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Milling
2026

a cut above

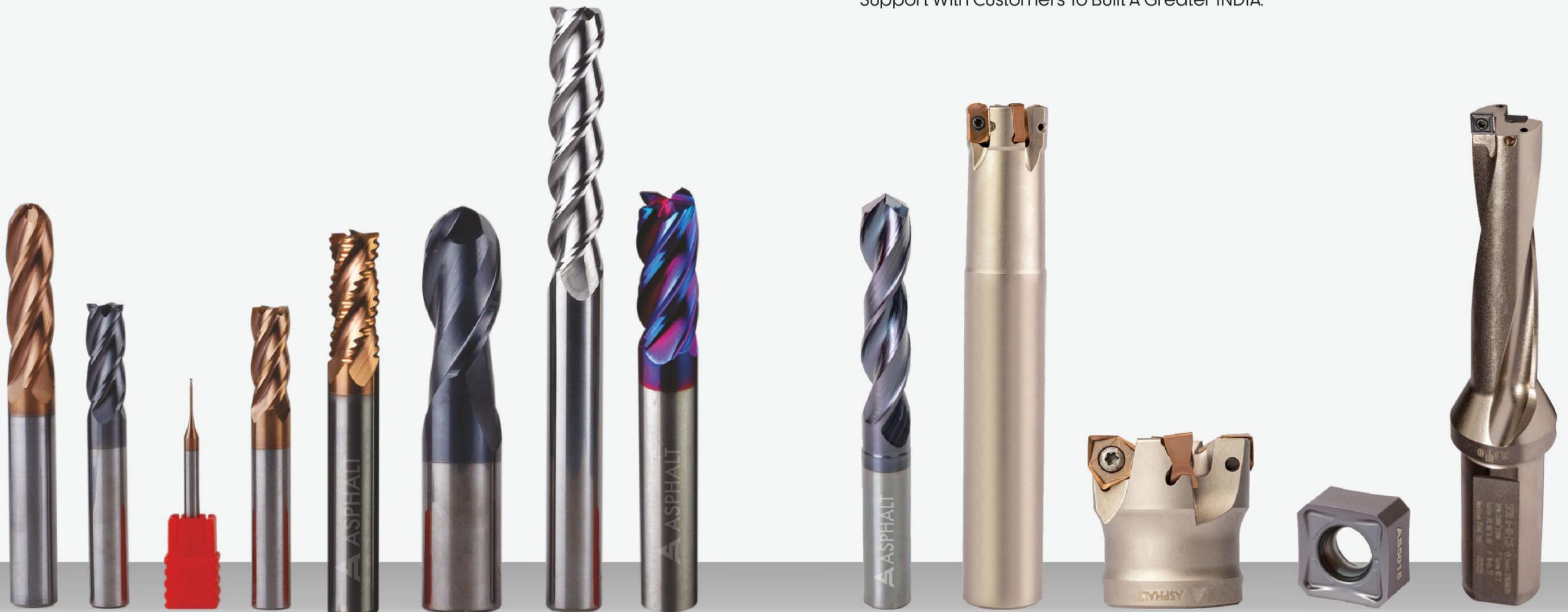


About Asphalt

We, **ASPHALT SYNDICATE LLP.** Specialise In Tools Application Engineering. We Are Mainly Focused In Solid Carbide Endmill & Ballnose, Carbide Drills, Carbide Inserts & Circular Saw Blade. We Are One Of The Pioneers In Tool Engineering And With The Practical Experience In Metal Cutting Tools & Its Various Applications, We Are In A Position To Render Our Technical Services & Bring Down Your Tool Cost Per Component.

Choose **Asphalt Syndicate LLP.** For Carbide Tools That Combine Innovative Engineering Unmatched Quality, And Affordability. Join The Ranks Of Satisfied Customers Who Have Elevated Their Machining Capabilities With Our Top-notch Products. Experience The **Asphalt Syndicate LLP.** Advantage And Witness The Difference In Your Manufacturing Operations.

ASPHALT SYNDICATE LLP. Is Bound To Share Their Expertise And Support With Customers To Built A Greater INDIA.



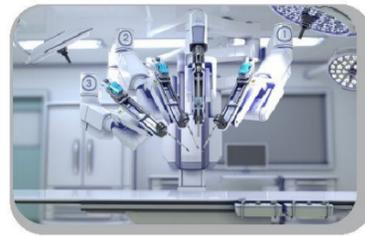
INDUSTRIES WE SERVE



Aerospace



Automotive



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Railway



Heavy Machinery

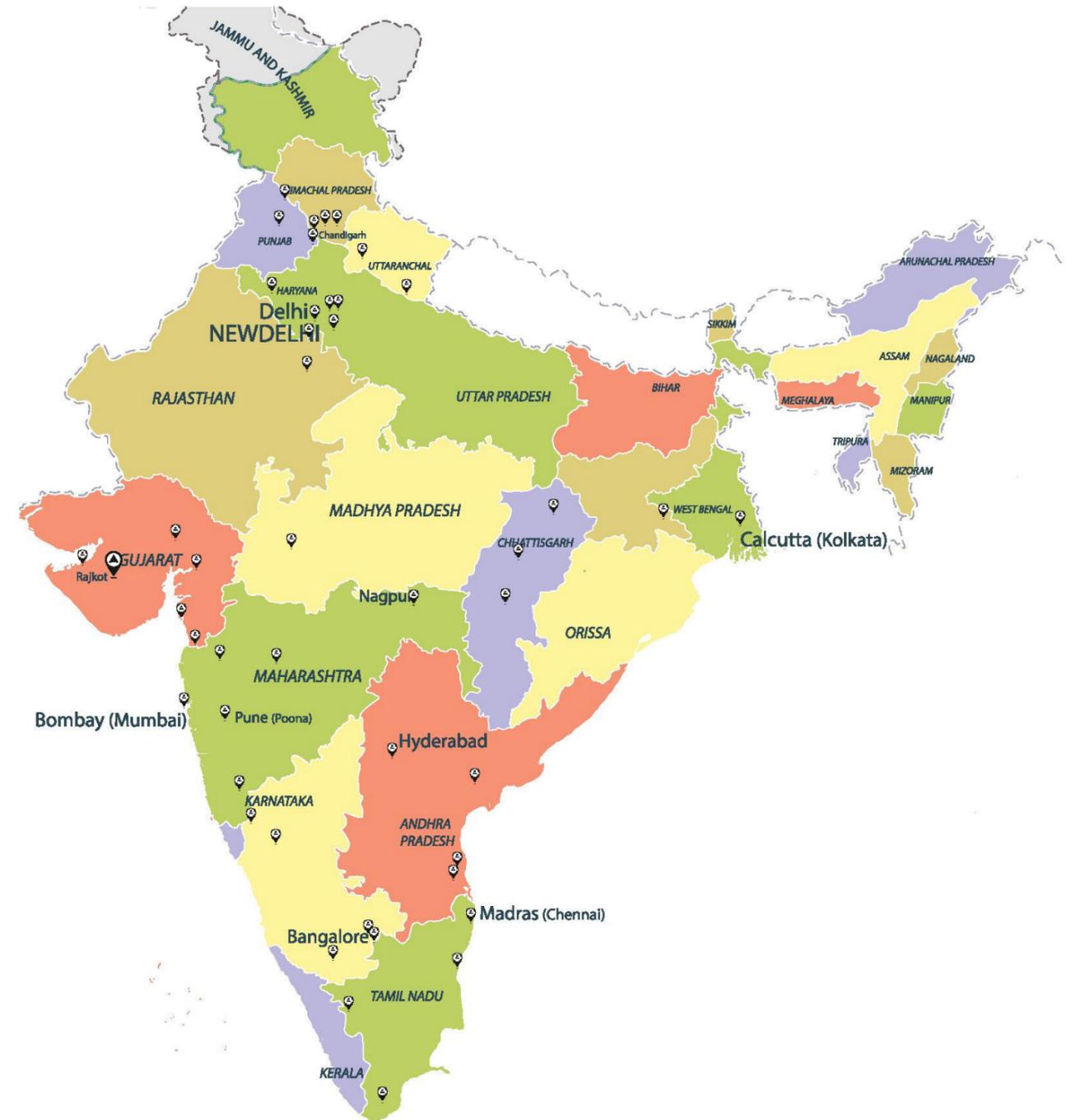


Marine



Construction

IMPACTFUL PRESENCE



INDEX



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Megatron

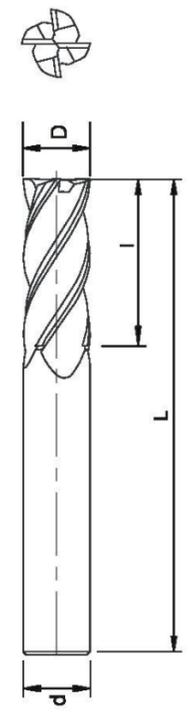


Megatron

Flat Carbide Endmill

4 Flute

AlTiCrN	40°-42°	Unequal	DIN 6535-HA	Stainless Steel
Slotting	Pocketing	Facing	Ramping	Side Milling

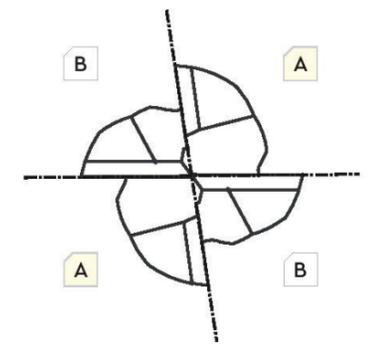
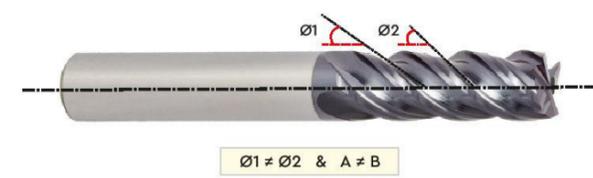


Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
3	9	50	4
4	12	50	4
5	15	50	6
6	18	50	6
8	24	60	8
10	30	75	10
12	36	75	12
16	45	100	16
20	50	100	20

Dia(D) Up to	Tolerance (mm)
6	+0/-0.02
12	+0/-0.025
20	+0/-0.03

• Shank Dia (d) Tolerance h6

Unequal Spacing of Teeth and Variable Leads



Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Hardened Steel		High Hardened Steel	Cast Iron	Copper & Aluminium	Stainless Steel	Titanium	Inconel
		HRC~50	HRC~55	HRC~60					
●	●	●			●		●	○	○

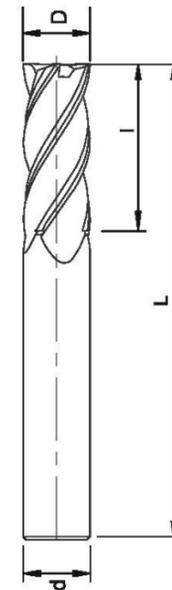
● Excellent ○ Good

Cyclotron

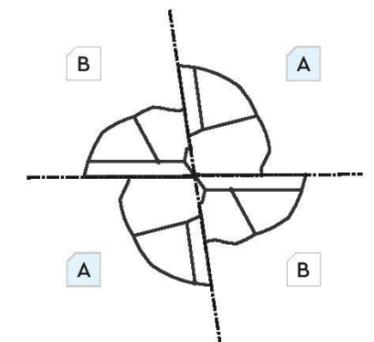
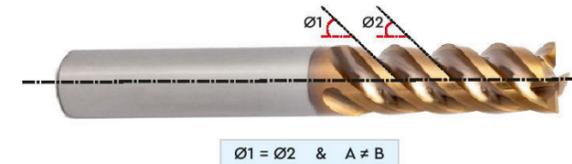
Flat Carbide Endmill

4 Flute

AlTiCrSiN	45°	Unequal	DIN 6535-HA	General Steel
Slotting	Pocketing	Facing	Ramping	Side Milling



Equal Spacing of Teeth and Variable Leads



Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
2	6	50	4
3	9	50	4
4	12	50	4
5	15	50	6
6	18	50	6
8	24	60	8
10	30	75	10
12	36	75	12
16	45	100	16
20	45	100	20

Dia(D) Up to	Tolerance (mm)
6	+0/-0.02
12	+0/-0.025
20	+0/-0.03

• Shank Dia (d) Tolerance h6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Hardened Steel		High Hardened Steel	Cast Iron	Copper & Aluminium	Stainless Steel	Titanium	Inconel
		HRC~50	HRC~55	HRC~60					
●	●	●			○		○	○	○

● Excellent ○ Good

Cyclotron

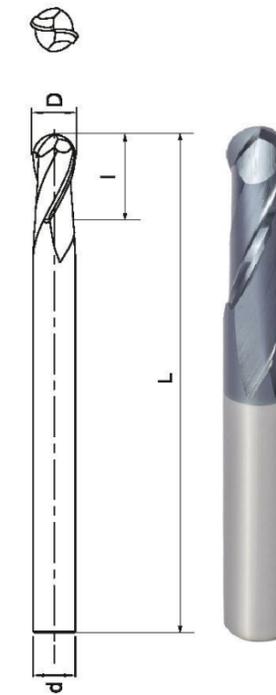


Multitron

Ballnose Carbide Endmill

2 Flute

AlTiN	30°	2 Flute	DIN 6535-HA	General Steel
			Profiling	Side Milling



Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.6	2.4	50	4
R0.7	2.8	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R1	4	50	6
R1.25	5	50	6
R1.5	6	50	6
R1.75	7	50	6
R2	8	50	6
R2.5	10	50	6
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R5	20	75	10
R6	24	75	12
R8	32	100	16
R10	40	100	20

Dia(D) Up to	Tolerance (mm)
6	±0.005
12	±0.01
20	±0.015

• Shank Dia (d) Tolerance h6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Hardened Steel		High Hardened Steel	Cast Iron	Copper & Aluminium	Stainless Steel	Titanium	Inconel
		HRc~50	HRc~55	HRc~60					
●	●	●			○		○	○	○

● Excellent ○ Good

Multitron

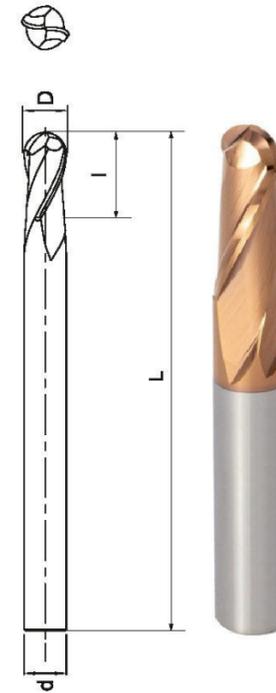


Hardtron

Ballnose Carbide Endmill

2 Flute

AlTiCrSiN	30°	2 Flute	DIN 6535-HA	Hardened Steel
			Profiling	Side Milling



Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	1.5	50	4
R0.6	2	50	4
R0.7	2	50	4
R0.75	2.5	50	4
R1	3	50	4
R1.25	4	50	4
R1.5	5	50	4
R1.75	5.5	50	4
R2	6	50	4
R0.5	1.5	50	6
R0.6	2	50	6
R0.7	2	50	6
R0.75	2.5	50	6
R1	3	50	6
R1.25	4	50	6
R1.5	5	50	6
R2	6	50	6
R2.5	8	50	6
R3	9	50	6
R3.5	11	60	8
R4	12	60	8
R5	15	75	10
R6	18	75	12

Dia(D) Up to	Tolerance (mm)
6	±0.005
12	±0.01

• Shank Dia (d) Tolerance h6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Hardened Steel		High Hardened Steel	Cast Iron	Copper & Aluminium	Stainless Steel	Titanium	Inconel
		HRc~50	HRc~55	HRc~65					
			●	●					

● Excellent ○ Good

HARDTRON



Unicorn

Flat Carbide Endmill

4 Flute

AlTiCrN	35°	4 Flute	DIN 6535-HA	Universal
Slotting	Pocketing	Facing	Ramping	Side Milling



Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
2	5	50	4
3	7	50	4
4	10	50	4
5	12	50	6
6	15	50	6
6	21	75	6
8	20	60	8
8	28	75	8
8	40	100	8
10	25	75	10
10	35	100	10
12	30	75	12
12	42	100	12
16	40	100	16
16	56	150	16
20	50	100	20
20	70	150	20

Dia(D) Up to	Tolerance (mm)
6	+0/-0.02
12	+0/-0.025
20	+0/-0.03

• Shank Dia (d) Tolerance h6

Applicable Working Material

Carbon Steel ~HB225	Alloy Steel HB225~325	Hardened Steel		High Hardened Steel	Cast Iron	Copper & Aluminium	Stainless Steel	Titanium	Inconel
		HRC~50	HRC~55	HRC~60					
●	●	●			○		●	●	●

● Excellent ○ Good

Unicorn

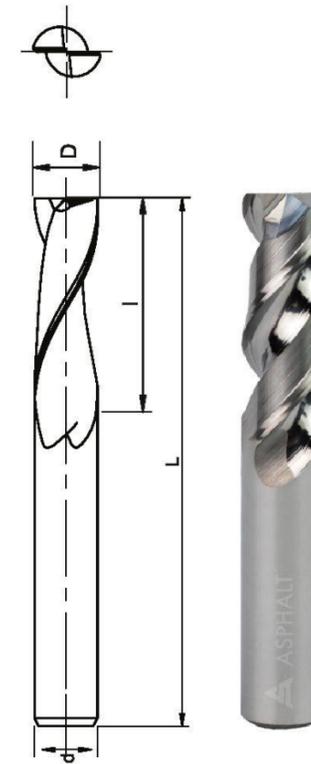
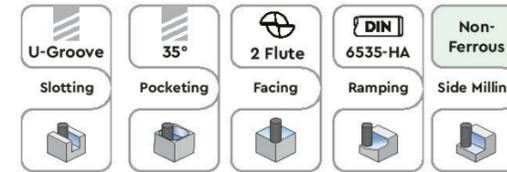


UTRON



Utron

Flat Carbide
Uncoated U-Groove Endmill
2 Flute - 55 HRC



Dia(D) Up to	Tolerance (mm)
6	+0/-0.02
12	+0/-0.025
20	+0/-0.03

• Shank Dia (d) Tolerance h6

Applicable Working Material

Non-Ferrous	Excellent	Good
●	●	○

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
1.5	5	50	4
2	6	50	4
2.5	8	50	4
3	10	50	3
3	10	50	4
3.5	12	50	4
4	12	50	4
5	15	50	5
6	18	50	6
7	21	60	8
8	24	60	8
9	27	75	10
10	30	75	10
11	33	75	12
12	36	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

Standard

1	3	75	4
1.5	5	75	4
2	6	75	4
3	15	75	4
4	15	75	4
5	20	75	5
6	25	75	6
8	30	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

Long

3	12	100	3
4	20	100	4
5	25	100	5
6	30	100	6
6	35	150	6
8	40	100	8
8	50	150	8
10	50	150	10
12	60	150	12

Extra Long

UTRON



Utron

Flat Carbide
Uncoated U-Groove Endmill
3 Flute - 55 HRC

U-Groove	35°	3 Flute	DIN 6535-HA	Non-Ferrous
Slotting	Pocketing	Facing	Ramping	Side Milling



Dia(D) Up to	Tolerance (mm)
6	+0/-0.02
12	+0/-0.025
20	+0/-0.03

• Shank Dia (d) Tolerance h6

Applicable Working Material

Non-Ferrous	Excellent	Good
-------------	-----------	------

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
1.5	5	50	4
2	6	50	4
2.5	8	50	4
3	10	50	3
3	10	50	4
3.5	12	50	4
4	12	50	4
5	15	50	5
6	18	50	6
7	21	60	8
8	24	60	8
9	27	75	10
10	30	75	10
11	33	75	12
12	36	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

1	3	75	4
1.5	5	75	4
2	6	75	4
3	15	75	4
4	15	75	4
5	20	75	5
6	25	75	6
8	30	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

3	12	100	3
4	20	100	4
5	25	100	5
6	30	100	6
6	35	150	6
8	40	100	8
8	50	150	8
10	50	150	10
12	60	150	12

Standard

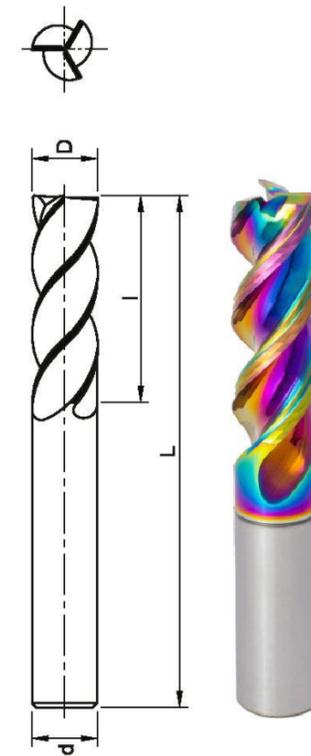
LONG

Extra LONG

Astron

Flat Carbide
DLC Coated U-Groove Endmill
3 Flute - 55 HRC

U-Groove	35°	3 Flute	DIN 6535-HA	Non-Ferrous
Slotting	Pocketing	Facing	Ramping	Side Milling



Dia(D) Up to	Tolerance (mm)
6	+0/-0.02
12	+0/-0.025
20	+0/-0.03

• Shank Dia (d) Tolerance h6

Applicable Working Material

Non-Ferrous	Excellent	Good
-------------	-----------	------

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
1.5	5	50	4
2	6	50	4
2.5	8	50	4
3	10	50	3
3	10	50	4
3.5	12	50	4
4	12	50	4
5	15	50	5
6	18	50	6
7	21	60	8
8	24	60	8
9	27	75	10
10	30	75	10
11	33	75	12
12	36	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

Standard

1	3	75	4
1.5	5	75	4
2	6	75	4
3	15	75	4
4	15	75	4
5	20	75	5
6	25	75	6
8	30	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

Long

3	12	100	3
4	20	100	4
5	25	100	5
6	30	100	6
6	35	150	6
8	40	100	8
8	50	150	8
10	50	150	10
12	60	150	12

Extra Long

ASTRON



Asphalt Premium

Elegance is beauty
that never fades



TiSiN Coated
 35° Helix / 45° High Helix
 0.6 µm Particle
 DIN 6535 Form HA



Premium

Flat Carbide Endmill 35°

4 Flute - 55 HRC



Recommended For

Steel 30-55 HRC
 P20
 Hot Die Steel (H13, H11, H21)
 Stainless Steel <55 HRC
 D2
 Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	2.5	50	4
1.5	4	50	4
2	5	50	4
2.5	6.5	50	4
3	7.5	50	3
3	7.5	50	4
3.5	9	50	4
4	10	50	4
5	13	50	5
6	15	50	6
7	20	60	8
8	20	60	8
9	25	75	10
10	25	75	10
11	30	75	12
12	30	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

Standard



1	3	75	4
1.5	5	75	4
2	6	75	4
3	9	75	4
4	14	75	4
5	20	75	5
6	21	75	6
8	30	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

Long

3	12	100	3
4	18	100	4
5	25	100	5
6	27	100	6
6	40	150	6
8	35	100	8
8	50	150	8
10	55	150	10
12	60	150	12

Extra Long

Premium



Flat Carbide Endmill High Helix (45°)

4 Flute - 55 HRC

Recommended For

Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	2.5	50	4
1.5	4	50	4
2	5	50	4
2.5	6.5	50	4
3	7.5	50	3
3	7.5	50	4
3.5	9	50	4
4	10	50	4
5	13	50	5
6	15	50	6
7	20	60	8
8	20	60	8
9	25	75	10
10	25	75	10
11	30	75	12
12	30	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

Standard



1	3	75	4
1.5	5	75	4
2	6	75	4
3	9	75	4
4	14	75	4
5	20	75	5
6	21	75	6
8	30	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

LONG

3	12	100	3
4	18	100	4
5	25	100	5
6	27	100	6
6	40	150	6
8	35	100	8
8	50	150	8
10	55	150	10
12	60	150	12

Extra LONG

Premium



Ballnose Carbide Endmill

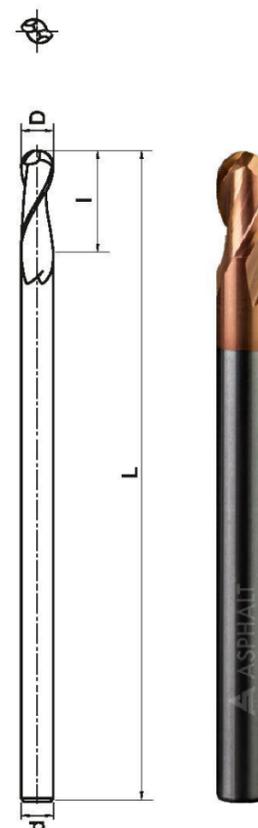
2 Flute - 55 HRC

Recommended For

Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16
R9	36	100	18
R10	40	100	20

Standard



R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16
R9	40	150	18
R10	40	150	20

LONG

R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra LONG

Premium



Ballnose Carbide Endmill 4 Flute - 55 HRC

Recommended For

Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steels <55 HRC
D2
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16

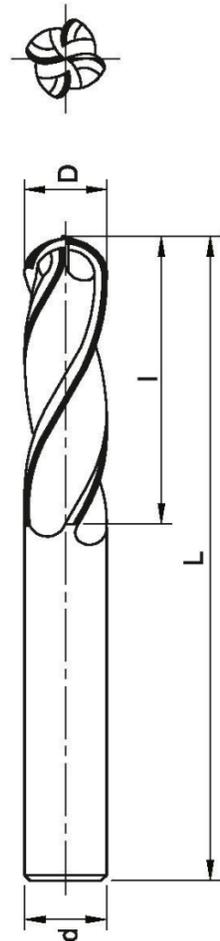
Standard

R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16

Long

R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra Long



Premium



Ballnose Carbide Endmill High Helix (45°) 2 Flute - 55 HRC

Recommended For

Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16
R9	36	100	18
R10	40	100	20

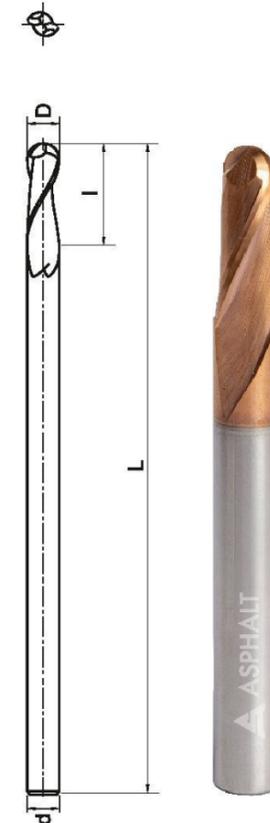
Standard

R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16
R9	40	150	18
R10	40	150	20

Long

R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra Long



Premium



**Corner Radius (CR)
Carbide Endmill
4 Flute - 55 HRC**

Recommended For

Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium

Dia (D)	CR (r)	Flute Length (l)	Total Length (L)	Shank Dia (d)
3	0.5	8	50	3
3	1	8	50	3
4	0.5	10	50	4
4	1	10	50	4
5	0.5	12	50	5
5	1	12	50	5
6	0.5	15	50	6
6	1	15	50	6
8	0.5	20	60	8
8	1	20	60	8
10	0.5	25	75	10
10	1	25	75	10
10	1.5	25	75	10
12	0.5 / 1	30	75	12
12	1.5	30	75	12
12	2 / 2.5	30	75	12
16	1 / 2 / 2.5	35	100	16

Standard



3	0.5	12	75	3
3	1	12	75	3
4	0.5	20	75	4
4	1	20	75	4
5	0.5	20	75	5
5	1	20	75	5
6	0.5	25	75	6
6	1	25	75	6
8	0.5	30	75	8
8	1	30	75	8
10	0.5	40	100	10
10	1	40	100	10
12	0.5	45	100	12
12	1	45	100	12
16	1	-	150	16

LONG

3	0.5 / 1	12	100	3
4	0.5 / 1	20	100	4
5	0.5 / 1	20	100	5
6	0.5 / 1	30	100	6
6	1	40	150	6
8	0.5 / 1	35	100	8
8	1	50	150	8
10	1	60	150	10
12	1	60	150	12

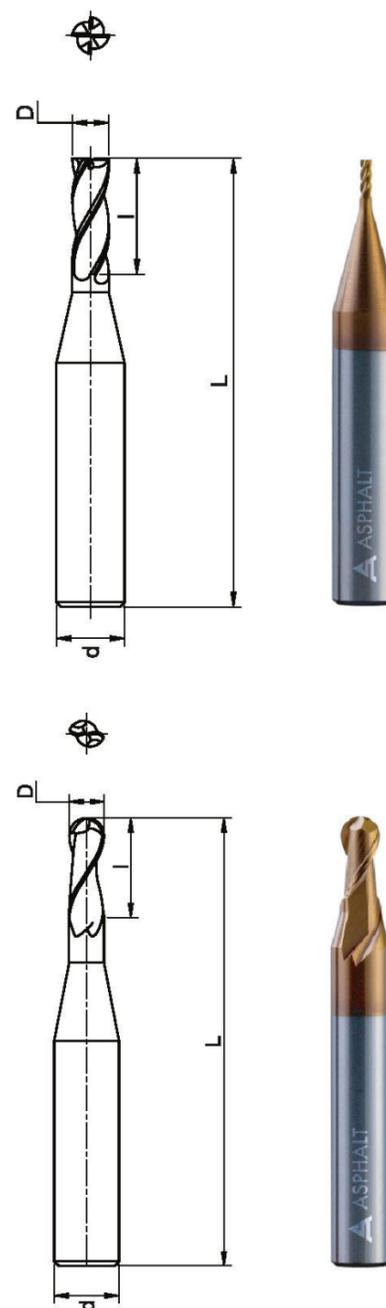
Extra LONG

Premium

**Carbide Endmill
55 HRC - 6 mm Shank**

Recommended For

Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium



4F Flat Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	6
1.5	4	50	6
2	5	50	6
2.5	8	50	6
3	8	50	6
3.5	10	50	6
4	10	50	6
5	12	50	6

Standard

1	3	75	6
1.5	5	75	6
2	6	75	6
2.5	6	75	6
3	12	75	6
3.5	12	75	6
4	20	75	6
5	20	75	6

LONG

2F Ballnose Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	6
R0.75	3	50	6
R1	4	50	6
R1.25	5	50	6
R1.5	6	50	6
R1.75	7	50	6
R2	8	50	6
R2.5	10	50	6

Standard

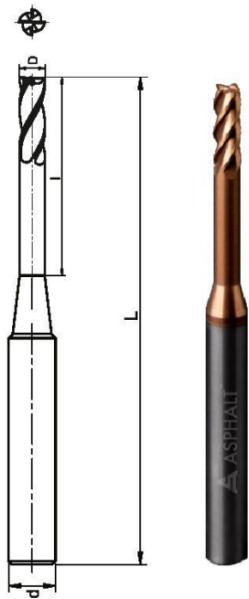
R0.5	2	75	6
R0.75	3	75	6
R1	4	75	6
R1.25	5	75	6
R1.5	6	75	6
R1.75	7	75	6
R2	8	75	6
R2.5	10	75	6

LONG

Premium

Carbide Long Neck Endmill 55 HRC

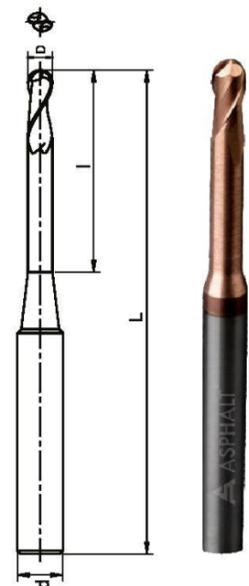
Recommended For
Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium



4F Flat Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	4/6/8/10/12/15/20	50	4
1.5	6/8/10/12/15/20	50	4
2	6/8/10/12/15/20	50	4
2.5	6/8/10/12/15/20	50	4
3	10/12/15/20	50	4

Standard



2F Ballnose Endmill

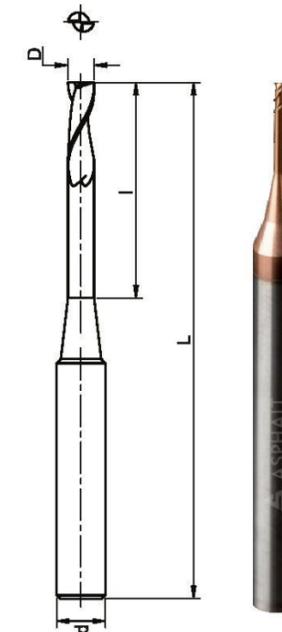
Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	4/6/8/10/12/15/20	50	4
R0.75	4/6/8/10/12/15/20	50	4
R1	6/8/10/12/15/20	50	4
R1.25	6/8/10/12/15/20	50	4
R1.5	10/12/15/20	50	4

Standard

Premium

Micro Carbide Endmill 2 Flute - 55 HRC

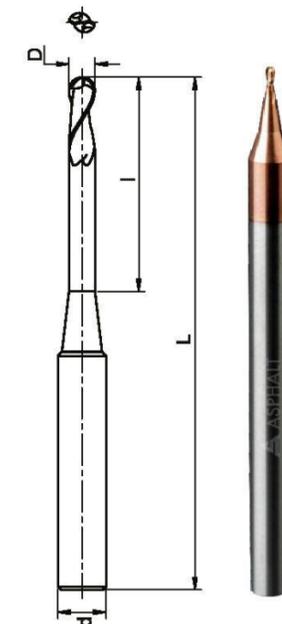
Recommended For
Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium



Flat Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
0.3	2/3/4/6/8/10	50	4
0.4	2/3/4/6/8/10	50	4
0.5	2/3/4/6/8/10	50	4
0.6	2/3/4/6/8/10	50	4
0.7	2/3/4/6/8/10	50	4
0.8	2/3/4/6/8/10	50	4

Standard



Ballnose Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.15	2/3/4/6/8	50	4
R0.2	2/3/4/6/8	50	4
R0.25	2/3/4/6/8	50	4
R0.3	2/3/4/6/8	50	4
R0.35	2/3/4/6/8	50	4
R0.4	2/3/4/6/8	50	4

Standard

AlTiSiN Coated
 35° Helix
 0.4 µm Particle
 DIN 6535 Form HA



Premium

Flat Carbide Endmill 4 Flute - 65 HRC

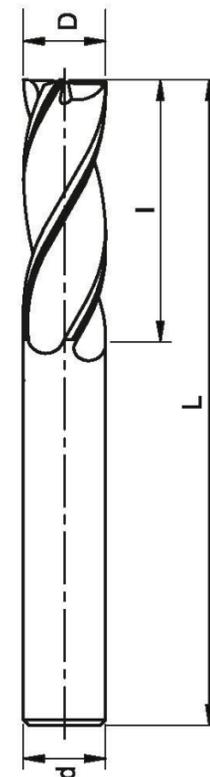


Recommended For

Steel 30-65 HRC
 P20
 Hot Die Steel (H13, H11, H21)
 Stainless Steel <65 HRC
 Hardened Steel
 Carbon Steel

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	2.5	50	4
1.5	4	50	4
2	5	50	4
2.5	6.5	50	4
3	7.5	50	3
3	7.5	50	4
3.5	9	50	4
4	10	50	4
5	13	50	5
6	15	50	6
7	20	60	8
8	20	60	8
9	25	75	10
10	25	75	10
11	30	75	12
12	30	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

Standard



1	3	75	4
1.5	5	75	4
2	6	75	4
3	9	75	4
4	13	75	4
5	20	75	5
6	20	75	6
8	24	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

Long

3	12	100	3
4	25	100	4
5	25	100	5
6	25	100	6
6	40	150	6
8	35	100	8
8	50	150	8
10	60	150	10
12	60	150	12

Extra Long

Premium



Ballnose Carbide Endmill

2 Flute - 65 HRC

Recommended For

Steel 30-65 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <65 HRC
Hardened Steel
Carbon Steel

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16
R9	36	100	18
R10	40	100	20

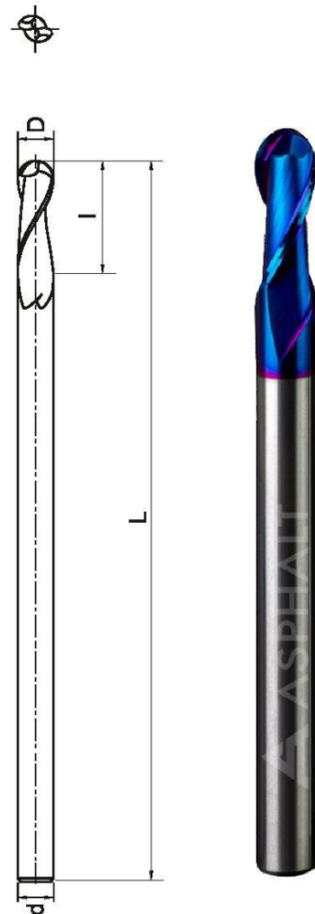
Standard

R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16
R9	40	150	18
R10	40	150	20

LONG

R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra LONG



Premium



Corner Radius (CR) Carbide Endmill

4 Flute - 65 HRC

Recommended For

Steel 30-65 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <65 HRC
Hardened Steel
Carbon Steel

Dia (D)	CR (r)	Flute Length (l)	Total Length (L)	Shank Dia (d)
3	0.5	8	50	3
3	1	8	50	3
4	0.5	10	50	4
4	1	10	50	4
5	0.5	12	50	5
5	1	12	50	5
6	0.5	15	50	6
6	1	15	50	6
8	0.5	20	60	8
8	1	20	60	8
10	0.5	25	75	10
10	1	25	75	10
10	1.5	25	75	10
12	0.5 / 1	30	75	12
12	1.5	30	75	12
12	2 / 2.5	30	75	12
16	1 / 2 / 2.5	35	100	16

Standard

3	0.5	12	75	3
3	1	12	75	3
4	0.5	20	75	4
4	1	20	75	4
5	0.5	20	75	5
5	1	20	75	5
6	0.5	25	75	6
6	1	25	75	6
8	0.5	30	75	8
8	1	30	75	8
10	0.5	40	100	10
10	1	40	100	10
12	0.5	45	100	12
12	1	45	100	12

LONG

3	0.5 / 1	12	100	3
4	0.5 / 1	20	100	4
5	0.5 / 1	20	100	5
6	0.5 / 1	30	100	6
6	1	40	150	6
8	0.5 / 1	35	100	8
8	1	50	150	8
10	1	60	150	10
12	1	60	150	12

Extra LONG



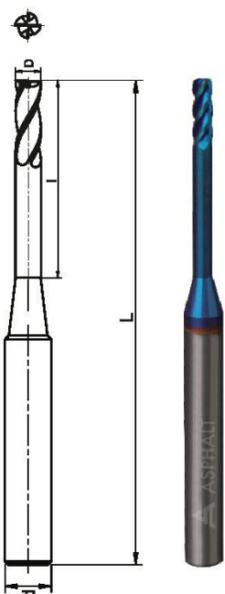
Premium



Carbide Long Neck Endmill 65 HRC

Recommended For

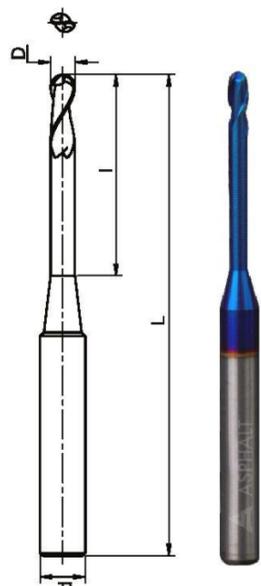
Steel 30-65 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <65 HRC
Hardened Steel
Carbon Steel



4F Flat Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	6/8/10/12/15/20	50	4
1.5	6/8/10/12/15/20	50	4
2	6/8/10/12/15/20	50	4
2.5	6/8/10/12/15/20	50	4
3	10/12/15/20	50	4

Standard



2F Ballnose Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	6/8/10/12/15/20	50	4
R0.75	6/8/10/12/15/20	50	4
R1	6/8/10/12/15/20	50	4
R1.25	6/8/10/12/15/20	50	4
R1.5	10/12/15/20	50	4

Standard

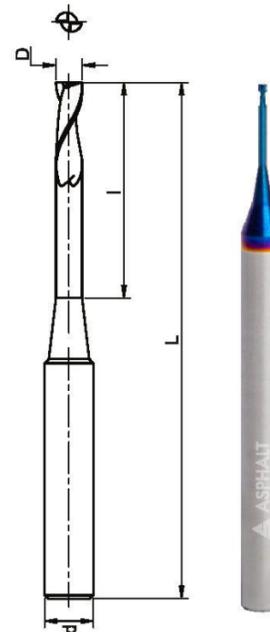
Premium



Micro Carbide Endmill 2 Flute - 65 HRC

Recommended For

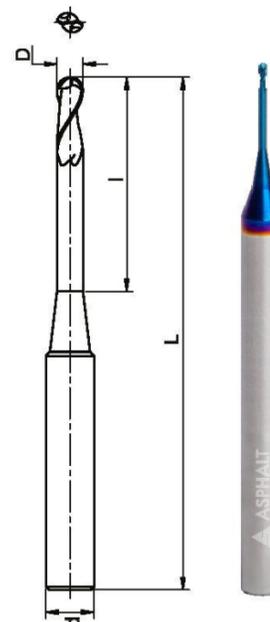
Steel 30-65 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <65 HRC
Hardened Steel
Carbon Steel



Flat Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
0.3	2/3/4/6/8/10	50	4
0.4	2/3/4/6/8/10	50	4
0.5	2/3/4/6/8/10	50	4
0.6	2/3/4/6/8/10	50	4
0.7	2/3/4/6/8/10	50	4
0.8	2/3/4/6/8/10	50	4

Standard



Ballnose Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.15	2/3/4/6/8/10	50	4
R0.2	2/3/4/6/8/10	50	4
R0.25	2/3/4/6/8/10	50	4
R0.3	2/3/4/6/8/10	50	4
R0.35	2/3/4/6/8/10	50	4
R0.4	2/3/4/6/8/10	50	4

Standard

- AlTiN Coated
- 35° Helix
- 0.6 μm Particle
- DIN 6535 Form HA



Flat Carbide Endmill 4 Flute - 50 HRC

Recommended For

- Mild Steel
- Casting
- Steel 30-45 HRC
- EN Grade Material
- Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
1.5	4	50	4
2	5	50	4
2.5	8	50	4
3	8	50	3
3	8	50	4
3.5	10	50	4
4	10	50	4
5	12	50	5
6	15	50	6
7	20	60	8
8	20	60	8
9	25	75	10
10	25	75	10
11	30	75	12
12	30	75	12
14	40	100	14
16	45	100	16
18	45	100	18
20	45	100	20
25	45	100	25

Standard



1	3	75	4
1.5	5	75	4
2	6	75	4
3	12	75	4
4	20	75	4
5	20	75	5
6	25	75	6
8	30	75	8
10	40	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	70	150	18
20	70	150	20

Long

3	12	100	3
4	25	100	4
5	25	100	5
6	30	100	6
6	40	150	6
8	35	100	8
8	50	150	8
10	50	150	10
12	60	150	12

Extra Long

Ballnose Carbide Endmill 2 Flute - 50 HRC

Recommended For

Mild Steel
Casting
Steel 30-45 HRC
EN Grade Material
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16
R9	36	100	18
R10	40	100	20

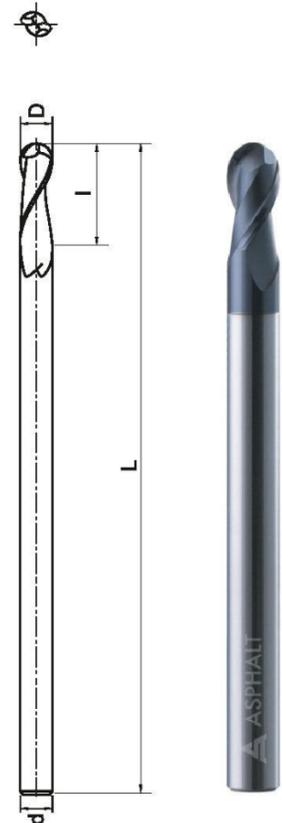
Standard

R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16
R9	40	150	18
R10	40	150	20

Long

R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra Long



Ballnose Carbide Endmill 4 Flute - 50 HRC

Recommended For

Mild Steel
Casting
Steel 30-45 HRC
EN Grade Material
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16

Standard

R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16

Long

R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra Long



Corner Radius (CR) Carbide Endmill 4 Flute - 50 HRC

Recommended For

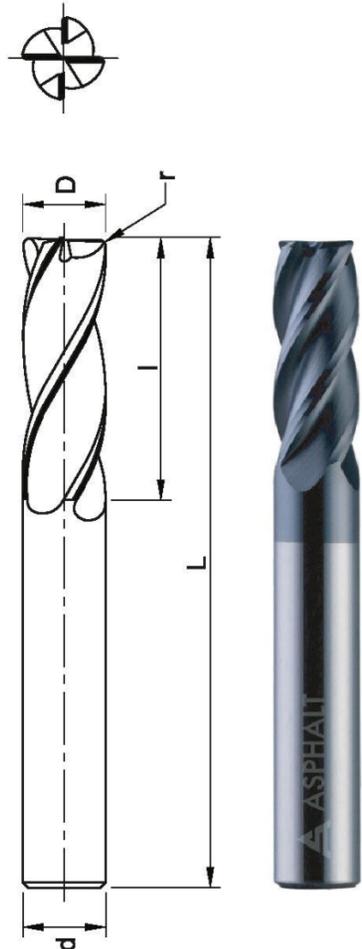
Mild Steel
Casting
Steel 30-45 HRC
EN Grade Material
Aluminium

Dia (D)	CR (r)	Flute Length (l)	Total Length (L)	Shank Dia (d)
3	0.5	8	50	3 / 4
3	1	8	50	3 / 4
4	0.5	10	50	4
4	1	10	50	4
5	0.5	12	50	5
5	1	12	50	5
6	0.5	15	50	6
6	1	15	50	6
8	0.5	20	60	8
8	1	20	60	8
10	0.5	25	75	10
10	1	25	75	10
10	1.5	25	75	10
12	0.5 / 1	30	75	12
12	1.5	30	75	12
12	2 / 2.5	30	75	12
16	1 / 2 / 2.5	35	100	16

Standard

LONG

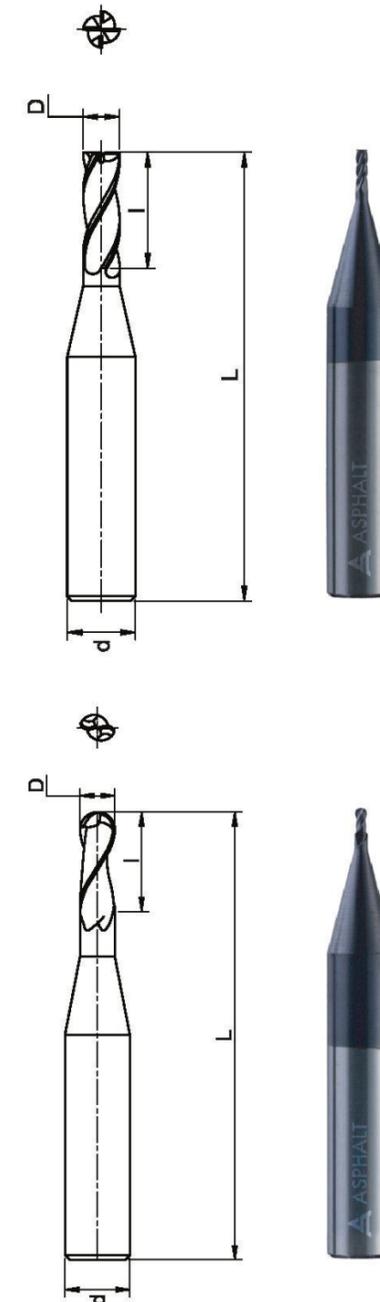
Extra LONG



Carbide Endmill 50 HRC - 6mm Shank

Recommended For

Mild Steel
Casting
Steel 30-45 HRC
EN Grade Material
Aluminium



4F Flat Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	6
1.5	4	50	6
2	5	50	6
2.5	8	50	6
3	8	50	6
3.5	10	50	6
4	10	50	6
5	12	50	6

Standard

1	3	75	6
1.5	5	75	6
2	6	75	6
2.5	6	75	6
3	12	75	6
3.5	12	75	6
4	20	75	6
5	20	75	6

LONG

2F Ballnose Endmill

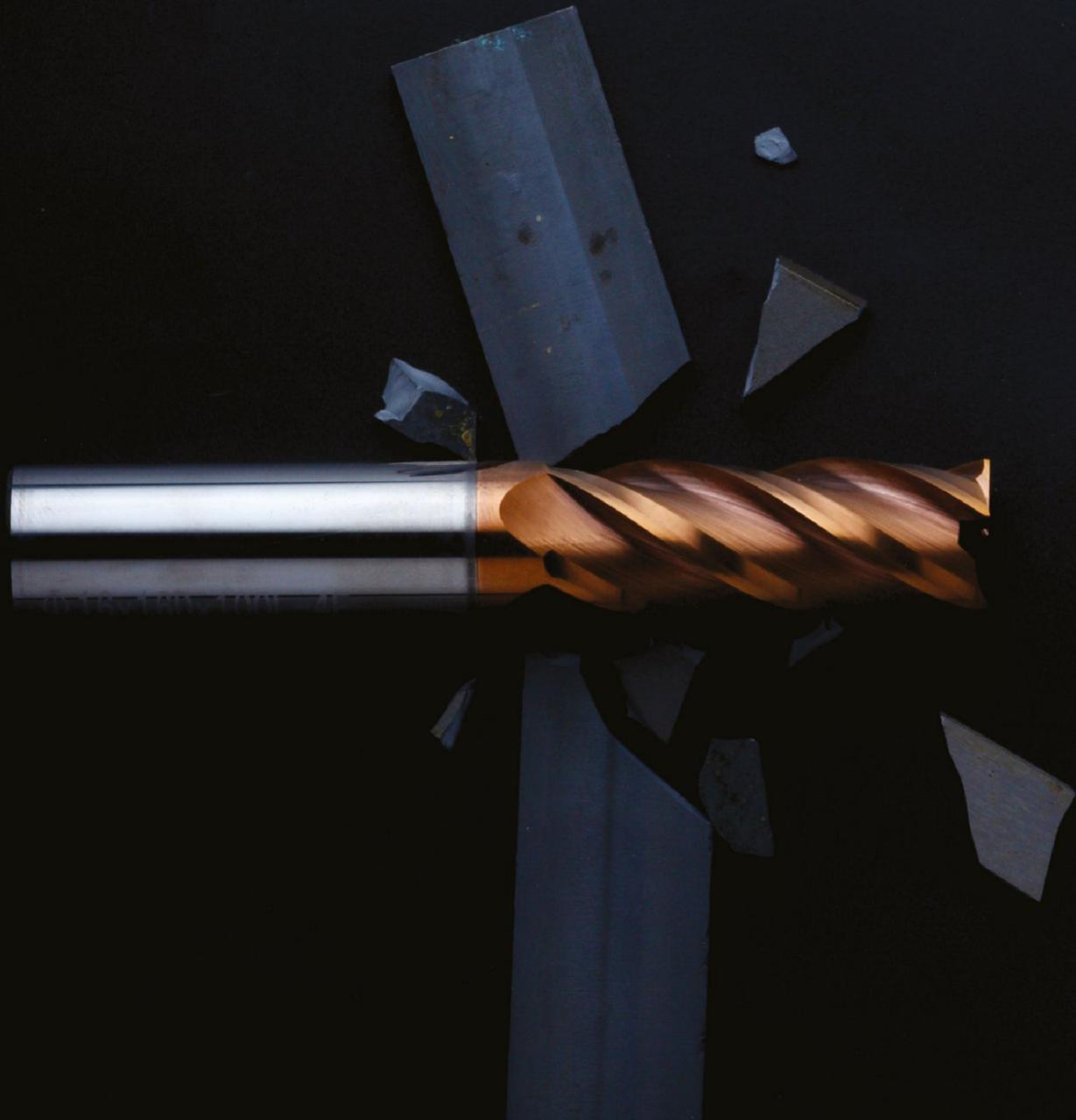
Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	6
R0.75	3	50	6
R1	4	50	6
R1.25	5	50	6
R1.5	6	50	6
R1.75	7	50	6
R2	8	50	6
R2.5	10	50	6

Standard

R0.5	2	75	6
R0.75	3	75	6
R1	4	75	6
R1.25	5	75	6
R1.5	6	75	6
R1.75	7	75	6
R2	8	75	6
R2.5	10	75	6

LONG

- TiSiN Coated
- 35° Helix
- 0.6 μm Particle
- DIN 6535 Form HA



Flat Carbide Coated Endmill 2 Flute - 55 HRC

Recommended For

- Steel 30-55 HRC
- P20
- Hot Die Steel (H13, H11, H21)
- Stainless Steel <55 HRC
- D2
- Aluminium



Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
1.5	5	50	4
2	6	50	4
2.5	8	50	4
3	10	50	3
3	10	50	4
3.5	12	50	4
4	12	50	4
5	15	50	5
6	18	50	6
7	21	60	8
8	24	60	8
9	27	75	10
10	30	75	10
11	33	75	12
12	36	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

Standard

1	3	75	4
1.5	5	75	4
2	6	75	4
3	15	75	4
4	15	75	4
5	20	75	5
6	25	75	6
8	30	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

Long

3	12	100	3
4	20	100	4
5	25	100	5
6	30	100	6
6	35	150	6
8	40	100	8
8	50	150	8
10	50	150	10
12	60	150	12

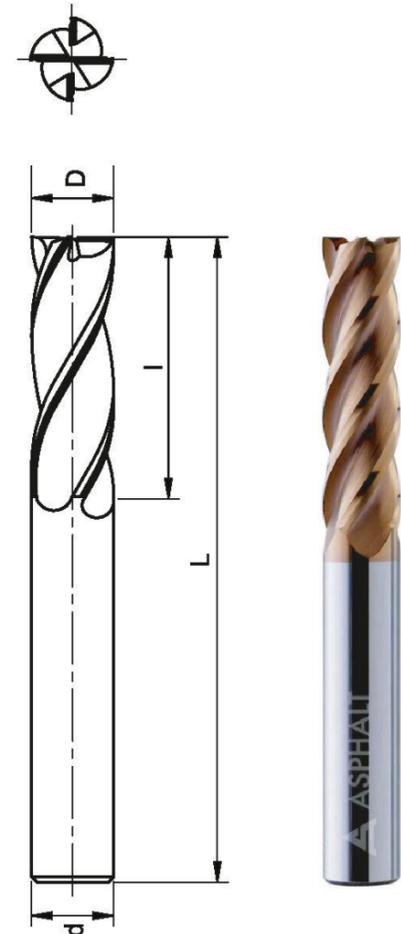
Extra Long

Flat Carbide Endmill 4 Flute - 55 HRC

Recommended For
Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steels <55 HRC
D2
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
1.5	4	50	4
2	5	50	4
2.5	8	50	4
3	8	50	3
3	8	50	4
3.5	10	50	4
4	10	50	4
5	12	50	5
6	15	50	6
7	20	60	8
8	20	60	8
9	25	75	10
10	25	75	10
11	30	75	12
12	30	75	12
14	40	100	14
16	45	100	16
18	45	100	18
20	45	100	20
25	45	100	25

Standard



1	3	75	4
1.5	5	75	4
2	6	75	4
3	12	75	4
4	20	75	4
5	20	75	5
6	25	75	6
8	30	75	8
10	40	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	70	150	18
20	70	150	20

LONG

3	12	100	3
4	25	100	4
5	25	100	5
6	30	100	6
6	40	150	6
8	35	100	8
8	50	150	8
10	60	150	10
12	60	150	12

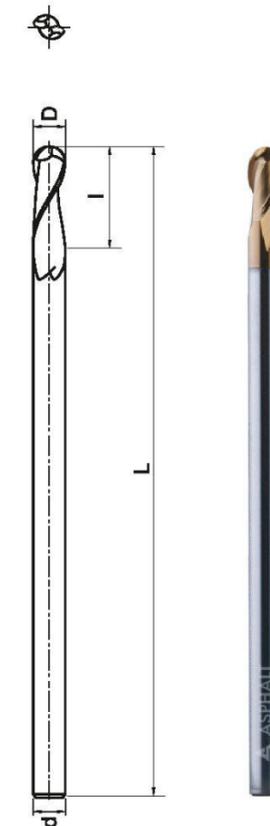
Extra LONG

Ballnose Carbide Endmill 2 Flute - 55 HRC

Recommended For
Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steels <55 HRC
D2
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16
R9	36	100	18
R10	40	100	20

Standard



R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16
R9	40	150	18
R10	40	150	20

LONG

R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra LONG

Ballnose Carbide Endmill 4 Flute - 55 HRC

Recommended For
Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steels <55 HRC
D2
Aluminium

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16

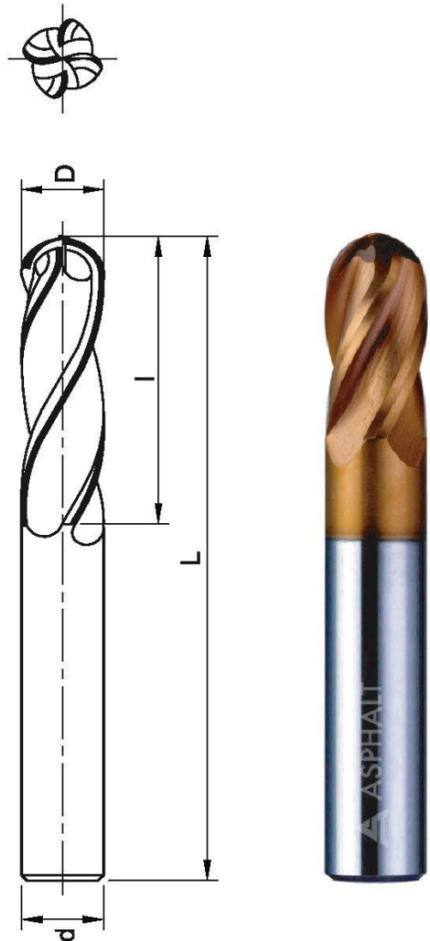
Standard

R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16

LONG

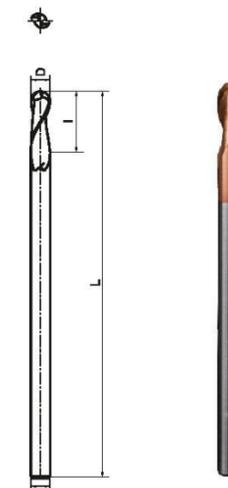
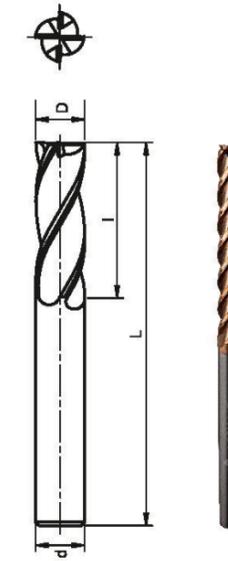
R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra LONG



Carbide Endmill 200mm Long 55 HRC

Recommended For
Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium



Flat Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
6	45	200	6
8	70	200	8
10	85	200	10
12	90	200	12
16	100	200	16
20	100	200	20

4 Flute

Ballnose Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R3	12	200	6
R4	16	200	8
R5	20	200	10
R6	24	200	12
R8	32	200	16
R10	40	200	20

2 Flute

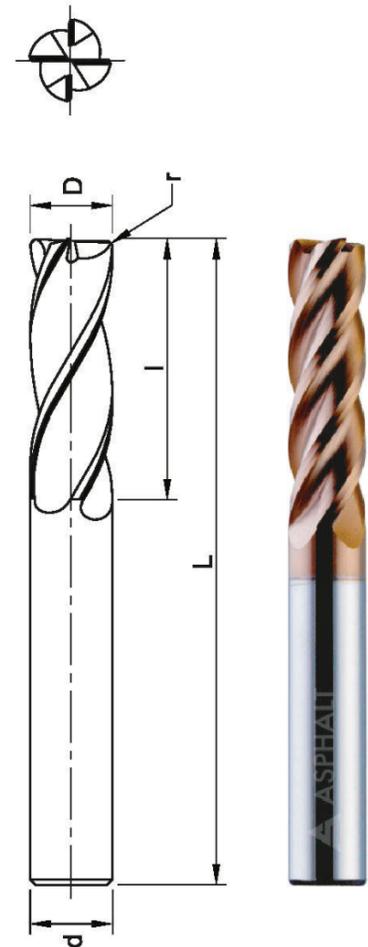
Corner Radius (CR) Carbide Endmill 4 Flute - 55 HRC

Recommended For

Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium

Dia (D)	CR (r)	Flute Length (l)	Total Length (L)	Shank Dia (d)
3	0.5	8	50	3 / 4
3	1	8	50	3 / 4
4	0.5	10	50	4
4	1	10	50	4
5	0.5	12	50	5
5	1	12	50	5
6	0.5	15	50	6
6	1	15	50	6
8	0.5	20	60	8
8	1	20	60	8
10	0.5	25	75	10
10	1	25	75	10
10	1.5	25	75	10
12	0.5 / 1	30	75	12
12	1.5	30	75	12
12	2 / 2.5	30	75	12
16	1 / 2 / 2.5	35	100	16

Standard



3	0.5	12	75	3
3	1	12	75	3
4	0.5	20	75	4
4	1	20	75	4
5	0.5	20	75	5
5	1	20	75	5
6	0.5	25	75	6
6	1	25	75	6
8	0.5	30	75	8
8	1	30	75	8
10	0.5	40	100	10
10	1	40	100	10
12	0.5	45	100	12
12	1	45	100	12

Long

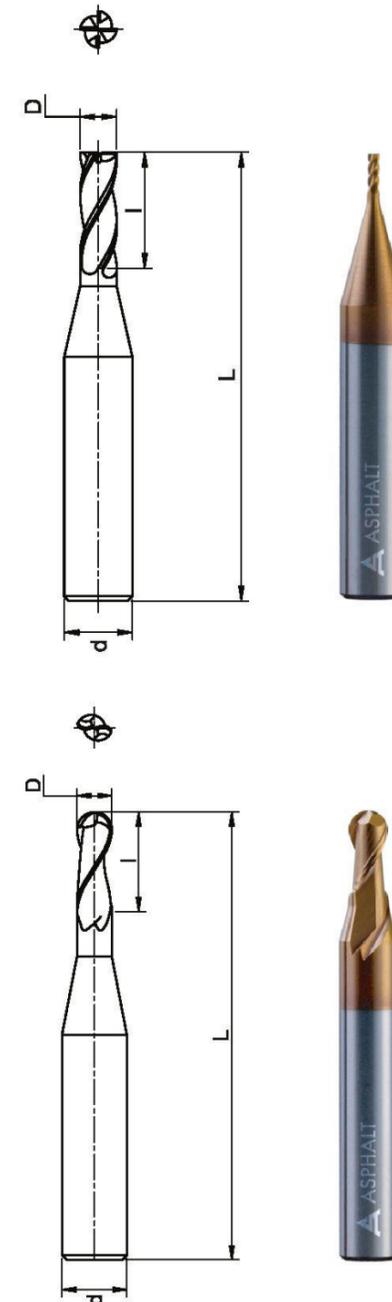
3	0.5 / 1	20	100	3
4	0.5 / 1	20	100	4
5	0.5 / 1	25	100	5
6	0.5 / 1	30	100	6
6	1	40	150	6
8	0.5 / 1	35	100	8
8	1	50	150	8
10	1	60	150	10
12	1	60	150	12

Extra Long

Carbide Endmill 55 HRC - 6mm Shank

Recommended For

Steel 30-55 HRC
P20
Hot Die Steel (H13, H11, H21)
Stainless Steel <55 HRC
D2
Aluminium



4F Flat Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	6
1.5	4	50	6
2	5	50	6
2.5	8	50	6
3	8	50	6
3.5	10	50	6
4	10	50	6
5	12	50	6

Standard

1	3	75	6
1.5	5	75	6
2	6	75	6
2.5	6	75	6
3	12	75	6
3.5	12	75	6
4	20	75	6
5	20	75	6

Long

2F Ballnose Endmill

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	6
R0.75	3	50	6
R1	4	50	6
R1.25	5	50	6
R1.5	6	50	6
R1.75	7	50	6
R2	8	50	6
R2.5	10	50	6

Standard

R0.5	2	75	6
R0.75	3	75	6
R1	4	75	6
R1.25	5	75	6
R1.5	6	75	6
R1.75	7	75	6
R2	8	75	6
R2.5	10	75	6

Long

Uncoated 50 HRC Series

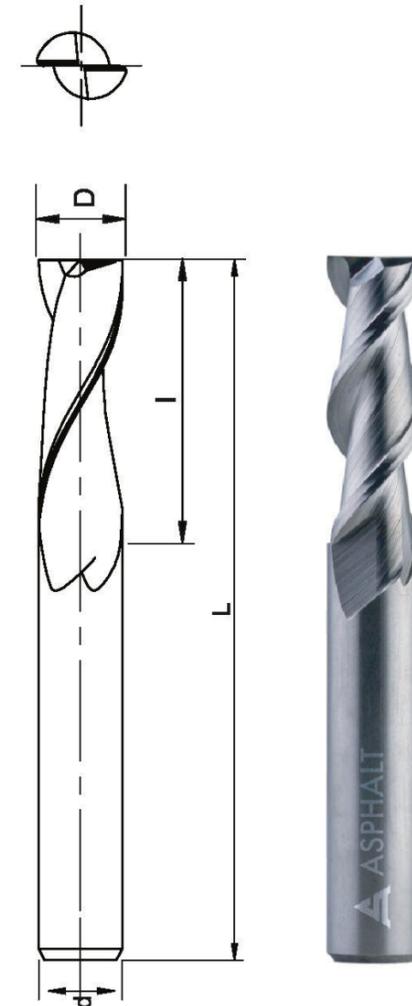
- Uncoated
- 45° Helix
- 0.6 µm Particle
- DIN 6535 Form HA



Flat Carbide Uncoated Endmill 2 Flute - 50 HRC

Recommended For

- Aluminium
- Wood
- Aluminium Alloys



Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
1.5	5	50	4
2	6	50	4
2.5	8	50	4
3	10	50	3
3	10	50	4
3.5	12	50	4
4	12	50	4
5	15	50	5
6	18	50	6
7	21	60	8
8	24	60	8
9	27	75	10
10	30	75	10
11	33	75	12
12	36	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

Standard

1	3	75	4
1.5	5	75	4
2	6	75	4
3	15	75	4
4	15	75	4
5	20	75	5
6	25	75	6
8	30	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

Long

3	12	100	3
4	20	100	4
5	25	100	5
6	30	100	6
6	35	150	6
8	40	100	8
8	50	150	8
10	50	150	10
12	60	150	12

Extra Long

Flat Carbide Uncoated Endmill 3 Flute - 50 HRC

Recommended For
Aluminium
Wood
Aluminium Alloys

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
1	3	50	4
1.5	5	50	4
2	6	50	4
2.5	8	50	4
3	10	50	3
3	10	50	4
3.5	12	50	4
4	12	50	4
5	15	50	5
6	18	50	6
7	21	60	8
8	24	60	8
9	27	75	10
10	30	75	10
11	33	75	12
12	36	75	12
14	45	100	14
16	45	100	16
18	45	100	18
20	45	100	20

Standard

1	3	75	4
1.5	5	75	4
2	6	75	4
3	15	75	4
4	15	75	4
5	20	75	5
6	25	75	6
8	30	75	8
10	45	100	10
12	45	100	12
14	60	150	14
16	60	150	16
18	60	150	18
20	60	150	20

Long

3	12	100	3
4	20	100	4
5	25	100	5
6	30	100	6
6	40	150	6
8	40	100	8
8	50	150	8
10	50	150	10
12	60	150	12

Extra Long



Ballnose Carbide Uncoated Endmill 2 Flute - 50 HRC

Recommended For
Aluminium
Wood
Aluminium Alloys

Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
R0.5	2	50	4
R0.75	3	50	4
R1	4	50	4
R1.25	5	50	4
R1.5	6	50	3
R1.5	6	50	4
R1.75	7	50	4
R2	8	50	4
R2.5	10	50	5
R3	12	50	6
R3.5	14	60	8
R4	16	60	8
R4.5	18	75	10
R5	20	75	10
R5.5	22	75	12
R6	24	75	12
R7	28	100	14
R8	32	100	16
R9	36	100	18
R10	40	100	20

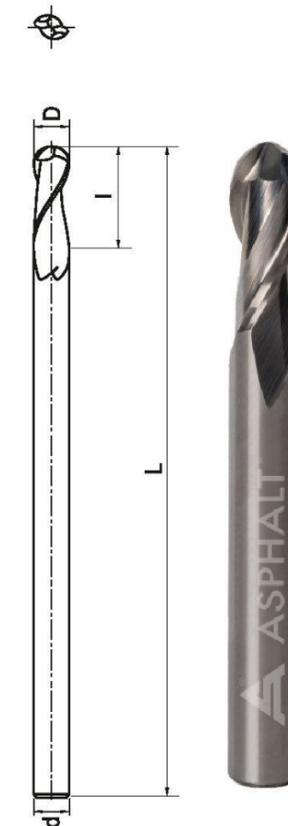
Standard

R0.5	2	75	4
R0.75	3	75	4
R1	4	75	4
R1.5	6	75	4
R2	8	75	4
R2.5	10	75	5
R3	12	75	6
R4	16	75	8
R5	20	100	10
R6	24	100	12
R7	28	150	14
R8	32	150	16
R9	40	150	18
R10	40	150	20

Long

R1.5	6	100	3
R2	8	100	4
R2.5	10	100	5
R3	12	100	6
R3	12	150	6
R4	16	100	8
R4	16	150	8
R5	20	150	10
R6	24	150	12

Extra Long



Drill 55 HRC Series

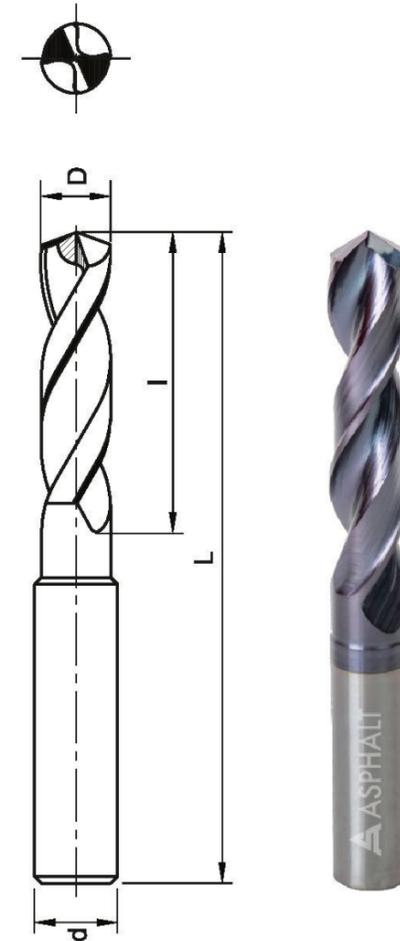
- TiCN Coated
- 130° Tip Angle
- Non - Through Coolant
- DIN 6535 Form HA



Carbide Drill 55 HRC

Recommended For

- Steel 30-55 HRC
- P20
- Hot Die Steel(H13, H11, H21)
- D2
- Aluminium



Dia (D)	Flute Length (l)	Total Length (L)	Shank Dia (d)
0.5 ~ 0.9	5	50	3
1.0 ~ 1.5	8	50	3
1.6 ~ 2.0	11	50	3
2.1 ~ 2.5	13	50	3
2.6 ~ 3.0	16	50	3
3.1 ~ 3.5	18	50	4
3.6 ~ 4.0	20	50	4
4.1 ~ 4.5	20	50	6
4.6 ~ 5.0	24	60	6
5.1 ~ 6.0	26	60	6
6.1 ~ 7.0	28	60	8
7.1 ~ 8.0	30	60	8
8.1 ~ 9.0	34	75	10
9.1 ~ 9.5	38	75	10
9.6 ~ 10.0	40	75	10
10.1 ~ 11.0	42	75	12
11.1 ~ 12.0	45	75	12
12.5	52	100	14
13	52	100	14

1.5	13	50	3
1.6 ~ 2.0	20	50	3
2.1 ~ 2.5	22	75	3
2.6 ~ 3.0	26	75	3
3.1 ~ 3.5	28	75	4
3.6 ~ 4.0	32	75	4
4.1 ~ 5.0	36	75	6
5.1 ~ 6.0	40	75	6
6.1 ~ 7.0	48	100	8
7.1 ~ 8.0	50	100	8
8.1 ~ 9.0	56	100	10
9.1 ~ 10.0	58	100	10
10.1 ~ 11.0	60	100	12
11.1 ~ 12.0	65	100	12
12.5	70	120	14

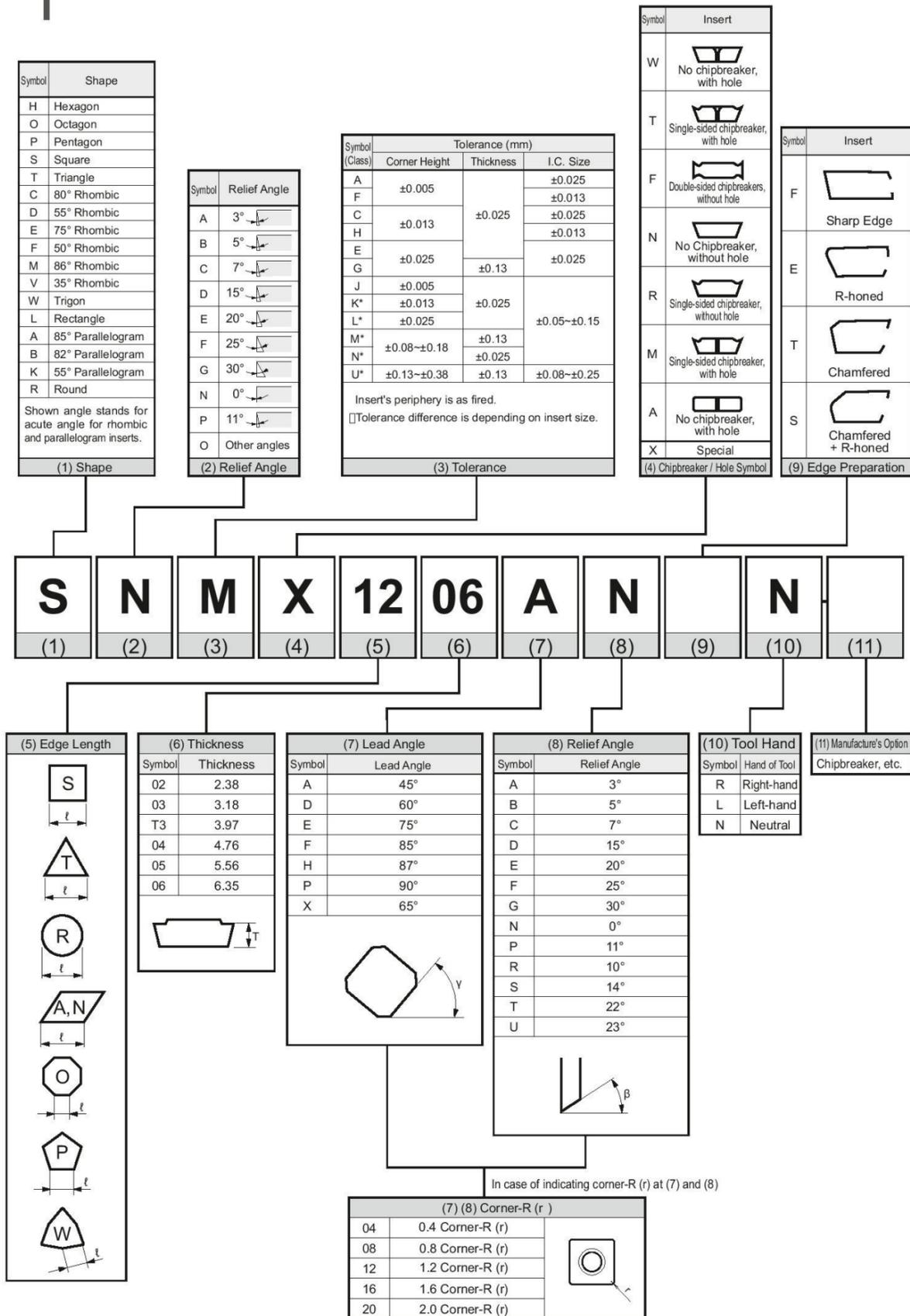
* All Size Are Available In 0.1 Difference

3D Drill

5D Drill



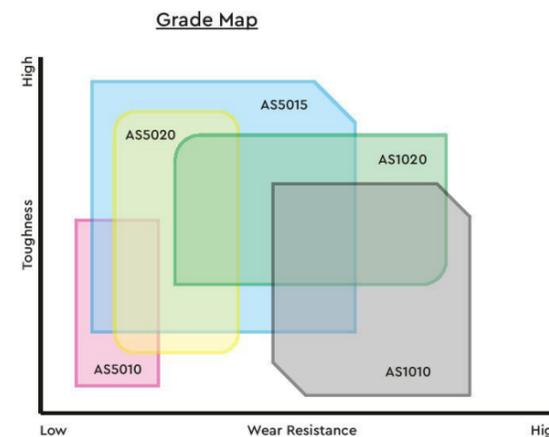
Inserts Identification System



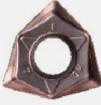
Insert Grades

AS1010	ASPHALT superior CVD coated grade with fine cemented carbide substracts ensures excellent wear resistance, because of its wide working range recommended for general machining of steel and cast iron.
AS1020	Combination of good toughness and strength enhance by its raw substance with Al2O3 added CVD coating improves its wear resistance. Suitable of various operation in steel below 50 HRC.
AS5010	PVD coated cemented carbide with balanced cobalt substracts and post-treatment technology improves wear resistance and toughness. Because of its wear resistance and toughness balance, recommended for graded steel and stainless steel general application.
AS5015	Compact CVD coating with fine cemented carbide substracts gives flexibility for semi finish and roughing application. Recommended for hard alloy steel and stainless steel machining for various semi finish and roughing application.
AS5020	New PVD coating perfectly matched with toughness substracts gives excellent heat resistance and mechanical properties. Recommended for stainless steel and super alloy steel for wide range of application.

Milling Grades	P Steel					M Stainless Steel					K Cast Iron				S Superalloys				H Hardened Steel				
	P01	P10	P20	P30	P40	P50	M01	M10	M20	M30	M40	K01	K10	K20	K30	K40	S01	S10	S20	S30	H01	H10	H20
CVD	AS1010	1010										1010											
	AS1020	1020										1020											
	AS5015	5015					5015					5015				5015							
PVD	AS5010	5010					5010					5010				5010							
	AS5020	5020					5020									5020							



Inserts Geometry

	MSR	Versatile Geometry Very Good Edge Strength For Roughing And Semi Roughing Application Due To Its Sharpness And Big Rack Angle Its Capable For Taking Good Range Of Feed And DOC.
	GM	Sharp Geometry Applicable For Heavy Roughing To Semi Roughing Application Due To Its Sharpness Chip Evacuation Is Good And It Will Take High Doc And High Feed Compared To Regular Insert.
	MO	MO Geometry Have Different Chip Breaker ,toughness And Big Rack Face. Due To Its Toughness Suitable In All Heavy Roughing Application To Semi Roughing And Semi Finish Application.
	HR	Tough Geometry Suitable For Difficult To Cut Material And Hard Part Machining In Most Roughing Application.
	MRR	Strong Cutting Edge Geometry With Good Edge Strength For Roughing And Semi Roughing Application.
	MR	Universal Roughing Geometry For Roughing To Medium Roughing Application.
	PSR	General Roughing Geometry For Roughing And Semi Roughing Application In Cast Iron And Mild Steel Application.
	GR	Sharp And Strong Roughing Geometry For Most Of Roughing Cast Iron And Mild Steel Application.
	UD	Universal Geometry For U-drill And Other Drilling Application.
	PM	Sharp And Positive Rack Angle Geometry Applicable For Roughing And Semi Roughing Application Due To Its Sharpness Chip Evacuation Is Good And It Will Take High DOC.

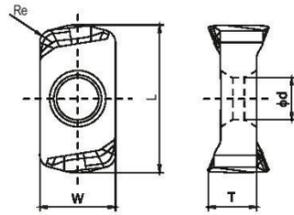
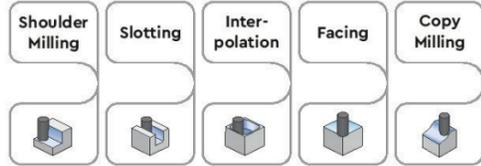
Milling Insert

- High Feed Mill
- Square Shoulder Mill
- Copy Mill
- Face Mill



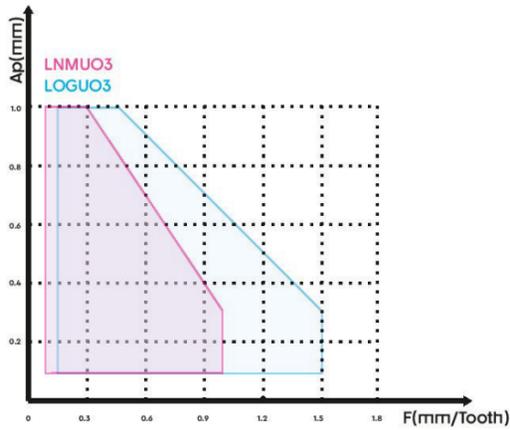
High Feed Mill

ISO LNMU
LOGU



Insert	L	W	T	d	Re
LNMU0303ZER	11.9	6.0	3.75	2.85	1.2
LOGU030310ER	11.9	6.2	3.96	3.45	1

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
LNMU0303ZER	MSR	AS1020	●		○				120 - 250
LNMU0303ZER	MSR	AS5010	●	○	○		○		90 - 180
LNMU0303ZER	MSR	AS5020	●	●			○		90 - 200
LOGU030310ER	GM	AS1020	●		○				120 - 250
LOGU030310ER	GM	AS5020	●	●			○		90 - 200



Case Study

Factors	Case-1	Case-2
Model	LNMU0303ZER-MSR-AS5010	LOGU030310ER-GM-AS1020
Operation	Slotting	Pocketing
Material	P20	EN8
Tool Dia	25mm	32mm
Pocket	4	4
Vc	150	170
RPM	1910	1691
DOC (Ap)	0.6	0.5
Feed(mm/tooth)	0.8	1
Engagement(Ae)	100%	100%
Life	1 Hr. 52 Min.	2 Hr. 32 Min.

Cutter Body

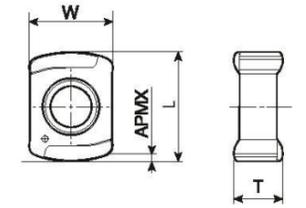
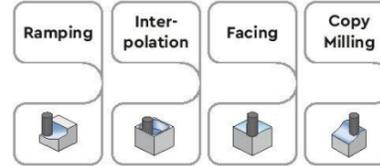
Code	Size	Tooth	LNMU Screw: S2507 Spanner: T08P	LOGU Screw: S3065 Spanner: T15P
ASCB	16x150/200	T2	✓	✓
ASCB	20x150/200	T2/T3	✓	✓
ASCB	25x150/200	T3/T4	✓	✓
ASCB	32x150/200	T4/T5	✓	✓
ASCB	D40	T6	✓	✓
ASCB	D50	T6/T7	✓	✓
ASCB	D63	T7/T8	✓	✓
ASCB	D80	T8/T9	✓	✓

* Other Sizes Available On Request.



High Feed Mill

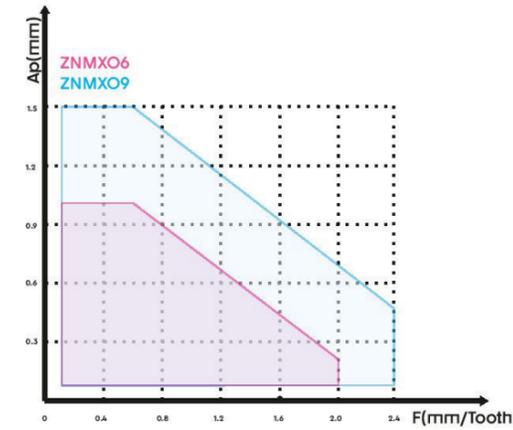
ZNMX



Insert	L	W	T	Apmx
ZNMX0603R	9.00	6.39	3.73	1.0
ZNMX0904R	11.94	9.20	4.79	1.5

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
ZNMX0603R	MO	AS5015	●	●	○		●	○	100 - 280
ZNMX0904R	MO	AS5015	●	●	○		●	○	120 - 300

* For Other Technical Data Refer Page No.77



Case Study

Factors	Case-1	Case-2
Model	ZNMX0603R MO-AS5015	ZNMX0904R MO-AS5015
Operation	Cavity	Pocketing
Material	P20	OHNS
Tool Dia	25mm	32mm
Pocket	4	4
Vc	180	160
RPM	2300	1600
DOC (Ap)	0.7	1.0
Feed(mm/tooth)	1.05	1.26
Engagement(Ae)	75%	60%
Life	2 Hr. 28 Min.	1 Hr. 50 Min.

Cutter Body

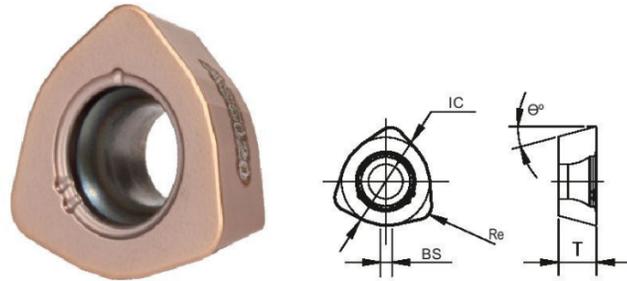
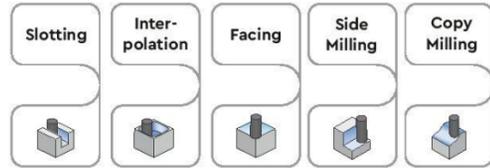
Code	Size	Tooth	ZNMX06 Screw: S2505/O8 Spanner: T08	ZNMX09 Screw: S3508 Spanner: T15
ASCB	16x150/200	T2	✓	
ASCB	20x150/200	T2/T3	✓	
ASCB	25x150/200	T2/T3/T4	✓	✓
ASCB	32x150/200	T3/T4	✓	✓
ASCB	D40	T4/T5	✓	✓
ASCB	D50	T5/T6	✓	✓
ASCB	D63	T6/T7	✓	✓
ASCB	D80	T6/T7		✓
ASCB	D100	T7/T8		✓
ASCB	D125	T8/T9		✓

* Other Sizes Available On Request.



High Feed Mill

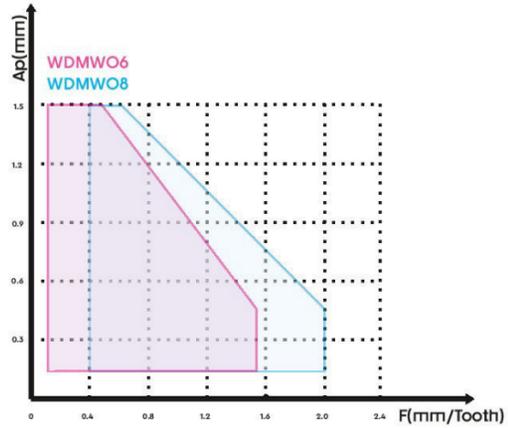
ISO WDMW



Insert	IC	T	BS	Re	θ°
WDMW06T320ZTR	9.525	3.97	1.2	2	15
WDMW080520ZTR	12	4.76	2.5	2	15

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
WDMW06T320ZTR	MO	AS5015	●	●	○		●	○	90 - 250
WDMW080520ZTR	MO	AS5020	●	●			○		90 - 250

* For Other Technical Data Refer Page No.78



Case Study

Factors	Case-1	Case-2
Model	WDMW06T320 ZTR-MO-AS5015	WDMW06T320 ZTR-MO-AS5015
Operation	Profiling	Facing
Material	P20	P20
Tool Dia	25mm	32mm
Pocket	2	3
Vc	180	180
RPM	2300	1800
Feed(mm/tooth)	1.0mm	0.7mm
DOC (Ap)	0.5mm	0.6 mm
Engagement(Ae)	100%	70%
Life	1 Hr. 18 Min	2 Hr. 45 Min

Cutter Body

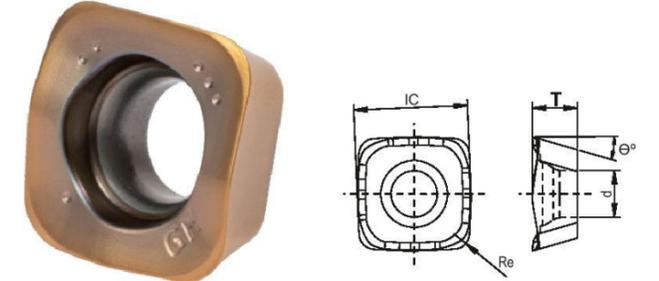
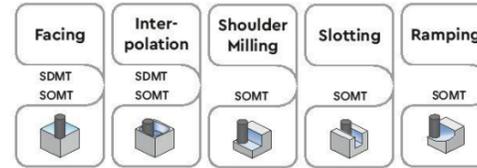
Code	Size	Tooth	WDMW06 Screw: S3510 Spanner: T15P	WDMW08 Screw: S4010 Spanner: T15P
ASCB	25x150/200	T2	✓	
ASCB	32x150/200	T2/T3	✓	✓
ASCB	D40	T3/T4	✓	✓
ASCB	D50	T4/T5	✓	✓
ASCB	D63	T5/T6	✓	✓
ASCB	D80	T5/T6		✓

* Other Sizes Available On Request.



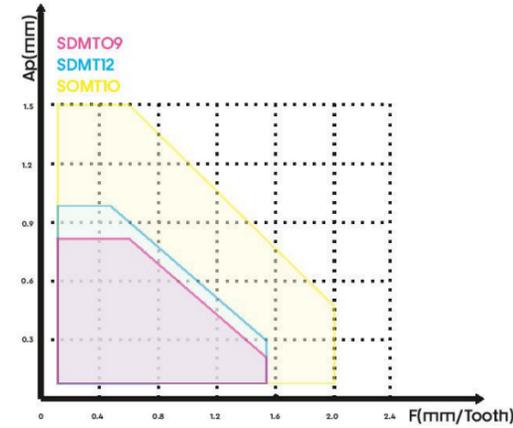
High Feed Mill

ISO SDMT
SOMT



Insert	IC	T	d	Re	θ°
SDMT09T307	9	3.5	3.5	0.7	15
SDMT120512	12.7	5.56	4.4	1.2	15
SOMT100420ER	10.3	4.58	4.6	2	16

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
SDMT09T307	HR	AS5015	●	●	○		●	○	90 - 200
SDMT120512	MRR	AS5015	●	●	○		●	○	100 - 230
SDMT120512	MRR	AS5020	●	●			○		90 - 220
SOMT100420ER	MR	AS5015	●	●	○		●	○	100 - 230
SOMT100420ER	MR	AS5020	●	●			○		80 - 180



Case Study

Factors	Case-1	Case-2
Model	SDMT120512-MRR-AS5020	SOMT100420ER-MR-AS5015
Operation	Facing	Side Milling
Material	S.S.(316)	Forge Steel
Tool Dia	50mm	50mm
Pocket	4	4
Vc	120	180
RPM	750	1146
DOC (Ap)	0.42	1
Feed(mm/tooth)	0.5	0.7
Engagement(Ae)	60%	60%
Life	1 Hr.36 Min	1 Hr. 38 Min

Cutter Body

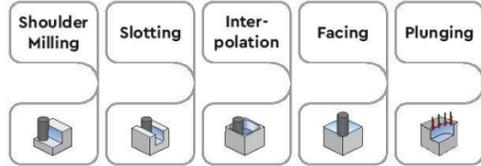
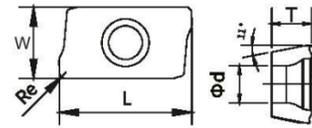
Code	Size	Tooth	SDMT09 Screw: S3510 Spanner: T15P	SDMT12 Screw: S4010 Spanner: T15P	SOMT10 Screw: S4010 Spanner: T15P
ASCB	25x150/200	T2	✓		✓
ASCB	32x150/200	T2/T3	✓	✓	✓
ASCB	D40	T3/T4	✓	✓	✓
ASCB	D50	T4/T5	✓	✓	✓
ASCB	D63	T5/T6	✓	✓	✓
ASCB	D80	T5/T6		✓	✓

* Other Sizes Available On Request.



Square Shoulder Mill

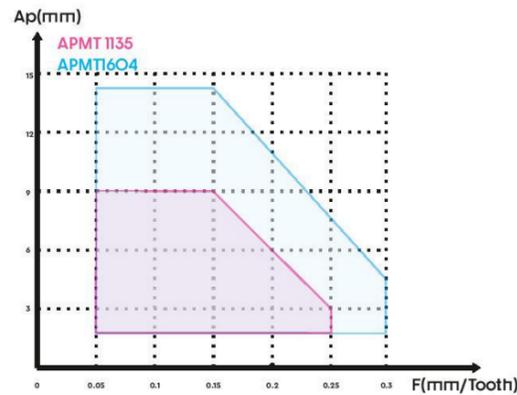
ISO APMT



Insert	L	W	T	d	Re
APMT1135PDER	11.25	6.2	3.5	2.8	0.8
APMT1604PDER	17.3	9.3	5.25	4.4	0.8
APMT1604PDER	17.3	9.3	5.25	4.4	2.0/3.0

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
APMT1135PDER	MSR	AS1020	●		○				100 - 300
APMT1135PDER	MSR	AS5020	○	●			○		100 - 300
APMT1604PDER	MSR	AS1020	●		○				100 - 300
APMT1604PDER	MSR	AS5020	●	●			○		100 - 300
APMT1604PDER-R20	MSR	AS1020	●		○				100 - 300
APMT1604PDER-R30	HR	AS1020	●		○				100 - 300

Case Study



Factors	Case-1	Case-2
Model	APMT1135PDER-MSR-AS5020	APMT1604PDER-MSR-AS5020
Operation	Shoulder Milling	Slotting
Material	S.S.Duplex	S.S.Duplex 4A
Tool Dia	25mm	50mm
Pocket	3	4
Vc	95	90
RPM	1210	593
DOC (Ap)	0.5	0.7
Feed(mm/tooth)	0.29	0.29
Engagement(Ae)	70%	100%
Life	33 Min	38 Min

Cutter Body

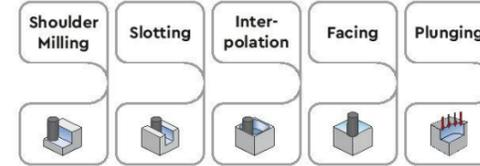
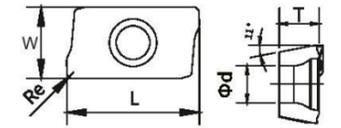
Code	Size	Tooth	APMT11 Screw: S2506 Spanner: T08P	APMT16 Screw: S4010 Spanner: T18P
ASCB	10/12x100	T1	✓	
ASCB	16x150/200	T2	✓	
ASCB	18x150/200	T2	✓	
ASCB	20x150/200	T2	✓	✓
ASCB	25x150/200	T2/T3	✓	✓
ASCB	32x150/200	T3/T4	✓	✓
ASCB	D40	T4/T5	✓	✓
ASCB	D50	T4/T5	✓	✓
ASCB	D63	T5		✓
ASCB	D80/D100	T6		✓
ASCB	D125	T7		✓

* Other Sizes Available On Request.



Square Shoulder Mill

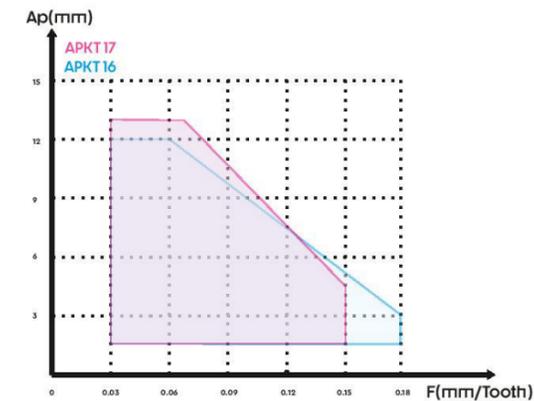
ISO APKT



Insert	L	W	T	d	Re
APKT1604	17.3	9.3	5.25	4.4	0.8
APKT1705PER	18.5	10.7	5.56	4.4	0.8

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
APKT1604	-	A01				●			160 - 500
APKT1705PER	PSR	AS1010	●		○				100 - 230
APKT1705PER	MSR	AS5020	●	●			○		100 - 230

Case Study



Factors	Case-1	Case-2
Model	APKT1705PER-PSR-AS1010	APKT1705PER-MSR-AS5020
Operation	Face Milling	Shoulder Milling
Material	En 24 Steel	Stainless Steel 316
Tool Dia	63mm	50mm
Pocket	5	4
Vc	160	120
RPM	810	763
DOC (Ap)	1.5	1.0
Feed(mm/tooth)	0.25	0.20
Engagement(Ae)	80%	70%
Life	42 Min	46 Min

Cutter Body

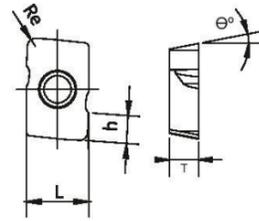
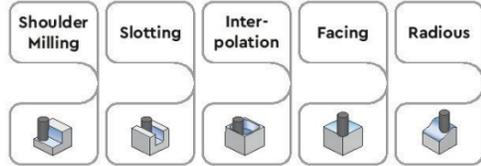
Code	Size	Tooth	APKT16 Screw: S4010 Spanner: T18P	APKT17 Screw: S4085 Spanner: T18P
ASCB	10/12x100	T1		
ASCB	16x150/200	T2		
ASCB	18x150/200	T2		
ASCB	20x150/200	T2		
ASCB	25x150/200	T2	✓	
ASCB	32x150/200	T2/T3	✓	✓
ASCB	D40	T3/T4	✓	✓
ASCB	D50	T4	✓	✓
ASCB	D63	T4/T5	✓	✓
ASCB	D80/D100	T5/T6	✓	✓
ASCB	D125	T7	✓	

* Other Sizes Available On Request.



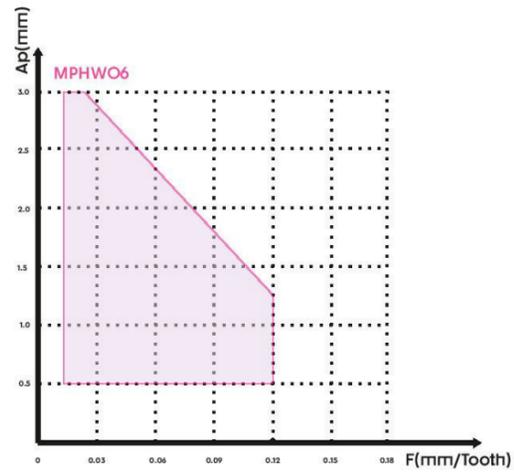
Square Shoulder Mill

ISO MPHW



Insert	L	T	h	Re	θ°
MPHW060308ZEL	6.35	3.18	3	0.8	11

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
MPHW060308ZEL	-	AS5020	●	●			○		130 - 300



Case Study

Factors	Case
Model	MPHW060608-ZEL-AS4010
Operation	Finish Redious
Material	OHNS
Tool Dia	32
Pocket	5
Vc	220
RPM	2188
Feed(mm/tooth)	0.1
DOC (Ap)	0.08
Engagement(Ae)	70 %
Life	3 Hr.

Cutter Body

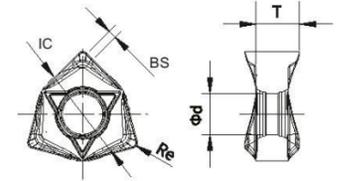
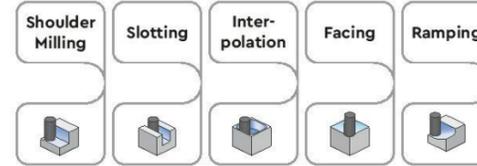
Code	Size	Tooth	MPHW Screw: S3610 Spanner: T08P
ASCB	20x150/200	T3	✓
ASCB	25x150/200	T4	✓
ASCB	30x150/200	T4	✓
ASCB	32x150/200	T5	✓

*Other Sizes Available On Request.



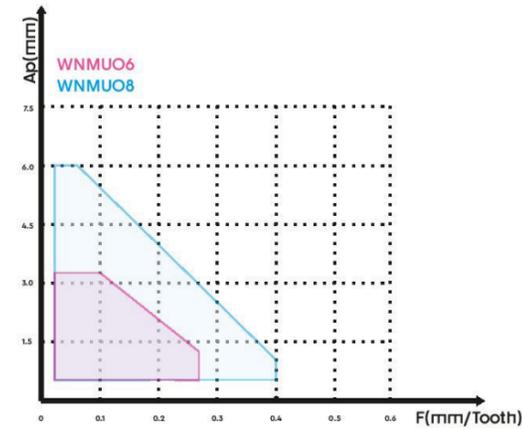
Square Shoulder Mill

ISO WNMU



Insert	IC	T	d	BS	Re
WNMU060408	9.52	4.76	6.2	-	0.8
WNMU080608	14.02	6.65	6.2	1.3	0.8

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
WNMU060408EN	GM	AS5020	●	●			○		100 - 200
WNMU080608EN	GM	AS5015	●	●	○		●	○	100 - 250
WNMU080608EN	GM	AS5020	●	●			○		100 - 200
WNMU080608	-	A01				●			150 - 450



Case Study

Factors	Case
Model	WNMU080608EN-GM-AS5015
Operation	Facing
Material	M.S.
Tool Dia	50 mm
Pocket	4
Vc	200
RPM	1273
DOC (Ap)	2.5
Feed(mm/tooth)	0.1
Engagement(Ae)	70 %
Life	1 Hr. 58 Min.

Cutter Body

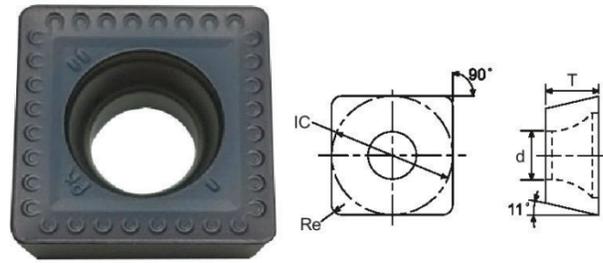
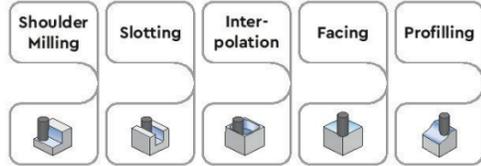
Code	Size	Tooth	WNMU06 Screw: S3610 Spanner: T15P	WNMU08 Screw: S5012 Spanner: T20P
ASCB	D40	T4	✓	
ASCB	D50	T4/T5	✓	✓
ASCB	D63	T5/T6	✓	✓
ASCB	D80	T6/T7	✓	✓
ASCB	D100	T7/T8	✓	✓
ASCB	D125	T8/T9	✓	✓

*Other Sizes Available On Request.



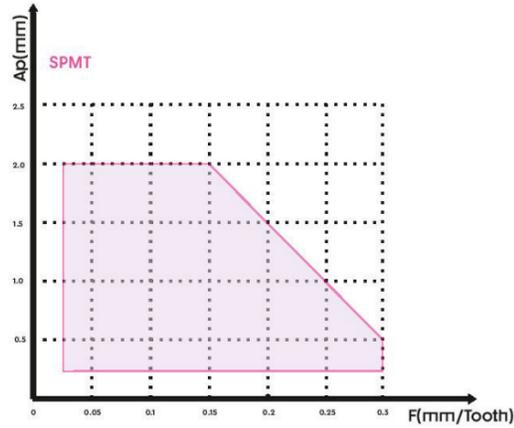
90° Shoulder Mill

ISO SPMT



Insert	IC	T	d	Re
SPMT120408	12.7	4.76	5.5	0.8
SPMT120412	12.7	4.76	5.5	1.2

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
SPMT120408	PM	AS1015	●		○				120 - 350
SPMT120412	PM	AS1020	●		○				120 - 350
SPMT120408	PM	AS5020	●	●			○		100 - 200
SPMT120412	PM	AS5020	●	●			○		100 - 200



Case Study

Factors	Case
Model	SPMT120408-PM AS5015
Operation	Facing
Material	M.S.
Tool Dia	100 mm
Pocket	7
Vc	200
RPM	637
Feed(mm/tooth)	0.3
DOC (Ap)	0.1
Engagement(Ae)	75 %
Life	2 Hr. 8 Min.

Cutter Body

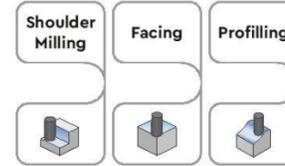
Code	Size	Tooth	SPMT12 Screw: S4512 Spanner: T20P
ASCB	D50	T4	✓
ASCB	D63	T5	✓
ASCB	D80	T6	✓
ASCB	D100	T7	✓
ASCB	D125	T8	✓

* Other Sizes Available On Request.



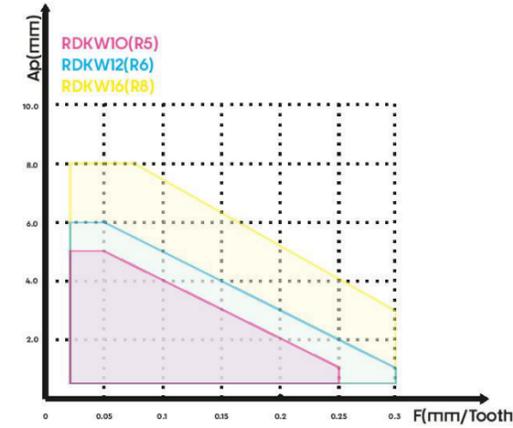
Copy Milling

ISO RDKW



Insert	D	T	d	θ°
RDKW1003(R5)	10	3.18	4.4	15
RDKW1204(R6)	12	4.76	4.4	15
RDKW1606(R8)	16	4.76	5.5	15

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
RDKW1003(R5)	MO	AS5015	●	●	○		●	○	100 - 250
RDKW1003(R5)	MO	AS5020	●	●			○		90 - 200
RDKW1204(R6)	MO	AS5015	●	●	○		●	○	100 - 250
RDKW1606(R8)	MO	AS5020	●	●			○		100 - 250



Case Study

Factors	Case-1	Case-2
Model	RDKW1204- MO-AS5015(R6)	RDKW1204- MO-AS5015(R6)
Operation	Profiling	Cavity Milling
Material	P20	P20
Tool Dia	40mm	63mm
Pocket	4	5
Vc	180	200
RPM	1432	1011
Feed(mm/tooth)	0.2mm	0.15mm
DOC (Ap)	1.0mm	1.5 mm
Engagement(Ae)	70 %	70 %
Life	1 Hr. 45 Min	2 Hr. 45 Min

Cutter Body

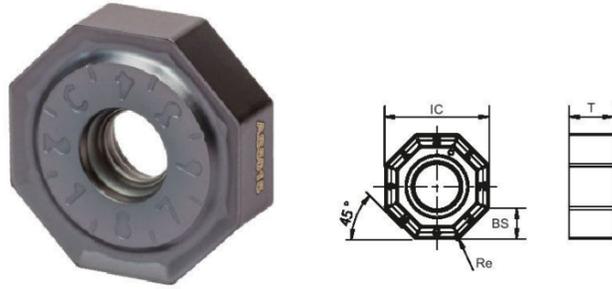
Code	Size	Tooth	RDKW10 Screw: S4090 Spanner: T15P	RDKW12 Screw: S4010 Spanner: T15P	RDKW16 Screw: S5012 Spanner: T20P
ASCB	20x150/200	T2	✓		
ASCB	25x150/200	T2	✓	✓	
ASCB	32x150/200	T3	✓	✓	
ASCB	D40	T3	✓	✓	
ASCB	D50/D52	T3/T4		✓	✓
ASCB	D63	T4		✓	✓
ASCB	D80	T5/T6		✓	✓
ASCB	D100	T6/T7		✓	✓
ASCB	D125	T7/T8		✓	✓

* Other Sizes Available On Request.



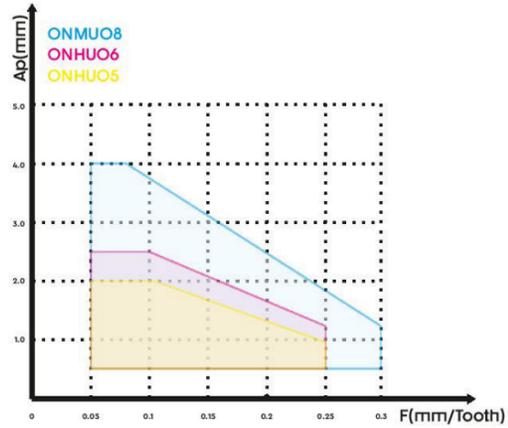
Face Mill

ISO
ONHU
ONMU



Insert	IC	T	BS	Re
ONHU050408	12.7	4.76	-	0.8
ONHU060408	16.0	4.76	-	0.8
ONMU060408	16.0	4.76	-	0.8
ONMU080608	20.2	6.0	5.5	0.8

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
ONHU050408	-	AS5015	●	●	○		●	○	100 - 350
ONHU060408	-	AS5015	●	●	○		●	○	100 - 350
ONMU060408	-	AS5015	●	●	○		●	○	100 - 350
ONMU080608	-	AS5010	●		○				120 - 300
ONMU080608	-	AS5015	●	●	○		●	○	100 - 350



Case Study

Factors	Case
Model	ONMU080608-AS5015
Operation	Facing
Material	M.S.
Tool Dia	80 mm
Pocket	6
Vc	180
RPM	716
DOC (Ap)	2.2
Feed(mm/tooth)	0.12
Engagement(Ae)	75 %
Life	1 Hr. 39 Min.

Cutter Body

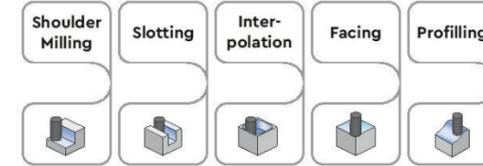
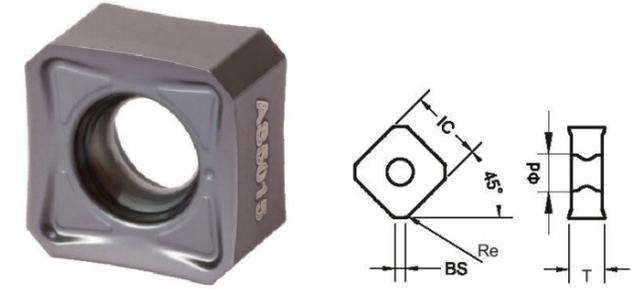
Code	Size	Tooth	ON_UO5 Screw: S4010 Spanner: T15P	ON_UO6 Screw: S4010 Spanner: T15P	ONMU08 Screw: S5012 Spanner: T20P
ASCB	D50	T4	✓	✓	✓
ASCB	D63	T5	✓	✓	✓
ASCB	D80	T6	✓	✓	✓
ASCB	D100	T7	✓	✓	✓
ASCB	D125	T8	✓	✓	✓
ASCB	D160	T9/T10	✓	✓	✓

* Other Sizes Available On Request.



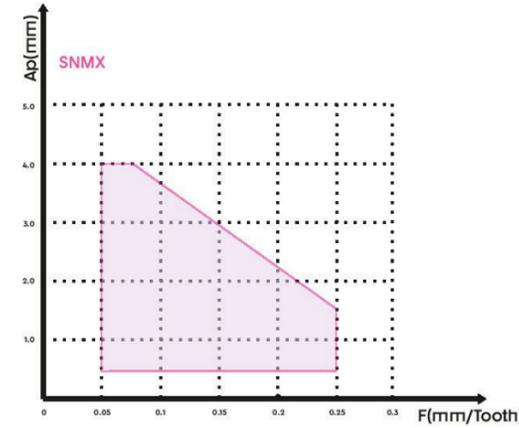
Face Mill

ISO
SNMX



Insert	IC	T	BS	d	Re
SNMX1206ANN	12.7	6.2	1.8	5.5	0.4
SNMX120608	12.7	6.35	-	5.5	0.8
SNMX120612	12.7	6.35	-	5.5	1.2

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
SNMX1206ANN	GR	AS5015	●	●	○		●	○	120 - 300
SNMX120608	GR	AS1010	●		●				160 - 400
SNMX120612	GR	AS1010	●		●				160 - 400
SNMX120608	GR	AS5015	●	●	○		●	○	120 - 300
SNMX120612	GR	AS5015	●	●	○		●	○	120 - 300



Case Study

Factors	Case
Model	SNMX120612-GR AS5015
Operation	Facing
Material	C.I.
Tool Dia	80 mm
Pocket	6
Vc	300
RPM	1194
Feed(mm/tooth)	0.18
DOC (Ap)	1.5
Engagement(Ae)	70 %
Life	2 Hr. 14 Min.

Cutter Body

Code	Size	Tooth	SNMX Screw: S5012 Spanner: T20P
ASCB	D50	T4	✓
ASCB	D63	T5	✓
ASCB	D80	T6	✓
ASCB	D100	T7	✓
ASCB	D125	T8	✓
ASCB	D160	T9	✓

* Other Sizes Available On Request.

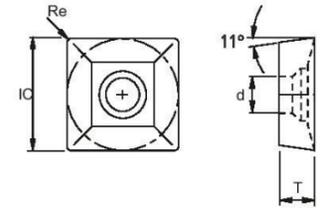
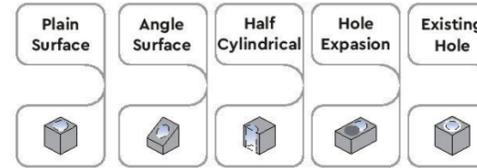


Through Coolant
Electroplated
6:4 Groove Ratio,
For Better Chip Removal



Hole Making

ISO SPMG



Insert	IC	T	d	Re
SPMG050204	5	2.38	2.25	0.4
SPMG060204	6	2.38	2.61	0.4
SPMG07T308	7.94	3.97	2.85	0.8
SPMG090408	9.80	4.30	4.05	0.8
SPMG110408	11.50	4.80	4.45	0.8
SPMG140512	14.30	5.20	5.75	1.2

Insert	Geometry	Grade	P	M	K	N	S	H	Vc
SPMG050204	UD	AS5015	●	●	○		●	○	50 - 280
SPMG060204	UD	AS5015	●	●	○		●	○	50 - 280
SPMG07T308	UD	AS5015	●	●	○		●	○	50 - 280
SPMG090408	UD	AS5015	●	●	○		●	○	50 - 280
SPMG110408	UD	AS5015	●	●	○		●	○	50 - 280
SPMG140512	UD	AS5015	●	●	○		●	○	50 - 280



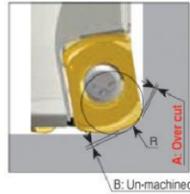
U - Drill

Code	Insert	Screw	Spanner	Size	L/D=2	L/D=3	L/D=4	L/D=5
ASUD	SPMG05	S2250	T06P	12.5 - 15.5	✓	✓	✓	
ASUD	SPMG06	S2255	T07P	16 - 21.5	✓	✓	✓	✓
ASUD	SPMG07	S2580	T08P	22 - 27.5	✓	✓	✓	✓
ASUD	SPMG09	S3590	T15P	28 - 33.5	✓	✓	✓	✓
ASUD	SPMG11	S4010	T15P	34 - 41	✓	✓	✓	✓
ASUD	SPMG14	S5011	T20P	42 - 50	✓	✓	✓	✓

* All Size Are Available In Q5 Difference
* Other Sizes Available On Request.

Technical Data

ISO ZNMX

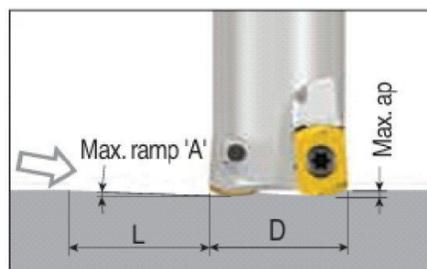


Insert	Dia	R Program	A Overcut	B Unmachined
ZNMX06	16	1.5	0	0.35
ZNMX06	20-63	2.0	0	0.42
ZNMX09	25-125	2.5	0	0.61

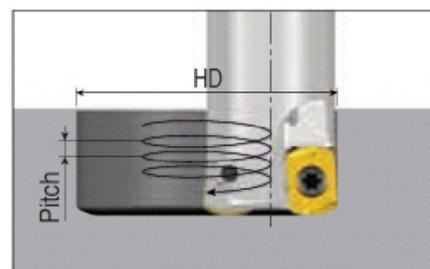
Cutter Dia (D)	Straight Ramp Down			Helical Ramp Down		
	Max.Ramp(A2)	Max. ap	Min. Length (L)	Min. dia (HD)	Max dia (HD)	Max Pithch/Rev
16	2.0	0.7	13	23	32	0.7
20	1.5	1.0	38	31	40	0.8
25	1.3	1.0	41	41	50	1.0
32	0.9	1.0	57	55	64	1.0
40	0.7	1.0	64	71	80	1.0
50	0.6	1.0	96	91	100	1.0
63	0.5	1.0	115	117	126	1.0

Cutter Dia (D)	Straight Ramp Down			Helical Ramp Down		
	Max.Ramp(A2)	Max. ap	Min. Length (L)	Min. dia (HD)	Max dia (HD)	Max Pithch/Rev
25	2.2	1.5	39	42	50	1.5
32	2.0	1.5	43	56	64	1.5
40	1.5	1.5	57	72	80	1.5
50	1.0	1.5	86	92	100	1.5
63	0.9	1.5	96	118	126	1.5
80	0.8	1.5	107	152	160	1.5
100	0.7	1.5	123	192	200	1.5
125	0.4	1.5	215	240	250	1.5

Straight ramping

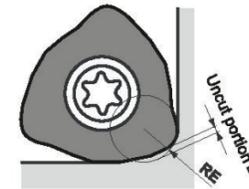


Helical ramping



Technical Data

ISO WDMW

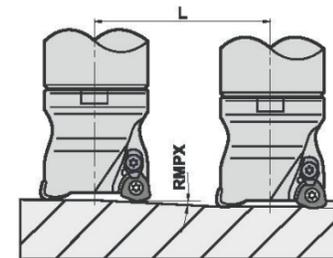


Insert	Dia	R Program	A Overcut	B Unmachined
WDMW06	25 - 63	3.0	0	0.46
WDMW08	32 - 100	3.0	0	0.63

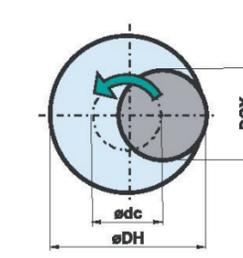
Cutter Dia (D)	Straight Ramp Down			Helical Ramp Down		
	Max.Ramp(A2)	Max. ap	Min. Length (L)	Min. dia (HD)	Max dia (HD)	Max Pithch/Rev
25	4	2.0	14.3	33	46	1.0
32	2.5	2.0	22.9	47	60	1.0
40	1.5	2.0	38.2	63	76	1.0
50	1.1	2.0	52.1	83	96	1.0
63	0.8	2.0	71.6	107	122	1.0

Cutter Dia (D)	Straight Ramp Down			Helical Ramp Down		
	Max.Ramp(A2)	Max. ap	Min. Length (L)	Min. dia (HD)	Max dia (HD)	Max Pithch/Rev
32	4.0	2.0	14.3	41	60	1.5
40	3.0	2.0	19.1	57	76	1.5
50	2.0	2.0	28.6	77	96	1.5
63	1.5	2.0	38.2	103	122	1.5
80	1.1	2.0	52.1	137	156	1.5
100	0.8	2.0	71.6	177	196	1.5

RAMPING



HELICAL RAMP DOWN



How To Derive A Locus Of The Centre Of The Tool.

$$\text{ødc} = \text{øDH} - \text{DCX}$$

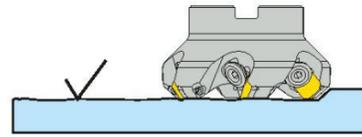
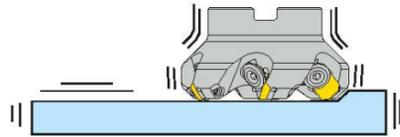
Locus of the centre of the tool = Desired hole diameter - Cutting Diameter Maximum

- For The Depth Of Cut Per Pass, Refer To The Cutting Conditions Above For Helical Ramp Down.
- Set The Machine Spindle Revolution So That The Tool Is Rotating And Cutting In A Down Cut Direction.
- Where Dc Cutter Dia. 10.1(WDMW06)
- Where Dc Cutter Dia. 11.7(WDMW08)

- When Ramping And Helical Cutting, Please Apply A Lower Feed.
- When Helical Ramp Down, Please Set The Feed In The Axial Direction At 0.2mm/rev Or Less.
- The Long Chips Generated Can Disperse, Ensure That Adequate Safety Precautions Are Taken.

Trouble Shooting

Vibration
Tool Life Problems



- Improve The Stability Of Cutter And Workpiece.
- Change Cutter Positioning.
- Minimize Tool Overhang.
- Reduce The Cutting Speed.
- Increase The Feed Rate.
- Reduce The Depth Of Cut.
- Select A Different Insert Geometry,
See Page Insert Geometry
- Use Anti - Vibration Bar

- Improve The Stability Of Cutter And Workpiece.
- Minimize Tool Overhang.
- Reduce The Feed Rate.
- Increase The Cutting Speed
- Use Coolant.
- Use Wiper Inserts.
- Keep Feed/rev Value Within Wiper Width
- Use Anti - Vibration Bar

Rapid Flank Wear



Reduce The Cutting Speed.
Increase The Feed Rate.
Climb Milling.

Comb Cracks



Reduce The Cutting Speed.
Reduce The Feed Rate.
No Coolant
Change Cutter Positioning.

Rapid Notch wear



Reduce The Cutting Speed.
Increase The Feed Rate.
Increase The Depth Of Cut.
Climb Milling.
Change Cutter Positioning

Built-Up Edge (BUE)



Increase The Cutting Speed.
Increase The Feed Rate
No Coolant.
Climb Milling.
Change Cutter Positioning

Chipping



Increase The Cutting Speed.
Reduce The Feed Rate.
Conventional Milling.
Improve Chip Evacuation.
Change Cutter Positioning.
Minimize Tool Overhang.
Improve Stability.

MACHINING APPLICATION

ASPHALT OPTIMAX

Asphalt Personalize App Your Smart Machining Assistant Designed To Help You Select The Perfect Cutting Tool Based On Material, Application, And Operating Conditions.

Key Highlights:

- Intuitive And Easy-to-use Interface Suitable For All Machine Shop Personnel
- Instant Access To Recommended Machining Parameters With Optimized Ranges
- Accurate, Material-specific Calculations For Enhanced Performance And Productivity
- Ensures Consistent Results With Verified Tooling And Application Data



Optimized For Machining Excellence

- This Application Delivers Precise Machining Parameters Tailored To Your Selected Cutting Tool And Operation, Ensuring Improved Efficiency, Reliability, And Component Quality.

Continuous Innovation We Are Actively Developing Additional Productivity Tools Such As:

- Cost Per Component Calculator
- Application Based Tool Selection Assistant
- And many more to enhance your machining experience

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