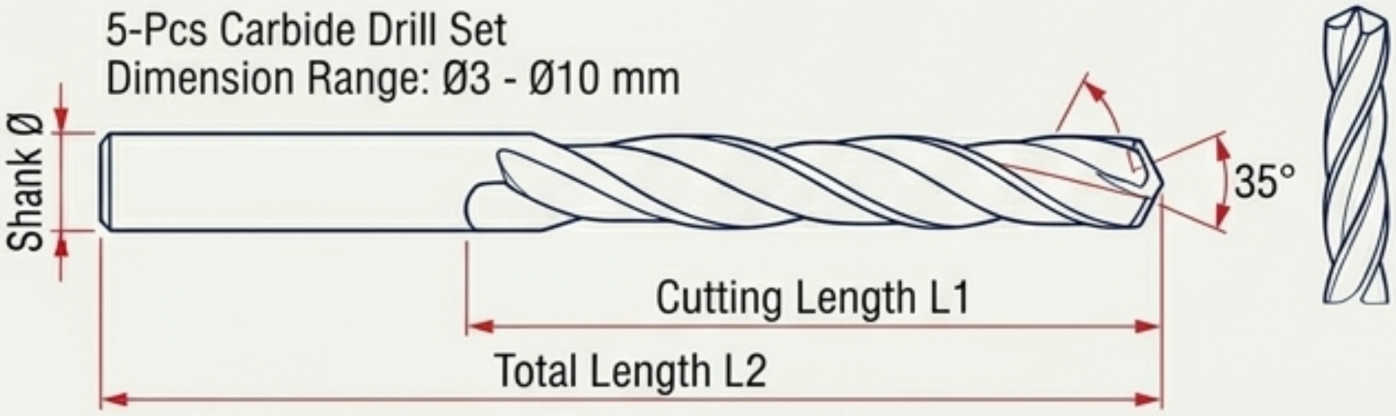
ARKHEON
CUTTING TOOLS
METALE HÜKMEDEN GEOMETRİ

* KARBÜR MATKAP
* KARBÜR FREZE
* KARBÜR ÖZEL TAKIM

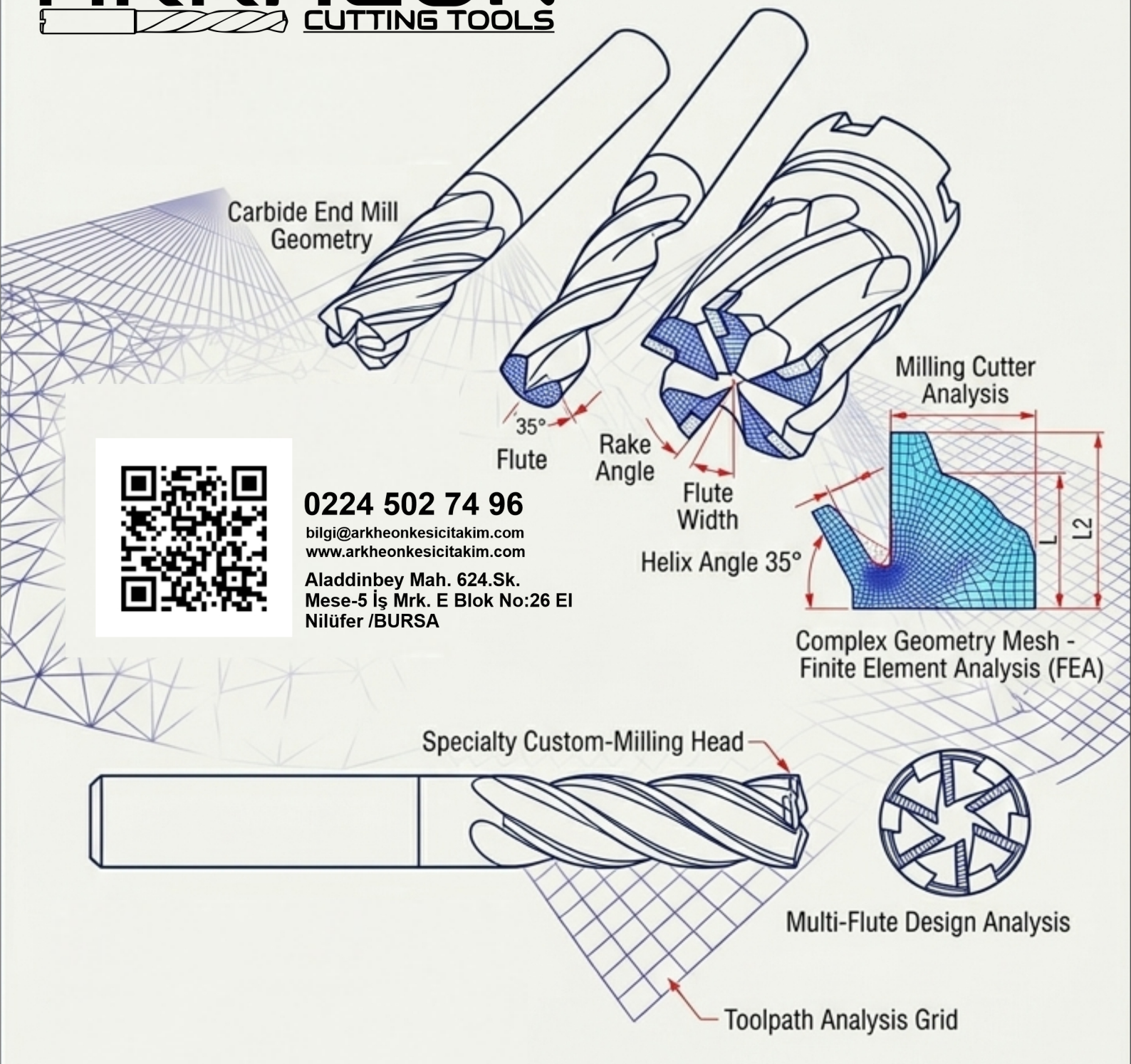


www.arkheonkesicitakim.com
bilgi@arkheonkesicitakim.com
0224 502 74 96
Aladdinbey Mh. 624. Sk. Mese -5 İş Mrk.
E Blok No:26 El Nilüfer BURSA

5-Pcs Carbide Drill Set
Dimension Range: Ø3 - Ø10 mm



ARKHEON
CUTTING TOOLS



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bilgi@arkheonkesicitakim.com
www.arkheonkesicitakim.com
Aladdinbey Mah. 624.Sk.
Mese-5 İş Mrk. E Blok No:26 El
Nilüfer /BURSA

HAKKIMIZDA

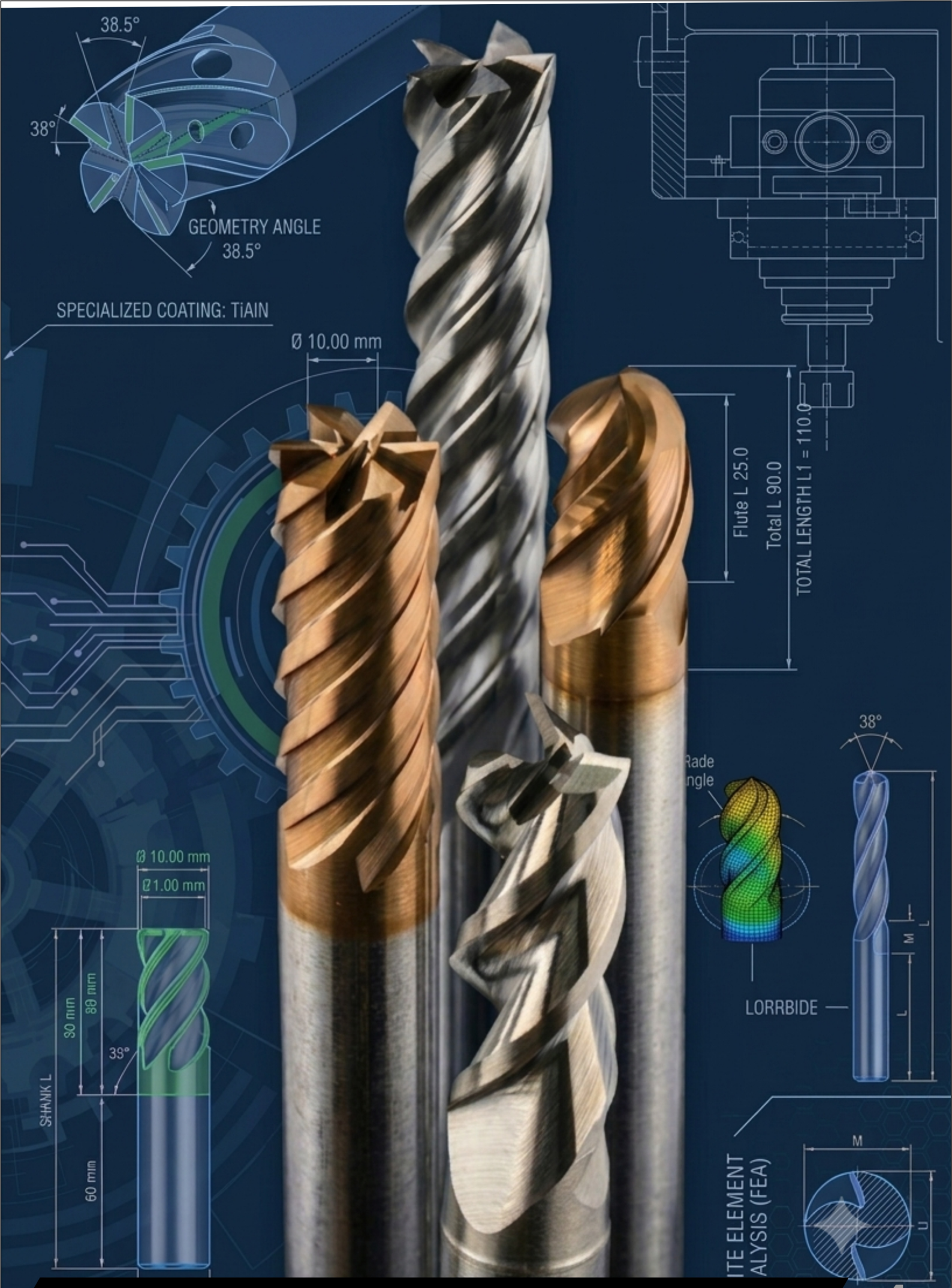
Arkheon Kesici Takımlar, metal işleme sektörüne yüksek hassasiyetli ve güvenilir kesici takım çözümleri sunmak amacıyla kurulmuştur.
Sektörde 16 yılı aşkın deneyim ile edindiğimiz bilgi birikimini, modern üretim teknolojileri ve mühendislik yaklaşımı ile birleştirerek müşterilerimize değer katmayı hedefliyoruz.

Firmamız; karbür kesici takım üretimi, özel takım imalatı ve CNC bileme hizmetleri alanlarında faaliyet göstermektedir. Üretim süreçlerimizde kalite, hassasiyet ve sürdürülebilir performans temel önceliklerimizdir.
Metal işleme sektörünün farklı ihtiyaçlarını anlayarak, müşterilerimize yüksek performanslı, uzun ömürlü ve verimlilik odaklı çözümler sunuyoruz.

Arkheon olarak yalnızca ürün üretmiyor, aynı zamanda iş ortaklarımızın üretim süreçlerini daha verimli hale getirecek teknik çözümler ve mühendislik desteği sağlıyoruz. Her projeye özel yaklaşımımız sayesinde müşterilerimizin üretim maliyetlerini düşürmelerine ve rekabet güçlerini artırmalarına katkıda bulunuyoruz.

Sloganımız olan “Metale Hükmeden Geometri”, kesici takım geometrisinin üretim performansındaki kritik rolünü temsil etmektedir. Bu anlayışla, metal işleme dünyasında güvenilir ve yenilikçi bir çözüm ortağı olmayı sürdürüyoruz.

Saygılarımızla.


38.5°
38°
GEOMETRY ANGLE
38.5°
SPECIALIZED COATING: TiAlN
Ø 10.00 mm
Flute L 25.0
Total L 90.0
TOTAL LENGTH L1 = 110.0
38°
LORRBIDE
Ø 10.00 mm
Ø 1.00 mm
30 mm
39°
SHANK L
60 mm
M
U

INFORMATION

AlTiN	Coating Type
TiSiN	Coating Type
AlCrN	Coating Type
nACo Blue	Coating Type
NO COATING	Uncoated
Z2	Solid Carbide 2 Flute End Mill
Z3	Solid Carbide 3 Flute End Mill
Z4	Solid Carbide 4 Flute End Mill
Z5	Solid Carbide 5 Flute End Mill
Z6	Solid Carbide 6 Flute End Mill
ARKHEON Std.	Arkheon Standart
	Shank Type
< 56 HRC	Suited for Hardened Steels
~30°	Helix Angle
	Cutting Data Page

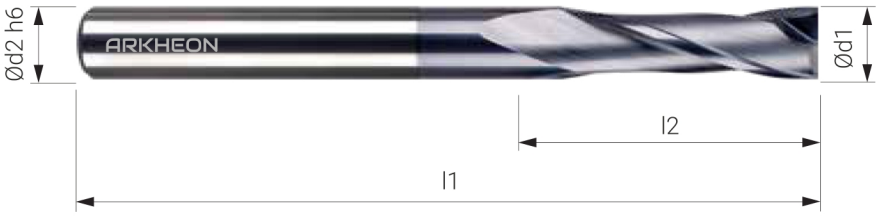
INDEKS

		Page
500FS1	Standart Milling Normal Version	8-10
500FS2	Standart Milling Long Version	11
500FS3	Standart Milling Extra Long Version	12
510RD1	Radial Chatter Milling Normal Version	13
510FS1	Faceted Chatter Milling Ultra Cut	14
520FS1	Roughing End Milling	16
525FS1	Chip Breaker Z5 Milling	17
530FS1	With Corner Radius Milling Normal Version	18
530FS2	With Corner Radius Milling Long Version	19
55-56	Chamfering Milling	20-21
610FS1	65 Hrc Standart Milling Normal Version	23
615FS1	65 Hrc Standart Milling Long Version	24
620FS1	65 Hrc Ballnose Milling Normal Version	25
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INDEKS

		Page
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630FS2	65 Hrc Corner Radius Milling Long Version	28
560FS1	Aluminum Milling Normal Version	29-30
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Solid Carbide End Mills / Normal Version



AlTiN | Z2 | ~30° | < 48 HRC | ARKHEON Std.

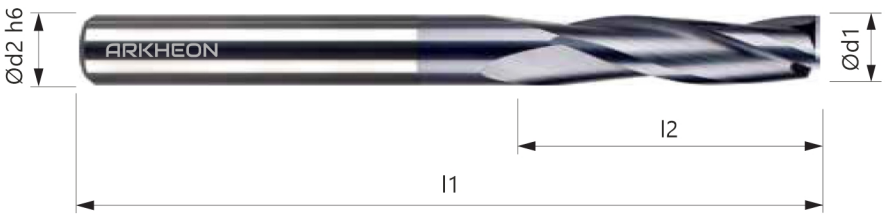
Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
500FS-S03021	3	50	8	3	0.10x45°	2
500FS-S04021	4	50	10	4	0.15x45°	2
500FS-S05021	5	50	13	5	0.15x45°	2
500FS-S06021	6	57	14	6	0.20x45°	2
500FS-S08021	8	63	19	8	0.25x45°	2
500FS-S10021	10	72	22	10	0.25x45°	2
500FS-S12021	12	83	26	12	0.25x45°	2
500FS-S14021	14	83	26	14	0.25x45°	2
500FS-S16021	16	92	32	16	0.40x45°	2
500FS-S18021	18	92	32	18	0.40x45°	2
500FS-S20021	20	104	38	20	0.40x45°	2

HA HB

Solid Carbide End Mills / Normal Versiyon



AlTiN | Z3 | ~30° | < 48 HRC | Std.

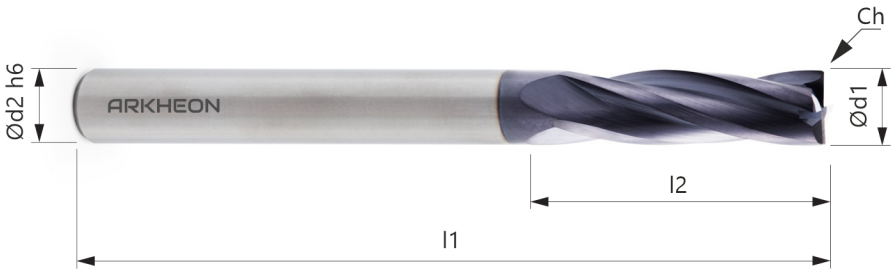
Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
500FS-S03031	3	50	8	3	0.10x45°	3
500FS-S04031	4	50	10	4	0.15x45°	3
500FS-S05031	5	50	13	5	0.15x45°	3
500FS-S06031	6	57	14	6	0.20x45°	3
500FS-S08031	8	63	19	8	0.25x45°	3
500FS-S10031	10	72	22	10	0.25x45°	3
500FS-S12031	12	83	26	12	0.25x45°	3
500FS-S14031	14	83	26	14	0.25x45°	3
500FS-S16031	16	92	32	16	0.40x45°	3
500FS-S18031	18	92	32	18	0.40x45°	3
500FS-S20031	20	104	38	20	0.40x45°	3

HA HB

Solid Carbide End Mills / Normal Version



Application Range

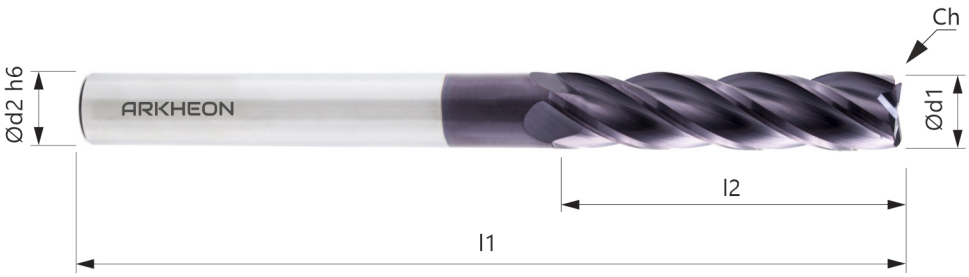
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | Z4 | ~30° | < 48 HRC | ARKHEON Std.

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
500FS-S03041	3	50	8	3	0.10x45°	4
500FS-S04041	4	50	10	4	0.15x45°	4
500FS-S05041	5	50	13	5	0.15x45°	4
500FS-S06041	6	57	14	6	0.20x45°	4
500FS-S08041	8	63	19	8	0.25x45°	4
500FS-S10041	10	72	22	10	0.25x45°	4
500FS-S12041	12	83	26	12	0.25x45°	4
500FS-S14041	14	83	26	14	0.25x45°	4
500FS-S16041	16	92	32	16	0.40x45°	4
500FS-S18041	18	92	32	18	0.40x45°	4
500FS-S20041	20	104	38	20	0.40x45°	4

HA HB

Solid Carbide End Mills / Long Version



Application Range

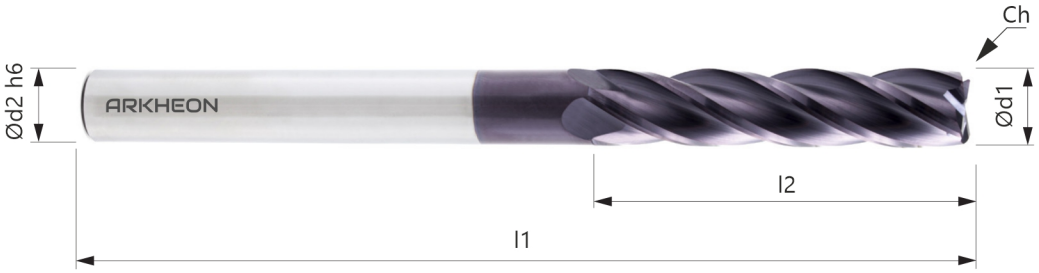
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | Z4 | ~35° | < 48 HRC | ARKHEON Std.

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
500FS-U03041	3	75	15	3	0.10x45°	4
500FS-U04041	4	75	20	4	0.15x45°	4
500FS-U05041	5	75	25	5	0.15x45°	4
500FS-U06041	6	100	30	6	0.20x45°	4
500FS-U08041	8	100	40	8	0.25x45°	4
500FS-U10041	10	100	45	10	0.25x45°	4
500FS-U12041	12	100	45	12	0.25x45°	4
500FS-U14041	14	100	45	14	0.25x45°	4

HA HB

Solid Carbide End Mills / Extra Long Version



Application Range

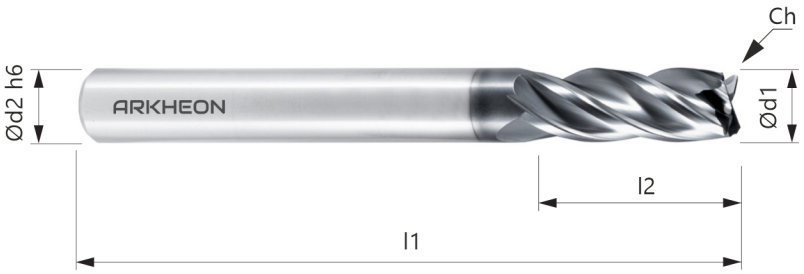
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | Z4 | ~35° | < 48 HRC | ARKHEON Std.

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
500FS-E06041	6	150	35	6	0.20x45°	4
500FS-E08041	8	150	45	8	0.25x45°	4
500FS-E10041	10	150	55	10	0.25x45°	4
500FS-E12041	12	150	55	12	0.25x45°	4
500FS-E14041	14	150	60	14	0.25x45°	4
500FS-E16041	16	150	70	16	0.40x45°	4
500FS-E18041	18	150	70	18	0.40x45°	4
500FS-E20041	20	150	70	20	0.40x45°	4

HA HB

Solid Carbide Variable End Mills / Normal Version



Application Range

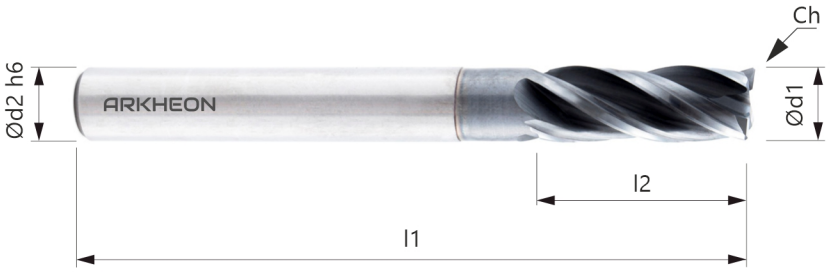
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlCrN | Z4 | ~38/41° | < 48 HRC | ARKHEON Std.

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
510RD-S03043	3	57	8	6	0.10x45°	4
510RD-S04043	4	57	10	6	0.15x45°	4
510RD-S05043	5	57	13	6	0.15x45°	4
510RD-S06043	6	57	14	6	0.20x45°	4
510RD-S08043	8	63	19	8	0.20x45°	4
510RD-S10043	10	72	22	10	0.25x45°	4
510RD-S12043	12	83	26	12	0.25x45°	4
510RD-S14043	14	83	26	14	0.40x45°	4
510RD-S16043	16	92	32	16	0.40x45°	4
510RD-S18043	18	92	32	18	0.50x45°	4
510RD-S20043	20	104	38	20	0.50x45°	4

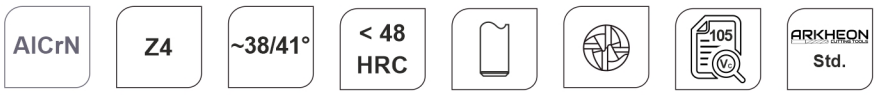
HA HB

Solid Carbide Variable End Mills / Ultra Cut



Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

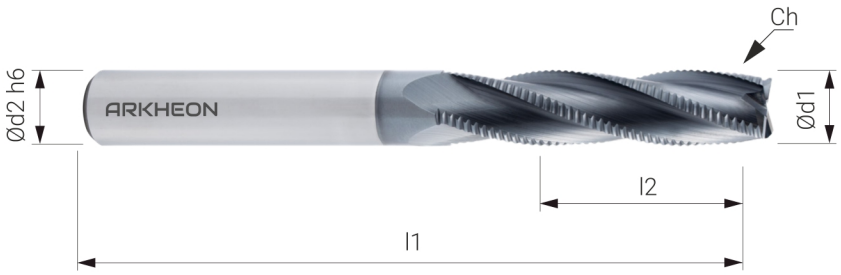


Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
510FS-S03043	3	57	8	6	0.10x45°	4
510FS-S04043	4	57	10	6	0.15x45°	4
510FS-S05043	5	57	13	6	0.15x45°	4
510FS-S06043	6	57	14	6	0.20x45°	4
510FS-S08043	8	63	19	8	0.20x45°	4
510FS-S10043	10	72	22	10	0.25x45°	4
510FS-S12043	12	83	26	12	0.25x45°	4
510FS-S14043	14	83	26	14	0.40x45°	4
510FS-S16043	16	92	32	16	0.40x45°	4
510FS-S18043	18	92	32	18	0.50x45°	4
510FS-S20043	20	104	38	20	0.50x45°	4

HA HB


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Solid Carbide Roughing, End Mills / Normal Version



Application Range

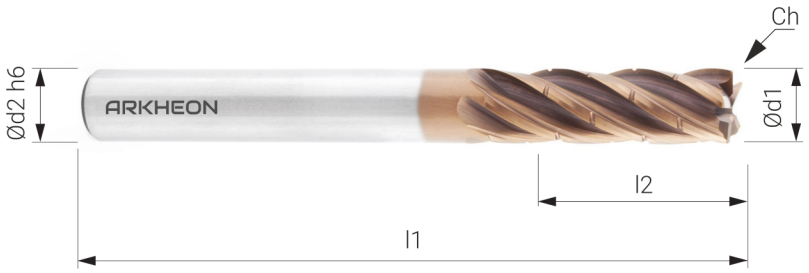
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlCrN | Z4 | ~45° | < 48 HRC | ARKHEON Std.

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
520FS-S03043	3	57	8	6	0.10x45°	4
520FS-S04043	4	57	10	6	0.15x45°	4
520FS-S05043	5	57	13	6	0.15x45°	4
520FS-S06043	6	57	14	6	0.20x45°	4
520FS-S08043	8	63	19	8	0.20x45°	4
520FS-S10043	10	72	22	10	0.25x45°	4
520FS-S12043	12	83	26	12	0.25x45°	4
520FS-S14043	14	83	26	14	0.40x45°	4
520FS-S16043	16	92	32	16	0.40x45°	4
520FS-S18043	18	92	32	18	0.50x45°	4
520FS-S20043	20	104	38	20	0.50x45°	4

HA HB

Solid Carbide Variable End Mills / Ultra Cut



TiSiN | Z5 | ~30° | < 56 HRC | Std.

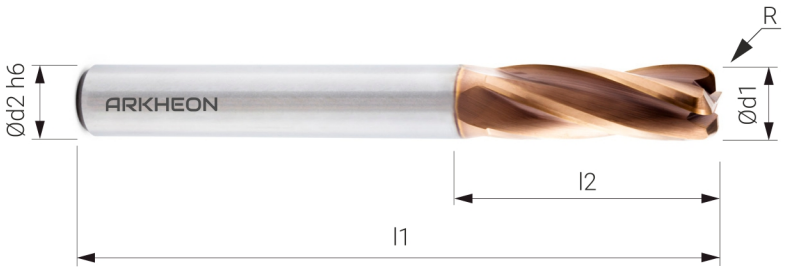
Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
525FS-S06054	6	57	14	6	0.20x45°	5
525FS-S08054	8	63	19	8	0.20x45°	5
525FS-S10054	10	72	22	10	0.25x45°	5
525FS-S12054	12	83	26	12	0.25x45°	5
525FS-S14054	14	83	26	14	0.40x45°	5
525FS-S16054	16	92	32	16	0.40x45°	5
525FS-S18054	18	92	32	18	0.50x45°	5
525FS-S20054	20	104	38	20	0.50x45°	5

HA HB

Solid Carbide End Mills,With Corner Radius / Normal Version



Application Range

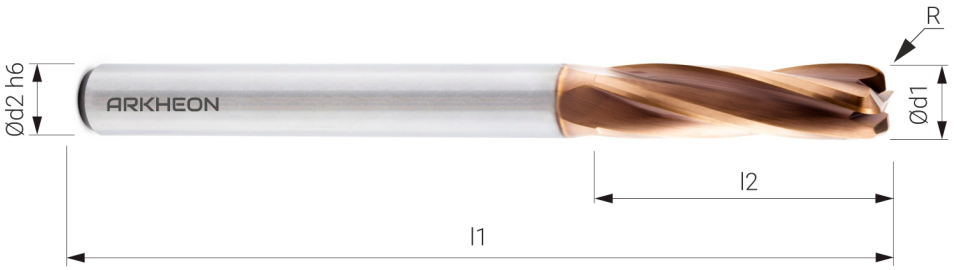
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

TiSiN | Z4 | ~30° | < 56 HRC | ARKHEON Std.

Order Code	d1 h10	l1	l2	d2 h6	R	Z
530FS-S03041-R05	3	50	8	3	0,5	4
530FS-S03041-R10	3	50	8	3	1	4
530FS-S04041-R05	4	50	10	4	0,5	4
530FS-S04041-R10	4	50	10	4	1	4
530FS-S05041-R05	5	50	13	5	0,5	4
530FS-S05041-R10	5	50	13	5	1	4
530FS-S06041-R05	6	57	14	6	0,5	4
530FS-S06041-R10	6	57	14	6	1	4
530FS-S08041-R05	8	63	19	8	0,5	4
530FS-S08041-R10	8	63	19	8	1	4
530FS-S08041-R20	8	63	19	8	2	4
530FS-S10041-R05	10	72	22	10	0,5	4
530FS-S10041-R10	10	72	22	10	1	4
530FS-S10041-R20	10	72	22	10	2	4
530FS-S12041-R05	12	83	26	12	0,5	4
530FS-S12041-R10	12	83	26	12	1	4
530FS-S12041-R20	12	83	26	12	2	4
530FS-S14041-R05	14	83	26	14	0,5	4
530FS-S14041-R10	14	83	26	14	1	4
530FS-S14041-R20	14	83	26	14	2	4
530FS-S16041-R05	16	92	32	16	0,5	4
530FS-S16041-R10	16	92	32	16	1	4
530FS-S16041-R20	16	92	32	16	2	4
530FS-S18041-R05	18	92	32	18	0,5	4
530FS-S18041-R10	18	92	32	18	1	4
530FS-S18041-R20	18	92	32	18	2	4
530FS-S20041-R05	20	104	38	20	0,5	4
530FS-S20041-R10	20	104	38	20	1	4
530FS-S20041-R20	20	104	38	20	2	4

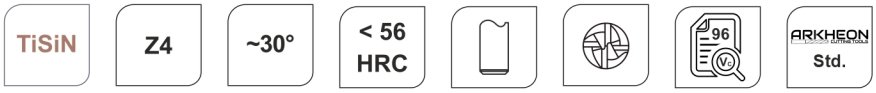
HA HB

Solid Carbide End Mills,With Corner Radius / Long Version



Application Range

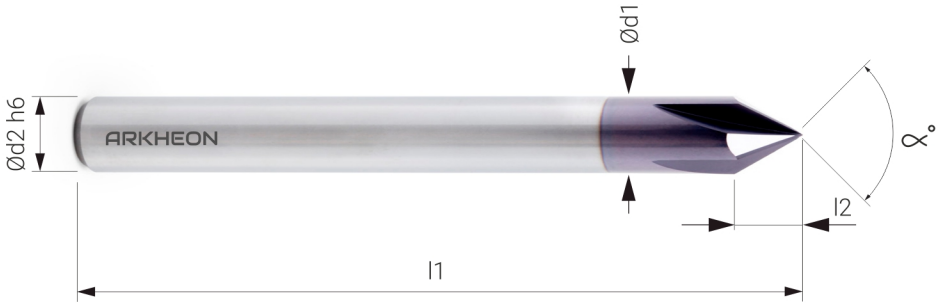
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 h10	l1	l2	d2 h6	R	Z
530FS-U03041-R05	3	50	8	3	0,5	4
530FS-U03041-R10	3	50	8	3	1	4
530FS-U04041-R05	4	50	10	4	0,5	4
530FS-U04041-R10	4	50	10	4	1	4
530FS-U05041-R05	5	50	13	5	0,5	4
530FS-U05041-R10	5	50	13	5	1	4
530FS-U06041-R05	6	57	14	6	0,5	4
530FS-U06041-R10	6	57	14	6	1	4
530FS-U08041-R05	8	63	19	8	0,5	4
530FS-U08041-R10	8	63	19	8	1	4
530FS-U08041-R20	8	63	19	8	2	4
530FS-U10041-R05	10	72	22	10	0,5	4
530FS-U10041-R10	10	72	22	10	1	4
530FS-U10041-R20	10	72	22	10	2	4
530FS-U12041-R05	12	83	26	12	0,5	4
530FS-U12041-R10	12	83	26	12	1	4
530FS-U12041-R20	12	83	26	12	2	4
530FS-U14041-R05	14	83	26	14	0,5	4
530FS-U14041-R10	14	83	26	14	1	4
530FS-U14041-R20	14	83	26	14	2	4
530FS-U16041-R05	16	92	32	16	0,5	4
530FS-U16041-R10	16	92	32	16	1	4
530FS-U16041-R20	16	92	32	16	2	4
530FS-U18041-R05	18	92	32	18	0,5	4
530FS-U18041-R10	18	92	32	18	1	4
530FS-U18041-R20	18	92	32	18	2	4
530FS-U20041-R05	20	104	38	20	0,5	4
530FS-U20041-R10	20	104	38	20	1	4
530FS-U20041-R20	20	104	38	20	2	4

HA HB

Solid Carbide Chamfering End Mills



Application Range

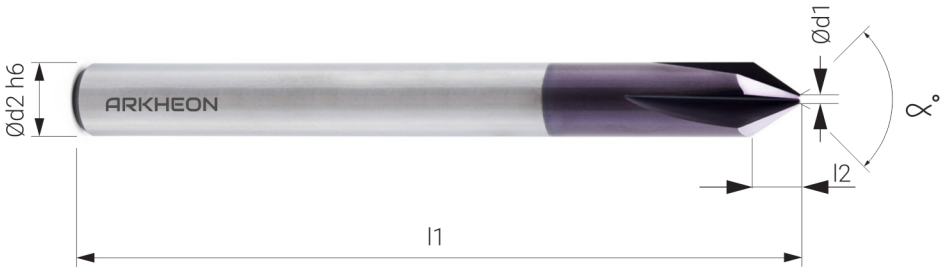
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | Z4 | ~0° | < 48 HRC | 96 | ARKHEON Std.

Order Code	d1 h10	l2	d2 h6	l1	∝°	Z
5590-S06041	6	3	6	57	90°	4
5590-S06041	6	5,2	6	57	60°	4
5590-S08041	8	4	8	63	90°	4
5590-S08041	8	7	8	63	60°	4
5590-S10041	10	5	10	72	90°	4
5590-S10041	10	8,7	10	72	60°	4
5590-S12041	12	6	12	83	90°	4
5590-S12041	12	10,4	12	83	60°	4
5590-S14041	14	7	14	83	90°	4
5590-S14041	14	12,1	14	83	60°	4
5590-S16041	16	8	16	92	90°	4
5590-S16041	16	14	16	92	60°	4

HA HB

Solid Carbide Chamfering End Mills



Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

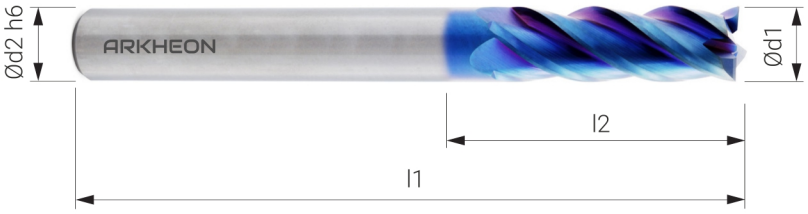
AlTiN | Z4 | ~0° | < 48 HRC | 96 | ARKHEON Std.

Order Code	d1 h10	l2	d2 h6	l1	∝°	Z
5690-S06041	1	2,5	6	57	90°	4
5690-S06041	1,4	4	6	57	60°	4
5690-S08041	1	3,5	8	63	90°	4
5690-S08041	2,5	4,8	8	63	60°	4
5690-S10041	1,5	4,25	10	72	90°	4
5690-S10041	3	6	10	72	60°	4
5690-S12041	3	4,5	12	83	90°	4
5690-S12041	3,3	7,5	12	83	60°	4
5690-S14041	4	5	14	83	90°	4
5690-S14041	2,4	10	14	83	60°	4
5690-S16041	4	6	16	92	90°	4
5690-S16041	4,5	10	16	92	60°	4

HA HB



Solid Carbide End Mills, For Hard Materials / Normal Version



nACo Blue | Z4 | ~45° | HRC 65 | | | | ARKHEON Std.

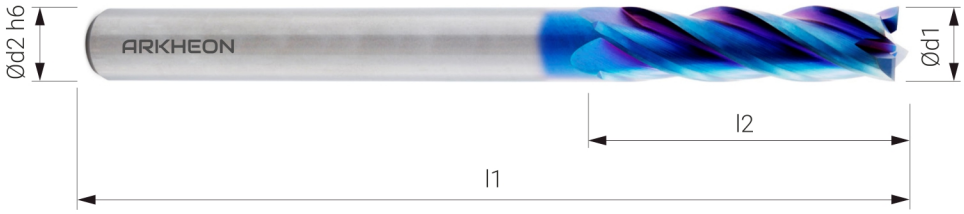
Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

Order Code	d1 h10	l1	l2	d2 h6	Z
610FS-S03046	3	50	8	3	4
610FS-S04046	4	50	10	4	4
610FS-S05046	5	50	13	5	4
610FS-S06046	6	57	16	6	4
610FS-S08046	8	63	20	8	4
610FS-S10046	10	72	25	10	4
610FS-S12046	12	83	30	12	4
610FS-S14046	14	83	26	14	4
610FS-S16046	16	92	32	16	4
610FS-S18046	18	92	32	18	4
610FS-S20046	20	104	38	20	4

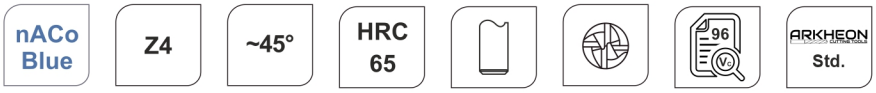
HA HB

Solid Carbide End Mills, For Hard Materials / Long Version



Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 h10	l1	l2	d2 h6	Z
615FS-S03046	3	50	8	3	4
615FS-S04046	4	50	10	4	4
615FS-S05046	5	50	13	5	4
615FS-S06046	6	57	16	6	4
615FS-S08046	8	63	20	8	4
615FS-S10046	10	72	25	10	4
615FS-S12046	12	83	30	12	4
615FS-S14046	14	83	26	14	4
615FS-S16046	16	92	32	16	4
615FS-S18046	18	92	32	18	4
615FS-S20046	20	104	38	20	4

HA HB

Solid Carbide Ball Nose End Mills, For Hard Materials / Normal Version



nACo Blue | Z2 | ~30° | HRC 65

Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

Order Code	d1 h19	l1	l2	d2 h6	R	Z
620FS-S03026	3	50	8	3	1,5	2
620FS-S04026	4	50	10	4	2	2
620FS-S05026	5	50	12	5	2,5	2
620FS-S06026	6	57	14	6	3	2
620FS-S08026	8	63	19	8	4	2
620FS-S10026	10	72	22	10	5	2
620FS-S12026	12	83	26	12	6	2
620FS-S14026	14	83	26	14	7	2
620FS-S16026	16	92	32	16	8	2
620FS-S18026	18	92	32	18	9	2
620FS-S20026	20	104	38	20	10	2

HA HB

Solid Carbide Ball Nose End Mills, For Hard Materials / Long Version



Application Range

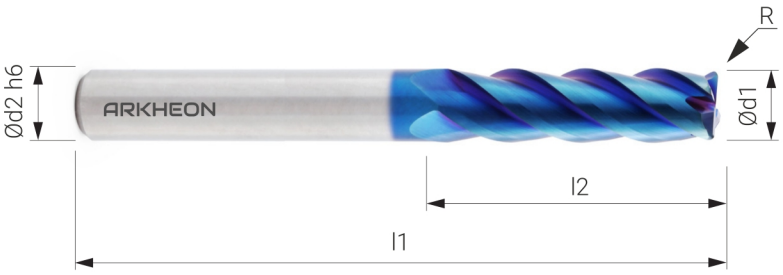
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

nACo Blue | Z2 | ~30° | HRC 65 | 96 | ARKHEON Std.

Order Code	d1 h19	l1	l2	d2 h6	R	Z
620FS-U03026	3	50	8	3	1,5	2
620FS-U04026	4	50	10	4	2	2
620FS-U05026	5	50	12	5	2,5	2
620FS-U06026	6	57	14	6	3	2
620FS-U08026	8	63	19	8	4	2
620FS-U10026	10	72	22	10	5	2
620FS-U12026	12	83	26	12	6	2
620FS-U14026	14	83	26	14	7	2
620FS-U16026	16	92	32	16	8	2
620FS-U18026	18	92	32	18	9	2
620FS-U20026	20	104	38	20	10	2

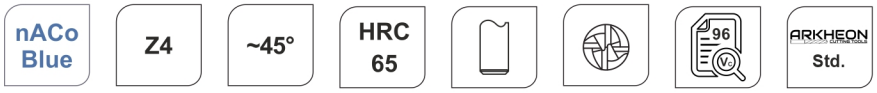
HA HB

Solid Carbide End Mills,With Corner Radius, For Hard Materials / Normal Version



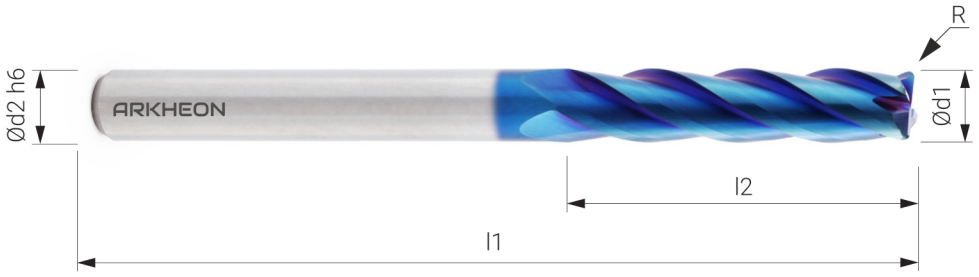
Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



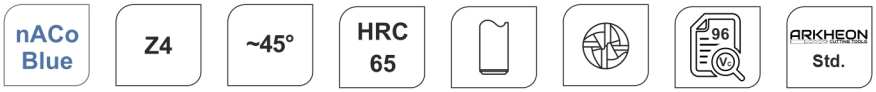
Order Code	d1 h10	l1	l2	d2 h6	R	Z
630FS-S03046-R05	3	50	8	3	0,5	4
630FS-S03046-R10	3	50	8	3	1	4
630FS-S04046-R05	4	50	10	4	0,5	4
630FS-S04046-R10	4	50	10	4	1	4
630FS-S05046-R05	5	50	13	5	0,5	4
630FS-S05046-R10	5	50	13	5	1	4
630FS-S06046-R05	6	57	14	6	0,5	4
630FS-S06046-R10	6	57	14	6	1	4
630FS-S08046-R05	8	63	19	8	0,5	4
630FS-S08046-R10	8	63	19	8	1	4
630FS-S08046-R20	8	63	19	8	2	4
630FS-S10046-R05	10	72	22	10	0,5	4
630FS-S10046-R10	10	72	22	10	1	4
630FS-S10046-R20	10	72	22	10	2	4
630FS-S12046-R05	12	83	26	12	0,5	4
630FS-S12046-R10	12	83	26	12	1	4
630FS-S12046-R20	12	83	26	12	2	4
630FS-S14046-R05	14	83	26	14	0,5	4
630FS-S14046-R10	14	83	26	14	1	4
630FS-S14046-R20	14	83	26	14	2	4
630FS-S16046-R05	16	92	32	16	0,5	4
630FS-S16046-R10	16	92	32	16	1	4
630FS-S16046-R20	16	92	32	16	2	4
630FS-S18046-R05	18	92	32	18	0,5	4
630FS-S18046-R10	18	92	32	18	1	4
630FS-S18046-R20	18	92	32	18	2	4
630FS-S20046-R05	20	104	38	20	0,5	4
630FS-S20046-R10	20	104	38	20	1	4
630FS-S20046-R20	20	104	38	20	2	4

Solid Carbide End Mills,With Corner Radius, For Hard Materials / Long Version



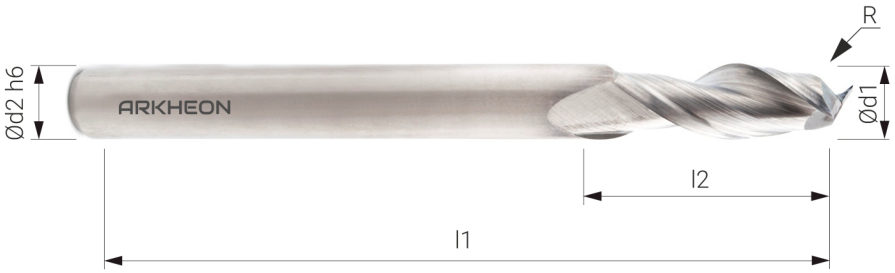
Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



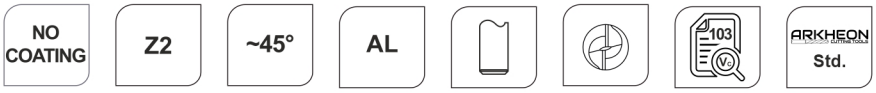
Order Code	d1 h10	l1	l2	d2 h6	R	Z
630FS-U03046-R05	3	50	8	3	0,5	4
630FS-U03046-R10	3	50	8	3	1	4
630FS-U04046-R05	4	50	10	4	0,5	4
630FS-U04046-R10	4	50	10	4	1	4
630FS-U05046-R05	5	50	13	5	0,5	4
630FS-U05046-R10	5	50	13	5	1	4
630FS-U06046-R05	6	57	14	6	0,5	4
630FS-U06046-R10	6	57	14	6	1	4
630FS-U08046-R05	8	63	19	8	0,5	4
630FS-U08046-R10	8	63	19	8	1	4
630FS-U08046-R20	8	63	19	8	2	4
630FS-U10046-R05	10	72	22	10	0,5	4
630FS-U10046-R10	10	72	22	10	1	4
630FS-U10046-R20	10	72	22	10	2	4
630FS-U12046-R05	12	83	26	12	0,5	4
630FS-U12046-R10	12	83	26	12	1	4
630FS-U12046-R20	12	83	26	12	2	4
630FS-U14046-R05	14	83	26	14	0,5	4
630FS-U14046-R10	14	83	26	14	1	4
630FS-U14046-R20	14	83	26	14	2	4
630FS-U16046-R05	16	92	32	16	0,5	4
630FS-U16046-R10	16	92	32	16	1	4
630FS-U16046-R20	16	92	32	16	2	4
630FS-U18046-R05	18	92	32	18	0,5	4
630FS-U18046-R10	18	92	32	18	1	4
630FS-U18046-R20	18	92	32	18	2	4
630FS-U20046-R05	20	104	38	20	0,5	4
630FS-U20046-R10	20	104	38	20	1	4
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Solid Carbide End Mills, For Aluminium / Normal Version



Application Range

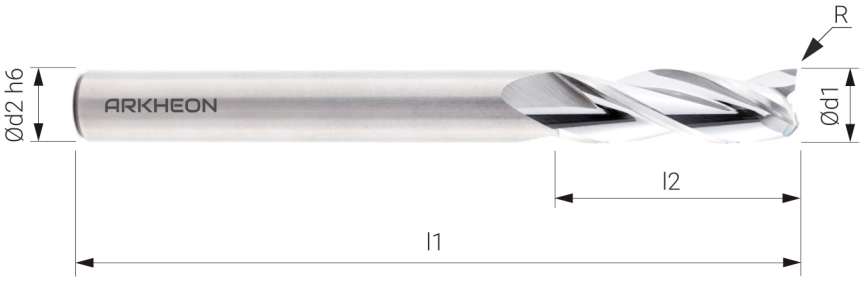
* Non Ferrous Metals Aluninium
* Aluminium Alloys
* Copper
* Copper Alloys
* Plastics



Order Code	d1 h10	l1	l2	d2 h6	R	Z
560FS-S0302	3	57	8	6	0,2	2
560FS-S0402	4	57	10	6	0,2	2
560FS-S0502	5	57	13	6	0,2	2
560FS-S0602	6	57	14	6	0,2	2
560FS-S0802	8	63	19	8	0,2	2
560FS-S1002	10	72	22	10	0,2	2
560FS-S1202	12	83	26	12	0,2	2
560FS-S1402	14	83	26	14	0,2	2
560FS-S1602	16	92	32	16	0,2	2
560FS-S1802	18	92	32	18	0,2	2
560FS-S2002	20	104	38	20	0,2	2

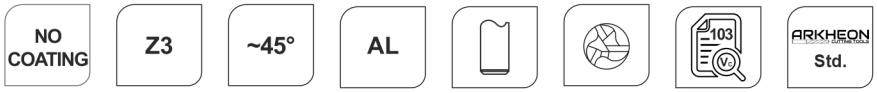
HA HB

Solid Carbide End Mills, For Aluminium / Normal Version



Application Range

* Non Ferrous Metals Aluninium
* Aluminium Alloys
* Copper
* Copper Alloys
* Plastics



Order Code	d1 h10	l1	l2	d2 h6	R	Z
560FS-S0303	3	57	8	6	0,2	3
560FS-S0403	4	57	10	6	0,2	3
560FS-S0503	5	57	13	6	0,2	3
560FS-S0603	6	57	14	6	0,2	3
560FS-S0803	8	63	19	8	0,2	3
560FS-S1003	10	72	22	10	0,2	3
560FS-S1203	12	83	26	12	0,2	3
560FS-S1403	14	83	26	14	0,2	3
560FS-S1603	16	92	32	16	0,2	3
560FS-S1803	18	92	32	18	0,2	3
560FS-S2003	20	104	38	20	0,2	3

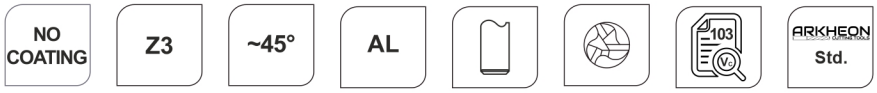
HA HB

Solid Carbide End Mills, For Aluminium / Long Version



Application Range

* Non Ferrous Metals Aluninium
* Aluminium Alloys
* Copper
* Copper Alloys
* Plastics



Order Code	d1 h10	l1	l2	d2 h6	R	Z
560FS-U0603	6	100	30	6	0,2	3
560FS-U0803	8	100	40	8	0,2	3
560FS-U1003	10	100	45	10	0,2	3
560FS-U1203	12	100	45	12	0,2	3

HA HB

Solid Carbide End Mills, For Aluminium / Extra Long Version



Application Range

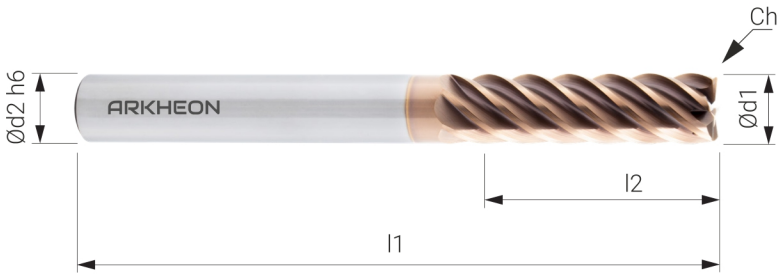
* Non Ferrous Metals Aluninium
* Aluminium Alloys
* Copper
* Copper Alloys
* Plastics



Order Code	d1 h10	l1	l2	d2 h6	R	Z
560FS-E1203	12	150	75	12	0,2	3
560FS-E1403	14	150	75	14	0,2	3
560FS-E1603	16	150	75	16	0,2	3
560FS-E1803	18	150	75	18	0,2	3
560FS-E2003	20	150	75	20	0,2	3

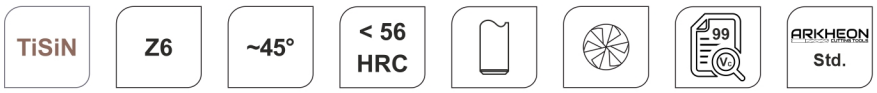
HA HB

Solid Carbide Multi Flute Cutter / Normal Version



Application Range

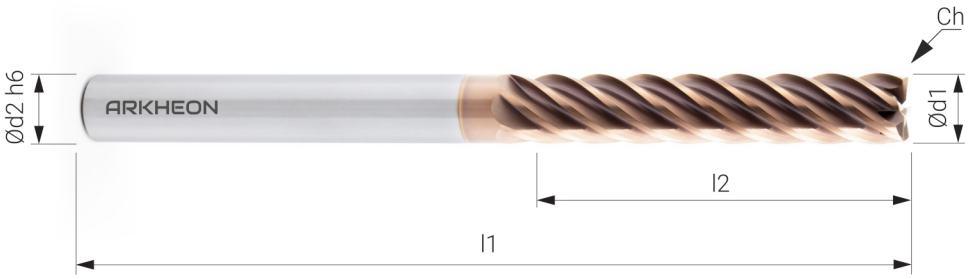
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
570FS-S06034	6	57	14	6	0.20x45°	6
570FS-S08034	8	63	19	8	0.20x45°	6
570FS-S10034	10	72	22	10	0.25x45°	6
570FS-S12034	12	83	26	12	0.25x45°	6
570FS-S14034	14	83	26	14	0.40x45°	6
570FS-S16034	16	92	32	16	0.40x45°	6
570FS-S18034	18	92	32	18	0.50x45°	6
570FS-S20034	20	104	38	20	0.50x45°	6

HA HB

Solid Carbide Multi Flute Cutter / Long Version



Application Range

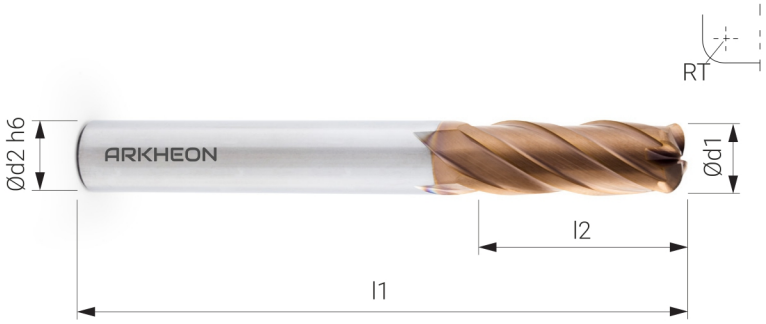
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

TiSiN | Z6 | ~45° | < 56 HRC | ARKHEON Std.

Order Code	d1 h10	l1	l2	d2 h6	Ch	Z
570FS-U06034	6	100	30	6	0.20x45°	6
570FS-U08034	8	100	35	8	0.20x45°	6
570FS-U10034	10	100	40	10	0.25x45°	6
570FS-U12034	12	100	45	12	0.25x45°	6
570FS-U16034	16	150	65	14	0.40x45°	6
570FS-U20034	20	150	80	16	0.40x45°	6

HA HB

Solid Carbide High Speed End Mills / Normal Version



Application Range

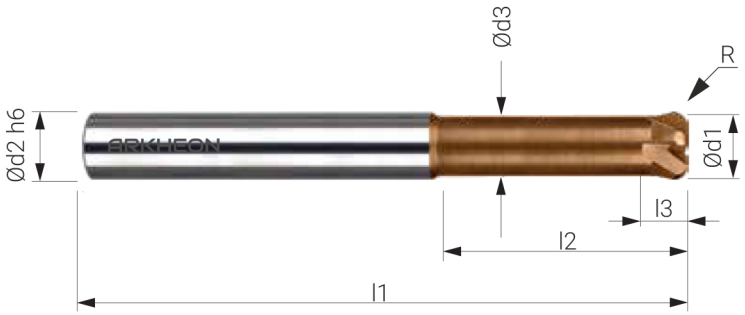
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

TiSiN | Z4 | ~45° | < 56 HRC | ARKHEON Std.

Order Code	d1 h10	l1	l2	d2 h6	RT	Z
580FS-S04044	4	57	10	6	0,65	4
580FS-S05044	5	57	12	6	0,7	4
580FS-S06044	6	57	13	6	0,75	4
580FS-S08044	8	63	16	8	1,4	4
580FS-S10044	10	72	20	10	2	4
580FS-S12044	12	83	24	12	2,1	4
580FS-S16044	16	92	24	16	2,75	4
580FS-S20044	20	104	24	20	3	4

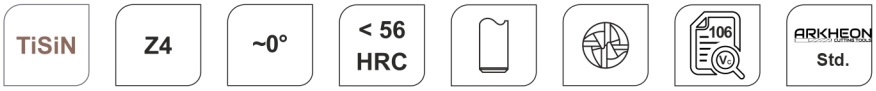
HA HB

Solid Carbide High Speed End Mills, With Corner Radius / Normal Version



Application Range

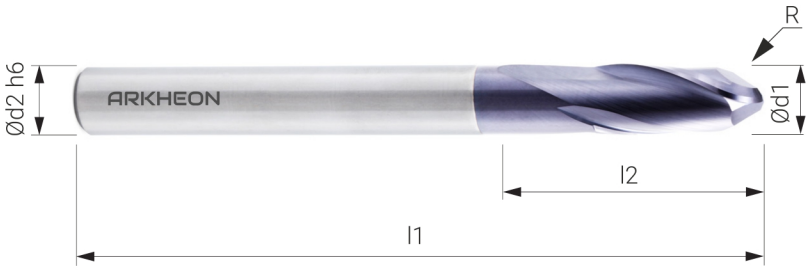
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 h10	l1	l2	l3	d2 h6	d3	R	Z
585FS-S04044	4	75	10	1.6	6	3.6	0.5	4
585FS-S05044	5	75	12	2	6	4.5	1	4
585FS-S06044	6	100	13	2.5	6	5.4	1	4
585FS-S08044	8	100	16	3.5	8	7.2	1	4
585FS-S10044	10	100	20	4	10	9	1	4
585FS-S12044	12	100	24	5	12	11	1	4

HA HB

Solid Carbide Ball Nose End Mills / Normal Version



Application Range

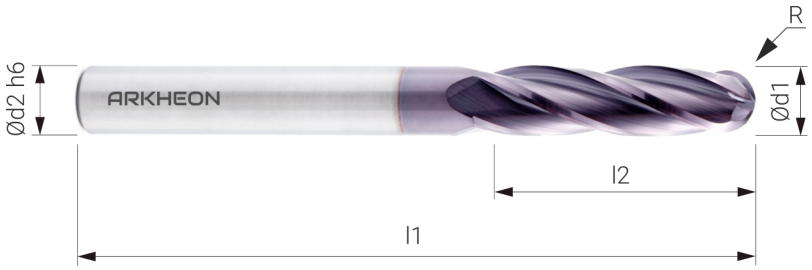
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | Z2 | ~30° | < 48 HRC | ARKHEON Std.

Order Code	d1 h9	l1	l2	d2 h6	R	Z
540FS-S03024	3	50	8	3	1,5	2
540FS-S04024	4	50	10	4	2	2
540FS-S05024	5	50	13	5	2,5	2
540FS-S06024	6	57	14	6	3	2
540FS-S08024	8	63	19	8	4	2
540FS-S10024	10	72	22	10	5	2
540FS-S12024	12	83	26	12	6	2
540FS-S14024	14	83	26	14	7	2
540FS-S16024	16	92	32	16	8	2
540FS-S18024	18	92	32	18	9	2
540FS-S20024	20	104	38	20	10	2

HA HB

Solid Carbide Ball Nose End Mills / Normal Version



Application Range

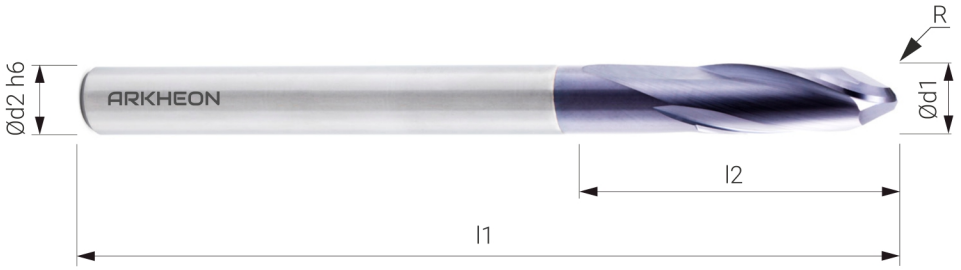
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | Z4 | ~30° | < 48 HRC | ARKHEON Std.

Order Code	d1 h9	l1	l2	d2 h6	R	Z
540FS-S03044	3	50	8	3	1,5	4
540FS-S04044	4	50	10	4	2	4
540FS-S05044	5	50	13	5	2,5	4
540FS-S06044	6	57	14	6	3	4
540FS-S08044	8	63	19	8	4	4
540FS-S10044	10	72	22	10	5	4
540FS-S12044	12	83	26	12	6	4
540FS-S14044	14	83	26	14	7	4
540FS-S16044	16	92	32	16	8	4
540FS-S18044	18	92	32	18	9	4
540FS-S20044	20	104	38	20	10	4

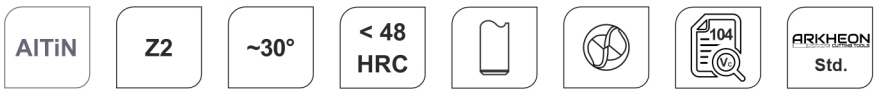
HA HB

Solid Carbide Ball Nose End Mills / Long Version



Application Range

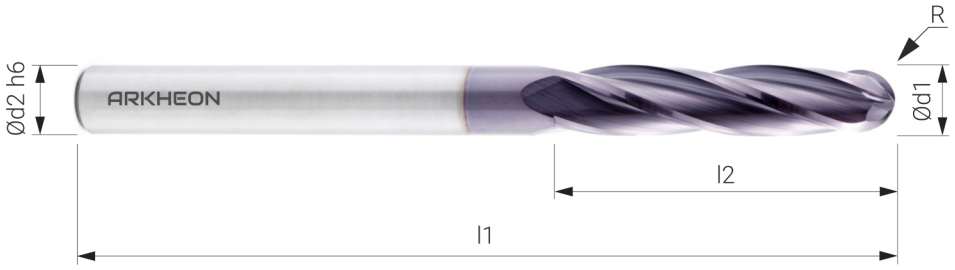
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 h9	l1	l2	d2 h6	R	Z
540FS-U03024	3	75	12	3	1,5	2
540FS-U04024	4	75	16	4	2	2
540FS-U05024	5	75	20	5	2,5	2
540FS-U06024	6	100	25	6	3	2
540FS-U08024	8	100	35	8	4	2
540FS-U10024	10	100	40	10	5	2
540FS-U12024	12	100	40	12	6	2

HA HB

Solid Carbide Ball Nose End Mills / Long Version



Application Range

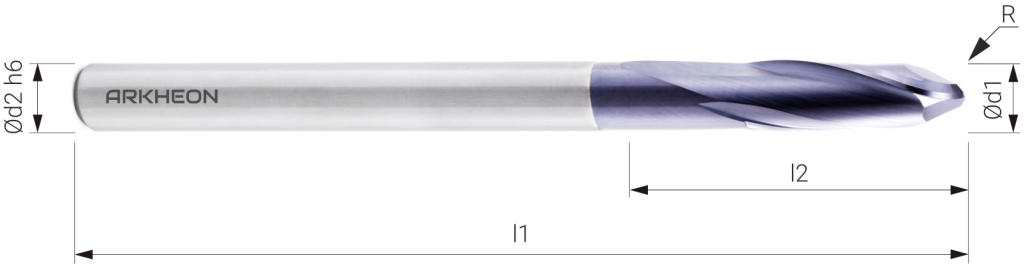
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | Z4 | ~30° | < 48 HRC | ARKHEON Std.

Order Code	d1 h9	l1	l2	d2 h6	R	Z
540FS-U03044	3	75	12	3	1,5	4
540FS-U04044	4	75	16	4	2	4
540FS-U05044	5	75	20	5	2,5	4
540FS-U06044	6	100	25	6	3	4
540FS-U08044	8	100	35	8	4	4
540FS-U10044	10	100	40	10	5	4
540FS-U12044	12	100	40	12	6	4

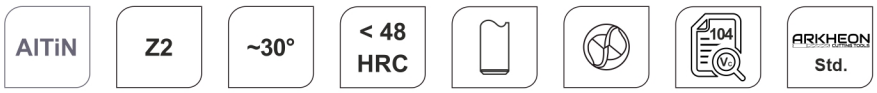
HA HB

Solid Carbide Ball Nose End Mills / Extra Long Version



Application Range

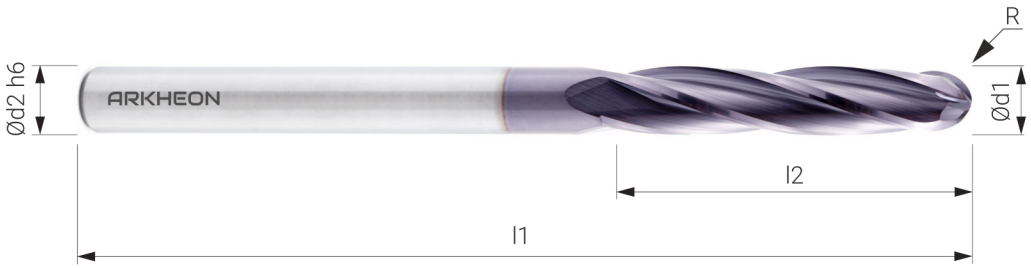
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 h9	l1	l2	d2 h6	R	Z
540FS-E06024	6	150	20	6	3	2
540FS-E08024	8	150	25	8	4	2
540FS-E10024	10	150	30	10	5	2
540FS-E12024	12	150	35	12	6	2
540FS-E14024	14	150	35	14	7	2
540FS-E16024	16	150	50	16	8	2
540FS-E18024	18	150	50	18	9	2
540FS-E20024	20	150	50	20	10	2

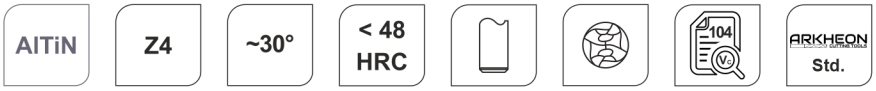
HA HB

Solid Carbide Ball Nose End Mills / Extra Long Version



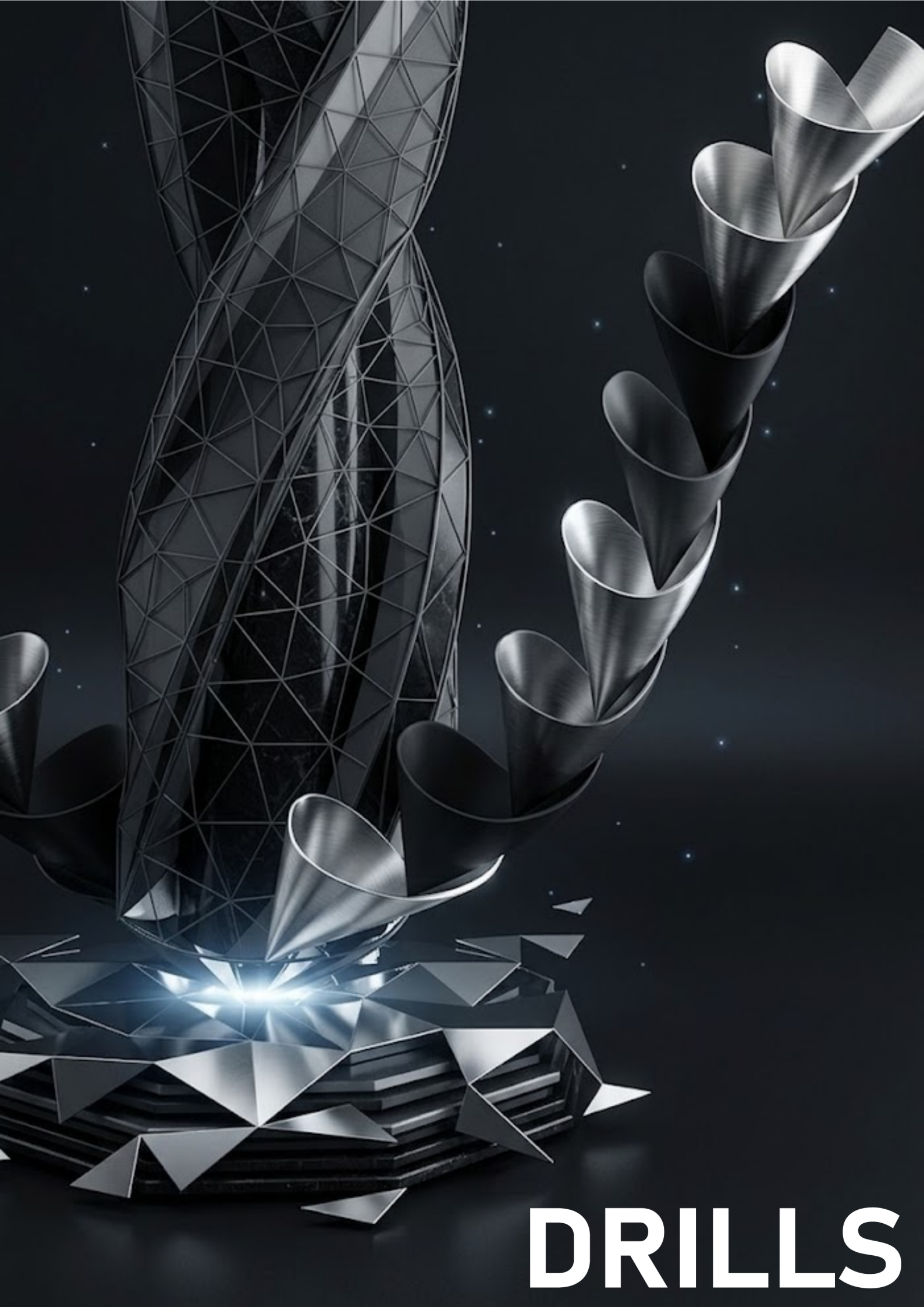
Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 h9	l1	l2	d2 h6	R	Z
540FS-E06044	6	150	20	6	3	4
540FS-E08044	8	150	25	8	4	4
540FS-E10044	10	150	30	10	5	4
540FS-E12044	12	150	35	12	6	4
540FS-E14044	14	150	35	14	7	4
540FS-E16044	16	150	50	16	8	4
540FS-E18044	18	150	50	18	9	4
540FS-E20044	20	150	50	20	10	4

HA HB



DRILLS

INFORMATION

AlTiN	Coating Type
3xd	Deph 3xd
5xd	Deph 5xd
8xd	Deph 8xd
ARKHEON Std.	Arkheon Standart
RH	Right Cutting
LH	Left Cutting
	Shank Type
< 48 HRC	Suited for Hardened Steels up tu 48 HRC
~30°	Helix Angle
	Without İnternal Coolant
	With İnternal Coolant
 140°	Point Angle
	Cutting Data Page

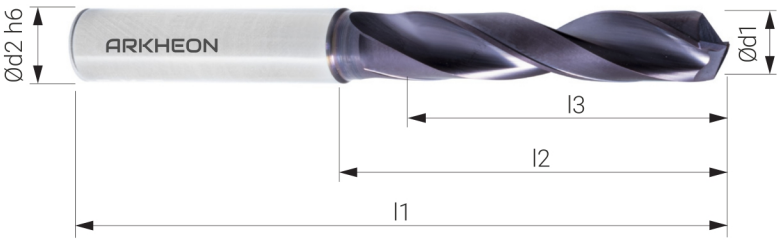
HA HB

INDEKS

		Page
M1-3D	**Solid Carbide Drills** Without Internal Coolant	46-51
M2-3D	**Solid Carbide Drills** With Internal Coolant	52-57
M1-5D	**Solid Carbide Drills** Without Internal Coolant	58-63
M2-5D	**Solid Carbide Drills** With Internal Coolant	64-69
M2-8D	**Solid Carbide Drills** With Internal Coolant	70-74
NC-S	**65 Hrc Standart Milling** Normal Version	75
700H	**Carbide Reamer** Spiral	76

HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

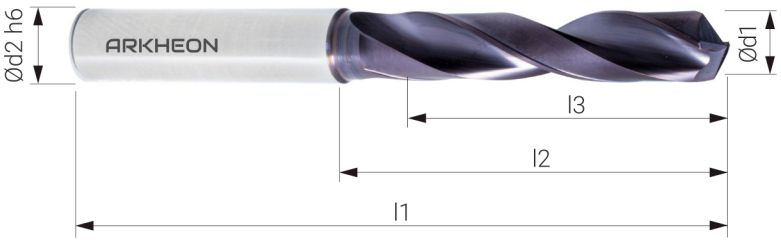
* Unalloyed Steels
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* Aluminium Alloys
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* Plastics
* Graphite

AlTiN | 3xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-3D-03001	3	6	62	20	14	2
M1-3D-03101	3,1	6	62	20	14	2
M1-3D-03201	3,2	6	62	20	14	2
M1-3D-03301	3,3	6	62	20	14	2
M1-3D-03401	3,4	6	62	20	14	2
M1-3D-03501	3,5	6	62	20	14	2
M1-3D-03601	3,6	6	62	20	14	2
M1-3D-03651	3,65	6	62	20	14	2
M1-3D-03701	3,7	6	62	20	14	2
M1-3D-03801	3,8	6	66	24	17	2
M1-3D-03901	3,9	6	66	24	17	2
M1-3D-04001	4	6	66	24	17	2
M1-3D-04101	4,1	6	66	24	17	2
M1-3D-04201	4,2	6	66	24	17	2
M1-3D-04301	4,3	6	66	24	17	2
M1-3D-04401	4,4	6	66	24	17	2
M1-3D-04501	4,5	6	66	24	17	2
M1-3D-04601	4,6	6	66	24	17	2
M1-3D-04701	4,7	6	66	24	17	2
M1-3D-04801	4,8	6	66	28	20	2
M1-3D-04901	4,9	6	66	28	20	2
M1-3D-05001	5	6	66	28	20	2
M1-3D-05101	5,1	6	66	28	20	2
M1-3D-05201	5,2	6	66	28	20	2

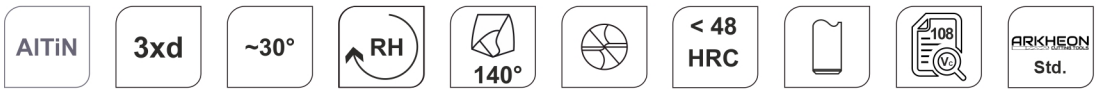
HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

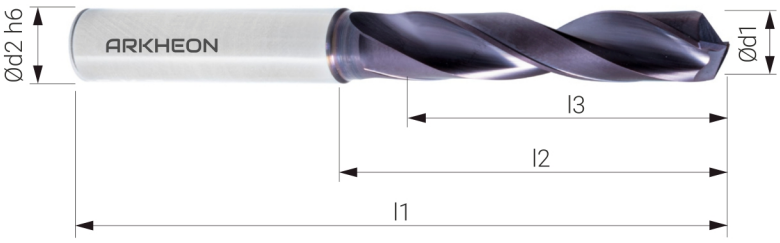
* Unalloyed Steels
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* Heat Resistant Materials
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* Hardened Materials
* Aluminium Alloys
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* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-3D-05301	5,3	6	66	28	20	2
M1-3D-05401	5,4	6	66	28	20	2
M1-3D-05501	5,5	6	66	28	20	2
M1-3D-05551	5,55	6	66	28	20	2
M1-3D-05601	5,6	6	66	28	20	2
M1-3D-05651	5,65	6	66	28	20	2
M1-3D-05701	5,7	6	66	28	20	2
M1-3D-05801	5,8	6	66	28	20	2
M1-3D-05901	5,9	6	66	28	20	2
M1-3D-06001	6,0	6	66	28	20	2
M1-3D-06101	6,1	8	79	34	24	2
M1-3D-06201	6,2	8	79	34	24	2
M1-3D-06301	6,3	8	79	34	24	2
M1-3D-06401	6,4	8	79	34	24	2
M1-3D-06501	6,5	8	79	34	24	2
M1-3D-06601	6,6	8	79	34	24	2
M1-3D-06701	6,7	8	79	34	24	2
M1-3D-06801	6,8	8	79	34	24	2
M1-3D-06901	6,9	8	79	34	24	2
M1-3D-07001	7	8	79	34	24	2
M1-3D-07101	7,1	8	79	41	29	2
M1-3D-07201	7,2	8	79	41	29	2
M1-3D-07301	7,3	8	79	41	29	2
M1-3D-07401	7,4	8	79	41	29	2

HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

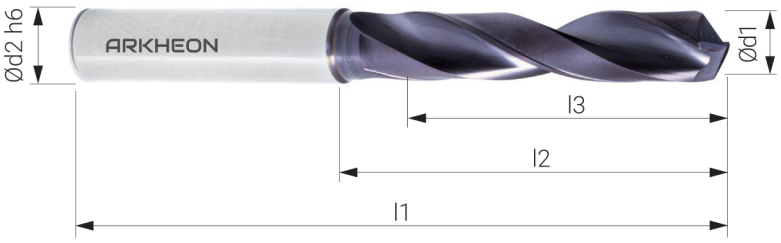
* Unalloyed Steels
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* Heat Resistant Materials
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* Plastics
* Graphite

AlTiN | 3xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-3D-07501	7,5	8	79	41	29	2
M1-3D-07551	7,55	8	79	41	29	2
M1-3D-07601	7,6	8	79	41	29	2
M1-3D-07701	7,7	8	79	41	29	2
M1-3D-07801	7,8	8	79	41	29	2
M1-3D-07901	7,9	8	79	41	29	2
M1-3D-08001	8	8	79	41	29	2
M1-3D-08101	8,1	10	89	47	35	2
M1-3D-08201	8,2	10	89	47	35	2
M1-3D-08301	8,3	10	89	47	35	2
M1-3D-08401	8,4	10	89	47	35	2
M1-3D-08501	8,5	10	89	47	35	2
M1-3D-08601	8,6	10	89	47	35	2
M1-3D-08701	8,7	10	89	47	35	2
M1-3D-08801	8,8	10	89	47	35	2
M1-3D-08901	8,9	10	89	47	35	2
M1-3D-09001	9	10	89	47	35	2
M1-3D-09101	9,1	10	89	47	35	2
M1-3D-09201	9,2	10	89	47	35	2
M1-3D-09301	9,3	10	89	47	35	2
M1-3D-09401	9,4	10	89	47	35	2
M1-3D-09501	9,5	10	89	47	35	2
M1-3D-09551	9,55	10	89	47	35	2
M1-3D-09601	9,6	10	89	47	35	2

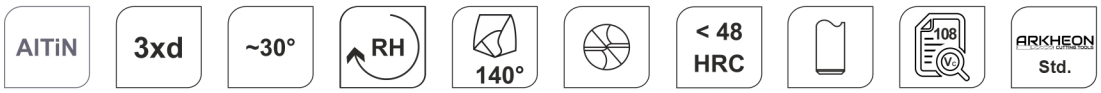
HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

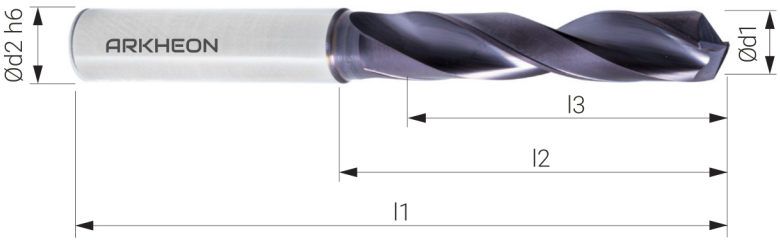
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-3D-09701	9,7	10	89	47	35	2
M1-3D-09801	9,8	10	89	47	35	2
M1-3D-09901	9,9	10	89	47	35	2
M1-3D-10001	10	10	89	47	35	2
M1-3D-10101	10,1	12	102	55	40	2
M1-3D-10201	10,2	12	102	55	40	2
M1-3D-10301	10,3	12	102	55	40	2
M1-3D-10401	10,4	12	102	55	40	2
M1-3D-10501	10,5	12	102	55	40	2
M1-3D-10601	10,6	12	102	55	40	2
M1-3D-10701	10,7	12	102	55	40	2
M1-3D-10801	10,8	12	102	55	40	2
M1-3D-10901	10,9	12	102	55	40	2
M1-3D-11001	11	12	102	55	40	2
M1-3D-11101	11,1	12	102	55	40	2
M1-3D-11201	11,2	12	102	55	40	2
M1-3D-11301	11,3	12	102	55	40	2
M1-3D-11401	11,4	12	102	55	40	2
M1-3D-11501	11,5	12	102	55	40	2
M1-3D-11551	11,55	12	102	55	40	2
M1-3D-11601	11,6	12	102	55	40	2
M1-3D-11701	11,7	12	102	55	40	2
M1-3D-11801	11,8	12	102	55	40	2
M1-3D-11901	11,9	12	102	55	40	2

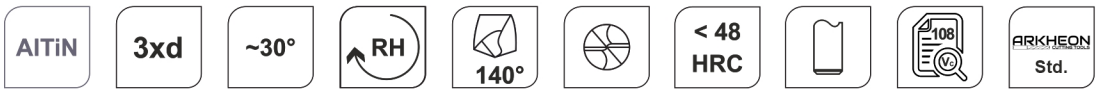
HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

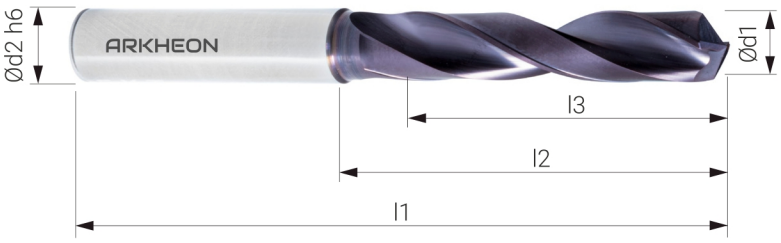
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-3D-12001	12	12	102	55	40	2
M1-3D-12101	12,1	14		60	43	2
M1-3D-12201	12,2	14	107	60	43	2
M1-3D-12301	12,3	14		60	43	2
M1-3D-12401	12,4	14	107	60	43	2
M1-3D-12501	12,5	14		60	43	2
M1-3D-12601	12,6	14	107	60	43	2
M1-3D-12701	12,7	14		60	43	2
M1-3D-12801	12,8	14	107	60	43	2
M1-3D-12901	12,9	14		60	43	2
M1-3D-13001	13	14	107	60	43	2
M1-3D-13101	13,1	14		60	43	2
M1-3D-13201	13,2	14	107	60	43	2
M1-3D-13301	13,3	14		60	43	2
M1-3D-13401	13,4	14	107	60	43	2
M1-3D-13501	13,5	14		60	43	2
M1-3D-13601	13,6	14	107	60	43	2
M1-3D-13701	13,7	14		60	43	2
M1-3D-13801	13,8	14	107	60	43	2
M1-3D-13901	13,9	14		60	43	2
M1-3D-14001	14	14	107	60	43	2
M1-3D-14101	14,1	16		65	45	2
M1-3D-14201	14,2	16	115	65	45	2
M1-3D-14301	14,3	16		65	45	2
M1-3D-14401	14,4	16	115	65	45	

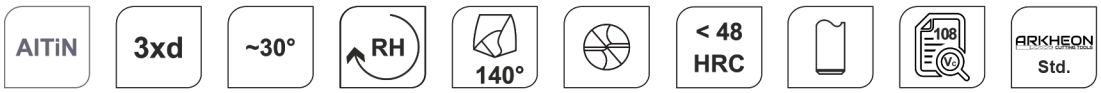
HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

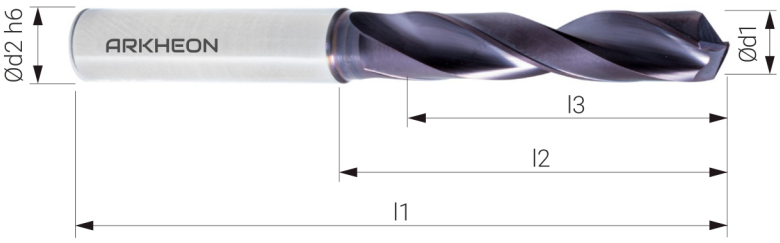
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-3D-14501	14,5	16	115	65	45	2
M1-3D-14601	14,6	16	115	65	45	2
M1-3D-14701	14,7	16	115	65	45	2
M1-3D-14801	14,8	16	115	65	45	2
M1-3D-14901	14,9	16	115	65	45	2
M1-3D-15001	15	16	115	65	45	2
M1-3D-15101	15,1	16	115	65	45	2
M1-3D-15201	15,2	16	115	65	45	2
M1-3D-15301	15,3	16	115	65	45	2
M1-3D-15401	15,4	16	115	65	45	2
M1-3D-15501	15,5	16	115	65	45	2
M1-3D-15601	15,6	16	115	65	45	2
M1-3D-15701	15,7	16	115	65	45	2
M1-3D-15801	15,8	16	115	65	45	2
M1-3D-15901	15,9	16	115	65	45	2
M1-3D-16001	16	16	115	65	45	2
M1-3D-16501	16,5	18	123	73	51	2
M1-3D-17001	17	18	123	73	51	2
M1-3D-17501	17,5	18	123	73	51	2
M1-3D-18001	18	18	123	73	51	2
M1-3D-18501	18,5	20	131	79	55	2
M1-3D-18801	18,8	20	131	79	55	2
M1-3D-19001	19	20	131	79	55	2
M1-3D-19501	19,5	20	131	79	55	2
M1-3D-20001	20	20	131	79	55	2

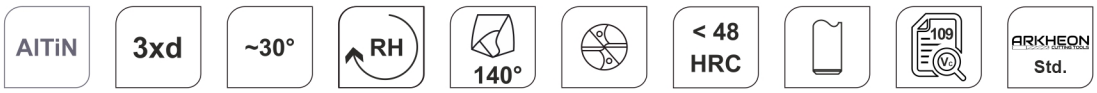
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

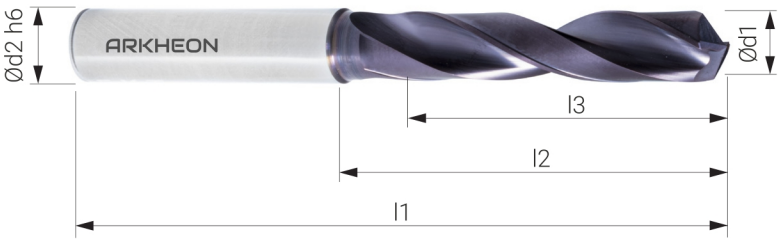
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-3D-03001	3	6	62	20	14	2
M2-3D-03101	3,1	6	62	20	14	2
M2-3D-03201	3,2	6	62	20	14	2
M2-3D-03301	3,3	6	62	20	14	2
M2-3D-03401	3,4	6	62	20	14	2
M2-3D-03501	3,5	6	62	20	14	2
M2-3D-03601	3,6	6	62	20	14	2
M2-3D-03651	3,65	6	62	20	14	2
M2-3D-03701	3,7	6	62	20	14	2
M2-3D-03801	3,8	6	66	24	17	2
M2-3D-03901	3,9	6	66	24	17	2
M2-3D-04001	4	6	66	24	17	2
M2-3D-04101	4,1	6	66	24	17	2
M2-3D-04201	4,2	6	66	24	17	2
M2-3D-04301	4,3	6	66	24	17	2
M2-3D-04401	4,4	6	66	24	17	2
M2-3D-04501	4,5	6	66	24	17	2
M2-3D-04601	4,6	6	66	24	17	2
M2-3D-04701	4,7	6	66	24	17	2
M2-3D-04801	4,8	6	66	28	20	2
M2-3D-04901	4,9	6	66	28	20	2
M2-3D-05001	5	6	66	28	20	2
M2-3D-05101	5,1	6	66	28	20	2
M2-3D-05201	5,2	6	66	28	20	2

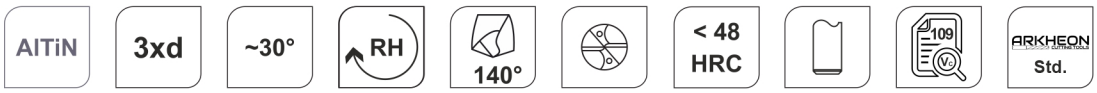
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

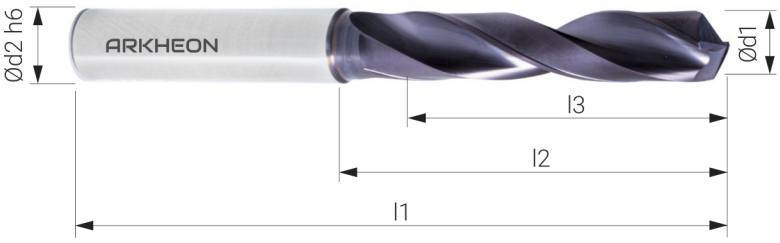
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-3D-05301	5,3	6	66	28	20	2
M2-3D-05401	5,4	6	66	28	20	2
M2-3D-05501	5,5	6	66	28	20	2
M2-3D-05551	5,55	6	66	28	20	2
M2-3D-05601	5,6	6	66	28	20	2
M2-3D-05651	5,65	6	66	28	20	2
M2-3D-05701	5,7	6	66	28	20	2
M2-3D-05801	5,8	6	66	28	20	2
M2-3D-05901	5,9	6	66	28	20	2
M2-3D-06001	6	6	66	28	20	2
M2-3D-06101	6,1	8	79	34	24	2
M2-3D-06201	6,2	8	79	34	24	2
M2-3D-06301	6,3	8	79	34	24	2
M2-3D-06401	6,4	8	79	34	24	2
M2-3D-06501	6,5	8	79	34	24	2
M2-3D-06601	6,6	8	79	34	24	2
M2-3D-06701	6,7	8	79	34	24	2
M2-3D-06801	6,8	8	79	34	24	2
M2-3D-06901	6,9	8	79	34	24	2
M2-3D-07001	7	8	79	34	24	2
M2-3D-07101	7,1	8	79	41	29	2
M2-3D-07201	7,2	8	79	41	29	2
M2-3D-07301	7,3	8	79	41	29	2
M2-3D-07401	7,4	8	79	41	29	2

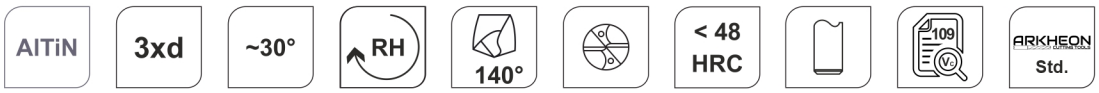


Solid Carbide Drills, With Internal Coolant



Application Range

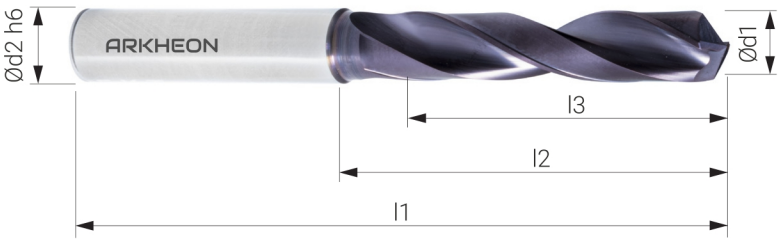
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-3D-07501	7,5	8	79	41	29	2
M2-3D-07551	7,55	8	79	41	29	2
M2-3D-07601	7,6	8	79	41	29	2
M2-3D-07701	7,7	8	79	41	29	2
M2-3D-07801	7,8	8	79	41	29	2
M2-3D-07901	7,9	8	79	41	29	2
M2-3D-08001	8	8	79	41	29	2
M2-3D-08101	8,1	10	89	47	35	2
M2-3D-08201	8,2	10	89	47	35	2
M2-3D-08301	8,3	10	89	47	35	2
M2-3D-08401	8,4	10	89	47	35	2
M2-3D-08501	8,5	10	89	47	35	2
M2-3D-08601	8,6	10	89	47	35	2
M2-3D-08701	8,7	10	89	47	35	2
M2-3D-08801	8,8	10	89	47	35	2
M2-3D-08901	8,9	10	89	47	35	2
M2-3D-09001	9	10	89	47	35	2
M2-3D-09101	9,1	10	89	47	35	2
M2-3D-09201	9,2	10	89	47	35	2
M2-3D-09301	9,3	10	89	47	35	2
M2-3D-09401	9,4	10	89	47	35	2
M2-3D-09501	9,5	10	89	47	35	2
M2-3D-09551	9,55	10	89	47	35	2
M2-3D-09601	9,6	10	89	47	35	2

HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

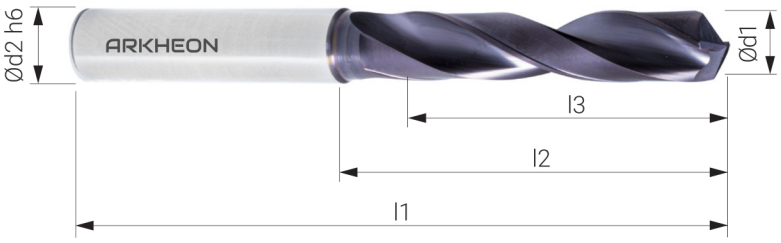
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 3xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-3D-09701	9,7	10	89	47	35	2
M2-3D-09801	9,8	10	89	47	35	2
M2-3D-09901	9,9	10	89	47	35	2
M2-3D-10001	10	10	89	47	35	2
M2-3D-10101	10,1	12	102	55	40	2
M2-3D-10201	10,2	12	102	55	40	2
M2-3D-10301	10,3	12	102	55	40	2
M2-3D-10401	10,4	12	102	55	40	2
M2-3D-10501	10,5	12	102	55	40	2
M2-3D-10601	10,6	12	102	55	40	2
M2-3D-10701	10,7	12	102	55	40	2
M2-3D-10801	10,8	12	102	55	40	2
M2-3D-10901	10,9	12	102	55	40	2
M2-3D-11001	11	12	102	55	40	2
M2-3D-11101	11,1	12	102	55	40	2
M2-3D-11201	11,2	12	102	55	40	2
M2-3D-11301	11,3	12	102	55	40	2
M2-3D-11401	11,4	12	102	55	40	2
M2-3D-11501	11,5	12	102	55	40	2
M2-3D-11551	11,55	12	102	55	40	2
M2-3D-11601	11,6	12	102	55	40	2
M2-3D-11701	11,7	12	102	55	40	2
M2-3D-11801	11,8	12	102	55	40	2
M2-3D-11901	11,9	12	102	55	40	2

HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

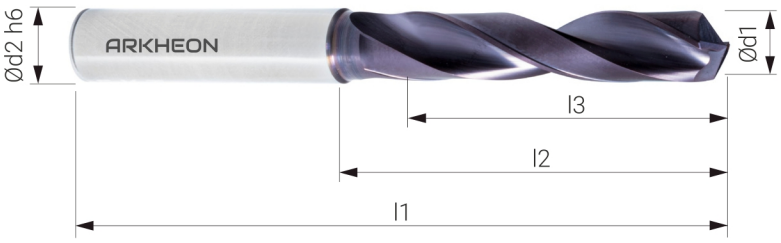
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 3xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-3D-12001	12	12	102	55	40	2
M2-3D-12101	12,1	14	107	60	43	2
M2-3D-12201	12,2	14	107	60	43	2
M2-3D-12301	12,3	14	107	60	43	2
M2-3D-12401	12,4	14	107	60	43	2
M2-3D-12501	12,5	14	107	60	43	2
M2-3D-12601	12,6	14	107	60	43	2
M2-3D-12701	12,7	14	107	60	43	2
M2-3D-12801	12,8	14	107	60	43	2
M2-3D-12901	12,9	14	107	60	43	2
M2-3D-13001	13	14	107	60	43	2
M2-3D-13101	13,1	14	107	60	43	2
M2-3D-13201	13,2	14	107	60	43	2
M2-3D-13301	13,3	14	107	60	43	2
M2-3D-13401	13,4	14	107	60	43	2
M2-3D-13501	13,5	14	107	60	43	2
M2-3D-13601	13,6	14	107	60	43	2
M2-3D-13701	13,7	14	107	60	43	2
M2-3D-13801	13,8	14	107	60	43	2
M2-3D-13901	13,9	14	107	60	43	2
M2-3D-14001	14	14	107	60	43	2
M2-3D-14101	14,1	16	115	65	45	2
M2-3D-14201	14,2	16	115	65	45	2
M2-3D-14301	14,3	16	115	65	45	2

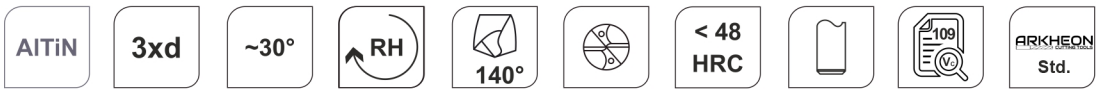
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

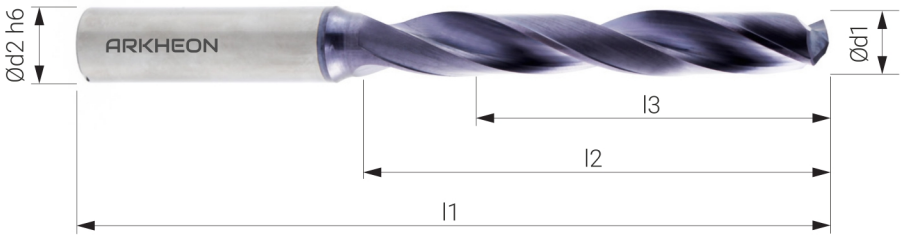
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-3D-14501	14,5	16	115	65	45	2
M2-3D-14601	14,6	16	115	65	45	2
M2-3D-14701	14,7	16	115	65	45	2
M2-3D-14801	14,8	16	115	65	45	2
M2-3D-14901	14,9	16	115	65	45	2
M2-3D-15001	15	16	115	65	45	2
M2-3D-15101	15,1	16	115	65	45	2
M2-3D-15201	15,2	16	115	65	45	2
M2-3D-15301	15,3	16	115	65	45	2
M2-3D-15401	15,4	16	115	65	45	2
M2-3D-15501	15,5	16	115	65	45	2
M2-3D-15601	15,6	16	115	65	45	2
M2-3D-15701	15,7	16	115	65	45	2
M2-3D-15801	15,8	16	115	65	45	2
M2-3D-15901	15,9	16	115	65	45	2
M2-3D-16001	16	16	115	65	45	2
M2-3D-16501	16,5	18	123	73	51	2
M2-3D-17001	17	18	123	73	51	2
M2-3D-17501	17,5	18	123	73	51	2
M2-3D-18001	18	18	123	73	51	2
M2-3D-18501	18,5	20	131	79	55	2
M2-3D-18801	18,8	20	131	79	55	2
M2-3D-19001	19	20	131	79	55	2
M2-3D-19501	19,5	20	131	79	55	2
M2-3D-20001	20	20	131	79	55	2

HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

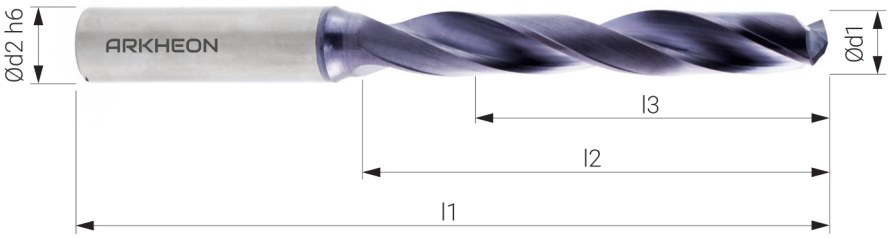
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 5xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-5D-03001	3,0	6	66	28	23	2
M1-5D-03101	3,1	6	66	28	23	2
M1-5D-03201	3,2	6	66	28	23	2
M1-5D-03301	3,3	6	66	28	23	2
M1-5D-03401	3,4	6	66	28	23	2
M1-5D-03501	3,5	6	66	28	23	2
M1-5D-03601	3,6	6	66	28	23	2
M1-5D-03651	3,65	6	66	28	23	2
M1-5D-03701	3,7	6	66	28	23	2
M1-5D-03801	3,8	6	74	36	29	2
M1-5D-03901	3,9	6	74	36	29	2
M1-5D-04001	4	6	74	36	29	2
M1-5D-04101	4,1	6	74	36	29	2
M1-5D-04201	4,2	6	74	36	29	2
M1-5D-04301	4,3	6	74	36	29	2
M1-5D-04401	4,4	6	74	36	29	2
M1-5D-04501	4,5	6	74	36	29	2
M1-5D-04601	4,6	6	74	36	29	2
M1-5D-04701	4,7	6	74	36	29	2
M1-5D-04801	4,8	6	82	44	35	2
M1-5D-04901	4,9	6	82	44	35	2
M1-5D-05001	5,0	6	82	44	35	2
M1-5D-05101	5,1	6	82	44	35	2
M1-5D-05201	5,2	6	82	44	35	2

HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

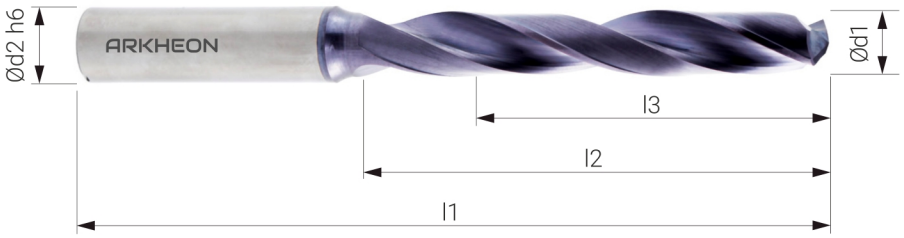
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 5xd | ~30° | RH | 140° | < 48 HRC | 108 | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-5D-05301	5,3	6	82	44	35	2
M1-5D-05401	5,4	6	82	44	35	2
M1-5D-05501	5,5	6	82	44	35	2
M1-5D-05551	5,55	6	82	44	35	2
M1-5D-05601	5,6	6	82	44	35	2
M1-5D-05651	5,65	6	82	44	35	2
M1-5D-05701	5,7	6	82	44	35	2
M1-5D-05801	5,8	6	82	44	35	2
M1-5D-05901	5,9	6	82	44	35	2
M1-5D-06001	6	6	82	44	35	2
M1-5D-06101	6,1	8	91	53	43	2
M1-5D-06201	6,2	8	91	53	43	2
M1-5D-06301	6,3	8	91	53	43	2
M1-5D-06401	6,4	8	91	53	43	2
M1-5D-06501	6,5	8	91	53	43	2
M1-5D-06601	6,6	8	91	53	43	2
M1-5D-06701	6,7	8	91	53	43	2
M1-5D-06801	6,8	8	91	53	43	2
M1-5D-06901	6,9	8	91	53	43	2
M1-5D-07001	7	8	91	53	43	2
M1-5D-07101	7,1	8	91	53	43	2
M1-5D-07201	7,2	8	91	53	43	2
M1-5D-07301	7,3	8	91	53	43	2
M1-5D-07401	7,4	8	91	53	43	2

HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

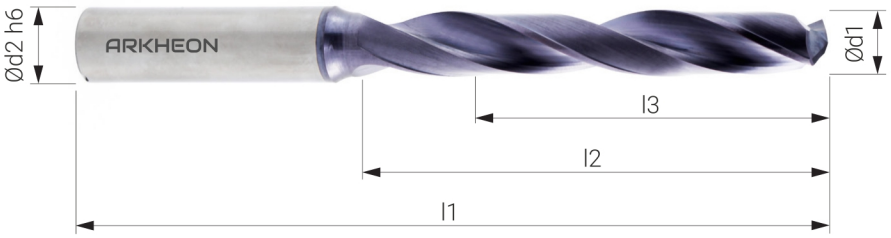
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 5xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-5D-07501	7,5	8	91	53	43	2
M1-5D-07551	7,55	8	91	53	43	2
M1-5D-07601	7,6	8	91	53	43	2
M1-5D-07701	7,7	8	91	53	43	2
M1-5D-07801	7,8	8	91	53	43	2
M1-5D-07901	7,9	8	91	53	43	2
M1-5D-08001	8	8	91	53	43	2
M1-5D-08101	8,1	10	103	61	49	2
M1-5D-08201	8,2	10	103	61	49	2
M1-5D-08301	8,3	10	103	61	49	2
M1-5D-08401	8,4	10	103	61	49	2
M1-5D-08501	8,5	10	103	61	49	2
M1-5D-08601	8,6	10	103	61	49	2
M1-5D-08701	8,7	10	103	61	49	2
M1-5D-08801	8,8	10	103	61	49	2
M1-5D-08901	8,9	10	103	61	49	2
M1-5D-09001	9	10	103	61	49	2
M1-5D-09101	9,1	10	103	61	49	2
M1-5D-09201	9,2	10	103	61	49	2
M1-5D-09301	9,3	10	103	61	49	2
M1-5D-09401	9,4	10	103	61	49	2
M1-5D-09501	9,5	10	103	61	49	2
M1-5D-09551	9,55	10	103	61	49	2
M1-5D-09601	9,6	10	103	61	49	2

HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

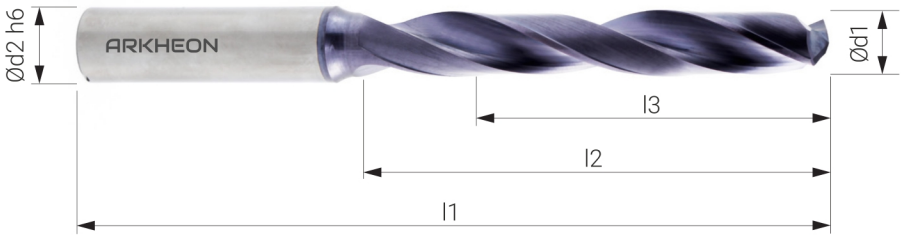
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 5xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-5D-09701	9,7	10	103	61	49	2
M1-5D-09801	9,8	10	103	61	49	2
M1-5D-09901	9,9	10	103	61	49	2
M1-5D-10001	10	10	103	61	49	2
M1-5D-10101	10,1	12	118	71	56	2
M1-5D-10201	10,2	12	118	71	56	2
M1-5D-10301	10,3	12	118	71	56	2
M1-5D-10401	10,4	12	118	71	56	2
M1-5D-10501	10,5	12	118	71	56	2
M1-5D-10601	10,6	12	118	71	56	2
M1-5D-10701	10,7	12	118	71	56	2
M1-5D-10801	10,8	12	118	71	56	2
M1-5D-10901	10,9	12	118	71	56	2
M1-5D-11001	11	12	118	71	56	2
M1-5D-11101	11,1	12	118	71	56	2
M1-5D-11201	11,2	12	118	71	56	2
M1-5D-11301	11,3	12	118	71	56	2
M1-5D-11401	11,4	12	118	71	56	2
M1-5D-11501	11,5	12	118	71	56	2
M1-5D-11551	11,55	12	118	71	56	2
M1-5D-11601	11,6	12	118	71	56	2
M1-5D-11701	11,7	12	118	71	56	2
M1-5D-11801	11,8	12	118	71	56	2
M1-5D-11901	11,9	12	118	71	56	2

HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

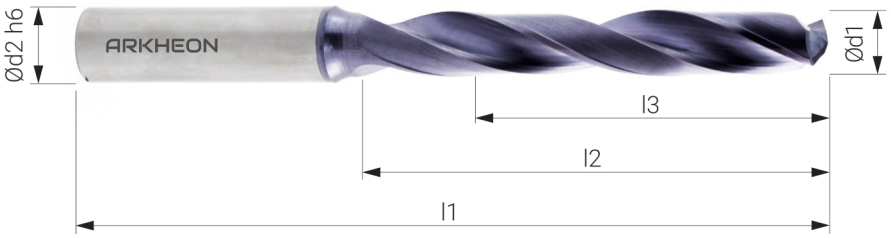
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 5xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-5D-12001	12	12	118	71	56	2
M1-5D-12101	12,1	14	124	77	60	2
M1-5D-12201	12,2	14	124	77	60	2
M1-5D-12301	12,3	14	124	77	60	2
M1-5D-12401	12,4	14	124	77	60	2
M1-5D-12501	12,5	14	124	77	60	2
M1-5D-12601	12,6	14	124	77	60	2
M1-5D-12701	12,7	14	124	77	60	2
M1-5D-12801	12,8	14	124	77	60	2
M1-5D-12901	12,9	14	124	77	60	2
M1-5D-13001	13	14	124	77	60	2
M1-5D-13101	13,1	14	124	77	60	2
M1-5D-13201	13,2	14	124	77	60	2
M1-5D-13301	13,3	14	124	77	60	2
M1-5D-13401	13,4	14	124	77	60	2
M1-5D-13501	13,5	14	124	77	60	2
M1-5D-13601	13,6	14	124	77	60	2
M1-5D-13701	13,7	14	124	77	60	2
M1-5D-13801	13,8	14	124	77	60	2
M1-5D-13901	13,9	14	124	77	60	2
M1-5D-14001	14	14	124	77	60	2
M1-5D-14101	14,1	16	133	83	63	2
M1-5D-14201	14,2	16	133	83	63	2
M1-5D-14301	14,3	16	133	83	63	2
M1-5D-14401	14,4	16	133	83	63	2

HA HB

Solid Carbide Drills, Without Internal Coolant



Application Range

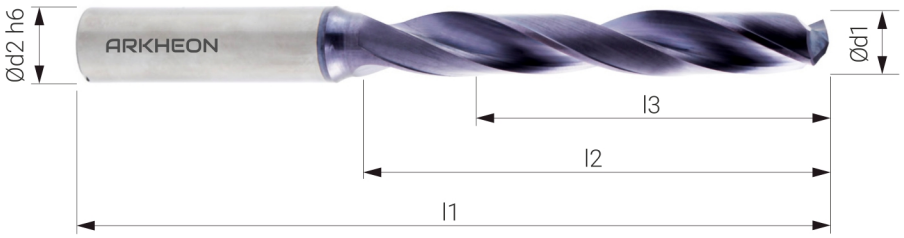
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 5xd | ~30° | RH | 140° | < 48 HRC | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M1-5D-14501	14,5	16	133	83	63	2
M1-5D-14601	14,6	16	133	83	63	2
M1-5D-14701	14,7	16	133	83	63	2
M1-5D-14801	14,8	16	133	83	63	2
M1-5D-14901	14,9	16	133	83	63	2
M1-5D-15001	15	16	133	83	63	2
M1-5D-15101	15,1	16	133	83	63	2
M1-5D-15201	15,2	16	133	83	63	2
M1-5D-15301	15,3	16	133	83	63	2
M1-5D-15401	15,4	16	133	83	63	2
M1-5D-15501	15,5	16	133	83	63	2
M1-5D-15601	15,6	16	133	83	63	2
M1-5D-15701	15,7	16	133	83	63	2
M1-5D-15801	15,8	16	133	83	63	2
M1-5D-15901	15,9	16	133	83	63	2
M1-5D-16001	16	16	133	83	63	2
M1-5D-16501	16,5	18	143	93	71	2
M1-5D-17001	17	18	143	93	71	2
M1-5D-17501	17,5	18	143	93	71	2
M1-5D-18001	18	18	143	93	71	2
M1-5D-18501	18,5	20	153	101	77	2
M1-5D-18801	18,8	20	153	101	77	2
M1-5D-19001	19	20	153	101	77	2
M1-5D-19501	19,5	20	153	101	77	2
M1-5D-20001	20	20	153	101	77	2

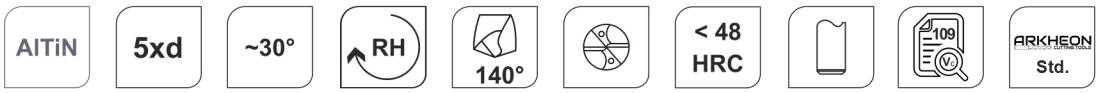
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

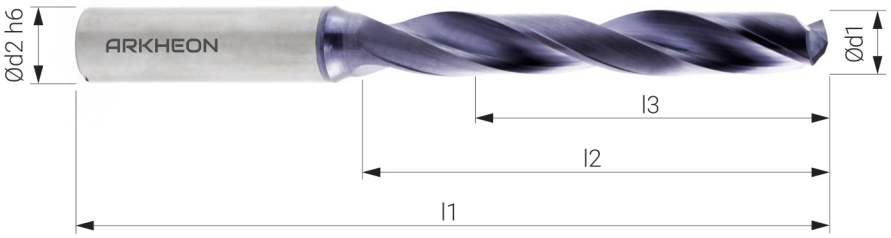
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-5D-03001	3	6	66	28	23	2
M2-5D-03101	3,1	6	66	28	23	2
M2-5D-03201	3,2	6	66	28	23	2
M2-5D-03301	3,3	6	66	28	23	2
M2-5D-03401	3,4	6	66	28	23	2
M2-5D-03501	3,5	6	66	28	23	2
M2-5D-03601	3,6	6	66	28	23	2
M2-5D-03651	3,65	6	66	28	23	2
M2-5D-03701	3,7	6	66	28	23	2
M2-5D-03801	3,8	6	74	36	29	2
M2-5D-03901	3,9	6	74	36	29	2
M2-5D-04001	4	6	74	36	29	2
M2-5D-04101	4,1	6	74	36	29	2
M2-5D-04201	4,2	6	74	36	29	2
M2-5D-04301	4,3	6	74	36	29	2
M2-5D-04401	4,4	6	74	36	29	2
M2-5D-04501	4,5	6	74	36	29	2
M2-5D-04601	4,6	6	74	36	29	2
M2-5D-04701	4,7	6	74	36	35	2
M2-5D-04801	4,8	6	82	44	35	2
M2-5D-04901	4,9	6	82	44	35	2
M2-5D-05001	5	6	82	44	35	2
M2-5D-05101	5,1	6	82	44	35	2
M2-5D-05201	5,2	6	82	44	35	2

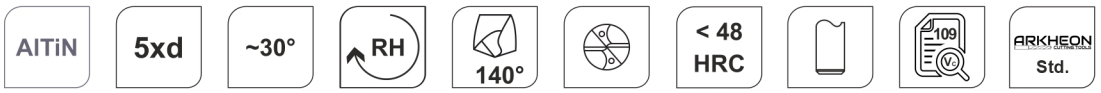
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

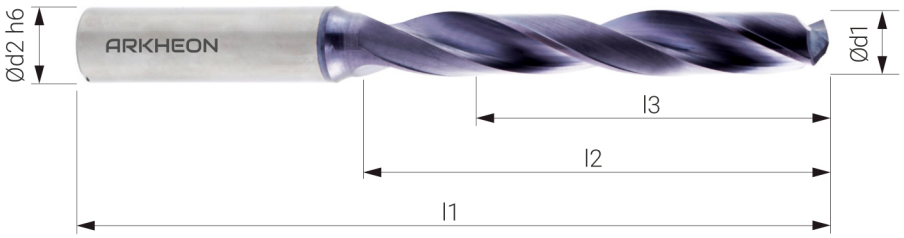
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-5D-05301	5,3	6	82	44	35	2
M2-5D-05401	5,4	6	82	44	35	2
M2-5D-05501	5,5	6	82	44	35	2
M2-5D-05551	5,55	6	82	44	35	2
M2-5D-05601	5,6	6	82	44	35	2
M2-5D-05651	5,65	6	82	44	35	2
M2-5D-05701	5,7	6	82	44	35	2
M2-5D-05801	5,8	6	82	44	35	2
M2-5D-05901	5,9	6	82	44	35	2
M2-5D-06001	6	6	82	44	35	2
M2-5D-06101	6,1	8	91	53	43	2
M2-5D-06201	6,2	8	91	53	43	2
M2-5D-06301	6,3	8	91	53	43	2
M2-5D-06401	6,4	8	91	53	43	2
M2-5D-06501	6,5	8	91	53	43	2
M2-5D-06601	6,6	8	91	53	43	2
M2-5D-06701	6,7	8	91	53	43	2
M2-5D-06801	6,8	8	91	53	43	2
M2-5D-06901	6,9	8	91	53	43	2
M2-5D-07001	7	8	91	53	43	2
M2-5D-07101	7,1	8	91	53	43	2
M2-5D-07201	7,2	8	91	53	43	2
M2-5D-07301	7,3	8	91	53	43	2
M2-5D-07401	7,4	8	91	53	43	2

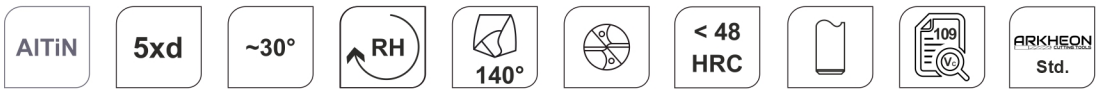
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

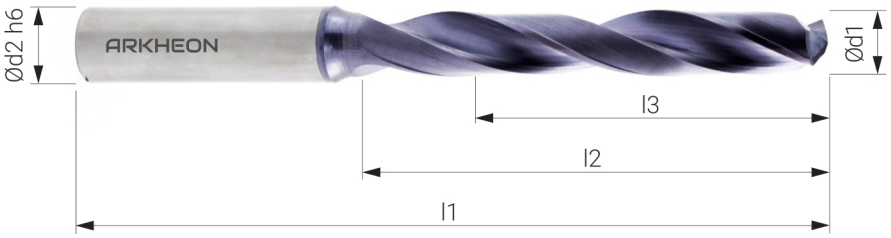
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-5D-07501	7,5	8	91	53	43	2
M2-5D-07551	7,55	8	91	53	43	2
M2-5D-07601	7,6	8	91	53	43	2
M2-5D-07701	7,7	8	91	53	43	2
M2-5D-07801	7,8	8	91	53	43	2
M2-5D-07901	7,9	8	91	53	43	2
M2-5D-08001	8	8	91	53	43	2
M2-5D-08101	8,1	10	103	61	49	2
M2-5D-08201	8,2	10	103	61	49	2
M2-5D-08301	8,3	10	103	61	49	2
M2-5D-08401	8,4	10	103	61	49	2
M2-5D-08501	8,5	10	103	61	49	2
M2-5D-08601	8,6	10	103	61	49	2
M2-5D-08701	8,7	10	103	61	49	2
M2-5D-08801	8,8	10	103	61	49	2
M2-5D-08901	8,9	10	103	61	49	2
M2-5D-09001	9	10	103	61	49	2
M2-5D-09101	9,1	10	103	61	49	2
M2-5D-09201	9,2	10	103	61	49	2
M2-5D-09301	9,3	10	103	61	49	2
M2-5D-09401	9,4	10	103	61	49	2
M2-5D-09501	9,5	10	103	61	49	2
M2-5D-09551	9,55	10	103	61	49	2
M2-5D-09601	9,6	10	103	61	49	2

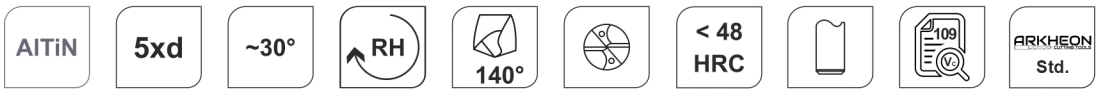
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

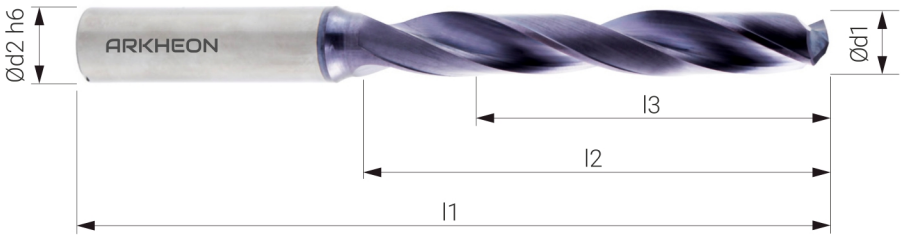
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-5D-09701	9,7	10	103	61	49	2
M2-5D-09801	9,8	10	103	61	49	2
M2-5D-09901	9,9	10	103	61	49	2
M2-5D-10001	10	10	103	61	49	2
M2-5D-10101	10,1	12	118	71	56	2
M2-5D-10201	10,2	12	118	71	56	2
M2-5D-10301	10,3	12	118	71	56	2
M2-5D-10401	10,4	12	118	71	56	2
M2-5D-10501	10,5	12	118	71	56	2
M2-5D-10601	10,6	12	118	71	56	2
M2-5D-10701	10,7	12	118	71	56	2
M2-5D-10801	10,8	12	118	71	56	2
M2-5D-10901	10,9	12	118	71	56	2
M2-5D-11001	11	12	118	71	56	2
M2-5D-11101	11,1	12	118	71	56	2
M2-5D-11201	11,2	12	118	71	56	2
M2-5D-11301	11,3	12	118	71	56	2
M2-5D-11401	11,4	12	118	71	56	2
M2-5D-11501	11,5	12	118	71	56	2
M2-5D-11551	11,55	12	118	71	56	2
M2-5D-11601	11,6	12	118	71	56	2
M2-5D-11701	11,7	12	118	71	56	2
M2-5D-11801	11,8	12	118	71	56	2
M2-5D-11901	11,9	12	118	71	56	2

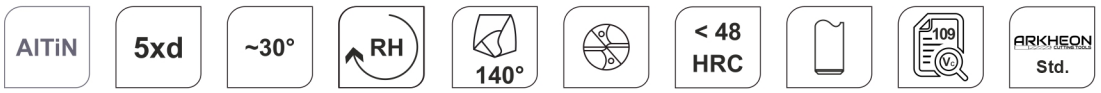
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

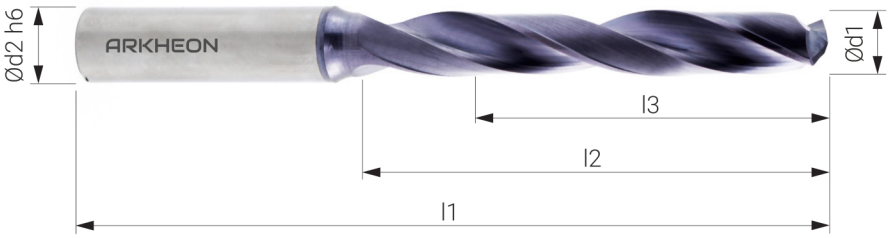
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-5D-12001	12	12	118	71	56	2
M2-5D-12101	12,1	14	124	77	60	2
M2-5D-12201	12,2	14	124	77	60	2
M2-5D-12301	12,3	14	124	77	60	2
M2-5D-12401	12,4	14	124	77	60	2
M2-5D-12501	12,5	14	124	77	60	2
M2-5D-12601	12,6	14	124	77	60	2
M2-5D-12701	12,7	14	124	77	60	2
M2-5D-12801	12,8	14	124	77	60	2
M2-5D-12901	12,9	14	124	77	60	2
M2-5D-13001	13	14	124	77	60	2
M2-5D-13101	13,1	14	124	77	60	2
M2-5D-13201	13,2	14	124	77	60	2
M2-5D-13301	13,3	14	124	77	60	2
M2-5D-13401	13,4	14	124	77	60	2
M2-5D-13501	13,5	14	124	77	60	2
M2-5D-13601	13,6	14	124	77	60	2
M2-5D-13701	13,7	14	124	77	60	2
M2-5D-13801	13,8	14	124	77	60	2
M2-5D-13901	13,9	14	124	77	60	2
M2-5D-14001	14	14	124	77	60	2
M2-5D-14101	14,1	16	133	83	63	2
M2-5D-14201	14,2	16	133	83	63	2
M2-5D-14301	14,3	16	133	83	63	2
M2-5D-14401	14,4	16	133	83	63	2

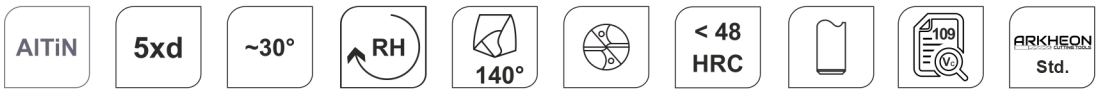
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

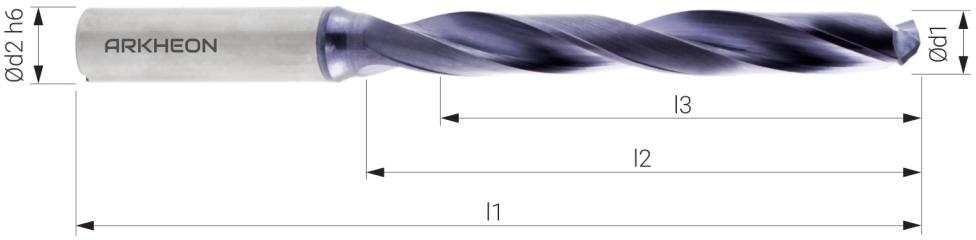
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-5D-14501	14,5	16	133	83	63	2
M2-5D-14601	14,6	16	133	83	63	2
M2-5D-14701	14,7	16	133	83	63	2
M2-5D-14801	14,8	16	133	83	63	2
M2-5D-14901	14,9	16	133	83	63	2
M2-5D-15001	15	16	133	83	63	2
M2-5D-15101	15,1	16	133	83	63	2
M2-5D-15201	15,2	16	133	83	63	2
M2-5D-15301	15,3	16	133	83	63	2
M2-5D-15401	15,4	16	133	83	63	2
M2-5D-15501	15,5	16	133	83	63	2
M2-5D-15601	15,6	16	133	83	63	2
M2-5D-15701	15,7	16	133	83	63	2
M2-5D-15801	15,8	16	133	83	63	2
M2-5D-15901	15,9	16	133	83	63	2
M2-5D-16001	16	16	133	83	63	2
M2-5D-16501	16,5	18	143	93	71	2
M2-5D-17001	17	18	143	93	71	2
M2-5D-17501	17,5	18	143	93	71	2
M2-5D-18001	18	18	143	93	71	2
M2-5D-18501	18,5	20	153	101	77	2
M2-5D-18801	18,8	20	153	101	77	2
M2-5D-19001	19	20	153	101	77	2
M2-5D-19501	19,5	20	153	101	77	2
M2-5D-20001	20	20	153	101	77	2

HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

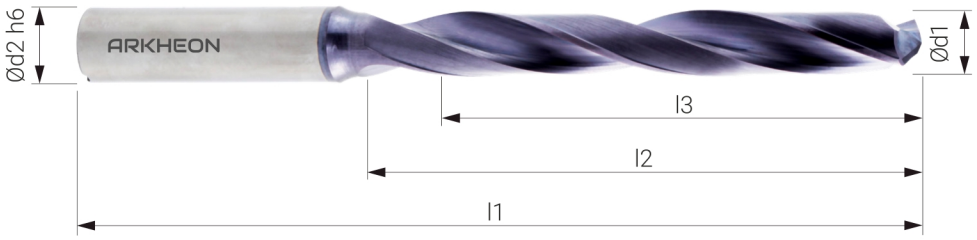
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 8xd | ~30° | RH | 140° | < 48 HRC | 110 | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-8D-04001	4	6	85	45	38	2
M2-8D-04101	4,1	6	85	45	38	2
M2-8D-04201	4,2	6	85	45	38	2
M2-8D-04301	4,2	6	85	45	38	2
M2-8D-04401	4,4	6	85	45	38	2
M2-8D-04501	4,5	6	85	45	38	2
M2-8D-04601	4,6	6	85	45	38	2
M2-8D-04701	4,7	6	85	45	38	2
M2-8D-04801	4,8	6	97	57	49	2
M2-8D-04901	4,9	6	97	57	49	2
M2-8D-05001	5	6	97	57	49	2
M2-8D-05101	5,1	6	97	57	49	2
M2-8D-05201	5,2	6	97	57	49	2
M2-8D-05301	5,3	6	97	57	49	2
M2-8D-05401	5,4	6	97	57	49	2
M2-8D-05501	5,5	6	97	57	49	2
M2-8D-05601	5,6	6	97	57	49	2
M2-8D-05701	5,7	6	97	57	49	2
M2-8D-05801	5,8	6	97	57	49	2
M2-8D-05901	5,9	6	97	57	49	2
M2-8D-06001	6	6	97	57	49	2
M2-8D-06101	6,1	8	106	66	57	2
M2-8D-06201	6,2	8	106	66	57	2
M2-8D-06301	6,3	8	106	66	57	2

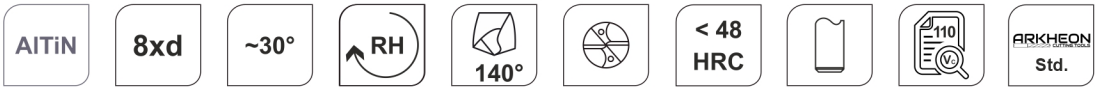
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

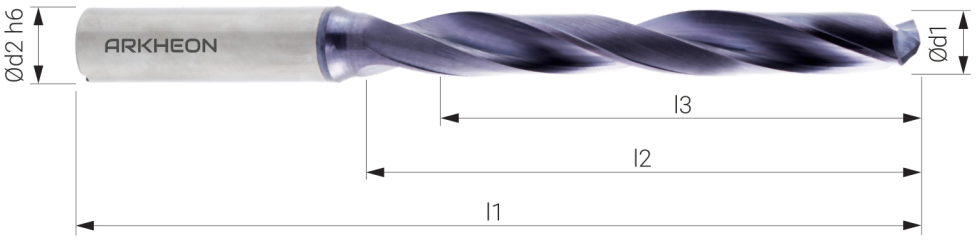
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-8D-06401	6,4	8	106	66	57	2
M2-8D-06501	6,5	8	106	66	57	2
M2-8D-06601	6,6	8	106	66	57	2
M2-8D-06701	6,7	8	106	66	57	2
M2-8D-06801	6,8	8	106	66	57	2
M2-8D-06901	6,9	8	106	66	57	2
M2-8D-07001	7	8	106	66	57	2
M2-8D-07101	7,1	8	116	76	66	2
M2-8D-07201	7,2	8	116	76	66	2
M2-8D-07301	7,3	8	116	76	66	2
M2-8D-07401	7,4	8	116	76	66	2
M2-8D-07501	7,5	8	116	76	66	2
M2-8D-07601	7,6	8	116	76	66	2
M2-8D-07701	7,7	8	116	76	66	2
M2-8D-07801	7,8	8	116	76	66	2
M2-8D-07901	7,9	8	116	76	66	2
M2-8D-08001	8	8	116	76	66	2
M2-8D-08101	8,1	10	139	95	85	2
M2-8D-08201	8,2	10	139	95	85	2
M2-8D-08301	8,3	10	139	95	85	2
M2-8D-08401	8,4	10	139	95	85	2
M2-8D-08501	8,5	10	139	95	85	2
M2-8D-08601	8,6	10	139	95	85	2
M2-8D-08701	8,7	10	139	95	85	2

HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

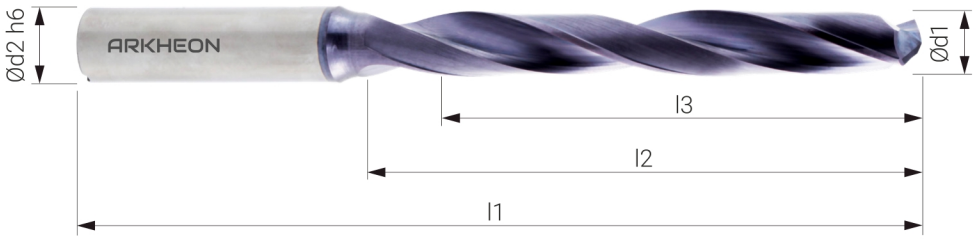
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite

AlTiN | 8xd | ~30° | RH | 140° | < 48 HRC | 110 | ARKHEON Std.

Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-8D-08801	8,8	10	139	95	85	2
M2-8D-08901	8,9	10	139	95	85	2
M2-8D-09001	9	10	139	95	85	2
M2-8D-09101	9,1	10	139	95	85	2
M2-8D-09201	9,2	10	139	95	85	2
M2-8D-09301	9,3	10	139	95	85	2
M2-8D-09401	9,4	10	139	95	85	2
M2-8D-09501	9,5	10	139	95	85	2
M2-8D-09601	9,6	10	139	95	85	2
M2-8D-09701	9,7	10	139	95	85	2
M2-8D-09801	9,8	10	139	95	85	2
M2-8D-09901	9,9	10	139	95	85	2
M2-8D-10001	10	10	139	95	85	2
M2-8D-10101	10,1	12	163	114	96	2
M2-8D-10201	10,2	12	163	114	96	2
M2-8D-10301	10,3	12	163	114	96	2
M2-8D-10401	10,4	12	163	114	96	2
M2-8D-10501	10,5	12	163	114	96	2
M2-8D-10601	10,6	12	163	114	96	2
M2-8D-10701	10,7	12	163	114	96	2
M2-8D-10801	10,8	12	163	114	96	2
M2-8D-10901	10,9	12	163	114	96	2
M2-8D-11001	11	12	163	114	96	2
M2-8D-11101	11,1	12	163	114	96	2

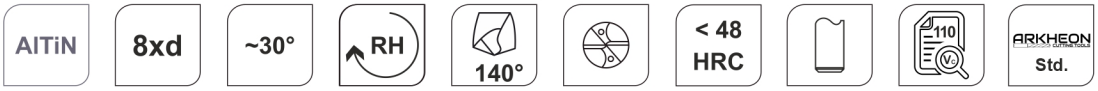
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

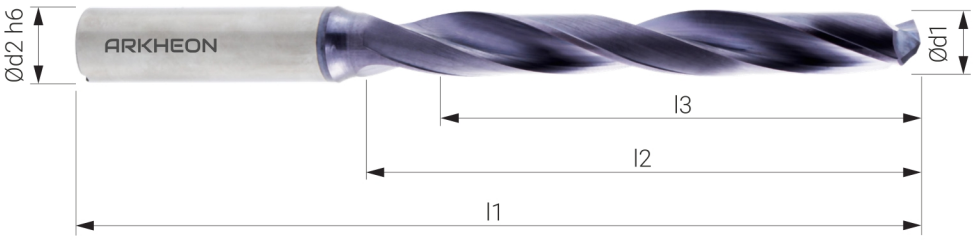
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-8D-11201	11,2	12	163	114	96	2
M2-8D-11301	11,3	12	163	114	96	2
M2-8D-11401	11,4	12	163	114	96	2
M2-8D-11501	11,5	12	163	114	96	2
M2-8D-11601	11,6	12	163	114	96	2
M2-8D-11701	11,7	12	163	114	96	2
M2-8D-11801	11,8	12	163	114	96	2
M2-8D-11901	11,9	12	163	114	96	2
M2-8D-12001	12	12	163	114	96	2
M2-8D-12101	12,1	14	182	133	115	2
M2-8D-12301	12,3	14	182	133	115	2
M2-8D-12501	12,5	14	182	133	115	2
M2-8D-12701	12,7	14	182	133	115	2
M2-8D-12901	12,9	14	182	133	115	2
M2-8D-13001	13	14	182	133	115	2
M2-8D-13101	13,1	14	182	133	115	2
M2-8D-13301	13,3	14	182	133	115	2
M2-8D-13501	13,5	14	182	133	115	2
M2-8D-13701	13,7	14	182	133	115	2
M2-8D-13901	13,9	14	182	133	115	2
M2-8D-14001	14	14	182	133	115	2
M2-8D-14101	14,1	16	204	152	130	2
M2-8D-14201	14,3	16	204	152	130	2
M2-8D-14501	14,5	16	204	152	130	2

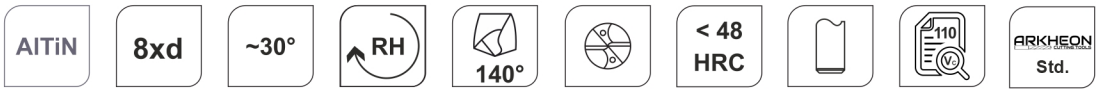
HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

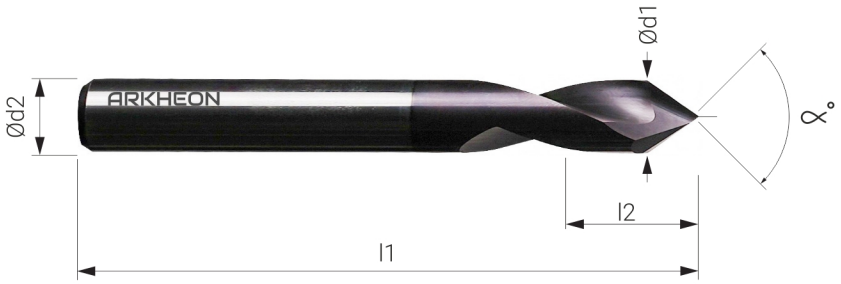
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	l3	z
M2-8D-14701	14,7	16	204	152	130	2
M2-8D-14901	14,9	16	204	152	130	2
M2-8D-15001	15	16	204	152	130	2
M2-8D-15101	15,1	16	204	152	130	2
M2-8D-15301	15,3	16	204	152	130	2
M2-8D-15501	15,5	16	204	152	130	2
M2-8D-15701	15,7	16	204	152	130	2
M2-8D-15901	15,9	16	204	152	130	2
M2-8D-16001	16	16	204	152	130	2
M2-8D-16501	16,5	18	223	171	144	2
M2-8D-11701	17	18	223	171	144	2
M2-8D-17501	17,5	18	223	171	144	2
M2-8D-11801	18	18	223	171	144	2
M2-8D-18551	18,5	20	244	190	160	2
M2-8D-19001	19	20	244	190	160	2
M2-8D-19551	19,5	20	244	190	160	2
M2-8D-20001	20	20	244	190	160	2

HA HB

Solid Carbide Drills, With Internal Coolant



Application Range

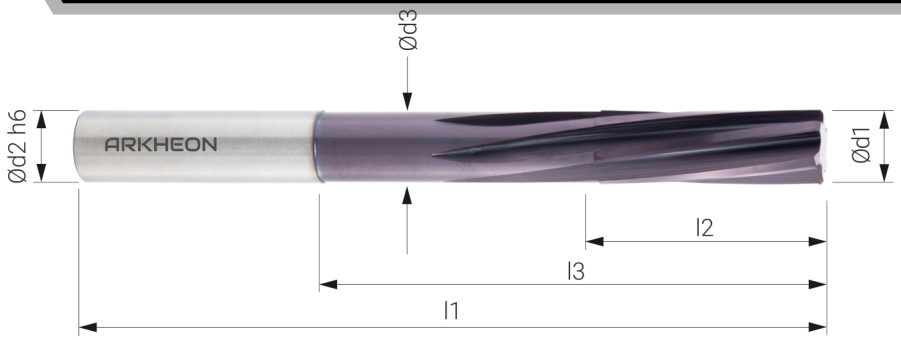
* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 m7	d2 h6	l1	l2	α°
NC-S-050901	5	5	50	10	90°
NC-S-051201	5	5	50	10	120°
NC-S-060901	6	6	57	15	90°
NC-S-061201	6	6	57	15	120°
NC-S-080901	8	8	63	17	90°
NC-S-081201	8	8	63	17	120°
NC-S-100901	10	10	72	20	90°
NC-S-101201	10	10	72	20	120°
NC-S-120901	12	12	83	25	90°
NC-S-121201	12	12	83	25	120°
NC-S-140901	14	14	83	30	90°
NC-S-141201	14	14	83	30	120°
NC-S-160901	16	16	92	35	90°
NC-S-161201	16	16	92	35	120°
NC-S-180901	18	18	92	35	90°
NC-S-181201	18	18	92	35	120°
NC-S-200901	20	20	104	40	90°
NC-S-201201	20	20	104	40	120°



Solid Carbide Drills, Without Internal Coolant



Application Range

* Unalloyed Steels
* Machining Steels
* Low Alloy Steels
* Stainless Steels
* Heat Resistant Materials
* Titanium and Titanium Alloys
* Cast Iron
* Hardened Materials
* Aluminium Alloys
* Copper and Copper Alloys
* Plastics
* Graphite



Order Code	d1 H7	l1	l2	l3	d3	d2 h6	Z
700-H7-04061	4	75	20	43	3,7	4	6
700-H7-05061	5	86	24	54	4,7	5	6
700-H7-06061	6	93	26	57	5,6	6	6
700-H7-08061	8	117	33	75	7,6	8	6
700-H7-10061	10	133	38	87	9,6	10	6
700-H7-12061	12	151	44	105	11,6	12	6
700-H7-14061	14	160	47	112	13,6	14	6
700-H7-16061	16	160	52	112	15,6	16	6
700-H7-18061	18	160	56	112	17,6	18	6
700-H7-20061	20	160	60	112	19,6	20	6

HA HB

Calculation Of Cutting Speed And Feed Rate For Ball Nose End Mills

Cutting Speed

$$V_c = \frac{\pi \times d_1 \times n}{1000}$$

Feed Rate For End Mills

$$V_f = n \times f_z \times f_n$$

$$n = \frac{1000 \times V_c}{\pi \times d_1}$$

V_C : Cutting speed (m / min)
d_1 : End Mill diameter (mm)
n : Revolution (rpm)
V_f : Feed speed (mm / min)
f_z : Feed per tooth (mm / tooth)
f_n : Number of teeth

General recommendations for solid carbide end mills

- In case of vibration, reduce feed and speed.
- When slotting Stainless Steel it may be necassary to reduce spindle and feed per tooth.
- For side milling, modify feed to obtain required finish quality.
- Use high presicion machine set up for rigidity.
- For Ball Nose End Mills with 4 cutting edge use following recommendation is usefull if surface have over 30 degree, increase feedrate up to 30%.

HA HB

Solid Carbide End Mils Recommended Cutting Data

ISO		P										
Material		Non-alloy steel and cast steel, free cutting steel					Low alloy steel and cast steel (less than)		High alloy steel and cast steel			
		< 0.25 %C	< 0.25 %C	< 0.55 %C	< 0.55 %C	≥ 0.55 %C						
Condition		Annealed	Annealed	Quenched and tempered	Annealed	Quenched and tempered	Annealed	Quenched and tempered	Annealed	Quenched and tempered		
Tensile Strenth [N/mm^2]		420	650	850	750	1000	600	930	1000	1200	680	1100
Hardness HB		125	190	250	220	300	200	275	300	350	200	325
Speed (m/min)	V min.	210	160	140	140	120	130	100	110	120	110	65
	V max.	230	190	150	150	130	150	110	120	130	130	70

ISO		M			ISO		K					
Material		Stainless steel and Cast Steel			Material		Cast Iron Nodular (GGG)		Grey Cast Iron (GG)		Malleable Cast Iron	
Condition		Ferritic / Martensitic	Martensitic	Austenitic	Condition		Ferritic Pearlitic	Pearlitic	Ferritic	Pearlitic	Ferritic	Pearlitic
Tensile Strenth [N/mm^2]		680	820	600	Tensile Strenth [N/mm^2]							
Hardness HB		200	240	180	Hardness HB		180	260	160	250	130	230
Speed (m/min)	V min.	100	60	70	Speed (m/min)	V min.	70	110	130	70	130	110
	V max.	170	150	100		V max.	220	200	230	230	230	200

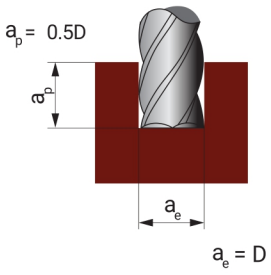
ISO		N							
Material		Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper Alloys		
				≤ 12% Si		>12% Si	>1% Pb		
Condition		Not cureable	Cured	Not cureable	Cured	Quenched and tempered	High Temperature	Brass	Electrolitic copper
Tensile Strenth [N/mm^2]									
Hardness HB		60	100	75	90	130	110	90	100
Speed (m/min)	V min.	650	600	650	600	250	310	310	220
	V max.	700	690	700	690	280	350	350	250

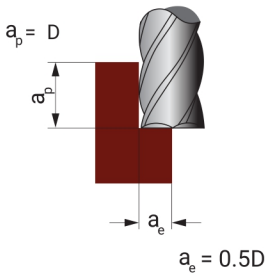
ISO		S						
Material		High Temp. Alloys					Titanium an Ti Alloys	
		Fe Based		Fe Based				
Condition		Annealed	Cured	Annealed	Cured	Cast		Alpha+beta alloys cured
Tensile Strenth [N/mm^2]							RM400	RM1050
Hardness HB		200	280	250	350	320		
Speed (m/min)	V min.	20	20	20	20	30	30	30
	V max.	30	20	20	20	60	60	60

ISO		H			
Material		Hardened Steel		Chilled cast iron	Cast iron
		Hardened		Cast	Hardened
Condition		Annealed	Cured	Annealed	Cured
Tensile Strenth [N/mm^2]					
Hardness HB		55 HRC	60 HRC	400	55 HRC
Speed (m/min)	V min.	30	30	50	30
	V max.	40	30	60	40



Solid Carbide End Mills, Recommended Cutting Data





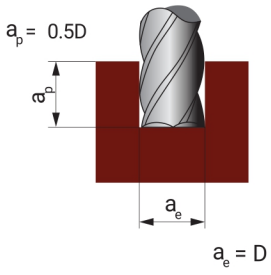
D (mm)	Slotting		Shouldering	
	Fz (min)	Fz (max)	Fz (min)	Fz (max)
1	0.003	0.005	0.003	0.007
2	0.005	0.030	0.005	0.033
3	0.010	0.040	0.010	0.044
4	0.015	0.045	0.015	0.049
5	0.025	0.050	0.020	0.055
6	0.030	0.060	0.025	0.066
8	0.030	0.080	0.030	0.088
10	0.035	0.090	0.030	0.098
12	0.040	0.100	0.035	0.108
14	0.050	0.110	0.040	0.119
16	0.050	0.120	0.050	0.130
18	0.050	0.130	0.050	0.140
20	0.050	0.150	0.050	0.170
25	0.060	0.150	0.060	0.180

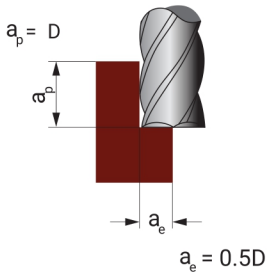
- For Slotting M type materials — a_{pmax} = 0.5D
- For Slotting S type materials — a_{pmax} = 0.25D
- For Finishing P type materials — a_{pmax} = 1.5D

Solid Carbide Roughing End Mills, Recommended Cutting Data Cutting Data

520FS Series

D (mm)	Slotting		Shouldering	
	Fz (min)	Fz (max)	Fz (min)	Fz (max)
1	0.006	0.01	0.006	0.014
2	0.01	0.06	0.01	0.066
3	0.02	0.08	0.02	0.088
4	0.03	0.09	0.03	0.098
5	0.04	0.10	0.04	0.110
6	0.05	0.12	0.05	0.132
8	0.06	0.16	0.06	0.176
10	0.06	0.18	0.06	0.196
12	0.07	0.20	0.07	0.216
14	0.08	0.22	0.08	0.238
16	0.10	0.24	0.10	0.260
18	0.10	0.26	0.10	0.280
20	0.10	0.30	0.10	0.340
25	0.12	0.30	0.12	0.360

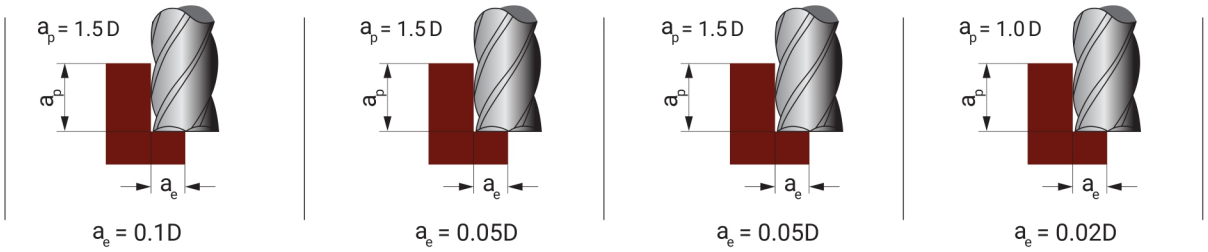




Solid Carbide End Mils, Recommended Cutting Data

570FS Series

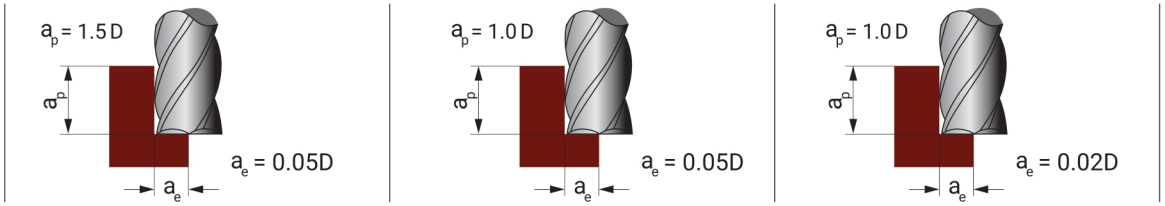
Material	Alloy Steels, Cast Iron		Alloy Steels Tempered Steels		Hardened Steels		High Hardened Steels	
Hardness	- HRC30		HRC30 - HRC45		HRC50 - HRC60		HRC50 - HRC65	
Strength	-850 N/mm²		850-1600 N/mm²		1600-2000 N/mm²		2000 N/mm²	
Diameter	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)
6	5600	1900	3900	1250	1600	200	1100	130
8	4200	1900	3000	1250	1200	200	900	130
10	3400	1900	2400	1250	1000	200	700	130
12	2800	1600	2000	1000	900	200	600	110
14	2450	1400	1750	900	900	175	525	90
16	2100	1200	1500	800	900	150	450	70
18	1900	1100	1350	750	700	135	375	65
20	1700	1000	1200	700	500	120	300	60



Solid Carbide Roughing End Mills, Short Recommended Cutting Data

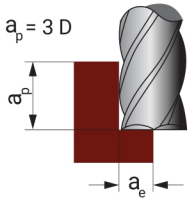
570FS Series For High Speed

Material	Hardened Steels Tempered Steels		Hardened Steels		High Hardened Steels	
Hardness	- HRC50		HRC50 - HRC60		HRC60 - HRC65	
Strength	-1600 N/mm²		1600-2000 N/mm²		2000 N/mm²	
Diameter	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)
6	17000	6100	8400	3000	4200	1500
8	13000	6100	6300	3000	3200	1500
10	10000	6000	5000	3000	2500	1500
12	8400	5000	4200	2500	2100	1300
14	7350	4500	3700	2200	1850	1150
16	6300	4000	3200	1900	1600	1000
18	5650	3550	2850	1685	1450	900
20	5000	3100	2500	1470	1300	800

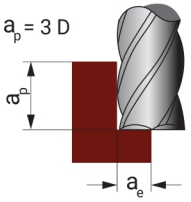


570FS Series For Long Version

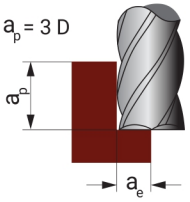
Material	Alloy Steels, Cast Iron		Alloy Steels Tempered Steels		Hardened Steels		High Hardened Steels	
Hardness	- HRC30		HRC30 - HRC45		HRC50 - HRC60		HRC50 - HRC65	
Strength	-850 N/mm^2		850-1600 N/mm^2		1600-2000 N/mm^2		2000 N/mm^2	
Diameter	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)
6	2400	500	1700	360	1400	250	1110	200
8	1800	460	1300	340	1100	240	850	180
10	1400	430	1000	300	900	230	680	160
12	1150	400	900	280	700	210	580	150
14	1025	375	775	260	625	190	515	140
16	900	350	650	240	550	170	450	130
18	800	325	557	220	500	160	390	125
20	700	300	500	200	450	150	330	120



a_e = 0.02D



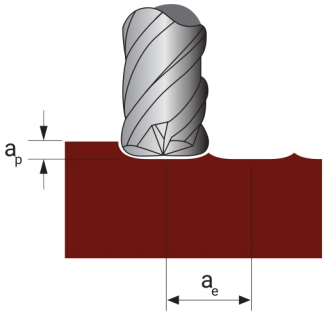
a_e = 0.01D



a_e = 0.005D

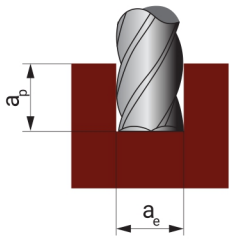
580FS Series

ISO	Materials		V_c (m/min)	$f_z$max. (mm)	$a_p$max. (mm)	$a_e$max. (mm)
P	Cold-extrusion steels, Magnetic soft iron	≤ 400 N/mm²	280 - 300	0.04 x d_1	0.06 x d_1	0.6 x d_1
	Free-cutting steels, General construction steels	≤ 600 N/mm²	260 - 280	0.04 x d_1	0.05 x d_1	0.6 x d_1
	Free-cutting steels, Construction steels, Alloyed steels, Steel casting	≤ 850 N/mm²	240 - 260	0.025 x d_1	0.04 x d_1	0.6 x d_1
	Cementation steels, Heat-treatable steels, Nitriding steels, Cold work steels	≤ 1100 N/mm²	220 - 240	0.025 x d_1	0.04 x d_1	0.6 x d_1
	Heat-treatable steels, Hot work steels, Nitriding steels, Hardened Steels up to 44 HRC, Cold work steels	≤ 1400 N/mm²	180 - 200	0.02 x d_1	0.035 x d_1	0.6 x d_1
	Hardened Steels > 44 - 45		120 - 160	0.015 x d_1	0.03 x d_1	0.6 x d_1
	Hardened Steels > 55 - 60		100 - 120	0.01 x d_1	0.025 x d_1	0.6 x d_1
	Hardened Steels > 60 - 63		80 - 100	0.01 x d_1	0.02 x d_1	0.6 x d_1
	Hardened Steels > 63 - 66		60 - 80	0.007 x d_1	0.015 x d_1	0.6 x d_1
K	Cast iron	GG20-GG30	180 - 200	0.05 x d_1	0.07 x d_1	0.6 x d_1
	Cast iron with nodular graphite	GGG40-GGG70	180 -200	0.05 x d_1	0.07 x d_1	0.6 x d_1
	Cast iron with vermicular graphite	GGV(80%Perlit)	160 - 180	0.04 x d_1	0.07 x d_1	0.6 x d_1
	Malleable cast iron		160 -180	0.04 x d_1	0.07 x d_1	0.6 x d_1
N	Copper-zinc alloys (brass, long-chipping)		180 - 200	0.04 x d_1	0.07 x d_1	0.6 x d_1
	Copper-zinc alloys (brass, short-chipping)		180 - 200	0.04 x d_1	0.07 x d_1	0.6 x d_1
	Copper-aluminium alloys (alubronze, long chipping),		160 - 180	0.04 x d_1	0.06 x d_1	0.6 x d_1
	Copper-tin alloys (bronze, long chipping)		160 - 180	0.04 x d_1	0.06 x d_1	0.6 x d_1
	Duroplastics (Short chipping)		200 - 220	0.05 x d_1	0.07 x d_1	0.6 x d_1
	Tungsten-copper alloys		100 - 140	0.035 x d_1	0.07 x d_1	0.6 x d_1



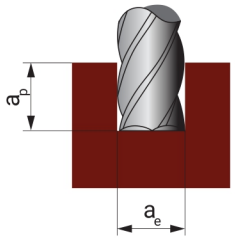
510RD Series

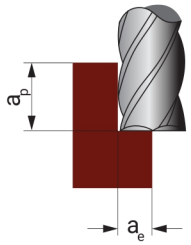
Material	Vc (m/min)	Slotting	Ø3		Ø4		Ø5		Ø6		Ø8		Ø10		Ø12		Ø16		Ø20	
			Medium	Heavy	Medium	Heavy	Medium	Heavy	Medium	Heavy	Medium	Heavy	Medium	Heavy	Medium	Heavy	Medium	Heavy	Medium	Heavy
Non-alloy steel and cast steel, free cutting steel ≥0.25%C.	200	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Non-alloy steel and cast steel, free cutting steel <0.55%C.	160	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Low alloy & cast steel (less than 5% of alloying elements).	130	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
High alloyed steel, cast steel and tool steel.	80	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Stainless steel and cast steel.	150	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Stainless steel and cast steel.	120	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Stainless steel and cast steel.	80	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Cast iron nodular (GGG).	180	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Grey cast iron (GG).	170	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Aluminum-cast, alloyed<12% Si.	770	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Aluminum-cast, alloyed >12% Si.	310	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Copper alloys.	270	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Titanium Ti alloys.	50	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Hardened steel.	40	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40
Hardened steel.	30	f_z (mm/tooth)	0.02	0.012	0.024	0.014	0.028	0.017	0.034	0.021	0.044	0.026	0.048	0.029	0.054	0.033	0.068	0.041	0.08	0.048
		a_p (mm)	3.20	6.40	5.00	7.00	6.00	8.40	7.00	9.80	9.00	12.60	11.00	15.40	13.00	18.20	17.00	23.80	21.00	29.40



560FS Series

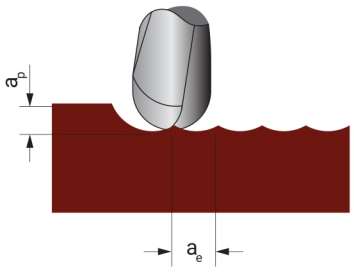
Material		Aluminium si < %10			Aluminium si > %10		
Vc (m / min)		700			300		
Slotting / Shouldering Processing		fz (mm/tooth)	ap (mm)	ae (mm)	fz (mm/tooth)	ap (mm)	ae (mm)
Ø4	Shouldering	0.040	4.0	2.0	0.032	4.0	2.0
	Sloting	0.032	4.0	-	0.026	4.0	-
Ø5	Shouldering	0.050	5.0	2.5	0.040	5.0	2.5
	Sloting	0.040	5.0	-	0.032	5.0	-
Ø6	Shouldering	0.060	6.0	3.0	0.048	6.0	3.0
	Sloting	0.048	6.0	-	0.038	6.0	-
Ø8	Shouldering	0.080	8.0	4.0	0.064	8.0	4.0
	Sloting	0.064	8.0	-	0.051	8.0	-
Ø10	Shouldering	0.100	10.0	5.0	0.080	10.0	5.0
	Sloting	0.080	10.0	-	0.064	10.0	-
Ø12	Shouldering	0.120	12.0	6.0	0.096	12.0	6.0
	Sloting	0.096	12.0	-	0.077	12.0	-
Ø14	Shouldering	0.140	14.0	7.0	0.112	14.0	7.0
	Sloting	0.112	14.0	-	0.090	14.0	-
Ø16	Shouldering	0.160	16.0	8.0	0.128	16.0	8.0
	Sloting	0.128	16.0	-	0.102	16.0	-
Ø20	Shouldering	0.200	20.0	10.0	0.160	20.0	10.0
	Sloting	0.160	20.0	-	0.128	20.0	-





540FS Series

Shoulder Processing		ap = 0,3 x Ød$_1$ (Below R1,0 ; 0,2xØd$_1$)		ae = 0,7 x Ød$_1$ (Below R1,0 ; 0,6xØd$_1$)		
R	Vc / fz	Material				
		Carbon Steel , Alloy Steel		Hardened Steel (Below HRC48)	Cast Iron	Stainless Steel, Ti-alloy etc.
		(Below HRC25)	(Below HRC48)			
R0,5 ~ R1,4	Vc	160 - 200 - 240	80 - 120 - 160	80 - 100 - 120	80 - 100 - 120	50 - 60 - 75
	fz	0,005 ~ 0,010	0,003 ~ 0,005	0,002 ~ 0,003	0,008 ~ 0,015	0,003 ~ 0,005
R1,5 ~ R2,9	Vc	160 - 200 - 240	80 - 120 - 160	80 - 100 - 120	80 - 100 - 120	50 - 60 - 75
	fz	0,013 ~ 0,025	0,007 ~ 0,013	0,005 ~ 0,008	0,017 ~ 0,042	0,007 ~ 0,013
R3,0 ~ R6,4	Vc	160 - 200 - 240	80 - 120 - 160	80 - 100 - 120	80 - 100 - 120	50 - 60 - 75
	fz	0,030 ~ 0,050	0,017 ~ 0,033	0,010 ~ 0,020	0,056 ~ 0,136	0,017 ~ 0,033
R6,5 ~ R9,9	Vc	160 - 200 - 240	80 - 120 - 160	80 - 100 - 120	80 - 100 - 120	50 - 60 - 75
	fz	0,070 ~ 0,100	0,040 ~ 0,057	0,020 ~ 0,040	0,167 ~ 0,238	0,040 ~ 0,057
R10,0 ~ R20,0	Vc	160 - 200 - 240	80 - 120 - 160	80 - 100 - 120	80 - 100 - 120	50 - 60 - 75
	fz	0,118 ~ 0,167	0,085 ~ 0,095	0,045 ~ 0,080	0,250 ~ 0,350	0,085 ~ 0,095
Vc = m / min		fz = mm/tooth				



540FS Series For High Speed

Corner Radius (mm)	Material									
	Carbon steel, Cast iron (HB150 ~250)		Alloy steel, Prehardened steel (HRC 25 ~ 35)		Heat resistant alloys, titanium alloy (HRC 35 - 45)		Hardened steel (HRC 45 ~ 55)		Stainless steel	
	Speed (rpm)	Feed (mm/min)	Speed (rpm)	Feed (mm/min)	Speed (rpm)	Feed (mm/min)	Speed (rpm)	Feed (mm/min)	Speed (rpm)	Feed (mm/min)
r = 1	51000	2100	39800	1300	35700	960	35700	960	23700	640
r = 2	25500	2700	19900	1700	17900	1300	17900	1300	11900	830
r = 3	17000	3000	13300	1900	11900	1400	11900	1400	7900	920
r = 4	12800	3100	10000	2000	9000	1500	9000	1500	6000	960
r = 5	10200	3100	8000	2000	7200	1500	7200	1500	4800	960
r = 6	8500	3100	6700	2000	6000	1500	6000	1500	4000	960
Depth and wide of cut a_e	0,05 x Ø d_1						0,02 x Ø d_1		0,05 x Ø d_1	
a_p	0,1 x Ø d_1						0,05 x Ø d_1		0,1 x Ø d_1	

510FS Series

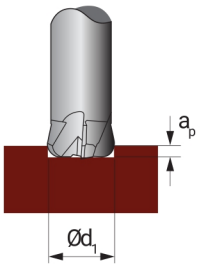
Material	Carbon Steel, Alloy Steel (<30 HRC) Ck55, 070M55, Cast iron GG25				Alloy Steel, Tool Steel (30-45 HRC) W.Nr. 1.2344 (H13)				Austenitic Stainless Steel X5CrNi18-10 X5CrNiMo17-12-2 Titanium alloy				Hardened Steel (45-55 HRC) W.Nr. 1.2344 (H13)				Heat Resistant Alloys Inconel			
Operation	Shoulder Milling		Slotting		Shoulder Milling		Slotting		Shoulder Milling		Slotting		Shoulder Milling		Slotting		Shoulder Milling		Slotting	
Dia (mm)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)	RPM (rev/min)	Feed (mm/min)
2	21000	1100	17000	680	21000	1100	10000	400	14000	560	9600	310	9600	310	4800	130	4800	130	3200	80
3	15000	1250	12000	720	15000	1250	6900	410	10600	850	7400	380	7400	380	3200	140	4200	200	2700	110
4	11000	1400	9200	810	11000	1400	5600	490	8000	960	5600	400	5600	400	2400	150	3200	220	2000	120
5	9600	1920	7600	1060	9600	1920	4500	630	6400	1020	4500	410	4500	430	1900	170	2500	250	1600	130
6	8000	2240	6400	1280	8000	2240	3700	740	5300	1060	3700	440	3700	440	1600	190	2100	250	1300	160
7	6800	1900	5500	1210	6800	1900	3200	700	4500	1010	3200	410	3200	450	1400	190	1800	260	1100	140
8	6000	1680	4800	1150	6000	1680	2800	670	4000	960	2800	390	2800	450	1200	190	1600	260	1000	130
9	5300	1480	4200	1010	5300	1480	2500	600	3500	840	2500	350	2500	450	1100	180	1400	220	900	130
10	4800	1440	3800	910	4800	1440	2200	530	3200	770	2200	350	2200	440	1000	160	1300	210	800	130
11	4400	1350	3500	900	4400	1350	2000	530	2900	760	2000	320	2000	400	900	160	1200	190	720	120
12	4000	1250	3200	900	4000	1250	1900	530	2700	760	1900	300	1900	380	800	160	1100	180	660	110
13	3700	1180	2900	810	3700	1180	1700	480	2500	700	1700	290	1700	360	730	150	1000	160	610	100
14	3400	1160	2700	760	3400	1160	1600	450	2300	640	1600	290	1600	350	680	140	900	140	570	90
16	3000	1140	2400	670	3000	1140	1400	390	2000	560	1400	280	1400	340	600	120	800	130	500	80
18	2700	970	2100	670	2700	970	1200	380	1800	550	1200	270	1200	340	530	120	700	110	440	70
20	2400	860	1900	610	2400	860	1100	350	1600	510	1100	260	1100	330	480	120	600	100	400	60
Depth of cut	ae≤0.2D ap≤1.5D		ap≤1D (Max : 12 mm.)		ae≤0.2D ap≤1.5D		ap≤1D (Max : 12 mm.)		ae≤0.1D ap≤1.5D		ap≤0.5D		ae≤0.05D ap≤ 1.5D		ap≤0.2D		ae≤0.05D ap≤ 1.5D		ap≤0.2D	

• When cutting austenitic stainless steels, the use of water-soluble cutting fluid is effective. When cutting heat-resistant alloys, the use non water-soluble cutting fluid is recommended.
• If the depth of cut is shallow, the revolution and feed rate can be increased.
• The irregular helix flute end mill has a larger effect on controlling the vibrations when compared to standard end mills. However, if the rigidity or the
machine or the workpiece installation is very low, then vibration can occur. In this case, please reduce the revolution and feed rate proportionalety, or set the depth of cut smaller.
• For shoulder milling, climb cutting is recomended.

585FS Series

Diametres (mm)	Material									
	Mild Steel Carbon steel, Cast iron (~750 N/mm²)		Alloy steel, Tool Stell, Prehardened Steel (HRC 25 ~ 38)		Hardened Steel Stainless Steel (HRC 38 - 45)		Hardened Steel Heat Resistant Alloys, Titanium Alloy (HRC 45 ~ 55 HRC)		Hardened Steel (HRC 55 ~ 60 HRC)	
	Speed (rpm)	Feed (mm/min)	Speed (rpm)	Feed (mm/min)	Speed (rpm)	Feed (mm/min)	Speed (rpm)	Feed (mm/min)	Speed (rpm)	Feed (mm/min)
4	15200	12350	15200	11400	11400	8550	11400	7790	7550	3370
5	11870	13300	11870	12060	9070	9070	9070	8170	6030	3610
6	10070	13300	10070	12060	7550	9070	7550	8170	5030	3610
8	7550	13300	7550	12060	5650	9070	5650	8170	3800	3610
10	6030	13300	6030	12060	4510	9070	4510	8170	3040	3610
12	5030	13300	5030	12060	3800	9070	3800	8170	2520	3610

Depth of cut								
	ap : 0,1 x R				ap	ae		ap	ae
				R ≤ 2	0,1 x R	0,3 x Ø d_1	R ≤ 2	0,05 x R	0,3 x Ø d_1
	ae : 0,3 x Ø d_1			2 < r	0,2 mm	0,3 x Ø d_1	2 < r	0,1 mm	0,3 x Ø d_1



Cutting Speed

$$V_c = \frac{\pi \times d_1 \times n}{1000}$$

Feed Rate For Drills

$$V_f = n \times f_n$$

$$n = \frac{1000 \times V_c}{\pi \times d_1}$$

V_C : Cutting speed (m / min)
d_1 : End Mill diameter (mm)
n : Revolution (rpm)

V_f : Feed speed (mm / min)
f_n : Feed rate per revolution (mm / r)

M1-3D / M1-5D Series

Material Group			Cutting Speed	f_n mm/rev. Drill Diameter (mm)				
			Vc m/min.	3 - 5 mm	5 - 8 mm	8 - 12 mm	12 - 16 mm	16 - 20 mm
Steel and Cast Steel	Low-alloy steel and cast steel up to 600 N/m m²	St37 - St42 - C22 - GS38	65 - 145	0.09 - 0.13	0.16 - 0.23	0.2 - 0.30	0.26 - 0.37	0.28 - 0.40
	Steel and cast steel up to 600 N/m m²	St50 - St60 - C35 - GS52	60 - 140	0.09 - 0.13	0.16 - 0.23	0.2 - 0.30	0.26 - 0.35	0.28 - 0.40
	Steel and cast steel 700 - 1000 N/m m²	St70 - C45 - GS62	50 - 120	0.06 - 0.14	0.11- 0.25	0.14 - 0.31	0.17 - 0.39	0.19 - 0.44
	Steel and cast steel 1000 - 1300 N/m m²	90MnCrV8 - 100Cr6	40 - 70	0.05 - 0.09	0.09 - 0.16	0.12 - 0.20	0.15 - 0.25	0.16 - 0.27
	Steel and cast steel 1300 - 1600 N/m m²	X210Cr12 - 34CrAlNi7	30 - 40	0.03 - 0.05	0.06 - 0.08	0.07 - 0.11	0.09 - 0.13	0.1 - 0.15
	Steel hardened	45 - 55 HRC	15 - 30	0.025 - 0.036	0.032- 0.06	0.05 - 0.072	0.067 - 0.096	0.075 - 0.11
	Steel hardened	55 - 65HRc	10 - 15	0.008- 0.012	0.009 - 0.015	0.017 - 0.024	0.025 - 0.036	0.025 - 0.036
	Stainless steel ferritic		35 - 85	0.069 - 0.12	0.85 - 0.14	0.15 - 0.26	0.19 - 0.32	0.22 - 0.38
	Stainless steel austenitic, sulphured		40 - 80	0.04 - 0.07	0.07 - 0.13	0.10 - 0.17	0.13 - 0.22	0.15 - 0.25
	Stainless steel hardened		25 - 45	0.04 - 0.07	0.07- 0.12	0.08 - 0.14	0.11 - 0.18	0.12 - 0.21
Ni and Co alloys	up to 900 N/m m²		15 - 30	0.03 - 0.05	0.05 - 0.08	0.07 - 0.11	0.09 - 0.13	-
	between 900 - 1200 N/m m²		10 - 20	0.02 - 0.04	0.05 - 0.07	0.06 - 0.09	0.07 - 0.11	-
	above 1200 N/mm²		5 - 15	0.02 - 0.03	0.04 - 0.05	0.06 - .008	0.07 - 0.09	
Grey and Nodular Cast Iron	up to 200 HB	GG20, GGG40, GTS45	75 - 90	0.15 - 0.25	0.20 - 0.35	0.25 - 0.45	0.30 - 0.50	0.35 - 0.55
	up to 250 HB	GG30, GGG60, GTW40	65 - 80					
	above 250 HB	GG40, GGG70, GTS70	55 - 70	0.12 - 0.20	0.15 - 0.25	0.20 - 0.35	0.25 - 0.40	0.30 - 0.45
Malleable cast iron	between 350 - 450 HB		35 - 60	0.06 - 0.10	0.08 - 0.12	0.10 - 0.14	0.12 - 0.16	0.14 - 0.18
Aluminium	Aluminium < 10% Si		80 - 300	0.07-0.15	0.10 - 0.25	0.15 -0.35	0.25 - 0.45	0.30 - 0.50
	Aluminium > 10% Si		70 - 200	0.07-0.15	0.10 - 0.25	0.15 -0.35	0.25 - 0.45	0.30 - 0.50
Titanium	WASPALOY	NiCr20Co14MoTi	10 - 30	0.02 - 0.5	0.02 - 0.07	0.04 - 0.10	0.06 - 0.12	0.08 - 0.15
	INCONEL	NiCr20Co18MoNb						
	NIMONIC	NiCr20Co18Ti						
	RENE 41	NiCr20Co11TiAl						

NC5, reduce cutting data 30%.

M2-3D / M2-5D Series

Material Group			Cutting Speed	f_n mm/rev				
				Drill Diameter (mm)				
			Vc m/min	3 - 5 mm	5 - 8 mm	8 - 12 mm	12 - 16 mm	16 - 20 mm
Steel and Cast Steel	Low-alloy steel and cast steel up to 600 N/mm²	St37 - St42 - C22 - GS38	75 - 180	0.09 - .13	0.16 - 0.23	0.2 - 0.29	0.26 - 0.37	0.28 - 0.41
	Steel and cast steel up to 600 N/mm²	St50 - St60 - C35 - GS52	65 - 155	0.09 - 0.13	0.16 - 0.23	0.2 - 0.29	0.26 - 0.37	0.28 -0.41
	Steel and cast steel 700 - 1000 N/mm²	St70 - C45 - GS62	55 - 135	0.06 - 0.14	0.11 - 0.25	0.14 - 0.31	0.17 - 0.39	0.19 -0.44
	Steel and cast steel 1000 - 1300 N/mm²	90MnCrV8 - 100Cr6	45 - 80	0.05 - 0.09	0.09 - 0.16	0.12 -0.2	0.15 - 0.25	0.16 - 0.27
	Steel and cast steel 1300 - 1600 N/mm²	X210Cr12 - 34CrAlNi7	45 - 80	0.05 - 0.09	0.09 - 0.16	0.12 - 0.2	0.15 - 0.25	0.16 - 0.27
	Steel hardened	45 - 55 HRC	25 - 40	0.025 - 0.036	0.04 - 0.06	0.05 - 0.07	0.065 - 0.095	0.075 - 0.11
	Steel hardened	55 - 65HRc	20 - 30	0.015 - 0.025	0.02 - 0.04	0.03 - 0.05	0.045 - 0.075	0.055 - 0.09
	Stainless steel ferritic		45 - 105	0.070 - 0.12	0.13 - 0.22	0.16 - 0.27	0.2 - .34	0.22 - 0.38
	Stainless steel austenitic, sulphured		45 - 85	0.035 - 0.075	0.09 - 0.16	0.12 - 0.21	0.15 - 0.25	0.18 - 0.3
	Stainless steel hardened		35 - 55	0.045 - 0.080	0.075 - 0.13	0.11 - 0.18	0.13 - 0.22	0.15 - 0.25
Ni and Co alloys	up to 900 N/mm²		25 - 40	0.030 - 0.045	0.055 - 0.080	0.75 - 0.11	0.090 - 0.13	0.11 -0.16
	between 900 - 1200 N/mm²		15 - 25	0.025 - 0.035	0.040 - 0.060	0.05 - 0.070	0.065 - 0.095	0.075 - 0.11
	above 1200 N/mm²		10 - 15	0.020 - 0.030	0.040 - 0.055	0.045 - 0.065	0.060 - 0.080	0.070 - 0.095
Grey and Nodular Cast Iron	up to 200 HB	GG20, GGG40, GTS45	85 - 105	0.15 - 0.25	0.20 - 0.35	0.25 - 0.45	0.30 - 0.50	0.35 - 0.55
	up to 250 HB	GG30, GGG60, GTW40	75 - 90	0.15 - 0.26	0.20 - 0.36	0.25 - 0.46	0.30 - 0.51	0.35 - 0.56
	above 250 HB	GG40, GGG70, GTS70	65 - 80	0.12 - 0.20	0.15 - 0.25	0.20 - 0.35	0.25 - 0.40	0.30 - 0.45
Malleable cast iron	between 350 - 450 HB		40 - 70	0.06 - 0.10	0.08 - 0.12	0.10 - 0.14	0.12 - 0.16	0.14 - 0.18
Aluminium	Aluminium < 10% Si		100 - 400	0.10 - 0.25	0.15 - 0.35	0.25 - 0.45	0.30 - 0.50	0.35 - 0.55
	Aluminium > 10% Si		90 - 300	0.10 - 0.26	0.15 - 0.36	0.25 - 0.46	0.30 - 0.51	0.35 - 0.56
Titanium	WASPALOY	NiCr20Co14MoTi	15 - 35	0.02 - 0.07	0.04 - 0.10	0.06 - 0.12	0.08 - 0.15	0.08 - 0.18
	INCONEL	NiCr20Co18MoNb						
	NIMONIC	NiCr20Co18Ti						
	RENE 41	NiCr20Co11TiAl						

M2-8D Series

Material Group			Drilling Depth	Cutting Speed	f_n mm/rev.			
					Drill Diameter (mm)			
			diameter x d	Vc m/min.	4 - 8 mm	8 - 12 mm	12 - 16 mm	16 - 20 mm
Steel and Cast Steel	Low-alloy steel and cast steel up to 600 N/mm²	St37 - St42 - C22 - GS38	between 8 -12 x d	75 - 150	0.09 - 0.27	0.17 - 0.32	0.24 - 0.32	0.30 - 0.43
			between 12 -16 x d	60 - 120	0.08 - 0.26	0.16 - 0.30	0.23 - 0.31	0.28 -0.40
	Steel and cast steel up to 600 N/mm²	St50 - St60 - C35 - GS52	between 8 -12 x d	75 - 150	0.08 - 0.26	0.16 - 0.30	0.23 - 0.31	0.25 - 0.40
			between 12 -16 x d	60 - 120	0.07 - 0.25	0.15 - 0.29	0.21 - 0.30	0.24 - 0.38
	Steel and cast steel 700 - 1000 N/mm²	St70 - C45 - GS62	between 8 -12 x d	60 - 120	0.07 - 0.25	0.14 - 0.29	0.22 - 0.39	0.24 - 0.39
		90MnCrV8 - 100Cr6	between 12 -16 x d	60 - 100	0.07 - 0.24	0.14 - 0.28	0.20 - 0.28	0.23 - 0.38
	Steel and cast steel 1000 - 1600 N/,mm²		between 8 -12 x d	40 - 100	0.04 - 0.16	0.10 - 0.18	0.12 - 0.20	0.14 - 0.22
			between 12 -16 x d	30 - 80	0.04 - 0.16	0.10 - 0.18	0.12 - 0.20	0.14 - 0.22
	Stainless steel ferritic		between 8 -12 x d	25 - 40	0.05 - 0.16	0.12 - 0.18	0.14 - 0.20	0.16 - 0.24
			between 12 -16 x d	20 -40	0.05 - 0.16	0.12 - 0.18	0.14 - 0.20	0.16 - 0.24
	Stainless steel austenitic, sulphured		between 8 -12 x d	40 - 60	0.05 - 0.16	0.12 - 0.18	0.14 - 0.20	0.16 - 0.24
			between 12 -16 x d	30 - 50	0.05 - 0.16	0.12 - 0.18	0.14 - 0.20	0.16 - 0.24
	Stainless steel austenitic		between 8 -12 x d	20 - 50	0.04 - 0.14	0.06 - 0.15	0.08 - 0.17	0.10 - 0.20
			between 12 -16 x d	20 - 40	0.04 - 0.14	0.06 - 0.15	0.08 - 0.17	0.10 - 0.20
Grey and Nodular Cast Iron		GG20, GGG40, GTS45	between 8 -12 x d	80 - 140	0.10 - 0.25	0.12 - 0.30	0.14 - 0.35	0.16 - 0.45
			between 12 -16 x d	70 - 120	0.08 - 0.27	0.10 - 0.28	0.12 - 0.34	0.15 - 0.42
	up to 250 HB	GG30, GGG60, GTW40	between 8 -12 x d	75 - 130	0.10 - 0.25	0.12 - 0.30	0.14 - 0.35	0.16 - 0.45
			between 12 -16 x d	60 - 120	0.08 - 0.28	0.10 - 0.28	0.12 - 0.34	0.15 - 0.42
	above 250 HB	GG40, GGG70, GTS70	between 8 -12 x d	75 - 100	0.08 - 0.20	0.10 - 0.25	0.12 - 0.30	0.14 - 0.40
			between 12 -16 x d	40 - 80	0.06 - 0.18	0.08 - 0.22	0.10 - 0.28	0.12 - 0.35
Malleable cast iron	between 350 - 450 HB		between 8 -12 x d	50 - 100	0.07 - 0.19	0.09 - 0.24	0.11 - 0.29	0.13 - 0.39
			between 12 -16 x d	40 - 70	0.05 - 0.18	0.07 - 0.22	0.09 - 0.28	0.11 - 0.35
Aluminium	Aluminium < 10% Si		between 8 -12 x d	200 - 450	0.10 - 0.30	0.14 - 0.35	0.18 - 0.40	0.20 - 0.50
			between 12 -16 x d	175 - 350	0.09 - 0.28	0.13 - 0.33	0.17 - 0.38	0.19 - 0.48
	Aluminium > 10% Si		between 8 -12 x d	150 - 300	0.09 - 0.29	0.13 - 0.34	0.17 - 0.39	0.19 - 0.49
			between 12 -16 x d	125 - 250	0.08 - 0.27	0.12 - 0.32	0.16 - 0.37	0.18 - 0.47
Titanium	WASPALOY	Ni Cr 20 Co 14 Mo Ti	between 8 -12 x d	20 - 40	0.04 - 0.08	0.06 - 0.11	0.08 - 0.14	0.10 - 0.17
	INCONEL	Ni Cr 20 Co 18 Mo Nb	between 12 -16 x d	10 - 30	0.03 - 0.07	0.05 - 0.10	0.07 - 0.13	0.09 - 0.16
	NIMONIC	Ni Cr 20 Co 18 Ti						
	RENE 41	Ni Cr 20 Co 11 Ti Al						

R_m [N/mm²]	HV 10	HB	HRC
240	75	71	
255	80	76	
270	85	81	
285	90	86	
305	95	90	
320	100	95	
335	105	100	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	157	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	235	223	
770	240	228	
785	245	233	
800	250	238	22
820	255	242	23
835	260	247	24
860	268	255	25
870	272	258	26
900	280	266	27

R_m [N/mm²]	HV 10	HB	HRC
920	287	273	28
940	293	278	29
970	302	287	30
995	310	295	31
1020	317	301	32
1050	327	311	33
1080	336	319	34
1110	345	328	35
1140	355	337	36
1170	364	346	37
1200	373	354	38
1230	382	363	39
1260	392	372	40
1300	403	383	41
1330	413	393	42
1360	423	402	43
1400	434	413	44
1440	446	424	45
1480	458	435	46
1530	473	449	47
1570	484	460	48
1620	497	472	49
1680	514	488	50
1730	527	501	51
1790	544	517	52
1845	560	532	53
1910	578	549	54
1980	596	567	55
2050	615	584	56
2140	639	607	57
	655	622	58
	675		59
	698		60
	720		61
	745		62
	773		63
	800		64
	829		65
	864		66
	900		67
	940		68

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