.7	
	25.00	25	26	102	2	45.5	24.5	C11025.0	C12625.0
1"	25.40	25	26	102	2	45.5	24.5	C1101	
	26.00	25	26	102	2	45.5	24.5	C11026.0	
	28.00	25	26	102	2	45.5	24.5	C11028.0	
1.1/8	28.58	25	26	102	2	45.5	24.5	C1101.1/8	
	30.00	25	26	102	2	45.5	24.5	C11030.0	C12630.0
1.1/4	31.75	32	32	112	2	51.5	31.5	C1101.1/4	
	32.00	32	32	112	2	51.5	31.5	C11032.0	
	35.00	32	32	112	2	51.5	31.5	C11035.0	¹⁾³⁾
	36.00	32	32	112	2	51.5	31.5	C11036.0	¹⁾³⁾
	40.00	40	38	130	2	59.5	39.0	C11040.0	¹⁾³⁾
	45.00	40	38	130	2	59.5	38.0	C11045.0	¹⁾³⁾
	50.00	50	45	147	2	66.5	48.0	C11050.0	¹⁾³⁾

¹⁾ az átmérő tűrése h10 / toleranta diametrului h10 / çap toleransı h10 / diameter tolerance h10

²⁾ ≠ P9 turés / ≠ P9 toleranta / slot P9 toleransı değil / slot not in P9 tolerance

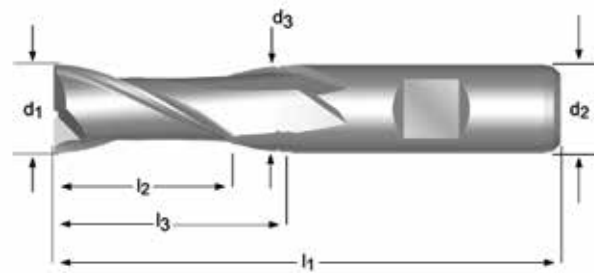
³⁾ Csak HSS-E anyagminőségben érhető el / Disponibil doar din HSCo / Sadece HSCo olarak mevcut / Available in HSS-E only

C123 • Hosszlyukmaró • Freze deget

C139 • Kanal Frezesi • Slot Drill

C123	▪	1.1	1.2	1.3	1.4	4.1	5.1	6.1	6.2	6.3						
	•	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1				
C139	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1			

C123	HSS-E PM	P9	N	Z 2		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B		e8		DIN 844K
C139	HSS-E PM	P9	N	Z 2		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B	TiCN	e8		DIN 844K



d ₁ Ø Inch	d ₁ Ø mm	d ₂ Ø _{h6} mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C123	C139
1/16	1.59	6	7	51	2	-	-	C1231/16 ¹⁾	
	2.00	6	7	51	2	-	-	C1232.0	C1392.0
	2.50	6	8	52	2	-	-	C1232.5	
	3.00	6	8	52	2	-	-	C1233.0	C1393.0
1/8	3.18	6	10	54	2	-	-	C1231/8 ¹⁾	
	3.50	6	10	54	2	-	-	C1233.5	
5/32	3.97	6	11	55	2	-	-	C1235/32 ¹⁾	
	4.00	6	11	55	2	-	-	C1234.0	C1394.0
	4.50	6	11	55	2	-	-	C1234.5	
3/16	4.76	6	13	57	2	-	-	C1233/16 ¹⁾	
	5.00	6	13	57	2	-	-	C1235.0	C1395.0
	5.50	6	13	57	2	-	-	C1235.5	C1395.5
	6.00	6	13	57	2	-	-	C1236.0	C1396.0
1/4	6.35	10	16	66	2	-	-	C1231/4 ¹⁾	
	6.50	10	16	66	2	-	-	C1236.5	C1396.5
	7.00	10	16	66	2	-	-	C1237.0	C1397.0
	7.50	10	16	66	2	-	-	C1237.5	C1397.5
5/16	7.94	10	19	69	2	-	-	C1235/16 ¹⁾	
	8.00	10	19	69	2	-	-	C1238.0	C1398.0
	8.50	10	19	69	2	-	-	C1238.5	C1398.5
	9.00	10	19	69	2	-	-	C1239.0	C1399.0
	9.50	10	19	69	2	-	-	C1239.5	C1399.5
3/8	9.52	10	22	72	2	31.5	9.5	C1233/8 ¹⁾	
	10.00	10	22	72	2	31.5	9.5	C12310.0	C13910.0
	11.00	12	22	79	2	-	-	C12311.0	C13911.0
	12.00	12	26	83	2	37.5	11.5	C12312.0	C13912.0
1/2	12.70	12	26	83	2	37.5	11.5	C1231/2 ¹⁾	
	13.00	12	26	83	2	37.5	11.5	C12313.0	C13913.0
	14.00	12	26	83	2	37.5	11.5	C12314.0	C13914.0
9/16	14.29	12	26	83	2	37.5	11.5	C1239/16 ¹⁾	

¹⁾ az átmérő tűrése -.0005 inches / -.0013 inches / toleranta diametrului -.0005 inches / -.0013 inches / çap toleransı -0.0005 inç / -0.0013 inç / diameter tolerance -0.0005 inches / -0.0013 inches

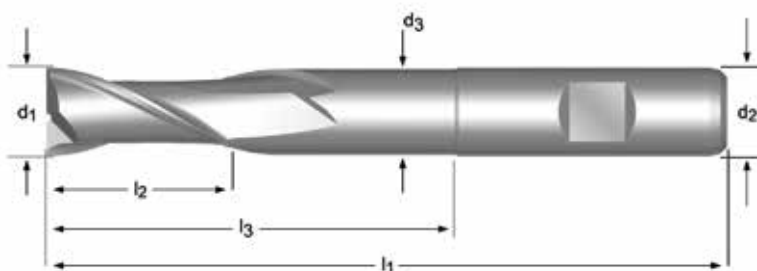
d_1 Ø Inch	d_1 Ø mm	d_2 Ø h_6 mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C123	C139
5/8	15.00	12	26	83	2	37.5	11.5	C12315.0	C13915.0
	15.88	16	32	92	2	43.5	15.5	C1235/8 ¹⁾	
	16.00	16	32	92	2	43.5	15.5	C12316.0	C13916.0
	18.00	16	32	92	2	43.5	15.5	C12318.0	C13918.0
3/4	19.05	20	38	104	2	53.5	18.5	C1233/4 ²⁾	
	20.00	20	38	104	2	53.5	19.5	C12320.0	C13920.0
	22.00	20	38	104	2	53.5	19.5	C12322.0	C13922.0
	25.00	25	45	121	2	64.5	24.5	C12325.0	C13925.0
1"	25.40	25	45	121	2	64.5	24.5	C1231	
	30.00	25	45	121	2	64.5	24.5	C12330.0	C13930.0
	32.00	32	53	133	2	72.5	31.5	C12332.0	
	36.00	32	53	133	2	72.5	31.5	C12336.0	³⁾
	40.00	32	53	133	2	72.5	31.5	C12336.0	³⁾
		40	63	155	2	84.5	39.0	C12340.0	³⁾

C135

- Hosszlyukmaró
- Freze deget
- Kanál Frezesi
- Slot Drill

C135	▪	1.1	1.2	5.1	6.1	6.2	6.3								
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.2	7.1	7.2	7.3	8.1

C135 HSS-E P9 N Z 2 λ 30° γ 12° DIN 1835B e8 DORMER



C135



2.00 - 20.00

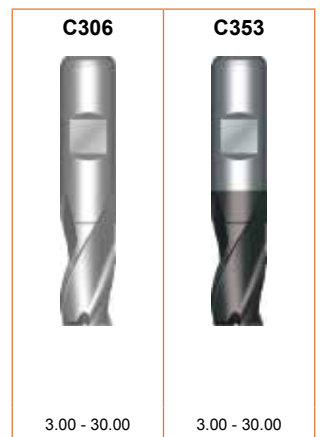
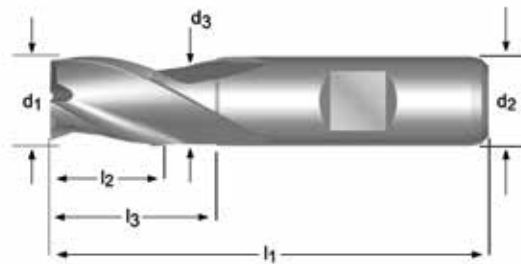
d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C135
2.00	6	7	54	2	18.0	1.8	C1352.0
3.00	6	8	56	2	20.0	2.8	C1353.0
4.00	6	11	63	2	27.0	3.7	C1354.0
5.00	6	13	68	2	32.0	4.7	C1355.0
6.00	6	13	68	2	32.0	5.7	C1356.0
7.00	10	16	80	2	40.0	6.5	C1357.0
8.00	10	19	88	2	48.0	7.5	C1358.0
9.00	10	19	88	2	48.0	8.5	C1359.0
10.00	10	22	95	2	54.5	9.5	C13510.0
11.00	12	22	102	2	57.0	10.5	C13511.0
12.00	12	26	110	2	64.5	11.5	C13512.0
13.00	12	26	110	2	64.5	11.5	C13513.0
14.00	12	26	110	2	64.5	11.5	C13514.0
15.00	12	26	110	2	64.5	11.5	C13515.0
16.00	16	32	123	2	74.5	15.5	C13516.0
17.00	16	32	123	2	74.5	15.5	C13517.0
18.00	16	32	123	2	74.5	15.5	C13518.0
19.00	16	32	123	2	74.5	15.5	C13519.0
20.00	20	38	141	2	90.5	19.5	C13520.0

C306 • Hosszlyukmaró
• Freze deget

C353 • Kanal Frezesi
• Slot Drill

C306	▪	1.2	1.3	4.1	5.1	6.1	6.2	6.3	•	1.1	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.2	7.3	8.1								
C353	▪	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	•	1.1	1.6	2.1	2.2	2.3	4.3	5.3	6.4	7.2	7.3	7.4	8.1

C306	HSS-E PM		N	Z 3		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B		e8 h10		DIN 327D
C353	HSS-E PM		N	Z 3		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B	Alcra	e8 h10		DIN 327D



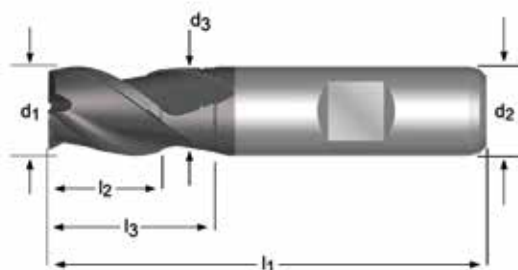
d ₁ Ø mm	d ₂ Ø _h mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C306	C353
3.00	6	5	49	3	-	-	C3063.0	C3533.0
3.50	6	6	50	3	-	-	C3063.5	C3533.5
4.00	6	7	51	3	-	-	C3064.0	C3534.0
4.50	6	7	51	3	-	-	C3064.5	C3534.5
4.80	6	8	52	3	-	-	C3064.8	C3534.8
5.00	6	8	52	3	-	-	C3065.0	C3535.0
5.50	6	8	52	3	-	-	C3065.5	C3535.5
5.75	6	8	52	3	-	-	C3065.75	C3535.75
6.00	6	8	52	3	-	-	C3066.0	C3536.0
6.50	10	10	60	3	-	-	C3066.5	C3536.5
7.00	10	10	60	3	-	-	C3067.0	C3537.0
7.50	10	10	60	3	-	-	C3067.5	C3537.5
7.75	10	11	61	3	-	-	C3067.75	C3537.75
8.00	10	11	61	3	-	-	C3068.0	C3538.0
8.50	10	11	61	3	-	-	C3068.5	C3538.5
9.00	10	11	61	3	-	-	C3069.0	C3539.0
9.50	10	11	61	3	-	-	C3069.5	C3539.5
9.70	10	13	63	3	22.5	9.5	-	C3539.7
10.00	10	13	63	3	22.5	9.5	C30610.0	C35310.0
11.00	12	13	70	3	-	-	C30611.0	C35311.0
12.00	12	16	73	3	27.5	11.5	C30612.0	C35312.0
13.00	12	16	73	3	27.5	11.5	C30613.0	C35313.0
14.00	12	16	73	3	27.5	11.5	C30614.0	C35314.0
15.00	12	16	73	3	27.5	11.5	C30615.0	C35315.0
16.00	16	19	79	3	30.5	15.5	C30616.0	C35316.0
18.00	16	19	79	3	30.5	15.5	C30618.0	C35318.0
20.00	20	22	88	3	37.5	19.5	C30620.0	C35320.0
22.00	20	22	88	3	37.5	19.5	C30622.0	C35322.0
25.00	25	26	102	3	45.5	24.5	C30625.0	C35325.0
28.00	25	26	102	3	45.5	24.5	C30628.0	C35328.0
30.00	25	26	102	3	45.5	24.5	C30630.0	C35330.0

C367

- Hosszlyukmaró
- Freze deget
- Kanal Frezesi
- Slot Drill

C367	▪	1.1	1.2	2.1	2.2	2.3	2.4	6.1	7.1	
	•	1.3	1.4	4.1	5.1	6.2	6.3	7.2	7.3	8.1

C367 HSS-E PM P9 N Z 3 $\lambda 40^\circ$ $\gamma 15^\circ$ DIN 1835B Alcrona e8 DIN 327D



C367



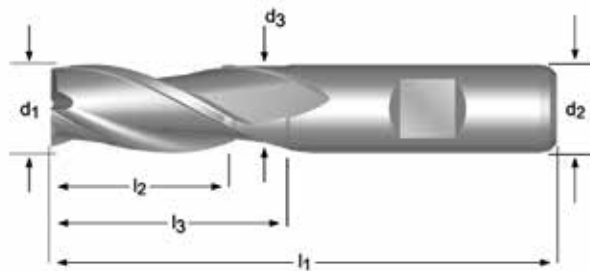
2.00 - 20.00

d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C367
2.00	6	4	48	3	-	-	C3672.0
3.00	6	5	49	3	-	-	C3673.0
4.00	6	7	51	3	-	-	C3674.0
5.00	6	8	52	3	-	-	C3675.0
6.00	6	8	52	3	-	-	C3676.0
7.00	10	10	60	3	-	-	C3677.0
8.00	10	11	61	3	-	-	C3678.0
9.00	10	11	61	3	-	-	C3679.0
10.00	10	13	63	3	22.5	9.5	C36710.0
11.00	12	13	70	3	-	-	C36711.0
12.00	12	16	73	3	27.5	11.5	C36712.0
13.00	12	16	73	3	27.5	11.5	C36713.0
14.00	12	16	73	3	27.5	11.5	C36714.0
16.00	16	19	79	3	30.5	15.5	C36716.0
18.00	16	19	79	3	30.5	15.5	C36718.0
20.00	20	22	88	3	37.5	19.5	C36720.0

- C305** • Hosszlyukmaró
• Freze deget
- C352** • Kanál Frezesi
• Slot Drill

C305	▪	1.2	1.3	4.1	5.1	5.2	6.1	6.2	6.3							
	•	1.1	1.4	2.1	3.1	3.2	3.3	3.4	4.2	7.2	7.3	8.1				
C352	▪	1.2	1.3	1.4	1.5	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.1	1.6	2.1	2.2	2.3	4.3	5.3	6.4	7.2	7.3	7.4	8.1			

C305	HSS-E PM		N	Z 3		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B		e8		DIN 844K
C352	HSS-E PM		N	Z 3		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B	Alcra	e8		DIN 844K

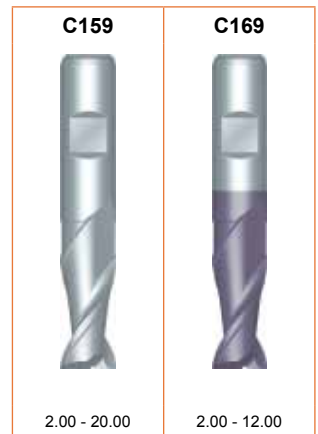
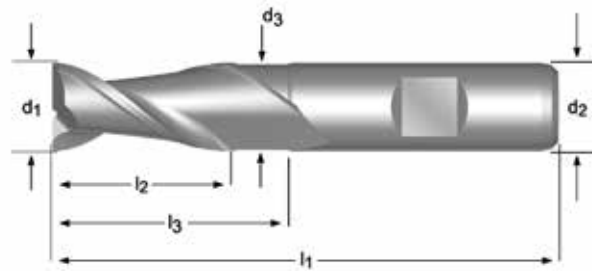


d ₁ Ø mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C305	C352
2.00	6	7	51	3	-	-	C3052.0	
2.50	6	8	52	3	-	-	C3052.5	
3.00	6	8	52	3	-	-	C3053.0	C3523.0
3.50	6	10	54	3	-	-	C3053.5	
4.00	6	11	55	3	-	-	C3054.0	C3524.0
4.50	6	11	55	3	-	-	C3054.5	
5.00	6	13	57	3	-	-	C3055.0	C3525.0
5.50	6	13	57	3	-	-	C3055.5	
6.00	6	13	57	3	-	-	C3056.0	C3526.0
6.50	10	16	66	3	-	-	C3056.5	
7.00	10	16	66	3	-	-	C3057.0	
7.50	10	16	66	3	-	-	C3057.5	
8.00	10	19	69	3	-	-	C3058.0	C3528.0
8.50	10	19	69	3	-	-	C3058.5	
9.00	10	19	69	3	-	-	C3059.0	
10.00	10	22	72	3	31.5	9.5	C30510.0	C35210.0
11.00	12	22	79	3	-	-	C30511.0	
12.00	12	26	83	3	37.5	11.5	C30512.0	C35212.0
13.00	12	26	83	3	37.5	11.5	C30513.0	
14.00	12	26	83	3	37.5	11.5	C30514.0	C35214.0
15.00	12	26	83	3	37.5	11.5	C30515.0	
16.00	16	32	92	3	43.5	15.5	C30516.0	C35216.0
17.00	16	32	92	3	43.5	15.5	C30517.0	
18.00	16	32	92	3	43.5	15.5	C30518.0	C35218.0
19.00	16	32	92	3	43.5	15.5	C30519.0	
20.00	20	38	104	3	53.5	19.5	C30520.0	C35220.0
22.00	20	38	104	3	53.5	19.5	C30522.0	
25.00	25	45	121	3	-	-	C30525.0	
28.00	25	45	121	3	-	-	C30528.0	
30.00	25	45	121	3	-	-	C30530.0	
32.00	32	53	133	3	-	-	C30532.0	

- C159** • Hosszlyukmaró
• Freze deget
- C169** • Kanal Frezesi
• Slot Drill

C159	▪	1.1	6.1	6.2	6.3	7.1	7.2	7.3	8.1	8.2	
	•	1.2	1.3	2.1	2.2	4.1	5.1				
C169	▪	1.1	1.2	6.1	6.2	6.3	7.1	7.2	7.3	8.1	8.2
	•	1.3	2.1	2.2	2.3	4.1	4.2	5.1	5.2		

C159	HSS-E		W	Z 2		$\lambda 40^\circ$ $\gamma 20^\circ$	DIN 1835B		e8	
C169	HSS-E		W	Z 2		$\lambda 40^\circ$ $\gamma 20^\circ$	DIN 1835B	TiCN	e8	

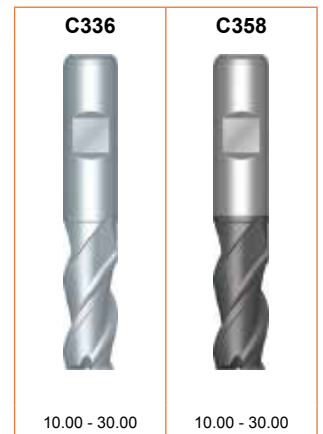
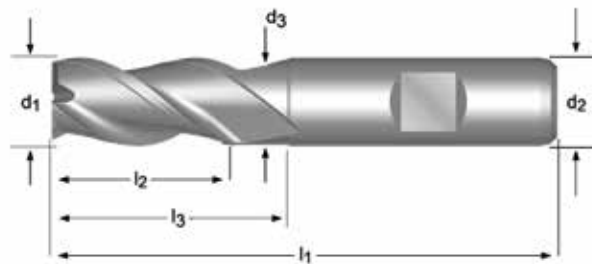


d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C159	C169
2.00	6	7	51	2	-	-	C1592.0	C1692.0
3.00	6	8	52	2	-	-	C1593.0	C1693.0
4.00	6	11	55	2	-	-	C1594.0	C1694.0
5.00	6	13	57	2	-	-	C1595.0	C1695.0
6.00	6	13	57	2	-	-	C1596.0	C1696.0
8.00	10	19	69	2	-	-	C1598.0	C1698.0
10.00	10	22	72	2	-	-	C15910.0	C16910.0
12.00	12	26	83	2	-	-	C15912.0	C16912.0
14.00	12	26	83	2	37.5	11.5	C15914.0	
16.00	16	32	92	2	43.5	15.5	C15916.0	
18.00	16	32	92	2	43.5	15.5	C15918.0	
20.00	20	38	104	2	53.5	19.5	C15920.0	

- C336** • Ujjmaró
• Freze cilindrice
- C358** • Parmak freze
• End Mill

C336	▪	6.1	6.2	6.3	7.1	7.2	7.3	8.1	8.2		
	•	1.1	1.2	1.3	2.1	2.2	4.1	5.1			
C358	▪	1.2	6.1	6.2	6.3	7.1	7.2	7.3	7.4	8.1	8.2
	•	1.1	1.3	2.1	2.2	2.3	4.1	4.2	5.1	5.2	

C336	HSS-E PM		W	Z 3		$\lambda 40^\circ$ $\gamma 25^\circ$	DIN 1835B		k10		DIN 844K
C358	HSS-E PM		W	Z 3		$\lambda 40^\circ$ $\gamma 25^\circ$	DIN 1835B	Alcrona	k10		DIN 844K



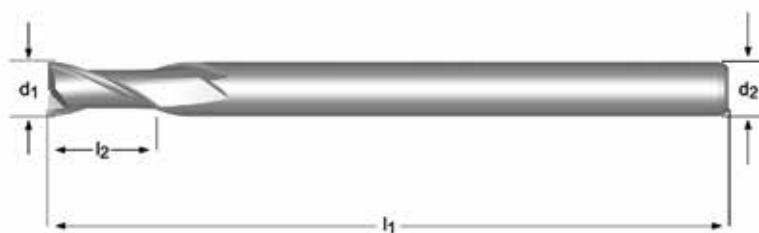
d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C336	C358
10.00	10	22	72	3	31.5	9.5	C33610.0	C35810.0
12.00	12	26	83	3	37.5	11.5	C33612.0	C35812.0
14.00	12	26	83	3	37.5	11.5	C33614.0	C35814.0
16.00	16	32	92	3	43.5	15.5	C33616.0	C35816.0
18.00	16	32	92	3	43.5	15.5	C33618.0	C35818.0
20.00	20	38	104	3	53.5	19.5	C33620.0	C35820.0
22.00	20	38	104	3	53.5	19.5	C33622.0	C35822.0
25.00	25	45	121	3	64.5	24.5	C33625.0	C35825.0
30.00	25	45	121	3	64.5	24.5	C33630.0	C35830.0

C167

- Ujjmaró
- Freze cilindrice
- Parmak freze
- End Mill

C167	▪	1.1	1.2	5.1	6.1	6.2	6.3								
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.2	7.1	7.2	7.3	8.1

C167 HSS-E  N  Z 2  $\lambda 30^\circ$ $\gamma 12^\circ$   js14  



C167



6.00 - 16.00

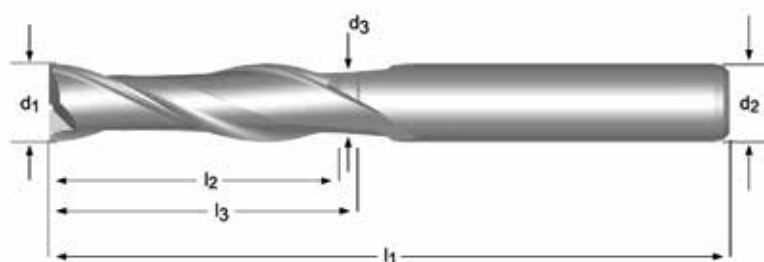
d_1 \emptyset mm	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	z	C167
6.00	6	13	180	2	C1676.0
8.00	8	19	180	2	C1678.0
10.00	10	22	200	2	C16710.0
12.00	12	26	200	2	C16712.0
16.00	16	32	200	2	C16716.0

C122

- Ujjmaró
- Freze cilindrice
- Parmak freze
- End Mill

C122	▪	1.1	1.2	5.1	6.1	6.2	6.3										
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.2	7.1	7.2	7.3	8.1		

C122 HSS-E N Z 2 $\lambda 30^\circ$ $\gamma 12^\circ$



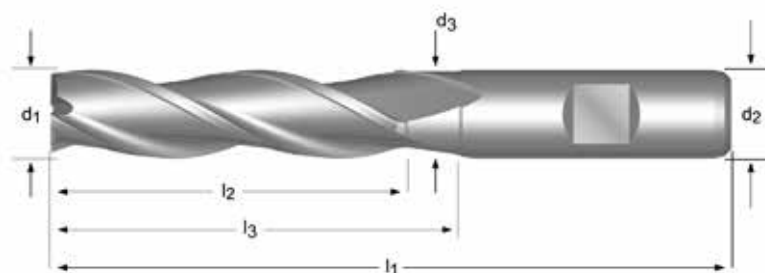
d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C122
5.00	5	22	65	2	-	-	C1225.0
6.00	6	27	75	2	-	-	C1226.0
7.00	8	33	85	2	-	-	C1227.0
8.00	8	33	85	2	-	-	C1228.0
10.00	10	40	95	2	-	-	C12210.0
12.00	12	45	110	2	-	-	C12212.0
14.00	12	52	125	2	-	-	C12214.0
16.00	16	58	140	2	69.5	15.5	C12216.0
18.00	16	65	150	2	76.5	15.5	C12218.0
20.00	20	70	160	2	85.5	19.5	C12220.0
22.00	20	75	170	2	90.5	19.5	C12222.0
25.00	25	82	185	2	101.5	24.5	C12225.0
30.00	25	90	205	2	109.5	24.5	C12230.0

C346

- Ujjmaró
- Freze cilindrice
- Parmak freze
- End Mill

C346	▪	1.2	4.1	5.1	6.1	6.2	6.3							
	•	1.1	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	8.1

C346 HSS-E  N  Z 3   $\lambda 30^\circ$ $\gamma 12^\circ$   e8  DIN 844L



C346



3.00 - 20.00

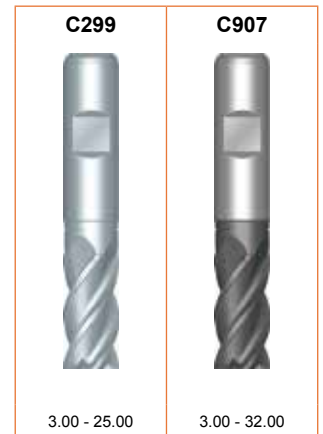
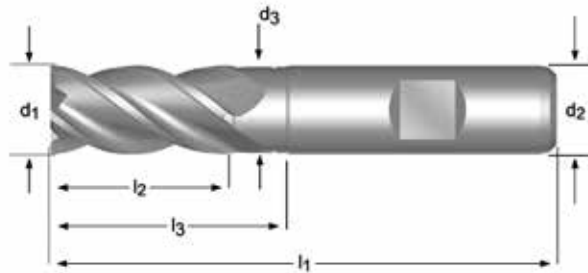
d_1 \emptyset mm	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 \emptyset mm	C346
3.00	6	12	56	3	-	-	C3463.0
4.00	6	19	63	3	-	-	C3464.0
5.00	6	24	68	3	-	-	C3465.0
6.00	6	24	68	3	-	-	C3466.0
7.00	10	30	80	3	-	-	C3467.0
8.00	10	38	88	3	-	-	C3468.0
9.00	10	38	88	3	-	-	C3469.0
10.00	10	45	95	3	-	-	C34610.0
11.00	12	45	102	3	-	-	C34611.0
12.00	12	53	110	3	-	-	C34612.0
13.00	12	53	110	3	64.5	11.5	C34613.0
14.00	12	53	110	3	64.5	11.5	C34614.0
15.00	12	53	110	3	64.5	11.5	C34615.0
16.00	16	63	123	3	74.5	15.5	C34616.0
18.00	16	63	123	3	74.5	15.5	C34618.0
20.00	20	75	141	3	90.5	19.5	C34620.0

C299 • Ujjaró
• Freze cilindrice

C907 • Parmak freze
• End Mill

C299	▪	1.3	1.4	1.5	2.1	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.2	7.4		
	•	1.6	2.2	4.1															
C907	▪	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.2	7.4
	•	4.1																	

C299	HSS-E PM		N	Z 3-5		$\lambda 45^\circ$ $\gamma 12^\circ$	DIN 1835B		k10		DIN 844K
C907	HSS-E PM		N	Z 3-6		$\lambda 45^\circ$ $\gamma 12^\circ$	DIN 1835B	Alcra	k10		DIN 844K

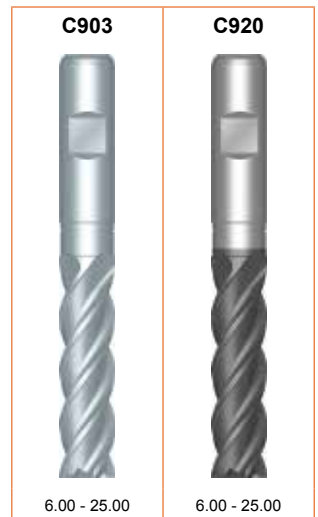
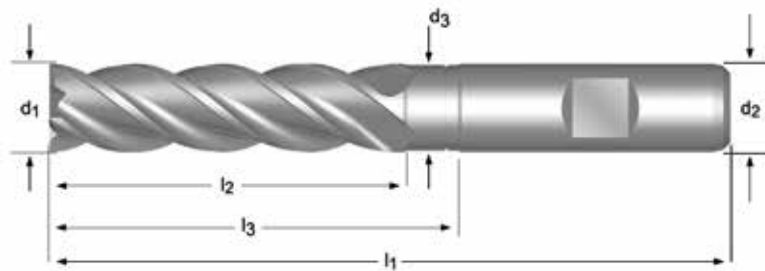


d ₁ Ø mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C299	C907
3.00	6	8	52	3	-	-	C2993.0	C9073.0
4.00	6	11	55	3	-	-	C2994.0	C9074.0
5.00	6	13	57	3	-	-	C2995.0	C9075.0
6.00	6	13	57	3	-	-	C2996.0	C9076.0
8.00	10	19	69	4	-	-	C2998.0	C9078.0
10.00	10	22	72	4	31.5	9.5	C29910.0	C90710.0
12.00	12	26	83	4	37.5	11.5	C29912.0	C90712.0
14.00	12	26	83	4	37.5	11.5	C29914.0	C90714.0
16.00	16	32	92	4	43.5	15.5	C29916.0	C90716.0
18.00	16	32	92	4	43.5	15.5	C29918.0	C90718.0
20.00	20	38	104	4	53.5	19.5	C29920.0	C90720.0
22.00	20	38	104	5	53.5	19.5		C90722.0
25.00	25	45	121	5	64.5	24.5	C29925.0	C90725.0
28.00	25	45	121	6	64.5	24.5		C90728.0
30.00	25	45	121	6	64.5	24.5		C90730.0
32.00	32	53	133	6	72.5	31.5		C90732.0

- C903** • Ujjmaró
• Freze cilindrice
- C920** • Parmak freze
• End Mill

C903	▪	1.3	1.4	1.5	2.1	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.2	7.4		
	•	1.6	2.2	4.1															
C920	▪	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.1	5.2	5.3	6.2	7.4
	•	4.1																	

C903	HSS-E PM		N	Z 3-5		$\lambda 45^\circ$ $\gamma 12^\circ$	DIN 1835B		k10		DIN 844L
C920	HSS-E PM		N	Z 3-5		$\lambda 45^\circ$ $\gamma 12^\circ$	DIN 1835B	Alcroná	k10		DIN 844L

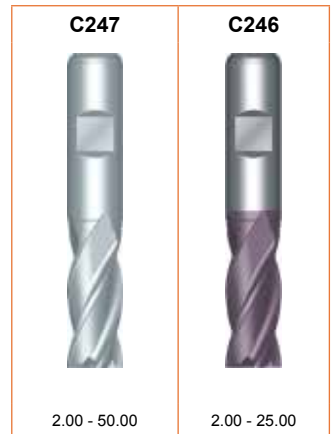
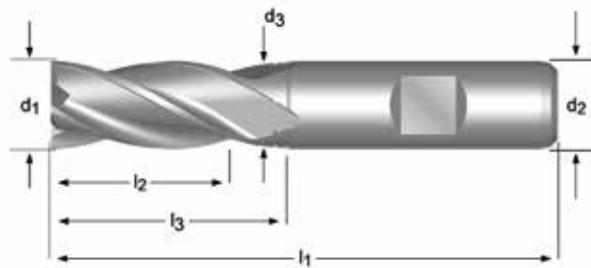


d_1 Ø mm	d_2 Ø _{h_s} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C903	C920
6.00	6	24	68	3	-	-	C9036.0	C9206.0
8.00	10	38	88	4	-	-	C9038.0	C9208.0
10.00	10	45	95	4	54.5	9.5	C90310.0	C92010.0
12.00	12	53	110	4	64.5	11.5	C90312.0	C92012.0
14.00	12	53	110	4	64.5	11.5	C90314.0	C92014.0
16.00	16	63	123	4	74.5	15.5	C90316.0	C92016.0
18.00	16	63	123	4	74.5	15.5		C92018.0
20.00	20	75	141	4	90.5	19.5	C90320.0	C92020.0
22.00	20	75	141	5	90.5	19.5		C92022.0
25.00	25	90	166	5	109.5	24.5		C92025.0

- C247** • Ujjmaró
• Freze cilindrice
- C246** • Parmak freze
• End Mill

C247	▪	1.1	1.2	1.3	4.1	5.1	6.1	6.2	6.3							
	•	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1			
C246	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1			

C247	HSS-E PM		N	Z 4-8		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B		k10		DIN 844K
C246	HSS-E PM		N	Z 4-6		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B	TiCN	k10		DIN 844K



d ₁ Ø Inch	d ₁ Ø mm	d ₂ Ø _{h₆} mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C247	C246
	2.00	6	7	51	4	-	-	C2472.0	C2462.0
	2.50	6	8	52	4	-	-	C2472.5	
1/8	3.00	6	8	52	4	-	-	C2473.0	C2463.0
	3.18	6	10	54	4	-	-	C2471/8	¹⁾
	3.50	6	10	54	4	-	-	C2473.5	
	4.00	6	11	55	4	-	-	C2474.0	C2464.0
	4.50	6	11	55	4	-	-	C2474.5	
3/16	4.76	6	13	57	4	-	-	C2473/16	¹⁾
	5.00	6	13	57	4	-	-	C2475.0	C2465.0
	5.50	6	13	57	4	-	-	C2475.5	
1/4	6.00	6	13	57	4	-	-	C2476.0	C2466.0
	6.35	10	16	66	4	-	-	C2471/4	¹⁾
	6.50	10	16	66	4	-	-	C2476.5	
	7.00	10	16	66	4	-	-	C2477.0	C2467.0
5/16	7.50	10	16	66	4	-	-	C2477.5	
	7.94	10	19	69	4	-	-	C2475/16	¹⁾
	8.00	10	19	69	4	-	-	C2478.0	C2468.0
	8.50	10	19	69	4	-	-	C2478.5	
	9.00	10	19	69	4	-	-	C2479.0	
3/8	9.50	10	19	69	4	-	-	C2479.5	
	9.52	10	22	72	4	31.5	9.5	C2473/8	¹⁾
	10.00	10	22	72	4	31.5	9.5	C24710.0	C24610.0
	11.00	12	22	79	4	-	-	C24711.0	C24611.0
1/2	12.00	12	26	83	4	37.5	11.5	C24712.0	C24612.0
	12.70	12	26	83	4	37.5	11.5	C2471/2	¹⁾
	13.00	12	26	83	4	37.5	11.5	C24713.0	C24613.0
	14.00	12	26	83	4	37.5	11.5	C24714.0	C24614.0
9/16	14.29	12	26	83	4	37.5	11.5	C2479/16	¹⁾
	15.00	12	26	83	4	37.5	11.5	C24715.0	C24615.0
5/8	15.88	16	32	92	4	43.5	15.5	C2475/8	¹⁾

¹⁾ az átmérő tűrése +.0025 inches / -.0005 inches / toleranta diametrului +.0025 inches / -.0005 inches / çap toleransı +0.0025 inç / -.0005 inç / diameter tolerance +0.0025 inches / -0.0005 inches

d ₁ Ø Inch	d ₁ Ø mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C247	C246
	16.00	16	32	92	4	43.5	15.5	C24716.0	C24616.0
	17.00	16	32	92	4	43.5	15.5	C24717.0	
	18.00	16	32	92	4	43.5	15.5	C24718.0	C24618.0
	19.00	16	32	92	4	43.5	15.5	C24719.0	
3/4	19.05	20	38	104	4	53.5	18.5	C2473/4 ¹⁾	
	20.00	20	38	104	4	53.5	19.5	C24720.0	C24620.0
	21.00	20	38	104	4	53.5	19.5	C24721.0	
	22.00	20	38	104	5	53.5	19.5	C24722.0	C24622.0
7/8	22.22	20	38	104	5	53.5	19.5	C2477/8 ¹⁾	
	23.00	20	38	104	5	53.5	19.5	C24723.0	
	24.00	25	45	121	5	64.5	23.5	C24724.0	
	25.00	25	45	121	5	64.5	24.5	C24725.0	C24625.0
1"	25.40	25	45	121	5	64.5	24.5	C2471 ¹⁾	
	26.00	25	45	121	6	64.5	24.5	C24726.0	
	28.00	25	45	121	6	64.5	24.5	C24728.0	
	30.00	25	45	121	6	64.5	24.5	C24730.0	
	32.00	32	53	133	6	72.5	31.5	C24732.0	
	36.00	32	53	133	6	72.5	31.5	C24736.0 ²⁾³⁾	
	40.00	40	63	155	6	84.5	39.0	C24740.0 ²⁾³⁾	
	50.00	50	75	177	8	96.5	48.0	C24750.0 ²⁾³⁾	

¹⁾ az átmérő tűrése +.0025 inches / -.0005 inches / toleranta diametrului +.0025 inches / -.0005 inches / çap toleransı +0.0025 inç / -0.0005 inç / diameter tolerance +0.0025 inches / -0.0005 inches

²⁾ Központon nincs vágás / Fara tais central / Merkezi kesim yok / No centre Cutting

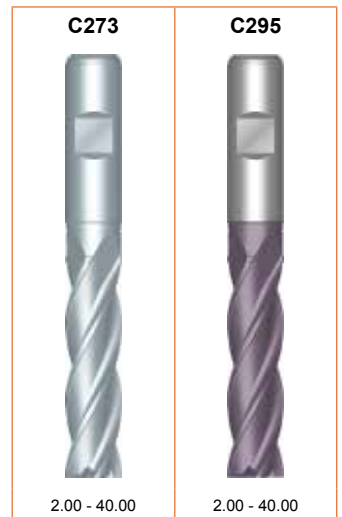
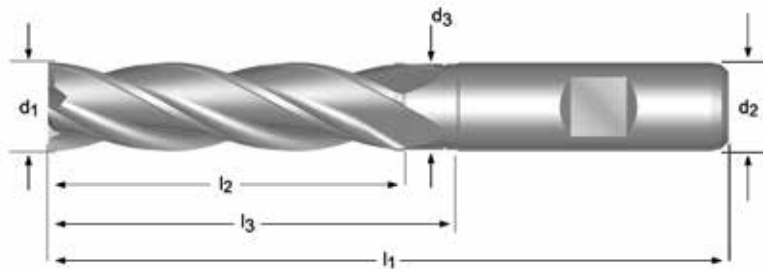
³⁾ Csak HSS-E anyagminőségben érhető el / Disponibil doar din HSCo / Sadece HSCo olarak mevcut / Available in HSS-E only

C273 • Ujjmaró
• Freze cilindrice

C295 • Parmak freze
• End Mill

C273	▪	1.1	1.2	1.3	4.1	5.1	6.1	6.2	6.3								
	•	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1				
C295	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1				

C273	HSS-E PM		N	Z 4-6		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B		k10		DIN 844L
C295	HSS-E PM		N	Z 4-6		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B	TiCN	k10		DIN 844L



d ₁ Ø Inch	d ₁ Ø mm	d ₂ Ø _{h_s} mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C273	C295
1/8	2.00	6	10	54	4	-	-	C2732.0	C2952.0
	2.50	6	12	56	4	-	-	C2732.5	
	3.00	6	12	56	4	-	-	C2733.0	C2953.0
	3.18	6	15	59	4	-	-	C2731/8 ¹⁾	
	3.50	6	15	59	4	-	-	C2733.5	
3/16	4.00	6	19	63	4	-	-	C2734.0	C2954.0
	4.50	6	19	63	4	-	-	C2734.5	
	4.76	6	24	68	4	-	-	C2733/16 ¹⁾	
	5.00	6	24	68	4	-	-	C2735.0	C2955.0
	5.50	6	24	68	4	-	-	C2735.5	
1/4	6.00	6	24	68	4	-	-	C2736.0	C2956.0
	6.35	10	30	80	4	-	-	C2731/4 ¹⁾	
	7.00	10	30	80	4	-	-	C2737.0	C2957.0
	8.00	10	38	88	4	-	-	C2738.0	C2958.0
	9.00	10	38	88	4	-	-	C2739.0	C2959.0
3/8	9.52	10	45	95	4	54.5	9.5	C2733/8 ¹⁾	
	10.00	10	45	95	4	54.5	9.5	C27310.0	C29510.0
	11.00	12	45	102	4	-	-	C27311.0	C29511.0
	12.00	12	53	110	4	64.5	11.5	C27312.0	C29512.0
	12.70	12	53	110	4	64.5	11.5	C2731/2 ¹⁾	
1/2	13.00	12	53	110	4	64.5	11.5	C27313.0	
	14.00	12	53	110	4	64.5	11.5	C27314.0	
	15.00	12	53	110	4	64.5	11.5	C27315.0	C29515.0
	15.88	16	63	123	4	74.5	15.5	C2735/8 ¹⁾	
	16.00	16	63	123	4	74.5	15.5	C27316.0	C29516.0
18.00	16	63	123	4	74.5	15.5	C27318.0	C29518.0	

¹⁾ az átmérő tűrése +.0025 inches / -.0005 inches / toleranta diametrului +.0025 inches / -.0005 inches / çap toleransı +0.0025 inç / -.0005 inç / diameter tolerance +0.0025 inches / -0.0005 inches

d ₁ ∅ Inch	d ₁ ∅ mm	d ₂ ∅h ₆ mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ ∅ mm	C273	C295
3/4	19.05	20	75	141	4	90.5	18.5	C2733/4 ¹⁾	
	20.00	20	75	141	4	90.5	19.5	C27320.0	C29520.0
	22.00	20	75	141	5	90.5	19.5	C27322.0	
	25.00	25	90	166	5	109.5	24.5	C27325.0	C29525.0
1"	25.40	25	90	166	5	109.5	24.5	C2731 ¹⁾	
	28.00	25	90	166	6	109.5	24.5	C27328.0	
	30.00	25	90	166	6	109.5	24.5	C27330.0	C29530.0
	32.00	32	106	186	6	125.5	31.5	C27332.0	C29532.0
	40.00	40	125	217	6	146.5	39.0	C27340.0 ^{2),3)}	C29540.0

¹⁾ az átmérő tűrése +.0025 inches / -.0005 inches / toleranta diametrului +.0025 inches / -.0005 inches / çap toleransı +0.0025 inç / -0.0005 inç / diameter tolerance +0.0025 inches / -0.0005 inches

²⁾ Központon nincs vágás / Fara tais central / Merkezi kesim yok / No centre Cutting

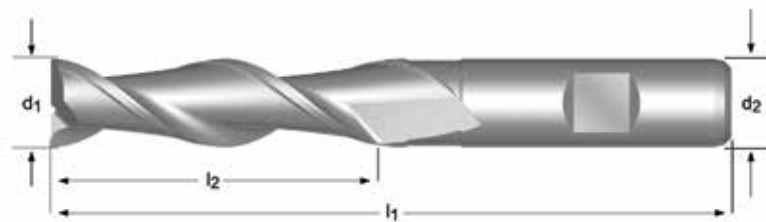
³⁾ Csak HSS-E anyagminőségben érhető el / Disponibil doar din HSCo / Sadece HSCo olarak mevcut / Available in HSS-E only

C166

- Ujjmaró
- Freze cilindrice
- Parmak freze
- End Mill

C166	▪	1.1	6.1	6.2	6.3	7.1	7.2	7.3	8.1	8.2
	•	1.2	1.3	2.1	2.2	4.1	5.1			

C166 HSS-E W Z 2 $\lambda 40^\circ$ $\gamma 20^\circ$ DIN 1835B e8 DIN 844L

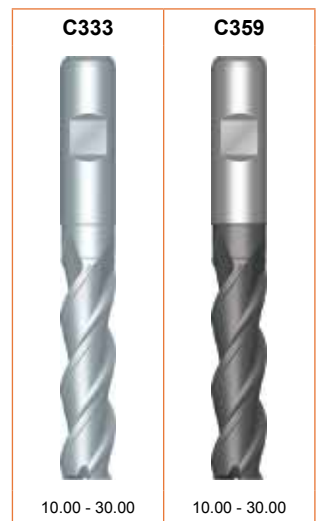
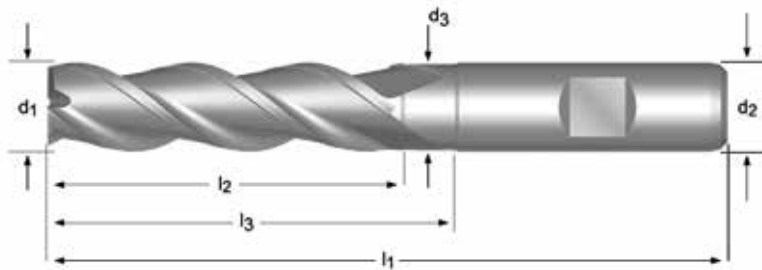


d_1 \emptyset mm	d_2 $\emptyset h_6$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 \emptyset mm	C166
6.00	6	24	68	2	-	-	C1666.0
7.00	10	30	80	2	-	-	C1667.0
8.00	10	38	88	2	-	-	C1668.0
9.00	10	38	88	2	-	-	C1669.0
10.00	10	45	95	2	-	-	C16610.0
12.00	12	53	110	2	-	-	C16612.0

- C333** • Ujjmaró
• Freze cilindrice
- C359** • Parmak freze
• End Mill

C333	▪	6.1	6.2	6.3	7.1	7.2	7.3	8.1	8.2	
C359	▪	6.1	6.2	6.3	7.1	7.2	7.3	7.4	8.1	8.2

C333	HSS-E PM		W	Z 3		λ 40° γ 25°	DIN 1835B		k10		DIN 844L
C359	HSS-E PM		W	Z 3		λ 40° γ 25°	DIN 1835B	Alcrona	k10		DIN 844L



d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C333	C359
10.00	10	45	95	3	54.5	9.5	C33310.0	C35910.0
12.00	12	53	110	3	64.5	11.5	C33312.0	C35912.0
14.00	12	53	110	3	64.5	11.5	C33314.0	C35914.0
16.00	16	63	123	3	74.5	15.5	C33316.0	C35916.0
18.00	16	63	123	3	74.5	15.5	C33318.0	C35918.0
20.00	20	75	141	3	90.5	19.5	C33320.0	C35920.0
25.00	25	90	166	3	109.5	24.5	C33325.0	C35925.0
30.00	25	90	166	3	109.5	24.5	C33330.0	C35930.0

C324

- Nagyoló Ujjmaró
- Freze cilindro-frontale pentru degrosare
- Kaba
- Roughing End Mill

C324	▪	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	7.4
	•	1.3	4.1	5.1	6.4												

C324

HSS-E PM



HRA

Z 3



$\lambda 35^\circ$
 $\gamma 12^\circ$

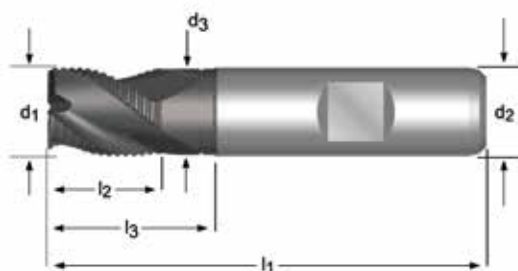
DIN 1835B

Alcrona

k12



DIN 327D



d_1 \varnothing mm	d_2 $\varnothing h_8$ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 \varnothing mm	C324
8.00	10	11	61	3	-	-	C3248.0
10.00	10	13	63	3	22.5	9.5	C32410.0
12.00	12	16	73	3	27.5	11.5	C32412.0
14.00	12	16	73	3	27.5	11.5	C32414.0
16.00	16	19	79	3	30.5	15.5	C32416.0
18.00	16	19	79	3	30.5	15.5	C32418.0
20.00	20	22	88	3	37.5	19.5	C32420.0
28.00	25	26	102	3	45.5	24.5	C32428.0
30.00	25	26	102	3	45.5	24.5	C32430.0

C922

- Nagyoló Ujjmaró
- Freze cilindro-frontale pentru degrosare
- Kaba
- Roughing End Mill

C922	▪	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	7.4
	•	1.3	4.1	5.1	6.4												

C922

HSS-E
PM

HRA

Z
3-4

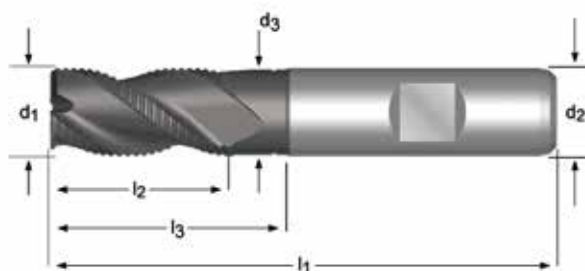
λ 35°
 γ 12°

DIN
1835B

Alcroná

k12

DIN
844K



C922



6.00 - 40.00

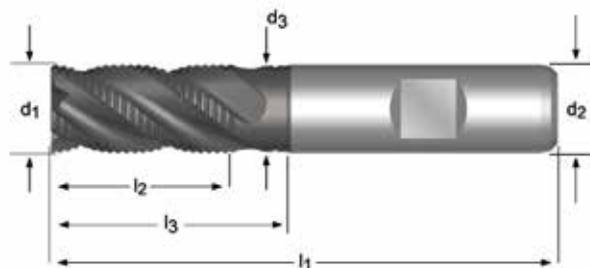
d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C922
6.00	6	13	57	3	-	-	C9226.0
7.00	10	16	66	3	-	-	C9227.0
8.00	10	19	69	3	-	-	C9228.0
9.00	10	19	69	3	-	-	C9229.0
10.00	10	22	72	3	31.5	9.5	C92210.0
11.00	12	22	79	3	-	-	C92211.0
12.00	12	26	83	3	37.5	11.5	C92212.0
13.00	12	26	83	3	37.5	11.5	C92213.0
14.00	12	26	83	3	37.5	11.5	C92214.0
15.00	12	26	83	3	37.5	11.5	C92215.0
16.00	16	32	92	3	43.5	15.5	C92216.0
18.00	16	32	92	3	43.5	15.5	C92218.0
20.00	20	38	104	3	53.5	19.5	C92220.0
22.00	20	38	104	3	53.5	19.5	C92222.0
24.00	25	45	121	4	64.5	23.5	C92224.0
25.00	25	45	121	4	64.5	24.5	C92225.0
26.00	25	45	121	4	64.5	24.5	C92226.0
28.00	25	45	121	4	64.5	24.5	C92228.0
30.00	25	45	121	4	64.5	24.5	C92230.0
32.00	32	53	133	4	72.5	31.5	C92232.0

C428

- Nagyoló Ujjmaró
- Freze cilindro-frontale pentru degrosare
- Kaba Parmak Freze
- Roughing End Mill

C428	▪	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	7.4
	•	1.3	4.1	5.1	6.4												

C428 **HSS-E PM** **HRA** **Z 4-6** **λ 35° γ 12°** **DIN 1835B** **Alcrona** **k12** **DIN 844K**



d_1 Ø mm	d_2 Ø _{h8} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C428
6.00	6	13	57	4	-	-	C4286.0
7.00	10	16	66	4	-	-	C4287.0
8.00	10	19	69	4	-	-	C4288.0
9.00	10	19	69	4	-	-	C4289.0
10.00	10	22	72	4	31.5	9.5	C42810.0
11.00	12	22	79	4	-	-	C42811.0
12.00	12	26	83	4	37.5	11.5	C42812.0
13.00	12	26	83	4	37.5	11.5	C42813.0
14.00	12	26	83	4	37.5	11.5	C42814.0
15.00	12	26	83	4	37.5	11.5	C42815.0
16.00	16	32	92	4	43.5	15.5	C42816.0
18.00	16	32	92	4	43.5	15.5	C42818.0
20.00	20	38	104	4	53.5	19.5	C42820.0
22.00	20	38	104	4	53.5	19.5	C42822.0
25.00	25	45	121	6	64.5	24.5	C42825.0
28.00	25	45	121	6	64.5	24.5	C42828.0
30.00	25	45	121	6	64.5	24.5	C42830.0
32.00	32	53	133	6	72.5	31.5	C42832.0
36.00	32	53	133	6	72.5	31.0	C42836.0
40.00	40	63	155	6	84.5	39.0	C42840.0

C492

- Nagyoló Ujjmaró
- Freze cilindro-frontale pentru degrosare
- Kaba
- Roughing End Mill

C492	▪	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	7.4
	•	4.1	5.1	6.4														

C492

HSS-E PM

Z 3-6

$\lambda 35^\circ$
 $\gamma 12^\circ$

DIN 1835B

Alcrona

k12

DIN 844L



C492



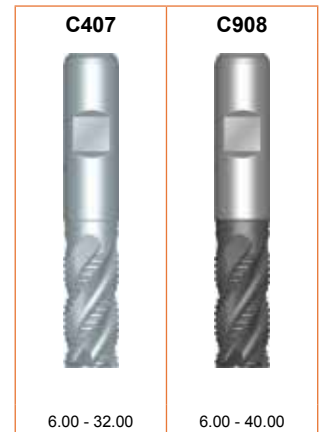
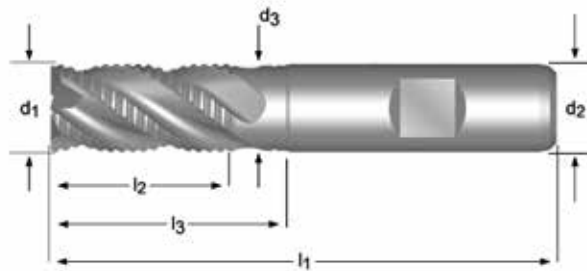
6.00 - 30.00

d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C492
6.00	6	24	68	3	-	-	C4926.0
8.00	10	38	88	3	-	-	C4928.0
10.00	10	45	95	4	54.5	9.5	C49210.0
12.00	12	53	110	4	64.5	11.5	C49212.0
14.00	12	53	110	4	64.5	11.5	C49214.0
16.00	16	63	123	4	74.5	15.5	C49216.0
18.00	16	63	123	4	74.5	15.5	C49218.0
20.00	20	75	141	4	90.5	19.5	C49220.0
22.00	20	75	141	4	90.5	19.5	C49222.0
25.00	25	90	166	6	109.5	24.5	C49225.0
30.00	25	90	166	6	109.5	24.5	C49230.0

- C407** • Nagyoló Ujjmaró
• Freze cilindro-frontale pentru degrosare
- C908** • Kaba
• Roughing End Mill

C407	▪	1.2	1.3	1.4	1.5	2.1	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	
	•	1.1	1.6	2.2	4.1	5.1	6.4	7.4									
C908	▪	1.3	1.4	1.5	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	
	•	1.6	4.1	5.1	6.4	7.4											

C407	HSS-E PM		NRA	Z 4-6		$\lambda 35^\circ$ $\gamma 12^\circ$	DIN 1835B		k12		DIN 844K
C908	HSS-E PM		NRA	Z 4-6		$\lambda 35^\circ$ $\gamma 12^\circ$	DIN 1835B	Alcrona	k12		DIN 844K



d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C407	C908
6.00	6	13	57	4	-	-	C4076.0	C9086.0
7.00	10	16	66	4	-	-	C4077.0	C9087.0
8.00	10	19	69	4	-	-	C4078.0	C9088.0
9.00	10	19	69	4	-	-	C4079.0	C9089.0
10.00	10	22	72	4	31.5	9.5	C40710.0	C90810.0
11.00	12	22	79	4	-	-	C40711.0	C90811.0
12.00	12	26	83	4	37.5	11.5	C40712.0	C90812.0
13.00	12	26	83	4	37.5	11.5	C40713.0	C90813.0
14.00	12	26	83	4	37.5	11.5	C40714.0	C90814.0
15.00	12	26	83	4	37.5	11.5	C40715.0	C90815.0
16.00	16	32	92	4	43.5	15.5	C40716.0	C90816.0
18.00	16	32	92	4	43.5	15.5	C40718.0	C90818.0
20.00	20	38	104	4	53.5	19.5	C40720.0	C90820.0
22.00	20	38	104	4	53.5	19.5		C90822.0
25.00	25	45	121	6	64.5	24.5	C40725.0	C90825.0
30.00	25	45	121	6	64.5	24.5		C90830.0
32.00	32	53	133	6	72.5	31.5	C40732.0	C90832.0
40.00	40	63	155	6	84.5	39.0		C90840.0

C944

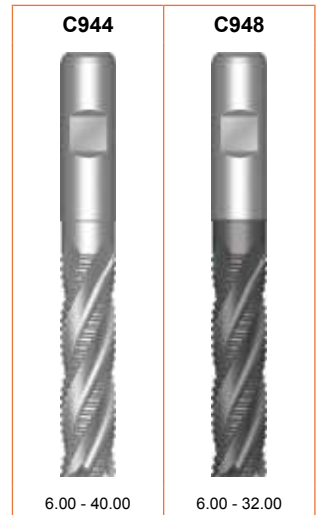
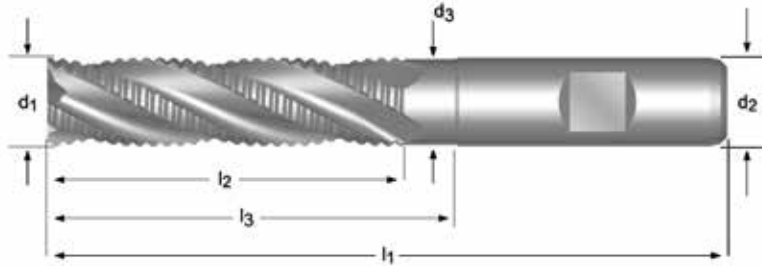
- Nagyoló Ujjmaró
- Freze cilindro-frontale pentru degrosare

C948

- Kaba
- Roughing End Mill

C944	▪	1.3	1.4	1.5	2.1	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	7.4		
	•	1.6	2.2	4.1	5.1	6.4												
C948	▪	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	7.4
	•	4.1	5.1	6.4														

C944	HSS-E PM		NRA	Z 4-6		$\lambda 35^\circ$ $\gamma 12^\circ$	DIN 1835B		k12		DIN 844L
C948	HSS-E PM		NRA	Z 4-6		$\lambda 35^\circ$ $\gamma 12^\circ$	DIN 1835B	Alcrona	k12		DIN 844L



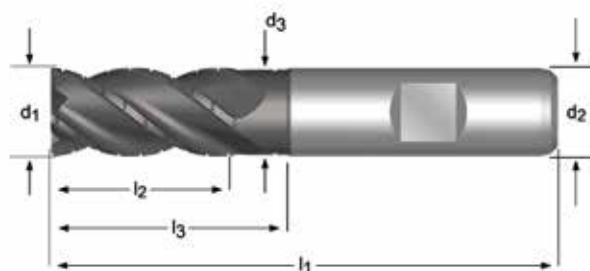
d_1 Ø mm	d_2 Ø _{h₆} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C944	C948
6.00	6	24	68	4	-	-	C9446.0	C9486.0
8.00	10	38	88	4	-	-	C9448.0	C9488.0
10.00	10	45	95	4	54.5	9.5	C94410.0	C94810.0
12.00	12	53	110	4	64.5	11.5	C94412.0	C94812.0
14.00	12	53	110	4	64.5	11.5	C94414.0	C94814.0
16.00	16	63	123	4	74.5	15.5	C94416.0	C94816.0
18.00	16	63	123	4	74.5	15.5		C94818.0
20.00	20	75	141	4	90.5	19.5	C94420.0	C94820.0
25.00	25	90	166	6	109.5	24.5	C94425.0	C94825.0
30.00	25	90	166	6	109.5	24.5		C94830.0
32.00	32	106	186	6	125.5	31.5	C94432.0	C94832.0
40.00	40	125	217	6	-	-	C94440.0	

C921

- Nagyoló Ujjmaró
- Freze cilindro-frontale pentru degrosare
- Kaba
- Roughing End Mill

C921	▪	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.2	4.3	5.2	5.3	6.2	7.4	
	•	4.1	5.1	6.4															

C921 **HSS-E PM** **FS** **Z 3-6** **λ 45°** **γ 12°** **DIN 1835B** **Alcrona** **k10** **DIN 844K**

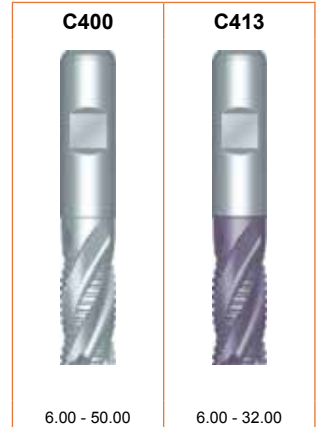
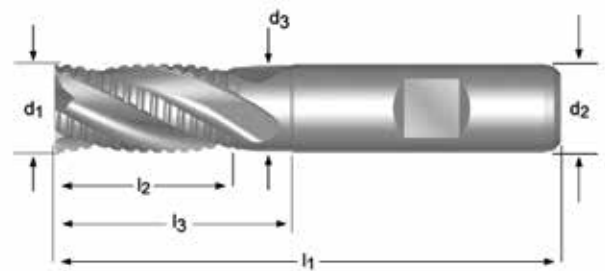


d_1 Ø mm	d_2 Ø _{h8} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C921
6.00	6	13	57	3	-	-	C9216.0
8.00	10	19	69	4	-	-	C9218.0
10.00	10	22	72	4	31.5	9.5	C92110.0
12.00	12	26	83	4	37.5	11.5	C92112.0
14.00	12	26	83	4	37.5	11.5	C92114.0
16.00	16	32	92	4	43.5	15.5	C92116.0
18.00	16	32	92	4	43.5	15.5	C92118.0
20.00	20	38	104	4	53.5	19.5	C92120.0
22.00	20	38	104	5	53.5	19.5	C92122.0
25.00	25	45	121	5	64.5	24.5	C92125.0
28.00	25	45	121	6	64.5	24.5	C92128.0
30.00	25	45	121	6	64.5	24.5	C92130.0
32.00	32	53	133	6	72.5	31.5	C92132.0

- C400** • Nagyoló Ujjmaró
• Freze cilindro-frontale pentru degrosare
- C413** • Kaba
• Roughing End Mill

C400	▪	1.2	1.3	6.2	6.3											
	•	1.1	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	7.2	7.3	8.1
C413	▪	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.2	5.2	6.2	6.3				
	•	1.1	1.5	1.6	2.1	2.3	4.1	4.3	5.1	5.3	6.1	6.4	7.2	7.3	7.4	8.1

C400	HSS-E		NF	Z 4-6		λ 30° γ 12°	DIN 1835B		k12		DIN 844K
C413	HSS-E		NF	Z 4-6		λ 30° γ 12°	DIN 1835B	TiCN	k12		DIN 844K

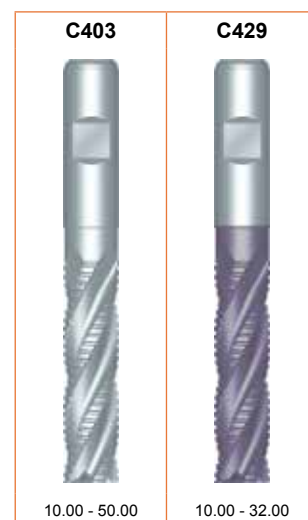
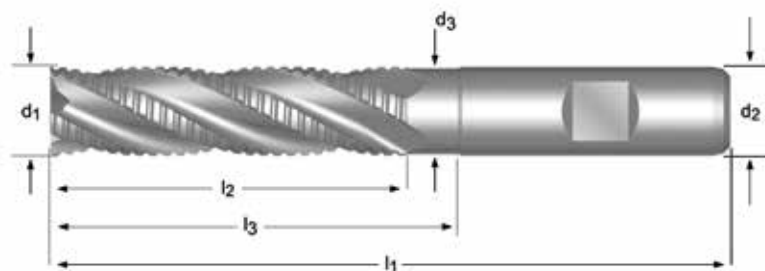


d ₁ Ø mm	d ₂ Øh ₆ mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C400	C413
6.00	6	13	57	4	-	-	C4006.0	C4136.0
7.00	10	16	66	4	-	-	C4007.0	
8.00	10	19	69	4	-	-	C4008.0	C4138.0
9.00	10	19	69	4	-	-	C4009.0	
10.00	10	22	72	4	-	-	C40010.0	C41310.0
11.00	12	22	79	4	-	-	C40011.0	
12.00	12	26	83	4	-	-	C40012.0	C41312.0
14.00	12	26	83	4	37.5	11.5	C40014.0	C41314.0
16.00	16	32	92	4	43.5	15.5	C40016.0	C41316.0
18.00	16	32	92	4	43.5	15.5	C40018.0	C41318.0
20.00	20	38	104	4	53.5	19.5	C40020.0	C41320.0
22.00	20	38	104	4	53.5	19.5	C40022.0	C41322.0
25.00	25	45	121	5	64.5	24.5	C40025.0	C41325.0
30.00	25	45	121	5	64.5	24.5	C40030.0	
32.00	32	53	133	6	72.5	31.0	C40032.0	C41332.0
50.00	50	75	177	6	96.5	48.0	C40050.0	

- C403** • Nagyoló Ujjmaró
• Freze cilindro-frontale pentru degrosare
- C429** • Kaba
• Roughing End Mill

C403	▪	1.2	1.3	6.2	6.3											
	•	1.1	1.4	2.1	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	7.2	7.3	8.1
C429	▪	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.2	5.2	6.2	6.3				
	•	1.1	1.5	1.6	2.1	2.3	4.1	4.3	5.1	5.3	6.1	6.4	7.2	7.3	7.4	8.1

C403	HSS-E		NF	Z 4-6		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B		k12		DIN 844L
C429	HSS-E		NF	Z 4-6		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B	TiCN	k12		DIN 844L



d ₁ Ø mm	d ₂ Ø _{h₆} mm	l ₂ mm	l ₁ mm	z	l ₃ mm	d ₃ Ø mm	C403	C429
10.00	10	45	95	4	-	-	C40310.0	C42910.0
12.00	12	53	110	4	-	-	C40312.0	C42912.0
14.00	12	53	110	4	64.5	11.5	C40314.0	C42914.0
16.00	16	63	123	4	74.5	15.5	C40316.0	C42916.0
18.00	16	63	123	4	74.5	15.5	C40318.0	C42918.0
20.00	20	75	141	4	90.5	19.5	C40320.0	C42920.0
25.00	25	90	166	5	109.5	24.5	C40325.0	C42925.0
30.00	25	90	166	5	109.5	24.5	C40330.0	C42930.0
32.00	32	106	186	6	125.5	31.0	C40332.0	C42932.0
36.00	32	106	186	6	125.5	31.5	C40336.0	
40.00	40	125	217	6	146.5	39.0	C40340.0	
45.00	40	125	217	6	146.5	39.5	C40345.0	
50.00	50	150	252	6	171.5	48.0	C40350.0	

C500

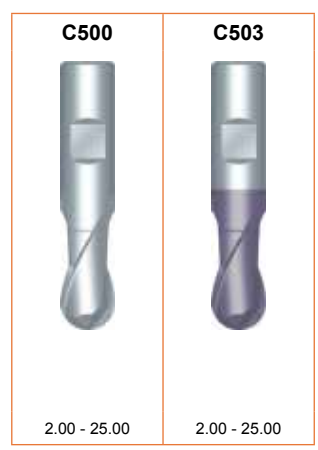
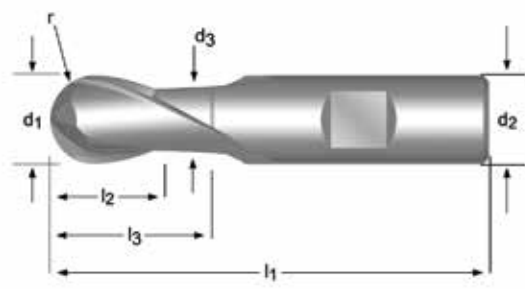
- Gömbvégű Ujjmaró
- Freze cu cap sferic

C503

- Küresel
- Ball-Nosed End Mill

C500	▪	1.1	1.2	4.1	5.1	6.1	6.2	6.3										
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1				
C503	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3		
	•	1.5	1.6	2.1	2.3	4.3	5.3	6.4	7.1	7.2	7.3	7.4	8.1					

C500	HSS-E		N	Z 2		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B		e8		DIN 327D
C503	HSS-E		N	Z 2		$\lambda 30^\circ$ $\gamma 12^\circ$	DIN 1835B	TiCN	e8		DIN 327D



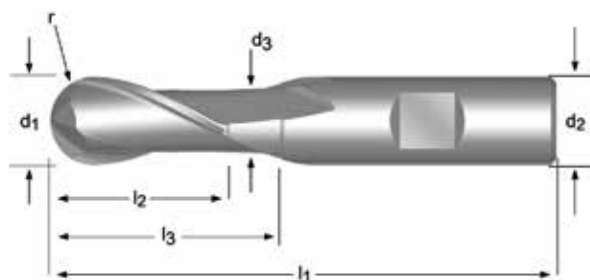
d_1 Ø mm	r ±0.05 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C500	C503
2.00	1.00	6	4	48	2	-	-	C5002.0	C5032.0
3.00	1.50	6	5	49	2	-	-	C5003.0	C5033.0
4.00	2.00	6	7	51	2	-	-	C5004.0	C5034.0
5.00	2.50	6	8	52	2	-	-	C5005.0	C5035.0
6.00	3.00	6	8	52	2	-	-	C5006.0	C5036.0
7.00	3.50	10	10	60	2	-	-	C5007.0	
8.00	4.00	10	11	61	2	-	-	C5008.0	C5038.0
9.00	4.50	10	11	61	2	-	-	C5009.0	
10.00	5.00	10	13	63	2	-	-	C50010.0	C50310.0
12.00	6.00	12	16	73	2	-	-	C50012.0	C50312.0
14.00	7.00	12	16	73	2	27.5	11.5	C50014.0	C50314.0
15.00	7.50	12	16	73	2	27.5	11.5	C50015.0	C50315.0
16.00	8.00	16	19	79	2	30.5	15.5	C50016.0	C50316.0
18.00	9.00	16	19	79	2	30.5	15.5	C50018.0	C50318.0
20.00	10.00	20	22	88	2	37.5	19.5	C50020.0	C50320.0
25.00	12.50	25	26	102	2	45.5	24.5	C50025.0	C50325.0

C505

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küresel
- Ball-Nosed End Mill

C505	▪	1.1	1.2	4.1	5.1	6.1	6.2	6.3										
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1				

C505 HSS-E N Z 2 $\lambda 30^\circ$ $\gamma 12^\circ$ e8



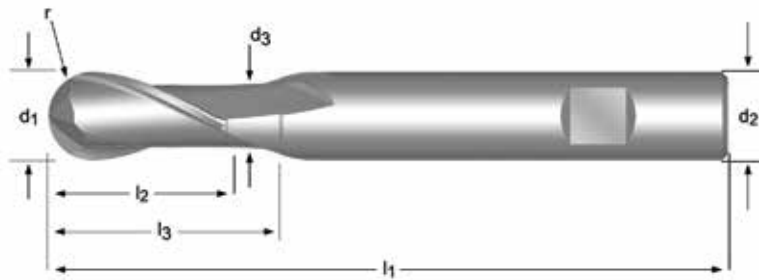
d_1 Ø mm	r ±0.05 mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C505
3.00	1.50	6	8	52	2	-	-	C5053.0
4.00	2.00	6	11	55	2	-	-	C5054.0
5.00	2.50	6	13	57	2	-	-	C5055.0
6.00	3.00	6	13	57	2	-	-	C5056.0
8.00	4.00	10	19	69	2	-	-	C5058.0
10.00	5.00	10	22	72	2	-	-	C50510.0
12.00	6.00	12	26	83	2	-	-	C50512.0
14.00	7.00	12	26	83	2	37.5	11.5	C50514.0
16.00	8.00	16	32	92	2	43.5	15.5	C50516.0
20.00	10.00	20	38	104	2	53.5	19.5	C50520.0
22.00	11.00	20	38	104	2	53.5	19.5	C50522.0
25.00	12.50	25	45	121	2	64.5	24.5	C50525.0
28.00	14.00	25	45	121	2	64.5	24.5	C50528.0
30.00	15.00	25	45	121	2	64.5	24.5	C50530.0

C511

- Gömbvégű Ujjmaró
- Freze cu cap sferic
- Küre Parmak Freze
- Ball-Nosed End Mill

C511	▪	1.1	1.2	4.1	5.1	6.1	6.2	6.3								
	•	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.2	5.2	7.1	7.2	7.3	8.1		

C511 HSS-E  N  Z 2  $\lambda 30^\circ$ $\gamma 12^\circ$  DIN 1835B  e8  



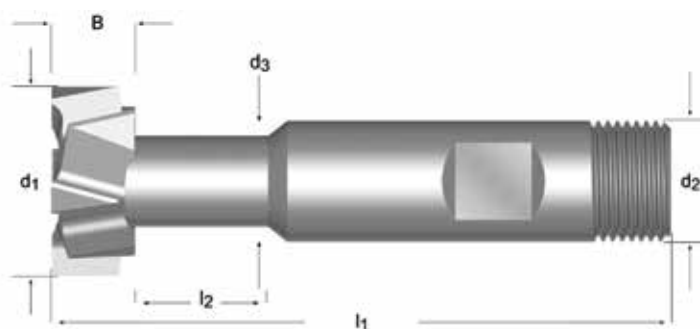
d_1 Ø mm	r ±0.05 mm	d_2 Øh ₆ mm	l_2 mm	l_1 mm	z	l_3 mm	d_3 Ø mm	C511
3.00	1.50	6	8	56	2	-	-	C5113.0
4.00	2.00	6	11	63	2	-	-	C5114.0
5.00	2.50	6	13	68	2	-	-	C5115.0
6.00	3.00	6	13	68	2	-	-	C5116.0
8.00	4.00	10	19	88	2	-	-	C5118.0
10.00	5.00	10	22	95	2	-	-	C51110.0
12.00	6.00	12	26	110	2	-	-	C51112.0
14.00	7.00	12	26	110	2	64.5	11.5	C51114.0
16.00	8.00	16	32	123	2	74.5	15.5	C51116.0
18.00	9.00	16	32	123	2	74.5	15.5	C51118.0
20.00	10.00	20	38	141	2	90.5	19.5	C51120.0

C800

- T-horony maró
- Freze canal T
- T freze
- T-slot Cutter

C800	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	10.1												

C800 HSS-E N Z 6-8 $\lambda 15^\circ$ $\gamma 10^\circ$ d11 DIN 851



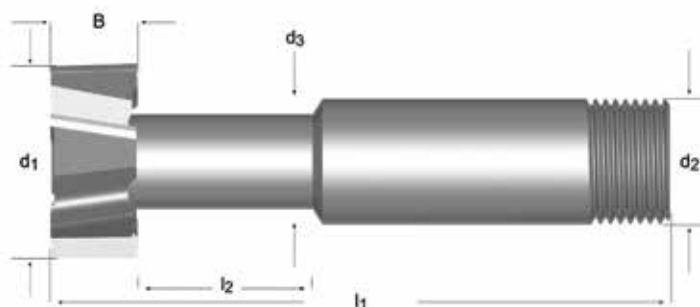
B	d ₁ Ø	T DIN650	d ₃ Ø	l ₂	l ₁	d ₂ Øh ₆	z	C800
4.0	11.00	5	4	6.5	53.5	10	6	C80011.0X5.0
6.0	12.50	6	5	9	57.0	10	6	C80012.5X6.0
8.0	16.00	8	7	12	62.0	10	6	C80016.0X8.0
8.0	18.00	10	8	15	70.0	12	6	C80018.0X10.0
9.0	21.00	12	10	18	74.0	12	8	C80021.0X12.0
11.0	25.00	14	12	20	82.0	16	8	C80025.0X14.0
14.0	32.00	18	15	26	90.0	16	8	C80032.0X18.0
18.0	40.00	22	19	27	108.0	25	8	C80040.0X22.0
22.0	50.00	28	25	34	124.0	32	8	C80050.0X28.0

C810

- T-horony maró
- Freze canal T
- T freze
- T-slot Cutter

C810	▪	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	6.4	7.1	7.2	7.3	
	•	1.5	1.6	2.2	2.3	4.2	4.3	5.2	5.3	7.4	8.1	10.1								

C810 HSS  N  Z 6-8  $\lambda 12^\circ$ $\gamma 10^\circ$   



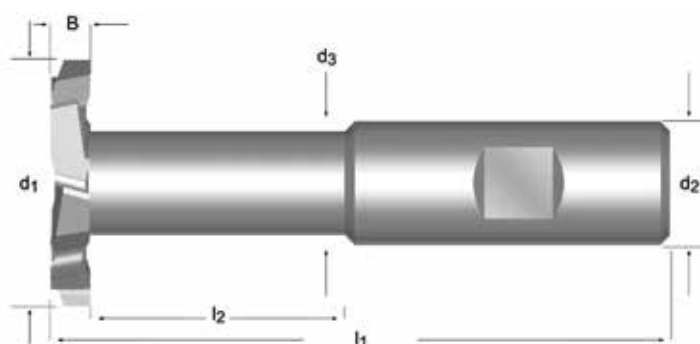
B	B	d ₁	d ₁	T	d ₃	l ₂	l ₁	d ₂	d ₂	z	C810
Inch	mm	Ø	Ø	DIN650	Ø	mm	mm	Ø, -0.025	Ø, -0.025		
		Inch	mm		mm			Inch	mm		
	6.00		12.50	6.0	5.00	11	57.0		10.0	6	C8106.0
1/4	6.35	37/64	14.68	1/4	6.35	14	60.5	1/2	12.7	6	C8101/4 ⁹⁾
	8.00		16.00	8.0	7.00	13	61.0		10.0	6	C8108.0
5/16	7.94	45/64	17.86	5/16	7.15	17	65.0	1/2	12.7	6	C8105/16 ⁹⁾
	8.00		18.00	10.0	8.00	17	65.0		12.0	6	C81010.0
	9.00		21.00	12.0	10.00	20	69.0		12.0	6	C81012.0
23/64	9.13	53/64	21.03	3/8	8.75	19	68.5	1/2	12.7	6	C8103/8 ⁹⁾
27/64	10.72	61/64	24.21	7/16	9.50	22	73.0	1/2	12.7	6	C8107/16 ⁹⁾
	11.00		25.00	14.0	12.00	23	79.0		16.0	6	C81014.0
15/32	11.91	1.5/64	27.38	1/2	11.90	24	76.0	1/2	12.7	6	C8101/2 ⁹⁾
	12.00		28.00	16.0	13.00	23	76.0		16.0	6	C81016.0
	14.00		32.00	18.0	15.00	27	98.0		25.0	8	C81018.0
	16.00		36.00	20.0	17.00	30	100.0		25.0	8	C81020.0
	18.00		40.00	22.0	19.00	33	108.0		25.0	8	C81022.0

C825

- T-horony maró
- Freze canal T
- T freze
- T-slot Cutter

C825	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	10.1												

C825 HSS-E N Z 8-12 $\lambda 15^\circ$ $\gamma 15^\circ$ DIN 1835B js16



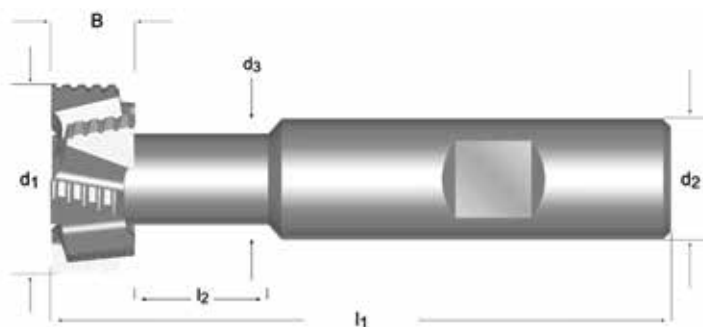
B mm	d ₁ Ø mm	Ch mm	d ₃ Ø mm	l ₂ mm	l ₁ mm	d ₂ Øh ₆ mm	z	C825
3	40	0.15	19.2	46	100	20	8	C8253.0X40.0
4	40	0.15	19.2	45	100	20	8	C8254.0X40.0
5	40	0.15	19.2	44	100	20	8	C8255.0X40.0
6	40	0.15	19.2	43	100	20	8	C8256.0X40.0
8	40	0.15	19.2	41	100	20	8	C8258.0X40.0
10	40	0.15	19.2	39	100	20	8	C82510.0X40.0
6	63	0.15	24.2	67	130	25	12	C8256.0X63.0
8	63	0.15	24.2	65	130	25	12	C8258.0X63.0
10	63	0.15	24.2	63	130	25	12	C82510.0X63.0
12	63	0.15	24.2	61	130	25	12	C82512.0X63.0
14	63	0.15	24.2	59	130	25	12	C82514.0X63.0
16	63	0.15	24.2	57	130	25	12	C82516.0X63.0

C801

- T-horony maró
- Freze canal T
- T freze
- T-slot Cutter

C801	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	10.1												

C801	HSS-E		NF	Z 6-8		$\lambda 12^\circ$ $\gamma 10^\circ$	DIN 1835B		d11			DIN 851
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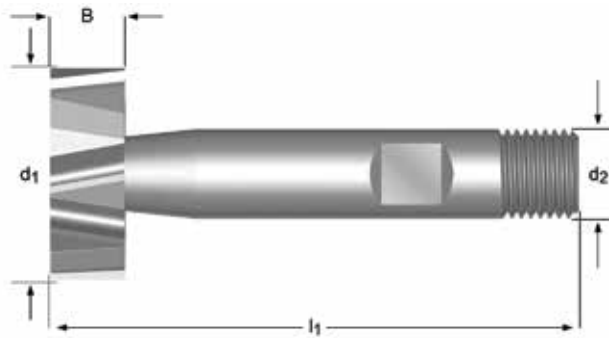


B	d ₁ ∅ mm	T DIN650	d ₃ ∅ mm	l ₂ mm	l ₁ mm	d ₂ ∅h ₆ mm	z	C801
8.0	16.0	8	7	10	62	10	6	C80116.0X8.0
8.0	18.0	10	8	13	70	12	6	C80118.0X10.0
9.0	21.0	12	10	16	74	12	6	C80121.0X12.0
11.0	25.0	14	12	17	82	16	8	C80125.0X14.0
14.0	32.0	18	15	22	90	16	8	C80132.0X18.0

- C822**
- Reteszhorony maró
 - Freze canale pene disc
 - T freze
 - Woodruff Cutter

C822	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	10.1												

C822 HSS-E N Z 6-12 $\lambda 10^\circ$ $\gamma 10^\circ$ **DIN 850**



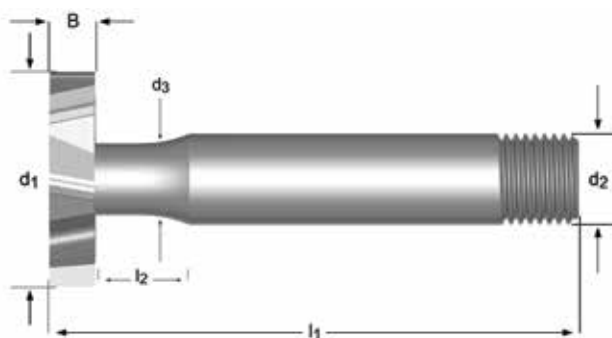
B mm	d ₁ ∅ mm	l ₁ mm	d ₂ ∅ _{h₆} mm	z	C822
1.0	4.50	50	6	6	C8224.5X1.0
1.5	7.50	50	6	6	C8227.5X1.5
2.0	7.50	50	6	6	C8227.5X2.0
2.0	10.50	50	6	8	C82210.5X2.0
2.5	10.50	50	6	8	C82210.5X2.5
3.0	10.50	50	6	8	C82210.5X3.0
3.0	13.50	56	10	8	C82213.5X3.0
4.0	13.50	56	10	8	C82213.5X4.0
3.0	16.50	56	10	8	C82216.5X3.0
4.0	16.50	56	10	8	C82216.5X4.0
5.0	16.50	56	10	8	C82216.5X5.0
3.0	19.50	63	10	10	C82219.5X3.0
4.0	19.50	63	10	10	C82219.5X4.0
5.0	19.50	63	10	10	C82219.5X5.0
5.0	22.50	63	10	10	C82222.5X5.0
6.0	22.50	63	10	10	C82222.5X6.0
8.0	22.50	63	10	10	C82222.5X8.0
6.0	25.50	63	10	12	C82225.5X6.0
6.0	28.50	63	10	12	C82228.5X6.0
8.0	28.50	63	10	12	C82228.5X8.0
10.0	28.50	71	12	12	C82228.5X10.0
8.0	32.50	71	12	12	C82232.5X8.0
10.0	32.50	71	12	12	C82232.5X10.0
10.0	45.50	71	12	12	C82245.5X10.0

C820

- Reteszhorony maró
- Freze canale pene disc
- T freze
- Woodruff Cutter

C820	▪	1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.1	7.2	7.3	
	•	1.5	1.6	2.3	4.2	4.3	5.2	5.3	6.4	7.4	8.1	10.1								

C820 HSS  N  Z 6-12  $\lambda 12^\circ$ $\gamma 10^\circ$     



Nr.	B Inch	B mm	d ₁ Ø Inch	d ₁ Ø mm	d ₃ Ø mm	l ₂ mm	l ₁ mm	d ₂ Ø, -0.025 Inch	d ₂ Ø, -0.025 mm	z	C820
		2.00		10.50	3.90	10	57.0		12.0	6	C82010.5X2.0
		2.50		10.50	3.90	10	57.0		12.0	6	C82010.5X2.5
		3.00		10.50	4.20	10	57.0		12.0	6	C82010.5X3.0
204	1/16	1.59	1/2	12.70	3.30	10	57.0	1/2	12.7	6	C820204 ⁹⁾
404	1/8	3.18	1/2	12.70	4.85	10	57.0	1/2	12.7	6	C820404 ⁹⁾
		2.00		13.50	4.00	10	57.0		12.0	6	C82013.5X2.0
		2.50		13.50	4.00	10	57.0		12.0	6	C82013.5X2.5
		3.00		13.50	5.00	10	57.0		12.0	6	C82013.5X3.0
		4.00		13.50	5.00	10	57.0		12.0	6	C82013.5X4.0
405	1/8	3.18	5/8	15.88	5.65	10	57.0	1/2	12.7	6	C820405 ⁹⁾
505	5/32	3.97	5/8	15.88	6.35	10	57.0	1/2	12.7	6	C820505 ⁹⁾
		2.50		16.50	4.00	10	57.0		12.0	6	C82016.5X2.5
		3.00		16.50	5.00	10	57.0		12.0	6	C82016.5X3.0
		4.00		16.50	5.00	10	57.0		12.0	6	C82016.5X4.0
		5.00		16.50	5.60	10	57.0		12.0	6	C82016.5X5.0
406	1/8	3.18	3/4	19.05	5.50	10	57.0	1/2	12.7	6	C820406 ⁹⁾
506	5/32	3.97	3/4	19.05	6.35	10	57.0	1/2	12.7	6	C820506 ⁹⁾
606	3/16	4.76	3/4	19.05	7.15	10	57.0	1/2	12.7	6	C820606 ⁹⁾
		3.00		19.50	5.60	10	57.0		12.0	6	C82019.5X3.0
		4.00		19.50	5.60	10	57.0		12.0	6	C82019.5X4.0
		5.00		19.50	6.00	10	57.0		12.0	6	C82019.5X5.0
507	5/32	3.97	7/8	22.23	6.35	10	63.5	1/2	12.7	8	C820507 ⁹⁾
607	3/16	4.76	7/8	22.23	7.15	10	63.5	1/2	12.7	8	C820607 ⁹⁾
807	1/4	6.35	7/8	22.23	8.75	10	63.5	1/2	12.0	8	C820807 ⁹⁾
		4.00		22.50	5.60	10	63.5		12.0	8	C82022.5X4.0
		5.00		22.50	6.00	10	63.5		12.0	8	C82022.5X5.0
		6.00		22.50	6.50	10	63.5		12.0	8	C82022.5X6.0
608	3/16	4.76	1"	25.40	7.15	10	70.0	1/2	12.7	8	C820608 ⁹⁾
808	1/4	6.35	1"	25.40	8.75	10	70.0	1/2	12.7	8	C820808 ⁹⁾
1008	5/16	7.94	1"	25.40	10.30	10	70.0	1/2	12.7	8	C8201008 ⁹⁾
		5.00		25.50	7.50	10	70.0		12.0	8	C82025.5X5.0
		6.00		25.50	7.50	10	70.0		12.0	8	C82025.5X6.0
		8.00		25.50	8.00	10	70.0		12.0	8	C82025.5X8.0
		5.00		28.50	8.00	12	70.0		12.0	8	C82028.5X5.0
		6.00		28.50	8.50	12	70.0		12.0	8	C82028.5X6.0
		8.00		28.50	9.00	12	70.0		12.0	8	C82028.5X8.0

⁹⁾ Szabvány - BS 122/4 / Standard - BS 122/4 / Standart - BS 122/4 / Standard - BS 122/4

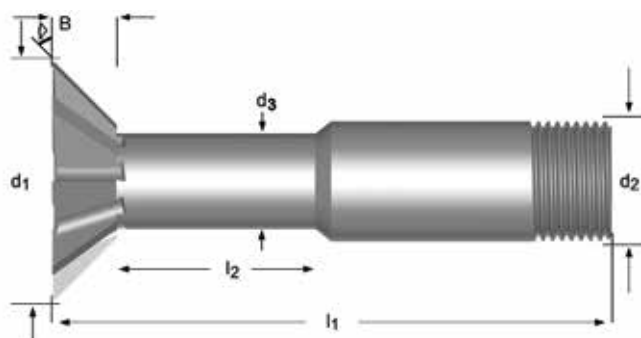
Nr.	B Inch	B mm	d ₁ Ø Inch	d ₁ Ø mm	d ₃ Ø mm	l ₂ mm	l ₁ mm	d ₂ Ø0,-0.025 Inch	d ₂ Ø0,-0.025 mm	z	C820
610	3/16	4.76	1.1/4	31.75	7.95	12	70.0	1/2	12.7	10	C820610 ⁹⁾
810	1/4	6.35	1.1/4	31.75	9.50	12	70.0	1/2	12.7	10	C820810 ⁹⁾
1010	5/16	7.94	1.1/4	31.75	11.10	12	70.0	1/2	12.7	10	C8201010 ⁹⁾
1210	3/8	9.53	1.1/4	31.75	11.95	12	70.0	1/2	12.7	10	C8201210 ⁹⁾
		5.00		32.50	8.00	12	70.0		12.0	10	C82032.5X5.0 ⁹⁾
		6.00		32.50	8.50	12	70.0		12.0	10	C82032.5X6.0 ⁹⁾
		8.00		32.50	9.00	12	70.0		12.0	10	C82032.5X8.0 ⁹⁾
811	1/4	6.35	1.3/8	34.93	11.10	20	76.0	1/2	12.7	10	C820811 ⁹⁾
1011	5/16	7.94	1.3/8	34.93	11.95	20	76.0	1/2	12.7	10	C8201011 ⁹⁾
1211	3/8	9.53	1.3/8	34.93	11.95	20	76.0	1/2	12.7	10	C8201211 ⁹⁾
		6.00		35.50	9.50	20	76.0		12.0	10	C82035.5X6.0 ⁹⁾
		8.00		35.50	11.50	20	76.0		12.0	10	C82035.5X8.0 ⁹⁾
812	1/4	6.35	1.1/2	38.10	11.10	20	76.0	1/2	12.7	10	C820812 ⁹⁾
1012	5/16	7.94	1.1/2	38.10	11.95	20	76.0	1/2	12.7	10	C8201012 ⁹⁾
1212	3/8	9.53	1.1/2	38.10	11.95	20	76.0	1/2	12.7	10	C8201212 ⁹⁾
		8.00		38.50	11.50	20	76.0		12.0	10	C82038.5X8.0 ⁹⁾
		10.00		38.50	11.50	20	76.0		12.0	10	C82038.5X10.0 ⁹⁾
		10.00		45.50	11.50	20	76.0		12.0	12	C82045.5X10.0 ⁹⁾

C837

- Szögmaró
- Freze coada de randunica
- Kírlángiç freze
- Dovetail Cutter

C837	▪	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.1	7.2	7.3	
	•	1.5	1.6	2.2	2.3	4.2	4.3	5.2	5.3	6.4	7.4	8.1							

C837 HSS  N  Z 6-8  $\lambda 0^\circ$ $\gamma 0^\circ$   



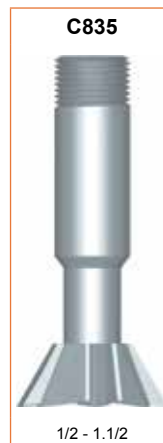
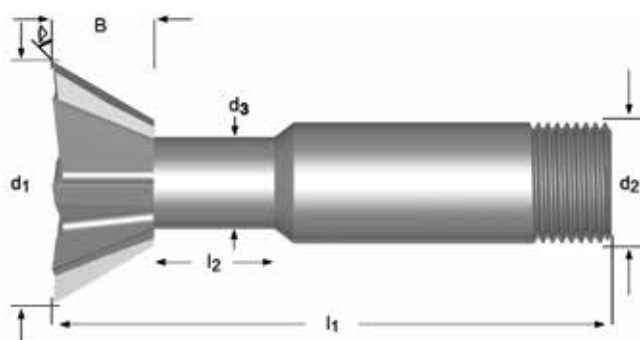
\triangle	B	d ₁	d ₁	d ₃	l ₂	l ₁	d ₂	d ₂	z	C837
	mm	Ø Inch	Ø mm	Ø mm	mm	mm	Ø _{0,-0.025} Inch	Ø _{0,-0.025} mm		
45°	3.0		13.00	4.75	16.5	63.5		12.00	6	C83713.0
45°	4.0	5/8	15.88	6.35	17.5	66.5	1/2	12.70	6	C8375/8 ⁹⁾
45°	4.0		16.00	6.35	17.5	66.5		12.00	6	C83716.0
45°	5.5		19.00	6.35	16.0	66.5		12.00	6	C83719.0
45°	5.5	3/4	19.05	6.35	16.0	66.5	1/2	12.70	6	C8373/4 ⁹⁾
45°	6.5		22.00	7.15	16.0	68.5		12.00	6	C83722.0
45°	6.5	7/8	22.23	7.15	16.0	68.5	1/2	12.70	6	C8377/8 ⁹⁾
45°	7.5		25.00	7.95	16.5	70.0		12.00	6	C83725.0
45°	8.0	1"	25.40	7.95	16.0	70.0	1/2	12.70	6	C8371
45°	8.5		28.00	9.55	17.0	71.5		16.00	6	C83728.0
45°	10.5		38.00	12.70	16.0	78.5		25.00	8	C83738.0

C835

- Szögmaró
- Freze coada de randunica
- Kírlángç freze
- Dovetail Cutter

C835	▪	1.1	1.2	1.3	1.4	2.1	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.1	7.2	7.3	
	•	1.5	1.6	2.2	2.3	4.2	4.3	5.2	5.3	6.4	7.4	8.1							

C835 HSS N Z 6-8 $\lambda 0^\circ$ $\gamma 0^\circ$



	B	d ₁ Ø	d ₁ Ø	d ₃ Ø	l ₂	l ₁	d ₂ Ø0,-0.025	d ₂ Ø0,-0.025	z	C835
	mm	Inch	mm	mm	mm	mm	Inch	mm		
60°	4.0	1/2	12.70	7.15	16.5	63.5	1/2	12.70	6	C8351/2 ⁹⁾
60°	4.0		13.00	7.15	16.5	63.5		12.00	6	C83513.0
60°	5.5	5/8	15.88	7.55	18.0	66.5	1/2	12.70	6	C8355/8 ⁹⁾
60°	5.5		16.00	7.55	18.0	66.5		12.00	6	C83516.0
60°	7.0		19.00	8.35	17.5	67.5		12.00	6	C83519.0
60°	7.0	3/4	19.05	8.35	17.5	67.5	1/2	12.70	6	C8353/4 ⁹⁾
60°	9.5		22.00	8.75	15.0	67.5		12.00	6	C83522.0
60°	9.5	7/8	22.23	8.75	15.0	67.5	1/2	12.70	6	C8357/8 ⁹⁾
60°	12.0		25.00	8.75	15.0	70.0		12.00	6	C83525.0
60°	12.0	1"	25.40	8.75	15.0	70.0	1/2	12.70	6	C8351 ⁹⁾
60°	12.5		28.00	11.10	15.5	73.0		16.00	6	C83528.0
60°	12.5	1.1/8	28.58	11.10	15.5	73.0	5/8	15.88	6	C8351.1/8 ⁹⁾
60°	13.5		32.00	12.70	16.0	74.5		16.00	8	C83532.0
60°	13.5	1.1/4	31.75	12.70	16.0	74.5	5/8	15.88	8	C8351.1/4 ⁹⁾
60°	14.5	1.3/8	34.93	12.70	16.0	82.5	1"	25.40	8	C8351.3/8 ⁹⁾
60°	14.5		35.00	12.70	16.0	82.5		25.00	8	C83535.0
60°	16.0		38.00	17.45	16.0	84.0		25.00	8	C83538.0
60°	16.0	1.1/2	38.10	17.45	16.0	84.0	1"	25.40	8	C8351.1/2 ⁹⁾

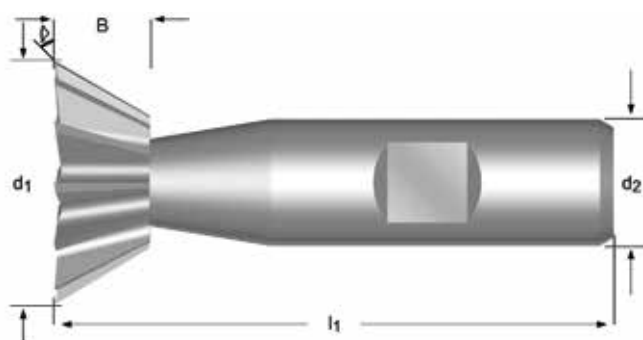
⁹⁾ Szabvány - BS 122/4 / Standard - BS 122/4 / Standart - BS 122/4 / Standard - BS 122/4

C830

- Szögmaró
- Freze coada de randunica
- Kírlangíç freze
- Dovetail Cutter

C830	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	10.1												

C830	HSS-E		N	Z 10-12		$\lambda 0^\circ$ $\gamma 0^\circ$	DIN 1835B		js16		DIN 1833C
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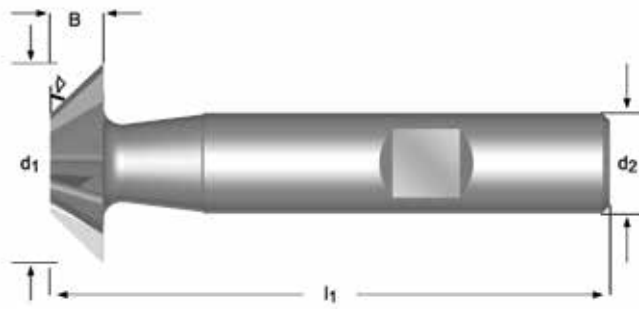


	B mm	d ₁ Ø mm	l ₁ mm	d ₂ Ø _{h₆} mm	z	C830
45°	3.5	12.0	54	10	10	C83012.0X45
45°	4.0	16.0	60	12	10	C83016.0X45
45°	5.0	20.0	63	12	10	C83020.0X45
45°	6.3	25.0	67	12	10	C83025.0X45
45°	8.0	32.0	71	16	12	C83032.0X45
60°	5.0	12.0	54	10	10	C83012.0X60
60°	6.3	16.0	60	12	10	C83016.0X60
60°	8.0	20.0	63	12	10	C83020.0X60
60°	10.0	25.0	67	12	10	C83025.0X60
60°	12.5	32.0	71	16	12	C83032.0X60

- C831**
- Inverz Szögmaró
 - Freza unghiulara
 - Ters kırilangıç freze
 - Inverse Dovetail Cutters

C831	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1	10.1												

C831 HSS-E N Z 10-12 $\lambda 0^\circ$ $\gamma 0^\circ$



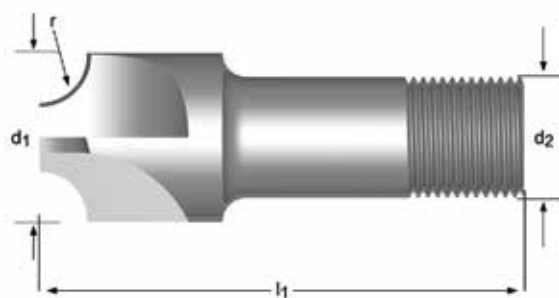
	B mm	d ₁ Ø mm	l ₁ mm	d ₂ Ø _{h₆} mm	z	C831
45°	3.5	12.0	54	10	10	C83112.0X45
45°	4.0	16.0	60	12	10	C83116.0X45
45°	5.0	20.0	63	12	10	C83120.0X45
45°	6.3	25.0	67	12	10	C83125.0X45
45°	8.0	32.0	71	16	12	C83132.0X45
60°	5.0	12.0	54	10	10	C83112.0X60
60°	6.3	16.0	60	12	10	C83116.0X60
60°	8.0	20.0	63	12	10	C83120.0X60
60°	10.0	25.0	67	12	10	C83125.0X60
60°	12.5	32.0	71	16	12	C83132.0X60

C710

- Ráduszmáró
- Freze pentru rotunjit muchii
- Radüs frezesi
- Corner Rounding Cutter

C710	▪	1.1	1.2	1.3	1.4	2.1	2.2	3.1	3.2	3.3	3.4	4.1	4.2	5.1	5.2	6.1	6.2	6.3	7.1	7.2	7.3
	•	1.5	1.6	2.3	4.3	5.3	6.4	7.4	10.1												

C710 HSS N Z 4 $\lambda 0^\circ$ $\gamma 0^\circ$ BS 122/4

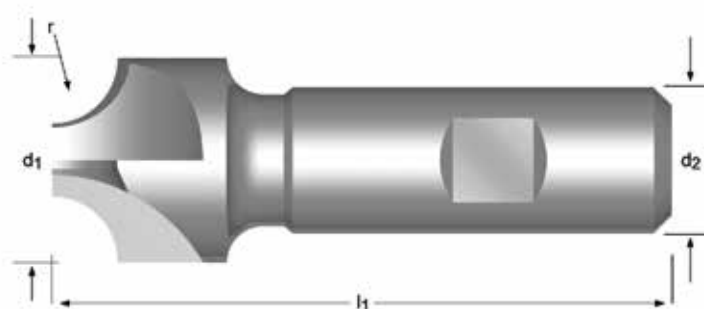


r Inch	d ₁ Ø Inch	d ₂ Ø _{h₈} Inch	d ₂ Ø mm	l ₁ mm	z	C710
1/16	3/8	3/8	9.53	60.5	4	C7101/16
1/8	1/2	1/2	12.70	60.5	4	C7101/8
5/32	9/16	1/2	12.70	60.5	4	C7105/32
3/16	5/8	5/8	15.88	60.5	4	C7103/16
1/4	7/8	5/8	15.88	63.5	4	C7101/4
3/8	1.1/16	1"	25.40	76.0	4	C7103/8
1/2	1.3/8	1"	25.40	82.5	4	C7101/2

- C700**
- Ráduszmáró
 - Freze pentru rotunjit muchii
 - Radüs frezesi
 - Corner Rounding Cutter

C700	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1	
	6.2	6.3	6.4	7.1	7.2	7.3	7.4	10.1													

C700 HSS-E N Z 4-6 $\lambda 0^\circ$ $\gamma 0^\circ$

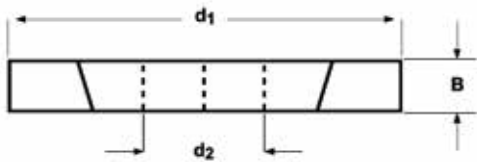


r mm	d ₁ Ø mm	d ₂ Øh ₆ mm	l ₁ mm	z	C700
1.00	10	10	60	4	C7001.0
1.50	10	10	60	4	C7001.5
2.00	10	10	60	4	C7002.0
2.50	10	10	60	4	C7002.5
3.00	12	12	60	4	C7003.0
3.50	12	12	60	4	C7003.5
4.00	15	12	60	4	C7004.0
5.00	18	16	70	4	C7005.0
6.00	21	16	70	4	C7006.0
7.00	24	16	70	4	C7007.0
8.00	24	16	70	4	C7008.0
9.00	28	20	85	4	C7009.0
10.00	28	20	85	4	C70010.0
12.00	35	20	100	4	C70012.0
12.50	35	20	100	4	C70012.5
14.00	42	25	100	4	C70014.0
15.00	48	25	105	5	C70015.0
16.00	48	25	105	5	C70016.0
20.00	60	32	115	6	C70020.0

- D200** • Keresztfogazású tárcsamaró
• Freza cilindro-frontala
- D763** • Kenar ve yüzey frezesi
• Side and Face Milling Cutter

D200; D763	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2
	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3	7.4	8.1								

D200	HSS-E			Z 16-30		$\lambda 15^\circ$ $\gamma 10^\circ$			js16		DIN 885A
D763	HSS-E			Z 28-44		$\lambda 15^\circ$ $\gamma 10^\circ$			js16		DIN 885A



d_1 \emptyset mm	B mm	d_2 \emptyset mm	z	D200	D763
50.00	10.0	16	16	D20050.0X10.0	
50.00	4.0	16	16	D20050.0X4.0	
50.00	5.0	16	16	D20050.0X5.0	
50.00	6.0	16	16	D20050.0X6.0	
50.00	8.0	16	16	D20050.0X8.0	
63.00	1.6	22	32		D76363.0X1.6
63.00	10.0	22	18	D20063.0X10.0	
63.00	12.0	22	18	D20063.0X12.0	
63.00	14.0	22	18	D20063.0X14.0	
63.00	16.0	22	16	D20063.0X16.0	
63.00	2.0	22	32		D76363.0X2.0
63.00	2.5	22	32		D76363.0X2.5
63.00	3.0	22	28		D76363.0X3.0
63.00	3.5	22	28		D76363.0X3.5
63.00	4.0	22	18	D20063.0X4.0	
63.00	5.0	22	18	D20063.0X5.0	
63.00	6.0	22	18	D20063.0X6.0	
63.00	8.0	22	18	D20063.0X8.0	
80.00	10.0	27	18	D20080.0X10.0	
80.00	12.0	27	18	D20080.0X12.0	
80.00	14.0	27	18	D20080.0X14.0	
80.00	16.0	27	18	D20080.0X16.0	
80.00	2.0	27	36		D76380.0X2.0
80.00	2.5	27	36		D76380.0X2.5
80.00	20.0	27	18	D20080.0X20.0	
80.00	3.0	27	32		D76380.0X3.0
80.00	3.5	27	32		D76380.0X3.5
80.00	4.0	27	20	D20080.0X4.0	
80.00	5.0	27	20	D20080.0X5.0	
80.00	6.0	27	20	D20080.0X6.0	
80.00	8.0	27	20	D20080.0X8.0	
100.00	10.0	32	22	D200100.0X10.0	
100.00	12.0	32	20	D200100.0X12.0	
100.00	14.0	32	20	D200100.0X14.0	

d ₁ Ø mm	B mm	d ₂ Ø mm	z	D200	D763
100.00	16.0	32	20	D200100.0X16.0	
100.00	18.0	32	20	D200100.0X18.0	
100.00	2.0	32	44		D763100.0X2.0
100.00	2.5	32	44		D763100.0X2.5
100.00	20.0	32	20	D200100.0X20.0	
100.00	25.0	32	20	D200100.0X25.0	
100.00	3.0	32	40		D763100.0X3.0
100.00	3.5	32	40		D763100.0X3.5
100.00	4.0	32	24	D200100.0X4.0	
100.00	5.0	32	24	D200100.0X5.0	
100.00	6.0	32	24	D200100.0X6.0	
100.00	8.0	32	22	D200100.0X8.0	
125.00	10.0	32	24	D200125.0X10.0	
125.00	12.0	32	22	D200125.0X12.0	
125.00	14.0	32	22	D200125.0X14.0	
125.00	16.0	32	22	D200125.0X16.0	
125.00	2.0	32	44		D763125.0X2.0
125.00	2.5	32	44		D763125.0X2.5
125.00	20.0	32	22	D200125.0X20.0	
125.00	25.0	32	22	D200125.0X25.0	
125.00	3.0	32	44		D763125.0X3.0
125.00	3.5	32	40		D763125.0X3.5
125.00	4.0	32	40		D763125.0X4.0
125.00	6.0	32	26	D200125.0X6.0	
125.00	8.0	32	26	D200125.0X8.0	
160.00	10.0	40	26	D200160.0X10.0	
160.00	12.0	40	26	D200160.0X12.0	
160.00	14.0	40	24	D200160.0X14.0	
160.00	16.0	40	24	D200160.0X16.0	
160.00	18.0	40	24	D200160.0X18.0	
160.00	20.0	40	24	D200160.0X20.0	
160.00	8.0	40	28	D200160.0X8.0	
200.00	12.0	40	30	D200200.0X12.0	
200.00	16.0	40	30	D200200.0X16.0	
200.00	20.0	40	30	D200200.0X20.0	

- D745**
- Fém körfűrész
 - Freze disc
 - Metal testeresi normal diş
 - Metal slitting saw Coarse

D745	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	6.1	6.2	6.3	7.1	7.2	7.3	8.1	
	•	2.1	2.2													

D745	HSS			Z 28-100		$\gamma 15^\circ$						DIN 1838
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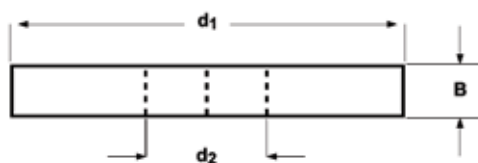
d_1 Ø mm	B mm	d_2 Ø mm	z	D745
50.00	0.5	13	48	D74550.0X.5
50.00	0.6	13	48	D74550.0X.6
50.00	0.8	13	40	D74550.0X.8
50.00	1.0	13	40	D74550.0X1.0
50.00	1.2	13	40	D74550.0X1.2
50.00	1.5	13	32	D74550.0X1.5
50.00	1.6	13	32	D74550.0X1.6
50.00	2.0	13	32	D74550.0X2.0
50.00	2.5	13	32	D74550.0X2.5
50.00	3.0	13	24	D74550.0X3.0
63.00	0.5	16	64	D74563.0X.5
63.00	0.6	16	48	D74563.0X.6
63.00	0.8	16	48	D74563.0X.8
63.00	1.0	16	48	D74563.0X1.0
63.00	1.2	16	40	D74563.0X1.2
63.00	1.5	16	40	D74563.0X1.5
63.00	1.6	16	40	D74563.0X1.6
63.00	2.0	16	40	D74563.0X2.0
63.00	2.5	16	32	D74563.0X2.5
63.00	3.0	16	32	D74563.0X3.0
80.00	0.5	22	64	D74580.0X.5
80.00	0.6	22	64	D74580.0X.6
80.00	0.8	22	64	D74580.0X.8
80.00	1.0	22	48	D74580.0X1.0
80.00	1.2	22	48	D74580.0X1.2
80.00	1.5	22	48	D74580.0X1.5
80.00	1.6	22	48	D74580.0X1.6
80.00	2.0	22	40	D74580.0X2.0
80.00	2.5	22	40	D74580.0X2.5
80.00	3.0	22	40	D74580.0X3.0
80.00	4.0	22	32	D74580.0X4.0
80.00	5.0	22	32	D74580.0X5.0
80.00	6.0	22	32	D74580.0X6.0
100.00	0.5	22	80	D745100.0X.5
100.00	0.6	22	80	D745100.0X.6
100.00	0.8	22	64	D745100.0X.8
100.00	1.0	22	64	D745100.0X1.0
100.00	1.2	22	64	D745100.0X1.2

d_1 Ø mm	B mm	d_2 Ø mm	z	D745
100.00	1.5	22	48	D745100.0X1.5
100.00	1.6	22	48	D745100.0X1.6
100.00	2.0	22	48	D745100.0X2.0
100.00	2.5	22	48	D745100.0X2.5
100.00	3.0	22	40	D745100.0X3.0
100.00	4.0	22	40	D745100.0X4.0
100.00	5.0	22	40	D745100.0X5.0
100.00	6.0	22	32	D745100.0X6.0
125.00	1.0	22	80	D745125.0X1.0
125.00	1.2	22	64	D745125.0X1.2
125.00	1.5	22	64	D745125.0X1.5
125.00	1.6	22	64	D745125.0X1.6
125.00	2.0	22	64	D745125.0X2.0
125.00	2.5	22	48	D745125.0X2.5
125.00	3.0	22	48	D745125.0X3.0
125.00	4.0	22	48	D745125.0X4.0
125.00	5.0	22	40	D745125.0X5.0
125.00	6.0	22	40	D745125.0X6.0
160.00	1.0	32	80	D745160.0X1.0
160.00	1.2	32	80	D745160.0X1.2
160.00	1.5	32	80	D745160.0X1.5
160.00	1.6	32	80	D745160.0X1.6
160.00	2.0	32	64	D745160.0X2.0
160.00	2.5	32	64	D745160.0X2.5
160.00	3.0	32	64	D745160.0X3.0
160.00	4.0	32	48	D745160.0X4.0
160.00	5.0	32	48	D745160.0X5.0
160.00	6.0	32	48	D745160.0X6.0
200.00	1.0	32	100	D745200.0X1.0
200.00	1.2	32	100	D745200.0X1.2
200.00	1.5	32	80	D745200.0X1.5
200.00	1.6	32	80	D745200.0X1.6
200.00	2.0	32	80	D745200.0X2.0
200.00	2.5	32	80	D745200.0X2.5
200.00	3.0	32	64	D745200.0X3.0
200.00	4.0	32	64	D745200.0X4.0
200.00	5.0	32	64	D745200.0X5.0
200.00	6.0	32	48	D745200.0X6.0
250.00	2.0	32	100	D745250.0X2.0
250.00	2.5	32	80	D745250.0X2.5
250.00	3.0	32	80	D745250.0X3.0
250.00	4.0	32	80	D745250.0X4.0
250.00	5.0	32	64	D745250.0X5.0
250.00	6.0	32	64	D745250.0X6.0
315.00	2.5	40	100	D745315.0X2.5
315.00	3.0	40	100	D745315.0X3.0

- D747**
- Fém körfűrész
 - Freze disc
 - Metal testeresi ince diş
 - Metal slitting saw Fine

D747	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	6.1	6.2	6.3	7.1	7.2	7.3	8.1	
	•	2.1	2.2													

D747	HSS			Z 40-200		γ 5°						DIN 1837
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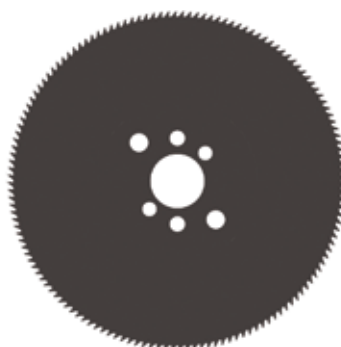
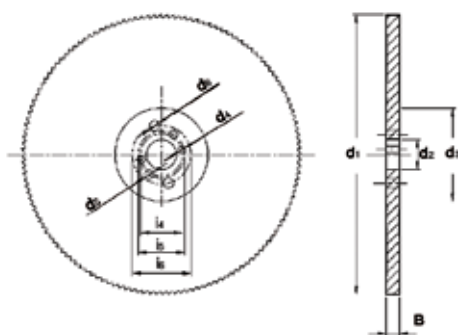
d_1 Ø mm	B mm	d_2 Ø mm	z	D747
32.00	0.3	8	80	D74732.0X.3
32.00	0.4	8	80	D74732.0X.4
32.00	0.5	8	80	D74732.0X.5
32.00	0.6	8	64	D74732.0X.6
32.00	0.8	8	64	D74732.0X.8
32.00	1.0	8	64	D74732.0X1.0
32.00	1.2	8	48	D74732.0X1.2
32.00	1.5	8	48	D74732.0X1.5
32.00	1.6	8	48	D74732.0X1.6
32.00	2.0	8	48	D74732.0X2.0
32.00	2.5	8	40	D74732.0X2.5
32.00	3.0	8	40	D74732.0X3.0
40.00	0.3	10	100	D74740.0X.3
40.00	0.4	10	100	D74740.0X.4
40.00	0.5	10	80	D74740.0X.5
40.00	0.6	10	80	D74740.0X.6
40.00	0.8	10	80	D74740.0X.8
40.00	1.0	10	64	D74740.0X1.0
40.00	1.2	10	64	D74740.0X1.2
40.00	1.5	10	64	D74740.0X1.5
40.00	1.6	10	64	D74740.0X1.6
40.00	2.0	10	48	D74740.0X2.0
40.00	2.5	10	48	D74740.0X2.5
40.00	3.0	10	48	D74740.0X3.0
50.00	0.3	13	128	D74750.0X.3
50.00	0.4	13	100	D74750.0X.4
50.00	0.5	13	100	D74750.0X.5
50.00	0.6	13	100	D74750.0X.6
50.00	0.8	13	80	D74750.0X.8
50.00	1.0	13	80	D74750.0X1.0
50.00	1.2	13	80	D74750.0X1.2
50.00	1.5	13	64	D74750.0X1.5
50.00	1.6	13	64	D74750.0X1.6
50.00	2.0	13	64	D74750.0X2.0
50.00	2.5	13	64	D74750.0X2.5
50.00	3.0	13	48	D74750.0X3.0
50.00	4.0	13	48	D74750.0X4.0
50.00	5.0	13	48	D74750.0X5.0

d₁ Ø mm	B mm	d₂ Ø mm	z	D747
50.00	6.0	13	40	D74750.0X6.0
63.00	0.3	16	128	D74763.0X.3
63.00	0.4	16	128	D74763.0X.4
63.00	0.5	16	128	D74763.0X.5
63.00	0.6	16	100	D74763.0X.6
63.00	0.8	16	100	D74763.0X.8
63.00	1.0	16	100	D74763.0X1.0
63.00	1.2	16	80	D74763.0X1.2
63.00	1.5	16	80	D74763.0X1.5
63.00	1.6	16	80	D74763.0X1.6
63.00	2.0	16	80	D74763.0X2.0
63.00	2.5	16	64	D74763.0X2.5
63.00	3.0	16	64	D74763.0X3.0
63.00	4.0	16	64	D74763.0X4.0
63.00	5.0	16	48	D74763.0X5.0
63.00	6.0	16	48	D74763.0X6.0
80.00	0.4	22	160	D74780.0X.4
80.00	0.5	22	128	D74780.0X.5
80.00	0.6	22	128	D74780.0X.6
80.00	0.8	22	128	D74780.0X.8
80.00	1.0	22	100	D74780.0X1.0
80.00	1.2	22	100	D74780.0X1.2
80.00	1.5	22	100	D74780.0X1.5
80.00	1.6	22	100	D74780.0X1.6
80.00	2.0	22	80	D74780.0X2.0
80.00	2.5	22	80	D74780.0X2.5
80.00	3.0	22	80	D74780.0X3.0
80.00	4.0	22	64	D74780.0X4.0
80.00	5.0	22	64	D74780.0X5.0
80.00	6.0	22	64	D74780.0X6.0
100.00	0.5	22	160	D747100.0X.5
100.00	0.6	22	160	D747100.0X.6
100.00	0.8	22	128	D747100.0X.8
100.00	1.0	22	128	D747100.0X1.0
100.00	1.2	22	128	D747100.0X1.2
100.00	1.5	22	100	D747100.0X1.5
100.00	1.6	22	100	D747100.0X1.6
100.00	2.0	22	100	D747100.0X2.0
100.00	2.5	22	100	D747100.0X2.5
100.00	3.0	22	80	D747100.0X3.0
100.00	4.0	22	80	D747100.0X4.0
100.00	5.0	22	80	D747100.0X5.0
100.00	6.0	22	64	D747100.0X6.0
125.00	1.0	22	160	D747125.0X1.0
125.00	1.2	22	128	D747125.0X1.2
125.00	1.5	22	128	D747125.0X1.5
125.00	1.6	22	128	D747125.0X1.6
125.00	2.0	22	128	D747125.0X2.0
125.00	2.5	22	100	D747125.0X2.5
125.00	3.0	22	100	D747125.0X3.0
125.00	4.0	22	100	D747125.0X4.0
125.00	5.0	22	80	D747125.0X5.0
125.00	6.0	22	80	D747125.0X6.0
160.00	1.0	32	160	D747160.0X1.0
160.00	1.2	32	160	D747160.0X1.2
160.00	1.5	32	160	D747160.0X1.5
160.00	1.6	32	160	D747160.0X1.6
160.00	2.0	32	128	D747160.0X2.0
160.00	2.5	32	128	D747160.0X2.5
160.00	3.0	32	128	D747160.0X3.0
160.00	4.0	32	100	D747160.0X4.0
160.00	5.0	32	100	D747160.0X5.0
160.00	6.0	32	100	D747160.0X6.0
200.00	1.0	32	200	D747200.0X1.0
200.00	1.2	32	200	D747200.0X1.2
200.00	1.5	32	160	D747200.0X1.5
200.00	1.6	32	160	D747200.0X1.6
200.00	2.0	32	160	D747200.0X2.0
200.00	2.5	32	160	D747200.0X2.5
200.00	3.0	32	128	D747200.0X3.0

d_1 Ø mm	B mm	d_2 Ø mm	z	D747
200.00	4.0	32	128	D747200.0X4.0
200.00	5.0	32	128	D747200.0X5.0
200.00	6.0	32	100	D747200.0X6.0
250.00	2.0	32	200	D747250.0X2.0
250.00	2.5	32	160	D747250.0X2.5
250.00	3.0	32	160	D747250.0X3.0
250.00	4.0	32	160	D747250.0X4.0
250.00	5.0	32	128	D747250.0X5.0
250.00	6.0	32	128	D747250.0X6.0
315.00	2.5	40	200	D747315.0X2.5
315.00	3.0	40	200	D747315.0X3.0
315.00	4.0	40	160	D747315.0X4.0
315.00	5.0	40	160	D747315.0X5.0
315.00	6.0	40	160	D747315.0X6.0

- D752** • Fém körfűrész
• Freze disc
- D753** • Metal testeresi normal disz
• Metal slitting saw Coarse

D752; D753	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	6.1	6.2	6.3	7.1	7.2	7.3	8.1	
	•	2.1	2.2													

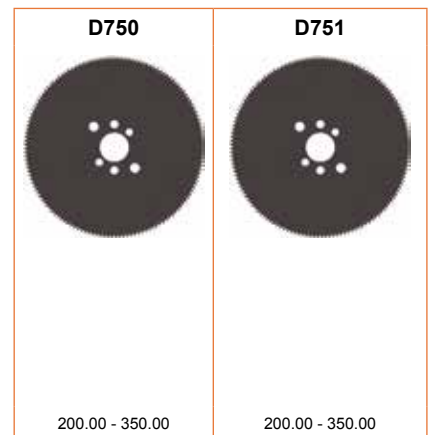
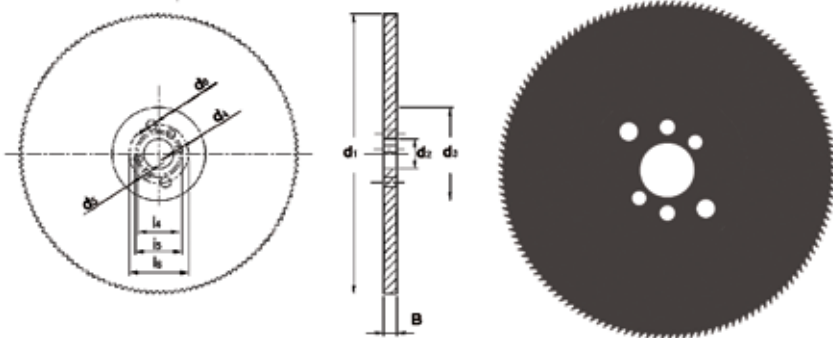


d_1 Ø mm	B mm	d_2 Ø mm	z	P mm	d_3 Ø mm	d_4 Ø mm	i_4 mm	d_5 Ø mm	i_5 mm	d_6 Ø mm	i_6 mm	D752	D753
200	1.8	32	100	6	100	8	45	9	50	11	63	D752200.0X1.8X100	
200	1.8	32	80	8	100	8	45	9	50	11	63	D752200.0X1.8X80	
225	2.0	32	120	6	100	8	45	9	50	11	63	D752225.0X2.0X120	
225	2.0	32	90	8	100	8	45	9	50	11	63	D752225.0X2.0X90	
250	2.0	32	100	8	100	8	45	9	50	11	63		D753250.0X2.0
250	2.0	32	128	6	100	8	45	9	50	11	63	D752250.0X2.0X128	
275	2.5	32	110	8	100	8	45	9	50	11	63	D752275.0X2.5X110	
300	2.5	32	120	8	100	8	45	9	50	11	63		D753300.0X2.5
300	2.5	32	160	6	100	8	45	9	50	11	63	D752300.0X2.5X160	
315	2.5	32	120	8	100	8	45	9	50	11	63		D753315.0X2.5
315	2.5	32	160	6	100	8	45	9	50	11	63	D752315.0X2.5X160	
350	2.5	32	140	8	120	8	45	9	50	11	63		D753350.0X2.5
350	2.5	32	180	6	120	8	45	9	50	11	63	D752350.0X2.5X180	

- D750** • Fém körfűrész
• Freze disc
- D751** • Metal testeresi normal diş
• Metal slitting saw Coarse

D750; D751	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	6.1	6.2	6.3	7.1	7.2	7.3	8.1	
	•	2.1	2.2													

D750	HSS			Z 128-220		$\gamma 18^\circ$					
D751	HSS			Z 160-350		$\gamma 18^\circ$					

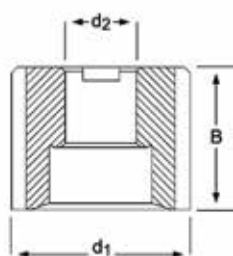


d ₁ Ø mm	B mm	d ₂ Ø mm	z	P mm	d ₃ Ø mm	d ₄ Ø mm	i ₄ mm	d ₅ Ø mm	i ₅ mm	d ₆ Ø mm	i ₆ mm	D750	D751
200	1.8	32	130	5	100	8	45	9	50	11	63	D750200.0X1.8	
200	1.8	32	160	4	100	8	45	9	50	11	63		D751200.0X1.8X160
200	1.8	32	200	3	100	8	45	9	50	11	63		D751200.0X1.8X200
225	2.0	32	140	5	100	8	45	9	50	11	63	D750225.0X2.0	
225	2.0	32	180	4	100	8	45	9	50	11	63		D751225.0X2.0X180
225	2.0	32	220	3	100	8	45	9	50	11	63		D751225.0X2.0X220
250	2.0	32	160	5	100	8	45	9	50	11	63	D750250.0X2.0	
250	2.0	32	200	4	100	8	45	9	50	11	63		D751250.0X2.0X200
250	2.0	32	250	3	100	8	45	9	50	11	63		D751250.0X2.0X250
275	2.5	32	180	5	100	8	45	9	50	11	63	D750275.0X2.5	
275	2.5	32	220	4	100	8	45	9	50	11	63		D751275.0X2.5X220
275	2.5	32	280	3	100	8	45	9	50	11	63		D751275.0X2.5X280
300	2.5	32	180	5	100	8	45	9	50	11	63	D750300.0X2.5	
300	2.5	32	220	4	100	8	45	9	50	11	63		D751300.0X2.5X220
300	2.5	32	300	3	100	8	45	9	50	11	63		D751300.0X2.5X300
315	2.5	32	200	5	100	8	45	9	50	11	63	D750315.0X2.5	
315	2.5	32	240	4	100	8	45	9	50	11	63		D751315.0X2.5X240
315	2.5	32	320	3	100	8	45	9	50	11	63		D751315.0X2.5X320
350	2.5	32	220	5	120	8	45	9	59	11	63	D750350.0X2.5	
350	2.5	32	280	4	120	8	45	9	50	11	63		D751350.0X2.5X280
350	2.5	32	350	3	120	8	45	9	50	11	63		D751350.0X2.5X350

- D400**
- Feltűzhető maró
 - Freze cilindrice cu alezaj
- D420**
- Göbekten bağlamalı freze
 - Shell End Mill

D400	▪	1.1	1.2	1.3	1.4	2.1	2.3	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.2	7.3			
	•	1.5	1.6	2.2	4.2	4.3	5.2	5.3	6.4	7.1	7.4	8.1	8.2	8.3	10.1						
D420	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1
		6.2	6.3	6.4	7.2	7.3	7.4	8.1	10.1												
	•	7.1	8.2	8.3																	

D400	HSS-E		N	Z 8-12		$\lambda 30^\circ$ $\gamma 12^\circ$			js16		DIN 1880
D420	HSS-E		N	Z 8-12		$\lambda 30^\circ$ $\gamma 12^\circ$		TiCN	js16		DIN 1880

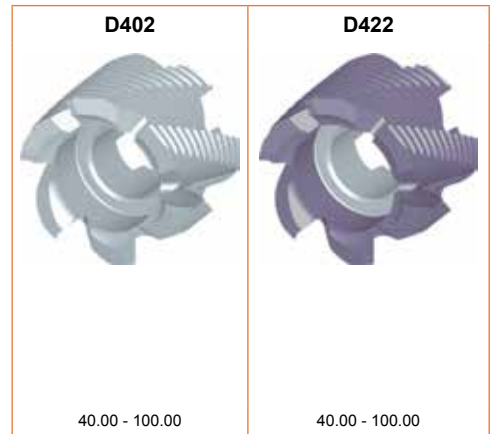
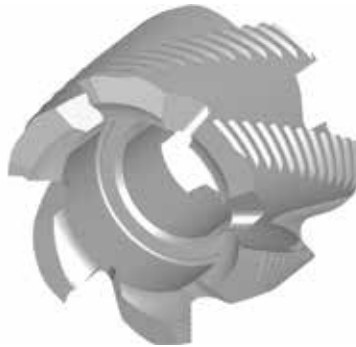
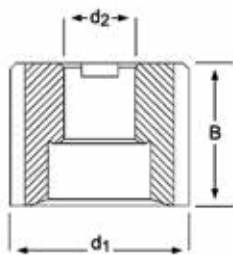


d_1 Ø mm	B mm	d_2 Ø mm	z	D400	D420
40.00	32	16	8	D40040.0	D42040.0
50.00	36	22	8	D40050.0	D42050.0
63.00	40	27	8	D40063.0	D42063.0
80.00	45	27	10	D40080.0	D42080.0
100.00	50	32	12	D400100.0	D420100.0

- D402**
- Feltűzhető maró
 - Freze cilindrice cu alezaj -frontale pentru degrosare
- D422**
- Kaba göbekten bağlamalı freze
 - Roughing Shell End Mill

D402	▪	1.1	1.2	1.3	1.4	2.1	2.3	3.1	3.2	3.3	3.4	4.1	5.1	6.1	6.2	6.3	7.2	7.3			
	•	1.5	1.6	2.2	4.2	4.3	5.2	5.3	6.4	7.1	7.4	8.1	8.2	8.3	10.1						
D422	▪	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	5.2	5.3	6.1
		6.2	6.3	6.4	7.2	7.3	7.4	8.1	10.1												
	•	7.1	8.2	8.3																	

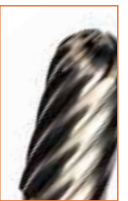
D402	HSS-E		NR	Z 6-10		$\lambda 30^\circ$ $\gamma 12^\circ$		js16		DIN 1880
D422	HSS-E		NR	Z 6-10		$\lambda 30^\circ$ $\gamma 12^\circ$	TiCN	js16		DIN 1880



d_1 Ø mm	B mm	d_2 Ø mm	z	D402	D422
40.00	32	16	6	D40240.0	D42240.0
50.00	36	22	6	D40250.0	D42250.0
63.00	40	27	8	D40263.0	D42263.0
80.00	45	27	8	D40280.0	D42280.0
100.00	50	32	10	D402100.0	D422100.0

P601	502	P721	520	P817	517
P605	506	P801	501	P819	518
P607	508	P801C	501	P821	519
P609	510	P803	503	P821C	519
P611	512	P803C	503	P823	521
P613	514	P805	505	P825	522
P615	516	P805C	505	P831	502
P621	520	P807	507	P833	504
P701	502	P807C	507	P835	506
P703	504	P809	509	P837	508
P705	506	P811	511	P841	512
P707	508	P811C	511	P842	520
P709	510	P813	513	P843	523
P711	512	P813C	513	P844	524
P713	514	P815	515	P880	525
P715	516	P815C	515	P890	526

495 - 526



Anyag	Material	Malzeme	Material
Alkalmazás	Aplicatie	Uygulama	Application
Lezáró forgácsolás	tais final	Uç kesim	End cut
Bevonat	Acoperire	Kaplama	Coating
Csúcscsőg	Unghiul la varf	Uç Açısı	Point Angle
Típus	Tip gaura	Tip	Type
Szabvány	Standard	Standart	Standard
<p>■ Kiváló alkalmazás</p> <p>■ Jó alkalmazás</p> <p>Példa 10 = Kerületi sebesség méter / perc +/- 10%</p>	<p>Excelent pentru aplicație</p> <p>Bun pentru aplicație</p> <p>Exemplu 10 = viteza de aşchiere în metrii pe minut +/- 10%</p>	<p>En Uygun Çözüm</p> <p>Uygun Çözüm</p> <p>Örnek 10 = Kesme hızı metre/dakika +/- %10</p>	<p>Excellent for Application</p> <p>Good for Application</p> <p>Example 10 = Peripheral speed in metres/minute +/- 10%</p>
Kódok	Coduri	Kodlar	Product Codes
Választék	Gama	Ürün aralığı	Range

AMG	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvöztöt acél	Otel aliat	Alaşimli çelik	Alloy steel
1.5	Ötvöztöt, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşimli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvöztöt, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşimli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvöztöt, edzett acél	Otel aliat, calit	Alaşimli çelik, ısıtılmış	Alloy steel, Heat treated
1.8	Ötvöztöt, edzett és kopásálló acél	Otel aliat, calit	Alaşimli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Ausztenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Ausztenites	Feritic+austenitic	Ferritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımsız	Titanium, unalloyed
4.2	Titánium, ötvöztöt	Aliat	Titanyum, alaşımlı	Titanium, alloyed
4.3	Titánium, ötvöztöt	Aliat	Titanyum, alaşımlı	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımsız	Nickel, unalloyed
5.2	Nikkel, ötvözett	Aliat	Nikel, alaşımlı	Nickel, alloyed
5.3	Nikkel, ötvözett	Aliat	Nikel, alaşımlı	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımsız	Al, Mg, unalloyed
7.2	Al ötvöztöt, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımlı, Si < %0.5	Al alloyed, Si < 0.5%
7.3	Al ötvöztöt, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımlı, Si > %0.5 < %10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvöztöt, Si > 10%	Al aliat cu Si >10%	Al alaşımlı, Si > %10 sertleştirilmiş. Al alaşımları, Mg alaşımları	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzemeler	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM		
	A	A	A	A	A	B	B	B	B	C	C	C	C	C	D		
	DC	DC	ST	VA	AL	DC	DC	ST	AL	DC	DC	ST	VA	AL	DC		
	P801	P801C	P701	P601	P831	P803	P803C	P703	P833	P805	P805C	P705	P605	P835	P807	P807C	
	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 12.70	
AMG	501	501	502	502	502	503	503	504	504	505	505	506	506	506	507	507	ISO
1.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	P 1
1.2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	P 1
1.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	P 2
1.4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	P 3
1.5	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	P 4
1.6	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	H 1
1.7	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	H 3
1.8	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	H 4
2.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	M 1
2.2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	M 3
2.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	M 2
2.4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	S 2
3.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	K 1
3.2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	K 2
3.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	K 3
3.4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	K 4
4.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	S 1
4.2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	S 2
4.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	S 3
5.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	S 1
5.2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	S 2
5.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	S 3
6.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	N 3
6.2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	N 4
6.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	N 3
6.4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	N 4
7.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	N 1
7.2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	N 1
7.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	N 1
7.4	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	N 2
8.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	O
8.2	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	O
8.3	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	O
9.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	H
10.1	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	O

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	
	D	D	D	E	E	E	F	F	F	F	F	G	G	G	G	H	
	ST	VA	AL	DC	ST	VA	DC	DC	ST	VA	AL	DC	DC	ST	VA	DC	
	P707	P607	P837	P809	P709	P609	P811	P811C	P711	P611	P841	P813	P813C	P713	P613	P815	
	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70	3.00 - 16.00	12.70	8.00 - 12.70	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 12.70	6.00 - 12.70	6.00 - 12.70	3.00 - 16.00	
AMG	508	508	508	509	510	510	511	511	512	512	512	513	513	514	514	515	ISO
1.1	■			■	■		■	■	■			■	■	■		■	P 1
1.2	■			■	■		■	■	■			■	■	■		■	P 1
1.3	■			■	■		■	■	■			■	■	■		■	P 2
1.4	■			■	■		■	■	■			■	■	■		■	P 3
1.5	■			■	■		■	■	■			■	■	■		■	P 4
1.6	■			■	■		■	■	■			■	■	■		■	H 1
1.7				■	■		■	■	■			■	■	■		■	H 3
1.8				■	■		■	■	■			■	■	■		■	H 4
2.1		■	●	■		■	■	■		■	●	■	■		■	■	M 1
2.2		■		■		■	■	■		■		■	■		■	■	M 3
2.3		■		■		■	■	■		■		■	■		■	■	M 2
2.4		■		■		■	■	■		■		■	■		■	■	S 2
3.1				■		■	■	■		■		■	■		■	■	K 1
3.2				■		■	■	■		■		■	■		■	■	K 2
3.3				■		■	■	■		■		■	■		■	■	K 3
3.4				■		■	■	■		■		■	■		■	■	K 4
4.1			●	■		■	■	■		■	●	■	■		■	■	S 1
4.2				■		■	■	■		■		■	■		■	■	S 2
4.3				■		■	■	■		■		■	■		■	■	S 3
5.1			●	■		■	■	■		■	●	■	■		■	■	S 1
5.2				■		■	■	■		■		■	■		■	■	S 2
5.3				■		■	■	■		■		■	■		■	■	S 3
6.1				■		■	●	●		■		■	●	●	■	●	N 3
6.2			●	■		■	■	■		■	●	■	■		■	■	N 4
6.3				■		■	■	■		■		■	■		■	■	N 3
6.4				■		■	■	■		■		■	■		■	■	N 4
7.1		■										■					N 1
7.2		■										■					N 1
7.3		■										■					N 1
7.4		■										■					N 2
8.1		■										■					O
8.2		■										■					O
8.3		■										■					O
9.1			■				■	■				■	■			■	H
10.1																	O

	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM	HM		
	H	H	H	J	K	L	L	L	L	L	M	N				
				60°	90°								135°	180°		
	DC	ST	VA	DC	DC	DC	DC	ST	VA	AL	DC	DC	GRP	GRP		
	P815C	P715	P615	P817	P819	P821	P821C	P721	P621	P842	P823	P825	P843	P844		
	8.00 - 12.70	8.00 - 12.70	8.00 - 12.70	3.00 - 16.00	3.00 - 16.00	3.00 - 16.00	3.00 - 12.70	10.00 - 12.70	8.00 - 12.70	6.00 - 12.70	3.00 - 16.00	3.00 - 16.00	3.00 - 8.00	3.00 - 8.00		
AMG		515	516	516	517	518	519	519	520	520	520	521	522	523	524	ISO
1.1	■				■	■	■	■	■			■	■			P 1
1.2	■				■	■	■	■	■			■	■			P 1
1.3	■				■	■	■	■	■			■	■			P 2
1.4	■				■	■	■	■	■			■	■			P 3
1.5	■				■	■	■	■	■			■	■			P 4
1.6	■	■			■	■	■	■	■			■	■			H 1
1.7	■				■	■	■	■	■			■	■			H 3
1.8	■				■	■	■	■	■			■	■			H 4
2.1	■		■	■	■	■	■	■	■	■	■	■	■			M 1
2.2	■		■	■	■	■	■	■	■	■	■	■	■			M 3
2.3	■		■	■	■	■	■	■	■	■	■	■	■			M 2
2.4	■		■	■	■	■	■	■	■	■	■	■	■			S 2
3.1	■				■	■	■	■	■			■	■			K 1
3.2	■				■	■	■	■	■			■	■			K 2
3.3	■				■	■	■	■	■			■	■			K 3
3.4	■				■	■	■	■	■			■	■			K 4
4.1	■				■	■	■	■	■	■	■	■	■			S 1
4.2	■				■	■	■	■	■	■	■	■	■			S 2
4.3	■				■	■	■	■	■	■	■	■	■			S 3
5.1	■				■	■	■	■	■	■	■	■	■			S 1
5.2	■				■	■	■	■	■	■	■	■	■			S 2
5.3	■				■	■	■	■	■	■	■	■	■			S 3
6.1	■			■	■	■	■	■	■	■	■	■	■			N 3
6.2	■			■	■	■	■	■	■	■	■	■	■			N 4
6.3	■			■	■	■	■	■	■	■	■	■	■			N 3
6.4	■			■	■	■	■	■	■	■	■	■	■			N 4
7.1										■						N 1
7.2										■						N 1
7.3										■						N 1
7.4										■						N 2
8.1										■			■	■		O
8.2										■			■	■		O
8.3										■			■	■		O
9.1	■			■	■	■	■	■			■	■				H
10.1																O



P880
Set



P890
Set

AMG	525	526	ISO
1.1			P 1
1.2			P 1
1.3			P 2
1.4			P 3
1.5			P 4
1.6			H 1
1.7			H 3
1.8			H 4
2.1			M 1
2.2			M 3
2.3			M 2
2.4			S 2
3.1			K 1
3.2			K 2
3.3			K 3
3.4			K 4
4.1			S 1
4.2			S 2
4.3			S 3
5.1			S 1
5.2			S 2
5.3			S 3
6.1			N 3
6.2			N 4
6.3			N 3
6.4			N 4
7.1			N 1
7.2			N 1
7.3			N 1
7.4			N 2
8.1			O
8.2			O
8.3			O
9.1			H
10.1			O

AL

DC

RPM / min

AMG	ISO	d ₁ Ø mm							
		3	6	8	10	12	16	20	
1.1 - 1.5	P	64 000	32 000	24 000	20 000	16 000	12 000	10 000	min
		83 000	42 000	32 000	25 000	21 000	16 000	13 000	max
1.6 - 1.8	H	51 000	26 000	20 000	16 000	13 000	10 000	8 000	min
		71 000	36 000	27 000	22 000	18 000	14 000	11 000	max
2	M	45 000	23 000	17 000	14 000	12 000	9 000	7 000	min
		64 000	32 000	24 000	20 000	16 000	12 000	10 000	max
3	K	58 000	29 000	22 000	19 000	15 000	11 000	9 000	min
		77 000	39 000	29 000	23 000	20 000	15 000	12 000	max
4	S 1	45 000	23 000	17 000	14 000	12 000	9 000	7 000	min
		58 000	29 000	22 000	18 000	15 000	11 000	9 000	max
5	S 1	45 000	23 000	17 000	14 000	12 000	9 000	7 000	min
		58 000	29 000	22 000	18 000	15 000	11 000	9 000	max
6	N	64 000	32 000	24 000	20 000	16 000	12 000	10 000	min
		71 000	36 000	27 000	22 000	18 000	14 000	11 000	max
7	N	71 000	36 000	27 000	22 000	18 000	14 000	11 000	min
		96 000	48 000	36 000	29 000	24 000	18 000	15 000	max
8	O	77 000	39 000	29 000	23 000	20 000	15 000	12 000	min
		96 000	48 000	36 000	29 000	24 000	18 000	15 000	max

ST

AMG	ISO		d ₁ Ø mm			
			3	6	10	12
1	P	Max	100 000	65 000	55 000	35 000
		Low	60 000	45 000	30 000	20 000
		High	80 000	60 000	40 000	30 000

VA

AMG	ISO		d ₁ Ø mm			
			3	6	10	12
2	M	Max	100 000	65 000	55 000	35 000
		Low	60 000	30 000	20 000	15 000
		High	80 000	45 000	30 000	22 000

GRP

AMG	ISO		d ₁ Ø mm					
			2	3	4	6	10	12
8	O	Low	40 000	25 000	20 000	20 000	15 000	10 000
		High	45 000	30 000	25 000	25 000	20 000	22 000

P801

- Turbómaró - homlokél nélküli kivitel
- Freza biax - cilindru fărã tais final
- Çapak alma frezesi - silindirik
- Rotary Burr - Cylinder without endcut

6,00 mm felett forrasztva
Brazate peste 6.00 mm
d1>6mm ise lehimli
Brazed above 6.00 mm

P801C

P801; P801C

▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
	4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
•	6.1																	

P801

HM

A



DC

DORMER

P801C

HM

A



DC

DORMER



P801



3.00 - 16.00

P801C



3.00 - 12.70

d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P801	P801C
3.00	3	14	38	P8013.0X3.0 ¹⁾	P801C3.0X3.0 ¹⁾
6.30	3	12.7	45	P8016.3X3.0	
6.00	6	18	50	P8016.0X6.0 ¹⁾	P801C6.0X6.0 ¹⁾
8.00	6	19	64	P8018.0X6.0	P801C8.0X6.0
9.60	6	19	64	P8019.6X6.0	P801C9.6X6.0
12.70	6	25	70	P80112.7X6.0	P801C12.7X6.0
16.00	6	25	70	P80116.0X6.0	

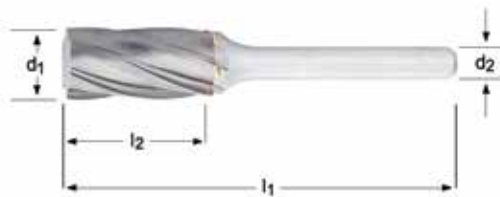
¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P701** • Turbómaró - homlokél nélküli kivitel
P601 • Freza biax - cilindru fărã tais final
P831 • Çapak alma frezesi - silindirik
 • Rotary Burr - Cylinder without endcut

6,00 mm felett forrasztva
 Brazate peste 6.00 mm
 d1>6mm ise lehimli
 Brazed above 6.00 mm

P701	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P601	▪	2.1	2.2	2.3	2.4			
P831	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3
	•	2.1	4.1	5.1	6.2			

P701	HM	A				ST	
P601	HM	A				VA	
P831	HM	A				AL	



	P701	P601	P831			
	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70			
d_1 Ø mm	d_2 Ø _h mm	l_2 mm	l_1 mm	P701	P601	P831
3.00	3	14	38		P6013.0X3.0 ¹⁾	
6.30	3	12.7	45		P6016.3X3.0	
6.00	6	18	50	P7016.0X6.0 ¹⁾	P6016.0X6.0 ¹⁾	P8316.0X6.0 ¹⁾
8.00	6	19	64	P7018.0X6.0	P6018.0X6.0	
9.60	6	19	64	P7019.6X6.0	P6019.6X6.0	P8319.6X6.0
12.70	6	25	70	P70112.7X6.0	P60112.7X6.0	P83112.7X6.0

P803

- Turbómaró - hengeres kialakítás homlokélel
- Freza biax - cilindru cu tais final

6,00 mm felett forrasztva

Brazate peste 6.00 mm

d1>6mm ise lehimli

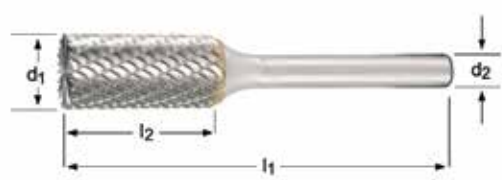
Brazed above 6.00 mm

P803C

- Çapak alma frezesi - silindirik düz kesimli
- Rotary Burr - Cylinder with endcut

P803; P803C	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	
		4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1											
	•	6.1																		

P803	HM	B							
P803C	HM	B							



d_1 Ø mm	d_2 Øh ₇ mm	l_2 mm	l_1 mm	P803	P803C
3.00	3	14	38	P8033.0X3.0 ¹⁾	P803C3.0X3.0 ¹⁾
6.30	3	12.7	45	P8036.3X3.0	
6.00	6	18	50	P8036.0X6.0 ¹⁾	P803C6.0X6.0 ¹⁾
8.00	6	19	64	P8038.0X6.0	P803C8.0X6.0
9.60	6	19	64	P8039.6X6.0	P803C9.6X6.0
12.70	6	25	70	P80312.7X6.0	P803C12.7X6.0
16.00	6	25	70	P80316.0X6.0	

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P703**
- Turbómaró - hengeres kialakítás homlokélel
 - Freza biax - cilindru cu tais final
- P833**
- Çapak alma frezesi düz kesimli - silindirik düz kesimli
 - Rotary Burr - Cylinder with endcut

6,00 mm felett forrasztva
Brazate peste 6.00 mm
d1>6mm ise lehimli
Brazed above 6.00 mm

P703	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P833	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3
	•	2.1	4.1	5.1	6.2			

P703	HM	B					ST		
P833	HM	B					AL		



d_1 Ø mm	d_2 Ø _{h7} mm	l_2 mm	l_1 mm	P703	P833
6.00	6	18	50	P7036.0X6.0 ¹⁾	P8336.0X6.0 ¹⁾
8.00	6	19	64	P7038.0X6.0	
9.60	6	19	64	P7039.6X6.0	P8339.6X6.0
12.70	6	25	70	P70312.7X6.0	P83312.7X6.0

P805

- Turbómaró - gömbvégű, hengeres

6,00 mm felett forrasztva

Brazate peste 6.00 mm

P805C

- Freza biax - cilindru cu cap sferic

- Çapak alma frezesi - küre

- Rotary Burr - Ball Nosed Cylinder

d1>6mm ise lehimli

Brazed above 6.00 mm

P805; P805C	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
	4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
	6.1																	

P805	HM	C				DC			
P805C	HM	C			TiAIN	DC			



d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P805	P805C
3.00	3	14	38	P8053.0X3.0 ¹⁾	P805C3.0X3.0 ¹⁾
6.30	3	12.7	45	P8056.3X3.0	
6.00	6	18	50	P8056.0X6.0 ¹⁾	P805C6.0X6.0 ¹⁾
8.00	6	19	64	P8058.0X6.0	P805C8.0X6.0
9.60	6	19	64	P8059.6X6.0	P805C9.6X6.0
12.70	6	25	70	P80512.7X6.0	P805C12.7X6.0
16.00	6	25	70	P80516.0X6.0	

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P705** • Turbómaró - gömbvégű, hengeres
P605 • Freza biax - cilindru cu cap sferic
P835 • Çapak alma frezesi - küre
 • Rotary Burr - Ball Nosed Cylinder

6,00 mm felett forrasztva
 Brazate peste 6.00 mm
 d1>6mm ise lehimli
 Brazed above 6.00 mm

P705	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P605	▪	2.1	2.2	2.3	2.4			
P835	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3
	•	2.1	4.1	5.1	6.2			

P705	HM	C				ST		
P605	HM	C				VA		
P835	HM	C				AL		



	P705	P605	P835			
	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70			
d ₁ Ø mm	d ₂ Ø _{h₇} mm	l ₂ mm	l ₁ mm	P705	P605	P835
3.00	3	14	38		P6053.0X3.0 ¹⁾	
6.30	3	12.7	45		P6056.3X3.0	
6.00	6	18	50	P7056.0X6.0 ¹⁾	P6056.0X6.0 ¹⁾	P8356.0X6.0 ¹⁾
8.00	6	19	64	P7058.0X6.0	P6058.0X6.0	
9.60	6	19	64	P7059.6X6.0	P6059.6X6.0	P8359.6X6.0
12.70	6	25	70	P70512.7X6.0	P60512.7X6.0	P83512.7X6.0

P807

- Turbómaró - gömb
- Freza biax - cap sferic

6,00 mm felett forrasztva

Brazate peste 6.00 mm

P807C

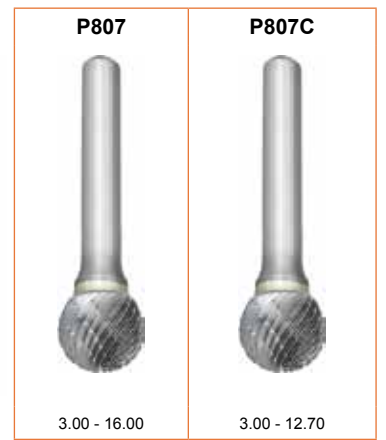
- Çapak alma frezesi - top
- Rotary Burr - Ball

d1>6mm ise lehimli

Brazed above 6.00 mm

P807; P807C	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
	4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
	6.1																	

P807	HM	D				DC		
P807C	HM	D			TAIN	DC		



d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P807	P807C
3.00	3	2.5	38	P8073.0X3.0 ¹⁾	P807C3.0X3.0 ¹⁾
4.00	3	3.4	38	P8074.0X3.0 ¹⁾	
6.30	3	5	38	P8076.3X3.0	
6.00	6	4.7	50	P8076.0X6.0 ¹⁾	P807C6.0X6.0 ¹⁾
8.00	6	6	52	P8078.0X6.0	P807C8.0X6.0
9.60	6	8	54	P8079.6X6.0	P807C9.6X6.0
12.70	6	11	56	P80712.7X6.0	P807C12.7X6.0
16.00	6	14	59	P80716.0X6.0	

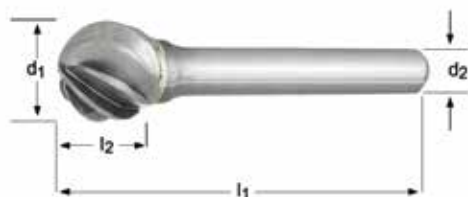
¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P707** • Turbómaró - gömb
P607 • Freza biax - cap sferic
P837 • Çapak alma frezesi - top
 • Rotary Burr - Ball

6,00 mm felett forrasztva
 Brazate peste 6.00 mm
 d1>6mm ise lehimli
 Brazed above 6.00 mm

P707	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P607	▪	2.1	2.2	2.3	2.4			
P837	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3
	•	2.1	4.1	5.1	6.2			

P707	HM	D				ST		
P607	HM	D				VA		
P837	HM	D				AL		



	P707	P607	P837			
	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70			
d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P707	P607	P837
3.00	3	2.5	38		P6073.0X3.0 ¹⁾	
6.30	3	5	38		P6076.3X3.0	
6.00	6	4.7	50	P7076.0X6.0 ¹⁾	P6076.0X6.0 ¹⁾	P8376.0X6.0 ¹⁾
8.00	6	6	52	P7078.0X6.0	P6078.0X6.0	
9.60	6	8	54	P7079.6X6.0	P6079.6X6.0	P8379.6X6.0
12.70	6	11	56	P70712.7X6.0	P60712.7X6.0	P83712.7X6.0

P809

- Turbómaró – ovális
- Freza biax - cap oval
- Çapak alma frezesi - oval
- Rotary Burr - Oval

6,00 mm felett forrasztva
 Brazate peste 6.00 mm
 d1>6mm ise lehimli
 Brazed above 6.00 mm

P809	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	
		5.2	5.3	6.2	6.3	6.4	9.1															
	•	6.1																				

P809 **HM** **E** **DC**



d_1 Ø mm	d_2 Ø _{h7} mm	l_2 mm	l_1 mm	P809
3.00	3	6	38	P8093.0X3.0 ¹⁾
6.30	3	9.5	42	P8096.3X3.0
6.00	6	10	50	P8096.0X6.0 ¹⁾
8.00	6	15	60	P8098.0X6.0
9.60	6	16	60	P8099.6X6.0
12.70	6	22	67	P80912.7X6.0
16.00	6	25	70	P80916.0X6.0

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P709**
- Turbómaró – ovális
 - Freza biax - cap oval
- P609**
- Çapak alma frezesi - oval
 - Rotary Burr - Oval

Forrasztva
Brazate
Kaynaklı
Brazed

P709 ■ 1.1 1.2 1.3 1.4 1.5 1.6

P609 ■ 2.1 2.2 2.3 2.4

P709 **HM** **E**     **ST** 

P609 **HM** **E**     **VA** 



d_1 Ø mm	d_2 Ø _{h7} mm	l_2 mm	l_1 mm	P709	P609
8.00	6	15	60		P6098.0X6.0
9.60	6	16	60		P6099.6X6.0
12.70	6	22	67	P70912.7X6.0	P60912.7X6.0

P811

- Turbómaró - Ívelt gömbvégű
- Freza biax - cap sferic forma copac

6,00 mm felett forrasztva

Brazate peste 6.00 mm

P811C

- Çapak alma frezesi - Küre yaprak
- Rotary Burr - Ball Nosed Tree

d1>6mm ise lehimli

Brazed above 6.00 mm

P811; P811C	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
	4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
	6.1																	

P811	HM	F					DC		
P811C	HM	F					DC		



d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P811	P811C
3.00	3	14	38	P8113.0X3.0 ¹⁾	P811C3.0X3.0 ¹⁾
6.30	3	12.7	45	P8116.3X3.0	
6.00	6	18	50	P8116.0X6.0 ¹⁾	P811C6.0X6.0 ¹⁾
8.00	6	20	65	P8118.0X6.0	
9.60	6	19	64	P8119.6X6.0	P811C9.6X6.0
12.70	6	25	70	P81112.7X6.0	P811C12.7X6.0
16.00	6	25	70	P81116.0X6.0	

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P711** • Turbómaró - Ívelt gömbvégű
P611 • Freza biax - cap sferic forma copac
P841 • Çapak alma frezesi - Küre yaprak
 • Rotary Burr - Ball Nosed Tree

6,00 mm felett forrasztva
 Brazate peste 6.00 mm
 d1>6mm ise lehimli
 Brazed above 6.00 mm

P711	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P611	▪	2.1	2.2	2.3	2.4			
P841	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3
	•	2.1	4.1	5.1	6.2			

P711	HM	F					ST		
P611	HM	F					VA		
P841	HM	F					AL		



	P711	P611	P841			
	6.00 - 12.70	3.00 - 12.70	6.00 - 12.70			
d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P711	P611	P841
3.00	3	14	38		P6113.0X3.0 ¹⁾	
6.30	3	12.7	45		P6116.3X3.0	
6.00	6	18	50	P7116.0X6.0 ¹⁾	P6116.0X6.0 ¹⁾	P8416.0X6.0 ¹⁾
8.00	6	20	65	P7118.0X6.0	P6118.0X6.0	
9.60	6	19	64	P7119.6X6.0	P6119.6X6.0	P8419.6X6.0
12.70	6	25	70	P71112.7X6.0	P61112.7X6.0	P84112.7X6.0

P813

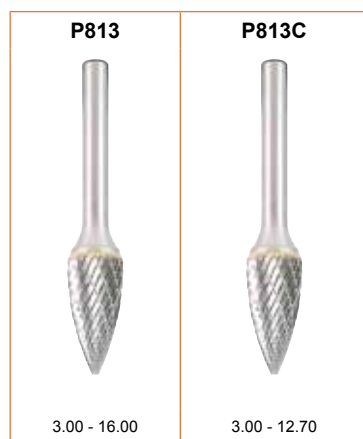
- Turbómaró - ívelt, hegyes
- Freza biax - cap ascutit forma copac
- Çapak alma frezesi - Düz yaprak
- Rotary Burr - Pointed Tree

6,00 mm felett forrasztva
 Brazate peste 6.00 mm
 d1>6mm ise lehimli
 Brazed above 6.00 mm

P813C

P813; P813C	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	
		4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1											
	•	6.1																		

P813	HM	G				DC			
P813C	HM	G			TAIN	DC			



d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P813	P813C
3.00	3	14	38	P8133.0X3.0 ¹⁾	P813C3.0X3.0 ¹⁾
6.30	3	12.7	45	P8136.3X3.0	
6.00	6	18	50	P8136.0X6.0 ¹⁾	P813C6.0X6.0 ¹⁾
8.00	6	19	64	P8138.0X6.0	
9.60	6	19	64	P8139.6X6.0	P813C9.6X6.0
12.70	6	25	70	P81312.7X6.0	P813C12.7X6.0
16.00	6	25	70	P81316.0X6.0	

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P713** • Turbómaró - ívelt, hegyes
• Freza biax - cap ascutit forma copac
- P613** • Çapak alma frezesi - Düz yaprak
• Rotary Burr - Pointed Tree

6,00 mm felett forrasztva
Brazate peste 6.00 mm
d1>6mm ise lehimli
Brazed above 6.00 mm

P713 ■ 1.1 1.2 1.3 1.4 1.5 1.6

P613 ■ 2.1 2.2 2.3 2.4

P713 HM G      ST 

P613 HM G     VA 



d_1 Ø mm	d_2 Ø _{h7} mm	l_2 mm	l_1 mm	P713	P613
6.00	6	18	50	P7136.0X6.0 ¹⁾	P6136.0X6.0 ¹⁾
8.00	6	19	64	P7138.0X6.0	P6138.0X6.0
9.60	6	19	64	P7139.6X6.0	P6139.6X6.0
12.70	6	25	70	P71312.7X6.0	P61312.7X6.0

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

P815

- Turbómaró - láng forma
- Freza biax - forma flacara
- Çapak alma frezesi - Parlak
- Rotary Burr - Flame

6,00 mm felett forrasztva
Brazate peste 6.00 mm
d1>6mm ise lehimli
Brazed above 6.00 mm

P815C

- Turbómaró - láng forma
- Freza biax - forma flacara
- Çapak alma frezesi - Parlak
- Rotary Burr - Flame

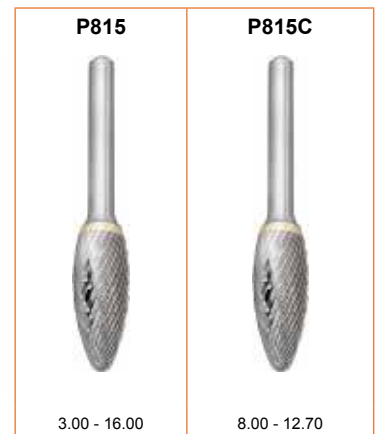
Forrasztva
Brazate
Kaynaklı
Brazed

P815; P815C	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	
		4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1											
	•	6.1																		

P815



P815C



d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P815	P815C
3.00	3	6	38	P8153.0X3.0 ¹⁾	
6.00	6	14	50	P8156.0X6.0 ¹⁾	
8.00	6	19	64	P8158.0X6.0	P815C8.0X6.0
9.60	6	19	65	P8159.6X6.0	
12.70	6	32	77	P81512.7X6.0	P815C12.7X6.0
16.00	6	36	81	P81516.0X6.0	

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

P715 • Turbómaró - láng forma
• Freza biax - forma flacara

P615 • Çapak alma frezesi - Parlak
• Rotary Burr - Flame

Forrasztva
Brazate
Kaynaklı
Brazed

P715 ■ 1.1 1.2 1.3 1.4 1.5 1.6

P615 ■ 2.1 2.2 2.3 2.4



	P715	P615			
					
	8.00 - 12.70	8.00 - 12.70			
P715	P615				
8.00	6	19	64	P7158.0X6.0	P6158.0X6.0
9.60	6	19	65	P7159.6X6.0	P6159.6X6.0
12.70	6	32	77	P71512.7X6.0	P61512.7X6.0

d_1 Ø mm	d_2 Øh ₇ mm	l_2 mm	l_1 mm		
8.00	6	19	64	P7158.0X6.0	P6158.0X6.0
9.60	6	19	65	P7159.6X6.0	P6159.6X6.0
12.70	6	32	77	P71512.7X6.0	P61512.7X6.0

P817

- Turbómaró – 60°-os süllyesztómaró
- Freza biax - zencuire 60°
- Çapak alma frezesi - 60° Havşa
- Rotary Burr - 60° Countersink

6,00 mm felett forrasztva
 Brazate peste 6.00 mm
 d1>6mm ise lehimli
 Brazed above 6.00 mm

P817	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1
	5.2	5.3	6.2	6.3	6.4	9.1														
	6.1																			

P817 **HM** **J** **60°** **DC**



d_1 Ø mm	d_2 Øh _r mm	l_2 mm	l_1 mm	P817
3.00	3	2.5	38	P8173.0X3.0 ¹⁾
6.00	6	4	50	P8176.0X6.0 ¹⁾
9.60	6	8	56	P8179.6X6.0
12.70	6	11	59	P81712.7X6.0
16.00	6	14.5	63	P81716.0X6.0

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

P819

- Turbómaró – 90°-os süllyesztómaró
- Freza biax - zencuire 90°
- Çapak alma frezesi - 90° Havşa
- Rotary Burr - 90° Countersink

6,00 mm felett forrasztva
Brazate peste 6.00 mm
d1>6mm ise lehimli
Brazed above 6.00 mm

P819	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1
		5.2	5.3	6.2	6.3	6.4	9.1														
	•	6.1																			

P819

HM

K



DC



P819



3.00 - 16.00

d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	P819
3.00	3	1.5	38	P8193.0X3.0 ¹⁾
6.00	6	3	50	P8196.0X6.0 ¹⁾
9.60	6	4.7	53	P8199.6X6.0
12.70	6	6.3	55	P81912.7X6.0
16.00	6	8	57	P81916.0X6.0

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

P821

- Turbómaró – gömbvégű kúp
- Freza biax - con cu raza varf
- Çapak alma frezesi - Konik küre
- Rotary Burr - Ball Nosed Cone

6,00 mm felett forrasztva
Brazate peste 6.00 mm
d1>6mm ise lehimli
Brazed above 6.00 mm

P821C

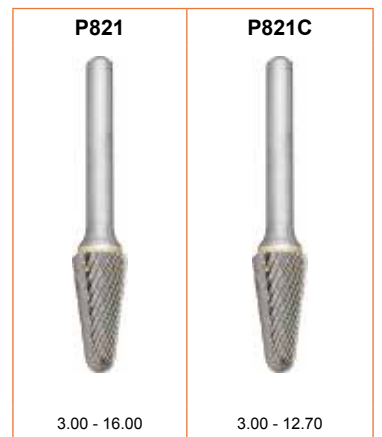
P821; P821C

▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
	4.3	5.1	5.2	5.3	6.2	6.3	6.4	9.1										
•	6.1																	

P821



P821C



d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	α	P821	P821C
3.00	3	14	38	8°	P8213.0X3.0 ¹⁾	P821C3.0X3.0 ¹⁾
6.00	6	18	50	14°	P8216.0X6.0 ¹⁾	
8.00	6	25.4	70	14°	P8218.0X6.0	
9.60	6	30	76	14°	P8219.6X6.0	
12.70	6	32	77	14°	P82112.7X6.0	P821C12.7X6.0
16.00	6	33	78	14°	P82116.0X6.0	

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P721**
- Turbómaró – gömbvégű kúp
 - Freza biax - con cu raza varf
- P621**
- Çapak alma frezesi - Konik küre
 - Rotary Burr - Ball Nosed Cone

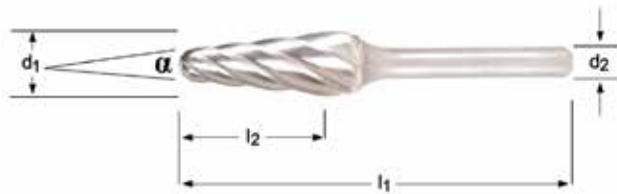
Forrasztva
Brazate
Kaynaklı
Brazed

- P842**
- Turbómaró – gömbvégű kúp
 - Freza biax - con cu raza varf
 - Çapak alma frezesi - Konik küre
 - Rotary Burr - Ball Nosed Cone

6,00 mm felett forrasztva
Brazate peste 6.00 mm
d1>6mm ise lehimli
Brazed above 6.00 mm

P721	▪	1.1	1.2	1.3	1.4	1.5	1.6	
P621	▪	2.1	2.2	2.3	2.4			
P842	▪	7.1	7.2	7.3	7.4	8.1	8.2	8.3
	•	2.1	4.1	5.1	6.2			

P721	HM	L				ST		
P621	HM	L				VA		
P842	HM	L				AL		



d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	α	P721	P621	P842
6.00	6	18	50	14°			P8426.0X6.0 ¹⁾
8.00	6	25.4	70	14°		P6218.0X6.0	
10.00	6	20	65	14°	P72110.0X6.0	P62110.0X6.0	
9.60	6	30	76	14°	P7219.6X6.0		P8429.6X6.0
12.70	6	32	77	14°	P72112.7X6.0	P62112.7X6.0	P84212.7X6.0

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6
520

P823

- Turbómaró – kúp
- Freza biax - conica
- Çapak alma frezesi - Konik küre
- Rotary Burr - Cone

6,00 mm felett forrasztva
 Brazate peste 6.00 mm
 d1>6mm ise lehimli
 Brazed above 6.00 mm

P823	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	
		5.2	5.3	6.2	6.3	6.4	9.1															
	•	6.1																				

P823

HM

M

DC



d_1 \varnothing mm	d_2 \varnothing_{h_7} mm	l_2 mm	l_1 mm	α	P823
3.00	3	11	38	14°	P8233.0X3.0 ¹⁾
6.30	3	12.7	49	22°	P8236.3X3.0
6.00	6	20	50	14°	P8236.0X6.0 ¹⁾
9.60	6	16	64	28°	P8239.6X6.0
12.70	6	22	71	28°	P82312.7X6.0
16.00	6	25	71	31°	P82316.0X6.0

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

P825

- Turbómaró – fordított kúp
- Freza biax - con inversat
- Çapak alma frezesi - ters konik
- Rotary Burr - Inverted Cone

6,00 mm felett forrasztva
Brazate peste 6.00 mm
d1>6mm ise lehimli
Brazed above 6.00 mm

P825	▪	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2	4.3	5.1	
		5.2	5.3	6.2	6.3	6.4	9.1															
	•	6.1																				

P825

HM

N



DC



P825



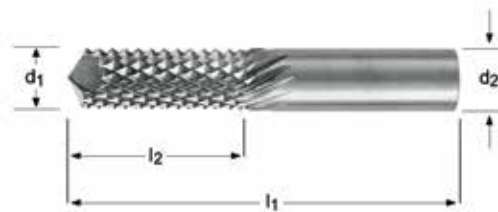
3.00 - 16.00

d ₁ Ø mm	d ₂ Øh ₇ mm	l ₂ mm	l ₁ mm	▷	P825
3.00	3	4	38	10°	P8253.0X3.0 ¹⁾
6.30	3	6	39	12°	P8256.3X3.0
6.00	6	8	50	10°	P8256.0X6.0 ¹⁾
9.60	6	9.5	55	16°	P8259.6X6.0
12.70	6	12.7	58	28°	P82512.7X6.0
16.00	6	19	64	18°	P82516.0X6.0

¹⁾ d2 Tűrés h6 / d2 toleranta h6 / d2 tolerans h6 / d2 tolerance h6

- P843**
- Gyémánt turbómaró – 135°-os kúpszöggel
 - Mașină de frezat cu diamant – vârful de burghiu 135°
 - Elmas kesme router - 135° matkap uçlu
 - Diamond Cut Router - 135° Drill Point

P843 ■ 8.1 8.2 8.3



P843



3.00 - 8.00

d_1 Ø mm	d_2 Ø _{h₆} mm	l_2 mm	l_1 mm	P843
3.00	3	13	45	P8433.0X3.0
6.00	6	19	63	P8436.0X6.0
8.00	8	25	63	P8438.0X8.0

P844

- Gyémánt turbómaró – Hengeres, maró kialakítás
- Mașină de frezat cu diamant – așchiere cu freză cilindro-frontală
- Elmas kesme router - freze uçlu
- Diamond Cut Router - End Mill Cut

P844 ■ 8.1 8.2 8.3

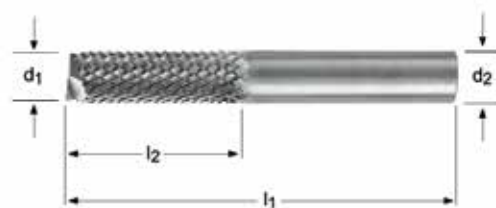
P844

HM



180°

GRP



P844



3.00 - 8.00

d_1 Ø mm	d_2 Ø _{h6} mm	l_2 mm	l_1 mm	P844
3.00	3	13	45	P8443.0X3.0
6.00	6	19	63	P8446.0X6.0
8.00	8	25	63	P8448.0X8.0

P880

- Turbómaró-készlet
- Set Freze Biax
- Çapak alma freze seti
- Rotary Burr Set

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben

A=tipuri în set, B=Nr. în Set, C=Diametre în Set

A= Set modeli, B= Set içerik adedi, C= Set çapları

A=Styles in Set, B=No. in Set, C=Diameters in Set



Nr.	A	B	C	P880
Nr01	P803 + P805 + P807 + P809 + P813	5	P8039.6X6.0, P8059.6X6.0, P8079.6X6.0, P8099.6X6.0, P8139.6X6.0	P88001
Nr02	P803C + P805C + P807C + P811C + P813C	5	P803C9.6X6.0, P805C9.6X6.0, P807C9.6X6.0, P811C9.6X6.0, P813C9.6X6.0	P88002
Nr03	P601 + P605 + P607 + P611 + P621	5	P6019.6X6.0, P6059.6X6.0, P6079.6X6.0, P6119.6X6.0, P62110.0X6.0	P88003
Nr04	P703 + P705 + P707 + P711 + P721	5	P7039.6X6.0, P7059.6X6.0, P7079.6X6.0, P7119.6X6.0, P72110.0X6.0	P88004

P890

- Turbómaró-tároló
- Taiere dublă pentru prelucrari generale
- Çapak alma freze dolabı
- Rotary Burr Dispenser

A=Típusok a készletben, B=Száma a készletben, C=Átmérők a készletben

A=tipuri în set, B=Nr. în Set, C=Diametre în Set

A= Set modeli, B= Set içerik adedi, C= Set çapları

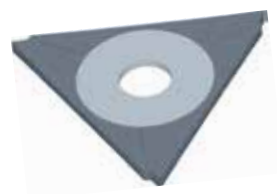
A=Styles in Set, B=No. in Set, C=Diameters in Set



Nr.	A	B	C	P890
Nr01	P803 + P805 + P811 + P813 + P821	40	P803(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2, P805(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2, P811(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2, P813(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2, P821(6.0X6.0, 8.0X6.0, 9.6X6.0, 12.7X6.0) X 2	P89001

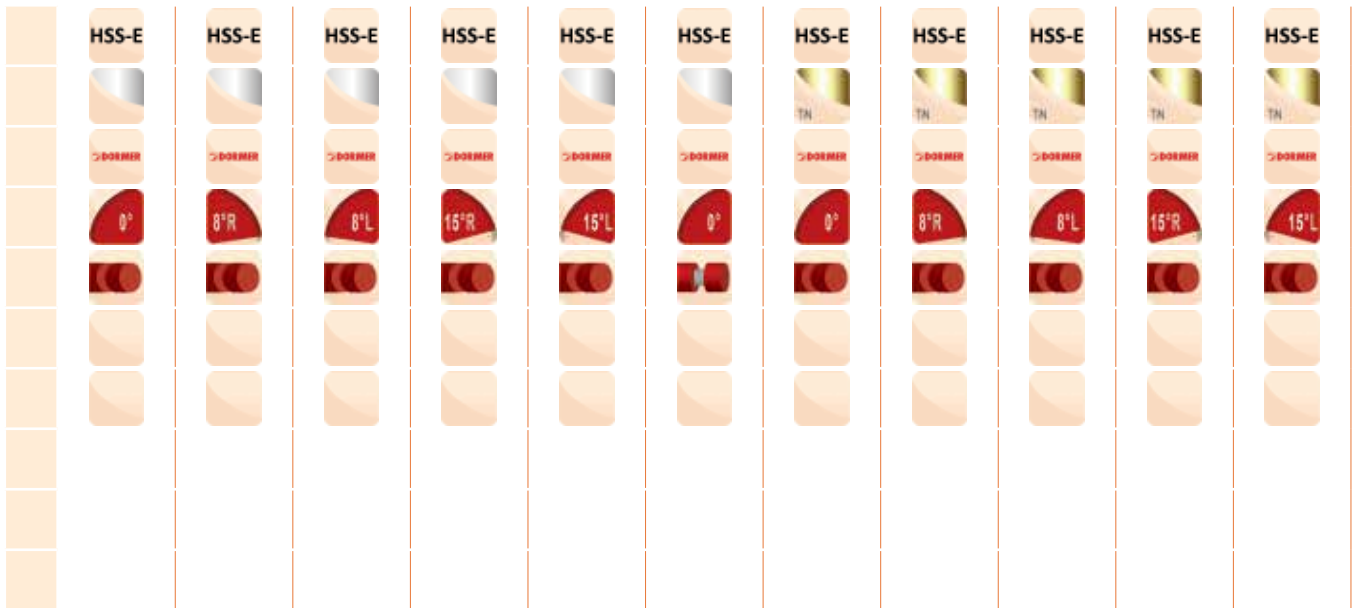
K300	533	K101	536
K301	533	K102	536
K302	533	K103	537
K303	533	K104	537
K304	533	K200	538
K305	533	K201	538
K310	534	K202	538
K311	534	K203	538
K312	534	K204	538
K313	534	K520	539
K314	534	K521	540
K330	535	K522	541
K331	535	M150	542
K332	535	M151	543
K333	535	M152	544
K334	535	M200	545
K100	536		

527 - 546



Anyag	Material	Malzeme	Material
Bevonat	Acoperire	Kaplama	Coating
Szabvány	Standard	Standart	Standard
Darabolás szöge	Unghiul taisului	Kenar açısı	Edge angle
Alkalmazás	Aplicatie	Uygulama	Application
Vágásirány	Directia de taiere	Kesme yönü	Direction of cut
Lapkaméret	Dimensiunea placutei	Kesici kenar uzunluğu	Insert size
■ Kiváló alkalmazás	Excelent pentru aplicație	En Uygun Çözüm	Excellent for Application
■ Jó alkalmazás	Bun pentru aplicație	Uygun Çözüm	Good for Application
Példa 10 = Kerületi sebesség méter / perc +/- 10%	Exemplu 10 = viteza de aşchiere în metrii pe minut +/- 10%	Örnek 10 = Kesme hızı metre/dakika +/- %10	Example 10 = Peripheral speed in metres/minute +/- 10%
Kódok	Coduri	Kodlar	Product Codes
Választék	Gama	Ürün aralığı	Size Range

AMG	Magyar	Romana	Türkçe	English
1.1	Lágy mágneses acél	Otel magnetic moale	Magnetik yumuşak çelik	Magnetic soft steel
1.2	Szerkezeti acél	Otel structural, de cementare	Yapı çeliği, karbürize edilmiş çelik	Structural steel, case carburizing steel
1.3	Szénacél	Otel carbon	Karbon çeliği	Plain Carbon steel
1.4	Ötvöztött acél	Otel aliat	Alaşımli çelik	Alloy steel
1.5	Ötvöztött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.6	Ötvöztött, edzett & hőkezelt acél	Otel aliat, imbunatatit	Alaşımli çelik, sertleştirilmiş ve tavlanmış çelik	Alloy steel, Hardened and tempered steel
1.7	Ötvöztött, edzett acél	Otel aliat, calit	Alaşımli çelik, ısıl işlemli	Alloy steel, Heat treated
1.8	Ötvöztött, edzett és kopásálló acél	Otel aliat, calit	Alaşımli çelik, sertleştirilmiş & sıcak iş çeliği	Alloy steel, Hardened & Wear resistant steel
2.1	Rozsdamentes acél	Prelucrare libera	Kolay işlenebilir, paslanmaz çelik	Free machining, Stainless Steel
2.2	Auszenites	Austenitic	Östenik	Austenitic
2.3	Ferrites + Auszenites	Feritic+austenitic	Ferritik + östenik, Ferritik, Martensitik	Ferritic + Austenitic, Ferritic, Martensitic
2.4	Nemesített	Durificat prin precipitare	Ön tavlanmış	Precipitation Hardened
3.1	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.2	Szürkeöntvény	Grafit lamelar	Lamel grafit	Lamellar graphite
3.3	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
3.4	Gömbgrafitos öntvény	Grafit nodular	Nodular grafit, pik döküm	Nodular graphite, Malleable Cast Iron
4.1	Titánium, ötvözetlen	Nealiat	Titanyum, alaşımsız	Titanium, unalloyed
4.2	Titánium, ötvöztött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
4.3	Titánium, ötvöztött	Aliat	Titanyum, alaşımlı	Titanium, alloyed
5.1	Nikkel, ötvözetlen	Nealiat	Nikel, alaşımsız	Nickel, unalloyed
5.2	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
5.3	Nikkel, ötvözött	Aliat	Nikel, alaşımlı	Nickel, alloyed
6.1	Vörösréz	Nealiat	Bakır	Copper
6.2	β - Sárgaréz , Bronz	Alama, bronz	β-pirinç, bronz	β-Brass, Bronze
6.3	CuZn Sárgaréz	Alama CuZn	α-pirinç	α-Brass
6.4	Nagy szilárdságú bronz	Bronz inalta rezistenta	Yüksek Dayanımlı Pirinç	High Strength Bronze
7.1	Al, Mg, ötvözetlen	Al, Mg nealiat	Al, Mg, alaşımsız	Al, Mg, unalloyed
7.2	Al ötvöztött, Si < 0.5%	Al aliat cu Si <0.5%	Al alaşımlı, Si < %0.5	Al alloyed, Si < 0.5%
7.3	Al ötvöztött, Si > 0.5% < 10%	Al aliat cu Si >0.5% <10%	Al alaşımlı, Si > %0.5 < %10	Al alloyed, Si > 0.5% < 10%
7.4	Al ötvöztött, Si > 10%	Al aliat cu Si >10%	Al alaşımlı, Si > %10 sertleştirilmiş, Al alaşımları, Mg alaşımları	Al alloyed, Si > 10% Whisker reinforced Al-alloys Mg-alloys
8.1	Hőre lágyuló anyagok	Termoplastice	Termoplastikler	Thermoplastics
8.2	Hőre keményedő anyagok	Termoreactive	Termoset plastikleri	Thermosetting plastics
8.3	Erősített műanyag	Plastic armat	Sertleştirilmiş plastik malzemeler	Reinforced plastic materials
9.1	Kemény anyagok (fém kerámia)	Cermet (metal ceramica)	Sermetler (metaller-seramikler)	Cermets (metals-ceramics)
10.1	Standard grafit	Grafit standard	Grafit	Graphite



	K300	K301	K302	K303	K304	K305	K310	K311	K312	K313	K314
	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.10 - 2.15	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00

AMG	533	533	533	533	533	533	534	534	534	534	534	ISO
1.1	■50A	■50A	■50A	■50A	■50A	■50A	■120A	■120A	■120A	■120A	■120A	P 1
1.2	■40B	■40B	■40B	■40B	■40B	■40B	■100B	■100B	■100B	■100B	■100B	P 1
1.3	●30C	●30C	●30C	●30C	●30C	●30C	■60C	■60C	■60C	■60C	■60C	P 2
1.4	●20D	●20D	●20D	●20D	●20D	●20D	●50D	●50D	●50D	●50D	●50D	P 3
1.5							●20E	●20E	●20E	●20E	●20E	P 4
1.6												H 1
1.7												H 3
1.8												H 4
2.1	●15C	●15C	●15C	●15C	●15C	●15C	■20C	■20C	■20C	■20C	■20C	M 1
2.2							■20C	■20C	■20C	■20C	■20C	M 3
2.3							●10B	●10B	●10B	●10B	●10B	M 2
2.4												S 2
3.1												K 1
3.2												K 2
3.3												K 3
3.4												K 4
4.1												S 1
4.2												S 2
4.3												S 3
5.1												S 1
5.2												S 2
5.3												S 3
6.1	●100B	●100B	●100B	●100B	●100B	●100B	■250B	■250B	■250B	■250B	■250B	N 3
6.2	■65C	■65C	■65C	■65C	■65C	■65C	■160C	■160C	■160C	■160C	■160C	N 4
6.3	■100B	■100B	■100B	■100B	■100B	■100B	■250B	■250B	■250B	■250B	■250B	N 3
6.4												N 4
7.1	●150A	●150A	●150A	●150A	●150A	●150A	■370A	■370A	■370A	■370A	■370A	N 1
7.2	●150B	●150B	●150B	●150B	●150B	●150B	■370B	■370B	■370B	■370B	■370B	N 1
7.3							■110C	■110C	■110C	■110C	■110C	N 1
7.4							●45D	●45D	●45D	●45D	●45D	N 2
8.1												O
8.2												O
8.3												O
9.1												H
10.1												O

A	0.20	0.25
B	0.15	0.20
C	0.10	0.15
D	0.05	0.10
E	0.03	0.05

A	0.20	0.25
B	0.15	0.20
C	0.10	0.15
D	0.05	0.10
E	0.03	0.05

	HSS-E	HSS-E	HSS-E	HSS-E	HSS-E						
	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN						
	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER	DORMER
	0°	8°R	8°L	16°R	16°L						
	K330	K331	K332	K333	K334	K100	K101	K102	K103	K104	
	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	10.00 - 20.00	12.00 - 20.00	10.00 - 14.00	16.00 - 32.00	16.00 - 32.00	
AMG	535	535	535	535	535	536	536	536	537	537	ISO
1.1	■120A	■120A	■120A	■120A	■120A						P 1
1.2	■100B	■100B	■100B	■100B	■100B						P 1
1.3	■60C	■60C	■60C	■60C	■60C						P 2
1.4	●50D	●50D	●50D	●50D	●50D						P 3
1.5	●20E	●20E	●20E	●20E	●20E						P 4
1.6											H 1
1.7											H 3
1.8											H 4
2.1	■20C	■20C	■20C	■20C	■20C						M 1
2.2	■20C	■20C	■20C	■20C	■20C						M 3
2.3	●10B	●10B	●10B	●10B	●10B						M 2
2.4											S 2
3.1											K 1
3.2											K 2
3.3											K 3
3.4											K 4
4.1		A	0.20	0.25							S 1
4.2		B	0.15	0.20							S 2
4.3		C	0.10	0.15							S 3
5.1		D	0.05	0.10							S 1
5.2		E	0.03	0.05							S 2
5.3											S 3
6.1	■250B	■250B	■250B	■250B	■250B						N 3
6.2	■160C	■160C	■160C	■160C	■160C						N 4
6.3	■250B	■250B	■250B	■250B	■250B						N 3
6.4											N 4
7.1	■370A	■370A	■370A	■370A	■370A						N 1
7.2	■370B	■370B	■370B	■370B	■370B						N 1
7.3	■110C	■110C	■110C	■110C	■110C						N 1
7.4	●45D	●45D	●45D	●45D	●45D						N 2
8.1											O
8.2											O
8.3											O
9.1											H
10.1											O

						HSS-E	HSS-E	HSS-E	
						h13	h9	h13	
	K200	K201	K202	K203	K204	K520	K521	K522	
	1.50	1.50	1.50	2.50	2.50	4.00 - 5/8"	3.00 - 20	10.00 - 25	
AMG	538	538	538	538	538	539	540	541	ISO
1.1						■80A	■80A	■80A	P 1
1.2						■80A	■80A	■80A	P 1
1.3						■65A	■65A	■65A	P 2
1.4						■55A	■55A	■55A	P 3
1.5						●35A	●35A	●35A	P 4
1.6									H 1
1.7									H 3
1.8									H 4
2.1						●37A	●37A	●37A	M 1
2.2						●30A	●30A	●30A	M 3
2.3									M 2
2.4									S 2
3.1						■60A	■60A	■60A	K 1
3.2						■50A	■50A	■50A	K 2
3.3						■40A	■40A	■40A	K 3
3.4						■25A	■25A	■25A	K 4
4.1									S 1
4.2									S 2
4.3									S 3
5.1									S 1
5.2									S 2
5.3									S 3
6.1						■100A	■100A	■100A	N 3
6.2						■65A	■65A	■65A	N 4
6.3						■100A	■100A	■100A	N 3
6.4						●50A	●50A	●50A	N 4
7.1						●120A	●120A	●120A	N 1
7.2						●150A	●150A	●150A	N 1
7.3									N 1
7.4									N 2
8.1									O
8.2									O
8.3									O
9.1									H
10.1									O

	M150	M151	M152	M200	M200	M200	ISO
	542	543	544	545	545	545	
1.1				■			P 1
1.2				■		●	P 1
1.3						●	P 2
1.4				■		●	P 3
1.5				■		■	P 4
1.6				■		■	H 1
1.7				●		■	H 3
1.8				●		■	H 4
2.1				■		■	M 1
2.2				■		■	M 3
2.3				■		■	M 2
2.4				●		■	S 2
3.1				■		●	K 1
3.2				■		●	K 2
3.3				■		●	K 3
3.4				■		●	K 4
4.1				■		■	S 1
4.2				■		■	S 2
4.3				■		■	S 3
5.1				■		■	S 1
5.2				■		■	S 2
5.3				■		■	S 3
6.1					●		N 3
6.2					●		N 4
6.3					●		N 3
6.4					●		N 4
7.1					■		N 1
7.2					■		N 1
7.3					■		N 1
7.4					■		N 2
8.1							O
8.2							O
8.3							O
9.1							H
10.1							O

K300

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K301

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K302

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K303

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K304

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K305

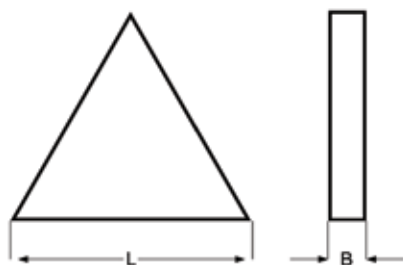
- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K300; K301; K302; K303; K304; K305

- 1.1 1.2 6.2 6.3
- 1.3 1.4 2.1 6.1 7.1 7.2

K300	HSS-E						
K301	HSS-E						
K302	HSS-E						
K303	HSS-E						
K304	HSS-E						
K305	HSS-E						



	K300	K301	K302	K303	K304	K305
	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.50 - 2.50	1.10 - 2.15

L	B	d min-max mm	K300	K301	K302	K303	K304	K305
23	1.10	9 - 17						K30523.0X1.1
23	1.30	18 - 26						K30523.0X1.3
23	1.50		K30023.0X1.5	K30123.0X1.5	K30223.0X1.5	K30323.0X1.5	K30423.0X1.5	
23	1.60	28 - 35						K30523.0X1.6
40	1.85	36 - 48						K30540.0X1.85
40	2.15	50 - 63						K30540.0X2.15
40	2.50		K30040.0X2.5	K30140.0X2.5	K30240.0X2.5	K30340.0X2.5	K30440.0X2.5	

K310

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K311

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K312

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K313

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



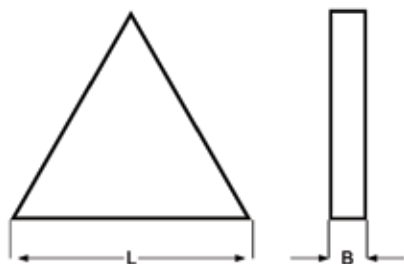
K314

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K310; K311; K312; K313; K314	▪	1.1	1.2	1.3	2.1	2.2	6.1	6.2	6.3	7.1	7.2	7.3
	•	1.4	1.5	2.3	7.4							

K310	HSS-E	TIN	DORMER	0°			
K311	HSS-E	TIN	DORMER	8°R			
K312	HSS-E	TIN	DORMER	8°L			
K313	HSS-E	TIN	DORMER	15°R			
K314	HSS-E	TIN	DORMER	15°L			



K310	K311	K312	K313	K314
23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00

L	B	K310	K311	K312	K313	K314
23	1.50	K31023.0X1.5	K31123.0X1.5	K31223.0X1.5	K31323.0X1.5	K31423.0X1.5
40	2.50	K31040.0X2.5	K31140.0X2.5	K31240.0X2.5	K31340.0X2.5	K31440.0X2.5

K330

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K331

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K332

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



K333

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts

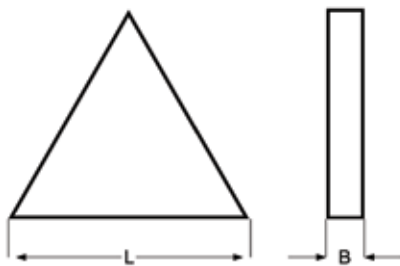


K334

- Leszúró váltólapka
- Placute debitare
- Kesme Uçları
- Parting Off Inserts



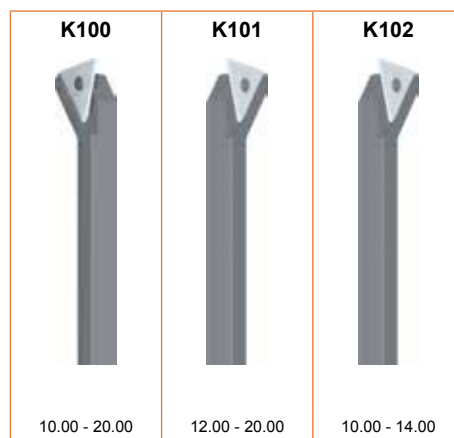
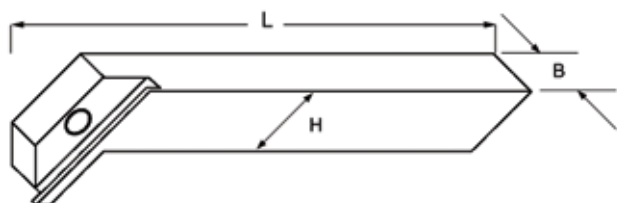
K330; K331; K332; K333; K334	▪	1.1	1.2	1.3	2.1	2.2	6.1	6.2	6.3	7.1	7.2	7.3
	•	1.4	1.5	2.3	7.4							



K330	K331	K332	K333	K334
23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00	23.00 - 40.00

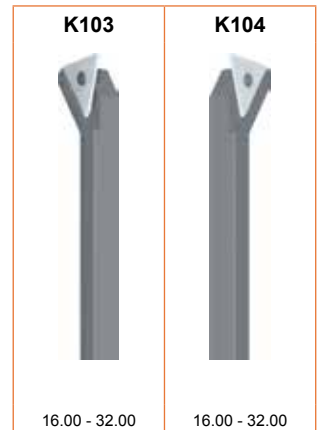
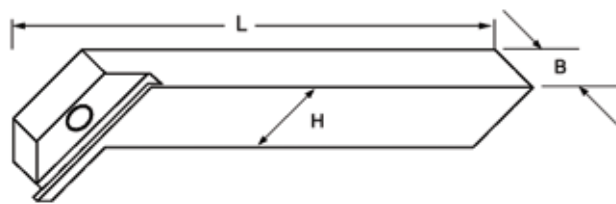
L	B	K330	K331	K332	K333	K334
23	1.50	K33023.0X1.5	K33123.0X1.5	K33223.0X1.5	K33323.0X1.5	K33423.0X1.5
40	2.50	K33040.0X2.5	K33140.0X2.5	K33240.0X2.5	K33340.0X2.5	K33440.0X2.5

- K100** • Leszúrókés
- K101** • Cutite debitare (portplacute)
- K102** • Torna Kateri
- Turning Insert Tool Holder



H	B	L	K100	K101	K102
10	10	125	K10010.0		K10210.0
12	12	125	K10012.0	K10112.0	
14	12	125			K10214.0
16	12	125	K10016.0	K10116.0	
20	12	125	K10020.0	K10120.0	

- K103** • Leszúrókés
• Cutite debitare (portplacute)
- K104** • Torna Kateri
• Turning Insert Tool Holder



H	B	L	K103	K104
16	16	140	K10316.0	K10416.0
25	16	140	K10325.0	K10425.0
32	16	140	K10332.0	K10432.0

- K200** • Alkatrészek a leszúró szerszámokhoz
- K201** • Piese de schimb pentru scule debitare/retezare
- K202** • Yedek Parçalar
- K203** • Spare Parts for Indexable Tool Holders
- K204** • Spare Parts for Indexable Tool Holders



size	tool code	K200	K201	K202	K203	K204
1.5	Excentric	K200ECC1.5				
1.5	Spanner		K201SPAN1.5			
1.5-2.5	Pin			K2022.5X12.0		
2.5	Excentric				K203ECC2.5	
2.5	Spanner					K204SPAN2.5

K520

- Betétkés, négyzet keresztmetszet, h13
- Cutite strung
- Kare
- Toolbits Square h13

K520	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	6.1	6.2	6.3
	•	1.5	2.1	2.2	6.4	7.1	7.2					

K520

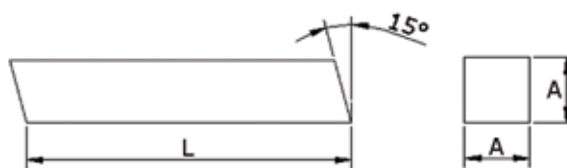
HSS-E



DIN
4964B



h13



A	L	K520
4	100	K5204.0X100.0
5	160	K5205.0X160.0
6	100	K5206.0X100.0
6	160	K5206.0X160.0
6	200	K5206.0X200.0
8	100	K5208.0X100.0
8	160	K5208.0X160.0
8	200	K5208.0X200.0
10	100	K52010.0X100.0
10	160	K52010.0X160.0
10	200	K52010.0X200.0
12	100	K52012.0X100.0
12	160	K52012.0X160.0
12	200	K52012.0X200.0
14	160	K52014.0X160.0
14	200	K52014.0X200.0
16	100	K52016.0X100.0
16	160	K52016.0X160.0
16	200	K52016.0X200.0
20	160	K52020.0X160.0
20	200	K52020.0X200.0
25	200	K52025.0X200.0
3/16	2.1/2	K5203/16X2.1/2
1/4	2.1/2	K5201/4X2.1/2
1/4	4"	K5201/4X4
5/16	2.1/2	K5205/16X2.1/2
5/16	3"	K5205/16X3
5/16	4"	K5205/16X4
3/8	3"	K5203/8X3
3/8	4"	K5203/8X4
3/8	6"	K5203/8X6
7/16	3.1/2	K5207/16X3.1/2
1/2	4"	K5201/2X4
1/2	6"	K5201/2X6
5/8	4.1/2	K5205/8X4.1/2
5/8	6"	K5205/8X6

- K521**
- Betétkés, kör keresztmetszet, h9
 - Cutite strung
 - Çubuk
 - Toolbits Round h9

K521	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	6.1	6.2	6.3
	•	1.5	2.1	2.2	6.4	7.1	7.2					



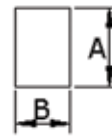
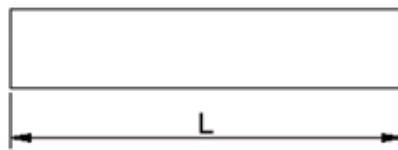
A	L	K521
3	100	K5213.0X100.0
4	100	K5214.0X100.0
5	160	K5215.0X160.0
6	100	K5216.0X100.0
6	160	K5216.0X160.0
8	100	K5218.0X100.0
8	160	K5218.0X160.0
8	200	K5218.0X200.0
10	100	K52110.0X100.0
10	200	K52110.0X200.0
12	100	K52112.0X100.0
12	200	K52112.0X200.0
14	200	K52114.0X200.0
16	200	K52116.0X200.0
20	200	K52120.0X200.0

K522

- Betétkés, négyszög keresztmetszet, h13
- Cutite strung
- Dikdörtgen
- Toolbits Rectangle h13

K522	▪	1.1	1.2	1.3	1.4	3.1	3.2	3.3	3.4	6.1	6.2	6.3
		•	1.5	2.1	2.2	6.4	7.1	7.2				

K522 **HSS-E** **DIN 4964D** **h13**



A	B	L	K522
10	3	200	K52210.0X3.0X200.0
12	3	200	K52212.0X3.0X200.0
10	4	200	K52210.0X4.0X200.0
16	4	200	K52216.0X4.0X200.0
20	4	200	K52220.0X4.0X200.0
18	5	200	K52218.0X5.0X200.0
20	5	200	K52220.0X5.0X200.0
10	6	200	K52210.0X6.0X200.0
12	6	200	K52212.0X6.0X200.0
16	6	200	K52216.0X6.0X200.0
20	6	200	K52220.0X6.0X200.0
25	6	200	K52225.0X6.0X200.0
12	8	200	K52212.0X8.0X200.0
16	8	200	K52216.0X8.0X200.0
20	8	200	K52220.0X8.0X200.0
12	10	200	K52212.0X10.0X200.0
16	10	200	K52216.0X10.0X200.0
20	10	200	K52220.0X10.0X200.0
25	12	200	K52225.0X12.0X200.0
25	16	200	K52225.0X16.0X200.0

M150

- Kúpátalakító, hőkezelt
- Reductii Morse imbunatatite in ulei
- Yağ kanallı zırh
- Sleeves Oil Toughened

K=Külső Morse-kúp K1=Belső Morse-kúp
 K=Ext. (extern) K1=Int. (intern)
 K=Dış K1=İç
 K=Ext. K1=Int.



M150



Nr.	K = Nr.	K1 = Nr.	M150
10	1	0	M1501-0
21	2	1	M1502-1
31	3	1	M1503-1
41	4	1	M1504-1
32	3	2	M1503-2
42	4	2	M1504-2
52	5	2	M1505-2
43	4	3	M1504-3
53	5	3	M1505-3
54	5	4	M1505-4
65	6	5	M1506-5

M151

- Kúpátalakító, Edzett és Köszörült
- Reductii Morse Calite si rectificata
- Sertleştirlmiş ve Taşlanmış Bilezikler
- Sleeves Hardened and Ground

K=Külső Morse-kúp K1=Belső Morse-kúp
 K=Ext. (extern) K1=Int. (intern)
 K=Dış K1=İç
 K=Ext. K1=Int.



Nr.	K = Nr.	K1 = Nr.	M151
10	1	0	M1511-0
21	2	1	M1512-1
31	3	1	M1513-1
41	4	1	M1514-1
32	3	2	M1513-2
42	4	2	M1514-2
52	5	2	M1515-2
43	4	3	M1514-3
53	5	3	M1515-3
54	5	4	M1515-4
65	6	5	M1516-5

M152

- Morse Kiütólap
- Pana extractoare
- Matkap drift
- Drill Drift



Nr.	M152
0	M1520
1 + 2	M15212
3 + 4	M15234
4 + 5	M15245
6	M1526

M200

- Vágóolaj
- Ulei de aschiere
- Kesme Yağı
- Cutting Oil



A		M200
1/4 Ltr. 12x	1BLUE	M2000.25NR.1BLUE
1/4 Ltr. 12x	2RED	M2000.25NR.2RED
1/4 Ltr. 12x	3GREEN	M2000.25NR.3GREEN
1 Ltr.	1BLUE	M2001.0NR.1BLUE
1 Ltr.	2RED	M2001.0NR.2RED
1 Ltr.	3GREEN	M2001.0NR.3GREEN
5 Ltr.	1BLUE	M2005.0NR.1BLUE
5 Ltr.	2RED	M2005.0NR.2RED
5 Ltr.	3GREEN	M2005.0NR.3GREEN
20 Ltr.	1BLUE	M20020.0NR.1BLUE



Általános információk - Magyar 559 - 578






Informatii generale - Romana 579 - 598
























Genel bilgi - Türkçe 599 - 618

General Information - English 619 - 638



Gyakori ikonok / Icoane comune
Ortak İkonlar / Common Icons

Anyag Material Malzeme Material	 <p>HM</p> <p>Keményfém Carbura Karbür Carbide</p>	 <p>HSS</p> <p>Gyorsacél Otel rapid Yüksek Hız Çeliği High Speed Steel</p>	 <p>HSS-E</p> <p>Kobalttal ötvözött gyorsacél Otel rapid cu Co Yüksek Hız Çeliği Kobaltlı High Speed Cobalt</p>
	 <p>HSS-E PM</p> <p>Kobalttal ötvözött porkohászati gyorsacél Otel rapid cu Co sinterizat HSS-E Toz Metalurjisi Çelik HSS-E Powder Metallurgy Steel</p>	 <p>HSS HM</p> <p>Gyorsacél / keményfém Otel rapid/ Carbura Yüksek Hız Çeliği/ Karbür High Speed Steel/ Carbide</p>	

Bevonat Acoperire Kaplama Coating	 <p>AlCN</p> <p>Alumínium-króm nitrid Nitrura Aluminu-Crom Alüminyum Krom Nitrit Aluminium Chromium Nitride</p>	 <p>Hi</p> <p>Polírozott felület Finisare lustruita Parlak Yüzey Polished Finish</p>	 <p>TiSiN</p> <p>Titán-szilícium nitrid Nitrura Titan-Siliciu Titanyum Silikon Nitrid Titanium Silicon Nitride</p>	 <p>ST</p> <p>Megeresztés gőz atmoszférában Brunare Buharlar Tavlanmış Steam Tempered</p>
	 <p>Fényes Lucios Parlak Bright</p>	 <p>Bronze</p> <p>Bronz Bronz Bronz Bronze</p>	 <p>Diamond</p> <p>Gyémánt Diamant Elmas Diamond</p>	 <p>Cr</p> <p>Fényes króm Crom lucios Krom Chromium</p>
	 <p>Super B</p> <p>Super B</p>	 <p>TiAlN</p> <p>Titán-alumínium nitrid Nitrura titan-aluminiu Titanyum Alüminyum Nitrid Titanium Aluminium Nitride</p>	 <p>TiCN</p> <p>Titán-karbonitrid Carbonitrura de titan Titanyum Karbo-Nitrid Titanium Carbo-Nitride</p>	 <p>TiN</p> <p>Titán nitrid Nitrura de titan Titanyum Nitrid Titanium Nitride</p>
	 <p>ST</p> <p>Fényes/gőzmegeesztéses Lucios/brunat Parlak/ Buharla Tavlanmış Bright/ Steam Tempered</p>	 <p>TiN</p> <p>Fényes/titán nitrid Lucios/nitrura de titan Parlak/ Titanyum Nitrid Bright/ Titanium Nitride</p>	 <p>ST Bronze</p> <p>Megeresztés gőz atmoszférában / bronz Brunare / Bronz Buharla Tavlanmış/ Bronz Steam Tempered/ Bronze</p>	 <p>TiAlN Top</p> <p>Titán alumínium nitrid - Top Nitrura titan-aluminiu - Top Titanyum Alüminyum Nitrid - Üst Titanium Aluminium Nitride - Top</p>
	 <p>XCEED</p> <p>Xceed</p>	 <p>Ti-phon</p> <p>Ti-phon for Hydra</p>	 <p>AlTiCN</p> <p>Alumínium-titán karbonitrid Carbonitrura Aluminu-Titan Alüminyum Titanyum Karbo - Nitrid Aluminium Titanium Carbo-Nitride</p>	 <p>AlTiN</p> <p>Alumínium-titán nitrid Nitrura Aluminu-Titan Alüminyum Titanyum Nitrid Aluminium Titanium Nitride</p>
	 <p>Alcrona</p> <p>Alcrona</p>	 <p>Alcrona Top</p> <p>Alcrona Top</p>	 <p>Alcrona Pro</p> <p>Alcrona Pro</p>	

Ikön megnevezések / Descriere icoana
Ikön aıklamaları / Icon descriptions

Gyakori ikönök / Icoane comune
Ortak İkonlar / Common Icons

Irány Direcție Yön Direction		
	Jobb Dreapta sağ Right	Bal Stanga sol left

Választás Caracterizare Rating Rating		
	Kiváló Excelent En Uygun Excellent	Jó Bun Uygun Good

Fúrasi mélység Adancimea Depth									

Fúró ikönök / Icoane gaurire
Matkap ikönları / Drilling Icons







Csúcsszög Unghiul la varf U Açısı Point Angle								
---	--	--	--	--	--	--	--	--

Kúpsülyesztök Unghi tesire Soğutma Countersink °				
	Központi 60° Centruitor 60° Punta 60° Centre 60°	Központi sugár alak Centruitor cu raza Punta - Rádus Form Centre radius form	Lépcső 90° Tesire la 90° Kademeli kılavuz - 90° Subland 90°	Letörés 180° Centruitor 60° Kademeli kılavuz - 90° Subland 180°
	Lépcsős fúró 90° Burghiu in trepte 90° Kademeli Matkap 90° Step Drill 90°	Lépcsős fúró 180° Burghiu in trepte 180° Kademeli Matkap 180° Step Drill 180°		

Alak Forme Form Form				
				CTW geometria Miez subtiat continuu Continuously Thinned Web Continuously Thinned Web

Hűtés Racire hladilno-mazalno Soğutma Coolant	
	Belső hűtés Racire interna İ soğutma Internal Coolant

Fúró ikonok / Icoane gaurire Matkap İkonları / Drilling Icons

Szár Coadă Şaft Shank			
	Hengeres szár Coadă cilindrică düz şaft Straight Shank	Morsekúpos szár Coadă Morse Mors Konik şaft Morse taper shank	DIN 6535 HA
			
	DIN 6535 HE	Hengeres, lapolt végű Coadă cu antrenor Dilli şaft Shank with tang	Hengeres, négyszög végű Coadă cu patrat de antrenare Kare dilli şaft Shank with square
			
	Csökkentett szár Coadă detalonată inceltimş şaft Reduced shank	DIN 6535 HB DIN 6535 HE	DIN 6535 HB / HE

Szabvány
Standard
Standart
Standard

NAS 907	DIN 333A	DIN 333R	DIN 338	DIN 340	DIN 341	DIN 345	DIN 1869/1	DIN 1869/2	DIN 1869/3	DIN 1870/1
DIN 1870/2	DIN 1897	DIN 1899	DIN 6537 K	DIN 6537 L	DIN 6539	DIN 8037	DIN 8374	DIN 8376	DIN 8377	DIN ANSI
BS 328										

Ikon megnevezések / Descriere icoana

İkon açıklamaları / Icon descriptions

Dörzsár - Kúpsüllyesztő ikonok / Reaming - countersink Icons

Raybalama - havşa ikonları / Reaming - countersink Icons

Kúposág
meredeksége
Gradientul
conului
Konik oranı
Taper Gradient



Tűrés
Toleranta
Tolerans
Tolerance



Alkalmazás
Aplicatie
Uygulama
Application



Kúpos süllyesztés
Zencuire
Havşa Matkabı
Countersink



Hengeres süllyesztés
Lamare
Silindirik havşa matkab
Counterbore



G314



M138

Kúpsüllyesztő
szöge
Unghi zencuire
Soğutma
Countersink °



G314



M138

Szár
Coadă
Şaft
Shank



Hengeres szár
Coadă cilindrică
düz
Straight



Morsekúpos szár
Coadă Morse
Mors Konik
Morse taper

Szabvány
Standard
Standart
Standard



Menetmegmunkálás / Icoane filetare

Diş açma ikonları / Threading icons

Menet típusok
 Forma filetelui
 Diş formu
 Thread form



Normál menet
 Metric
 Metrik
 Metric coarse



Finommenet
 Metric fin
 İnce diş metrik
 Metric fine



Amerikai normál menet
 Unified Coarse



Amerikai finom menet
 Unified Fine



Amerikai menet
 Unified



Withworth csőmenet
 British standard pipe fastening - G series



Amerikai kúpos csőmenet
 National taper pipe



Amerikai kúpos csőmenet (szárzótömítésű)
 National taper pipe dryseal



Amerikai hengeres csőmenet (szárzótömítésű)
 National taper pipe dryseal



Amerikai hengeres csőmenet
 National straight pipe mechanical



Angol zsinórmenet
 British association



Angol Withworth finommenet
 British standard fine



Angol Standard Witworth menet
 British standard Whitworth



Páncélmenet



Armour pipe/ steel conduit



British standard pipe taper - Rc Series

Horonygeometria

Helis Geometrisi
 Flute Geometry



Egyenes horony
 Canale drepte
 Düz Helis
 Straight Flute



Terelőél
 Varf spirál
 Spiral Uçlu
 Spiral Point



Menetformázó - horony nélküli deformare
 Ovalama Kılavuzu
 Fluteless - thread forming



Menetformázó kenőhoronnyal deformare cu canale de ulei
 Ovalama Kılavuzu, Yağ kanallı
 Fluteless - thread forming - oil grooves



10°-os csavart horony
 Canal elicoidal 10°
 Helis Açılı 10°
 Spiral flute 10°



15°



27°



30°



35°



40°



45°



48°

Furat típus
 Tip gaura
 Delik Tipi
 Hole Type



Átmenő furat
 Gaura strapunsa
 Through hole
 Through hole



Zsákfurat
 Gaura infundata
 Blind hole
 Blind hole



Átmenő vagy zsákfurat
 Gaura strapunsa sau infundata
 Through or blind hole
 Through or blind hole

Íkon megnevezések / Descriere icoana
 Íkon açıklamaları / Icon descriptions

Menetmegmunkálás / Icoane filetare
 Diş açma ikonları / Threading icons

Bekezdőkúp Conul de atac Pah Chamfer	B 3.5-5	C 2-3	C 2-3.5	E 1.5-2
B típusú Con B Pah B Chamfer B	A 6-8 C 2-3	D18-20 C 2-3	1.75XP	2.25XP

Tűrés Toleranta Tolerans Tolerance	2A	2B	6G	6GX	6g	6H	6HX	Class A
---	-----------	-----------	-----------	------------	-----------	-----------	------------	----------------



Közepes
Mediu
Orta
Medium






























Normál
Normal
Normal
Normal

Szár Coadă Şaft Shank	DIN 6535HA 	DIN 6535HB
--------------------------------	-----------------------	-----------------------

Szabvány Standard Standart Standard	DORMER DIN	DORMER ISO	DORMER ANSI	DIN 351	DIN 352	DIN 357	DIN 371	DIN 374	DIN 376	DIN 371≤10 376≥12	DIN 382
	DIN 2174	DIN 2181	DIN 2184-1	ISO 2283	ISO 2284	DIN 5156	DIN 5157	DIN 40432	DIN-EN 22568	ISO 529	ISO 2568
	ANSI	ANSI B94.9	BS 1127:1950								

Marás ikonjai / Icoane frezare /
Frezeleme ikonları / Milling icons

Típus Tip gaura Tip Type			
			
	Középsímítő forgácsoló Sfaramator de aschii semifinisare Yarı-finiş talaş kırıcı Semi-finishing chipbreaker	Finom menetemelkedésű, aszimmetrikus kerek forgácsoló Sfaramator de aschii rotund asimetric pas fin Aszimmetrikus formú finis talaş kırıcı Fine pitch asymmetrical rounded profile chipbreaker	Maró típusok könnyen és nehezen megmunkálható acélokhoz Tip tais pentru otel cu rezistentă joasă-inaltă Düşük ve yüksek dayanımlı çelikler için For steels with low to high resistance
			
	Durva fogazású, síma profilú forgácsoló Sfaramator de aschii plat pas mare Düz profilli talaş kırıcı Coarse pitch flat profile chipbreaker	Durva fogazású, aszimmetrikus hengeres forgácsoló Sfaramator de aschii rotunjit asimetric pas mare Aszimmetrikus formú talaş kırıcı Coarse pitch asymmetrical rounded profile chipbreaker	Marók puha és alakítható anyagokhoz Tais pentru materiale moi și maleabile Yumuşak ve yapışkan malzemeler için For soft and malleable materials
			
	Középsímítő forgácsoló Sfaramator de aschii semifinisare Yuvarlak formú talaş kırıcı Coarse pitch rounded profile chipbreaker		

Alkalmazás Aplicatie Uygulama Application				
				
	Horonymarás Canelare P9 Kanal P9 Slotting P9	Horonymarás Canelare Kanal Slotting	Szuper-símítás Super-finisare Süper-finiş Super-finishing	Símítás Finisare Finis Finishing
				
	Nagyolás Degrosare Kaba Roughing	Mácsoló marás Cap sferic Küresel Ball nose	Vállmarás rádiusszal cu raza Köşe radiuslu Corner radius	Nagy előtolás Avans rapid Yüksek ilerleme High feed
				
	Letörő maró Sanfrenare Pah Chamfering	T-horony marás Canale T T freze T-shaped	Reteszhorony marás Canal de pana T freze Woodruff	Fecskefarkú Coadă de randunica Kırlangıç Dovetail
				
	Fordított fecskefarkú Conica Ters kırlangıç Inverse dovetail	Sarkok lekerekítése Rotunjiri colturi Radüs Corner rounding	Horonymarás Disc alternant/ferastrau Kenar ve yüzey Side and face saws	Multi
				
	Homlokmarás Cilindrica cu alezaj Göbekten bağlamalı Shell end	Nagyolás Degrosare Kaba Roughing		

Ikon megnevezések / Descriere icoana
 Ikon açıklamaları / Icon descriptions

Marás ikonjai / Icoane frezare /
 Frezeleme ikonları / Milling icons

Írányok Directia Yön Direction				
	Váll-,homlokmarás, axiális marás Canelare, frezare in plan inclinat descendent, plonjare Kanal açma, rampalama, dalma Slotting, ramping, diving	Vállmarás, axiális marás Canelare, frezare in plan inclinat descendent Kanal açma, rampalama Slotting, ramping	Simitás Finisare Finiş Finishing	Marás Frezare frezezi Milling

Dolgozó hossz Lungime tais Kesme Boyu Cut Length					
	Extra rövid Extrascurt Ekstra kısa Extra short	Közepes Mediu Orta Medium			Extra hosszú Extralung Ekstra uzun Extra long

Szártűrés Toleranta cozii çap toleransi Diameter tolerance	d11	e8	h9	h10	h11	h12	k10	k12	js14	js16
--	------------	-----------	-----------	------------	------------	------------	------------	------------	-------------	-------------



e8 egész és feles méreteknél, h10 a többinél
 e8 pentru diametre întregi și jumătăți, h10 pentru celelalte valori
 Tam ve yarım çaplar e8, diğerleri h10
 e8 full and half diameters, h10 others

Spirálszög/ Homlokszög Unghiul spirei/ Unghi de degajare Helis açısı / Boşluk açısı Helix Angle/ Rake Angle	γ 5°	γ 15°	γ 18°	λ 0° γ 0°	λ ≠ γ 10°	λ 10° γ 10°	λ 12° γ 10°	λ 15° γ 10°	λ 15° γ 15°	λ 25° γ 0°	λ 25° γ 20°
	λ 30° γ -10°	λ 30° γ 3°	λ 30° γ 9°	λ 30° γ 10°	λ 30° γ 12°	λ 30° γ 15°	λ 30° γ 20°	λ 35° γ 9°	λ 35° γ 12°	λ 40° γ -6°	λ 40° γ 3°
	λ 40° γ 4°	λ 40° γ 10°	λ 40° γ 15°	λ 40° γ 20°	λ 40° γ 25°	λ 45° γ -10°	λ 45° γ 12°	λ 50° γ -26°	λ 50° γ 3°		

Fogszám Nr. Dinti ağız (z) Teeth (z)	Z 1	Z 2	Z 3	Z 3-4	Z 3-5	Z 3-6	Z 4	Z 4-6	Z 4-8	Z 6-8	Z 6-10
	Z 6-12	Z 8-12	Z 10-12	Z 16-30	Z 28-44	Z 28-100	Z 40-200	Z 80-180	Z 100-140	Z 128-220	Z 160-350



4 Élek száma - egyenlőtlen horonyszélesség
 4 Nr.dinti Divizare inegala
 4 ağızlı - farklı helisi
 4 teeth - differential pitch

Marás ikonjai / Icoane frezare
Frezeleme ikonları / Milling iconsSzár
Coadă
Şaft
ShankSzabvány
Standard
Standart
Standard

Ikön megnevezések / Descriere icoana
Ikön açıklamaları / Icon descriptions

Turbómaró ikonjai / Icoane Freza biax
Çapak alma ikonları / Burr icons

Alkalmazás
Aplicatie
Uygulama
Application



Homlokél nélküli kivitel
cilindru fără tais final
silindirik
Cylinder without end cut



Hengeres kialakítás homlokéllal
cilindru cu tais final
silindirik düz kesimli
Cylinder with endcut



Gömbvégű, hengeres
cilindru cu cap sferic
küre
Ball nosed cylinder



Gömb
cap sferic
top
Ball



Ovális
cap oval
oval
Oval



Ívelt gömbvégű
cap sferic forma copac
Küre yaprak
Ball nosed tree



Ívelt, hegyes
cap ascuțit forma copac
Düz yaprak
Pointed tree



Láng forma
forma flacara
Parlak
Flame



60°-os sülyesztőmaró
zencuire 60°
60° Havşa
60° degree countersink



90°-os sülyesztőmaró
zencuire 90°
90° Havşa
90° degree countersink



Gömbvégű kúp
con cu raza varf
Konik küre
Ball nosed cone



Kúp
conica
Konik küre
Cone



Fordított kúp
con inversat
ters konik
Inverted cone



Sectionare fibra de sticla
Fiberglass kesme
Fiberglass routing

Típus
Tip gaura
TIP
Type



Magas forgácsolási teljesítmény
acélban
Rata ridicata de îndeprtare a
spanului în otel
Çelikte yüksek talaş kaldırma oranı
High metal removal rate in steel



Magas forgácsolási teljesítmény
saválló acélban
Rata ridicata de îndeprtare a
spanului în otel inoxidabil
Paslanmaz çelikte yüksek talaş
kaldırma oranı
High metal removal rate in stainless
steel



Alumínium, nemvas fémek és
műanyag megmunkálás
Aschiere aluminiu pentru materiale
neferoase si plastic
Plastik dahil demir dışı malzemeler
için Aluminyum tip
Aluminium cut for non-ferrous
material including plastics



Üvegszálás anyagok, kompozitok
Fibra de sticla si compozite
Fibreglas ve kompozitler
Fibreglas and composites



Kettős él, univerzális felhasználáshoz
Taiere dubla pentru uz general
Genel kullanım için çift kesim tip
Double cut for general purpose use

??
tais final
End cut
End cut



Alap kialakítás
Standard
Standart
Standard








Varf burghiu
Matkap ucu
Drill point



Freze
Parmak freze
End mill

Leszúró szerszámok ikonjai / Icoane scule debitare
Kesme ikonları / Parting off icons

Élszög ° tais retezare Késszél szög Edge angle			
0°		8° balos / jobbos 8° stanga / dreapta 8° sol - sağı 8° left - right	15° balos / jobbos 15° stanga / dreapta 15° sol - sağı 15° left - right
Lapkaméret Dimensiunea placutei Késszél szélesség Insert size			
23mm		40mm	
Vágásirány Directia de taiere Késszél irány Direction of cut			
Jobbos Dreapta sağı Right		Balos Stanga sol Left	
Alkalmazás Aplicatie Uygulama Application			
Leszúrás Debitare Cut Cut		Beszúrás Canelare Groove Groove	
Alak Forma Form Form			
Hengeres Rotunda Çubuk Round		Négyszög Patrata Kare Square	Téglalap Dreptunghiulara Dikdörtgen Rectangular
Tűrés Toleranta Tolerans Tolerance			
h9		h13	
Szabvány Standard Standart Standard			
		DIN 4964A	DIN 4964B
			DIN 4964D

Magyar		Keményesség	Szakító szilárdság	ISO		
Anyagcsoportok (AMG)					HB	N/mm ²
1. Acél	1.1	Lágy mágneses acél	< 120	< 400	P 1	
	1.2	Szerkezeti acél	< 200	< 700	P 1	
	1.3	Szénacél	< 250	< 850	P 2	
	1.4	Ötvözött acél	< 250	< 850	P 3	
	1.5	Ötvözött, edzett & hőkezelt acél	> 250 < 350	> 850 < 1200	P 4	
	1.6	Ötvözött, edzett & hőkezelt acél	> 350	> 1200 < 1620	H 1	
	1.7	Ötvözött, edzett acél	49-55HRC	> 1620	H 3	
	1.8	Ötvözött, edzett és kopásálló acél	55-63HRC	> 1980	H 4	
	2. Rozsdamentes acél	2.1	Rozsdamentes acél	< 250	< 850	M 1
		2.2	Auszténites	< 320	< 1100	M 3
		2.3	Ferites + Auszténites	< 300	< 1000	M 2
		2.4	Nemesített	>320 <410	>1100 <1400	S 2
	3. Öntvény	3.1	Szürkeöntvény	< 150	> 500	K 1
		3.2	Szürkeöntvény	> 150 <300	> 500 < 1000	K 2
		3.3	Gömbgrafitos öntvény	< 200	< 700	K 3
3.4		Gömbgrafitos öntvény	> 200 < 300	> 700 < 1000	K 4	
4. Titánium	4.1	Titánium, ötvözetlen	< 200	< 700	S 1	
	4.2	Titánium, ötvözött	< 270	< 900	S 2	
	4.3	Titánium, ötvözött	> 270 < 350	> 900 ≤ 1250	S 3	
5. Nikkel	5.1	Nikkel, ötvözetlen	< 150	< 500	S 1	
	5.2	Nikkel, ötvözött	< 270	> 900	S 2	
	5.3	Nikkel, ötvözött	> 270 < 350	> 900 < 1200	S 3	
6. Réz	6.1	Vörösréz	< 100	< 350	N 3	
	6.2	β - Sárgaréz , Bronz	< 200	< 700	N 4	
	6.3	CuZn Sárgaréz	< 200	< 700	N 3	
	6.4	Nagy szilárdságú bronz	< 470	< 1500	N 4	
7. Alumínium Magnézium	7.1	Al, Mg, ötvözetlen	< 100	< 350	N 1	
	7.2	Al ötvözött, Si < 0.5%	< 150	< 500	N 1	
	7.3	Al ötvözött, Si > 0.5% < 10%	< 120	< 400	N 1	
	7.4	Al ötvözött, Si > 10%	< 120	< 400	N 2	
8. Szinterikus anyagok	8.1	Hőre lágyuló anyagok	---	---	O	
	8.2	Hőre keményedő anyagok	---	---	O	
	8.3	Erősített műanyag	---	---	O	
9. Kemény anyagok	9.1	Kemény anyagok (fém kerámia)	< 550	< 1700	H	
10. Grafit	10.1	Standard grafit	---	< 100	O	

ANYAGSOPORTOSÍTÁS A
MEGŰNKALANDÓ ANYAGOK ALAPJÁN

AMS	EN	W.Nr.	DIN	BS	SS	USA	UNS	ISO
1.1		1.1015, 1.1013	Rle60, Rle100	230M07, 050A12	1160	Leaded Steels	G12120	P 1
1.2	EN 10 025 – S235JRG2	1.1012, 1.1053, 1.7131	S137-2, 16MnCr5, S150-2	060A35, 080M40, 4360-50B	1312, 1412, 1914	135, 30	G10100	P 1
1.3	EN 10 025 – E295	1.1191, 1.0601	CK45, C60	080M46, 080A62	1550, 2142, 2172	1024, 1060, 1061	G10600	P 2
1.4	EN 10 083-1 – 42 CrMo 4 – EN 10 270-2	1.7225, 1.3505, 1.6582, 1.3247	42CrMo4, 100Cr6, 34CrNiMo6, S2-10-1-8	708M40/42, 817M40, 534A99, BM2, BT42	1672-04, 2090, 2244-02, 2541-02	4140, A2, 4340, M42, M2	G41270, G41470, T30102, T11342	P 3
1.5	EN ISO 4857 – H86-5-2	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, 55NiCrMoV6, X210Cr12, S2-10-1-8	801, BM2, BT42, 826 M40, 830M31	2244-04, 2541-03, 2550, 2722, 2723	01, L6, M42, D3, A2, M2, 4140, 8630	G96300, T30102, T11302, T30403, T11342	P 4
1.6	EN ISO 4857 – HS2-9-1-8	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, X210Cr12, S2-10-1-8	801, 826 M40, 830M31	2244-05, 2541-05, , HARDOX 400	01, L6, M42, D3, 4140, 8130	T30403, G41400, J14047	H 1
1.7	EN ISO 4857 – HS2-9-1-8	1.2510	100MnCrW4	BO1, BD3, BH13	HARDOX 500			H 3
1.8	EN ISO 4857 – X40CrMoV5-1	1.3343, 1.2344	S6-5-2, GX40CrMoV5-1	BM2, BH13	2242, HARDOX 600			H 4
2.1	EN 10 088-3 – X14CrMoS17	1.4305, 1.4104	X10CrNiSi189, X12CrMoS17	303 S21, 416 S37	2301, 2312, 2314, 2346, 2380	303, 416, 430F	S30300, S41600, S43020	M 1
2.2	EN 10 088-2-0 – 3 – 1, 4301+AT	1.4301, 1.4541, 1.4571	X5CrNi189, X10CrNiMoTi1810	304 S15, 321 S17, 316 S, 320 S12	2310, 2333, 2337, 2343, 2353, 2377	304, 321, 316	S30400, S32100, S31600	M 3
2.3	EN 10 088-3 – 1, 4460	1.4460, 1.4512, 1.4582	X8CrNiMo275, X4CrNiMoNi6257	317 S16, 316 S16	2324, 2387, 2570	409, 430, 436	S40900, S4300, S43600	M 2
2.4	EN 1,4547	1.4547	X2CrNiMo20-18-6	HR41	2378	17-4PH	S31254	S 2
3.1	EN 1561 – EN-JL1030	0.6010, 0.6040	GG10, GG40	Grade150, Grade 400	0120, 0212, 0814	ASTM A48 class 20	F11401, F12801	K 1
3.2	EN 1561 – EN-JL1050	0.6025, 0.6040	GG25, GG40	Grade200, Grade 400	0125, 0130, 0140, 0217	ASTM A48 class 40, STM A48 class 60	F12801, F14101	K 2
3.3	EN 1561 – EN-JL2040	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P4407, 700/2, 309/72	0219, 0717, 0727, 0732, 0852	ASTM A220 grade 40010, ASTM A602 grade M4504	F22830, F20001	K 3
3.4	EN 1561 – EN-JL2050	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P4407, 700/2, 309/72	0221, 0223, 0737, 0854	ASTM A220 grade 90001, ASTM A602 grade M8501	F26230, 20005	K 4
4.1		3.7024LN	T199.8	TA1 to 9	T199.8	ASTM B265 grade 1	R50250	S 1
4.2		3.7164LN, 3.7119LN	TiA6V4, TiA5Sn2	TA10 to 14, TA17	TiA6V4, TiA5Sn2	AMS4928	R54790	S 2
4.3		3.7164LN, 3.7174LN, 3.7184LN	TiA6V4, TiA6V5Sn2, TiA4MoSn2	TA10 to 13, TA28	TiA6V5Sn2	AMS4928, AMS4971	R56400, R54790	S 3
5.1		2.4060, 2.4066	Nickel 200, 270, N199.6	NA 11, NA12	Ni200, Ni270	Nickel 200, Nickel 230	N02200, N02230	S 1
5.2		2.4630LN, 2.4602, 2.4650LN	Nimonic 75, Monel 400, Hastelloy C, Inconel 600	HR203, 3027-76		Nimonic 75, Monel 400, Hastelloy, Inconel600	N06075, N10002, N04400, N06600	S 2
5.3		2.4668LN, 2.4631LN, 2.6554LN	Inconel 718, Nimonic 80A, Waspaloy	HR8, HR401, 601		Inconel 718, 625, Nimonic 80	N07718, N07080, N06625	S 3
6.1	EN 1652 – CW004A	2.0060, 2.0070	E-Cu57, SE-Cu	C101	5010	101	C10100, C1020	N 3
6.2	EN 1652 – CW612N	2.0380, 2.0360, 2.1030, 2.1080	CuZn39Pb2, CuZn40, CuSn8, CuSh6Zn	CZ120, CZ109/PB104	5168		C28000, C37710	N 4
6.3	EN 1652 – CW508L	2.0321, 2.0260	CuZn37, CuZn28	CZ108, CZ106	5150		C2600, C27200	N 3
6.4			Ampco 18, Ampco 25	AB1 type	5238, JM7-20			N 4
7.1	EN 485-2 – EN AW-1070A	3.0255	A199.5	LMO, 1 B (1050A)	4005	EC, 1060, 1100	A91060, A91100	N 1
7.2	EN 755-2 – EN AW-5005	3.1355, 3.3525	AlCuMg2, AlMg2Mn0.8	LM5, 10, 12, N4 (5251)	4106, 4212	380, 520.0, 520.2, 2024, 6061	A03800, A05200, A92024	N 1
7.3	EN 1706 – EN AC-42000	3.2162.05, 3.2341.01	GD-ALSi8Cu, G-ALSi5Mg	LM2, 4, 16, 18, 21, 22, 24, 25, 26, 27, L109	4244	319.0, 333.0, 319.1, 356.0	A03190, A03330, C35600	N 1
7.4	SS-EN 1706 – EN AC-47000	3.2561.01	G-ALSi18, G-ALSi12	LM6, 12, 13, 20, 28, 29, 30	4260, 4261, 4262	4032, 222, 1, A332.0	A94032, A02220, A13320	N 2
8.2				Polystyrene, Nylon, PVC Cellulose, Acetate & Nitrate		Polystyrene, Nylon, PVC		O
8.3				Ebonite, Tufnol, Bakelite		Bakelite		O
9.1				Kevlar, Pinned Circuit boards		Kevlar		O
10.1				Ferroc, Ferroclittant				H
				Graphite				O

Vágósebesség táblázat



		Vc															
m/perc		5	8	10	15	20	25	30	40	50	60	70	80	90	100	110	150
Feet/Min		16	26	32	50	66	82	98	130	165	197	230	262	296	330	362	495
Ø		RPM															
mm	inch																
1,00		1592	2546	3183	4775	6366	7958	9549	12732	15916	19099	22282	25465	28648	31831	35014	47747
1,50		1061	1698	2122	3183	4244	5305	6366	8488	10610	12732	14854	16977	19099	21221	23343	31831
2,00		796	1273	1592	2387	3183	3979	4775	6366	7958	9549	11141	12732	14324	15916	17507	23873
2,50		637	1019	1273	1910	2546	3183	3820	5093	6366	7639	8913	10186	11459	12732	14006	19099
3,00		531	849	1061	1592	2122	2653	3183	4244	5305	6366	7427	8488	9549	10610	11671	15916
3,18	1/8	500	801	1001	1501	2002	2502	3003	4004	5005	6006	7007	8008	9009	10010	11011	15015
3,50		455	728	909	1364	1819	2274	2728	3638	4547	5457	6366	7276	8185	9095	10004	13642
4,00		398	637	796	1194	1592	1989	2387	3183	3979	4775	5570	6366	7162	7958	8754	11937
4,50		354	566	707	1061	1415	1768	2122	2829	3537	4244	4951	5659	6366	7074	7781	10610
4,76	3/16	334	535	669	1003	1337	1672	2006	2675	3344	4012	4681	5350	6018	6687	7356	10031
5,00		318	509	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	9549
6,00		265	424	531	796	1061	1326	1592	2122	2653	3183	3714	4244	4775	5305	5836	7958
6,35	1/4	251	401	501	752	1003	1253	1504	2005	2506	3008	3509	4010	4511	5013	5514	7519
7,00		227	364	455	682	909	1137	1364	1819	2274	2728	3183	3638	4093	4547	5002	6821
7,94	5/16	200	321	401	601	802	1002	1203	1604	2004	2405	2806	3207	3608	4009	4410	6013
8,00		199	318	398	597	796	995	1194	1592	1989	2387	2785	3183	3581	3979	4377	5968
9,00		177	283	354	531	707	884	1061	1415	1768	2122	2476	2829	3183	3537	3890	5305
9,53	3/8	167	267	334	501	668	835	1002	1336	1670	2004	2338	2672	3006	3340	3674	5010
10,00		159	255	318	477	637	796	955	1273	1592	1910	2228	2546	2865	3183	3501	4775
11,11	7/16	143	229	287	430	573	716	860	1146	1433	1719	2006	2292	2579	2865	3152	4298
12,00		133	212	265	398	531	663	796	1061	1326	1592	1857	2122	2387	2653	2918	3979
12,70	1/2	125	201	251	376	501	627	752	1003	1253	1504	1754	2005	2256	2506	2757	3760
14,00		114	182	227	341	455	568	682	909	1137	1364	1592	1819	2046	2274	2501	3410
14,29	9/16	111	178	223	334	446	557	668	891	1114	1337	1559	1782	2005	2228	2450	3341
15,00		106	170	212	318	424	531	637	849	1061	1273	1485	1698	1910	2122	2334	3183
15,88	5/8	100	160	200	301	401	501	601	802	1002	1203	1403	1604	1804	2004	2205	3007
16,00		99	159	199	298	398	497	597	796	995	1194	1393	1592	1790	1989	2188	2984
17,46	11/16	91	146	182	273	365	456	547	729	912	1094	1276	1458	1641	1823	2005	2735
18,00		88	141	177	265	354	442	531	707	884	1061	1238	1415	1592	1768	1945	2653
19,05	3/4	84	134	167	251	334	418	501	668	835	1003	1170	1337	1504	1671	1838	2506
20,00		80	127	159	239	318	398	477	637	796	955	1114	1273	1432	1592	1751	2387
24,00		66	106	133	199	265	332	398	531	663	796	928	1061	1194	1326	1459	1989
25,00		64	102	127	191	255	318	382	509	637	764	891	1019	1146	1273	1401	1910
27,00		59	94	118	177	236	295	354	472	589	707	825	943	1061	1179	1297	1768
30,00		53	85	106	159	212	265	318	424	531	637	743	849	955	1061	1167	1592
32,00		50	80	99	149	199	249	298	398	497	597	696	796	895	995	1094	1492
36,00		44	71	88	133	177	221	265	354	442	531	619	707	796	884	973	1326
40,00		40	64	80	119	159	199	239	318	398	477	557	637	716	796	875	1194
50,00		32	51	64	95	127	159	191	255	318	382	446	509	573	637	700	955

HV	HRC	HB		
Vickers	Rockwell	Brinell	N/ mm ²	Tons/ sq. in.
940	68			
900	67			
864	66			
829	65			
800	64			
773	63			
745	62			
720	61			
698	60			
675	59			
655	58		2200	142
650		618	2180	141
640		608	2145	139
639	57	607	2140	138
630		599	2105	136
620		589	2070	134
615	56	584	2050	133
610		580	2030	131
600		570	1995	129
596	55	567	1980	128
590		561	1955	126
580		551	1920	124
578	54	549	1910	124
570		542	1880	122
560	53	532	1845	119
550		523	1810	117
544	52	517	1790	116
540		513	1775	115
530		504	1740	113
527	51	501	1730	112
520		494	1700	110
514	50	488	1680	109
510		485	1665	108
500		475	1630	105
497	49	472	1620	105
490		466	1595	103
484	48	460	1570	102
480		456	1555	101
473	47	449	1530	99
470		447	1520	98
460		437	1485	96
458	46	435	1480	96
450		428	1455	94
446	45	424	1440	93
440		418	1420	92

HV	HRC	HB		
Vickers	Rockwell	Brinell	N/ mm ²	Tons/ sq. in.
434	44	413	1400	91
423	43	402	1360	88
413	42	393	1330	86
403	41	383	1300	84
392	40	372	1260	82
382	39	363	1230	80
373	38	354	1200	78
364	37	346	1170	76
355	36	337	1140	74
350		333	1125	73
345	35	328	1110	72
340		323	1095	71
336	34	319	1080	70
330		314	1060	69
327	33	311	1050	68
320		304	1030	67
317	32	301	1020	66
310	31	295	995	64
302	30	287	970	63
300		285	965	62
295		280	950	61
293	29	278	940	61
290		276	930	60
287	28	273	920	60
285		271	915	59
280	27	266	900	58
275		261	880	57
272	26	258	870	56
270		257	865	56
268	25	255	860	56
265		252	850	55
260	24	247	835	54
255	23	242	820	53
250	22	238	800	52
245		233	785	51
243	21	231	780	50
240		228	770	50
235		223	755	49
230		219	740	48
225		214	720	47
220		209	705	46
215		204	690	45
210		199	675	44
205		195	660	43
200		190	640	41

	Ø mm							
	> 1 ≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50	> 50 ≤ 80	> 80 ≤ 120
Alaptűrés	µm							
e8	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89	-60 / -106	-72 / -126
f6	-6 / -12	-10 / -18	-13 / -22	-16 / -27	-20 / -33	-25 / -41	-30 / -49	-36 / -58
f7	-6 / -16	-10 / -22	-13 / -28	-16 / -34	-20 / -41	-25 / -50	-30 / -60	-36 / -71
h6	0 / -6	0 / -8	0 / -9	0 / -11	0 / -13	0 / -16	0 / -19	0 / -22
h7	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21	0 / -25	0 / -30	0 / -35
h8	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33	0 / -39	0 / -46	0 / -54
h9	0 / -25	0 / -30	0 / -36	0 / -43	0 / -52	0 / -62	0 / -74	0 / -87
h10	0 / -40	0 / -48	0 / -58	0 / -70	0 / -84	0 / -100	0 / -120	0 / -140
h11	0 / -60	0 / -75	0 / -90	0 / -110	0 / -130	0 / -160	0 / -190	0 / -220
h12	0 / -100	0 / -120	0 / -150	0 / -180	0 / -210	0 / -250	0 / -300	0 / -350
k10	+40 / 0	+48 / 0	+58 / 0	+70 / 0	+84 / 0	+100 / 0	+120 / 0	+140 / 0
k12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
m7	+2 / +12	+4 / +16	+6 / +21	+7 / +25	+8 / +29	+9 / +34	+11 / +41	+13 / +48
js14	+/- 125	+/- 150	+/- 180	+/- 215	+/- 260	+/- 310	+/- 370	+/- 435
js16	+/- 300	+/- 375	+/- 450	+/- 550	+/- 650	+/- 800	+/- 950	+/- 1100
H7	+10 / 0	+12 / 0	+15 / 0	+18 / 0	+21 / 0	+25 / 0	+30 / 0	+35 / 0
H8	+14 / 0	+18 / 0	+22 / 0	+27 / 0	+33 / 0	+39 / 0	+46 / 0	+54 / 0

1µm = 0.001mm

Fúrás

Általános tanácsok a fúráshoz

1. Válassza ki a megmunkálendő anyagminőség, a szerszámkapacitás és a hűtőkenő folyadék alapján a munkálathoz leginkább megfelelő fúrót.
2. Az alkatrészek és a szerszám orsója közti nem megfelelő merevség károsíthatja a fúrót, az alkatrészeket és a gépet egyaránt – mindig biztosítsa a maximális stabilitást. Ennek érdekében a lehető legkisebb kilógású fúrót válassza a művelethez.
3. A szerszám megfogás tökéletessége rendkívül fontos. A fúró nem mozoghat a szerszám befogóban!
4. A morze kúpos szárú fúrók használatakor a szerszámszár és a befogó közötti tökéletesen merev megfogás különös jelentőséggel bír.
5. Egy adott fúrási műveletnél az ahhoz konkrétan ajánlott hűtő-kenő folyadék használata javasolt. Bizonyosodjon meg, - különösen a fúrási pontnál - hogy kellő mennyiségű hűtő-kenő folyadékot használ.
6. A megfelelő fúrási minőség szempontjából elengedhetetlenül fontos a finomforgács eltávolítása a fúrási művelet alatt is. Ne engedje, hogy a forgács felboltozódjon a horonyban.
7. A fúró újraköszörülésekor győződjön meg róla, hogy a helyes csúcsszög-geometria kerül kialakításra, és a kopást eltávolították.

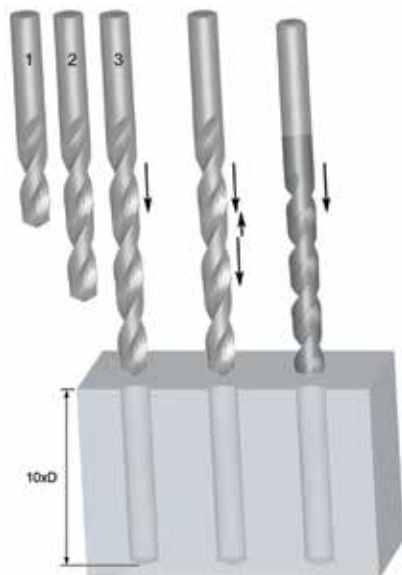
FURATMÉRET

A geometria, az alapanyag és bevonat technológiák tökéletesítésével fúrónk is pontosabb furatot készít. Általánosságban: Egy standard geometriájú fúró H12-es tűrésű furatot készít, ám a fenti fejlesztések eredményeként kedvező körülmények között az elérhető furattűrés akár H8 is lehet. Alább röviden felsoroljuk a terméktípusokat, és az általuk elérhető furattűréseket:

- HSS Általános célú fúrók - H12
- HSS / HSS-E mélyfurat készítéshez alkalmas fúrók – H10
- Nagyteljesítményű tömör keményfém bevonattal - H8/H9

Mélyfurat készítés

Mélyfuratkészítéskor számos módszer alkalmazásával elérhető a kívánt mélység. Alább 10 x fúróátmérő mélyfurat készítés lehetséges példái:



	Több szerszámmal / szerszámkészlettel	Több szerszámmal / szerszámkészlettel
Alkalmazott fúrók száma	3 (2,5xD, 6xD, 10xD)	2 (2,5xD, 10xD)
Fúrók típusa	Standard geometria, általános célú	Standard geometria, általános célú
+ / -	Drága Időigényes	Költséghatékonyabb, gyors

	Megszakított fúrás	Egyszeri mélyfúrással
Alkalmazott fúrók száma	1 (10xD)	1 (10xD)
Fúrók típusa	Standard geometria, általános célú	Célspecifikus szerszámok
+ / -	Időigényes	Költséghatékony Gyors

HIBAELHÁRÍTÁS FÚRÁSNÁL

PROBLÉMA	OK	MEGOLDÁS
Törött vagy csavart szárvég	Rossz illeszkedés a szár és befogó között	Győződjön meg róla, hogy a szár és a befogó szennyeződéstől és sérüléstől mentes
Keresztélen repedés	Túl nagy előtolás	Csökkentse az előtolási értéket az optimálisra
	Nem megfelelő kezdeti hátszög	Újraélezés a megfelelő geometriára
	Túlzott keresztél vastagság csökkenés	Újraélezés a megfelelő geometriára
	A fúró csúcshögtét nagyobb ütés éri	A csúcshögtét ne érje ütés. Vigyázzon a kúpos szárú fúrókkal, mikor beteszi / kiveszi az orsóba
Elkopott külső sarkok	Túl nagy a sebesség	Csökkentse a sebességet az optimálisra - esetleg növelheti az előtolást
Törött külső sarkok	Labilis befogás	Növelje a szerszám stabilitását
Vágóél megrepedése	Nem megfelelő geometria	Újraélezés a megfelelő geometriára
Törés a horony kifutáson	Ráakódás/ eltömődés a hornyon	Vágjon készlettel, vagy szakaszos előrehatolással
	Fúró instabilitás	Győződjön meg a tokmány és orsóbefogás merevségéről
Spirális végződés a furatban	Alacsony előtolás	Növelje az előtolást
	Nem megfelelő pozicionálási pontosság	Használjon központfúrót
Túl nagy furatméret	Nem megfelelő csúcshögtémetria	Újraélezéskor ellenőrizze a csúcshögtémetriát
	Nem megfelelő forgácseltávolítás	Hogy a forgács könnyebben kezelhető legyen, szabályozza a sebességet, előtolást, és a szakaszolás hosszát

Dörzsárazás

ÁLTALÁNOS TANÁCSOK A DÖRZSÁRAZÁSHOZ

A hatékony dörzsárazás legfontosabb feltétele a megfelelő munka-előkészítés. Gyakori hiba a túl kicsi anyagráhagyással előkészített furat. Amennyiben dörzsárazás előtt nem hagyunk elegendő anyagot a furatban, úgy a dörzsár hamar elkopik, ami az átmérő csökkenéséhez vezet. A teljesítmény szempontjából ugyanilyen fontos, hogy túl nagy anyagráhagyással se dolgozzunk. (Lásd: Anyageltávolítás fejezet a következő oldalon).

1. Válassza ki az alkalmazáshoz leginkább megfelelő dörzsár típust, alkalmazzuk az ajánlott optimális sebességet és előtolást. Győződjön meg arról, hogy a előfúratok megfelelő átmérőjűek.
2. A munkadarab megfogás merev legyen. A géporsónak nem lehet holtjátéka.
3. Használjon nagyon jó minőségű fúrótokmányt az egyenes szárú dörzsár befogásához. Automata előtolás mellett a laza-fogású tokmány a dörzsár törését okozhatja.
4. A szerszámot a lehető legmélyebben, a legkisebb kinyúlással fogja az orsóba.
5. A szerszáméltartam növelése érdekében fontos hogy az ajánlott hűtő-kenő folyadékot pontosan a vágóéleknél használja. Mivel a dörzsárazás nem egy nehéz forgácsolási művelet, az olaj 40:1-hez hígítási aránya általában megfelelő. Száraz megmunkálásnál, szürkeöntvény forgácsolásakor levegővel történő hűtés is lehetséges.
6. Ne engedje, hogy a hornyokat a forgácslerakódás eltömítse.
7. Újraélesítés előtt ellenőrizze a központok közötti koncentricitást. A legtöbb esetben csak az élettörésnél szükséges újraélesíteni.
8. A dörzsár mindig legyen éles. A gyakori újraélesítés gazdaságos megoldás. Fontos tudni, hogy a dörzsár a vágóélszalagon nem, csak az élettörés és a kúpos letörés között vág. Így egyértelműen csak ezek igényelnek újraélesítést. Az újraélesítés pontossága fontos a furatminőség és szerszáméltartam szempontjából.

ANYAGELTÁVOLÍTÁSI RÁTA

Dörzsárazásnál a javasolt anyageltávolítás mértéke a megmunkált anyag és az előfurat felületi minőségének függvénye:

A dörzsárazással készített furat mérete (mm)	Előfúráskor	Előmaglyuk fúráskor	A dörzsárazással készített furat mérete (inch)	Előfúráskor	Előmaglyuk fúráskor
4 alatt	0.1	0.1	3/16 alatt	0.004	0.004
4 és 11 között	0.2	0.15	3/16 és 1/2 között	0.008	0.006
11 és 39 között	0.3	0.2	1/2 és 1. 1/2 között	0.010	0.008
39 és 50 között	0.4	0.3	1.1/2 és 2 között	0.016	0.010

TŰRÉSHATÁROK



1. A STANDARD DÖRZSÁR VÁGÓÁTMÉRŐJÉN

A d1 átmérőt közvetlenül az élettörés vagy kúpos letörés mögött a kerületi vágóélszalag mentén mérjük. DIN 1420-es szabvány szerinti H7-es furattűrési jellemzi.

A DÖRZSÁR TŰRÉSE			
Átmérő (mm)		Tűrészhatár (mm)	
'-tól	'-ig (értéket beleértve)	Magas +	Alacsony +
	3	0.008	0.004
3	6	0.010	0.005
6	10	0.012	0.006
10	18	0.015	0.008

A DÖRZSÁR TŰRÉSE			
Átmérő (mm)		Tűrészhatár (mm)	
'-tól	'-ig (értéket beleértve)	Magas +	Alacsony +
	30	0.017	0.009
18	30	0.017	0.009
30	50	0.021	0.012
50	80	0.025	0.014

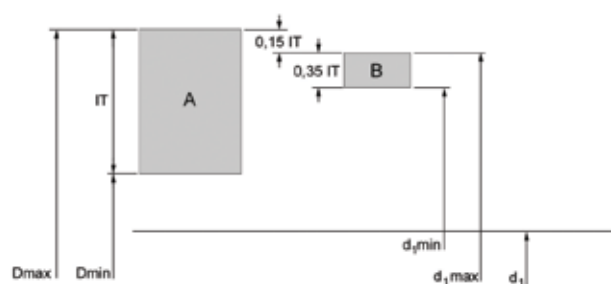
2. A H7-ES FURATON

A kész furatok legjellemzőbben H7-es tűrésűek (lásd alábbi táblázat). Minden egyéb tűrés esetén a 3. pont alatti képlet és táblázat használatos a dörzsár tűrés és tűrésmező meghatározására.

A DÖRZSÁR TŰRÉSE			
Átmérő (mm)		Tűrészhatár (mm)	
'-tól	'-ig (értéket beleértve)	Magas +	Alacsony +
	3	0.010	0
3	6	0.012	0
6	10	0.015	0
10	18	0.018	0

A DÖRZSÁR TŰRÉSE			
Átmérő (mm)		Tűrészhatár (mm)	
'-tól	'-ig (értéket beleértve)	Magas +	Alacsony +
	30	0.021	0
18	30	0.021	0
30	50	0.025	0
50	80	0.030	0

3. Amennyiben egy különleges tűrésű (pl. D 8) egyedi dörzsár méreteit szeretnénk pontosítani az alábbi útmutató a használatos.



A = Furattűrési
 B = Dörzsár tűrés
 IT = Tűrészmező
 Dmax = maximális furatátmérő
 Dmin = minimális furatátmérő
 d1 = Nominális átmérő
 d1max = dörzsár maximális átmérője
 d1min = dörzsár minimális átmérője

Tűrészmező	Átmérő tűrés mező							
	1 fölött 3-at beleértve	3 fölött 6-ot beleértve	6 fölött 10-et beleértve	10 fölött 18-at beleértve	18 fölött 30-at beleértve	30 fölött 50-et beleértve	50 fölött 80-at beleértve	80 fölött 120-at beleértve
IT5	4	5	6	8	9	11	13	15
IT6	6	8	9	11	13	16	19	22
IT7	10	12	15	18	21	25	30	35
IT8	14	18	22	27	33	39	46	54
IT9	25	30	36	43	52	62	74	87
IT10	40	48	58	70	84	100	120	140
IT11	60	75	90	110	130	160	190	220
IT12	100	120	150	180	210	250	300	350

Példa: 10mm-es furat, D8 tűréssel, max. átmérő = 10.062, min. átmérő = 10.040, furat tűrés (IT8) = 0.022

Maximális tűrés határ: $0.15 \times \text{furat tűrés (IT8)} = 0.0033$, kerekítve = 0.004

Minimális tűrés határ: $0.35 \times \text{furat tűrés (IT8)} = 0.0077$, kerekítve = 0.008

Dörzsár maximális tűrés határa = $10.062 - 0.004 = 10.058$

Dörzsár minimális tűrés határa = $10.058 - 0.008 = 10.050$

HIBAEELHÁRÍTÁS DÖRZSÁRAZÁSNÁL

PROBLÉMA	OK	MEGOLDÁS
Törött vagy csavart nyél	Nem megfelelő illeszkedés a szár és befogó között	Győződjön meg arról, hogy a szár és a befogó szennyeződéstől és sérüléstől mentes
Gyors szerszámkopás	Nem megfelelő anyageltávolítási ráta	Növelje az anyageltávolítási rátát
Felméretes furat	Túlzott élmagasság ingadozás	Újraélezés a megfelelő geometriára
	Szerszám elmozdulás az orsóban	Korrigálja az elmozdulást, stabilizálja a szerszámot
	Sérülés a szerszámbe fogón	Cserélje a befogót
	Sérülés a szerszám szárán	Cserélje, vagy élezze újra a szárát
	Szerszám elhajlása, görbülése	Cserélje, vagy élezze újra a szerszámot
	Aszimmetrikus élettörés szög	Újraélezés a megfelelő geometriára
	Túl nagy előtolás vagy vágósebesség	Alkalmazza a termékkatalógusban vagy termékválasztó CD-n javasolt forgácsolási paramétereket
Alulméretes furat	Nem megfelelő anyageltávolítási ráta	Növelje az anyageltávolítási rátát
	Hőképződés a dörzsárazás alatt: táguló majd zsugorodó furat	Növelje a hűtő-kenő folyadék adagot
	Szerszámkopás miatt alulméretes átmérő	Újraélezés a megfelelő geometriára
	Túl alacsony előtolás vagy vágósebesség	Alkalmazza a termékkatalógusban vagy Termék-választó CD-n javasolt forgácsolási paramétereket.
	Előfurat túl kicsi	Csökkentse az anyageltávolítási rátát
Ovális és kúpos furatok	Szerszám elmozdulás az orsóban	Korrigálja az elmozdulást, stabilizálja a szerszámot
	Szerszám rosszul illeszkedik a furatban	Használjon szegecslyukdörzsárat
	Aszimmetrikus élettörés szög	Újraélezés a megfelelő geometriára
Rossz furatvégződés	Túl sok eltávolítandó anyag	Csökkentse az anyageltávolítási rátát
	Szerszámkopás	Újraélezés a megfelelő geometriára
	Túl kicsi vágási homlokszög	Újraélezés a megfelelő geometriára
	Túlságosan felhígított emulzió vagy vágóolaj	Növelje a koncentrációt
	Előtolás és /vagy sebesség túl alacsony	Alkalmazza a termékkatalógusban vagy Termék-választó CD-n javasolt forgácsolási paramétereket
	A vágási sebesség túl nagy	Alkalmazza a termékkatalógusban vagy Termék-választó CD-n javasolt forgácsolási paramétereket
Az eszköz beszorul és eltörik	Szerszámkopás	Újraélezés a megfelelő geometriára
	Az eszköz hátrafelé kúpos szakasza túl kicsi	Ellenőrizze és cserélje ki/módosítsa az szerszámot
	Vágóélszalag túl széles	Ellenőrizze és cserélje ki/módosítsa az szerszámot
	munkadarab anyag deformálódik műanyag	Az eltolódás kiigazítása érdekében használjon állítható dörzsárat
	Benyomódásra hajlamos munkadarab	Csökkentse az anyageltávolítási rátát
	Heterogén kemény zárványos anyag	Használjon tömör keményfém dörzsárat

MENETMARÁS

ÁLTALÁNOS TIPPEK A MENETMARÁSSAL KAPCSOLATBAN

1. A menetmarás során a menet egy olyan marószerszám körkörös interpolációjával készül, amelynek a kerületén egy adott menetgeometria lett köszörüléssel kialakítva.
2. Menetmaró használatához olyan vezérelt szerszámgépre van szükség, amely képes a körkörös pályák bejárására.
3. A legtöbb korszerű CNC-gép rendelkezik menetmaráshoz szükséges megmunkálási ciklusokkal
4. További információkat a gép kézikönyvében vagy a gép gyártójánál talál

JELLEMZŐK ÉS ELŐNYÖK

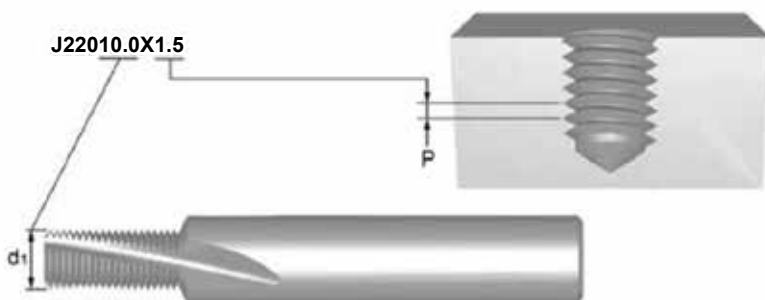
1. A menetmarás növeli a megbízhatóságot és az élettartamot
2. A menetmarók kis forgácsokat generálnak, ez pedig problémamentes menetmegmunkálást eredményez
3. Tűrésbeállítási lehetőség pontos koordinátákkal
4. Teljes menet hozható létre egészen a furat aljáig
5. Számos különféle anyag megmunkálására képes
6. Egy adott marószerszám képes különböző méretű meneteket kialakítani, feltéve, hogy a menetemelkedés azonos
7. u gyanazzal a szerszámmal létrehozhatók balos és jobbos menetek is
8. Egyes menetmarók képesek a belépési élettörés megmunkálására is (j 200, j 205, j 260)

A SZERSZÁM KIVÁLASZTÁSA

A szerszám cikkszámát a típus, az átmérő (d_1) és a menetemelkedés (P) határozza meg

Rendeléskor a cikkszámot használja

Mindig ellenőrizze a katalógusban, hogy a megfelelő menetméretekkel rendelkeznek-e



A fenti menetmaró szerszám olyan menetek készítésére alkalmas, amelyek mérete $\geq M12 \times 1,5$ (M14x1,5, M18x1,5 stb.).

PROGRAMOZÁS Rprg-vel

- A menettűrés egyszerű beállításához mindig rádiuszkorrekcióval (Rprg) programozzon.
- Az Rprg érték egy új marószerszám kezdőértéke, és megtalálható a maró szárára nyomtatva. Ezt ofszetként meg kell adni a szerszámvezérlési paramétereknél
- Az Rprg alapját a menet elméleti nullavonala adja, ez azt jelenti, hogy amikor a programozáshoz az Rprg értéket használja, a menet sohasem túlméretes, hanem normálisan szoros lesz
- A programkoordináták kis mértékű módosításával tehát létrehozható a kívánt menetméret

ALKALMAZÁSI j AVASLATOK

- Mindig a helyes forgácsolási adatokat használja (tekintse át a 198. oldalon található forgácsolásiadat-diagramot)
- A menet átmérőjéhez az ajánlott fúróméret ugyanaz, mint a hagyományos menettűrés esetében
- A menettűrés könnyű beállításához mindig kezdjen a menetmaró szárán látható Rprg értékkel
- Egy kaliberszám segítségével ellenőrizze az első menet tűrését, hogy megállapítsa, szükség van-e rádiuszkorrekcióra. A rádiusz 2-3 alkalommal korrigálható, mielőtt a menetmaró elhasználódik.
- Száraz megmunkálásnál sűrített levegőt érdemes használni a forgácsok eltávolítása érdekében
- Komolyabb kihívást jelentő anyagok menetmegmunkálása esetén érdemes 2 vagy 3 műveleti menetet végezni

MENETMEGMUNKÁLÁS

ÁLTALÁNOS TANÁCSOK A MENETFÚRÁSHOZ

A megfelelő menetfúrás számos tényező függvénye, melyek mind befolyásolják a végtermék minőségét.

1. Az anyag minőségéhez és a furat típusához (átmenő és zsákfurat) megfelelő menetfúró kiválasztása. Anyagtípus kiválasztásához használja az Anyagbesorolási táblázatot.
2. Bizonyosodjon meg a munkadarab stabil, merev megfogásáról. Az oldalirányú elmozdulás rossz minőségű menetet vagy a szerszám törését okozhatja.
3. Válasszon megfelelő méretű fúrot a katalógus vonatkozó oldaláról. Mindig bizonyosodjon meg arról, hogy a munkadarabon a felkeményedés mértéke minimális.
4. Válassza a katalógus termékoldal által javasolt vágási sebességet.
5. A tökéletes megmunkálás érdekében mindig a megfelelő vágófolyadékot használja.
6. NC gépek esetében a programhoz megfelelő vágósebességet válasszon. Menetfúró befogó esetén javasolt, hogy a menetemelkedés 95-97%-ig generálja a menetfúró saját menetemelkedését.
7. Ha lehetséges, a menetfúrot jó minőségű nyomatékhatárolós befogóval használja, amely biztosítja a menetfúró szabad tengelyirányú mozgását, és pontosan megvezeti azt a furatban. A jó befogóválasztás egy esetleges megfeneklésnél a szerszámtörést is megakadályozza.
8. A menetfúrot mindig finoman indítsa a furatba. Az egyenlőtlen előtolás harangszáj kialakulásához vezethet.

MENETFÚRÓ TŰRÉS VS. BELSŐ MENET (ANYA) TŰRÉS TÁBLÁZAT

Menetfúró tűrésosztály			Belső menet tűrés (anya)					Alkalmazás
ISO	DIN	ANSI BS						
ISO 1	4 H	3 B	4 H	5 H				Ráhagyás nélküli illesztés
ISO 2	6 H	2 B	4 G	5 G	6 H			Normál illesztés
ISO 3	6 G	1 B			6 G	7 H	8 H	Illesztés nagy ráhagyással
-	7 G	-				7 G	8 G	Laza illesztés későbbi felületi kezelés vagy bevonatolás miatt

HIBAEZHÁRÍTÁS - MENETFÚRÁSNÁL

PROBLÉMA	OK	MEGOLDÁS
Felméretes menet	Nem megfelelő tűrés	Alacsonyabb menettűrésű szerszámot válasszon.
	Nem megfelelő axiális előtolás	Csökkentse az előtolási rátát 5-10%-kal, vagy növelje a menettűró befogó szorítását.
	Az alkalmazáshoz rosszul megválasztott menettűró	Használjon terelőéles menettűró az átmenő furathoz, és csavart hornyút a zsákfurathoz. Használjon bevonatolt menettűró az élráttékképződés megelőzése érdekében. Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait az alkalmazáshoz
	A menettűró nem központos a furatban	Ellenőrizze a menettűró befogót és pozicionálja a menettűró közepe a furaton
	Hűtő-kenő folyadék hiánya	Az élráttékképződés elkerülése érdekében, használja a megfelelő hűtő-kenő folyadékot. (Lásd: Hűtő-kenő folyadék fejezet a műszaki kézikönyvben
	Menettűró sebessége túl alacsony	Kövesse a katalógus vagy a TermékVálasztó program ajánlásait.
Alulméretes menet	Az alkalmazáshoz rosszul megválasztott menettűró	Használjon terelőéles menettűró az átmenő furathoz, és csavart hornyút a zsákfurathoz. Használjon bevonatolt menettűró az élráttékképződés megelőzése érdekében. Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait az alkalmazáshoz.
	Nem megfelelő tűrés	Válasszon magasabb tűrésű szerszámot, különösen a felméretezésre kevésbé hajlamos anyagok, mint öntvény, rozsdamentes acél esetén.
	Nem megfelelő vagy nem elegendő hűtő-kenő folyadék	Használja a megfelelő minőségű és mennyiségű hűtő-kenő folyadékot, hogy megakadályozza a forgács furatba történő torlódását. (Lásd: Hűtő-kenő folyadék fejezet a műszaki kézikönyvben
	Túl kicsi magfurat	Növelje az előfűró átmérőjét a maximálisra. Ellenőrizze a menettűró méretét
	Rugalmas alakváltozás menettűrás után	Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait az alkalmazáshoz.
Forgácsképződés	Az alkalmazáshoz rosszul megválasztott menettűró	Használjon terelőéles menettűró az átmenő furathoz, és csavart hornyút a zsákfurathoz. Használjon bevonatolt menettűró az élráttékképződés megelőzése érdekében. Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait az alkalmazáshoz.
	Nem megfelelő vagy nem elegendő hűtő-kenő folyadék	Használja a megfelelő minőségű és mennyiségű hűtő-kenő folyadékot, hogy megakadályozza az élráttékképződést. (Lásd: Hűtő-kenő folyadék fejezet a műszaki kézikönyvben
	Megfeneklett menettűró	Növelje az előfűrás, vagy csökkentse a menettűrás mélységét.
	Felkeményedések a felszínen	Csökkentse a vágósebességet, használjon bevonatos szerszámot és megfelelő hűtő-kenő folyadékot. Lásd: "Rozsdamentes acélok megmunkálása" című fejezet a műszaki kézikönyvben
	Ellenkező irányú forgácsleválás	Kerülje a menettűró hirtelen visszafele történő mozdítását.
	A bekezdőkúp a furatbemenetnek ütközik	Ellenőrizze a menettűró pontos tengelyirányú pozicionálását.
	Túl kicsi magfurat	Növelje az előfűró átmérőjét a maximálisra. Ellenőrizze a menettűró méretét

HIBAEZHÁRITÁS - MENETFÚRÁSNÁL

PROBLÉMA	OK	MEGOLDÁS
Szerszám törés	Elkopott menetfúró	Használjon egy új szerszámot, vagy élezze újra a régit.
	Nem megfelelő vagy nem elegendő hűtő-kenő folyadék	Használja a megfelelő minőségű és mennyiségű hűtő-kenő folyadékot, hogy megakadályozza az élrátét képződést. (Lásd: Hűtő-kenő folyadék fejezet a műszaki kézikönyvben)
	Megfeneklett menetfúró	Növelje az előfúrás, vagy csökkentse a menetfúrás mélységét.
	Túl nagy vágósebesség	Csökkentse a vágósebességet. Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait.
	Felkeményedések a felszínen	Csökkentse a vágósebességet, használjon bevonatos szerszámot és megfelelő hűtő-kenő folyadékot. Lásd: "Rozsdamentes acélok megmunkálása" című fejezet a műszaki kézikönyvben
	Túl kicsi magfurat	Növelje az előfúró átmérőjét a maximálisra. Lásd: előfúró táblázat.
	Túl nagy nyomaték	Használjon nyomatékhatárolóval ellátott menetfúró-befogót
	Rugalmas alakváltozás menetfúrás után	Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait.
Gyors szerszámkopás	Az alkalmazáshoz rosszul megválasztott menetfúró	Használjon alacsonyabb homlokszöggel és/vagy magasabb hátszöggel és/vagy hosszabb bekezdőkúppal ellátott szerszámot. Használjon bevonatos szerszámot. Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait az alkalmazáshoz.
	Nem megfelelő vagy nem elegendő hűtő-kenő folyadék	Használja a megfelelő minőségű és mennyiségű hűtő-kenő folyadékot, hogy megakadályozza az élrátét képződést és a termikus sokkot a vágóéleken. (Lásd: Hűtő-kenő folyadék fejezet a műszaki kézikönyvben)
	Túl gyors vágósebesség	Csökkentse a vágósebességet. Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait.
Élrátét képződés	Az alkalmazáshoz rosszul megválasztott menetfúró	Használjon alacsonyabb homlokszöggel és/vagy magasabb hátszöggel. Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait az alkalmazáshoz.
	Nem megfelelő vagy nem elegendő hűtő-kenő folyadék	Használja a megfelelő minőségű és mennyiségű hűtő-kenő folyadékot, hogy megakadályozza az élrátét képződést. (Lásd: Hűtő-kenő folyadék fejezet).
	Nem megfelelő felületi kezelés	Válasszon szerszámot az ajánlott felületkezeléssel
	Túl alacsony vágósebesség	Ellenőrizze a Katalógus vagy a TermékVálasztó program ajánlásait az alkalmazáshoz.

MARÁS

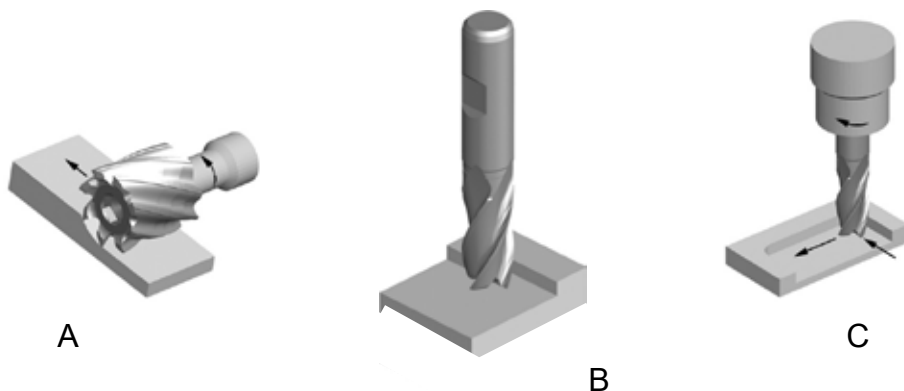
ÁLTALÁNOS TANÁCSOK MARÁSHOZ

A marási művelet egy előre meghatározott anyagmennyiség maróval történő eltávolítása a munkadarabról. A maró nagy sebességgel forog és viszonylag lassú mozgás, vagy előtolás jellemzi.

A marási folyamat jellemzője, hogy a maró minden éle kis különálló forgácsként távolítja el az anyagot a munkadarabról.

A MARÓ TÍPU SA

A három alapvető marási műveletet alább mutatjuk be: (A) palástmarás, (B) homlokmarás, (C) horonymarás.



Palástmarásnál (síkmarásnak is hívják) a maró forgástengelye a munkadarab felületével párhuzamos. A maró kerületén számos él van, amelyek mind egyéltű szerszámként viselkednek.

A palástmaró, attól függően, hogy egyenes vagy csavart hornyai vannak, derékszögű vagy rézsútós mozgást végez.

A homlokmaró a munkadarabra merőleges forgástengelyű orsóra szerelt szerszám. A marási műveletet a maró kerületén és homlokán elhelyezkedő vágóélek végzik.

Horonymarásnál a maró forgástengelye a munkadarabra merőleges. A vágóélek a homlok és a palástfelületen helyezkednek el.

ALKALMAZÁSOK

Az anyageltávolítási ráta és az adott alkalmazás között szoros kapcsolat van. Minden alkalmazás különböző mértékű anyageltávolítási rátát kíván. A Q mennyisége az alkalmazásra jellemző fogás növelésével arányosan növekszik. A Dormer Katalógus a különböző megmunkálási módokat ikonokkal jelzi.

Vállmarás	Homlokmarás	Horonymarás	Beszűrő marás	Rámpamarás
A vágás radiális mélysége max. a maró átmérő 0,25-szöröse.	A vágás radiális mélysége max. a maró átmérő 0,9-szerese, axiális mélysége az átmérő 0,1-szerese.	Horonymarás vagy reteshorony-marás. A radiális mélység a maróátmérővel megegyezik.	A központon átmenő éllel rendelkező marók esetén fúrási művelet is végezhető a munkadarabon. Az ilyen jellegű megmunkálásnál az előtolás feleződik.	Egyidejű axiális és radiális behatolás a munkadarabba.

HIBAEZHÁRITÁS - MARÁSNÁL

PROBLÉMA	OK	MEGOLDÁS
Szerszám törés	Túl nagy anyageltávolítás	Csökkentse a fogankénti előtolást
	Túl nagy előtolás	Csökkentse az előtolást
Szerszám kopás	A dolgozó-, vagy a teljes hossz túl nagy	Fogja lejjebb a szárat, vagy használjon rövidebb marót
	Túl kemény a munkadarab	A megfelelő alapanyagú és bevonatú szerszám kiválasztása érdekében tekintse át a Termék Katalógus, vagy a TermékVálasztó program ajánlásait
	Nem megfelelő előtolás vagy vágósebesség	Tekintse át a Katalógus, vagy a TermékVálasztó program forgácsolási paraméterekre vonatkozó ajánlásait
	Nem megfelelő forgácseltávolítás	Hűtő-kenő folyadék vezető csatornák beállítása
	Ellenirányú marás	Egyenirányú marás
	Nem megfelelő spirálszög választás	Tekintse át a Katalógus, vagy a Termék-Választó program szerszámajánlásait
Forgácsképződés	Túl nagy előtolási ráta	Csökkentse az előtolást
	Rezgés, zaj	Csökkentse a fordulatszámot
	Alacsony vágósebesség	Növelje a fordulatszámot
	Ellenirányú marás	Egyenirányú marás
	Szerszám megfogási probléma	Fogja lejjebb a szárat, vagy használjon rövidebb marót
	Munkadarab megfogási probléma	Fogja szorosabban a munkadarabot
Rövid szerszámél-tartam	Szívós megmunkálható anyag	Tekintse át a Termék Katalógus, vagy a TermékVálasztó program szerszámajánlásait
	Nem megfelelő élszögek és élszalagok	Váltson a megfelelő élszögre
	Maró és munkadarab súrlódása	Használjon bevonatos szerszámot
Rossz felületi minőség	Túl nagy előtolás	Lassítson a megfelelő sebességre
	Túl alacsony vágósebesség	Növelje a vágósebességet
	Forgácsbecsípődés	Csökkentse az anyageltávolítást
	Szerszámkopás	Cserélje, vagy köszörülje újra a szerszámot
	Élratét képződés	Váltson nagyobb spirálszögű szerszámra
	Forgács összeforradás	Növelje a hűtő-kenő folyadék mennyiségét

PROBLÉMA	OK	MEGOLDÁS
Pontatlan munkadarab	Szerszám elhajlás	Fogja lejjebb a szárat, vagy használjon rövidebb marót
	Nem megfelelően megválasztott élszám	Használjon több élű szerszámot
	Elhasznált, kopott szerszámtartó	javítsa, vagy cserélje ki
	Nem megfelelő szerszámmefogási merevség	Cseréljen rövidebb, merevebb befogóra
	Rossz orsó merevség	Használjon merevebb orsót
Rezgés, zaj	Túl nagy előtolás és vágósebesség	Korrigáljon a Katalógus/TermékVálasztó alapján
	A dolgozó-, vagy a teljes hossz túl nagy	Fogja lejjebb a szárat, vagy használjon rövidebb marót
	Túl mély vágás	Csökkentse a vágás mélységét
	Nem megfelelő merevség (gép vagy befogó oldalról)	Ellenőrizze, és szükség esetén cserélje a szerszámtartót

KEMÉNYFÉM TURBÓMARÓK

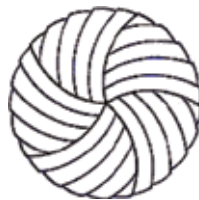
ÁLTALÁNOS TIPPEK A KEMÉNYFÉM TURBÓMARÓK KAPCSOLATBAN

A keményfém turbómarók gyakran használatosak számos különféle anyagból készült alkatrészek előkészítéséhez és végső műveleteihez.

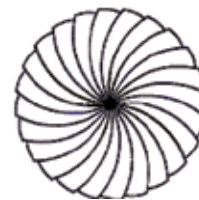
Általában manuálisan használják őket sűrített levegős furatköszörülő gépekbe szerelve

JELLEMZŐK ÉS ELŐNYÖK

1. A szívóssá tett és edzett acélszárok javítják a merevséget és csökkentik az elhajlás, illetve a rezgések kockázatát
2. A pontosan köszörült szárok javítják a befogást, és csökkentik az elforgás valószínűségét
3. A speciális keményforrasztott elemek megakadályozzák a nagy hőmérsékleti hibákat, valamint fokozott szilárdságot biztosítanak a nyomással és az ütésekkel szembeni ellenállás érdekében
4. Az univerzális dupla forgácsolású geometria számos különféle anyaghoz és alkalmazáshoz megfelelő
5. Anyagspecifikus geometriák is kaphatók kifejezetten acélhoz (ST), rozsdamentes acélhoz (A), alumíniumhoz (AL) és üvegszálaz anyagokhoz (GRP)
6. Kapható TiAlN-bevonattal, hogy hosszabb élettartam legyen elérhető abrazív anyagokban
7. A gömbvégű sorjázók szakaszos spirálhorony-köszörülésű geometriával rendelkeznek
8. Ez aktív geometriát biztosít a sorjázó közepe felé, így javul a forgácsolási művelet, és csökken a forgácsfelhalmozódás és az eltömődés esélye



Szakaszos



Normál

A BIZTONSÁG AZ ELSŐ

1. A nagy sebességű forgószerszámok veszélyforrást jelentenek, és nem megfelelő használat esetén veszélyessé válnak
2. A turbómarók cseréje előtt mindig válassza le a furatköszörülő gépet a sűrített levegő-ellátásról
3. Ellenőrizze a furatköszörülő állapotát, és ha lehetséges, akkor használjon kis rezgésű változatot
4. Mindig használjon megfelelő védőfelszerelést, és gondoskodjon a közelben dolgozó minden személy védelméről is



Személyi védőfelszerelés viselése mindig kötelező.

ALKALMAZÁSI j AVASLATOK

1. Mindig megfelelő névleges sebességű furatköszörülő gépet használjon
2. Fontos a furatköszörülő gépek rendszeres karbantartása; gondoskodni kell a kenésükről, és ellenőrizni kell, hogy nem kopottak-e a csapágyak
3. Turbómaró csere esetén mindig tisztítsa meg a furatköszörülő gép szorítóanyáját, patronját és belső kúpos részét
4. Próbálja meg elkerülni, hogy erős mechanikai rezgések vagy ütések ériék a turbómarót
5. Ne engedje túlhevülni a sorjázót, hogy elkerülje a túlzott mértékű hőhatásokat
6. Ne szúrja a turbómarót túl mélyen a munkadarab anyagába, és ügyeljen arra, hogy ne akadjon el sarkakban vagy csatornáknakban

SORJÁZÓ HASZNÁLATI HIBAELHÁRÍTÁS

PROBLÉMA	OK
A sorjázófogak csorbulása	A túlságosan alacsony fordulatszám ugrálást okozhat
	Excentricitás (elkopott orsó, patron vagy csapágyak)
	A sorjázó beszúrása a munkadarabba, ahol elakad
A sorjázófogak eltömődése	A horony hossza vagy a teljes hossz túl nagy
	Nem megfelelő a geometria az adott munkadarabanyaghoz
Idő előtti kopás	Túl magas a fordulatszám a sorjázó méretéhez és a munkadarab anyagához
	Excentricitás (elkopott orsó, patron vagy csapágyak)
A fej leválik a szárról	A túl magas fordulatszám túlhevüléshez vezet
	A hosszabb ideig tartó folyamatos használat túlhevüléshez veze

Romana		Grupa de materiale ce aplicatie (AMG)	Duritate HB	Rezistenta mecanica N/mm ²	ISO
1. Otel	1.1	Otel magnetic moale	< 120	< 400	P 1
	1.2	Otel structural, de cementare	< 200	< 700	P 1
	1.3	Otel carbon	< 250	< 850	P 2
	1.4	Otel aliat	< 250	< 850	P 3
	1.5	Otel aliat, imbunatatit	> 250 < 350	> 850 < 1200	P 4
	1.6	Otel aliat, imbunatatit	> 350	> 1200 < 1620	H 1
	1.7	Otel aliat, calit	49-55HRC	> 1620	H 3
	1.8	Otel aliat, calit	55-63HRC	> 1980	H 4
2. Otel inox	2.1	Prelucrare libera	< 250	< 850	M 1
	2.2	Austenitic	< 320	< 1100	M 3
	2.3	Feritic+austenitic	< 300	< 1000	M 2
	2.4	Durificat prin precipitare	>320 <410	>1100 <1400	S 2
3. Fonta	3.1	Grafit lamelar	< 150	> 500	K 1
	3.2	Grafit lamelar	> 150 <300	> 500 < 1000	K 2
	3.3	Grafit modular	< 200	< 700	K 3
	3.4	Grafit nodular	> 200 < 300	> 700 < 1000	K 4
4. Titan	4.1	Nealiat	< 200	< 700	S 1
	4.2	Aliat	< 270	< 900	S 2
	4.3	Aliat	> 270 < 350	> 900 ≤ 1250	S 3
5. Nickel	5.1	Nealiat	< 150	< 500	S 1
	5.2	Aliat	< 270	> 900	S 2
	5.3	Aliat	> 270 < 350	> 900 < 1200	S 3
6. Cupru	6.1	Nealiat	< 100	< 350	N 3
	6.2	Alama, bronz	< 200	< 700	N 4
	6.3	Alama, CuZn	< 200	< 700	N 3
	6.4	Bronz inalta rezistenta	< 470	< 1500	N 4
7. Aluminiu Magneziu	7.1	Al, Mg nealiat	< 100	< 350	N 1
	7.2	Al aliat cu Si <0.5%	< 150	< 500	N 1
	7.3	Al aliat cu Si >0.5% <10%	< 120	< 400	N 1
	7.4	Al aliat cu Si >10%	< 120	< 400	N 2
8. Materiale sintetice	8.1	Termoplastice	---	---	O
	8.2	Termoreactive	---	---	O
9. Materiale dure	9.1	Plastic armat	---	---	O
	9.1	Cermet (metal ceramica)	< 550	< 1700	H
10. Grafit	10.1	Grafit standard	---	< 100	O

EXEMPLE DE MATERIALE DE PRELU CAT

AMG	EN	W Nr.	DIN	BS	SS	USA	UNS	ISO
1.1		1.1015, 1.1013	Rf60, Rf6100	230Mn7, 050A12	1160	Leaded Steels	G12120	P 1
1.2	EN 10 025 - S235JR G2	1.1012, 1.1053, 1.17131	S137-2, 16MnCr5, S150-2	060A35, 080M40, 4360-50B	1312, 1412, 1914	135, 30	G10100	P 1
1.3	EN 10 025 - E295	1.1191, 1.0601	CK45, C60	080M46, 080A62	1550, 2142, 2172	1024, 1060, 1061	G10600	P 2
1.4	EN 10 083-1 - 42 CrMo 4 - EN 10 270-2	1.7225, 1.3505, 1.6582, 1.3247	42CrMo4, 100Cr6, 34CrNiMo6, S2-10-1+8	708M40/42, 817M40, 534A99, BM2, BT42	1672-04, 2090, 2244-02, 2541-02	4140, A2, 4340, M42, M2	G41270, G41470, T30102, T11342	P 3
1.5	EN ISO 4957 - HS6-5-2 - EN ISO 4957 - HS6-5-25	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, 5N1CrMoV6, X210Cr12, S2-10-1+8	B01, BM2, BT42, 826 M40, 830M31	2244-04, 2541-03, 2550, 2722, 2723	01, L6, M42, D3, A2, M2, 4140, 8630	G86300, T30102, T11302, T30403, T11342	P 4
1.6	EN ISO 4957 - HS2-9-1+8	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, X210Cr12, S2-10-1+8	801, 826 M40, 830M31	2244-05, 2541-05, HARDDOX 400	01, L6, M42, D3, 4140, 8130	T30403, G41400, J14047	H 1
1.7	EN ISO 4957 - HS2-9-1+8	1.2510	100MnCrW12	B01, BD3, BH13	HARDOX 500			H 3
1.8	EN ISO 4957 - X40CrMoV5-1	1.3343, 1.2344	S6-5-2, GX40CrMoV5-1	BM2, BH13	2242 HARDOX 600			H 4
2.1	EN 10 088-3 - X14CrMoS17	1.4305, 1.4104	X10CrNiS189, X12CrMoS17	303 S21, 416 S37	2301, 2312, 2314, 2346, 2380	303, 416, 430F	S30300, S41600, S43020	M 1
2.2	EN 10 088-2-0-3 - 1.4301+AT	1.4301, 1.4541, 1.4571	X5CrNi189 X10CrNiMoTi1810	304 S15, 321 S17, 316 S, 320 S12	2310, 2333, 2337, 2343, 2353, 2377	304, 321, 316	S30400, S32100, S31600	M 3
2.3	EN 10 088-3 - 1.4460	1.4460, 1.4512, 1.4582	X6CrNiMo275, X4CrNiMoN6257	317 S16, 316 S16	2324, 2387, 2570	409, 430, 436	S40900, S4300, S43600	M 2
2.4	EN 1 4547	1.4547	X2CrNiMo20-18-6	HR41	2378	17-4PH	S31254	S 2
3.1	EN 1561 - EN-JL1030	0.6010, 0.6040	GG10, GG40	Grade150, Grade 400	0120, 0212, 0814	ASTM A48 class 20	F11401, F12801	K 1
3.2	EN 1561 - EN-JL1050	0.6025, 0.6040	GG25, GG40	Grade200, Grade 400	0125, 0130, 0140, 0217	ASTM A48 class 40, STM A48 class 60	F12801, F14101	K 2
3.3	EN 1561 - EN-JL2040	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	42012, P44007, 7002, 30g/72	0219, 0717, 0727, 0732, 0852	ASTM A220 grade 40010, ASTM A602 grade M4504	F22830, F20001	K 3
3.4	EN 1561 - EN-JL2050	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	42012, P44007, 7002, 30g/72	0221, 0223, 0737, 0854	ASTM A220 grade 90001, ASTM A602 grade M8501	F26230, 20005	K 4
4.1		3.7024LN	T89.8	TA1 to 9	T89.8	ASTM B265 grade 1	R50250	S 1
4.2		3.7164LN, 3.7119LN	TA16V4, TA165n2	TA10 to 14, TA17	TA16V4, TA165n2	AMS4928	R54790	S 2
4.3		3.7164LN, 3.7174LN, 3.7184LN	TA16V4, TA16V5Sn2, TA14MoSn2	TA10 to 13, TA28	TA16V5Sn2	AMS4928, AMS4971	R56400, R54790	S 3
5.1		2.4060, 2.4066	Nickel 200, 270, N189.6	NA 11, NA12	NI200, NI270	Nickel 200, Nickel 230	N02200, N02230	S 1
5.2		2.4630LN, 2.4602, 2.4650LN	Nimonic 75, Monel 400, Hastelloy C, Inconel 600	HR203, 3027-76		Nimonic 75, Monel 400, Hastelloy, Inconel 600	N06075, N10002, N04400, N06600	S 2
5.3		2.4668LN, 2.4631LN, 2.6554LN	Inconel 718, Nimonic 80A, Waspaloy	HR8, HR401, 601		Inconel 718, 625, Nimonic 80	N07718, N07080, N06625	S 3
6.1	EN 1652 - CW004A	2.0060, 2.0070	E-Cu57, SE-Cu	C101	5010	101	C10100, C1020	N 3
6.2	EN 1652 - CW612N	2.0360, 2.0360, 2.1030, 2.1080	CuZn39Pb2, CuZn40, CuSn8, CuSn6Zn	CZ120, CZ109, PB104	5168		C28000, C37710	N 4
6.3	EN 1652 - CW508L	2.0321, 2.0260	CuZn37, CuZn28	CZ108, CZ106	5150		C2600, C27200	N 3
6.4			Ampco 18, Ampco 25	AB1 type	5238, JIM7-20			N 4
7.1	EN 485-2 - EN AW-1070A	3.0255	Al99.5	LMO, 1 B (1050A)	4005	EC, 1060, 1100	A91060, A91100	N 1
7.2	EN 755-2 - EN AW-5005	3.1355, 3.3525	AlCuMg2, AlMg2Mn0.8	LM5, 10, 12, N4 (6251)	4106, 4212	380, 520.0, 520.2, 2024, 6061	A03800, A05200, A92024	N 1
7.3	EN 1706 - EN AC-42000	3.2162.05, 3.2341.01	GD-ALSi8Cu, G-ANSiMg	LM2, 4, 16, 18, 21, 22, 24, 25, 26, 27, L109	4244	319.0, 333.0, 319.1, 356.0	A03190, A03330, C35600	N 1
7.4	SS-EN 1706 - EN AC-47000	3.2581.01	G-ALSiH8, G-ALSiH2	LM6, 12, 13, 20, 28, 29, 30	4260, 4261, 4262	4032, 222.1, A332.0	A94032, A02220, A13320	N 2
8.1			Polystyrene, Nylon, PVC Cellulose, Acetate & Nitrate			Polystyrene, Nylon, PVC		O
8.2			Ebonite, Tufnol, Bakelite			Bakelite		O
8.3			Kevlar, Printed Circuit boards			Kevlar		O
9.1			Ferrocite, Ferrotitanit					H
10.1			Graphite					O

Tabel Viteze de Aschiere



		Vc															
m/Min		5	8	10	15	20	25	30	40	50	60	70	80	90	100	110	150
Feet/Min		16	26	32	50	66	82	98	130	165	197	230	262	296	330	362	495
∅		RPM															
mm	inch																
1,00		1592	2546	3183	4775	6366	7958	9549	12732	15916	19099	22282	25465	28648	31831	35014	47747
1,50		1061	1698	2122	3183	4244	5305	6366	8488	10610	12732	14854	16977	19099	21221	23343	31831
2,00		796	1273	1592	2387	3183	3979	4775	6366	7958	9549	11141	12732	14324	15916	17507	23873
2,50		637	1019	1273	1910	2546	3183	3820	5093	6366	7639	8913	10186	11459	12732	14006	19099
3,00		531	849	1061	1592	2122	2653	3183	4244	5305	6366	7427	8488	9549	10610	11671	15916
3,18	1/8	500	801	1001	1501	2002	2502	3003	4004	5005	6006	7007	8008	9009	10010	11011	15015
3,50		455	728	909	1364	1819	2274	2728	3638	4547	5457	6366	7276	8185	9095	10004	13642
4,00		398	637	796	1194	1592	1989	2387	3183	3979	4775	5570	6366	7162	7958	8754	11937
4,50		354	566	707	1061	1415	1768	2122	2829	3537	4244	4951	5659	6366	7074	7781	10610
4,76	3/16	334	535	669	1003	1337	1672	2006	2675	3344	4012	4681	5350	6018	6687	7356	10031
5,00		318	509	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	9549
6,00		265	424	531	796	1061	1326	1592	2122	2653	3183	3714	4244	4775	5305	5836	7958
6,35	1/4	251	401	501	752	1003	1253	1504	2005	2506	3008	3509	4010	4511	5013	5514	7519
7,00		227	364	455	682	909	1137	1364	1819	2274	2728	3183	3638	4093	4547	5002	6821
7,94	5/16	200	321	401	601	802	1002	1203	1604	2004	2405	2806	3207	3608	4009	4410	6013
8,00		199	318	398	597	796	995	1194	1592	1989	2387	2785	3183	3581	3979	4377	5968
9,00		177	283	354	531	707	884	1061	1415	1768	2122	2476	2829	3183	3537	3890	5305
9,53	3/8	167	267	334	501	668	835	1002	1336	1670	2004	2338	2672	3006	3340	3674	5010
10,00		159	255	318	477	637	796	955	1273	1592	1910	2228	2546	2865	3183	3501	4775
11,11	7/16	143	229	287	430	573	716	860	1146	1433	1719	2006	2292	2579	2865	3152	4298
12,00		133	212	265	398	531	663	796	1061	1326	1592	1857	2122	2387	2653	2918	3979
12,70	1/2	125	201	251	376	501	627	752	1003	1253	1504	1754	2005	2256	2506	2757	3760
14,00		114	182	227	341	455	568	682	909	1137	1364	1592	1819	2046	2274	2501	3410
14,29	9/16	111	178	223	334	446	557	668	891	1114	1337	1559	1782	2005	2228	2450	3341
15,00		106	170	212	318	424	531	637	849	1061	1273	1485	1698	1910	2122	2334	3183
15,88	5/8	100	160	200	301	401	501	601	802	1002	1203	1403	1604	1804	2004	2205	3007
16,00		99	159	199	298	398	497	597	796	995	1194	1393	1592	1790	1989	2188	2984
17,46	11/16	91	146	182	273	365	456	547	729	912	1094	1276	1458	1641	1823	2005	2735
18,00		88	141	177	265	354	442	531	707	884	1061	1238	1415	1592	1768	1945	2653
19,05	3/4	84	134	167	251	334	418	501	668	835	1003	1170	1337	1504	1671	1838	2506
20,00		80	127	159	239	318	398	477	637	796	955	1114	1273	1432	1592	1751	2387
24,00		66	106	133	199	265	332	398	531	663	796	928	1061	1194	1326	1459	1989
25,00		64	102	127	191	255	318	382	509	637	764	891	1019	1146	1273	1401	1910
27,00		59	94	118	177	236	295	354	472	589	707	825	943	1061	1179	1297	1768
30,00		53	85	106	159	212	265	318	424	531	637	743	849	955	1061	1167	1592
32,00		50	80	99	149	199	249	298	398	497	597	696	796	895	995	1094	1492
36,00		44	71	88	133	177	221	265	354	442	531	619	707	796	884	973	1326
40,00		40	64	80	119	159	199	239	318	398	477	557	637	716	796	875	1194
50,00		32	51	64	95	127	159	191	255	318	382	446	509	573	637	700	955

HV	HRC	HB		
Vickers	Rockwell	Brinell	N/ mm ²	Tons/ sq. in.
940	68			
900	67			
864	66			
829	65			
800	64			
773	63			
745	62			
720	61			
698	60			
675	59			
655	58		2200	142
650		618	2180	141
640		608	2145	139
639	57	607	2140	138
630		599	2105	136
620		589	2070	134
615	56	584	2050	133
610		580	2030	131
600		570	1995	129
596	55	567	1980	128
590		561	1955	126
580		551	1920	124
578	54	549	1910	124
570		542	1880	122
560	53	532	1845	119
550		523	1810	117
544	52	517	1790	116
540		513	1775	115
530		504	1740	113
527	51	501	1730	112
520		494	1700	110
514	50	488	1680	109
510		485	1665	108
500		475	1630	105
497	49	472	1620	105
490		466	1595	103
484	48	460	1570	102
480		456	1555	101
473	47	449	1530	99
470		447	1520	98
460		437	1485	96
458	46	435	1480	96
450		428	1455	94
446	45	424	1440	93
440		418	1420	92

HV	HRC	HB		
Vickers	Rockwell	Brinell	N/ mm ²	Tons/ sq. in.
434	44	413	1400	91
423	43	402	1360	88
413	42	393	1330	86
403	41	383	1300	84
392	40	372	1260	82
382	39	363	1230	80
373	38	354	1200	78
364	37	346	1170	76
355	36	337	1140	74
350		333	1125	73
345	35	328	1110	72
340		323	1095	71
336	34	319	1080	70
330		314	1060	69
327	33	311	1050	68
320		304	1030	67
317	32	301	1020	66
310	31	295	995	64
302	30	287	970	63
300		285	965	62
295		280	950	61
293	29	278	940	61
290		276	930	60
287	28	273	920	60
285		271	915	59
280	27	266	900	58
275		261	880	57
272	26	258	870	56
270		257	865	56
268	25	255	860	56
265		252	850	55
260	24	247	835	54
255	23	242	820	53
250	22	238	800	52
245		233	785	51
243	21	231	780	50
240		228	770	50
235		223	755	49
230		219	740	48
225		214	720	47
220		209	705	46
215		204	690	45
210		199	675	44
205		195	660	43
200		190	640	41

Tol	Ø mm							
	> 1 ≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50	> 50 ≤ 80	> 80 ≤ 120
	µm							
e8	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89	-60 / -106	-72 / -126
f6	-6 / -12	-10 / -18	-13 / -22	-16 / -27	-20 / -33	-25 / -41	-30 / -49	-36 / -58
f7	-6 / -16	-10 / -22	-13 / -28	-16 / -34	-20 / -41	-25 / -50	-30 / -60	-36 / -71
h6	0 / -6	0 / -8	0 / -9	0 / -11	0 / -13	0 / -16	0 / -19	0 / -22
h7	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21	0 / -25	0 / -30	0 / -35
h8	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33	0 / -39	0 / -46	0 / -54
h9	0 / -25	0 / -30	0 / -36	0 / -43	0 / -52	0 / -62	0 / -74	0 / -87
h10	0 / -40	0 / -48	0 / -58	0 / -70	0 / -84	0 / -100	0 / -120	0 / -140
h11	0 / -60	0 / -75	0 / -90	0 / -110	0 / -130	0 / -160	0 / -190	0 / -220
h12	0 / -100	0 / -120	0 / -150	0 / -180	0 / -210	0 / -250	0 / -300	0 / -350
k10	+40 / 0	+48 / 0	+58 / 0	+70 / 0	+84 / 0	+100 / 0	+120 / 0	+140 / 0
k12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
m7	+2 / +12	+4 / +16	+6 / +21	+7 / +25	+8 / +29	+9 / +34	+11 / +41	+13 / +48
js14	+/- 125	+/- 150	+/- 180	+/- 215	+/- 260	+/- 310	+/- 370	+/- 435
js16	+/- 300	+/- 375	+/- 450	+/- 550	+/- 650	+/- 800	+/- 950	+/- 1100
H7	+10 / 0	+12 / 0	+15 / 0	+18 / 0	+21 / 0	+25 / 0	+30 / 0	+35 / 0
H8	+14 / 0	+18 / 0	+22 / 0	+27 / 0	+33 / 0	+39 / 0	+46 / 0	+54 / 0
H9	+25 / 0	+30 / 0	+36 / 0	+43 / 0	+52 / 0	+62 / 0	+74 / 0	+87 / 0
H12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
P9	-6 / -31	-12 / -42	-15 / -51	-18 / -61	-22 / -74	-26 / -86	-32 / -106	-37 / -124

1µm = 0.001 mm

GĂURIRE

RECOMADĂRI GENERALE LA GĂURIRE

1. Alegeți cel mai adecvat burghiu solicitat de aplicație, având în vedere materialul de prelucrat, posibilitățile mașinii – unelte și fluidul de răcire ce va fi utiliza
2. Lipsa de rigiditate a componente și a mașinii-unelte poate provoca deteriorarea burghiului, a componente sau a masinii - asigurați întotdeauna stabilitatea maximă. Măriți stabilitatea prin alegerea celui mai scurt burghiu adecvat aplicației.
3. Port-scula este o componentă importantă a prelucrării. Nu sunt permise jocuri ale sculei în port-sculă sau rotirea ei față de aceasta.
4. Utilizarea unui anumit fluid de răcire-ungere este determinată de particularitățile operației. Atunci când utilizați lichide de răcire și lubrifianți, asigurați un debit suficient, în special în zona vârfului burghiului
5. Evacuarea așchiilor în timpul găuririi este esențială în asigurarea procedurii corecte de găurire. Nu este permisă blocarea lor în canalele burghiului.
6. La reascuțire, asigurați reproducerea geometriei corecte a vârfului. Verificați dacă zona uzată a fost îndepărtată integral.

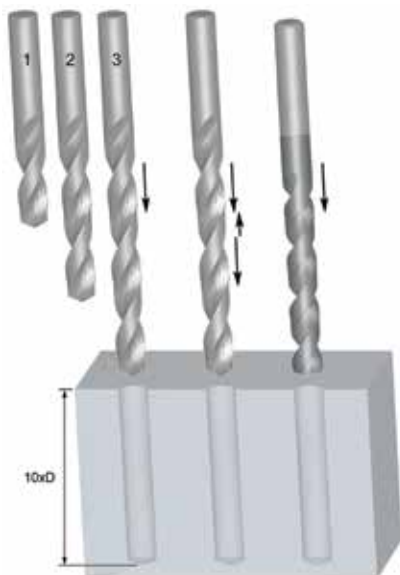
MĂRIMEA ALEZAJULUI

Materialul din care este executat burghiul, geometria sa împreună cu tipul de acoperire conferă sculei abilitatea de a realiza un alezaj de o anumită acuratețe. În general, sculele cu geometrie standard realizează alezaje în clasa H12. În condiții deosebite și cu geometrii dedicate, precizia poate ajunge și la H8. Pentru o mai bună înțelegere sunt listate mai jos principalele tipuri de burghie și performanțele lor:

- Burghie de uz general din HSS – H12
- Burghie din HSS / HSS-E cu spiră parabolică pentru găuri adânci – H10
- Acoperite, de înaltă performanță din carbură solidă – H8/H9

STRATEGIE DE GĂURIRE LA MARE ADÂNCIME

Pentru realizarea unui alezaj de lungime mare, există diverse procedee. În exemplul de mai jos sunt ilustrate 4 procedee de obținere a unui alezaj 10xD.



	Găurire serii	Găurire serii
Nr. burghiilor	3 (2,5xD, 6xD, 10xD)	2 (2,5xD, 10xD)
Tipul burghiului	Geometrie standard. Utilizare generală	Geometrie standard. Utilizare generală
+ / -	Costuri mari Timp îndelungat	Mai ieftin Rapid

	Găurire spiră	Găurire o singură trecere
Nr. burghiilor	1 (10xD)	1 (10xD)
Tipul burghiului	Geometrie standard. Utilizare generală	Scule cu utilizare specific
+ / -	Timp îndelungat	ieftin Rapid

PROBLEME LA GĂURIRE

PROBLEMĂ	CAUZĂ	REMEDIU
Antrenor rupt sau deformat	Contact defectuos între sculă și port-sculă	Controlați starea de curățenie a părților în contact. Nu folosiți piese cu defecte
Separare a miezului	Avans prea mare	Optimizați valoarea avansului
	Unghi de așezare prea mic	Verificați datele de reascuțir
	Subțiere excesivă a miezului	Verificați datele de reascuțir
	Impact cu șoc al vârfului sculei	Evitați impactul la vârful sculei. Verificați corectitudinea montării / demontării sculei în port-sculă
Uzura rapidă a colțurilor	Viteză de așchiere excesivă	Micșorați viteza de așchiere. Eventual, măriți avansul
Vârfuri exterioare rupte	Condiții de lucru instabile	Reduceți jocul componentei
Fisuri pe tășuri	Unghi de așezare prea mare	Verificați datele de reascuțir
Rupere în zona canalului	Blocare canale	Adoptați o altă metodă de găurire continuă/intrerupta
	Rotirea burghiului	Verificați montarea în siguranță a burghiului în mandrină și ax
Suprafață găurită cu urme în spirală	Avans prea mic	Măriți avansul
	Poziționare incorectă a sculei	Utilizați un ambore înainte de găurire
Dimensiunea găurii prea mare	Ascuțire incorectă	Verificați poziționarea pe centru a vârfului scule
	Evacuare defectuoasă a așchiilor	Verificați viteza, avansul și lungimea de penetrare în vederea optimizării formei așchiilor.

ALEZAREA**RECOMANDĂRI GENERALE LA ALEZARE**

Pentru a obține rezultate optime atunci când folosiți alezoarele, este esențial să le faceți să funcționeze. Un adaos de prelucrare prea mic va face ca scula să taseze în loc să așchieze. Dacă adaosul rămas în gaură înainte de alezare este insuficient, atunci alezorul se va deteriora, se va uza imediat și va pierde în diametru. La fel de grav este și un adaos prea mare. (Consultați Îndepărtarea adaosului, de mai jos).

1. Selectați tipul optim de alezor, viteza și avansul adecvat cazului de prelucrare. Asigurați-vă că găurile efectuate înainte au un diametru corect.
2. Verificați rigiditatea fixării piesei. Axul principal al mașinii nu are voie să aibă jocuri.
3. Mandrina în care este păstrat alezorul cu coadă cilindrică trebuie să fie de bună calitate. La o fixare nesigură, în condițiile unui avans automat, ruperea sculei este iminentă.
4. Reduceți la minim lungimea în consolă.
5. Utilizați lichidele de răcire recomandate. Verificați dacă tășurile primesc suficient lichid. Deoarece alezarea nu este o operație grea, un ulei solubil diluat în proporție de 40:1 este, în mod normal, suficient. Răcirea cu aer comprimat poate fi utilizată la prelucrarea fontelor cenușii dacă prelucrarea este uscată.
6. Verificați starea de curățenie a canalelor pentru a preveni blocarea așchiilor.
7. Înainte de reascuțire, verificați concentricitatea găurilor de centrare. În cele mai multe cazuri, numai conul de atac va necesita reascuțire.
8. Lucrați numai cu scule bine ascuțite. O ascuțire mai frecventă este benefică. Este necesar să se înțeleagă că alezorul așchiează numai în zona conului de atac, nu și în zona de conducere. Ca urmare, ascuțirea se va efectua numai pe conul de atac. Corectitudinea reascuțirii este foarte importantă pentru calitatea alezajelor și durabilitatea sculei.

ADAOSUL DE PRELUCRARE

Recomandările privind adaosul de prelucrare depind de materialul de prelucrat și de gradul de finisare anterior. Instrucțiuni generale pentru eliminarea adaosului sunt indicate în următoarele tabele:

Mărimea găurii finite (mm)	Alezare după găurire	Alezare după lărgire	Mărimea găurii finite (inch)	Alezare după găurire	Alezare după lărgire
Sub 4	0.1	0.1	Sub 3/16	0.004	0.004
Peste 4 până la 11	0.2	0.15	3/16 până la 1/2	0.008	0.006
Peste 11 până la 39	0.3	0.2	1/2 până la 1,1/2	0.010	0.008
Peste 39 până la 50	0.4	0.3	1,1/2 până la 2	0.016	0.010

LIMITE DE TOLERANȚĂ



1. TOLERANȚA ALEZOARELOR STANDARD

Diametrul alezorerului (d_1) se măsoară pe fațeta cilindrică, în spatele conului de atac. Toleranța lui este în concordanță cu prevederile DIN 1420 pentru a realiza alezaje în clasa H7.

TOLERANȚA ALEZORULUI			
Diametru (mm)		Câmp de toleranță (mm)	
Peste	Până la și inclusiv	Înaltă +	Scăzută +
	3	0.008	0.004
3	6	0.010	0.005
6	10	0.012	0.006
10	18	0.015	0.008

TOLERANȚA ALEZORULUI			
Diametru (mm)		Câmp de toleranță (mm)	
Peste	Până la și inclusiv	Înaltă +	Scăzută +
18	30	0.017	0.009
30	50	0.021	0.012
50	80	0.025	0.014

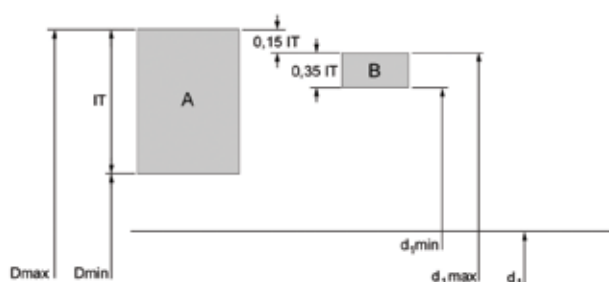
2. PE uN ALEZAJ H7

Cele mai utilizate toleranțe la găurile finite sunt cele în H7 (vezi tabelul de mai jos). Pentru orice altă toleranță, folosind figura și tabelul de la punctul 3, se poate calcula poziția și mărimea câmpului de toleranță al alezorerului

TOLERANȚĂ ALEZAJ			
Diametru (mm)		Câmp de toleranță (mm)	
Peste	Până la și inclusiv	Înaltă +	Scăzută +
	3	0.010	0
3	6	0.012	0
6	10	0.015	0
10	18	0.018	0

TOLERANȚĂ ALEZAJ			
Diametru (mm)		Câmp de toleranță (mm)	
Peste	Până la și inclusiv	Înaltă +	Scăzută +
18	30	0.021	0
30	50	0.025	0
50	80	0.030	0

3. Când este necesară definirea dimensiunilor alezorerului pentru o altă clasă de toleranță a alezorerului, de ex. D8, se poate utiliza ghidul de mai jos.



A = Toleranță Alezaj
 B = Toleranța alezorerului
 IT = Câmpul de toleranță
 Dmax = Diametrul maxim al alezajului
 Dmin = Diametrul minim al alezajului
 d_1 = Diametrul nominal
 $d_{1,max}$ = Diametrul maxim al alezorerului
 $d_{1,min}$ = Diametrul minim al alezorerului

Câmp de toleranță (microni)	Câmp toleranță diametru (mm)							
	peste 1 incl. 3	peste 3 incl. 6	peste 6 incl. 10	peste 10 incl. 18	peste 18 incl. 30	peste 30 incl. 50	peste 50 incl. 80	peste 80 incl. 120
IT5	4	5	6	8	9	11	13	15
IT6	6	8	9	11	13	16	19	22
IT7	10	12	15	18	21	25	30	35
IT8	14	18	22	27	33	39	46	54
IT9	25	30	36	43	52	62	74	87
IT10	40	48	58	70	84	100	120	140
IT11	60	75	90	110	130	160	190	220
IT12	100	120	150	180	210	250	300	350

de ex. alezaj 10mm cu toleranță D8, dia max = 10,062, dia min = 10,040, tol. alezaj (IT8) = 0,022

Limită maximă: $0,15 \times 0,022 = 0,0033$, rotunjit = 0,004

Limită minimă: $0,35 \times 0,022 = 0,0077$, rotunjit = 0,008

Diametrul maxim al alezorerului = $10,062 - 0,004 = 10,058$

Diametrul minim al alezorerului = $10,058 - 0,008 = 10,050$

PROBLEME LA ALEZARE

PROBLEMĂ	CAUZĂ	REMEDIU
Antrenor rupt sau deformat	Contact defectuos între sculă și port-sculă	Asigurați-vă că portscula și coada sunt curate și că nu se deteriorează
Uzura rapidă a sculei	Adaos de prelucrare prea mic	Măriți adaosul de prelucrare
Alezaaj prea mare	Variatie excesiva a fatetei de asezare	Verificați datele de reascuțir
	Deformarea axului mașinii	Reparați și rectificați deformarea axului mașini
	Îndoiri pe port-sculă	Înlocuiți port-scula
	Coada sculei deformată	Înlocuiți scula sau rectificați coad
	Sculă ovală	Înlocuiți sau reascuțiți scula
	Con de atac asimetric	Verificați datele de reascuțir
	Avans sau viteză prea mari	Reglați condițiile de așchiere conform Catalog
Alezaaj prea mic	Adaos de prelucrare prea mic	Măriți adaosul de prelucrare
	Căldură generată prea mare. Alezaajul se dilată și se contractă	Măriți debitul lichidului de răcire
	Scula este uzată și are un diametru prea mic	Verificați datele de reascuțir
	Avans sau viteză prea mici	Reglați condițiile de așchiere conform Catalog
	Alezaajul pregăurit este prea mic	Micșorați adaosul de prelucrare
Alezaaj conic și oval	Deformarea axului mașinii	Reparați și rectificați deformarea axului mașini
	Lipsă de coaxialitate între alezaaj și sculă	Utilizați un alezor punte
	Con de atac asimetric	Verificați datele de reascuțir
Finisarea alezaajului nesatisfăcătoare	Adaos excesiv de eliminat	Micșorați adaosul de prelucrare
	Sculă uzată excesiv	Verificați datele de reascuțir
	u nghi de degajare prea mic	Verificați datele de reascuțir
	Ulei de răcire sau emulsie prea diluate	Măriți concentrația %
	Avans și/sau viteză prea mici	Reglați condițiile de așchiere conform Catalog
	Viteză de așchiere prea mare	Reglați condițiile de așchiere conform Catalog
Scula se gripeaza și se rupe	Sculă uzată excesiv	Verificați datele de reascuțir
	Con de antrenare prea mic	Verificați și înlocuiți/modificați scu
	Fațeta cilindrică prea lată	Verificați și înlocuiți/modificați scu
	Materialul de prelucrat se deformează plastic	Utilizați un alezor reglabil pentru compensarea deformărilor
	Alezaajul pregăurit este prea mic	Micșorați adaosul de prelucrare
	Material cu structură eterogenă și cu incluziuni dure	Folosiți un alezor din CMS

FILETARE

RECOMADĂRI GENERALE PRIVIND FILETAREA

1. Filetarea este procesul de generare a unui filet prin interpolarea circulară a unei freze cu o rectificare specifică geometriei filetului în jurul periferiei
2. Pentru a putea utiliza o freză pentru filetare, este necesar să dispuneți de o mașină CNC care poate executa căi circulare.
3. Majoritatea mașinilor CNC moderne sunt prevăzute cu cicluri de prelucrare pentru filetar
4. Pentru mai multe informații, consultați manualul sau contactați furnizorul mașinii

CARACTERISTICI ȘI BENEFICII

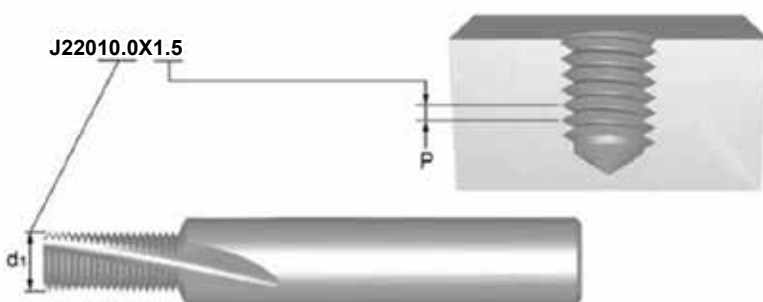
1. Filetarea conferă o fiabilitate și o durată de viață a sculei sporit
2. Frezele pentru filet produc așchii mai mici asigurând o filetare fără probleme
3. Reglările de toleranță se pot realiza prin coordonate exacte
4. Puteți genera un filet complet până la capătul găurii
5. Poate prelucra o mare varietate de materiale
6. Aceeași freză poate produce filete de diferite dimensiuni dacă pasul este identic
7. Cu aceeași sculă se pot executa atât filete pe dreapta, cât și pe stâng
8. Cu unele freze de filetat se poate prelucra și teșirea de intrare (J200, J205, J260)

ALEGEREA SCULEI

Frezele pentru filetare au un cod de identificare conținând tipul, diametrul (d_1) și pasul

Codul de identificare este numărul care trebuie utilizat atunci când comandați sculă

Consultați întotdeauna catalogul pentru a vă asigura că aveți dimensiunile corecte ale filetului



Această freză pentru filetare poate fi utilizată pentru filete M12x1,5 (M14x1,5, M18x1,5 etc)

PROGRAMARE Cu Rprg

- Pentru reglarea ușoară a toleranței filetului, programați întotdeauna o corecție de raz
- Valoarea Rprg este valoarea de început pentru o freză nouă și este inscripționată pe coada de la freză. Această valoare trebuie introdusă în memoria de compensare a sculei
- Rprg se bazează pe linia teoretică de zero a filetului, ceea ce înseamnă că, atunci când programați cu ajutorul Rprg, filetul nu este niciodată supradimensionat, ci este strâns în mod norma
- Aceasta înseamnă că, cu o ușoară modificare a coordonatelor programului, puteți crea un filet la dimensiune corespunzătoare

RECOMANDĂRI

- Utilizați întotdeauna regimul de așchiere corect (consultați tabelul cu regimul de așchiere, de la pagina 198)
- Utilizați mărimea de burghiu recomandată pentru diametrul filetului, ca la tarozii convenționali
- Pentru o reglare ușoară a toleranței filetului, începeți întotdeauna cu valoarea Rprg inscripționată pe coada frezei pentru file
- Utilizați un calibru tampon pentru verificarea toleranței primului filet pentru a stabili dacă raza trebuie corectată. Raza poate fi corectată de 2-3 ori până la uzarea completă a frezei de fileta
- În cazul prelucrării uscate, se recomandă utilizarea de aer comprimat pentru o îndepărtare mai ușoară a șpanului
- La filetarea unor materiale mai dificile, se recomandă executarea a 2 sau 3 trece

FILETARE

RECOMANDĂRI GENERALE LA FILETARE

Succesul operației de filetare depinde de mai mulți factori, fiecare dintre ei având efect asupra calității produsului fin

1. Alegeți tipul corect de tarod în funcție de material și tipul găurii, de ex. pentru gaură străpunsă sau înfundată, conform indicațiilor din tabelul Clasificarea materialele .
2. Verificați siguranța fixării tarodului. Existența unor jocuri poate provoca ruperea sculei și o lipsă de calitate a filetului
3. Alegeți dimensiunea corectă a burghiului de la pagina corespunzătoare a catalogului. Asigurați-vă că durificarea materialului în timpul filetării este minimă
4. Alegeți viteza de așchiere optimă conform indicațiilor din pagina de produs din catalog.
5. Utilizați lichidul de răcire adecvat pentru aplicația corectă.
6. La filetarea NC, asigurați-vă că valoarea avansului programat este cea corectă. La utilizarea port-tarozilor cu compensare, se recomandă ca mărimea avansului să fie 95 – 97% din valoarea pasului tarodului
7. Folosiți, dacă este posibil, port-tarozii cu limitare a momentului de torsiune. Asigurați mișcarea axială liberă a tarodului și perpendicularitatea sa față de alezaj. Protejați astfel tarodul de rupere în cazul unei „tamponări” în găurile înfundate.
8. Asigurați o intrare ușoară a tarodului în alezaj, deoarece un avans neuniform poate cauza distrugerea filetului

TABEL Cu TOLERANTELE TARODu Lu I / TOLERANTELE FILETu Lu I INTERIOR

Clasa de toleranta a tarodului			Clasa de toleranta a filetului (piulitei)					Aplicatii
ISO	DIN	ANSI BS						
ISO 1	4 H	3 B	4 H	5 H				Ajustaj fara tolerante
ISO 2	6 H	2 B	4 G	5 G	6 H			Ajustaj normal
ISO 3	6 G	1 B			6 G	7 H	8 H	Ajustaj cu tolerante largi
-	7 G	-				7 G	8 G	Ajustaj in vederea unui tratament sau acoperire

PROBLEME LA FILETAREA Cu TAROZI

PROBLEMĂ	CAUZĂ	REMEDIU
Filet prea mare	Toleranta incorecta	Alegeti un tarod in alta clasa de toleranta
	Avans axial incorect	Reduceti avansul cu 5 – 10% sau mariti compensarea port - tarodului
	Alegere gresita a tarodului	Utilizati tarozi cu ascutire suplimentara (λ) pentru gauri strapunse sau cu canale in spirala la gauri infundate. u tilizati tarozi acoperiti ptr. prevenirea taisului de depunere. Consultati Catalogul sau Product Selector ptr. o alegere corecta a sculei
	Lipsa de coaxialitate	Verificati centrarea fata de gaur
	ungere precara	Folositi o ungere abundenta ptr. a preveni formarea taisului de depunere. Vezi capitolul despre ungere in agenda tehnica
	Viteza de aschiere prea mica	urmati indicatiile din Catalog / Product Selector
Filet prea mic	Alegere gresita a tarodului	Utilizati tarozi cu ascutire suplimentara (λ) pentru gauri strapunse sau cu canale in spirala la gauri infundate. u tilizati tarozi acoperiti ptr. prevenirea taisului de depunere. Alegeti un tarod cu unghi de degajare mai mare. Consultati Catalogul sau Product Selector ptr. o alegere corecta a sculei
	Toleranta incorecta	Alegeti un tarod cu o toleranta mai inalta, in special la materiale cu tendinta redusa la deformare: fonte, inox
	ungere precara sau neadecvata	Folositi o ungere abundenta ptr. a preveni blocarea aschiilor in canale. Vezi capitolul despre ungere in agenda tehnica
	Pre – gaura prea mica	Mariti diametrul burghiului la valoarea maxima. Verificati dimensiunea burghiului pentru pregaurire
	Materialul se “strange” dupa filetar	Vezi recomandarile din Catalog / Product Selector ptr. gasirea unui tarod alternativ
Ciupirea dintilor	Alegere gresita a tarodului	Alegeti un tarod cu un unghi de degajare mai mic. Alegeti un con de atac mai lung. Alegeti un tarod cu ascutire suplimentara (λ) la gauri strapunse si cu canalele in spira la gauri infundate ptr. a evita blocarea aschiilor. Consultati Catalogul si Product Selector
	ungere precara sau neadecvata	Folositi o ungere abundenta ptr. a preveni formarea taisului de depunere. Vezi capitolul despre ungere in agenda tehnica
	Tarodul se tamponeaza in gaura	Mariti adancimea gaurii sau micorati cursa tarodului
	Material cu suprafata durificat	Reduceti viteza de aschiere, utilizati tarozi titanizati, verificati ungera. Vezi si cap. despre inox
	Comanda incorecta a reversarii	Evitati bruscarea comenzilor de reversare
	Conul de atac loveste intrarea gaurii	Corectati eroarea de centrare a tarodului fata de gaura
	Pre – gaura prea mica	Mariti diametrul burghiului la valoarea maxima. Verificati dimensiunea burghiului pentru pregaurire

PROBLEME LA FILETAREA Cu TAROZI

PROBLEMĂ	CAUZĂ	REMEDIU
Ruperea tarodului	Tarod uzat	Schimbati tarodul sau reascutiti tarodul
	Ungere insuficient	Folositi o ungere abundenta ptr. a preveni formarea taisului de depunere si blocarea evacuarii aschiilor. Vezi capitolul despre ungere in agenda tehnica
	Tarodul se tamponeaza in gaura	Mariti adancimea gaurii sau micsorati cursa tarodului
	Viteza de aschiere prea mare	Micsorati viteza. u rmati indicatiile din Catalog / Product Selector
	Material cu suprafata durificat	Reduceti viteza de aschiere, utilizati tarozi titanizati, verificati ungera. Vezi si cap. despre inox in agenda tehnica
	Pre – gaura prea mica	Mariti diametrul burghiului la valoarea maxima. Vezi tabelul cu marimi de burghie
	Moment de torsiune prea mare	u tilizati port – tarozi cu decuplare la un moment de torsiune reglat
	Materialul se “strange” dupa filetar	Vezi recomandarile din Catalog / Product Selector ptr. gasirea unui tarod alternativ
u zura rapida	Alegere gresita a tarodului	u tilizati un tarod cu un unghi de degajare mai mic si / sau cu un unghi de asezare mai mare si / sau cu con de atac mai lung. u tilizati un tarod titanizat. Cautati in Catalog sau in Product Selector o alta alternativa
	Ungere insuficient	Folositi o ungere abundenta ptr. a preveni formarea taisului de depunere si blocarea evacuarii aschiilor. Vezi capitolul despre ungere in agenda tehnica
	Viteza de aschiere prea mare	Micsorati viteza. u rmati indicatiile din Catalog / Product Selector
Tais de depunere	Alegere gresita a tarodului	u tilizati un tarod cu un unghi de degajare mai mic si / sau cu un unghi de asezare mai mare. Cautati in Catalog sau in Product Selector o alta alternativa
	Ungere insuficient	Folositi o ungere abundenta ptr. a preveni formarea taisului de depunere si blocarea evacuarii aschiilor. Vezi capitolul despre ungere in agenda tehnica
	Acoperire de suprafata neadecvata	Alegeti un tarod cu un tratament de suprafata recomandat
	Viteza de aschiere prea mica	u rmati recomandarile din Catalog / Product Selector.

FREZARE

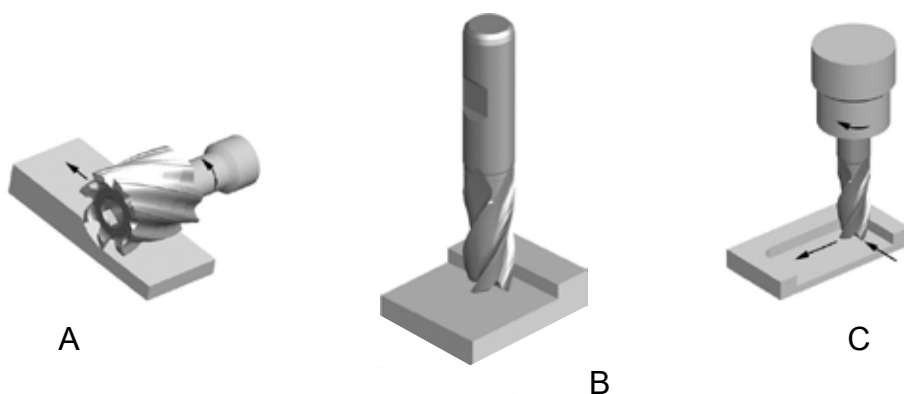
RECOMADARI GENERALE LA FREZARE

Frezarea este un procedeu de generare a unei suprafete prin indepartarea progresiva a adaosului de prelucrare prestabilit, cu un avans relativ mic la o rotatie a frezei in comparatie cu aschiera rapida.

Caracteristic frezarii este indepartarea succesiva a adaosului de prelucrare de catre fiecare dinte sub forma unor aschii individuale.

TIPURI DE FREZE

Cele trei operatii de baza sunt ilustrate mai jos: (A) frezare periferica (cilindrica), (B) frezare plana si (C) frezare frontala.



In frezarea periferica, denumita si cilindrica, axa frezei este paralela cu suprafata de prelucrat. Freza are un numar de dinti pe partea cilindrica, fiecare dinte actionand singular asupra suprafetei de prelucrat.

Frezele utilizate au dintii drepti sau curbi (elicoidali), generand o actiune ortogonala sau oblica.

In frezarea plana axul frezei este perpendicular pe suprafata de prelucrat. Suprafata prelucrata rezulta prin actiunea dintilor aflati atat la periferie cat si pe partea frontala a frezei

In frezarea frontala, in general, axa de rotatie a frezei are o pozitie verticala fata de suprafata de prelucrat. Dantura este amplasata atat pe partea frontala cat si pe cea cilindrica a frezei.

APLICATII

Debitul unitar (MRR) este strans legat de tipul aplicatiei. Pentru fiecare in parte angajamentul frezei in piesa este diferit si ca urmare si debitul unitar. Catalogul Dormer ilustreaza in mod clar si simplu aceste tipuri.

Frezare laterala	Frezare plana	Canelare	Frezare axiala	Frezare in rampa
Patrunderea radiala se limiteaza la 0,25 din diametrul frezei	Patrunderea radiala nu poate depasi 0,9 din diametrul frezei. Patrunderea axiala max. 0,1 din D	Realizarea canalelor de pana. Patrunderea radiala este egala cu diametrul frezei	Sunt posibile operatii de gaurire cu freze care au taisuri pana la centru. Avansul se injumatatest.	Miscare simultana in directie axiala si radiala.

PROBLEME LA FREZARE

PROBLEMĂ	CAUZĂ	REMEDIU
Ruperea sculei	Avans unitar prea mare	Micsorati avansul pe dinte
	Avansul mesei prea mare	Micsorati avansul mesei
u zura rapida	Lungimea canalelor sau lungimea totala prea mare	Alegeti o freza mai scurta; Micsorati lungimea in consola
	Materialul piesei prea dur	Alegeti din Catalog / Selector o scula din alt material aschietor si / sau cu o alta acoperire
	Regim de aschiere incorect	Corectati regimul dupa indicatiile din Catalog sau Selector
	Evacuare defectuoasa a aschiilor	Verificati modul de racire - unger
	Frezare in contra avansului	Frezare in sensul avansului
	u nghiul spirei impropriu	Vezi recomandarile din Catalog / Selector privind alegerea sculei
Ciupirea (stirbirea) taisurilor	Avans prea mare	Reduceti avansul
	Trepidatii (vibratii)	Reduceti turatia
	Viteza de aschiere prea mica	Mariti turatia
	Frezare in contra avansului	Frezare in sensul avansului
	Rigiditate insuficienta a scule	Alegeti o scula mai scurta si / sau micsorati lungimea in consola
	Rigiditate insuficienta a piese	Verificati schema de fixare – strangere a pies
Durabilitate nesatisfacatoare	Tenacitate inalta a materialului	Vezi recomandarile din Catalog / Selector privind alegerea sculei
	Geometrie activa improprie	Verificati unghiurile si fateta primar
	Frecari intre scula si piesa	utilizati scule titanizate
Rugozitate grosolana	Viteza de avans prea mare	Reduceti avansul mesei
	Viteza de aschiere prea mica	Mariti viteza de aschiere
	Blocarea aschiilor	Micsorati avansul pe dinte
	Scula uzata	Schimbati sau reascutiti scula
	Tais de depunere	Alegeti o scula cu spira mai pronuntata
	Sudarea aschiilor	Mariti debitul lichidului de racire

PROBLEMĂ	CAUZĂ	REMEDIU
Suprafata nesatisfacatoare	Cedarea sculei	Alegeti o scula mai scurta si / sau micorati lungimea in consola
	Numar prea mic de dinti	Alegeti o scula cu un nr. mai mare
	Scula deteriorata sau uzata	Schimbati sau reconditionati scula
	Rigiditate precara a port - sculei	Alegeti o port – scula mai rigida
	Rigiditatea axului principal prea mica	Alegeti o masina cu axul principal mai rigid (mai mare)
Vibratii (Trepidatii)	Viteza si avansul prea mari	Verificati regimul de aschiere dupa Catalog / Selecto
	Lungimea spirei sau lungimea totala prea mari	Alegeti o scula mai scurta sau mariti lungimea de fixar
	Adancimea de taiere prea mare	Micorati adausul de prelucrare
	Rigiditate insuficienta a masinii sau a port - sculei	Verificati port – scula. Schimbati – o daca este necesar

BAVURI DE CARBURĂ

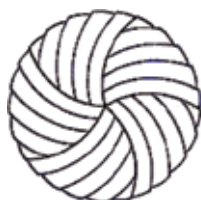
RECOMANDĂRI GENERALE PRIVIND BAVURILE DE CARBURĂ

Bavurile de carbură sunt utilizate pe scară largă pentru pregătirea și finisarea componentelor într-o gamă largă de materiale.

Sunt utilizate, în general, manual și montate la mașini de șlefuit pneumatice cu filier

CARACTERISTICI ȘI BENEFICII

1. Cozile de oțel întărit și călit îmbunătățesc rigiditatea și reduc riscul de îndoire sau vibrații
2. Cozile rectificat corect asigură o prindere mai bună și reduc riscul de răsucir
3. Elementele speciale de lipire tare previn eroarea de temperatură înaltă și, de asemenea, asigură rezistență sporită pentru a rezista la presiune și la impact
4. Geometria universală Double Cut este adecvată pentru o gamă largă de materiale și aplicații
5. Sunt disponibile, de asemenea, geometrii specifice materialului, adecvate oțelului (ST), oțelului inoxidabil (A), aluminiului (AL) și fibrei de sticlă (GRP)
6. Disponibilă cu acoperire TiAIN pentru a mări durata de viață a sculei în materiale abrazive
7. Bavurile cu cap sferic sunt rectificat cu geometria danturii Ski
8. Aceasta asigură o geometrie activă spre mijlocul bavurii, îmbunătățind acțiunea de așchiere și reducând riscul de depunere a șpanului și de înfundare



Skip



Normal

SIGURANȚĂ ÎNAINTE DE TOATE

1. Sculele rotative de mare viteză sunt periculoase în caz de utilizare incorectă
2. Deconectați întotdeauna mașina de șlefuit cu filieră de la sursa de alimentare cu aer înainte de a încerca să modificați bavuril
3. Verificați starea mașinii de șlefuit cu filieră și, dacă este posibil, utilizați versiuni cu vibrații scăzu
4. Utilizați întotdeauna echipament de protecție adecvat și asigurați-vă că orice persoană care lucrează în preajmă este, de asemenea, protejată



Echipamentul individual de protecție trebuie purtat în permanență.

RECOMANDĂRI

- Utilizați întotdeauna mașina de șlefuit cu filieră adecvată la viteză nominală
- Este importantă întreținerea curentă a mașinilor de șlefuit cu filieră; asigurați-vă că sunt unse, iar rulmenții nu sunt uzați
- Curățați întotdeauna piulița de strângere, bucușă elastică și conul interior al mașinii de șlefuit cu filieră atunci când modificați o bavur
- Încercați să evitați șocul mecanic și impactul puternic al bavurilor
- Încercați să evitați șocul termic nepermițând ca bavura să se încingă excesiv
- Nu introduceți bavura prea adânc în semifabricat sau nu îndesați bavura în colțuri sau canale

Depanare Cu Aju TORu L BAVu RILOR

PROBLEMĂ	CAUZĂ
Ciobirea dinților bavurii	Funcționare la turație prea mică, poate cauza instabilitate verticală
	Excentricitate (ax, bucușă elastică sau rulmenți uzați)
	Prelucrarea în adâncime și îndesarea bavurii în semifabricat
Înfundarea dinților bavurii	Lungimea danturii sau lungimea totală este prea mare
	Alegerea incorectă a geometriei pentru materialul semifabricat
Uzură prematură	Funcționarea la o turație prea mare pentru mărimea bavurii și materialului semifabricat
	Excentricitate (ax, bucușă elastică sau rulmenți uzați)
Capul se detașează de coadă	Funcționarea la o turație prea mare poate cauza supraîncălzire
	Funcționarea pentru perioade prelungite cauzează supraîncălzire

Türk		Sertlik	Gerilme Dayanımı	ISO		
Malzeme Uygulama Grupları		HB	N/mm ²			
1. Çelik	1.1 Yumuşak çelik	< 120	< 400	P 1		
	1.2 Yapı çeliği, karbürize çelik	< 200	< 700	P 1		
	1.3 Karbon çeliği	< 250	< 850	P 2		
	1.4 Alaşımli çelik	< 250	< 850	P 3		
	1.5 Alaşımli çelik, sertleştirilmiş ve tavllanmış çelik	> 250 < 350	> 850 < 1200	P 4		
	1.6 Alaşımli çelik, sertleştirilmiş ve tavllanmış çelik	> 350	> 1200 < 1620	H 1		
	1.7 Alaşımli çelik, ısıli işlemli	49-55HRC	> 1620	H 3		
	1.8 Alaşımli çelik, sertleştirilmiş ve aşınma dayanımlı çelik	55-63HRC	> 1980	H 4		
	2. Paslanmaz çelik	2.1 Yumuşak paslanmaz çelik	< 250	< 850	M 1	
		2.2 Östenik	< 320	< 1100	M 3	
		2.3 Ferritik + östenik, ferritik, martenzik	< 300	< 1000	M 2	
	3. Döküm demir	2.4 On sertleştirilmiş	>320 <410	>1100 <1400	S 2	
		3.1 lamel grafit	< 150	> 500	K 1	
		3.2 lamel grafit	> 150 <300	> 500 < 1000	K 2	
		3.3 noduler grafit, pik döküm	< 200	< 700	K 3	
		3.4 noduler grafit, pik döküm	> 200 < 300	> 700 < 1000	K 4	
		4. titanyum	4.1 titanyum, alaşımsız	< 200	< 700	S 1
			4.2 titanyum, alaşımlı	< 270	< 900	S 2
4.3 titanyum, alaşımlı			> 270 < 350	> 900 ≤ 1250	S 3	
5. nikel	5.1 nikel, alaşımsız	< 150	< 500	S 1		
	5.2 nikel, alaşımlı	< 270	> 900	S 2		
	5.3 nikel, alaşımlı	> 270 < 350	> 900 < 1200	S 3		
6. bakır	6.1 bakır	< 100	< 350	N 3		
	6.2 β-pirinç, bronz	< 200	< 700	N 4		
	6.3 α-pirinç	< 200	< 700	N 3		
	6.4 yüksek dayanımlı pirinç	< 470	< 1500	N 4		
7. alüminyum magnezyum	7.1 Al, Mg, alaşımsız	< 100	< 350	N 1		
	7.2 Al alaşımlı, Si<%0.5	< 150	< 500	N 1		
	7.3 Al alaşımlı, Si>%0.5 <%10	< 120	< 400	N 1		
	7.4 Al alaşımlı, Si>%10 sertleştirilmiş. Al alaşımları, Mg alaşımları	< 120	< 400	N 2		
8. Sentetik malzemeler	8.1 Termoplastikler	---	---	O		
	8.2 Termoset plastikleri	---	---	O		
	8.3 Sertleştirilmiş plastik malzemeler	---	---	O		
9. Sert malzeme	9.1 Sermetler (metaller-seramikler)	< 550	< 1700	H		
	10. Grafit	---	< 100	O		

FARKLI STANDARTLARDAN İŞ PARÇASI
MALZEME ÖRNEKLERİ

AMG	EN	W.N.	DIN	BS	SS	USA	UNS	ISO
1.1		1.1015, 1.1013	Rte60, Rte100	230M07, 050A12	1180	Leadeds Steels	G12120	P1
1.2	EN 10 025 - S235JRG2	1.1012, 1.1053, 1.7131	S137-2, 16MnCr5, S150-2	060A35, 080M40, 4360-50B	1312, 1412, 1914	135, 30	G10100	P1
1.3	EN 10 025 - E295	1.1191, 1.0601	CK45, C60	080M46, 080A62	1550, 2142, 2172	1024, 1060, 1061	G10600	P2
1.4	EN 10 083-1 - 42 CrMo 4 - EN 10 270-2	1.7225, 1.3505, 1.6582, 1.3247	42CrMo4, 100Cr6, 34CrNiMo6, S2-10-1-8	708M40/42, 817M40, 554A99, BM2, BT42	1672-04, 2090, 2244-02, 2541-02	4140, A2, 4340, M42, M2	G41270, G41470, T30102, T11342	P3
1.5	EN ISO 4957 - HS6-5-2 - EN ISO 4957 - HS6-5-2-5	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, 55NiCrMoV6, X210Cr12, S2-10-1-8	B01, BM2, BT42, 826 M40, 830M81	2244-04, 2541-03, 2550, 2722, 2723	01, L6, M42, D3, A2, M2, 4140, 8630	G86300, T30102 T11302, T30403, T11342	P4
1.6	EN-ISO 4957 - HS2-9-1-8	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, X210Cr12, S2-10-1-8	B01, 826 M40, 830M81	2244-05, 2541-05, , HARDOX 400	01, L6, M42, D3, 4140, 8130	T30403, G41400, J14047	H1
1.7	EN-ISO 4957 - HS2-9-1-8	1.2510	100MnCrW4	B01, BD3, BH13	HARDOX 500			H3
1.8	EN-ISO 4957 - X40CrMoV5-1	1.3343, 1.2344	S6-5-2, GX40CrMoV5-1	BM2, BH13	2242 HARDOX 600			H4
2.1	EN 10 088-3 - X14CrMoS17	1.4305, 1.4104	X10CrNiS189, X12CrMoS17	303 S21, 416 S37	2301, 2312, 2314, 2346, 2380	303, 416, 430F	S30300, S41600, S43020	M1
2.2	EN 10 088-2,0 - 3 - 1.4301+AT	1.4301, 1.4541, 1.4571	X5CrNi189 X10CrNiMoTi1810	304 S15, 321 S17, 316 S, 320 S12	2310, 2333, 2337, 2343, 2353, 2377	304, 321, 316	S30400, S32100, S31600	M3
2.3	EN 10 088-3 - 1.4460	1.4460, 1.4512, 1.4582	XBCrNiMo275, X4CrNiMoN6257	317 S16, 316 S16	2324, 2387, 2570	409, 430, 436	S40900, S4300, S43600	M2
2.4	EN 1.4547	1.4547	X2CrNiMo20-18-6	HR41	2378	17-4PH	S31254	S2
3.1	EN 1561 - EN-JL1030	0.6010, 0.6040	GG10, GG40	Grade150, Grade 400	0120, 0212, 0814	ASTM A48 class 20	F11401, F12801	K1
3.2	EN 1561 - EN-JL1050	0.6025, 0.6040	GG25, GG40	Grade200, Grade 400	0125, 0130, 0140, 0217	ASTM A48 class 40, STM A48 class 60	F12801, F14101	K2
3.3	EN 1561 - EN-JL2040	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P4407, 700/2, 30g/72	0219, 0717, 0727, 0732, 0852	ASTM A220 grade 40010, ASTM A602 grade M4504	F22830, F20001	K3
3.4	EN 1561 - EN-JL2050	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P4407, 700/2, 30g/72	0221, 0223, 0737, 0854	ASTM A220 grade 90001, ASTM A602 grade M6501	F26230, 20005	K4
4.1		3.7024LN	Ti99.8	TA1 to 9	Ti99.8	ASTM B265 grade 1	R50250	S1
4.2		3.7164LN, 3.7119LN	TiAl6V4, TiAl5Sn2	TA10 to 14, TA17	TiAl6V4, TiAl5Sn2	AMS4928	R54790	S2
4.3		3.7164LN, 3.7174LN, 3.7184LN	TiAl6V4, TiAl6V5Sn2, TiAl4MoSn2	TA10 to 13, TA28	TiAl6V5Sn2	AMS4928, AMS4971	R56400, R54790	S3
5.1		2.4060, 2.4086	Nickel 200, 270, N699.6	NA 11, NA12	Ni200, Ni270	Nickel 200, Nickel 230	N02200, N02230	S1
5.2		2.4630LN, 2.4602, 2.4650LN	Nimonic 75, Monel 400, Hastelloy C, Inconel 600	HR203, 3027-76		Nimonic 75, Monel400, Hastelloy, Inconel600	N06075, N10002, N04400, N06600	S2
5.3		2.4668LN, 2.4631LN, 2.6554LN	Inconel 718, Nimonic 80A, Waspaloy	HR8, HR401, 601		Inconel 718, 625, Nimonic 80	N07718, N07080, N06625	S3
6.1	EN 1652 - CW004A	2.0060, 2.0070	E-Cu57, SE-Cu	C101	5010	101	C10100, C1020	N3
6.2	EN 1652 - CW612N	2.0380, 2.0360, 2.1030, 2.1080	CuZn39Pb2, CuZn40, CuSn8, CuSn6Zn	CZ120, CZ109, PB104	5168		C28000, C37710	N4
6.3	EN 1652 - CW508L	2.0321, 2.0260	CuZn137, CuZn28	CZ108, CZ106	5150		C2600, C27200	N3
6.4			Ampco 18, Ampco 25	AB1 type	5238, JMT-20			N4
7.1	EN 485-2 - EN AW-1070A	3.0255	A99.5	LMO, 1 B (1050A)	4005	EC, 1060, 1100	A91060, A91100	N1
7.2	EN 755-2 - EN AW-5005	3.1355, 3.3525	AlCuMg2, AlMg2Mn0.8	LM5, 10, 12, N4 (5251)	4106, 4212	380, 520.0, 520.2, 2024, 6061	A03800, A05200, A92024	N1
7.3	EN 1706 - EN AC-42000	3.2162.05, 3.2341.01	GD-ALSi8Cu, G-ALSi8Mg	LM2.4, 16, 18, 21, 22., 24, 25, 26, 27, L109	4244	319.0, 333.0, 319.1, 356.0	A03190, A03330, C35600	N1
7.4	SS-EN 1706 - EN AC-47000	3.2581.01	G-ALSi18, G-ALSi12	LM6, 12, 13, 20, 28, 29, 30	4260, 4261, 4262	4032, 222.1, A332.0	A94032, A02220, A13320	N2
8.1			Polystyrene, Nylon, PVC Cellulose, Acetate & Nitrate			Polystyrene, Nylon, PVC		O
8.2			Ebonite, Tufnol, Bakelite			Bakelite		O
8.3			Kevlar, Printed Circuit boards			Kevlar		O
9.1			Ferrotic, Ferrititanit					H
10.1			Graphite					O

Kesme hızı tablosu



		Vc															
m/dak		5	8	10	15	20	25	30	40	50	60	70	80	90	100	110	150
Feet/dak		16	26	32	50	66	82	98	130	165	197	230	262	296	330	362	495
Ø		RPM															
mm	inç																
1,00		1592	2546	3183	4775	6366	7958	9549	12732	15916	19099	22282	25465	28648	31831	35014	47747
1,50		1061	1698	2122	3183	4244	5305	6366	8488	10610	12732	14854	16977	19099	21221	23343	31831
2,00		796	1273	1592	2387	3183	3979	4775	6366	7958	9549	11141	12732	14324	15916	17507	23873
2,50		637	1019	1273	1910	2546	3183	3820	5093	6366	7639	8913	10186	11459	12732	14006	19099
3,00		531	849	1061	1592	2122	2653	3183	4244	5305	6366	7427	8488	9549	10610	11671	15916
3,18	1/8	500	801	1001	1501	2002	2502	3003	4004	5005	6006	7007	8008	9009	10010	11011	15015
3,50		455	728	909	1364	1819	2274	2728	3638	4547	5457	6366	7276	8185	9095	10004	13642
4,00		398	637	796	1194	1592	1989	2387	3183	3979	4775	5570	6366	7162	7958	8754	11937
4,50		354	566	707	1061	1415	1768	2122	2829	3537	4244	4951	5659	6366	7074	7781	10610
4,76	3/16	334	535	669	1003	1337	1672	2006	2675	3344	4012	4681	5350	6018	6687	7356	10031
5,00		318	509	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	9549
6,00		265	424	531	796	1061	1326	1592	2122	2653	3183	3714	4244	4775	5305	5836	7958
6,35	1/4	251	401	501	752	1003	1253	1504	2005	2506	3008	3509	4010	4511	5013	5514	7519
7,00		227	364	455	682	909	1137	1364	1819	2274	2728	3183	3638	4093	4547	5002	6821
7,94	5/16	200	321	401	601	802	1002	1203	1604	2004	2405	2806	3207	3608	4009	4410	6013
8,00		199	318	398	597	796	995	1194	1592	1989	2387	2785	3183	3581	3979	4377	5968
9,00		177	283	354	531	707	884	1061	1415	1768	2122	2476	2829	3183	3537	3890	5305
9,53	3/8	167	267	334	501	668	835	1002	1336	1670	2004	2338	2672	3006	3340	3674	5010
10,00		159	255	318	477	637	796	955	1273	1592	1910	2228	2546	2865	3183	3501	4775
11,11	7/16	143	229	287	430	573	716	860	1146	1433	1719	2006	2292	2579	2865	3152	4298
12,00		133	212	265	398	531	663	796	1061	1326	1592	1857	2122	2387	2653	2918	3979
12,70	1/2	125	201	251	376	501	627	752	1003	1253	1504	1754	2005	2256	2506	2757	3760
14,00		114	182	227	341	455	568	682	909	1137	1364	1592	1819	2046	2274	2501	3410
14,29	9/16	111	178	223	334	446	557	668	891	1114	1337	1559	1782	2005	2228	2450	3341
15,00		106	170	212	318	424	531	637	849	1061	1273	1485	1698	1910	2122	2334	3183
15,88	5/8	100	160	200	301	401	501	601	802	1002	1203	1403	1604	1804	2004	2205	3007
16,00		99	159	199	298	398	497	597	796	995	1194	1393	1592	1790	1989	2188	2984
17,46	11/16	91	146	182	273	365	456	547	729	912	1094	1276	1458	1641	1823	2005	2735
18,00		88	141	177	265	354	442	531	707	884	1061	1238	1415	1592	1768	1945	2653
19,05	3/4	84	134	167	251	334	418	501	668	835	1003	1170	1337	1504	1671	1838	2506
20,00		80	127	159	239	318	398	477	637	796	955	1114	1273	1432	1592	1751	2387
24,00		66	106	133	199	265	332	398	531	663	796	928	1061	1194	1326	1459	1989
25,00		64	102	127	191	255	318	382	509	637	764	891	1019	1146	1273	1401	1910
27,00		59	94	118	177	236	295	354	472	589	707	825	943	1061	1179	1297	1768
30,00		53	85	106	159	212	265	318	424	531	637	743	849	955	1061	1167	1592
32,00		50	80	99	149	199	249	298	398	497	597	696	796	895	995	1094	1492
36,00		44	71	88	133	177	221	265	354	442	531	619	707	796	884	973	1326
40,00		40	64	80	119	159	199	239	318	398	477	557	637	716	796	875	1194
50,00		32	51	64	95	127	159	191	255	318	382	446	509	573	637	700	955

HV	HRC	HB	N/ mm ²	Tons/ sq. in.
Vickers	Rockwell	Brinell		
940	68			
900	67			
864	66			
829	65			
800	64			
773	63			
745	62			
720	61			
698	60			
675	59			
655	58		2200	142
650		618	2180	141
640		608	2145	139
639	57	607	2140	138
630		599	2105	136
620		589	2070	134
615	56	584	2050	133
610		580	2030	131
600		570	1995	129
596	55	567	1980	128
590		561	1955	126
580		551	1920	124
578	54	549	1910	124
570		542	1880	122
560	53	532	1845	119
550		523	1810	117
544	52	517	1790	116
540		513	1775	115
530		504	1740	113
527	51	501	1730	112
520		494	1700	110
514	50	488	1680	109
510		485	1665	108
500		475	1630	105
497	49	472	1620	105
490		466	1595	103
484	48	460	1570	102
480		456	1555	101
473	47	449	1530	99
470		447	1520	98
460		437	1485	96
458	46	435	1480	96
450		428	1455	94
446	45	424	1440	93
440		418	1420	92

HV	HRC	HB	N/ mm ²	Tons/ sq. in.
Vickers	Rockwell	Brinell		
434	44	413	1400	91
423	43	402	1360	88
413	42	393	1330	86
403	41	383	1300	84
392	40	372	1260	82
382	39	363	1230	80
373	38	354	1200	78
364	37	346	1170	76
355	36	337	1140	74
350		333	1125	73
345	35	328	1110	72
340		323	1095	71
336	34	319	1080	70
330		314	1060	69
327	33	311	1050	68
320		304	1030	67
317	32	301	1020	66
310	31	295	995	64
302	30	287	970	63
300		285	965	62
295		280	950	61
293	29	278	940	61
290		276	930	60
287	28	273	920	60
285		271	915	59
280	27	266	900	58
275		261	880	57
272	26	258	870	56
270		257	865	56
268	25	255	860	56
265		252	850	55
260	24	247	835	54
255	23	242	820	53
250	22	238	800	52
245		233	785	51
243	21	231	780	50
240		228	770	50
235		223	755	49
230		219	740	48
225		214	720	47
220		209	705	46
215		204	690	45
210		199	675	44
205		195	660	43
200		190	640	41

Tol	Ø mm							
	> 1 ≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50	> 50 ≤ 80	> 80 ≤ 120
	µm							
e8	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89	-60 / -106	-72 / -126
f6	-6 / -12	-10 / -18	-13 / -22	-16 / -27	-20 / -33	-25 / -41	-30 / -49	-36 / -58
f7	-6 / -16	-10 / -22	-13 / -28	-16 / -34	-20 / -41	-25 / -50	-30 / -60	-36 / -71
h6	0 / -6	0 / -8	0 / -9	0 / -11	0 / -13	0 / -16	0 / -19	0 / -22
h7	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21	0 / -25	0 / -30	0 / -35
h8	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33	0 / -39	0 / -46	0 / -54
h9	0 / -25	0 / -30	0 / -36	0 / -43	0 / -52	0 / -62	0 / -74	0 / -87
h10	0 / -40	0 / -48	0 / -58	0 / -70	0 / -84	0 / -100	0 / -120	0 / -140
h11	0 / -60	0 / -75	0 / -90	0 / -110	0 / -130	0 / -160	0 / -190	0 / -220
h12	0 / -100	0 / -120	0 / -150	0 / -180	0 / -210	0 / -250	0 / -300	0 / -350
k10	+40 / 0	+48 / 0	+58 / 0	+70 / 0	+84 / 0	+100 / 0	+120 / 0	+140 / 0
k12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
m7	+2 / +12	+4 / +16	+6 / +21	+7 / +25	+8 / +29	+9 / +34	+11 / +41	+13 / +48
js14	+/- 125	+/- 150	+/- 180	+/- 215	+/- 260	+/- 310	+/- 370	+/- 435
js16	+/- 300	+/- 375	+/- 450	+/- 550	+/- 650	+/- 800	+/- 950	+/- 1100
H7	+10 / 0	+12 / 0	+15 / 0	+18 / 0	+21 / 0	+25 / 0	+30 / 0	+35 / 0
H8	+14 / 0	+18 / 0	+22 / 0	+27 / 0	+33 / 0	+39 / 0	+46 / 0	+54 / 0

1µm = 0.001mm

DELME**DELME İPUÇ LARI**

1. Malzeme, makine özellikleri ve kesme sıvısını dikkate alarak en uygun matkabı seçiniz.
2. Tutucu ve iş milindeki esneklik matkaba zarar verebilir. Mümkün olan en kısa matkabı seçiniz.
3. Matkabın tutucu içinde hareket etmediğinden emin olunuz.
4. Mors konik shaftın tutucu yüzeyine iyi oturduğundan emin olmak için yumuşak çekiç kullanınız.
5. Kesme sıvısı delme performansına direk etki eder, soğutma sıvısının matkap ucuna geldiğinden emin olunuz.
6. Doğru talaş kontrolü için tavsiye edilen prosedürü uygulayınız.
7. Matkabı bilirken doğru açıda bilediğinizden ve bütün aşınmaları giderdiğinizden emin olun.

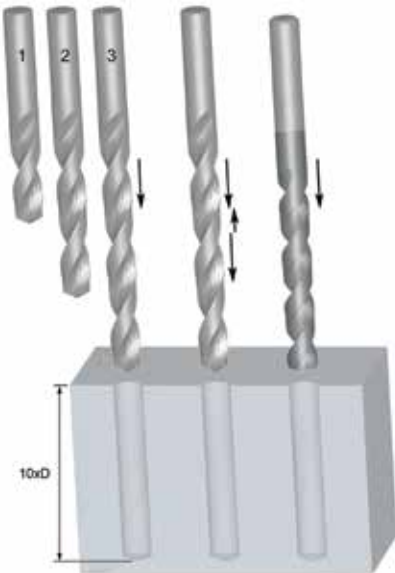
DELİK ÖLÇÜSÜ

Geometri, matkap malzemesi ve kaplaması doğru delik ölçüsü elde etmek için önemlidir. Normal şartlarda H12 toleransı elde edilir.

- HSS Genel Amaç Matkapları - H12
- HSS / HSS-E Parabolik Helisli Derin Delik Matkapları - H10
- Yüksek Performanslı Kaplamalı Karbür - H8/H9

DERİN DELİK STRATEJİSİ

Derin delik delme için birçok metod uygulanabilir. Aşağıda 10xD bir delik delmek için dört örnek verilmiştir.



	Delme serileri	Delme serileri
Matkap adedi	3 (2,5xD, 6xD, 10xD)	2 (2,5xD, 10xD)
Matkap tipi	Standart geometri, genel amaç	Standart geometri, genel amaç
+ / -	Pahalı Zaman kazandırıcı	Maliyet verimli Hızlı

	Nefesli delme	Tek seferde delme
Matkap adedi	1 (10xD)	1 (10xD)
Matkap tipi	Standart geometri, genel amaç	Özel amaç takımları
+ / -	Zaman kazandırıcı	Maliyet verimli Hızlı

TROUBLE SHOOTING WHEN DRILLING

PROBLEM	SEBEP	ÇÖZÜM
Kırılan ya da ezilen kenar	şaft ve tutucu uyumsuzluğu	Takım şaftı ve tutucu yuvasının temiz olduğundan emin olun.
Kırılan ya da ezilen kenar	ilerleme çok yüksek	İlerlemeyi optimum bir hıza düşürün
	yetersiz boşluk	doğru geometri için tekrar bileyin
	aşırı inceltme	doğru geometri için tekrar bileyin
	kesme ucunda yüksek darbe	matkap ucuna darbeden kaçının iş miline takıp çıkarılırken zorlanan konik şaftlı matkaplar
aşınmış dış köşeler	aşırı yüksek hız	Kesme hızını optimum bir hıza düşürün, ya da ilerlemeyi arttırabilirsiniz.
kırılan dış köşeler	stabil olmayan ayar	parçadaki hareketi azaltın
çapaklanma	aşırı boşluk	Doğru şartlarda tekrar bileyin.
heliste kırılma	heliste talaş birikmesi	Nefesli delme uygulayın
	matkap kayması	Matkabın tutucu içinde hareket etmediğinden emin olunuz.
delikte spiral izler	yetersiz ilerleme	İlerlemeyi arttırın
	kötü pozisyonlama hassasiyeti	öncesinde punta matkabı kullanın
çok büyük delik	hatalı uç geometrisi	uç geometrisini kontrol edin
	etkin olmayan talaş boşluğu	Talaş kontrolü için hız, ilerleme ve nefes boyunu ayarlayın

Raybalama

RAYBALAMA İPUÇLARI

Raybalama yaparken en iyi sonucu elde etmek için gerekli şartları sağlamak şarttır. Delik hazırlığı yaparken yapılan en bilinen hata çok az talaş payı bırakmaktır. Eğer yeterli talaş payı bırakılmazsa rayba sürtme-ovalama hareketi yapacak, bunun sonucu rayba hızlı bir şekilde aşınacak ve çap istenen özelliklerde olmayacaktır. Ayrıca gerekli talaş payı bırakılmaması performans için de önemli bir etkidir. (Bakınız Talaş Payı)

1. Uygulama için optimum rayba ile optimum kesme hızı ve ilerlemeyi seçin. Raybalama için hazırlanan deliğin doğru çapta olduğundan emin olun.
2. İş parçası bağlama ve iş mili rijit ve stabil olmalıdır.
3. Düz saplı bir rayba için iyi kalite bir tutucu seçilmelidir. Rayba tutucu içinde hareket ederse ve otomatik ilerleme kullanılıyorsa rayba kırılabilir.
4. Tezgah iş milinden takım mesafesinin minimumda tutun.
5. Raybanın takım ömrünü uzatmak için tavsiye edilen kesme sınırlarını kullanın ve bu sınırların kesici kenarlara ulaştığından emin olun. Raybalama ağır bir kesme işlemi olmadığı için genellikle 1:40 oranında seyreltilmiş çözünebilir yağ yeterlidir. Pik döküm malzemelerde basınçlı hava kullanılabilir.
6. Rayba kanallarının talaş ile dolup tıkanmasına izin vermeyin.
7. raybayı bilemeden önce eksenler arası eş merkezliliği kontrol edin. ç oğu durumda sadece konik kılavuz yeniden bilmesi gerekecektir.
8. Raybaları keskin tutun. Sık olarak yeniden bileme ekonomiktir, ama raybanın sadece eğimli ve konik kılavuz kısmı üzerinden kesme yaptığını, düzlükler üzerinde kesme yapmadığını anlamak önemlidir. Sonuç olarak sadece bu kısımlar yeniden bilemenin hassasiyeti delik kalitesi ve takım ömrü için önemlidir.

TALAŞ PAYI

Raybalamada tavsiye edilen talaş payı uygulama malzemesi ve önceden delinmiş olan deliğin yüzey kalitesine bağlıdır. Talaş payı için genel kılavuz değerler aşağıdaki tabloda görülmektedir.

Raybalanan delik ölçüsü (mm)	Ön delik delindiğinde	Ön-çekird-ek-delik delindiğinde	Raybalanan delik ölçüsü (İnç)	Ön delik delindiğinde	Ön-çekird-ek-delik delindiğinde
4'ün altı	0.1	0.1	Below 3/16	0.004	0.004
4-11 arası	0.2	0.15	3/16 to 1/2	0.008	0.006
11-39 arası	0.3	0.2	1/2 to 1.1/2	0.010	0.008
39-50 arası	0.4	0.3	1.1/2 to 2	0.016	0.010

TOLERANS LİMİTLERİ



1. STANDART RAYBALARIN KESME Ç APLARI

(d1) çapı konik ya da eğimli kısmın hemen arka tarafında dairesel olarak yapılan ölçümdür. Tolerans değeri DIN 1420'ye göredir ve H7 kalitesinde delikler üretmek için öngörülür.

RAY BA TOLERANSI			
ç ap (mm)		Tolerans sınırı (mm)	
Fazla	.....ya kadar ve dahil	yüksek +	Düşük +
	3	0.008	0.004
3	6	0.010	0.005
6	10	0.012	0.006
10	18	0.015	0.008

RAY BA TOLERANSI			
ç ap (mm)		Tolerans sınırı (mm)	
Fazla	.....ya kadar ve dahil	yüksek +	Düşük +
	30	0.017	0.009
18	30	0.017	0.009
30	50	0.021	0.012
50	80	0.025	0.014

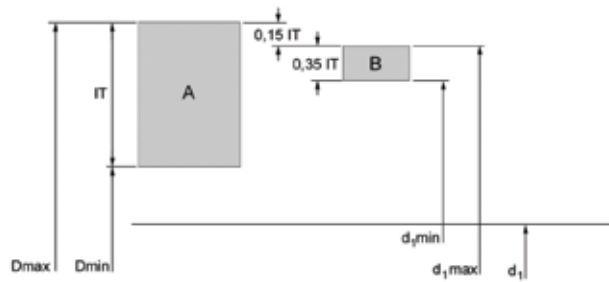
2. H7 delikte

En yaygın bitmiş delik toleransı H7'dir (aşağıdaki tablo). Diğer herhangi bir tolerans için, 3. maddenin altındaki şekil ve tablo raybanın tolerans konumu ve aralığını hesaplamak için kullanılabilir.

RAY BA TOLERANSI			
ç ap (mm)		Tolerans sınırı (mm)	
Fazla	.....ya kadar ve dahil	yüksek +	Düşük +
	3	0.010	0
3	6	0.012	0
6	10	0.015	0
10	18	0.018	0

RAY BA TOLERANSI			
ç ap (mm)		Tolerans sınırı (mm)	
Fazla	.....ya kadar ve dahil	yüksek +	Düşük +
	30	0.021	0
18	30	0.021	0
30	50	0.025	0
50	80	0.030	0

3. Özel bir tolerans değerinde (örneğin D8) kesme işlemi yapmak istendiği zaman, özel bir raybanın ölçülerini tanımlamak gerektiğinde, iyi bir şekilde tanımlanmış bu kılavuz kullanılabilir.



A = Delik Toleransı
 B = Rayba toleransı
 IT = Tolerans Aralığı
 Dmax = Maks. Delik çapı
 Dmin = Min. Delik çapı
 d₁ = Nominal çap
 d_{1,max} = Raybanın maks. ç apı
 d_{1,min} = Raybanın min. ç apı

Tolerans aralığı (mikron)	Tolerans Aralığı ç apı (mm)							
	1-3 arası	3-6 arası	6-10 arası	10-18 arası	18-30 arası	30-50 arası	50-80 arası	80-120 arası
IT5	4	5	6	8	9	11	13	15
IT6	6	8	9	11	13	16	19	22
IT7	10	12	15	18	21	25	30	35
IT8	14	18	22	27	33	39	46	54
IT9	25	30	36	43	52	62	74	87
IT10	40	48	58	70	84	100	120	140
IT11	60	75	90	110	130	160	190	220
IT12	100	120	150	180	210	250	300	350

Örnek; D8 tolranslı 10mm'lik bir delik, Maks. ç ap=10.062, Min. ç ap=10.040, Delik toleransı (IT8)=0.022

Maksimum limit: 0.15 x delik toleransı (IT8) = 0.0033, yuvarlama = 0.004

Minimum limit: 0.35 x delik toleransı (IT8) = 0.0077, yuvarlama = 0.008

Rayba için maksimum limit = 10.062 - 0.004 = 10.058

Rayba için minimum limit = 10.058 - 0.008 = 10.050

RAYBALAMADA SORUN ÇÖZME

PROBLEM	SEBEP	ÇÖZÜM
Kırık ya da kırışmış kesme kenarı	Şaft ve tutucu uyumsuzluğu	Takım şaftı ve tutucu yuvasının temiz olduğundan emin olun.
Hızlı takım aşınması	Yetersiz talaş payı	Talaş payını arttırın
büyük delik	Aşırı uzun boy	Doğru özelliklerde tekrar bileyin
	İş milinde pozisyonlama hatası	İş mili pozisyonlamasını kontrol ve tamir edin
	Takım tutucu içinde zorlanma	Takım tutucuyu değiştirin
	Takım şaftının zarar görmesi	Takım şaftını değiştirin ya da tekrar bileyin
	Takımın ovaliği	Takımı değiştirin ya da tekrar bileyin
	Asimetrik konik kılavuz açısı	Doğru özelliklerde tekrar bileyin
	Çok yüksek ilerleme ya da kesme hızı	Kesme şartlarını katalog değerlerine göre tekrar ayarlayın
küçük delik	Yetersiz talaş payı	Talaş payını arttırın
	Çok yüksek ısıdan dolayı delik genişler ya da daralır	Kesme hızı akışını arttırın
	Takım çapı aşınmış ve limitin altına düşmüş	Doğru özelliklerde tekrar bileyin
	Çok düşük ilerleme ya da kesme hızı	Kesme şartlarını katalog değerlerine göre tekrar ayarlayın
	Ön delik çok küçük	Talaş payını azaltın
oval ya da konik delik	İş milinde pozisyonlama hatası	İş mili pozisyonlamasını kontrol ve tamir edin
	Takım ve delik eksenlerinin çakışmaması	Köprü rayba kullanın
	Asimetrik konik kılavuz açısı	Doğru özelliklerde tekrar bileyin
kötü delik yüzeyi	Çok büyük talaş payı	Talaş payını azaltın
	Aşınmış takım	Doğru özelliklerde tekrar bileyin
	Çok küçük boşluk açısı	Doğru özelliklerde tekrar bileyin
	Aşırı seyreltilmiş kesme sıvısı	Konsantrasyonu arttırın
	İlerleme ve/veya kesme hızı çok düşük	Kesme şartlarını katalog değerlerine göre tekrar ayarlayın
	Kesme hızı çok yüksek	Kesme şartlarını katalog değerlerine göre tekrar ayarlayın
Takım sıkışması ya da kırılması	Aşınmış takım	Doğru özelliklerde tekrar bileyin
	Ters açı çok küçük	Takımı kontrol edin ve düzeltin/değiştirin
	Düzlük genişliği çok fazla	Takımı kontrol edin ve düzeltin/değiştirin
	İş parçası malzemesi sıkışmaya meyilli	Pozisyonlamayı düzeltmek için ayarlanabilir rayba kullanınthe displacement
	Ön delik çok küçük	Talaş payını azaltın
	Heterojen malzeme ve sert inklüzyon	Karbür rayba kullanın

DİŞ FREZELEME

DİŞ FREZELEME İPUÇ LARI

1. Diş frezeleme, bir deliğe diş açma işleminin bir diş freze takımıyla dairesel enterpolasyon yöntemiyle yapılmasıdır.
2. Bir diş frezesini kullanmak için dairesel takım yoluna sahip bir CNC tezgaha ihtiyaç vardır.
3. Günümüzde hemen her CNC tezgah diş frezeleme çevrimlerine sahiptir.
4. bilgi için tezgahınızın kullanma kılavuzu ya da teknik servisine başvurun.

ÖZELLİKLER VE FAYDALAR

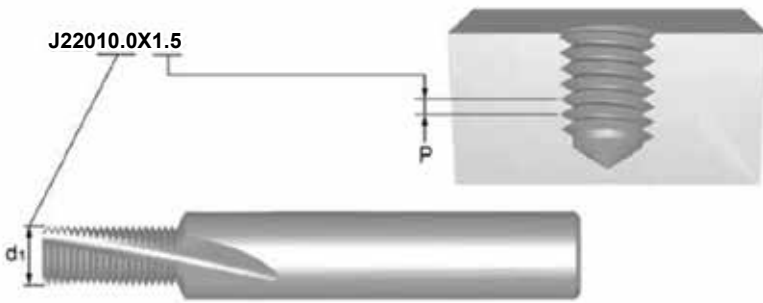
1. Diş frezeleme işlem güvenilirliğini ve takım ömrünü artırır.
2. Diş frezeleme daha küçük talaşlar ürettiği için daha sorunsuzdur.
3. Koordinat ayarlamalarıyla belirlenen toleransın içinde kalmak daha kolaydır.
4. Deliğin tabanına kadar diş çekebilme mümkün kılar.
5. Bir çok malzemeye diş çekilmesinde avantaj sağlar.
6. Adım aynı kalmak üzere bir diş frezesi ile bir çok çaptaki deliğe diş çekilebilir.
7. Aynı diş frezesiyle hem sağ hem sol diş çekilebilir.
8. Bazı diş frezeleri delik girişine havşa da açabilir. (J200, J205, J260)

DOĞRU TAKIM SEÇİMİ

Diş frezeleri, takım tipi, çap (d1) ve adım (P) bilgilerini içeren kodlara sahiptir.

Bu kodlarla sipariş verebilirsiniz.

Doğru ölçülerde takım seçtiğinizden emin olmak için mutlaka kataloğa bakın.



Bu diş frezesinin kullanım aralığı
≥ M12x1.5 (M14x1.5, M18x1.5 vs)

Rprg ile PROGRAMLAMA

- Diş toleransını kolay ayarlamak için mutlaka programlamayı radüs düzeltme ile yapınız.
- Rprg değer, yeni bir takım için başlangıç değeridir ve takım şaftında yazılıdır. Bu değer takım offset değerlerine girilmelidir.
- Rprg, teorik sıfır noktası anlamına gelir, dolayısıyla bu değer kullanıldığında asla olması gerekenden büyük ölçü elde etmezsiniz.
- Böylece gerekli küçük oynamalarla istediğiniz değeri güvenle bulabilirsiniz.

TAVSİYELER

- Her zaman doğru kesme şartlarını kullanın (katalog kesme şartları sayfa 198)
- Normal kılavuzlarda olduğu gibi tavsiye edilen matkap çaplarını kullanın.
- Diş toleransını doğru ayarlamak için mutlaka takım şaftında yazan Rprg değeriyle başlayınız.
- Çeçtiğiniz ilk dişi bir diş mastarıyla kontrol edin, radüsü takım aşınmadan önce iki ya da üç kere değıştirebilirsiniz.
- Kuru kesim yapılırken basınçlı hava kullanmanız talaş tahliyesi için avantaj sağlar.
- İşlemesi zor malzemeler için 2 ya da 2 paso kullanmanız gerekebilir.

DİŞ ÇEKME

DİŞ ÇEKME İPUÇ LARI

Herhangi bir diş çekme işleminin başarılı olması, tamamı biten ürünün kalitesini etkileyen bir dizi faktöre bağlıdır.

1. Deliğin tipi (örneğin açık ya da kör delik) ve parça malzemesi için doğru kılavuzu seçini Uygulama Malzeme Grupları tablosundan yararlanın.
2. Parçanın tam olarak sabitlendiğinden emin olun - yanal hareket kılavuzun kırılmasına ya da diş kalitesinin kötü olmasına sebep olabilir.
3. Delik için matkap tablosundan doğru matkabı seçtiğinizden emin olun. Malzeme sertleşmesini minimumda tutmaya özen gösterin.
4. Katalog sayfalarından yer alan doğru kesme hızını seçin.
5. Doğru uygulama için uygun kesme sıvısı kullanın.
6. NC uygulamalarında program için seçilen ilerleme değerinin doğru olduğundan emin olun. Kılavuz çekme aparatı kullanıldığında kılavuz kendi adımın oluşturması için adımın %95 ya da %97'si tavsiye edilir.
7. Mümkünse kılavuzu, kılavuza serbest eksenel hareket imkanı vererek deliği doğru ağızlamasını sağlayan, iyi kalite tork sınırlamalı bir kılavuz aparatına bağlayın. Bu aynı zamanda bir kör delik uygulamasında, kılavuzun kazara delik tabanına çarparak kırılmasını da önler.
8. Uygun olmayan bir ilerleme "çan şeklinde ağız" oluşturabileceğinden kılavuzun doğru ağızladığından emin olun.

Kılavuz Toleransı Vs İç Diş Toleransı (Somun)

Tolerans sınıfı, Kılavuz			Tolerans, İç diş (Somun)					uygulama
ISO	DIN	ANSI BS						
ISO 1	4 H	3 B	4 H	5 H				Sıkı geçme
ISO 2	6 H	2 B	4 G	5 G	6 H			Normal geçme
ISO 3	6 G	1 B			6 G	7 H	8 H	Boş geçme
-	7 G	-				7 G	8 G	Başka işlenmiş ya da kaplamayla boşluğu daraltın

Diş çekme de sorun çözme

PROBLEM	SEBEP	ÇÖZÜM
Büyük ölçü	Yanlış tolerans	Daha düşük diş toleranslı bir kılavuz seçin
	Yanlış ilerleme hızı	İlerlemeyi %5-10 azaltın ya da kılavuz tutucunun sıkmasını artırın
	Uygulama için yanlış kılavuz	Boş delik için düz, kapalı delik için helis kılavuz kullanın. Talaş yığılmasını önlemek için kaplamalı kılavuz kullanın. Doğru takım alternatifleri için takım seçici ya da kataloğa başvurun
	Kılavuz delik merkezinde değil	Kılavuz tutucu ve kılavuzun delik merkezinde olduğunu kontrol edin.
	Soğutma yok	ç apaklanmayı önlemek için yağ kullanın. Yağ bölümüne bakınız.
	Kesme hızı çok düşük	Katalog / ürün seçicideki tavsiyeleri uygulayın.
Küçük ölçü	Uygulama için yanlış kılavuz	Boş delik için düz, kapalı delik için helis kılavuz kullanın. Talaş yığılmasını önlemek için kaplamalı kılavuz kullanın. Doğru takım alternatifleri için takım seçici ya da kataloğa başvurun.
	Yanlış tolerans	Özellikle düşük ölçü, büyüme eğilimi olan, örneğin döküm demir, paslanmaz çelik gibi, malzemelerde daha yüksek toleranslı kılavuz seçin.
	Yanlış ya da eksik soğutma	ç apaklanmayı önlemek için yağ kullanın. Yağ bölümüne bakınız.
	Matkap çapı çok küçük	Matkap çapını üst limitte kullanın, kılavuz matkap tablolarına bakın.
	Kılavuzdan sonra malzeme geriliyor	Katalog / ürün seçicideki tavsiyeleri uygulayın.
ç apaklanma	Uygulama için yanlış kılavuz	Daha düşük talaş açısına sahip kılavuz seçin. Daha uzun pahlı kılavuz seçin. Talaş sıkışmasını önlemek için kör delikler için helis, boş delikler için düz kılavuz kullanın. Katalog veya ürün seçiciye başvurun.
	Yanlış ya da eksik soğutma	ç apaklanmayı önlemek için yağ kullanın. Yağ bölümüne bakınız.
	Kılavuz delik tabanına çarpıyor	Delme derinliğini artırın ya da diş derinliğini azaltın.
	Yüzey sertleşiyor	Kesme hızını düşürün, kaplamalı takım kullanın, yeterli yağlama sağlayın. Paslanmaz çeliklerin işlenmesi bölümüne bakın.
	ç ıkışta talaş sıkışıyor	Kılavuzu ani olarak tersine hareketle geri döndürmekten kaçının.
	Pah delik girişine çarpıyor	Eksenel konumu kontrol edin ve delik eksenini üzerindeki kılavuz ucunun aksel hatasını azaltın.
	Matkap çapı çok küçük	Matkap çapını üst limitte kullanın, kılavuz matkap tablolarına bakın.

Diş çekme de sorun çözme

PROBLEM	SEBEP	ÇÖZÜM
Kırılma	Aşınmış kılavuz	Yeni ya da yeniden bilenmiş kılavuz kullanın
	Yetersiz yağlama	ç apaklanmayı önlemek için yağ kullanın. Yağ bölümüne bakınız.
	Kılavuzun delik tabanına çarpması	Delme derinliğini arttırın ya da diş derinliğini azaltın.
	Kesme hızı çok yüksek	Kesme hızını düşürün, katalog ya da ürün seçiciye başvurun
	Yüzey sertleşmesi	Kesme hızını düşürün, kaplamalı takım kullanın, yeterli yağlama sağlayın. Paslanmaz çeliklerin işlenmesi bölümüne bakın.
	Matkap çapı çok küçük	Matkap çapını üst limitte kullanın, kılavuz matkap tablolarına bakın.
	çok yüksek tork	tork ayarlı kılavuz tutucu kullanın
	Malzeme sıkışması	Katalog / ürün seçicideki tavsiyeleri uygulayın.
ç abuk aşınma	Uygulama için yanlış kılavuz	Daha düşük talaş açısına sahip kılavuz seçin. Daha uzun pahlı kılavuz seçin. Talaş sıkışmasını önlemek için kör delikler için helis, boş delikler için düz kılavuz kullanın. Katalog veya ürün seçiciye başvurun.
	Yetersiz yağlama	ç apaklanmayı önlemek için yağ kullanın. Yağ bölümüne bakınız.
	Kesme hızı çok yüksek	Kesme hızını düşürün, katalog ya da ürün seçiciye başvurun
Talaş yığılması	Uygulama için yanlış kılavuz	Daha düşük talaş açısına sahip kılavuz seçin. Daha uzun pahlı kılavuz seçin. Talaş sıkışmasını önlemek için kör delikler için helis, boş delikler için düz kılavuz kullanın. Katalog veya ürün seçiciye başvurun.
	Yetersiz yağlama	ç apaklanmayı önlemek için yağ kullanın. Yağ bölümüne bakınız.
	Uygun olmayan yüzey işlemi	Uygun yüzey işlemleri bir kılavuz seçin
	Kesme hızı çok düşük	Katalog / ürün seçicideki tavsiyeleri uygulayın.

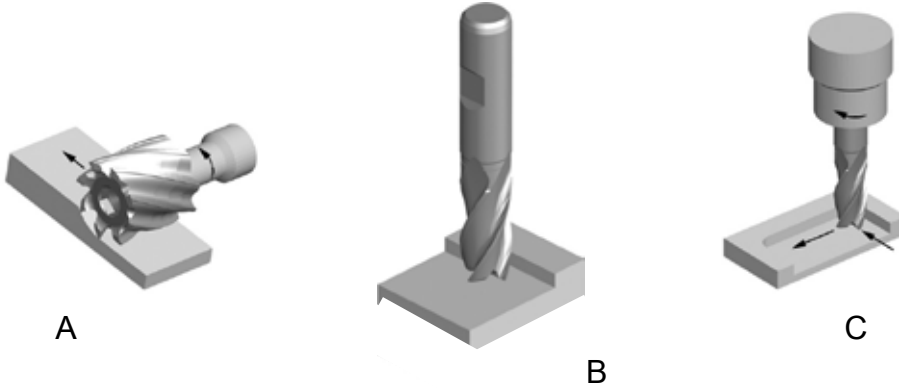
FREZELEME**FREZELEME İPUÇ LARI**

Frezeleme işlemi kesicinin yüksek hızlarda dönmesiyle ve ilerlemesiyle iş parçası üzerinden önceden belirlenmiş değerler içerisinde çok ya da az miktarda talaş kaldırarak işlenmiş yüzeyler üretme sürecidir.

Frezeleme sürecinin karakteristik özelliği her bir kesici ağzının iş parçasından kaldırılan talaşı küçük miktarlarda paylaşmasıdır.

Frezeleme Takımlarının Tipleri

Üç temel frezeleme operasyonu aşağıda gösterilmektedir: (A) ç evresel frezeleme, (B) Yüzey frezeleme, © Parmak free ile frezeleme



ç evresel frezelemede (vals frezeleme), kesicinin dönme eksenini, iş parçasının yüzeyine paraleledir. Kesici çevresi etrafında bir çok ağıza sahiptir, her kesici ağızsilindirik freze olarak adlandırılan tek noktalı kesme yapan takım gibi davranır. ç evresel frezelemede kullanılan kesiciler ortogonal ya da eğik kesme işlemi gerçekleştirecek helisel ya da düz dişlere sahip olabilir.

Yüzey frezelemede, kesici, iş parçası yüzeyine dik olacak şekilde bir eksen etrafında dönen bir mile monte edilir. Frezelenmiş yüzey kesicinin çevresi yave yüzeyi üzerinde konumlanmış kesici kenarların yaptığı işlemleden meydana gelmektedir.

Parmak freze ile frezelemede, kesici, genelde iş parçasına dik eksen etrafında döner. Konik yüzeyleri işlemek için eğim verilebilir. Kesici ağızlar, kesicinin, hem ağız kısmına hem de gövdesinin çevresine yerleştirilirler.

PARMAK FREZE İLE FARKLI UYGULAMALAR

MRR (talaş kaldırma oranı) ve uygulamalar birbiriyle yakından ilgilidir. Her farklı uygulama için farklı MRR değerlerimiz vardır ve bunlar Dormer kataloglarında çeşitli sembollerle belirtilmiştir.

Kenar Frezeleme	yüzey Frezeleme	Kanal Frezeleme	Dalma Frezeleme	Açılı Frezeleme
Radyal kesme derinliği freze çapının 0.25'nden az olmalıdır.	Radyal kesme derinliği çapının 0.9 katından fazla olmamalıdır, aksnel kesme derinliği çapın 0.1'inden az olmalıdır.	Kama kanalı işleme. Radyal kesme derinliği parmak frezenin çapına eşittir.	Parmak freze ile sadece merkezden kesme olması koşuluyla, iş parçasının delikdelmek mümkündür. Bu işlem ilerleme yarı yarıya azaltılmalıdır.	İş parçasına hem aksnel hem de radyal giriş.

Frezelemede Sorun ç özme

PROBLEM	SEBEP	ÇÖZÜM
Kırılma	ç ok yüksek talaş payı	Diş başına ilerlem hızını düşürün
	İlerleme çok hızlı	İlerleme hızını düşürün
ç apaklanma	Helis boyu ya da toplam boy çok uzun	Şaftı tutucunun içinde daha uzun yerden tutun ya da daha kısa bir takım kullanın
	İş parçası malzemesi çok sert	Katalog ya da ürün seçiciden daha üst bir kalite ve/veya kaplama seçin
	Uygun olmayan ilerleme ve hız	Katalog ya da ürün seçiciden doğru kesme parametrelerini seçin
	Kötü talaş tahliyesi	Soğutma sıvısı yolunu düzeltin
	Konvansiyonel (ters yönlü) frezeleme	Eş yönlü frezeleme
	uygun olmayan helis	Katalog ya da ürün seçiciden uygun takım alternatiflerini bulun
Chipping	İlerleme hızı çok yüksek	İlerleme hızını düşürün
	Tırlama	İş mili devrini düşürün
	Düşük kesme hızı	İş mili devrini arttırın
	Konvansiyonel (ters yönlü) frezeleme	Eş yönlü frezeleme
	Takım rijitliği	Şaftı tutucunun içinde daha uzun yerden tutun ya da daha kısa bir takım kullanın
	İş parçası rijitliği	İş parçasını daha sağlam bağlayın
Kısa takım ömrü	Tok iş parçası malzemesi	Katalog ya da ürün seçiciden doğru takımı seçin
	Uygun olmayan kesme açısı ve birincil boşaltma	Doğru kesme açısını seçin
	Freze/iş parçası sürtünmesi	Kaplamalı bir takım kullanın
Kötü yüzey kalitesi	İlerleme çok hızlı	Doğru kesme hızına düşürün
	Kesme hızı çok düşük	Kesme hızını yükseltin
	Talaş batması	Talaş payını azaltın
	Takım aşınması	Takımı değiştirin ya da bileyin
	Talaş yapışması	Daha yüksek helis açılı bir takım kullanın
	Talaş kaynaması	Soğutma kalitesini arttırın

PROBLEM	CAUSE	REMEDY
Kötü iş parçası hassasiyeti	Takım sapması	Şaftı tutucunun içinde daha uzun yerden tutun ya da daha kısa bir takım kullanın
	Yetersiz ağız sayısı	Daha fazla ağızlı bir takım kullanın
	Düşük sıkma değeri / aşınmış takım tutucu	Takımı değiştirin ya da bileyin
	Düşük takım tutucu rijitliği	Daha kısa/rijit bir takım tutucuyla değiştirin
	Düşük iş mili rijitliği	Daha büyük bir iş mili kullanın
Tırlama	İlerleme ve kesme hızı çok yüksek	İlerlemeyi ve kesme hızının düzeltin.
	Helis boyu ya da toplam boy çok uzun	Şaftı tutucunun içinde daha uzun yerden tutun ya da daha kısa bir takım kullanın
	Derinlik çok yüksek	Pasoyu azaltın
	Yetersiz rijitlik (tezgah ve takım tutucu)	Takım tutucuyu kontrol edin ve gerekiyorsa değiştirin

ÇAPAK ALMA FREZELERİ

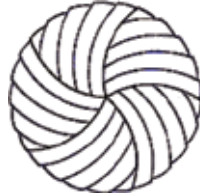
ÇAPAK ALMA İPUÇ LARI

Çapak alma frezeleri çoğunlukla birçok malzemenin komponent hazırlanması ve finişinde kullanılır.

Genellikle elle ve havalı tabancalara bağlayarak kullanılır

ÖZELLİKLER VE FAYDALAR

1. Toklaşatırılmış ve sertleştirilmiş çelik shaft ile rijitlik artar ve eğilme ile titreşim riskleri azalır.
2. Hassas işlenmiş shaft sayesinde sıkma kuvveti artar, hava tabancası içinde kayma azalır.
3. Özel kaynatılmış elemanlar yüksek sıcaklık dayanımı sağlar ve basınç ile darbeye karşı dayanıklılığı artırır.
4. Çift Kesim geometrisi birçok malzeme ve uygulamada kullanım sağlar
5. Malzemeye özel geometriler, çelik (ST), Paslanmaz (VA), Alüminyum (AL) ve Camelyaf (GRP) ile kullanılabilir.
6. Aşındırıcı malzemelerde takım ömrünü arttırmak için TiAlN kaplama
7. Küre takımlar Skip Helis geometrisine sahiptir.
8. Kesme merkezindeki bu özellik, kesme verimliliğini artırır ve talaş yığılmasını azaltır.



Skip



Normal

ÖNCE GÜVENLİK

1. Yüksek hızla dönen takımlar yanlış kullanıldığında tehlikeli olabilir ve yaralanmalara sebep olabilir.
2. Takım değiştirme sırasında önce hava tabancasının hava bağlantısını kesin.
3. Mümkün olduğunca en az titreşim veren hava tabancasını kullanın.
4. Her zaman siz ve yakınınızdakiler en uygun güvenlik ekipmanını kullanın.



Güvenlik ekipmanları her zaman kullanılmalıdır.

TAVSİYELER

- Her zaman doğru hızda kullanın
- Rutin bakım önemlidir, hava tabancalarının yağlandığından ve rulmanlarının aşınmadığından emin olun
- Her takım değiştirmede, somun, tabancanın iç koniği ve pens temizliğinden emin olun.
- Takımın mekanik şok ve ağır darbelere uğramasına engel olun
- Takımın termal şoklara uğramasına engel olun.
- Malemedeki kanal, köşe gibi yerlere olması erekenden fazla dalmayınız.

Ç apak Alma İşleminde Sorun Çözme

PROBLEM	SEBEP
Kesme ağzında talaş birikmesi	Ç ok düşük devir
	Kaçıklık (aşınmış iş mili, pens ya da rulman)
	İş parçasına dalma
Kesme ağzına talaş kaynaması	Helis boyu ya da toplam boy çok uzun
	İş parçası malzemesi için yanlış geometri
Erken Aşınma	Takım büyüklüğü ve iş parçası malzemesine göre çok yüksek devir
	Kaçıklık (aşınmış iş mili, pens ya da rulman)
Ön kısmın şafttan ayrılması	Fazla ısınmaya yol açan çok yüksek devir
	Ç ok uzun çalışma süresi yüzünden aşırı ısınma

English		Hardness	Tensile strength	ISO
Application Material Groups		HB	N/mm ²	
1. Steel	1.1 Magnetic soft steel	< 120	< 400	P 1
	1.2 Structural steel, case carburizing steel	< 200	< 700	P 1
	1.3 Plain Carbon steel	< 250	< 850	P 2
	1.4 Alloy steel	< 250	< 850	P 3
	1.5 Alloy steel, Hardened and tempered steel	> 250 < 350	> 850 < 1200	P 4
	1.6 Alloy steel, Hardened and tempered steel	> 350	> 1200 < 1620	H 1
	1.7 Alloy steel, Heat treated	49-55HRC	> 1620	H 3
	1.8 Alloy steel, Hardened & Wear resistant steel	55-63HRC	> 1980	H 4
2. Stainless Steel	2.1 Free machining, Stainless Steel	< 250	< 850	M 1
	2.2 Austenitic	< 320	< 1100	M 3
	2.3 Ferritic + Austenitic, Ferritic, Martensitic	< 300	< 1000	M 2
3. Cast Iron	2.4 Precipitation hardened	>320 <410	>1100 <1400	S 2
	3.1 Lamellar graphite	< 150	> 500	K 1
	3.2 Lamellar graphite	> 150 <300	> 500 < 1000	K 2
	3.3 Nodular graphite, Malleable Cast Iron	< 200	< 700	K 3
	3.4 Nodular graphite, Malleable Cast Iron	> 200 < 300	> 700 < 1000	K 4
	4.1 Titanium, unalloyed	< 200	< 700	S 1
4. Titanium	4.2 Titanium, alloyed	< 270	< 900	S 2
	4.3 Titanium, alloyed	> 270 < 350	> 900 ≤ 1250	S 3
	5.1 Nickel, unalloyed	< 150	< 500	S 1
5. Nickel	5.2 Nickel, alloyed	< 270	> 900	S 2
	5.3 Nickel, alloyed	> 270 < 350	> 900 < 1200	S 3
	6.1 Copper	< 100	< 350	N 3
6. Copper	6.2 β-Brass, Bronze	< 200	< 700	N 4
	6.3 α-Brass	< 200	< 700	N 3
	6.4 High Strength Bronze	< 470	< 1500	N 4
7. Aluminium Magnesium	7.1 Al, Mg, unalloyed	< 100	< 350	N 1
	7.2 Al alloyed, Si < 0.5%	< 150	< 500	N 1
	7.3 Al alloyed, Si > 0.5% < 10%	< 120	< 400	N 1
	7.4 Al alloyed, Si > 10% Whisker reinforced. Al-alloys MG-alloys	< 120	< 400	N 2
8. Synthetic materials	8.1 Thermoplastics	---	---	O
	8.2 Thermosetting plastics	---	---	O
	8.3 Reinforced plastic materials	---	---	O
9. Hard material	9.1 Cermet (metals-ceramics)	< 550	< 1700	H
	10. Graphite	---	< 100	O

EXAMPLES OF WORKPIECE MATERIALS
FROM DIFFERENT STANDARDS

AMS	EN	W.Nr.	DIN	BS	SS	USA	UNS	ISO
1.1		1.1015, 1.1013	Rte60, Rte100	230M07, 050A12	1160	Leaded Steels	G12120	P 1
1.2	EN 10 025 - S235JR2	1.1012, 1.1053, 1.7131	S137-2, 16MnCr5, S150-2	060A35, 080M40, 4360-50B	1312, 1412, 1914	135, 30	G10100	P 1
1.3	EN 10 025 - E295	1.1191, 1.0601	CK45, C60	080M46, 080A62	1550, 2142, 2172	1024, 1060, 1061	G10600	P 2
1.4	EN 10 083-1 - 42 CrMo 4 - EN 10 270-2	1.7225, 1.3505, 1.6582, 1.3247	42CrMo4, 100Cr6, 34CrNiMo6, S2-10-1-8	708M40/42, 817M40, 534A99, BM2, BT42	1672-04, 2090, 2244-02, 2541-02	4140, A2, 4340, M42, M2	G41270, G41470, T30102, T11342	P 3
1.5	EN ISO 4857 - HS6-5-2 - EN ISO 4857 - HS6-5-2.5	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, 55NiCrMoV6, X210Cr12, S2-10-1-8	801, BM2, BT42, 826M40, 830M31	2244-04, 2541-03, 2550, 2722, 2723	01, L6, M42, D3, A2, M2, 4140, 8630	G96300, T30102, T11302, T30403, T11342	P 4
1.6	EN ISO 4857 - HS2-9-1-8	1.2510, 1.2713, 1.3247, 1.2080	100MnCrW12, X210Cr12, S2-10-1-8	801, 826 M40, 830M31	2244-05, 2541-05, , HARDOX 400	01, L6, M42, D3, 4140, 8130	T30403, G41400, J14047	H 1
1.7	EN ISO 4857 - HS2-9-1-8	1.2510	100MnCrW4	BO1, BO3, BH13	HARDOX 500			H 3
1.8	EN ISO 4857 - X40CrMoV5-1	1.3343, 1.2344	S6-5-2, GX40CrMoV5-1	BM2, BH13	2242 HARDOX 600			H 4
2.1	EN 10 088-3 - X14CrMoS17	1.4305, 1.4104	X10CrNiS189, X12CrMoS17	303 S21, 416 S37	2301, 2312, 2314, 2346, 2380	303, 416, 430F	S30300, S41600, S43020	M 1
2.2	EN 10 088-2.0 - 3 - 1,4301+AT	1.4301, 1.4541, 1.4571	X5CrNiFe189, X10CrNiMoTi1810	304 S15, 321 S17, 316 S, 320 S12	2310, 2333, 2337, 2343, 2353, 2377	304, 321, 316	S30400, S32100, S31600	M 3
2.3	EN 10 088-3 - 1,4460	1.4460, 1.4512, 1.4582	X8CrNiMo275, X4CrNiMoN6257	317 S16, 316 S16	2324, 2387, 2570	409, 430, 436	S40900, S4300, S43600	M 2
2.4	EN 1,4547	1.4547	X2CrNiMo20-18-6	HR41	2378	17-4PH	S31254	S 2
3.1	EN 1561 - EN-JL1030	0.6010, 0.6040	GG10, GG40	Grade150, Grade 400	0120, 0212, 0814	ASTM A48 class 20	F11401, F12801	K 1
3.2	EN 1561 - EN-JL1050	0.6025, 0.6040	GG25, GG40	Grade200, Grade 400	0125, 0130, 0140, 0217	ASTM A48 class 40, STM A48 class 60	F12801, F14101	K 2
3.3	EN 1561 - EN-JL2040	0.7040, 0.7070, 0.8145, 0.8045	GGC40, GGG70, GTS45-06, GTW45-07	420/12, P4407, 700/2, 30g/72	0219, 0717, 0727, 0732, 0852	ASTM A220 grade 40010, ASTM A602 grade M4504	F22830, F20001	K 3
3.4	EN 1561 - EN-JL2050	0.7040, 0.7070, 0.8145, 0.8045	GGG40, GGG70, GTS45-06, GTW45-07	420/12, P4407, 700/2, 30g/72	0221, 0223, 0737, 0854	ASTM A220 grade 90001, ASTM A602 grade M8501	F26230, 20005	K 4
4.1		3.7024LN	T199 8	TA1 to 9	T199 8	ASTM B265 grade 1	R50250	S 1
4.2		3.7164LN, 3.7119LN	TA16V4, TIAE5n2	TA10 to 14, TA17	TA16V4, TIAE5n2	AMS4928	R54790	S 2
4.3		3.7164LN, 3.7174LN, 3.7184LN	TA16V4, TIA6V5Sn2, TIA4MoSn2	TA10 to 13, TA28	TA16V5Sn2	AMS4928, AMS4971	R56400, R54790	S 3
5.1		2.4060, 2.4066	Nickel 200, 270, N199 6	NA 11, NA12	Ni200, Ni270	Nickel 200, Nickel 230	N02200, N02230	S 1
5.2		2.4630LN, 2.4602, 2.4650LN	Nimonic 75, Monel 400, Hastelloy C, Inconel 600	HR203, 3027-76		Nimonic 75 Monel400, Hastelloy, Inconel600	N06075, N10002, N04400, N06600	S 2
5.3		2.4668LN, 2.4631LN, 2.6554LN	Inconel 718, Nimonic 80A, Waspaloy	HR8, HR401, 601		Inconel 718, 625, Nimonic 80	N07718, N07080, N06625	S 3
6.1	EN 1652 - CW004A	2.0060, 2.0070	E-Cu57, SE-Cu	C101	5010	101	C10100, C1020	N 3
6.2	EN 1652 - CW612N	2.0380, 2.0360, 2.1030, 2.1080	CuZn39Pb2, CuZn40, CuSn8, CuSh6Zn	CZ120, CZ109/PB104	5168		C28000, C37710	N 4
6.3	EN 1652 - CW508L	2.0321, 2.0260	CuZn37, CuZn28	CZ108,CZ106	5150		C2600, C27200	N 3
6.4			Ampco 18, Ampco 25	AB1 type	5238, JM7-20			N 4
7.1	EN 485-2 - EN AW-1070A	3.0255	A199.5	LMO, 1 B (1050A)	4005	EC, 1060, 1100	A91060, A91100	N 4
7.2	EN 755-2 - EN AW-5005	3.1355, 3.3525	AlCuMg2, AlMg2Mn0.8	LM5, 10, 12, N4 (5251)	4106, 4212	380, 520.0, 520.2, 2024, 6061	A03800, A05200, A92024	N 1
7.3	EN 1706 - EN AC-42000	3.2162.05, 3.2341.01	GD-ALSi8Cu, G-ALSi5Mg	LM2,4,16,18,21,22,,24,25,26,27,L109	4244	319.0, 333.0, 319.1, 356.0	A03190, A03330, C35600	N 1
7.4	SS-EN 1706 - EN AC-47000	3.2561.01	G-ALSi18, G-ALSi12	LM6, 12,13, 20, 28, 29, 30	4260, 4261, 4262	4032, 222.1, A332.0	A94032, A02220, A13320	N 2
8.1				Polystyrene, Nylon, PVC Cellulose, Acetate & Nitrate		Polystyrene, Nylon, PVC		O
8.2				Ebonite, Tufnol, Bakelite		Bakelite		O
8.3				Kevlar, Printed Circuit boards		Kevlar		O
9.1				Ferrotic, Ferrotiltant				H
10.1				Graphite				O

Table of Cutting Speeds



		Vc															
m/Min		5	8	10	15	20	25	30	40	50	60	70	80	90	100	110	150
Feet/Min		16	26	32	50	66	82	98	130	165	197	230	262	296	330	362	495
Ø		RPM															
mm	inch																
1,00		1592	2546	3183	4775	6366	7958	9549	12732	15916	19099	22282	25465	28648	31831	35014	47747
1,50		1061	1698	2122	3183	4244	5305	6366	8488	10610	12732	14854	16977	19099	21221	23343	31831
2,00		796	1273	1592	2387	3183	3979	4775	6366	7958	9549	11141	12732	14324	15916	17507	23873
2,50		637	1019	1273	1910	2546	3183	3820	5093	6366	7639	8913	10186	11459	12732	14006	19099
3,00		531	849	1061	1592	2122	2653	3183	4244	5305	6366	7427	8488	9549	10610	11671	15916
3,18	1/8	500	801	1001	1501	2002	2502	3003	4004	5005	6006	7007	8008	9009	10010	11011	15015
3,50		455	728	909	1364	1819	2274	2728	3638	4547	5457	6366	7276	8185	9095	10004	13642
4,00		398	637	796	1194	1592	1989	2387	3183	3979	4775	5570	6366	7162	7958	8754	11937
4,50		354	566	707	1061	1415	1768	2122	2829	3537	4244	4951	5659	6366	7074	7781	10610
4,76	3/16	334	535	669	1003	1337	1672	2006	2675	3344	4012	4681	5350	6018	6687	7356	10031
5,00		318	509	637	955	1273	1592	1910	2546	3183	3820	4456	5093	5730	6366	7003	9549
6,00		265	424	531	796	1061	1326	1592	2122	2653	3183	3714	4244	4775	5305	5836	7958
6,35	1/4	251	401	501	752	1003	1253	1504	2005	2506	3008	3509	4010	4511	5013	5514	7519
7,00		227	364	455	682	909	1137	1364	1819	2274	2728	3183	3638	4093	4547	5002	6821
7,94	5/16	200	321	401	601	802	1002	1203	1604	2004	2405	2806	3207	3608	4009	4410	6013
8,00		199	318	398	597	796	995	1194	1592	1989	2387	2785	3183	3581	3979	4377	5968
9,00		177	283	354	531	707	884	1061	1415	1768	2122	2476	2829	3183	3537	3890	5305
9,53	3/8	167	267	334	501	668	835	1002	1336	1670	2004	2338	2672	3006	3340	3674	5010
10,00		159	255	318	477	637	796	955	1273	1592	1910	2228	2546	2865	3183	3501	4775
11,11	7/16	143	229	287	430	573	716	860	1146	1433	1719	2006	2292	2579	2865	3152	4298
12,00		133	212	265	398	531	663	796	1061	1326	1592	1857	2122	2387	2653	2918	3979
12,70	1/2	125	201	251	376	501	627	752	1003	1253	1504	1754	2005	2256	2506	2757	3760
14,00		114	182	227	341	455	568	682	909	1137	1364	1592	1819	2046	2274	2501	3410
14,29	9/16	111	178	223	334	446	557	668	891	1114	1337	1559	1782	2005	2228	2450	3341
15,00		106	170	212	318	424	531	637	849	1061	1273	1485	1698	1910	2122	2334	3183
15,88	5/8	100	160	200	301	401	501	601	802	1002	1203	1403	1604	1804	2004	2205	3007
16,00		99	159	199	298	398	497	597	796	995	1194	1393	1592	1790	1989	2188	2984
17,46	11/16	91	146	182	273	365	456	547	729	912	1094	1276	1458	1641	1823	2005	2735
18,00		88	141	177	265	354	442	531	707	884	1061	1238	1415	1592	1768	1945	2653
19,05	3/4	84	134	167	251	334	418	501	668	835	1003	1170	1337	1504	1671	1838	2506
20,00		80	127	159	239	318	398	477	637	796	955	1114	1273	1432	1592	1751	2387
24,00		66	106	133	199	265	332	398	531	663	796	928	1061	1194	1326	1459	1989
25,00		64	102	127	191	255	318	382	509	637	764	891	1019	1146	1273	1401	1910
27,00		59	94	118	177	236	295	354	472	589	707	825	943	1061	1179	1297	1768
30,00		53	85	106	159	212	265	318	424	531	637	743	849	955	1061	1167	1592
32,00		50	80	99	149	199	249	298	398	497	597	696	796	895	995	1094	1492
36,00		44	71	88	133	177	221	265	354	442	531	619	707	796	884	973	1326
40,00		40	64	80	119	159	199	239	318	398	477	557	637	716	796	875	1194
50,00		32	51	64	95	127	159	191	255	318	382	446	509	573	637	700	955

HV Vickers	HRC Rockwell	HB Brinell	N/ mm ²	Tons/ sq. in.
940	68			
900	67			
864	66			
829	65			
800	64			
773	63			
745	62			
720	61			
698	60			
675	59			
655	58		2200	142
650		618	2180	141
640		608	2145	139
639	57	607	2140	138
630		599	2105	136
620		589	2070	134
615	56	584	2050	133
610		580	2030	131
600		570	1995	129
596	55	567	1980	128
590		561	1955	126
580		551	1920	124
578	54	549	1910	124
570		542	1880	122
560	53	532	1845	119
550		523	1810	117
544	52	517	1790	116
540		513	1775	115
530		504	1740	113
527	51	501	1730	112
520		494	1700	110
514	50	488	1680	109
510		485	1665	108
500		475	1630	105
497	49	472	1620	105
490		466	1595	103
484	48	460	1570	102
480		456	1555	101
473	47	449	1530	99
470		447	1520	98
460		437	1485	96
458	46	435	1480	96
450		428	1455	94
446	45	424	1440	93
440		418	1420	92

HV Vickers	HRC Rockwell	HB Brinell	N/ mm ²	Tons/ sq. in.
434	44	413	1400	91
423	43	402	1360	88
413	42	393	1330	86
403	41	383	1300	84
392	40	372	1260	82
382	39	363	1230	80
373	38	354	1200	78
364	37	346	1170	76
355	36	337	1140	74
350		333	1125	73
345	35	328	1110	72
340		323	1095	71
336	34	319	1080	70
330		314	1060	69
327	33	311	1050	68
320		304	1030	67
317	32	301	1020	66
310	31	295	995	64
302	30	287	970	63
300		285	965	62
295		280	950	61
293	29	278	940	61
290		276	930	60
287	28	273	920	60
285		271	915	59
280	27	266	900	58
275		261	880	57
272	26	258	870	56
270		257	865	56
268	25	255	860	56
265		252	850	55
260	24	247	835	54
255	23	242	820	53
250	22	238	800	52
245		233	785	51
243	21	231	780	50
240		228	770	50
235		223	755	49
230		219	740	48
225		214	720	47
220		209	705	46
215		204	690	45
210		199	675	44
205		195	660	43
200		190	640	41

Tolerances



Tol	Ø mm							
	> 1 ≤ 3	> 3 ≤ 6	> 6 ≤ 10	> 10 ≤ 18	> 18 ≤ 30	> 30 ≤ 50	> 50 ≤ 80	> 80 ≤ 120
	µm							
e8	-14 / -28	-20 / -38	-25 / -47	-32 / -59	-40 / -73	-50 / -89	-60 / -106	-72 / -126
f6	-6 / -12	-10 / -18	-13 / -22	-16 / -27	-20 / -33	-25 / -41	-30 / -49	-36 / -58
f7	-6 / -16	-10 / -22	-13 / -28	-16 / -34	-20 / -41	-25 / -50	-30 / -60	-36 / -71
h6	0 / -6	0 / -8	0 / -9	0 / -11	0 / -13	0 / -16	0 / -19	0 / -22
h7	0 / -10	0 / -12	0 / -15	0 / -18	0 / -21	0 / -25	0 / -30	0 / -35
h8	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33	0 / -39	0 / -46	0 / -54
h9	0 / -25	0 / -30	0 / -36	0 / -43	0 / -52	0 / -62	0 / -74	0 / -87
h10	0 / -40	0 / -48	0 / -58	0 / -70	0 / -84	0 / -100	0 / -120	0 / -140
h11	0 / -60	0 / -75	0 / -90	0 / -110	0 / -130	0 / -160	0 / -190	0 / -220
h12	0 / -100	0 / -120	0 / -150	0 / -180	0 / -210	0 / -250	0 / -300	0 / -350
k10	+40 / 0	+48 / 0	+58 / 0	+70 / 0	+84 / 0	+100 / 0	+120 / 0	+140 / 0
k12	+100 / 0	+120 / 0	+150 / 0	+180 / 0	+210 / 0	+250 / 0	+300 / 0	+350 / 0
m7	+2 / +12	+4 / +16	+6 / +21	+7 / +25	+8 / +29	+9 / +34	+11 / +41	+13 / +48
js14	+/- 125	+/- 150	+/- 180	+/- 215	+/- 260	+/- 310	+/- 370	+/- 435
js16	+/- 300	+/- 375	+/- 450	+/- 550	+/- 650	+/- 800	+/- 950	+/- 1100
H7	+10 / 0	+12 / 0	+15 / 0	+18 / 0	+21 / 0	+25 / 0	+30 / 0	+35 / 0
H8	+14 / 0	+18 / 0	+22 / 0	+27 / 0	+33 / 0	+39 / 0	+46 / 0	+54 / 0

1µm = 0.001mm

DRILLING

GENERAL HINTS ON DRILLING

1. Select the most appropriate drill for the application, bearing in mind the material to be machined, the capability of the machine tool and the coolant to be used.
2. Flexibility within the component and machine tool spindle can cause damage to the drill as well as the component and machine - ensure maximum stability at all times. This can be improved by selecting the shortest possible drill for the application.
3. Tool holding is an important aspect of the drilling operation and the drill cannot be allowed to slip or move in the tool holder.
4. The correct use of Morse Taper Shank drills relies on an efficient fit between the taper surfaces of the tool and the tool holder. The use of a soft-faced hammer should be used to drive the drill into the holder.
5. The use of suitable coolants and lubricants are recommended as required by the particular drilling operation. When using coolants and lubricants, ensure a copious supply, especially at the drill point.
6. Swarf evacuation whilst drilling is essential in ensuring the correct drilling procedure. Never allow the swarf to become stationary in the flute
7. When regrinding a drill, always make sure that the correct point geometry is produced and that any wear has been removed.

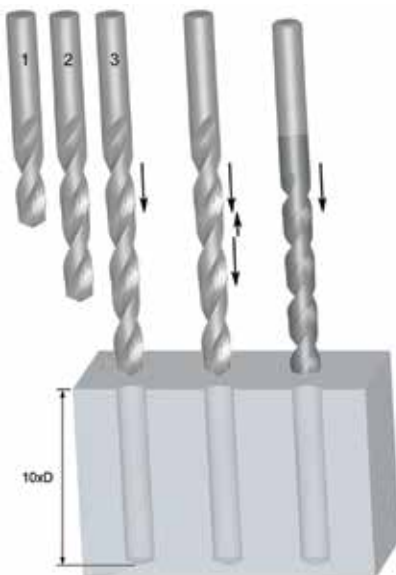
HOLE SIZE

As geometric, substrate and coating configurations become more advanced, the ability of a drill to produce a more accurate hole size increases. In general, a standard geometry tool will achieve a hole size to H12. However as the configuration of the drill becomes more complex the achievable hole size, under favourable conditions, can be as good as H8. To offer a better insight, listed below are the product types and their achievable hole tolerances:

- HSS General Purpose drills – H12
- HSS / HSS-E Parabolic Flute Deep Hole Drills – H10
- Solid Carbide High Performance coated – H8/H9

DEEP HOLE DRILLING STRATEGY

When drilling deep holes, several methods can be adopted to achieve the depth required. The example below shows four ways of drilling a hole with 10 x the diameter of the drill.



	Series Drilling	Series Drilling
No of drills	3 (2,5xD, 6xD, 10xD)	2 (2,5xD, 10xD)
Type of drill	Standard geometry, general purpose	Standard geometry, general purpose
+ / -	Expensive Time consuming	More cost effective Quick

	Peck Drilling	Single Pass Drilling
No of drills	1 (10xD)	1 (10xD)
Type of drill	Standard geometry, general purpose	Purpose specific tool
+ / -	Time consuming	Cost effective Fast

TROUBLE SHOOTING WHEN DRILLING

PROBLEM	CAUSE	REMEDY
Broken or twisted tangs	Bad fit between shank and socket	Ensure the shank and socket are clean and free from damage
Splitting of the web	Feed too high	Reduce feed to optimum rate
	Insufficient initial clearance	Regrind to correct specification
	Excessive web thinning	Regrind to correct specification
	Heavy impact at point of drill	Avoid impact at the point of drill. Take care with taper shank drills when inserting/ejecting from spindle
Worn outer corner	Excessive speed	Reduce speed to optimum - may be able to increase feed
Broken outer corners	Unstable component set up	Reduce movement in the component
Chipped cutting lips	Excessive initial clearance	Regrind to correct specification
Breakage at flute run out	Choking of flute	Adopt a peck/series drilling concept
	Drill slipping	Ensure the drill is held securely in the chuck and spindle
Spiral finish in hole	Insufficient feed	Increase feed
	Bad positional accuracy	Use a spot drill before drilling
Hole size too large	Incorrect point geometry	Check point geometry
	Ineffective swarf clearance	Adjust speed, feed and peck length to achieve more manageable swarf

REAMING

GENERAL HINTS ON REAMING

To obtain the best results when using reamers it is essential to make them 'work'. It is a common fault to prepare holes for reaming with too little stock left in. If insufficient stock is left in the hole before reaming, then the reamer will rub, quickly show wear and will result in loss of diameter. It is equally important for performance not to leave too much stock in the hole. (See Stock Removal below).

1. Select the optimum type of reamer and the optimum speeds and feeds for the application. Ensure that pre-drilled holes are the correct diameter.
2. The workpiece must be held rigid and the machine spindle should have no play.
3. The chuck in which a straight shank reamer is held must be good quality. If the reamer slips in the chuck and the feed is automatic, breakage of the reamer may occur.
4. Keep tool overhang from machine spindle to a minimum.
5. Use recommended lubricants to enhance the life of the reamer and ensure the fluid reaches the cutting edges. As reaming is not a heavy cutting operation, soluble oil 40:1 dilution is normally satisfactory. Air blasting may be used with grey cast iron, if dry machining.
6. Do not allow the flutes of a reamer to become blocked with swarf.
7. Before the reamer is reground, check concentricity between centres. In most instances only the bevel lead will need regrinding.
8. Keep reamers sharp. Frequent regrinding is good economy, but it is important to understand that reamers cut only on the bevel and taper leads and not on the lands. Consequently only these leads need regrinding. Accuracy of regrinding is important to hole quality and tool life.

STOCK REMOVAL

The recommended stock removal in reaming is dependent on the application material and the surface finish of the pre drilled hole. General guidelines for stock removal are shown in the following tables:

Size of reamed hole (mm)	When pre-drilled	When pre-core-drilled	Size of reamed hole (inches)	When pre-drilled	When pre-core-drilled
Below 4	0.1	0.1	Below 3/16	0.004	0.004
Over 4 to 11	0.2	0.15	3/16 to 1/2	0.008	0.006
Over 11 to 39	0.3	0.2	1/2 to 1.1/2	0.010	0.008
Over 39 to 50	0.4	0.3	1.1/2 to 2	0.016	0.010

TOLERANCE LIMITS



1. ON THE Cu TTING DIAMETER OF STANDARD REAMERS

The diameter (d_1) is measured across the circular land immediately behind the bevel or taper lead. The tolerance is in accordance with DIN 1420 and is intended to produce H7 holes.

REAMER TOLERANCE			
Diameter (mm)		Tolerance Limit (mm)	
Over	u p to and including	High +	Low +
	3	0.008	0.004
3	6	0.010	0.005
6	10	0.012	0.006
10	18	0.015	0.008

REAMER TOLERANCE			
Diameter (mm)		Tolerance Limit (mm)	
Over	u p to and including	High +	Low +
	30	0.017	0.009
18	50	0.021	0.012
30	80	0.025	0.014

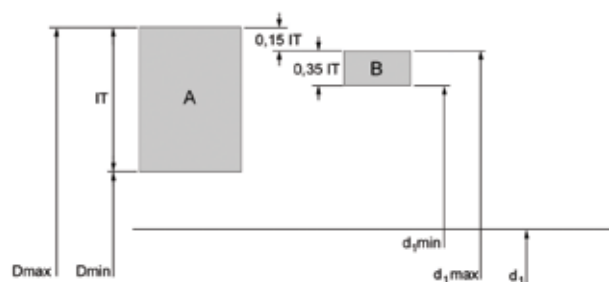
2. ON A H7 HOLE

The most common tolerance on a finished hole is H7 (see table below). For any other tolerance the figure and table beneath point 3 can be used to calculate the reamers tolerance location and width.

HOLE TOLERANCE			
Diameter (mm)		Tolerance Limit (mm)	
Over	u p to and including	High +	Low +
	3	0.010	0
3	6	0.012	0
6	10	0.015	0
10	18	0.018	0

HOLE TOLERANCE			
Diameter (mm)		Tolerance Limit (mm)	
Over	u p to and including	High +	Low +
	30	0.021	0
18	50	0.025	0
30	80	0.030	0

3. When it is necessary to define the dimensions of a special reamer intended to cut to a specific tolerance, e.g. D8 this well proven guide can be used.



A = Hole Tolerance
 B = Reamer Tolerance
 IT = Tolerance Width
 Dmax = Max Diameter of Hole
 Dmin = Min Diameter of Hole
 d_1 = Nominal Diameter
 $d_{1,max}$ = Max Diameter of Reamer
 $d_{1,min}$ = Min Diameter of Reamer

Tolerance width (microns)	Diameter Tolerance Width (mm)								
	over 1 incl. 3	over 3 incl. 6	over 6 incl. 10	over 10 incl. 18	over 18 incl. 30	over 30 incl. 50	over 50 incl. 80	over 80 incl. 120	over 120 incl. 180
IT5	4	5	6	8	9	11	13	15	18
IT6	6	8	9	11	13	16	19	22	27
IT7	10	12	15	18	21	25	30	35	45
IT8	14	18	22	27	33	39	46	54	66
IT9	25	30	36	43	52	62	74	87	105
IT10	40	48	58	70	84	100	120	140	170
IT11	60	75	90	110	130	160	190	220	270
IT12	100	120	150	180	210	250	300	350	450

e.g. 10mm hole with tolerance D8, Max dia = 10.062, Min dia = 10.040, Hole tol (IT8) = 0.022

Maximum limit: $0.15 \times \text{hole tolerance (IT8)} = 0.0033$, rounded up = 0.004

Minimum limit: $0.35 \times \text{hole tolerance (IT8)} = 0.0077$, rounded up = 0.008

Maximum limit for reamer = $10.062 - 0.004 = 10.058$

Minimum limit for reamer = $10.058 - 0.008 = 10.050$

TROUBLE SHOOTING WHEN REAMING

PROBLEM	CAUSE	REMEDY
Broken or twisted tangs	Incorrect fit between shank and socket	Ensure the shank and socket are clean and free from damage
Rapid tool wear	Insufficient stock to remove	Increase the amount of stock to be removed
Oversize hole	Excessive lip height variation	Regrind to correct specification
	Displacement in the machine spindle	Repair and rectify spindle displacement
	Deflects on the tool holder	Replace tool holder
	Tool shank is damaged	Replace or regrind the shank
	Ovality of the tool	Replace or regrind the tool
	Asymmetric bevel lead angle	Regrind to correct specification
	Too high feed or cutting speed	Adjust cutting conditions in accordance with Catalogue
Undersize hole	Insufficient stock to remove	Increase the amount of stock to be removed
	Too much heat generated while reaming. The hole widens and shrinks	Increase coolant flow
	The tool diameter is worn and is undersize	Regrind to correct specification
	Too low feed or cutting speed	Adjust cutting conditions in accordance with the Catalogue
	Pre-drilled hole is too small	Decrease the amount of stock to be removed
Oval and conical holes	Displacement in the machine spindle	Repair and rectify spindle displacement
	Misalignment between tool and hole	Use a bridge reamer
	Asymmetric bevel lead angle	Regrind to correct specification
Bad hole finish	Excessive stock to remove	Decrease the amount of stock to be removed
	Worn out tool	Regrind to correct specification
	Too small cutting rake angle	Regrind to correct specification
	Too diluted emulsion or cutting oil	Increase % concentration
	Feed and/or speed too low	Adjust cutting conditions in accordance with Catalogue
	Cutting speed too high	Adjust cutting conditions in accordance with Catalogue
The tool clamps and breaks	Worn out tool	Regrind to correct specification
	Back taper of the tool is too small	Check and replace/modify the tool
	The width of the land is too wide	Check and replace/modify the tool
	Workpiece material tends to squeeze	Use an adjustable reamer to compensate for the displacement
	Pre-drilled hole is too small	Decrease the amount of stock to be removed
	Heterogeneous material with hard inclusions	Use solid carbide reamer

THREAD MILLING

GENERAL HINTS ON THREAD MILLING

1. Thread milling is the process of generating a thread by the circular interpolation of a milling cutter with a specific thread geometry ground around its periphery.
2. To be able to use a thread milling cutter it is necessary to have a CNC machine that can make circular paths.
3. Most modern CNC machines are equipped with machining cycles for thread milling
4. Consult the manual or contact the machine supplier for information

FEATuRES AND BENEFITS

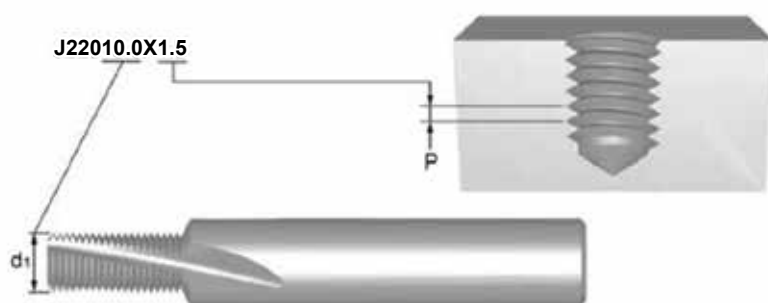
1. Thread milling gives increased reliability and tool life
2. Threadmills produce small chips resulting in problem free threading
3. Tolerance adjustments can be made using exact co-ordinates
4. you can generate a fuller thread to the bottom of the hole
5. Capable of machining a wide variety of materials
6. The same cutter can produce different size threads provided the pitch is the same
7. Both right and left hand threads can be created with the same tool
8. Some thread mills can also machine the entry chamfer (j 200, j 205, j 260)

CHOOSING y Ou R TOOL

Thread milling cutters have an item code based on the type, diameter (d_1) and pitch (P)

The item code is the number to use when ordering your tool

Always consult the catalogue to ensure you have the correct thread dimensions



This thread milling cutter can be used for threads \geq M12x1.5 (M14x1.5, M18x1.5 etc)

PROGRAMMING WITH Rprg

- For easy adjustment of the thread tolerance always program with radius correction
- The Rprg value is the start value for a new cutter and is printed on the cutter shank. This should be entered in the tool memory offset
- Rprg is based on the theoretical zero-line of the thread meaning that when you program using Rprg the thread is never oversize, but normally tight
- This means that with a small modification to the program co-ordinates you can create the thread to the required size

RECOMMENDATIONS

- Always use the correct cutting data (refer to the cutting data chart on page 198)
- use the recommended drill size for the thread diameter, as for conventional taps
- For easy adjustment of the thread tolerance always start with the Rprg value printed on the shank of the threadmill
- Use a gauge to check the tolerance on the first thread to establish if the radius needs to be corrected. The radius can be corrected 2 or 3 times before the threadmill is worn out
- When dry machining, compressed air is recommended to help with swarf removal
- When threading more difficult materials, it is recommended to take 2 or 3 passe

THREADING

GENERAL HINTS ON TAPPING

The success of any tapping operation depends on a number of factors, all of which affect the quality of the finished product.

1. Select the correct design of tap for the component material and type of hole, i.e. through or blind, from the Materials Classification chart
2. Ensure the component is securely clamped - lateral movement may cause tap breakage or poor quality threads.
3. Select the correct size of drill from the relevant catalogue page. Always ensure that work hardening of the component material is kept to a minimum.
4. Select the correct cutting speed as shown on the catalogue product page.
5. Use appropriate cutting fluid for correct application
6. In NC applications ensure that the feed value chosen for the program is correct. When using a tapping attachment, 95% to 97% of the pitch is recommended to allow the tap to generate its own pitch.
7. Where possible, hold the tap in a good quality torque limiting tapping attachment, which ensures free axial movement of the tap and presents it squarely to the hole. It also protects the tap from breakage if accidentally 'bottomed' in a blind hole.
8. Ensure smooth entry of the tap into the hole, as an uneven feed may cause 'bell mouting'.

TAP TOLERANCE VS TOLERANCE ON INTERNAL THREAD (Nu T)

Tolerance class, Tap			Tolerance, Internal thread (Nut)					Application
ISO	DIN	ANSI BS						
ISO 1	4 H	3 B	4 H	5 H				Fit without allowance
ISO 2	6 H	2 B	4 G	5 G	6 H			Normal fit
ISO 3	6 G	1 B			6 G	7 H	8 H	Fit with large allowance
-	7 G	-				7 G	8 G	Loose fit for following treatment or coating

TROUBLE SHOOTING WHEN TAPPING

PROBLEM	CAUSE	REMEDY
Oversize	Incorrect tolerance	Choose a tap with lower thread tolerance
	Incorrect axial feed rate	Reduce feed rate by 5-10% or increase compression of tap holder
	Wrong type of tap for application	Use spiral point for through hole or spiral flute for blind hole. Use coated tool to prevent built up edge. Check Catalogue or Product Selector for correct tool alternative
	Tap not centered on the hole	Check tap holder and position tap centre on the hole
	Lack of lubrication	Use good lubrication in order to prevent built up edge. See lubricant section in technical handbook
	Tap speed too slow	Follow recommendation in Catalogue / Product Selector
Undersize	Wrong type of tap for application	Use spiral point for through hole or spiral flute for blind hole. Use coated tool to prevent built up edge. Use tap with higher rake angle. Check Catalogue or Product Selector for correct tool alternative
	Incorrect tolerance	Choose a tap with higher tolerance, especially on material with low oversize tendency, such as cast iron, stainless steel
	Incorrect or lack of lubricant	Use good lubrication in order to prevent chip blockage inside the hole. See lubricant section in technical handbook
	Tap drill hole too small	Increase drill diameter to the maximum value. Check tapping size drill
	Material closing in after tapping	See recommendation in Catalogue / Product Selector for correct tool alternative
Chipping	Wrong type of tap for application	Choose a tap with lower rake angle. Choose a tap with longer chamfer. Use spiral point taps for through hole and spiral flute for blind holes, in order to avoid chip blockage. Check Catalogue or Product Selector for correct tool alternative
	Incorrect or lack of lubricant	Use good lubrication in order to prevent built up edge. See lubricant section in technical handbook
	Taps hit bottom of hole	Increase depth of drilling or decrease depth of tapping
	Work hardening surface	Reduce speed, use coated tool, use good lubrication. See section for machining of stainless steel in technical handbook
	Swarf trapping on reversal	Avoid sudden return of tap on reversal motion
	Chamfer hits hole entrance	Check axial position and reduce axial error of tap point on hole centre
	Tap drill hole too small	Increase drill diameter to maximum value. Check tapping size drill

TROUBLE SHOOTING WHEN TAPPING

PROBLEM	CAUSE	REMEDY
Breakage	Tap worn out	Use a new tap or regrind the old one
	Lack of lubricant	Use good lubrication in order to prevent built up edge and chip blockage. See lubricant section in technical handbook
	Taps hit bottom of hole	Increase depth of drilling or decrease depth of tapping
	Tap speed too high	Reduce cutting speed. Follow recommendation in Catalogue / Product Selector
	Work hardening surface	Reduce speed. Use coated tool Use good lubrication. See section for machining of stainless steel in technical handbook
	Tap drill hole too small	Increase drill diameter up to maximum value. See tap drill tables
	Too high torque	Use tapping attachment with torque adjustment clutch
	Material closing in after tapping	See recommendation in Catalogue / Product Selector for correct tool alternative
Rapid wear	Wrong type of tap for application	Use tap with lower rake angle and/or higher relief and/or longer chamfer. Use coated tool. Check Catalogue or Product Selector for correct tool alternative
	Lack of lubricant	Use good lubrication in order to prevent built up edge and thermal stress on cutting edge. See lubricant section in technical handbook
	Tap speed too high	Reduce cutting speed. Follow recommendation in Catalogue / Product Selector
Built up edge	Wrong type of tap for application	Use tap with lower rake angle and/or higher relief. Check Catalogue or Product Selector for correct tool alternative
	Lack of lubricant	Use good lubrication in order to prevent built up edge. See lubricant section in technical handbook
	Surface treatment not suitable	Choose a tap with the recommended surface treatment
	Tap speed too low	Follow recommendation in Catalogue / Product Selector

MILLING

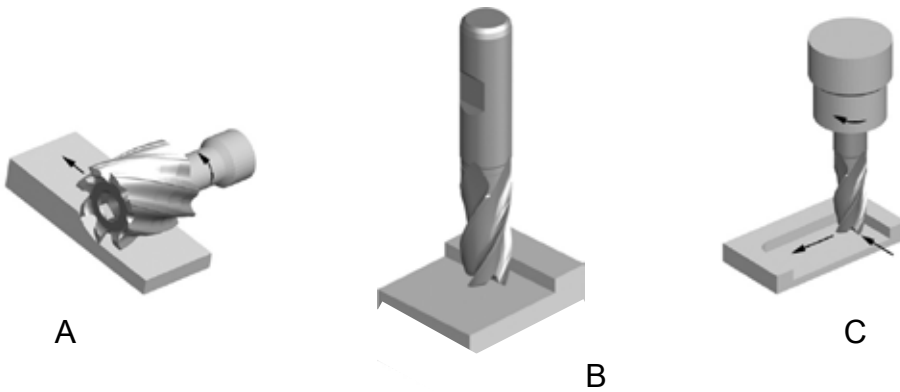
GENERAL HINTS ON MILLING

Milling is a process of generating machined surfaces by progressively removing a predetermined amount of material or stock from the workpiece at a relatively slow rate of movement or feed by a milling cutter rotating at a comparatively high speed.

The characteristic feature of the milling process is that each milling cutter tooth removes its share of the stock in the form of small individual chips

TYPE OF MILLING CUTTERS

The three basic milling operations are shown below: (A) peripheral milling, (B) face milling and (C) end milling.



In peripheral milling (also called slab milling), the axis of cutter rotation is parallel to the workpiece surface to be machined. The cutter has a number of teeth along its circumference, each tooth acting like a single-point cutting tool called a plain mill. Cutters used in peripheral milling may have straight or helical teeth generating an orthogonal or oblique cutting action.

In face milling, the cutter is mounted on a spindle with an axis of rotation perpendicular to the workpiece surface. The milled surface results from the action of cutting edges located on the periphery and face of the cutter.

In end milling, the cutter generally rotates on an axis vertical to the workpiece. It can be tilted to machine tapered surfaces. Cutting teeth are located on both the end face of the cutter and the periphery of the cutter body.

DIFFERENT APPLICATIONS FOR END MILLS

The MRR and the applications are strongly related. For each different application we have a different MRR that increases with the engagement section of the cutter on the workpiece. The recent Dormer Catalogue was produced with simple icons that show the different applications.

Side Milling	Face Milling	Slot Milling	Plunge Milling	Ramping
The radial depth of cut should be less than 0.25 of the diameter of the end mill.	The radial depth of cut should be no more than 0.9 of the diameter, axial depth of cut less than 0.1 of the diameter.	Machining of a slot for keyways. The radial depth of cut is equal to the diameter on the end mill.	It is possible to drill the workpiece with an end mill only with the cutting centre. In this operation the feed has to be halved.	Both axial and radial entering into the workpiece.

TROUBLE SHOOTING WHEN MILLING

PROBLEM	CAUSE	REMEDY
Breakage	Too high stock removal	Decrease feed per tooth
	Feed too fast	Slow down feed
Wear	Flute length or overall length too long	Hold shank deeper, use shorter end mill
	Workpiece material too hard	Check Catalogue or Selector for correct tool with higher grade material and/or proper coating
	Improper feed and speed	Check Catalogue or Selector for correct cutting parameters
	Poor chip evacuation	Reposition coolant lines
	Conventional milling	Climb milling
	Improper cutter helix	See recommendation in Catalogue/Selector for correct tool alternative
Chipping	Feed rate too high	Reduce feed rate
	Chattering	Reduce the RPM
	Low cutting speed	Increase the RPM
	Conventional milling	Climb milling
	Tool rigidity	Choose a shorter tool and/or place shank further up holder
	Workpiece rigidity	Hold workpiece tightly
Short Tool Life	Tough work material	Check Catalogue or Selector for correct tool alternative
	Improper cutting angle and primary relief	Change to correct cutting angle
	Cutter/workpiece friction	Use coated tool
Bad Surface finish	Feed too fast	Slow down to correct speed
	Speed too slow	Increase the speed
	Chip biting	Decrease stock removal
	Tool wear	Replace or regrind the tool
	Edge build up	Change to higher helix tool
	Chip welding	Increase coolant quantity

PROBLEM	CAUSE	REMEDY
Workpiece inaccuracy	Tool deflection	Choose a shorter tool and/or place shank further up holder
	Insufficient number of flutes	Use a tool with more flutes
	Loose/worn tool holder	Repair or replace it
	Poor tool holder rigidity	Replace with shorter/more rigid tool holder
	Poor spindle rigidity	Use larger spindle
Chattering	Feed and speed too high	Correct feed and speed with the help of the Catalogue/Selector
	Flute or overall length too long	Hold shank deeper and use shorter end mill
	Cutting too deep	Decrease depth of cut
	Not enough rigidity (machine and holder)	Check the tool holder and change it if necessary

CARBIDE BURRS

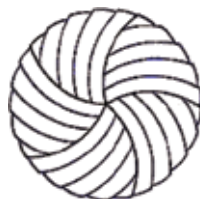
GENERAL HINTS ON CARBIDE BURRS

Carbide Burrs are widely used for preparing and finishing components in a wide range of materials

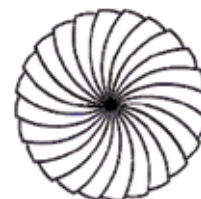
They are generally used by hand and mounted in air driven die-grinders

FEATuRES AND BENEFITS

1. Toughened and hardened steel shanks improve rigidity and reduce the risk of bending or vibration
2. Accurately ground shanks improve holding and reduce likelihood of spinning
3. Special brazing elements prevent high temperature failure and also provide increased strength to withstand pressure and impact
4. The universal Double Cut geometry is suitable for a wide range of materials and applications
5. Material specific geometries are also available suited to Steel (ST), Stainless Steel (VA), Aluminium (AL) and Fibreglass (GRP)
6. Available with TiAlN coating to increase tool life in abrasive materials
7. Ball nose burrs are ground with Skip Flute geometry
8. This provides active geometry towards the centre of the burr, improving the cutting action and reducing the chances of swarf build up and clogging



Skip



Normal

SAFETy FIRST

1. High speed rotating tools are hazardous and can be dangerous if miss-used
2. Always disconnect the die grinder from the air supply before attempting to change the burrs
3. Check the condition of the die grinder and if possible use low vibration versions
4. Always use the appropriate protective equipment and ensure anyone working close by is also protected



Personal protective equipment must be worn at all times.

RECOMMENDATIONS

- Always use the appropriate speed rated die grinder (refer to the speed chart on page??)
- Routine maintenance of die grinders is important, ensure they are oiled and bearings are not worn
- Always clean the clamping nut, collet and internal taper of the die grinder when changing a burr
- Try to avoid mechanical shock and heavy impact of the burrs
- Try to avoid thermal shock by not allowing the burr to become overheated
- Don't plunge the burr too deep into the workpiece material or jam the bur into corners or channels

TROUBLE SHOOTING USING BURRS

PROBLEM	CAUSE
Chipping of Burr Teeth	Running too low rpm, can cause bouncing
	Eccentricity (worn spindle, collet or bearings)
	Plunging and jamming the burr into the workpiece
Clogging of Burr Teeth	Flute length or overall length too long
	Incorrect geometry choice for workpiece material
Premature Wear	Running too high rpm for size of burr and workpiece material
	Eccentricity (worn spindle, collet or bearings)
Head Detaches from Shank	Running too high rpm causing overheating
	Running for prolonged periods causing overheating

SIMPLY RELIABLE

Az ember szakértőként a forgácsot szemlélve meg tudja ítélni a munka minőségét. A forgács egy tiszta, egyszerű forma, ami képes elmondani a saját történetét. Egy érthető és ellentmondás mentes jelzés, ezért használjuk az **egyszerű megbízhatóság** szimbólumaként.

Profesyoneller sadece talaşa bakarak işin kalitesini değerlendirebilir. Bizim talaşımız kendi öyküsünü anlatan pürüzsüz ve basit şekillidir. Açık ve istikrarlı işaretenin dolaylı basitçe güvenilir olmak için sembolümüz olarak talaş **şeklini kullanıyoruz**.

Ca profesionist, puțeți analiza calitatea muncii doar uitându-vă la așchie. Așchia are o formă curată și necomplicată, care, în sine, spune o poveste. Este un semnal clar și coerent și de aceea îl folosim ca un simbol pentru a fi **simplic și de încredere**.

As a professional you can judge the quality of work by just looking at the chip. Our chip is a clean and uncomplicated shape that in itself tells a story. It is a clear and consistent signal and that's why we use it as a symbol for being **simply reliable**.

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