



AutoCAMIN

one click for your all manufacturing  
needs & CNC operations

# Milling TOOLS

All types of CNC tools for your die and mold manufacturing  
requirements.

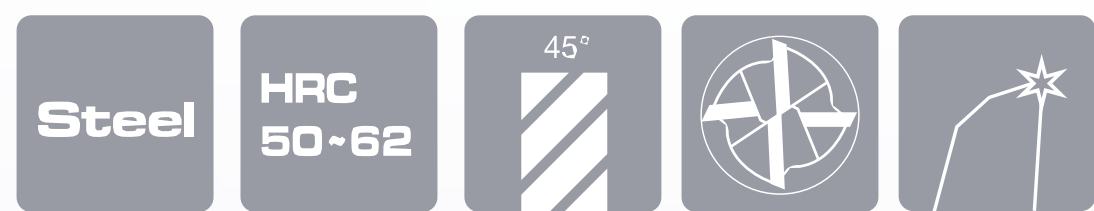




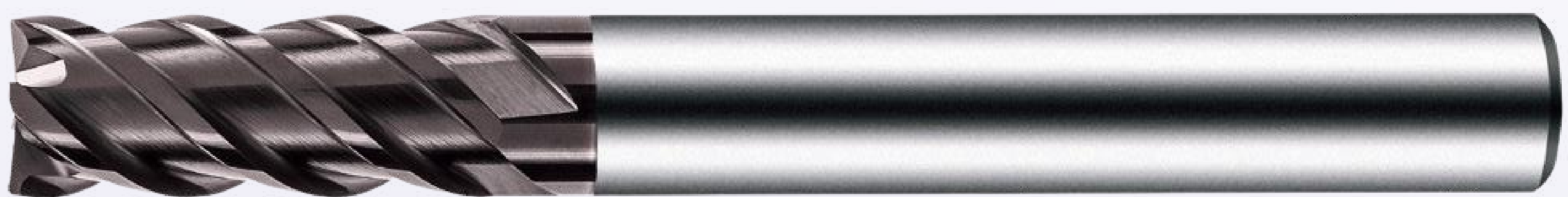
# Hardened steel Roughing and Finishing

## HPCE (HRC50-62)

Corner radius tool for hardened steel milling, HRC50-65. Suitable for side milling, trochoidal milling.



Dc: 0 ~ -0.0008"  
 CR: +/- 0.004"  
 Runout: 0.0004"  
 Ds: h5



Part No.	Cutting Dia. Dc	No. of flute	Flute Length Lf	Corner Radius CR	Shank Dia. Ds	Overall Length L
HPCE04-4-08-08-30R0.01	3/64	4	1/8	0.01	1/4	2
HPCE05-4-10-10-30R0.01	1/16	4	5/32	0.01	1/4	2
HPCE06-4-11-11-30R0.01	5/64	4	3/16	0.01	1/4	2
HPCE07-4-12-12-30R0.01	3/32	4	1/4	0.01	1/4	2
HPCE08-4-13-13-30R0.01	1/8	4	5/16	0.01	1/4	2
HPCE11-4-16-16-30R0.01	3/16	4	1/2	0.01	1/4	2
HPCE12-4-18-18-30R0.01	1/4	4	5/8	0.01	1/4	2
HPCE14-4-21-21-32R0.01	3/8	4	4/5	0.01	3/8	2

Unit of Length (mm)



# Hardened steel 3D Geometry

## Finishing

### HDB/4S (HRC50-62)

High precision ball nose tool, 4mm shank, for hardened steel milling. Designed for high precision die and mold finishing.



Dc<Ds, R: +0.005 ~ -0.005mm  
 Dc=Ds, R: -0.002 ~ -0.009mm R  
 profile line form: +/-0.003mm  
 Runout: 0.005mm  
 Eff. Length Leff: +0.005 ~  
 +0.015mm Ds: h5



Part No.	Cutting Dia. Dc	No. of flute	Flute Length Lf	Effective Length Leff xx	Shank Dia. Ds	Overall Length L
HDB02xx-50/4S	0.2	2	0.2	0.2/0.5/1/1.5/2/2.5/3/3.5/4	4	50
HDB03xx-50/4S	0.3	2	0.2	0.2/0.5/1/1.5/2/2.5/3/3.5/4/4.5/5	4	50
HDB04xx-50/4S	0.4	2	0.3	0.3/1/1.5/2/2.5/3/3.5/4/4.5/5/5.5/6	4	50
HDB05xx-50/4S	0.5	2	0.4	0.4/1/1.5/2/2.5/3/3.5/4/4.5/5/5.5/6/6.5/7/7.5/8	4	50
HDB06xx-50/4S	0.6	2	0.5	0.5/1.5/2/2.5/3/3.5/4/4.5/5/5.5/6/6.5/7/7.5/8/8.5/9	4	50
HDB08xx-50/4S	0.8	2	0.6	0.6/2/3/4/5/6/7/8/9/10	4	50
HDB10xx-50/4S	1.0	2	0.8	0.8/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16	4	50
HDB12xx-50/4S	1.2	2	1	1/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16	4	50
HDB14xx-50/4S	1.4	2	1.2	1.2/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16	4	50
HDB15xx-50/4S	1.5	2	1.3	1.3/3/4/5/6/7/8/9/10/11/12/13/14/15/16	4	50
HDB16xx-50/4S	1.6	2	1.4	1.4/3/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18	4	50
HDB18xx-50/4S	1.8	2	1.6	1.6/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20	4	50
HDB20xx-50/4S	2.0	2	1.7	1.7/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20	4	50
HDB25xx-50/4S	2.5	2	2	2/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20	4	50
HDB30xx-50/4S	3.0	2	2.5	2.5/5/6/7/8/9/10/11/12/13/14/15/16/18/20	4	50
HDB35xx-50/4S	3.5	2	3	3/6/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	4	50
HDB40xx-50/4S	4.0	2	3	3/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	4	50

Unit of Length (mm)



# HDB/6S (HRC50-62)

High precision ball nose tool, 6mm shank, for hardened steel milling. Designed for high precision die and mold finishing.



Dc<Ds, R: +0.005 ~ -0.005mm  
 Dc=Ds, R: -0.002 ~ -0.009mm R  
 profile line form: +/-0.003mm  
 Runout: 0.005mm  
 Eff. Length Leff: +0.005 ~  
 +0.015mm Ds: h5



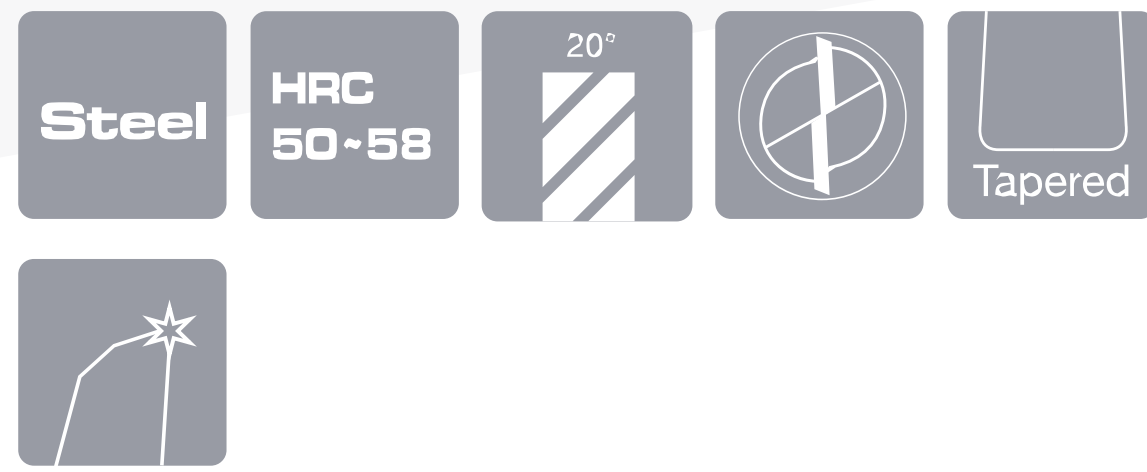
Part No.	Cutting Dia. Dc	No. of flute	Flute Length Lf	Effective Length Leff xx	Shank Dia. Ds	Overall Length L
HDB20xx-50/6S	2	2	1.7	1.7/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20	6	50
HDB20xx-75/6S	2	2	1.7	1.7/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20	6	75
HDB20xx-100/6S	2	2	1.7	1.7/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20	6	100
HDB30xx-50/6S	3	2	2.5	2.5/5/6/7/8/9/10/11/12/13/14/15/16/18/20	6	50
HDB30xx-75/6S	3	2	2.5	2.5/5/6/7/8/9/10/11/12/13/14/15/16/18/20	6	75
HDB30xx-100/6S	3	2	2.5	2.5/5/6/7/8/9/10/11/12/13/14/15/16/18/20	6	100
HDB40xx-50/6S	4	2	3	3/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	6	50
HDB40xx-75/6S	4	2	3	3/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	6	75
HDB40xx-100/6S	4	2	3	3/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	6	100
HDB50xx-50/6S	5	2	3.5	3.5/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30/32/34/36	6	50
HDB60xx-50/6S	6	2	4	4/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30/32/34/36/38/40	6	50
HDB60xx-75/6S	6	2	4	4/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30/32/34/36/38/40	6	75
HDB60xx-100/6S	6	2	4	4/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30/32/34/36/38/40	6	100

Unit of Length (mm)



# HDC

High precision corner radius tool for hardened steel milling. Designed for die and mold finishing.  
Good for steep wall finishing, not suitable for side milling.



Dc: 0 ~ -0.01mm R: +/-0.005mm  
R profile line form: +/-0.003mm  
Runout: 0.005mm  
Eff. Length Leff: +0.05 ~ +0.15mm Ds: h5



Part No.	Cutting Dia. Dc	No. of flute	Flute Length Lf	Effective Length Leff xx	Corner radius CR OO	Shank Dia. Ds	Overall Length L
HDC02xxROO-50/4S	0.2	2	0.1	0.1/0.5/1/1.5/2/2.5/3/3.5/4	0.02/0.05	4	50
HDC03xxROO-50/4S	0.3	2	0.1	0.1/0.5/1/1.5/2/2.5/3/3.5/4/4.5/5	0.02/0.05	4	50
HDC04xxROO-50/4S	0.4	2	0.2	0.2/1/1.5/2/2.5/3/3.5/4/4.5/5/5.5/6	0.02/0.05	4	50
HDC05xxROO-50/4S	0.5	2	0.2	0.2/1/1.5/2/2.5/3/3.5/4/4.5/5/5.5/6/6.5/7/7.5/8	0.02/0.05	4	50
HDC06xxROO-50/4S	0.6	2	0.3	0.3/1.5/2/2.5/3/3.5/4/4.5/5/5.5/6/6.5/7/7.5/8/8.5/9	0.02/0.05	4	50
HDC08xxROO-50/4S	0.8	2	0.4	0.4/2/3/4/5/6/7/8/9/10	0.05/0.1	4	50
HDC10xxROO-50/4S	1	2	0.5	0.5/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16	0.05/0.1/0.2	4	50
HDC12xxROO-50/4S	1.2	2	0.6	0.6/2/3/4/5/6/7/8/9/10/11/12/13/14/15/16	0.1/0.2	4	50
HDC14xxROO-50/4S	1.4	2	0.7	0.7/3/4/5/6/7/8/9/10/11/12/13/14/15/16	0.1/0.2	4	50
HDC15xxROO-50/4S	1.5	2	0.8	0.8/3/4/5/6/7/8/9/10/11/12/13/14/15/16	0.1/0.2/0.3	4	50
HDC16xxROO-50/4S	1.6	2	1	1/3/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18	0.1/0.2/0.3	4	50
HDC18xxROO-50/4S	1.8	2	1.2	1.2/3/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20	0.1/0.2/0.3	4	50

Unit of Length (mm)



# HQC

High precision corner radius tool for hardened steel milling. Designed for die and mold finishing.  
Good for steep wall finishing, not suitable for side milling.



Dc < Ds, Dc: 0 ~ -0.01mm  
Dc = Ds, Dc: -0.005 ~ -0.015mm  
R: +/-0.005mm  
R profile line form: +/-0.003mm  
Runout: 0.005mm  
Eff. Length Leff: +0.05 ~ +0.15mm  
Ds: h5



Part No.	Cutting Dia. Dc	No. of flute	Flute Length Lf	Effective Length Leff xx	Corner radius CR OO	Shank Dia. Ds	Overall Length L
HQC20xxROO-50/4S	2	4	1	1/4/5/6/7/8/9/10/11/12/13/14/15/16/18/20	0.1/0.2/0.3/0.5	4	50
HQC25xxROO-50/4S	2.5	4	1.5	1.5/4/5/6/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26	0.1/0.2/0.3/0.5	4	50
HQC30xxROO-50/4S	3	4	1.9	1.9/5/6/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	0.1/0.2/0.3/0.5	4	50
HQC35xxROO-50/4S	3.5	4	2	2/5/6/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	0.1/0.2/0.3/0.5	4	50
HQC40xxROO-50/4S	4	4	2.3	2.3/6/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	0.1/0.2/0.3/0.5	4	50
HQC50xxROO-50/6S	5	4	2.8	2.8/6/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	0.1/0.2/0.3/0.5	6	50
HQC60xxROO-50/6S	6	4	3.6	3.6/6/7/8/9/10/11/12/13/14/15/16/18/20/22/24/26/28/30	0.1/0.2/0.3/0.5	6	50

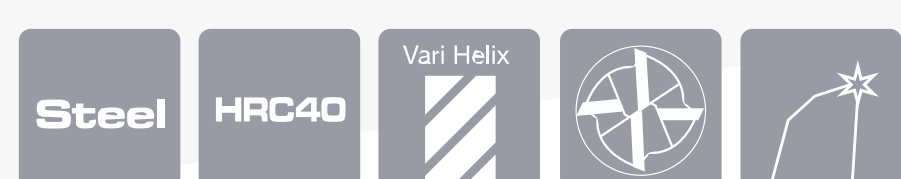
Unit of Length (mm)



# Steel (below HRC40) milling

## QMS

Quick mill, square end tool for carbon steel, alloyed steel, cast iron and tool steel. Suitable for slotting, side milling, trochoidal milling, general machining and part machining.



Dc: 0 ~ -0.02mm  
Runout: 0.01mm  
Ds: h5



Part No.	Cutting Dia. Dc	No. of flute	Flute Length Lf	Shank Dia. Ds	Overall Length L
QMS2-4-5-5-50	2	4	5	4	50
QMS3-4-8-8-50	3	4	8	4	50
QMS4-4-10-10-50	4	4	10	4	50
QMS6-4-15-15-50	6	4	15	6	50
QMS8-4-20-20-60	8	4	20	8	60
QMS10-4-25-25-75	10	4	25	10	75
QMS12-4-30-30-75	12	4	30	12	75

## QMS/QMC cutting condition

Tool Dia.	Carbon Steel, Cast Iron S50C, FC300 HRC28 below		Alloy Steel, Tool Steel SCM, SKS, SKD HRC28-33		Tool Steel, Prehardened Steel P20, NAK80 HRC33-40	
	S	F	S	F	S	F
Dc						
2	13535	596	11943	480	10350	410
3	9554	838	8493	510	7431	446
4	8758	1051	8360	1003	6768	539
6	6900	1242	5573	1003	4512	632
8	5175	1097	4180	836	3384	609
10	4140	1076	3344	807	2707	541
12	3450	1035	2787	778	2256	541

Slotting,  $a_p=1D$

Unit of Length (mm)



# QMC

Quick mill. corner radius tool for carbon steel, alloyed steel, cast iron and tool steel. Suitable for slotting, side milling, trochoidal milling, general machining and part machining.



Dc: 0 ~ -0.02mm  
 CR: +/- 0.01mm  
 Runout: 0.01mm  
 Ds: h5



Part No.	Cutting Dia. Dc	No. of flute	Flute Length Lf	Corner Radius CR	Shank Dia. Ds	Overall Length L
QMC2-4-5-5-50R0.2	2	4	5	0.2	4	50
QMC3-4-8-8-50R0.2	3	4	8	0.2	4	50
QMC4-4-10-10-50R0.2	4	4	10	0.2	4	50
QMC6-4-15-15-50R0.2	6	4	15	0.2	6	50
QMC8-4-20-20-60R0.2	8	4	20	0.2	8	60
QMC10-4-25-25-75R0.2	10	4	25	0.2	10	75
QMC12-4-30-30-75R0.2	12	4	25	0.2	12	75

## QMS/QMC cutting condition

Tool Dia.	Carbon Steel, Cast Iron S50C, FC300 HRC28 below		Alloy Steel, Tool Steel SCM, SKS, SKD HRC28-33		Tool Steel, Prehardened Steel P20, NAK80 HRC33-40	
	S	F	S	F	S	F
Dc						
2	16720	1003	15924	764	12739	510
3	11677	1401	10616	934	8493	510
4	10350	1656	8360	1001	6768	677
6	7962	2070	6635	1597	5573	1003
8	5971	1791	4976	1393	4180	1003
10	4777	1529	3981	1274	3344	940
12	3981	1274	3317	1128	2787	836

Side Milling,  $a_p=1.5D$ ,  $a_e=0.2D$

Unit of Length (mm)



# High feed tools

## HFM

high feed tools, small cutting depth, high feed, high ae%, for non-steep geometry, hardened steel mold roughing



Dc: 0 ~ -0.025mm  
Runout: 0.01mm  
Ds: h5



Part No.	Tool Type	Cutting Dia. Dc	No. of Flute	Flute Length Lf	Effective Length Leff.	CAM R	Shank Dia. Ds	Overall Length L	Recommended Stock leave for finishing
HFM1.5-2-1-xx-50	High Feed	2	2	1	4/6/8/10	0.21	4	50	0.08
HFM2-2-1-xx-50	High Feed	2	2	1	5/8/10/12	0.28	4	50	0.1
HFM3-2-2-xx-50	High Feed	3	2	2	8/10/12/15	0.42	4	50	0.1
HFM4-2-2-xx-50	High Feed	4	2	2	10/12/14/16/20	0.57	4	50	0.12
HFM6-4-4-xx-50	High Feed	6	4	4	15/20/25	0.85	4	50	0.15
HFM6-4-4-25-75	High Feed	6	4	4	25	0.85	6	75	0.15
HFM8-4-4-30-75	High Feed	8	4	4	30	1.13	8	75	0.2
HFM10-4-4-35-75	High Feed	10	4	4	35	1.42	10	75	0.25
HFM10-4-4-35-100	High Feed	10	4	4	35	1.42	10	100	0.25
HFM12-4-4-40-75	High Feed	12	4	4	40	1.7	12	75	0.35
HFM12-4-4-40-100	High Feed	12	4	4	40	1.7	12	100	0.35

## HFM cutting condition

Tool Dia.	No. of flutes	ae	ap	Steel HRC30-40			Steel HRC40-50			Steel HRC50-60		
				Vc=180mm/min.			Vc=150mm/min.			Vc=130mm/min.		
				S	F	fz	S	F	fz	S	F	fz
2	2	45-75%	0.08	28662	4013	0.07	23885	3344	0.07	20701	2898	0.07
3	2	45-75%	0.1	19108	3822	0.1	15924	3185	0.1	13800	2760	0.1
4	2	45-75%	0.12	14331	3439	0.12	11943	2866	0.12	10350	2484	0.12
6	4	45-75%	0.15	9554	5732	0.15	7962	4777	0.15	6900	4140	0.15
8	4	45-75%	0.18	7166	4873	0.17	5971	4060	0.17	5175	3519	0.17
10	4	45-75%	0.2	5732	4586	0.2	4777	3822	0.2	4140	3312	0.2
12	4	45-75%	0.25	4777	4777	0.25	3981	3981	0.25	3450	3450	0.25

Unit of Length (mm)



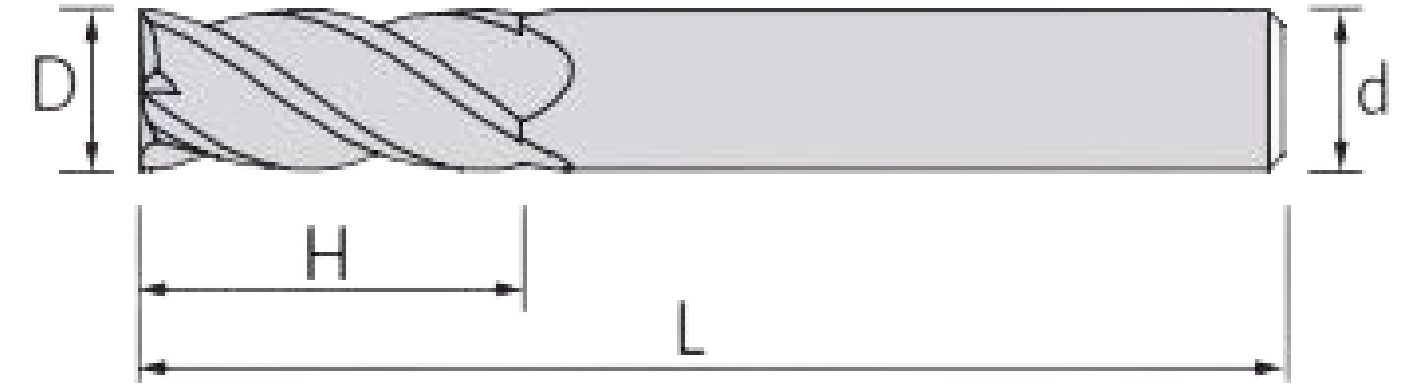
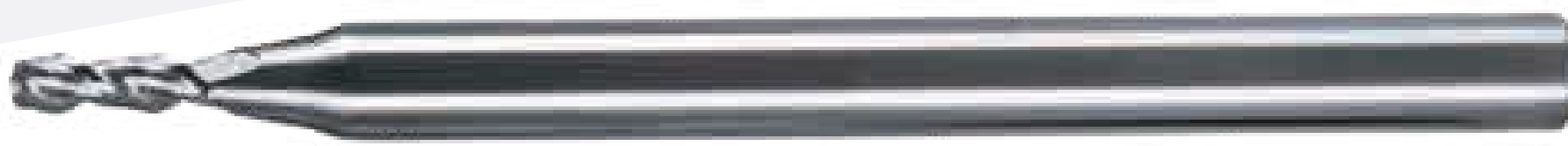
# END MILL FOR ALUMINUM

## EMN SOLID CARBIDE END MILL FOR ALUMINUM

EMN245

Special for aluminum alloy

2 Flute

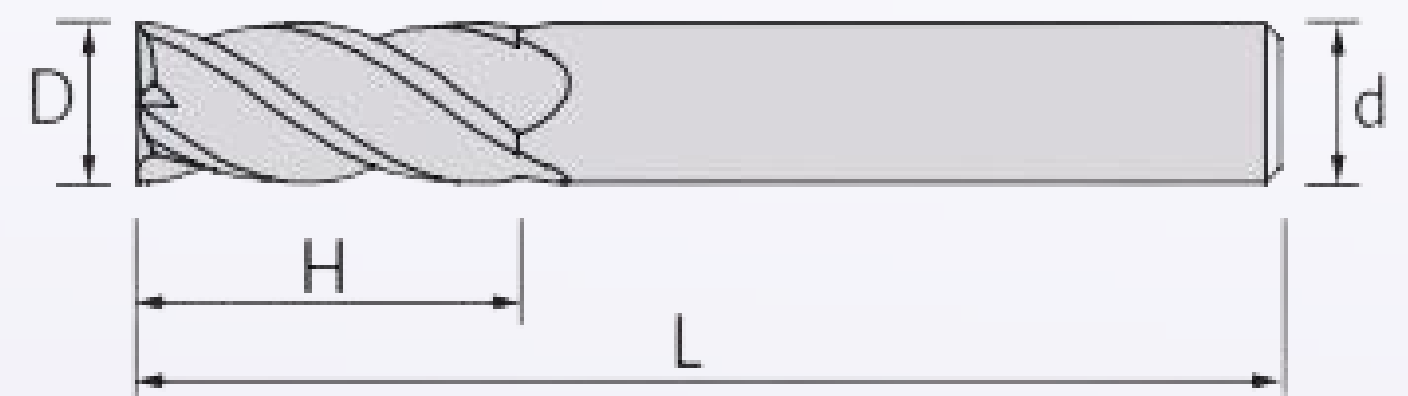
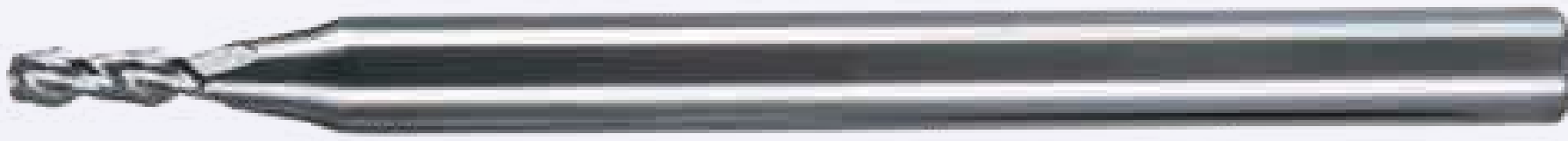


Spec.	L	D	d	H	T	Angle	(KGS) Weights	Workpiece Material	Cutting HRC
EMM445-D040d040-L10.0-050L	50	4	4	10	4	45	-	<p><b>P</b> : +</p> <p><b>M</b> : ++</p> <p><b>K</b> : +</p>	HRC25°~42°
EMM445-D060d060-H15.0-060L	60	6	6	15	4	45	-		
EMM445-D080d080-H20.0-060L	60	8	8	20	4	45	-		
EMM445-D100d100-H30.0-075L	75	10	10	30	4	45	-		
EMM445-D120d120-H30.0-075L	75	12	12	30	4	45	-		

EMN345

Special for aluminum alloy

3 Flute



Spec.	L	D	d	H	T	Angle	(KGS) Weights	Workpiece Material	Cutting HRC
EMN345-D040d040-H12.0-050L	50	4	4	12	3	45	-	<p><b>N</b> : ++</p>	HRC15°~45°
EMN345-D050d060-H15.0-050L	50	5	6	15	3	45	-		
EMN345-D060d060-H18.0-060L	60	6	6	18	3	45	-		
EMN345-D080d080-H20.0-060L	60	8	8	20	3	45	-		
EMN345-D100d100-H26.0-075L	75	10	10	26	3	45	-		
EMN345-D120d120-H30.0-075L	75	12	12	30	3	45	-		
EMN345L-D040d040-H16.0-050L	50	4	4	16	3	45	-		
EMN345L-D050d060-H20.0-060L	60	5	6	20	3	45	-		
EMN345L-D060d060-H24.0-075L	75	6	6	24	3	45	-		
EMN345L-D080d080-H30.0-075L	75	8	8	30	3	45	-		
EMN345L-D100d100-H40.0-100L	100	10	10	40	3	45	-		
EMN345L-D120d120-H45.0-100L	100	12	12	45	3	45	-		

Unit of Length (mm)



# EMT3VH SOLID CARBIDE END MILL FOR ALUMINUM

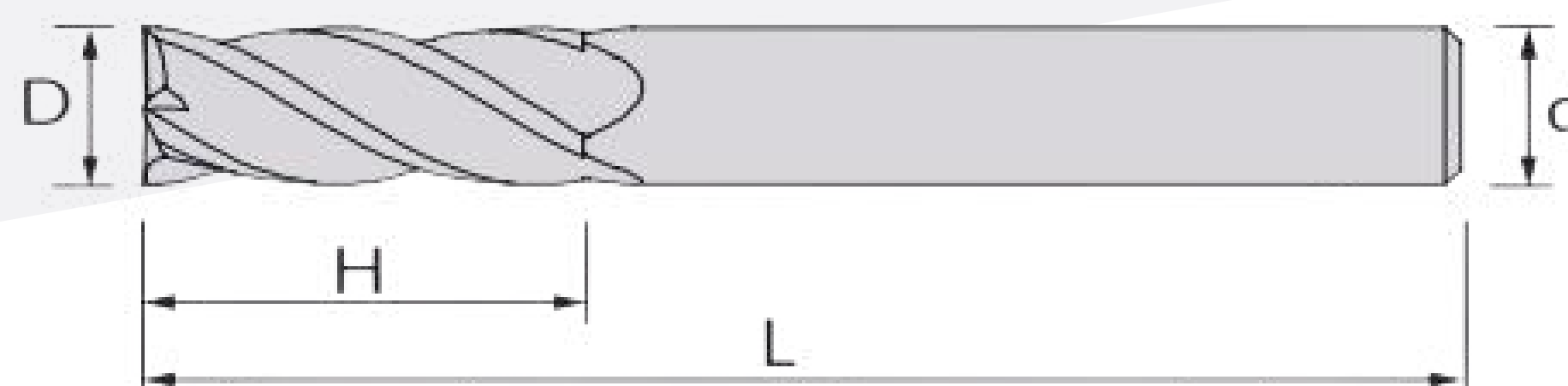
EMT3VH

Special for aluminum alloy

Unequally divided series

Anti-seismic type

3 Flute



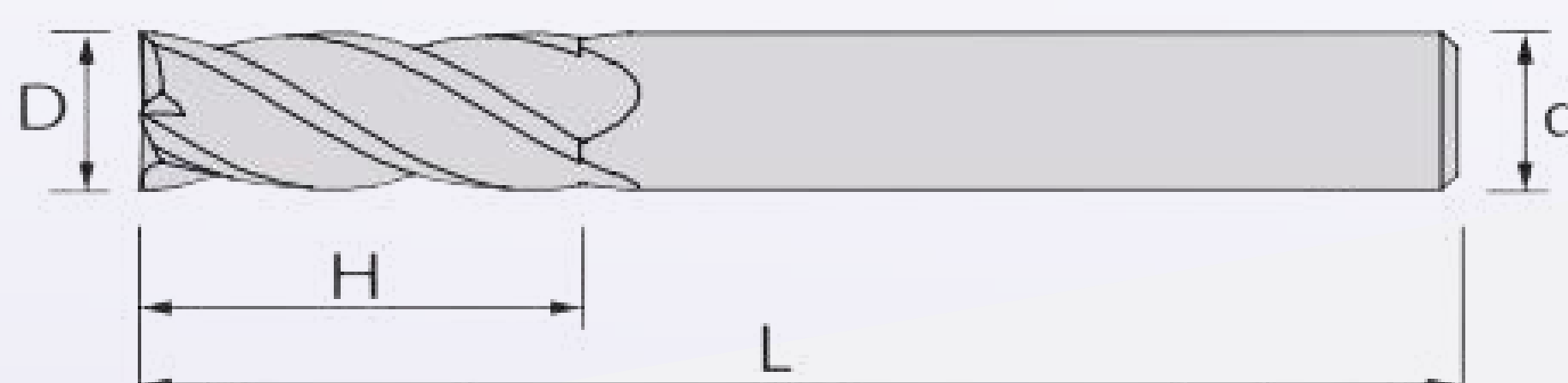
Spec.	L	D	d	H	T	Angle	(KGS) Weights	Workpiece Material	Cutting HRC
EMN3VH-D030d060-H9.0-050L	50	3	6	9	3	38/41	-	N : ++	-
EMN3VH-D040d060-H12.0-050L	50	4	6	12	3	38/41	-		
EMN3VH-D050d060-H14.0-050L	50	5	6	14	3	38/41	-		
EMN3VH-D060d060-H16.0-050L	50	6	6	16	3	38/41	-		
EMN3VH-D080d060-H20.0-060L	60	8	8	20	3	38/41	-		
EMN3VH-D100d100-H25.0-075L	75	10	10	25	3	38/41	-		
EMN3VH-D120d120-H30.0-075L	75	12	12	30	3	38/41	-		

# EUN SOLID CARBIDE END MILL FOR ALUMINUM

EUN

Special for aluminum alloy

3 Flute



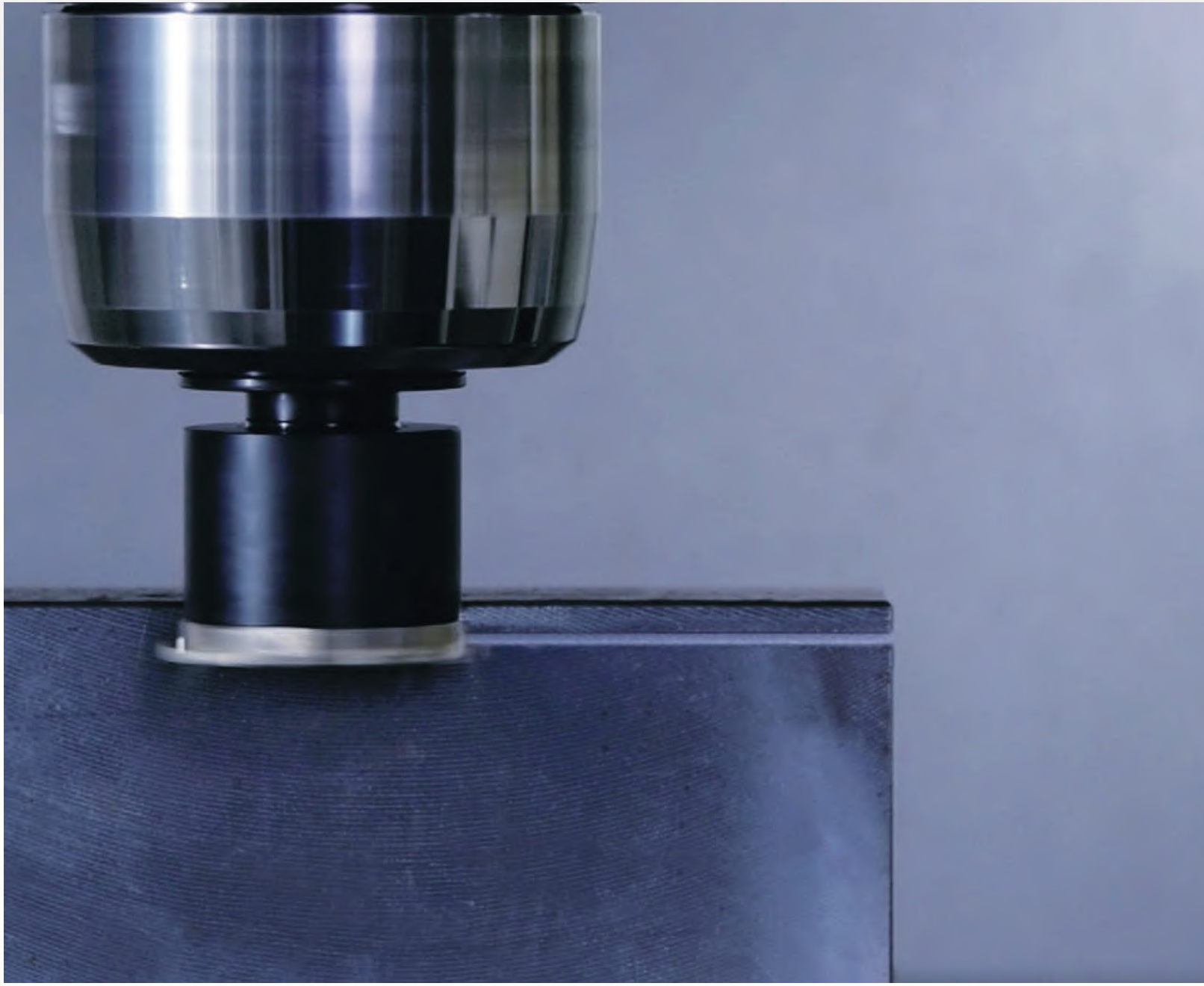
Spec.	L	D	d	H	T	Angle	(KGS) Weights	Workpiece Material	Cutting HRC
EUN-0150	50	1	4	3	3	50	-	N : ++	-
EUN-0250	50	2	4	6	3	50	-		
EUN-0350	50	3	4	9	3	50	-		
EUN-0450	50	4	4	12	3	50	-		
EUN-0650	50	6	6	18	3	50	-		
EUN-0860	60	8	8	24	3	50	-		
EUN-1075	75	10	10	30	3	50	-		
EUN-1275	75	12	12	36	3	50	-		

Unit of Length (mm)



# TGAL

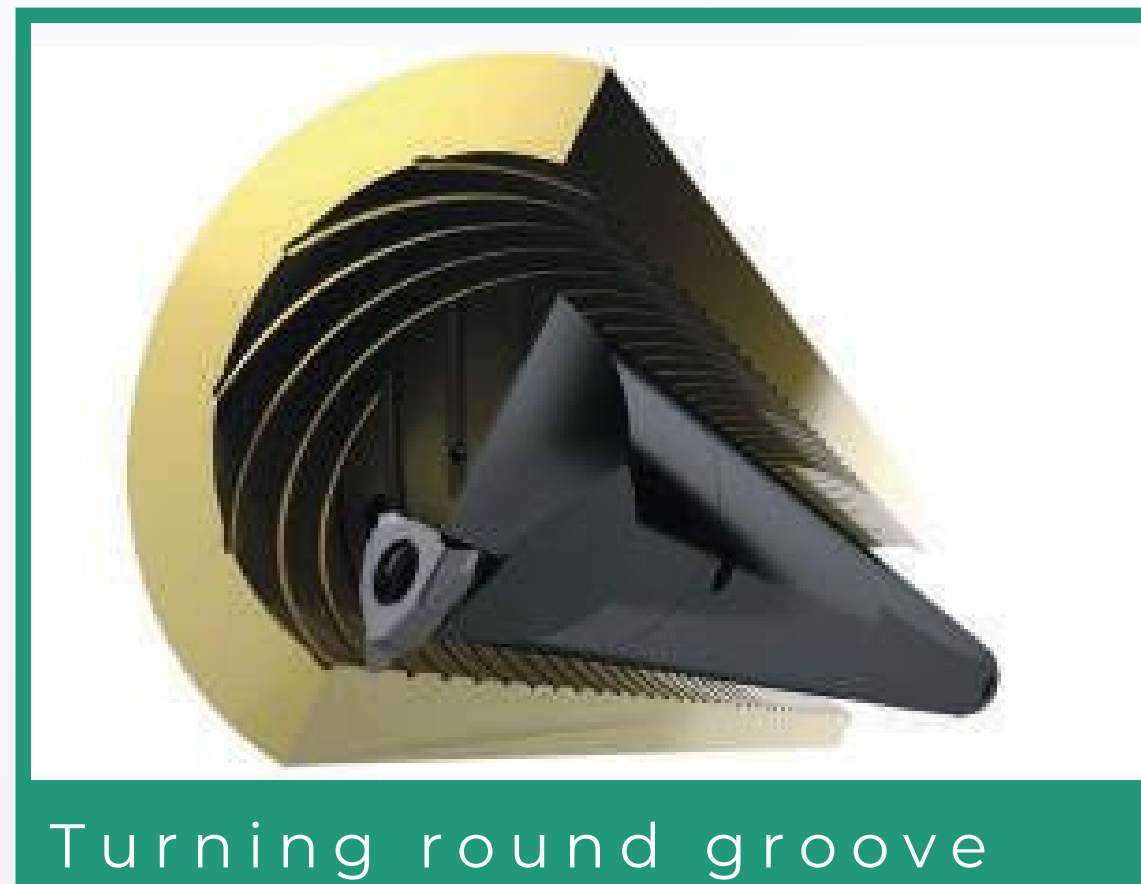
## INDEXABLE GROOVE MILLING CUTTER INSERT SERIES



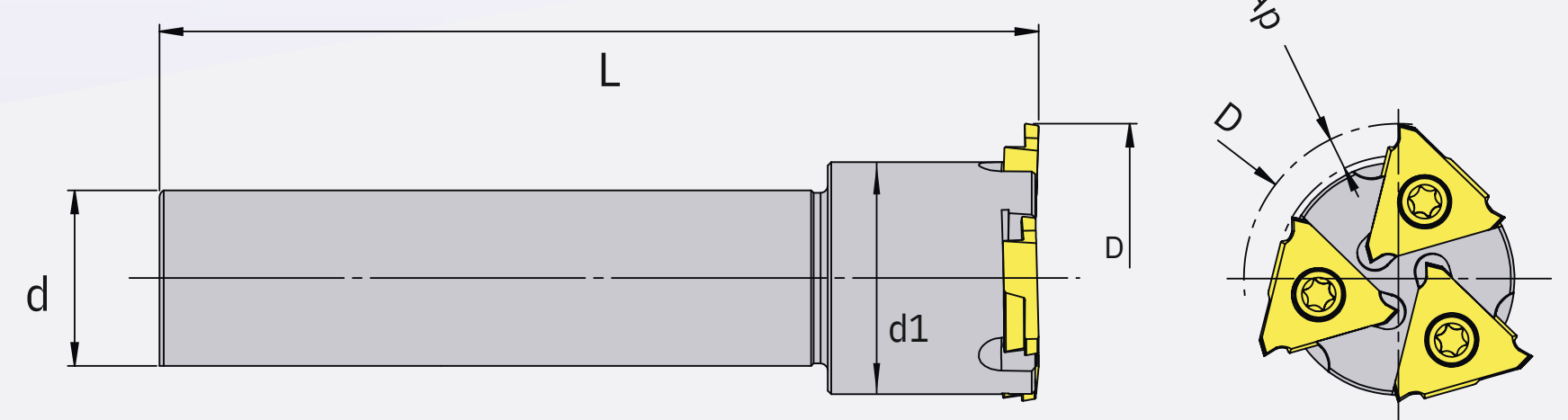
- Grooving range : 1.25~4.00mm
- Suitable for processing O-ring grooves.
- Available with standard inserts or customized R angle inserts.

### Cutting Edge Solutions

High precision turning



### Example



### Feature

- Used for groove milling applications.
- Multiple cutting edges for efficient machining.
- Suitable for processing O-ring grooves.

Spec.	D	Ap	L	d	d1	Insert	Weight
TGC-4020-125	40	2	125	20	30	TGAL	0.43
TGC-4420-125	44	3	125	20	34	4125-4400	0.5

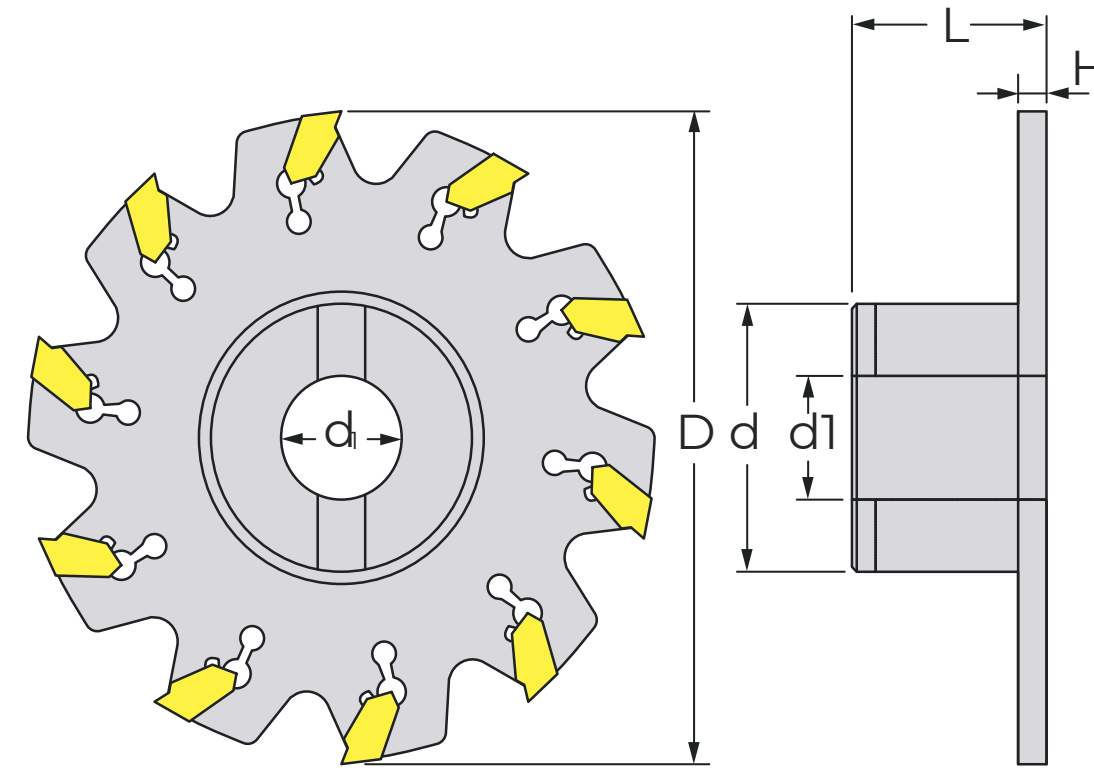
Unit of Length (mm)



## Accessories

Insert	Screw	Wrench	Torque
TGAL 4125-4400	M5-11-7.0-55	T20	6.5

## TDC Indexable Side Disc Cutter



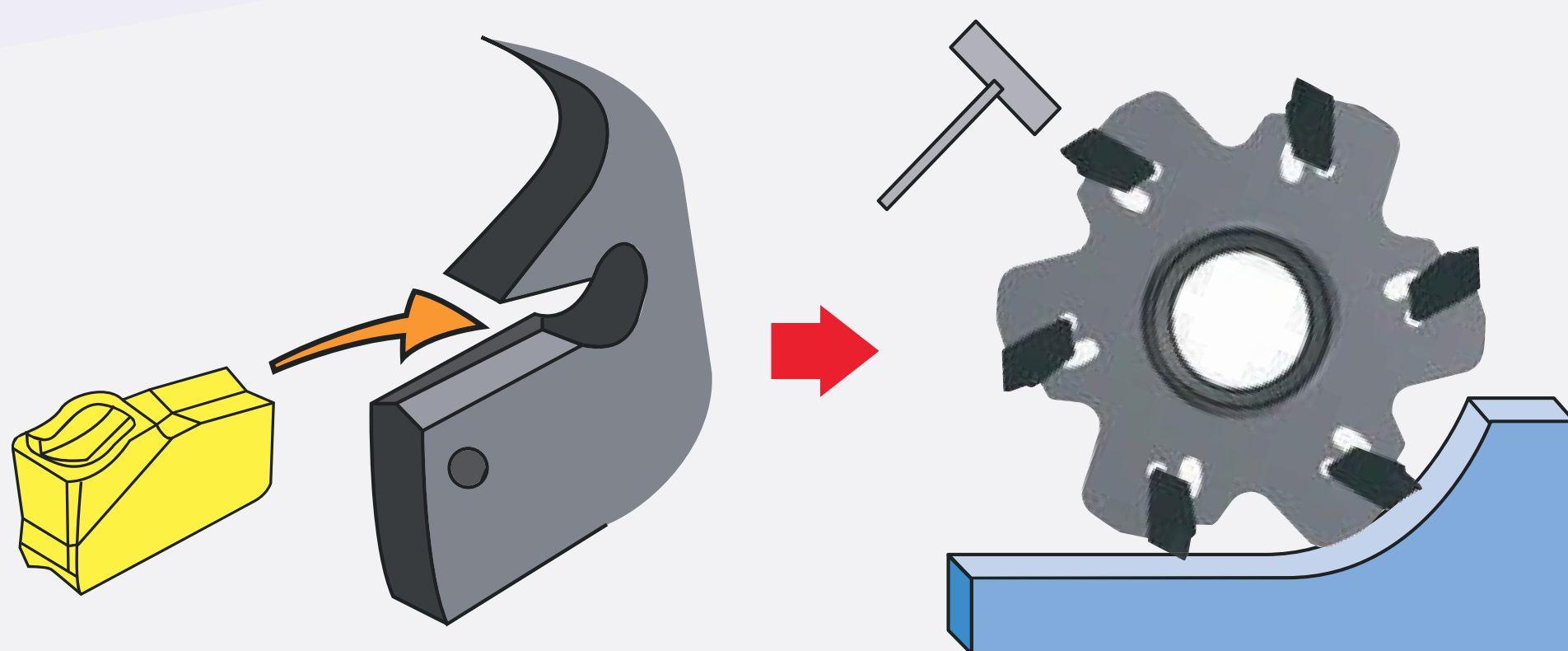
### Feature

- Made of vibration resistance tool steel.
- After the heat treatment, we will finish the cutter again for better accuracy

Spec.	L	D	d	d1	H	Ae	Flutes	Insert	Wrench	Weight (KGS)
TDC-75×03B22	40	75	50	22	3	12.5	8	TGTN3	DW-70	0.60
TDC-75×04B22					4			TGTN4		0.51
TDC-100×03B22	50x	100			3	25	10	TGTN3		0.79
TDC-100×04B22					4			TGTN4		0.81
TDC-125×03B22		125			3	37.5	12	TGTN3		1.20
TDC-125×04B22					4			TGTN4		2.03

Unit of Length (mm)

### Instructions




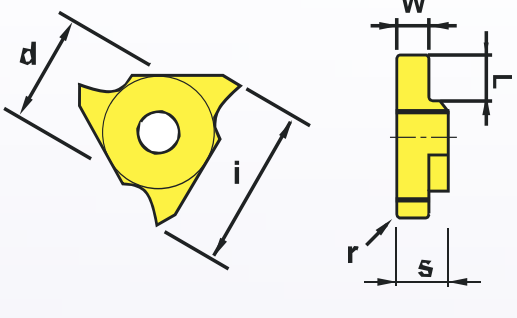

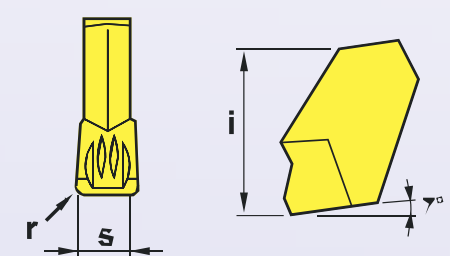
Place the insert onto the insert seat, press it gently to secure, and then lightly tap with a rubber hammer to ensure proper alignment between the insert and the cutter body.

Install the DW-70 wrench into the insert seat and rotate it clockwise to loosen and remove the insert.





# TGC INDEXABLE GROOVE MILLING CUTTER

Shape	Spec.	Layer coated micro grain				Micro grain cemented carbide			(mm)						Drawing
		CHF				HF			Size						
		OM4010	OM4025	RM4025		OM5005			W	L	d	i	s	r	
	TGAR4125	●	●						1.25	1.2	13	17.59	4.76	0.2	
	TGAR4150	●	●				○		1.5	3	13	17.59	4.76	0.2	
	TGAR4175	●	●						1.75	3	13	17.59	4.76	0.2	
	TGAR4200	●	●						2	3	13	17.59	4.76	0.2	
	TGAR4235	●	●						2.35	3	13	17.59	4.76	0.2	
	TGAR4250	●	●						2.5	4.5	13	17.59	4.76	0.3	
	TGAR4300	●	●						3	4.5	13	17.59	4.76	0.3	
	TGAR4350	●	●						3.5	4.5	13	17.59	4.76	0.3	
	TGAR4400	●	●						4	4.5	13	17.59	4.76	0.4	
	TGTN3	●	●	●		●			-	-	-	11.3	3.1	0.2	
	TGTN4	●	●			●			-	-	-	11.3	4.1	0.25	

## TG 41.42.43.44 Cutting Parameter

Machining Materials		Vc(m/min)	(mm)			
			W=0.5~1.2	W=1.25~2.25	W=2.3~3.25	W=4~4.5
P	Alloyed Steels	80~160	0.03~0.08	0.04~0.09	0.05~0.1	0.05~0.12
M	Stainless Steels	60~130	0.03~0.07	0.04~0.08	0.05~0.09	0.05~0.1
K	Cast Iron	80~300	0.03~0.08	0.04~0.09	0.05~0.1	0.05~0.12
H	Hard Material	80~120	-	0.02~0.05	0.03~0.07	-

## TGTN 3.4 Cutting Parameter

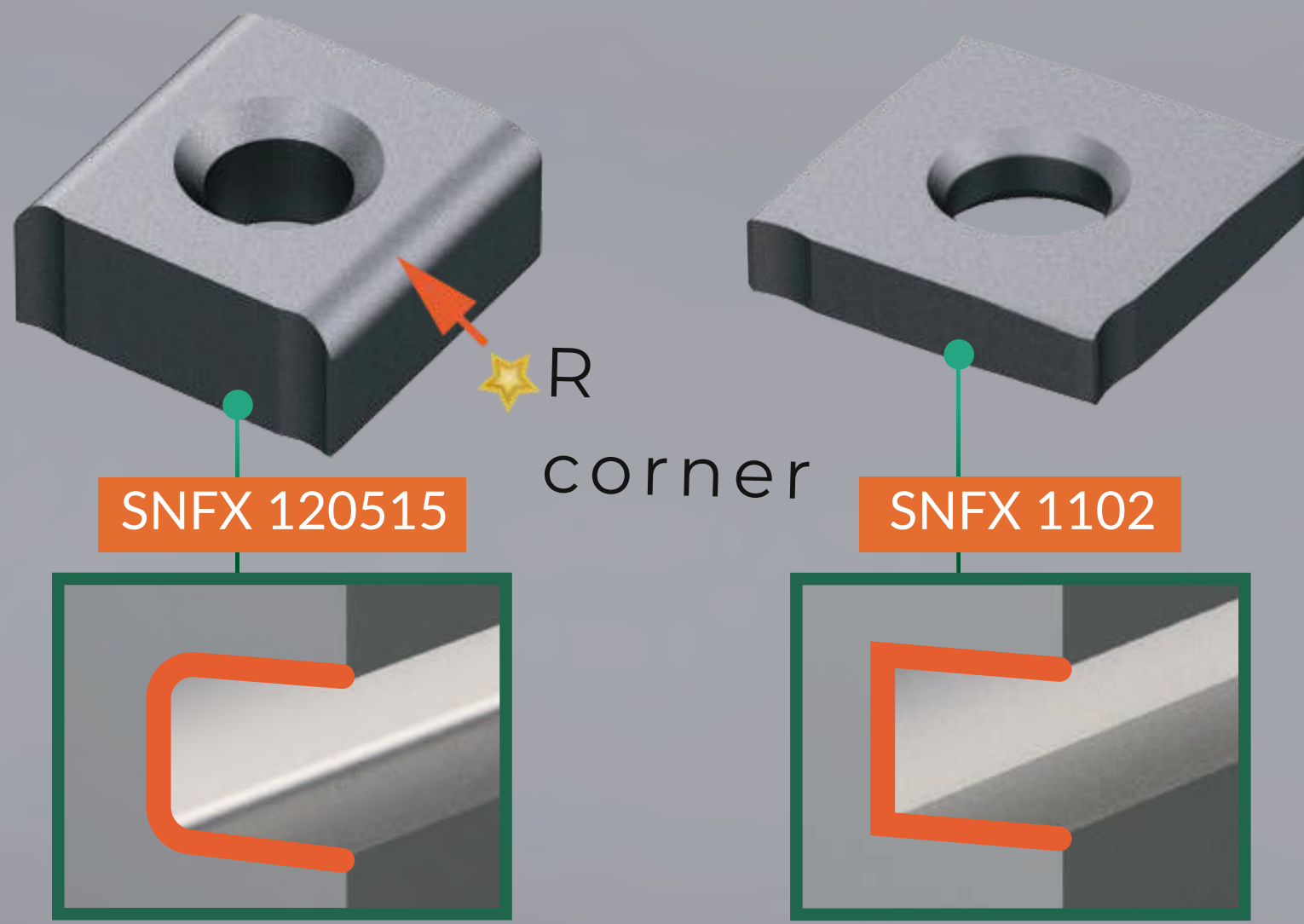
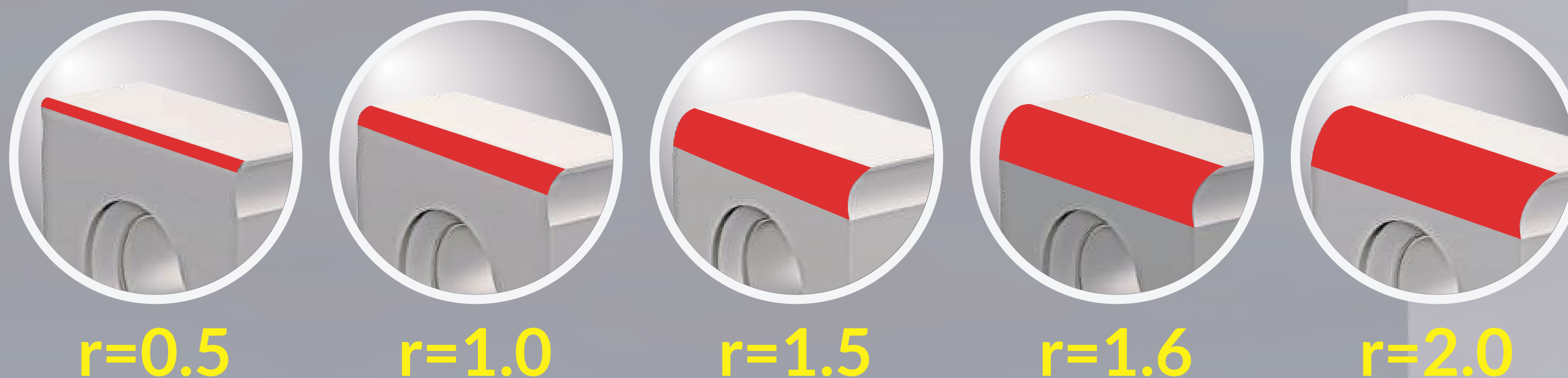
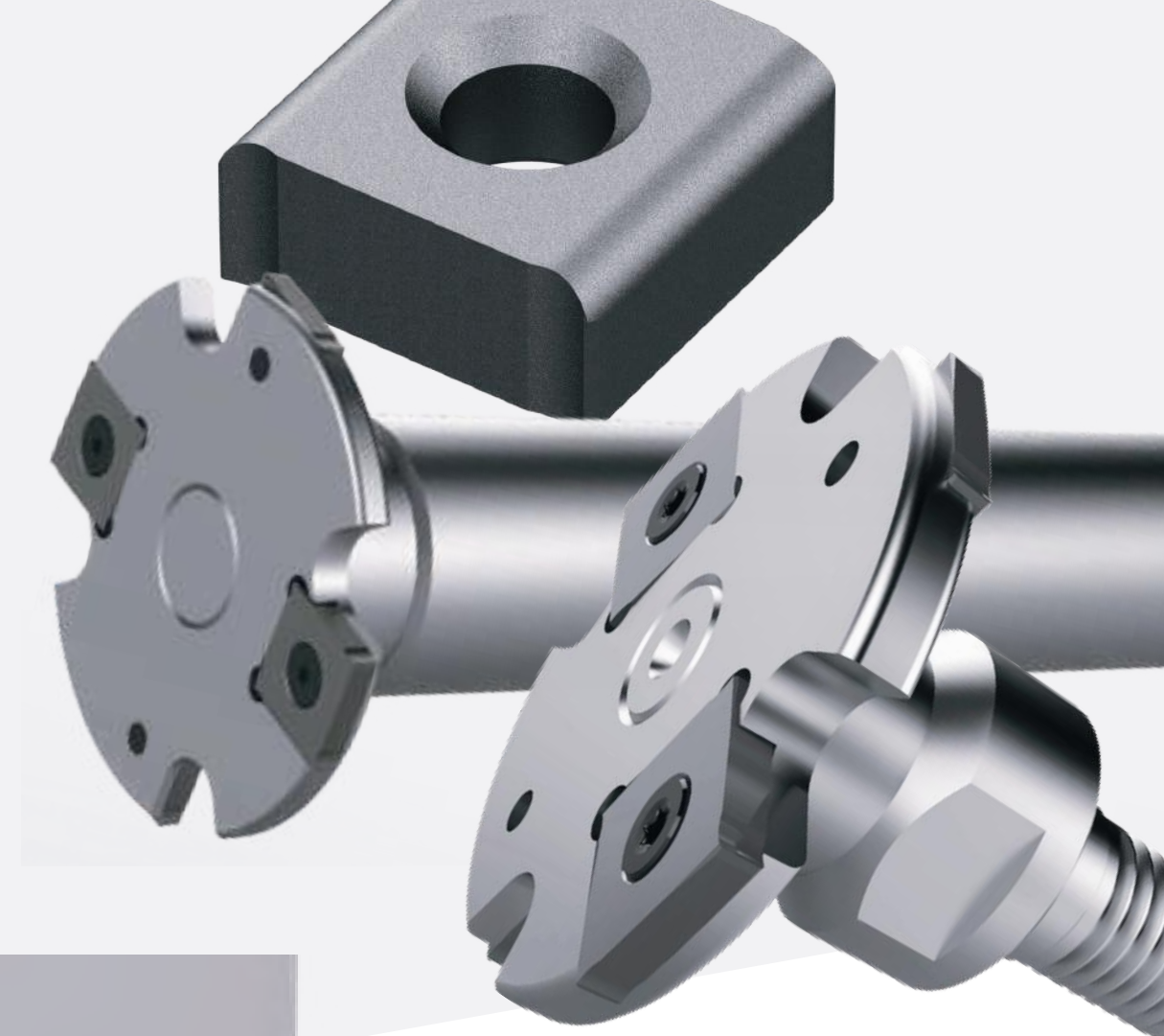
Machining Materials		Grade	Vc(m/min)	(mm)
P	Alloyed Steels	OM4025N	100~220	0.06(0.05-0.12)
		RM4025	100~200	0.06(0.05-0.12)
M	Stainless Steels	OM4025N	110~275	0.08(0.06-0.12)
		RM4025	70~120	0.06(0.05-0.12)
K	Cast Iron	OM4025N	110~275	0.08(0.06~0.12)

Unit of Length (mm)

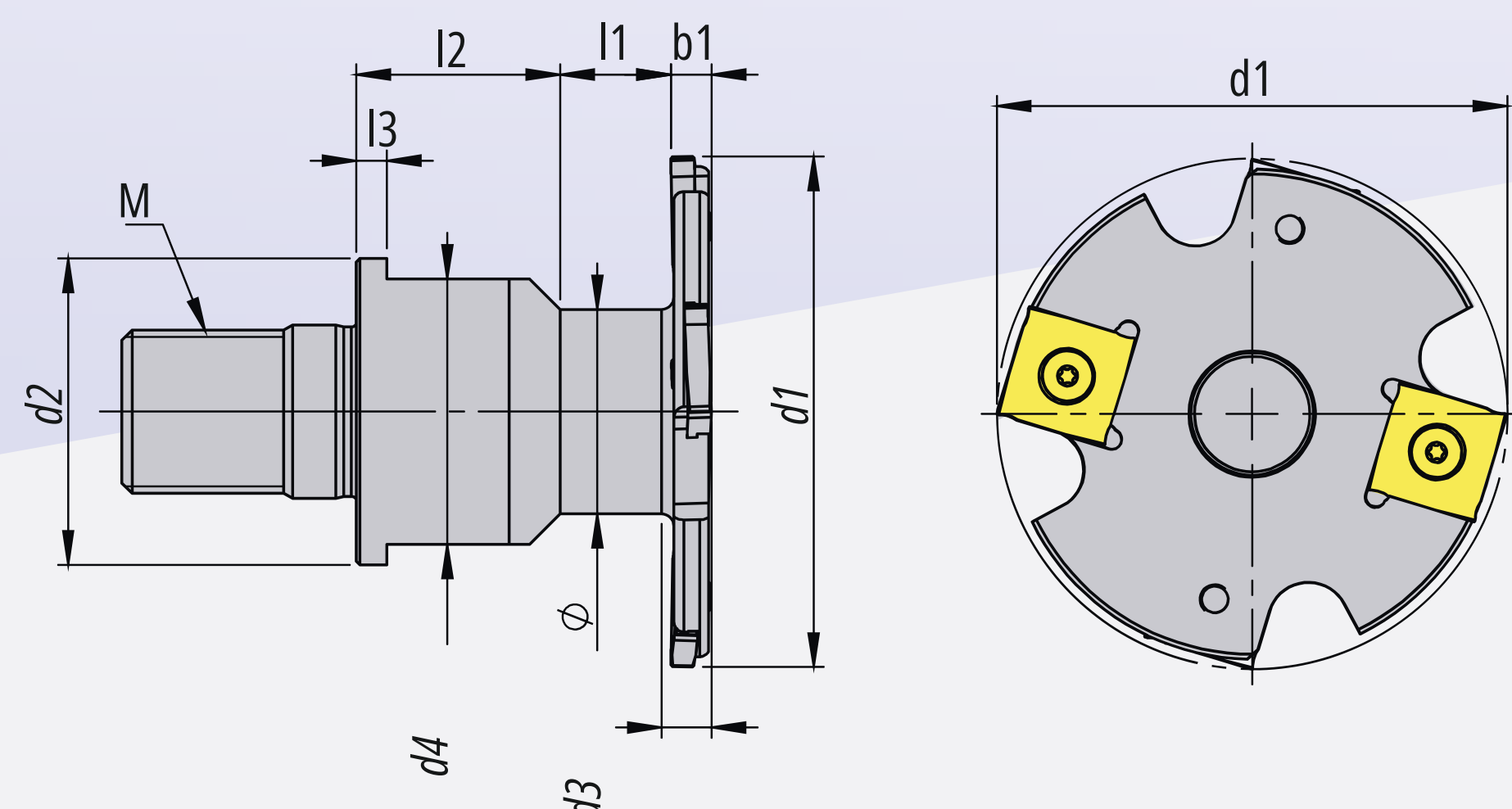


# SNFX

## INDEXABLE SIDE DISC CUTTER INSERT SERIES



## SDC Indexable Side Disc Cutter For Small Diameter



### Feature

- Designed for small diameters, and be able to work with the carbide extension shank.

Spec.	d1	d2	d3	d4	b1	b2	l1	l2	l3	Max	M	Flutes	Insert
SDC-40-04M10	40	18.5	14	16	4	4.9	8.3	10.7	3	10	M10	4	SNFX1102
SDC-40-05M10	40	18.5	14	16	5	5.9	8.3	10.7	3	10	M10	4	SNFX1103
SDC-50-04M12	50	23	16	18	4	4.9	11	13	3	14	M12	6	SNFX1102
SDC-50-05M12	50	23	16	18	5	5.9	11	13	3	14	M12	6	SNFX1103
SDC-50-06M12	50	23	16	18	6	6.9	11	13	3	14	M12	4	SNFX1203

- Comes with SOM locking tooth extension rod



Shape	Spec.	Layer coated micro grain		Micro grain cemented carbide		(mm)				Drawing
		CHF		HF		Size				
		OM4010	OM4025	OM5005		d	i	s	r	
	SNFX1102	●	●	●		11	-	2.3	-	
	SNFX1103	●	●	●		11	-	2.7	-	
	SNFX1203	●	●	●		12.7	-	3.2	-	
	SNFX1205	●	●	●		12.7	-	5.4	-	
	SNFX1207	●	●	●		12.7	-	7	-	
	SNFX120305	●	●	●		12.7	-	3.2	0.5	
	SNFX120310	●	●	●		12.7	-	3.2	1	
	SNFX120315	●	●	●		12.7	-	3.2	1.5	
	SNFX120505	●	●	●						
	SNFX120510	●	●	●		12.7	-	5.4	1	
	SNFX120515	●	●	●		12.7	-	5.4	1.5	
	SNFX120516	●	●	●		12.7	-	5.4	1.6	
	● SNFX120520	●	●	●		12.7	-	5.4	2	
	SNFX120705	●	●	●		12.7	-	7	0.5	
	SNFX120710	●	●	●		12.7	-	7	1	
	SNFX120715	●	●	●		12.7	-	7	1.5	
	● SNFX120720	●	●	●		12.7	-	7	2	

● - Available on order

### Formula of average chip thickness

$$fz = \sqrt{(D/Ap \times f)}$$

$$0.11 = \sqrt{(D/Ap \times f)}$$

$$0.31 = f$$

D=Effective outer diameter  
f= Feed per flutes

Ap=Depth  
hm= Effective chip thickness

### TG 41.42.43.44 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	(mm)
P	Alloyed Steels	OM4010	90~250	0.08(0.06~0.12)
		OM4025	90~230	0.08(0.06~0.12)
M	Stainless Steels	OM4010	55~110	0.06(0.06~0.12)
		OM4025	55~100	0.06(0.06~0.12)
K	Cast Iron	OM4025	110~275	0.08(0.06~0.12)
N	Aluminum&Al	OM5005	500~700	0.15(0.15~0.17)

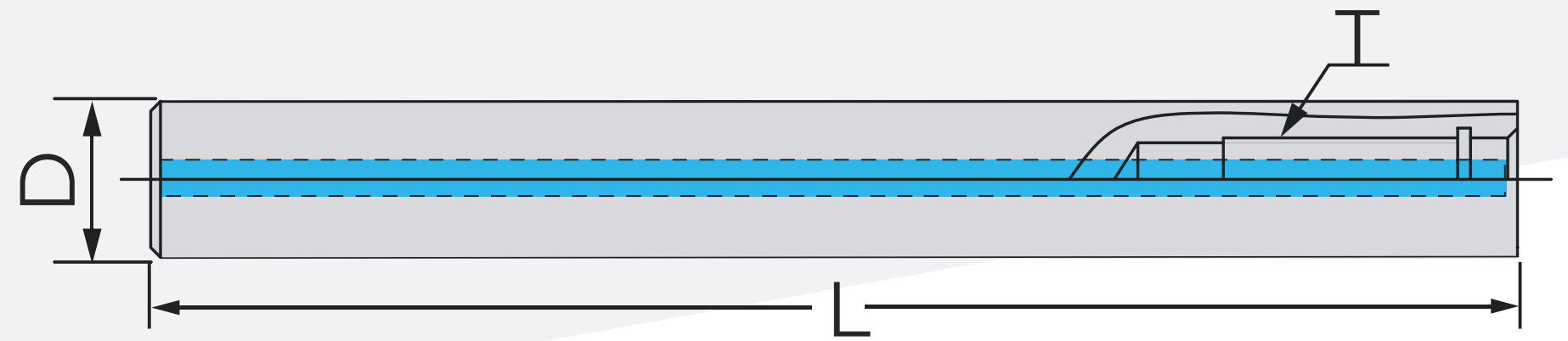
Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).

Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)



## C/M Straight Tungsten Carbide Extension Shank



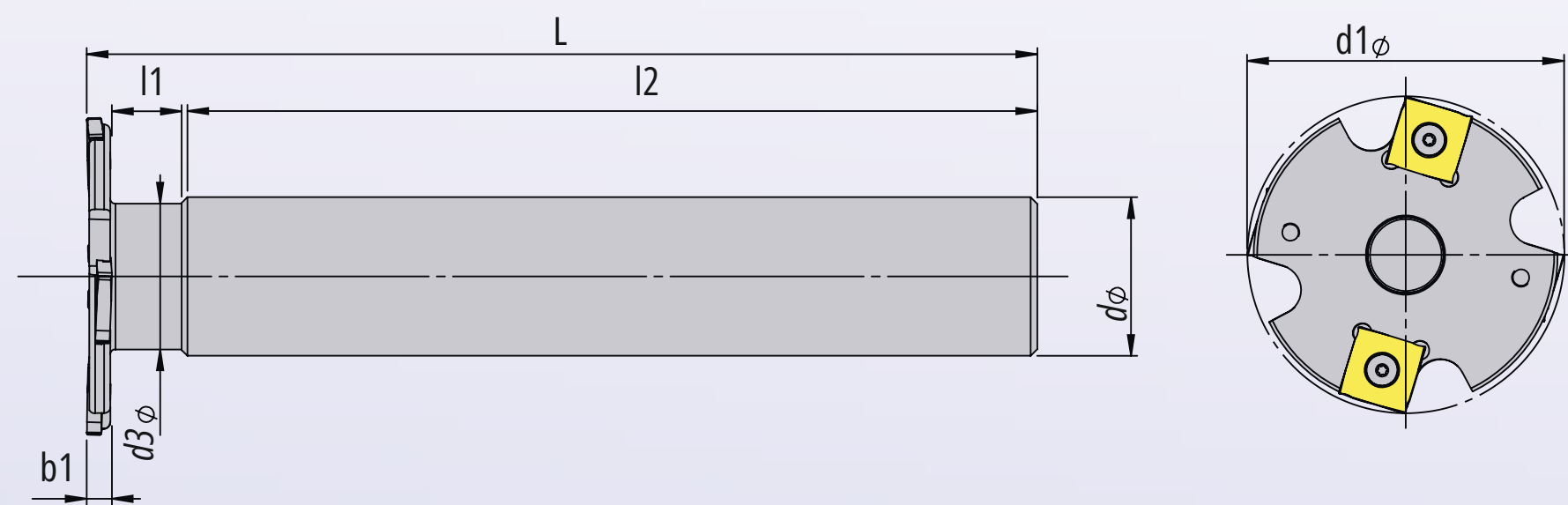
### Feature

- Through-hole design for better water coolant and anti-vibration.

Spec.	L	D	T	(KGS) Weight
C20-M10-150-C	150	20	M10-1.5P	0.60
C20-M10-200-C	200	20	M10-1.5P	0.85
C25-M12-200-C	200	25	M12-1.75P	1.30
C25-M12-250-C	250	25	M12-1.75P	1.60

Unit of Length (mm)

## SDC Indexable Side Disc Cutter For Small Diameter



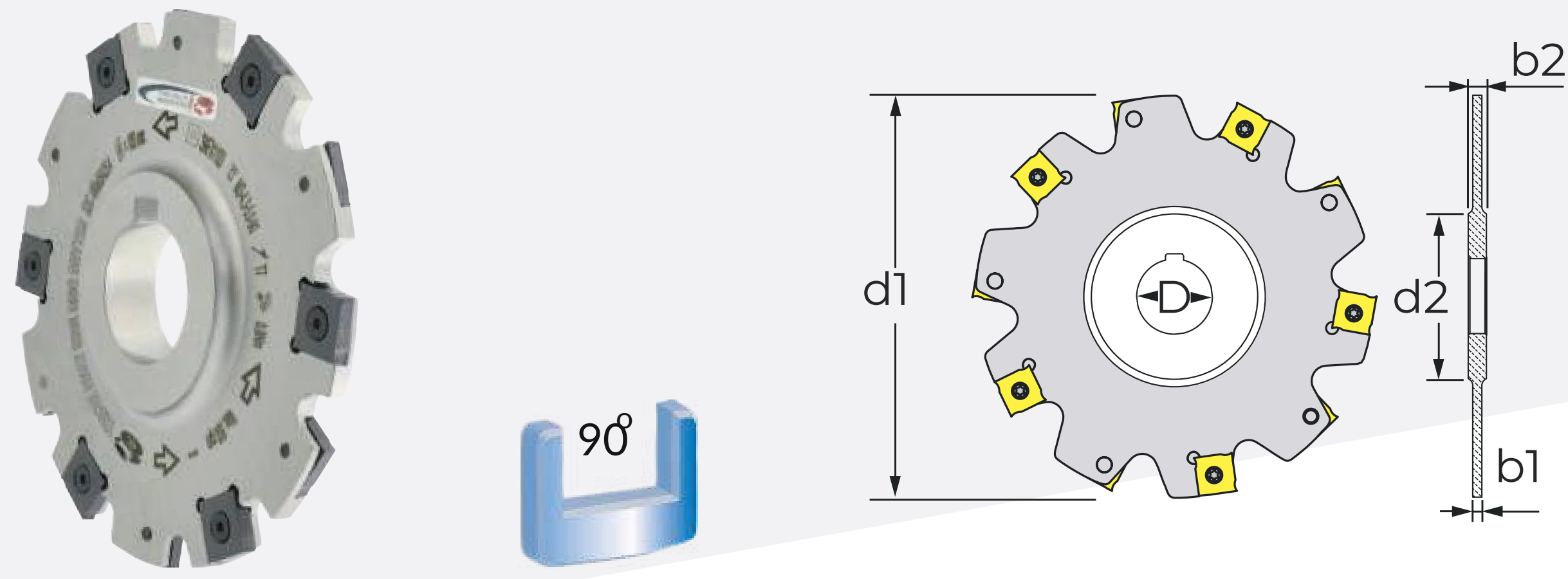
Spec.	d1	d	d3	b1	Max	L	l1	l2	Flutes	Insert
SDC-04-5025-150	50	25	23	4	11	150	11	134	4	SNFX1102
SDC-05-5025-150	50	25	23	5	11	150	10	134	4	SNFX1103
SDC-04-6332-150	63	32	33	4	13	150	17	148	4	SNFX1102

### Accessories

Insert	Screw	Wrench	(N.m) Torque
SN..1102	M3-3.5-5.0-90	T7	0.9



# SDC Indexable Side Disc Cutter



Spec.	D	d1	d2	b1	b2	Flutes	Insert	(KGS) Weight
SDC-100×04A25.4	25.4	100	41	4	12	12	SN..1102	0.38
SDC-100×05A25.4	25.4	100	41	5	12	12	SN..1103	0.44
SDC-100×06A25.4	25.4	100	41	6	12	10	SN..1203	0.45
SDC-100×07A25.4	25.4	100	41	7	12	9	SN..1203	0.49
SDC-100×08A25.4	25.4	100	41	8	12	9	SN..1203	0.54
SDC-100×10A25.4	25.4	100	41	10	12	10	SN..1205	0.59
SDC-100×11A25.4	25.4	100	41	11	12	10	SN..1207	0.62
SDC-100×12A25.4	25.4	100	41	12	12	10	SN..1207	0.66
SDC-100×14A25.4	25.4	100	41	14	16	9	SN..1207	0.77
SDC-125×04A25.4	25.4	125	41	4	12	14	SN..1102	0.58
SDC-125×05A25.4	25.4	125	41	5	12	14	SN..1103	0.63
SDC-125×06A25.4	25.4	125	41	6	12	12	SN..1203	0.69
SDC-125×07A25.4	25.4	125	41	7	12	12	SN..1203	0.75
SDC-125×08A25.4	25.4	125	41	8	12	12	SN..1203	0.81
SDC-125×09A25.4	25.4	125	41	9	12	12	SN..1205	0.86
SDC-125×10A25.4	25.4	125	41	10	12	12	SN..1205	0.94
SDC-125×12A25.4	25.4	125	41	12	12	12	SN..1207	1.05
SDC-125×14A25.4	25.4	125	41	14	16	12	SN..1207	1.20
SDC-160×06A25.4	25.4	160	41	6	12	16	SN..1203	1.04
SDC-160×07A25.4	25.4	160	41	7	12	15	SN..1203	0.17
SDC-160×08A25.4	25.4	160	41	8	12	15	SN..1203	1.26
SDC-160×09A25.4	25.4	160	41	9	12	16	SN..1205	1.35
SDC-160×10A25.4	25.4	160	41	10	12	16	SN..1205	1.48
SDC-160×12A25.4	25.4	160	41	12	12	16	SN..1207	1.74
SDC-160×14A25.4	25.4	160	41	14	16	15	SN..1207	1.99

## Accessories

Insert	Screw	Wrench	(N.m) Torque
SN..1102	M3-3.5-5.0-90	T7	0.9
SN..1103	M3-4.3-5.0-90	T7	0.9
SN..1203	M4-5.0-6.2-90	T15	3.0
SN..1205	M4-8.2-6.2-90	T15	3.0
SN..1207	M4-11-6.2-90-T15-TIN	T15	3.0

Unit of Length (mm)



# SDC Indexable Side Disc Cutter

Spec.	D	d1	d2	b1	b2	Flutes	Insert	(KGS) Weight
SDC-63×04B22	22	63	34	4	8	8	SN..1102	0.27
SDC-63×05B22	22	63	34	5	8	8	SN..1103	0.28
SDC-63×06B22	22	63	34	6	8	6	SN..1203	0.28
SDC-80×04B22	22	80	34	4	8	10	SN..1102	0.31
SDC-80×05B22	22	80	34	5	8	10	SN..1103	0.33
SDC-80×06B22	22	80	34	6	8	8	SN..1203	0.35
SDC-100×04B27	27	100	41	4	12	12	SN..1102	0.38
SDC-100×05B27	27	100	41	5	12	12	SN..1103	0.44
SDC-100×06B27	27	100	41	6	12	10	SN..1203	0.45
SDC-100×07B27	27	100	41	7	12	9	SN..1203	0.49
SDC-100×08B27	27	100	41	8	12	9	SN..1203	0.54
SDC-100×10B27	27	100	41	10	12	10	SN..1205	0.59
SDC-100×12B27	27	100	41	12	12	10	SN..1207	0.70
SDC-100×14B27	27	100	41	14	12	9	SN..1207	0.70
SDC-125×04B32	32	125	47	4	12	14	SN..1102	0.58
SDC-125×05B32	32	125	47	5	12	14	SN..1103	0.63
SDC-125×06B32	32	125	47	6	12	12	SN..1203	0.69
SDC-125×07B32	32	125	47	7	12	12	SN..1203	0.75
SDC-125×08B32	32	125	47	8	12	12	SN..1203	0.81
SDC-125×09B32	32	125	47	9	12	12	SN..1205	0.86
SDC-125×10B32	32	125	47	10	12	12	SN..1205	0.94
SDC-125×12B32	32	125	47	12	12	12	SN..1207	1.05
SDC-125×14B32	32	125	47	14	12	12	SN..1207	1.20
SDC-160×06B40	40	160	55	6	12	16	SN..1203	1.04
SDC-160×07B40	40	160	55	7	12	15	SN..1203	0.17
SDC-160×08B40	40	160	55	8	12	15	SN..1203	1.26
SDC-160×09B40	40	160	55	9	12	16	SN..1205	1.35
SDC-160×10B40	40	160	55	10	12	16	SN..1205	1.48
SDC-160×12B40	40	160	55	12	12	16	SN..1207	1.74
SDC-160×14B40	40	160	55	14	12	15	SN..1207	1.99
SDC-200×06B50	50	200	69	6	12	18	SN..1203	-
SDC-200×08B50	50	200	69	8	12	18	SN..1203	-
SDC-200×10B50	50	200	69	10	12	18	SN..1205	-
SDC-200×12B50	50	200	69	12	12	18	SN..1207	-
SDC-200×14B50	50	200	69	14	14	18	SN..1207	3.20
SDC-250×08B50	50	250	69	8	12	24	SN..1203	4.30
SDC-250×10B50	50	250	69	10	12	24	SN..1205	4.30
SDC-250×12B50	50	250	69	12	12	24	SN..1207	4.50
SDC-250×14B50	50	250	69	14	14	24	SN..1207	4.50

Unit of Length (mm)

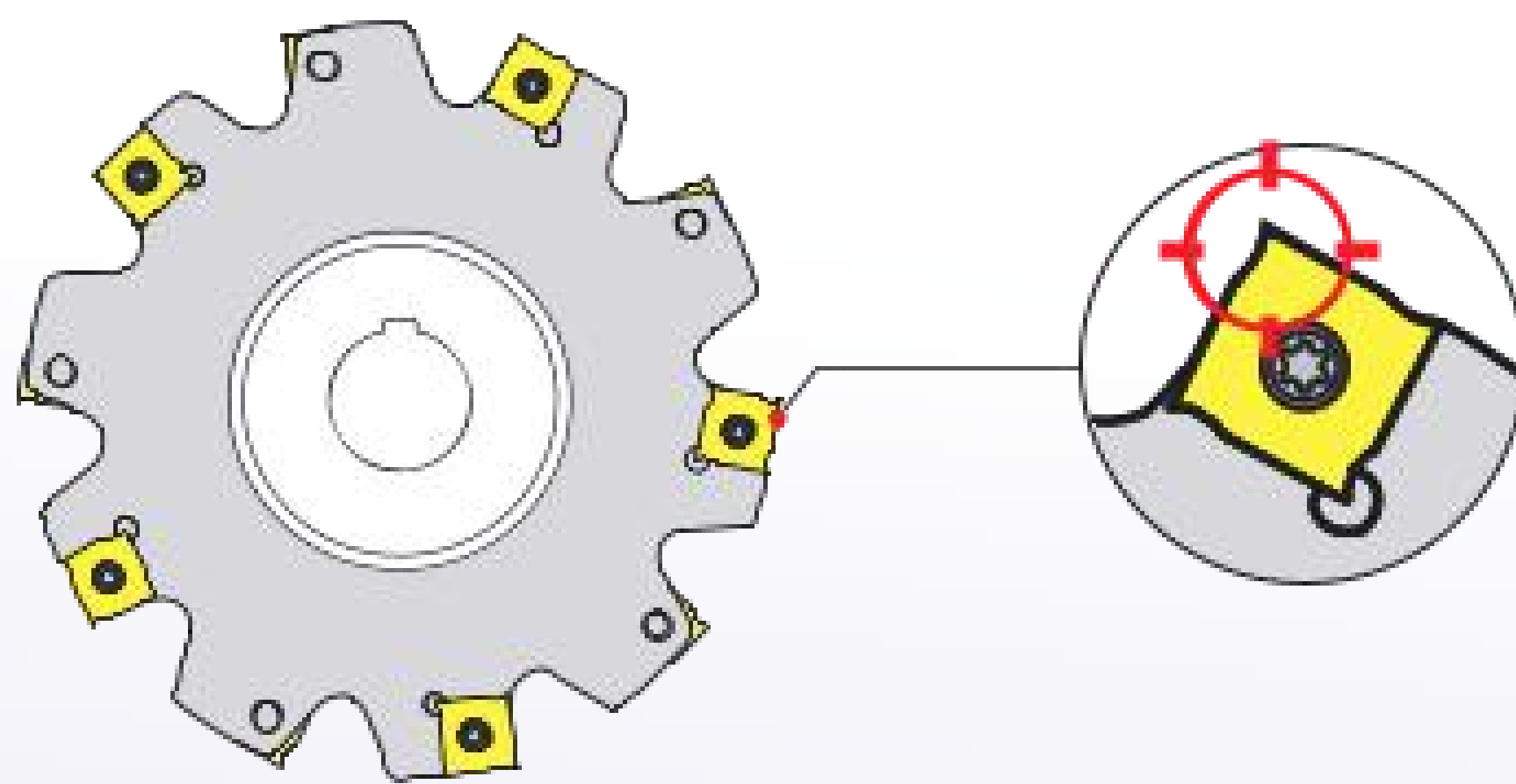


## Accessories

Insert	Screw	Wrench	(N.m) Torque
SN..1102	M3-3.5-5.0-90	T7	0.9
SN..1103	M3-4.3-5.0-90	T7	0.9
SN..1203	M4-5.0-6.2-90	T15	3.0
SN..1205	M4-8.2-6.2-90	T15	3.0
SN..1207	M4-11-6.2-90-T15-TIN	T15	3.0

Unit of Length (mm)

### ⚠ Cautions!

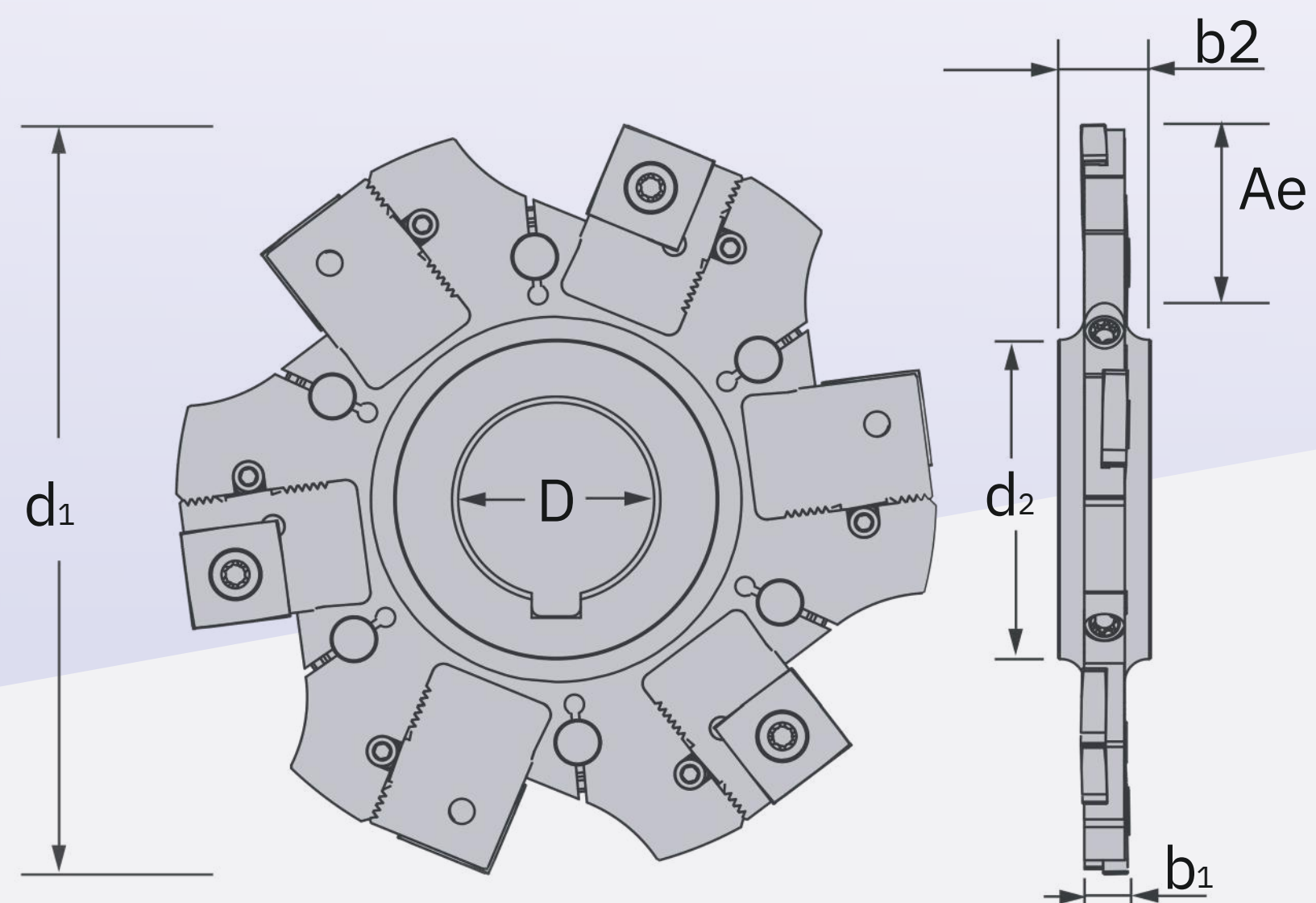


When installing inserts, need to notice the direction of the nose. (red aim point of drawing)

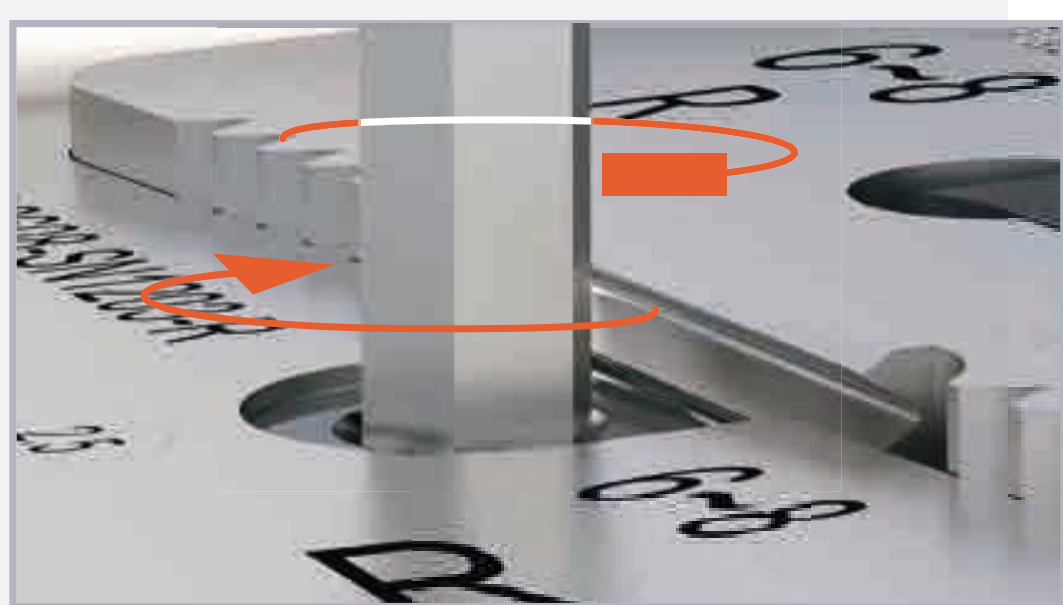
## ASDC ADJUSTABLE SIDE DISC CUTTER

PAT.NO M574526(TW)

PAT.NO ZL 2018 2 1953076.6(CN)



### Example



Use the adjustable lock screw to fine-tune the groove size.



Insert seat tooth design for junction stability.



Adjustable size 6~8mm.  
(Adjustable range 2mm)

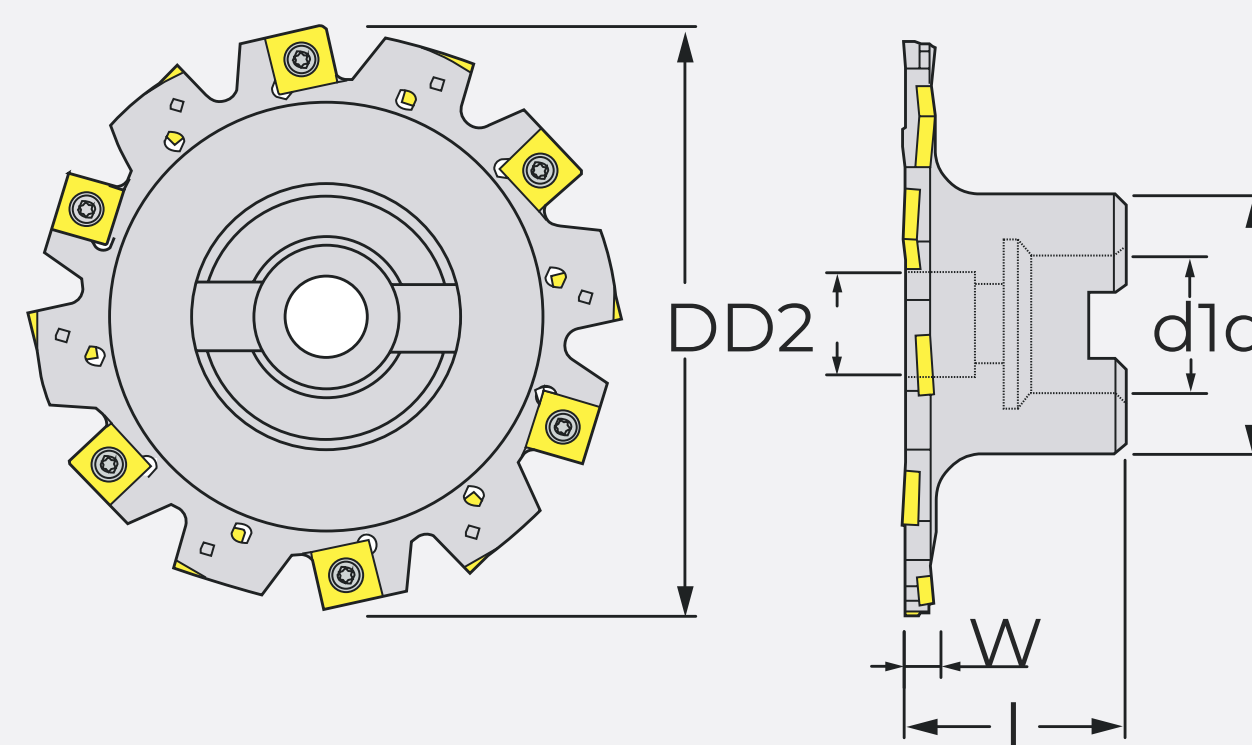


Spec.	D	d1	d2	b1	b2	Ae	Flutes	Insert Seat	Insert	(KGS) Weight
ASDC-100-0608A25.4-6T-SN1203	25.4	100	41	6~8	12	25	6	ASDC-CA0608-SN1203-R ASDC-CA0608-SN1203-L	SN..1203	0.27
ASDC-100-0810A25.4-6T-SN1205	25.4	100	41	8~10	12	25	6	ASDC-CA0810-SN1205-R ASDC-CA0810-SN1205-L	SN..1205	-
ASDC-100-1012A25.4-6T-SN1207	25.4	100	41	10~12	12	25	6	ASDC-CA1012-SN1207-R ASDC-CA1012-SN1207-L	SN..1207	-
ASDC-100-1214A25.4-6T-SN1207	25.4	100	41	12~14	16	25	6	ASDC-CA1214-SN1207-R ASDC-CA1214-SN1207-L	SN..1207	-
ASDC-125-0608A25.4-8T-SN1203	25.4	125	41	6~8	12	25	8	ASDC-CA0608-SN1203-R ASDC-CA0608-SN1203-L	SN..1203	-
ASDC-125-0810A25.4-8T-SN1205	25.4	125	41	8~10	12	35	8	ASDC-CA0810-SN1205-R ASDC-CA0810-SN1205-L	SN..1205	-
ASDC-125-1012A25.4-8T-SN1207	25.4	125	41	10~12	12	35	8	ASDC-CA1012-SN1207-R ASDC-CA1012-SN1207-L	SN..1207	-
ASDC-125-1214A25.4-8T-SN1207	25.4	125	41	12~14	16	35	8	ASDC-CA1214-SN1207-R ASDC-CA1214-SN1207-L	SN..1207	-
ASDC-160-0608A25.4-10T-SN1203	25.4	160	41	6~8	12	45	10	ASDC-CA0608-SN1203-R ASDC-CA0608-SN1203-L	SN..1203	-
ASDC-160-0810A25.4-10T-SN1205	25.4	160	41	8~10	12	45	10	ASDC-CA0810-SN1205-R ASDC-CA0810-SN1205-L	SN..1205	-
ASDC-160-1012A25.4-10T-SN1207	25.4	160	41	10~12	12	45	10	ASDC-CA1012-SN1207-R ASDC-CA1012-SN1207-L	SN..1207	-
ASDC-160-1214A25.4-10T-SN1207	25.4	160	41	12~14	16	45	10	ASDC-CA1214-SN1207-R ASDC-CA1214-SN1207-L	SN..1207	-

## Accessories

Insert	Screw	Wrench	(N.m) Torque
SN..1203	M4-5.0-6.2-90	T15	3.0 N.m
SN..1205	M4-8.2-6.2-90	T15	3.0 N.m
SN..1207	M4-11-6.2-90-T15-TIN	T15	3.0 N.m

## GDC Indexable Side Disc Cutter Insert



Unit of Length (mm)



Spec.	L	D	D2	d	d1	W	Flutes	Insert	(KGS) Weight
GDC-80×04B22	40	80	28	45	22	4	10	SN..1102	0.50
GDC-80×05B22	40	80	28	45	22	5	10	SN..1103	0.50
GDC-80×06B22	40	80	28	45	22	6	8	SN..1203	0.55
GDC-80×07B22	40	80	28	45	22	7	9	SN..1203	0.57
GDC-80×08B22	40	80	28	45	22	8	9	SN..1203	0.70
GDC-80×09B22	40	80	28	45	22	9	8	SN..1205	0.60
GDC-80×10B22	40	80	28	45	22	10	8	SN..1205	0.62
GDC-80×12B22	40	80	28	45	22	12	8	SN..1207	0.66
GDC-80×14B22	40	80	28	45	22	14	9	SN..1207	0.70
GDC-100×04B27	40	100	33	50	27	4	12	SN..1102	0.74
GDC-100×05B27	40	100	33	50	27	5	12	SN..1103	0.70
GDC-100×06B27	40	100	33	50	27	6	10	SN..1203	0.73
GDC-100×07B27	40	100	33	50	27	7	9	SN..1203	0.76
GDC-100×08B27	40	100	33	50	27	8	9	SN..1203	0.80
GDC-100×09B27	40	100	33	50	27	9	10	SN..1205	0.82
GDC-100×10B27	40	100	33	50	27	10	10	SN..1205	0.86
GDC-100×12B27	40	100	33	50	27	12	10	SN..1207	0.90
GDC-100×14B27	40	100	33	50	27	14	9	SN..1207	0.98
GDC-125×04B32	45	125	43	70	32	4	14	SN..1102	1.30
GDC-125×05B32	45	125	43	70	32	5	14	SN..1103	1.40
GDC-125×06B32	45	125	43	70	32	6	12	SN..1203	1.40
GDC-125×07B32	45	125	43	70	32	7	12	SN..1203	1.45
GDC-125×08B32	45	125	43	70	32	8	12	SN..1203	1.45
GDC-125×09B32	45	125	43	70	32	9	12	SN..1205	1.58
GDC-125×10B32	45	125	43	70	32	10	12	SN..1205	1.58
GDC-125×12B32	45	125	43	70	32	12	12	SN..1207	1.65
GDC-125×14B32	45	125	43	70	32	14	12	SN..1207	1.76
GDC-160×06B40	50	160	50	90	40	6	16	SN..1203	2.60
GDC-160×07B40	50	160	50	90	40	7	15	SN..1203	2.60
GDC-160×08B40	50	160	50	90	40	8	15	SN..1203	2.80
GDC-160×09B40	50	160	50	90	40	9	16	SN..1205	2.80
GDC-160×10B40	50	160	50	90	40	10	16	SN..1205	2.90
GDC-160×12B40	50	160	50	90	40	12	16	SN..1207	3.08
GDC-160×14B40	50	160	50	90	40	14	15	SN..1207	0.23

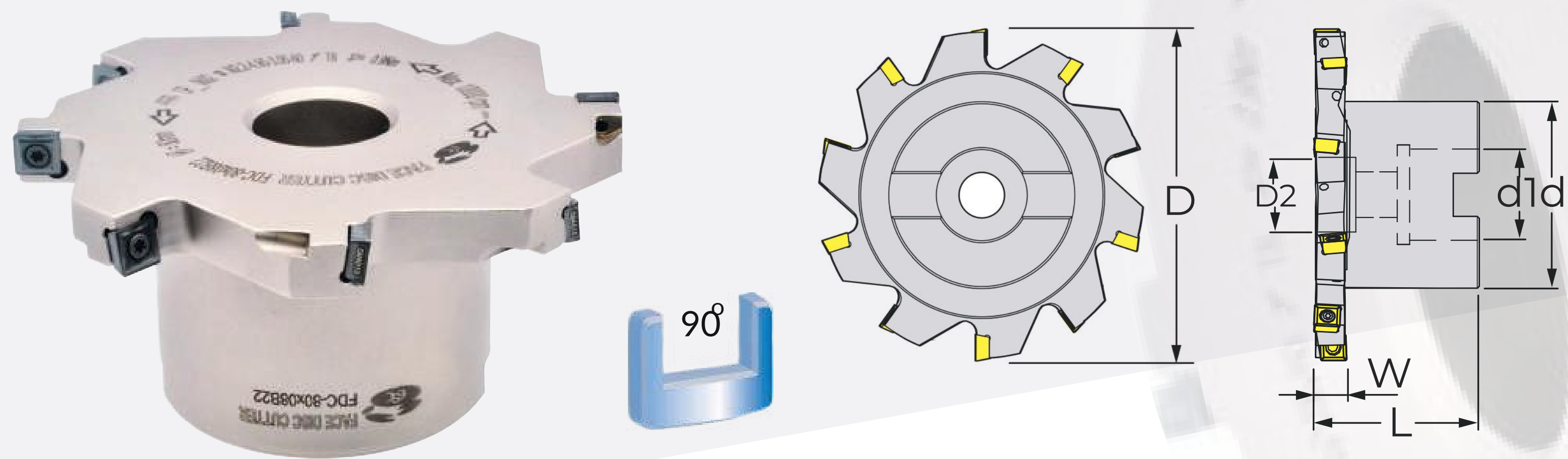
## Accessories

Insert	Screw	Wrench	(N.m) Torque
SN..1102	M3-3.5-5.0-90	T7	0.9
SN..1103	M3-4.3-5.0-90	T7	0.9
SN..1203	M4-5.0-6.2-90	T15	3.0
SN..1205	M4-8.2-6.2-90	T15	3.0
SN..1207	M4-11-6.2-90-T15-TIN	T15	3.0

Unit of Length (mm)



# FDC Indexable Side Disc Cutter



## Feature

- Made of anti-vibration tool steel.
- After the heat treatment, we will finish the cutter again for better accuracy.
- 4 edges usable, effective cost-saving.


Spec.	L	D	d2	d	d1	W	Flutes	Insert	(KGS) Weight
FDC-80-08B22	40	80	18	45	22	8	8	SP..0602	0.73
FDC-100-08B27	40	100	19	50	27	8	10	SP..0602	0.96
FDC-100-10B27	40	100	19	50	27	10	10	SP..0602	1.03
FDC-100-14B27	40	100	19	50	27	14	10	SP..0903	1.02
FDC-125-10B32	45	125	43	70	32	10	12	SP..0602	1.70
FDC-125-12B32	45	125	43	70	32	12	12	SP..0903	1.70
FDC-160-12B40	50	160	50	80	40	12	14	SP..0903	2.70
FDC-200-12B40	50	200	50	90	40	12	16	SP..0903	4.00
FDC-125-16B32	45	125	43	70	32	16	10	SP..1204	1.80
FDC-160-16B40	50	160	50	80	40	16	12	SP..1204	2.90
FDC-160-18B40	50	160	50	80	40	18	12	SP..1204	2.90
FDC-200-16B40	50	200	50	90	40	16	14	SP..1204	4.50
FDC-200-18B40	50	200	50	90	40	18	14	SP..1204	4.90
FDC-200-20B40	50	200	50	90	40	20	14	SP..1204	5.19

## Accessories

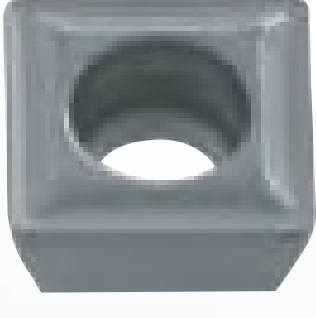
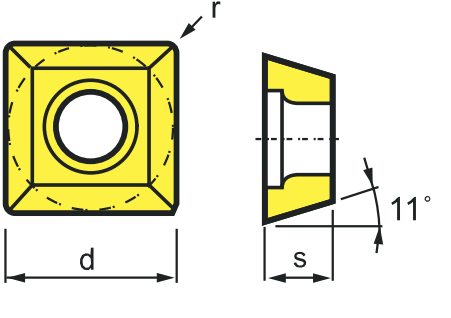

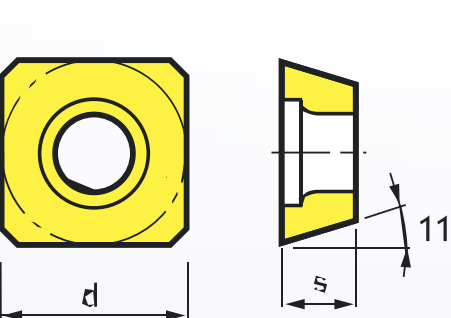
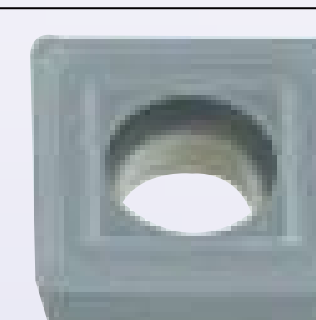
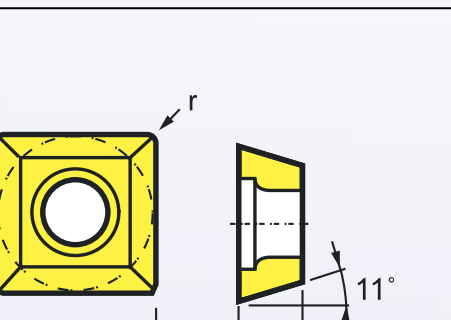

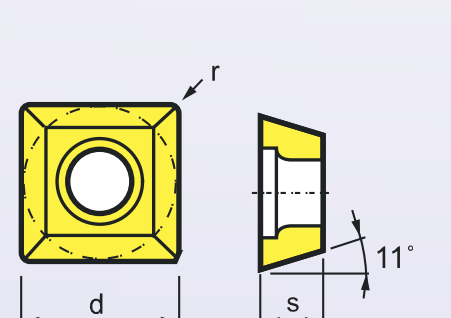
Insert	Screw	Wrench	(N.m) Torque
SP..0602	M2.2-5.2-3.1-60-T7-TIN	T7	0.9
SP..0903	M4-10-5.7-60	T15	3.0
SP..1204	M5-11-6.4-43	T20	5.0

Unit of Length (mm)

# FDC INDEXABLE SIDE DISC CUTTER

Shape	Spec.	Layer coated micro grain					Micro grain cemented carbide				(mm)				Drawing			
		CHF					HF				Size							
		OM4010	OM4025	RM4025	RM4030	RM3130	OM5005					d	i	s		r		
	Alloyed Steels	○	○	○	○													Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting
	Stainless Steels	○	○		○													
Cast Iron	○	○						○										
Aluminum&Al										□								
Refractory Alloys																		
Hard Material		○																

Shape	Spec.	Layer coated micro grain					Micro grain cemented carbide				(mm)				Drawing	
		CHF					HF				Size					
		OM4010	OM4025	RM4025	RM4030	RM3130	OM5005					d	i	s	r	
	SPMT060204-M01			●		●					6	-	2.38	0.4		
	SPGT060204-M02				●											
	SPMT090308-M01			●							9.525	-	3.18	0.8		
	SPMW090304	●	●								9.525	-	3.18	0.4		
	SPET120408-M02	●	●				●				12.7	-	4.76	0.8		
	SPMT120408-R01			●							12.7	-	4.76	0.8		

## SP 06.09.12 Cutting Parameter

Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P Low-Alloy Steels	OM4010	100~220	0.10~0.35	2.0~9.0
	OM4025	100~220	0.10~0.35	2.0~9.0
	RM4025	100~220	0.10~0.35	2.0~9.0
P Alloyed Steels	OM4010	70~120	0.10~0.25	1.0~5.0
	OM4025	70~120	0.10~0.25	1.0~5.0
	RM4025	70~120	0.10~0.25	1.0~5.0
M Stainless Steels	OM4010	130~200	0.12~0.30	3.0~8.0
	OM4025	130~200	0.12~0.30	3.0~8.0
K Cast Iron	OM4025	100~210	0.10~0.20	2.0~9.0
	RM3130	100~210	0.10~0.20	2.0~9.0
N Aluminum&Al	OM5005	300(250-450)	0.2(0.15-0.35)	2.0~9.0

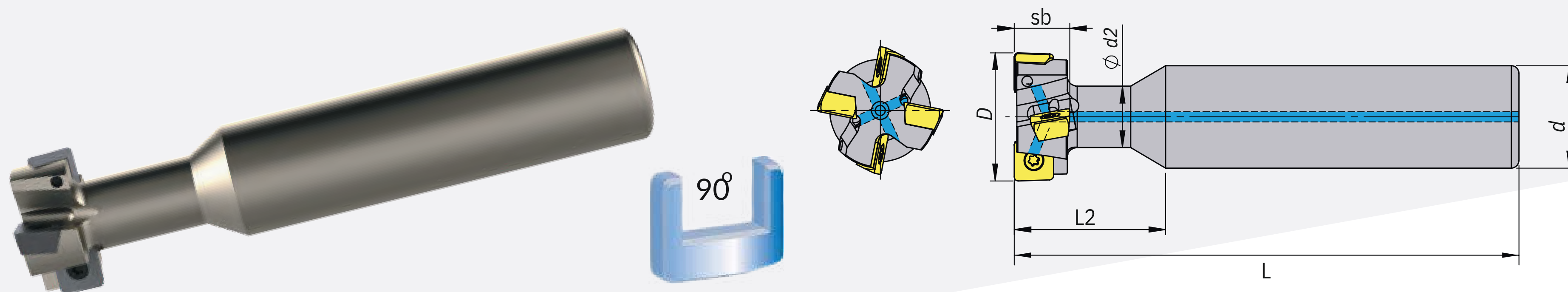
Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).

Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)



# BTS T-slot End Mill



## Feature

- Made of anti-vibration tool steel with through coolant.
- After the heat treatment, we will finish the cutter again for better accuracy.

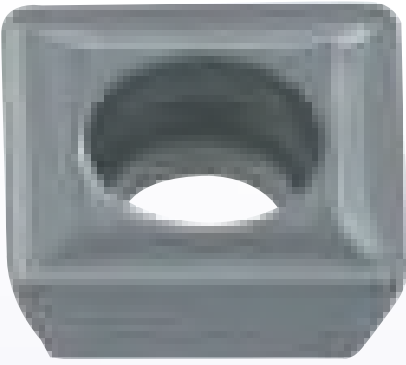
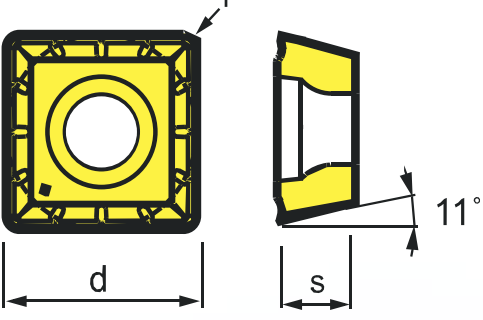

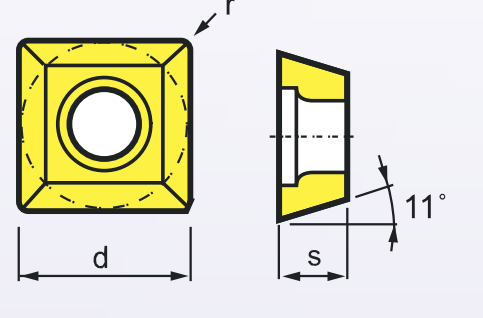
Spec.	D	sb	d2	L2	L	d	t	Insert
NEW BTS-1210-SO04-07	12	7	5	15	80	10	2	SO..0402
NEW BTS-1612-SO04-07	16	7	8	20	100	12	4	SO..0402
BTS-1916-SP05-08	19	8	9.5	25	120	16	4	SP..0502
BTS-2116-SP06-09	21	9	11	27	120	16	4	SP..0602
BTS-2520-SP07-11	25	11	12	30	120	20	4	SP..07T3
BTS-3225-SP07-11	32	11	23	30	150	25	4	SP..07T3
BTS-3225-SP09-14	32	14	17	39	150	25	4	SP..0904
BTS-3525-SP09-14	35	14	20	39	150	25	4	SP..0904
BTS-4025-SP11-18	40	18	21	49	150	25	4	SP..1104
BTS-5032-SP14-22	50	22	27	61	150	32	4	SP..1405
BTS-5525-SP07-11	55	11	20	40	180	25	6	SP..07T3
BTS-6025-SP09-15	60	15	25	40	180	25	6	SP..0904
BTS-6032-SP14-15	60	25	32	55	180	32	4	SP..1405

## Accessories

Insert	Screw	Wrench	(N.m) Torque
SO..0402	T6	M2-3.8-2.68-43	0.6
SP..0502	T6	M2-4.3-2.7-60-T6-TIN	0.6
SP..0602	T7	M2.2-5.2-3.1-60-T7-TIN	0.9
SP..07T3	T8	M2.5-6.33-3.5-48-T8-TIN	1.2
SP..0904	T10	M3.5-8.4-5.0-60-T10-TIN	2.0
SP..1104	T15	M4-9.35-5.65-60-T15-TIN	3.0
SP..1405	T20	M5-12.8-7.0-60-T20-TIN	5.0

Unit of Length (mm)

## BTS T-slot End Mill Insert

Shape	Spec.	Layer coated micro grain				Micro grain cemented carbide				(mm)				Drawing
		CHF				HF				Size				
		RM4025	RM3130	RM4030		RM5005	RM5060			d	i	s	r	
	SOMT040204-M01	●								4.6	-	2	0.4	
	SPGT050204-M02			●		●				5	-	2.38	0.4	
	SPGT060204-M02			●		●				6	-	2.38	0.4	
	SPGT07T308-M02			●		●				7.94	-	3.97	0.8	
	SPGT090408-M02			●		●				9.8	-	4.3	0.8	
	SPGT110408-M02			●		●				11.5	-	4.76	0.8	
	SPGT140512-M02			●		●				14.3	-	5.2	1.2	
	★ SPMT050204-M03	●	●							5	-	2.38	0.4	
	★ SPMT060204-M03	●	●							6	-	2.38	0.4	
	★ SPMT07T308-M03	●	●							7.94	-	3.97	0.8	
	★ SPMT090408-M03	●	●							9.8	-	4.3	0.8	
	★ SPMT110408-M03	●	●							11.5	-	4.76	0.8	
	★ SPMT140512-M03	●	●							14.3	-	5.2	1.2	
	SPMT050204-MT					●	●			5	-	2.38	0.4	
	SPMT060204-MT					●	●			6	-	2.38	0.4	
	SPMT07T308-MT					●	●			7.94	-	3.97	0.8	
	SPMT090408-MT					●	●			9.8	-	4.3	0.8	
	SPMT110408-MT					●	●			11.5	-	4.76	0.8	
	SPMT140512-MT					●	●			14.3	-	5.2	1.2	

## SO 04 / SP 05.06.07.09.11.14 Cutting Parameter

Machining Materials		Vc(m/min)	fz(mm/rev)
P	Alloyed Steels	130~200	0.08~0.12
K	Cast Iron	110~230	0.07~0.01
N	Aluminum&Al	180~600	0.12~0.15

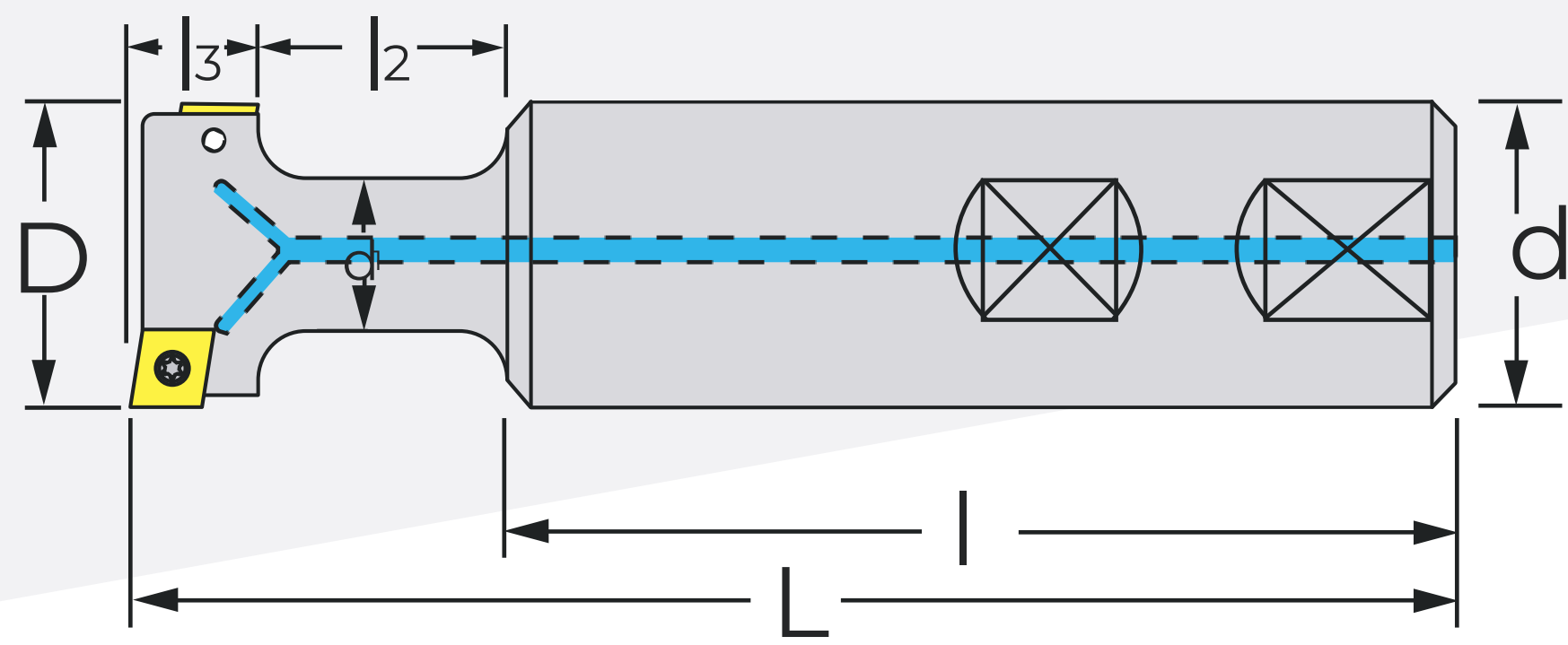
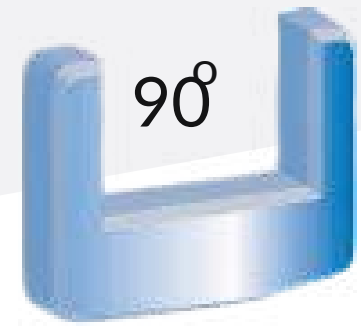
■ Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).

■ Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)



# ATS T-slot End Mill



## Feature

- Made of anti-vibration tool steel with through coolant.
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	l1	l2	l3	D	d	d1	Flutes	Insert	(KGS) Weight
ATS-25-11	112	80	21	11	25	25	12.5	2	CC..0602	0.35
ATS-32-14	120	77	30	14	32	32	16	4	CC..0803	0.55
ATS-40-18	130	80	32	18	40	32	20	4	CC..09T3	0.67
ATS-50-22	140	80	39	22	50	32	26	4	CC..1204	0.77

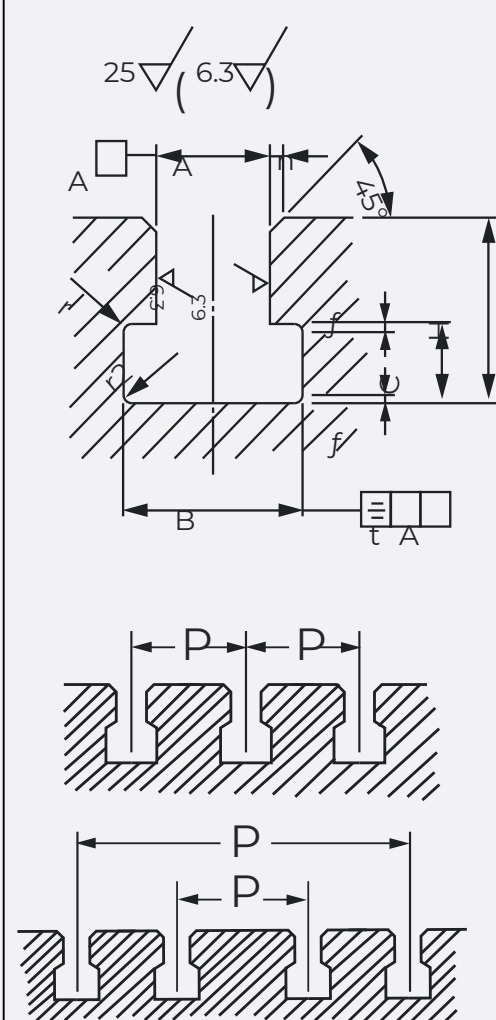
## Accessories

Insert	Screw	Wrench	(N.m) Torque
CC..0602	M2.5-6.0-3.5-60	T8	1.2
CC..0803	M3-8.0-4.0-43	T9	1.4
CC..09T3	M4-10-5.7-60	T15	3.0
CC..1204	M5-11-7.5-60	T20	5.0

JIS B 0952-1987


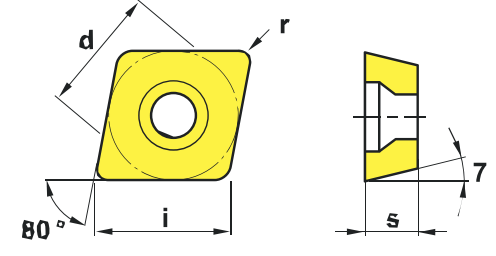

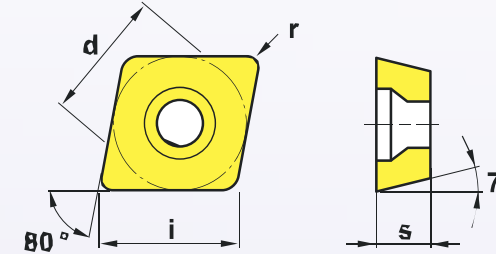

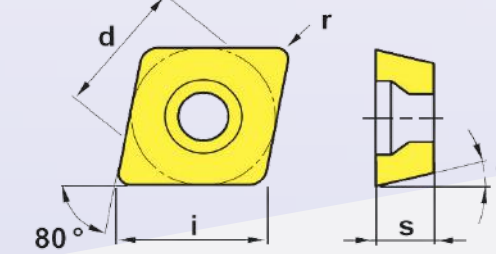
JIS B 0953-1987

Nominal ruler	standard size	A				B		C		H		reference		Drawing
		CHF				HF	tolerance	HF	tolerance	maxi	mini	n	f	slot pitch p
		1 grade H8	2 grade H812	3 grade H14	4 grade	standard size		standard size	tolerance	imum	imum	maximum	maximum	
5	5	+0.018	+0.120	-	-	10	+10	3	+0.50	10	8	1	0.6	20, 25, 32
6	6	0				11	+1.50	5	+10	13	11			25, 32, 40
8	8	+0.022	+0.150	-	-	14.5		7		18	15			32, 40, 50
10	10	0				16	+20	8		21	17			40, 50, 63
12	12	+0.027		+0.027		19		9	25	20	50, 63, 80			
14	14	0	+0.180	0	+2.70	23	+30	12	28	23	1.6			1
18	18					30		16	36	30		80, 100, 125		
22	22	+0.033	+0.210	+0.520	+3.30	37	+40	20	+20	45	38	1	1	100, 125, 160
28	28	0				46		25		56	48			125, 160, 200
36	36	+0.039				56	+30	32	+30	71	61	2	1.6	160, 200, 250
42	42	0	+0.250	+0.620		68		36		85	74			200, 250, 320
48	48					80	+50	40	+40	95	84	2	2	250, 320, 400
54	54	+0.046	+0.300	+0.740		90		40		106	94			320, 400, 500



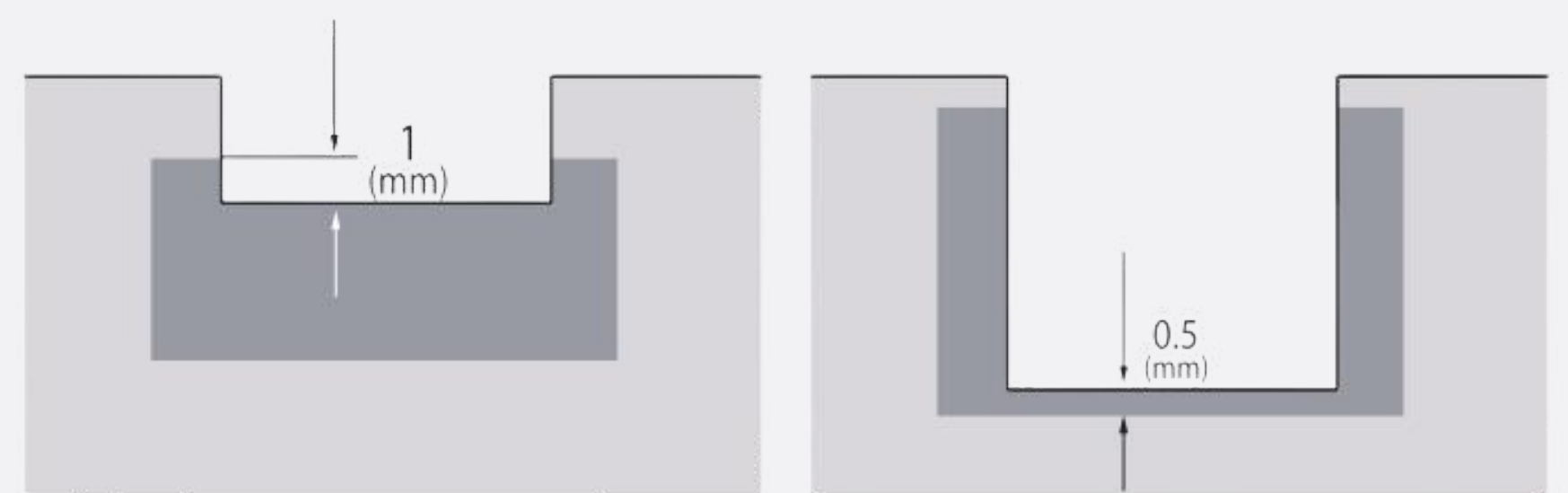
Unit of Length (mm)

# ATS T-slot End Mill Insert

ISO	P	Alloyed Steels	○							Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting				
	M	Stainless Steels	○											
	K	Cast Iron		○										
	N	Aluminum&Al					○							
S	Refractory Alloys													
H	Hard Material													
Shape	Spec.	Layer coated micro grain				Micro grain cemented carbide				(mm)				Drawing
		CHF				HF				Size				
		RM425	RM315			RM5005	RM4035			d	i	s	r	
	CCMT060204-HM	●	●						6.35	6.4	2.38	0.4		
	CCMT060208-HM	●	●						6.35	6.4	2.38	0.8		
	CCMT09T304-HM	●	●						9.525	9.7	3.97	0.4		
	CCMT09T308-HM	●	●						9.525	9.7	3.97	0.8		
	CCMT120404-HM	●	●						12.7	12.9	4.76	0.4		
	CCMT120408-HM	●	●						12.7	12.9	4.76	0.8		
	CCGT060202-NK					●			6.35	6.5	2.38	0.2		
	CCGT060204-NK					●			6.35	6.5	2.38	0.4		
	CCGT060208 NK					●			6.35	6.5	2.38	0.8		
	CCGT09T304 NK					●			9.525	9.7	3.97	0.4		
	CCGT09T308-NK					●			9.525	9.7	3.97	0.8		
	CCGT120404-NK					●			12.7	12.9	4.76	0.4		
	CCGT120408 NK					●			12.7	12.9	4.76	0.8		
	CCMT060202N-F01					●			6.35	6.4	2.38	0.2		
	CCMT060204N-F01					●			6.35	6.4	2.38	0.4		
	CCMT09T304N-F01					●			9.525	9.7	3.97	0.4		
	CCMT09T308N-F01					●			9.525	9.7	3.97	0.8		
	CCMT120404N-F01					●			12.7	12.9	4.76	0.4		
	CCMT120408N-F01					●			12.7	12.9	4.76	0.8		

## Cautions:

- Removing the metal chips by mist cooler if necessary.
- With coolant hole, benefit for chip release.
- Designed for roughing. Additional fine cutting is required if necessary.
- Customized products are available.



## CC 06.08.09.12 Cutting Parameter

Machining Materials		Vc(m/min)	fz(mm/rev)
P	Alloyed Steels	180~220	0.08~0.12
K	Cast Iron	110~230	0.07~0.01
N	Aluminum&Al	180~600	0.12~0.15

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)

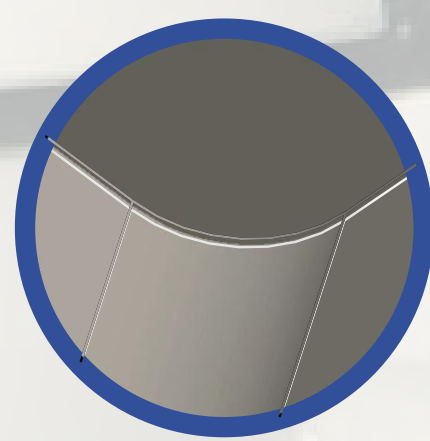
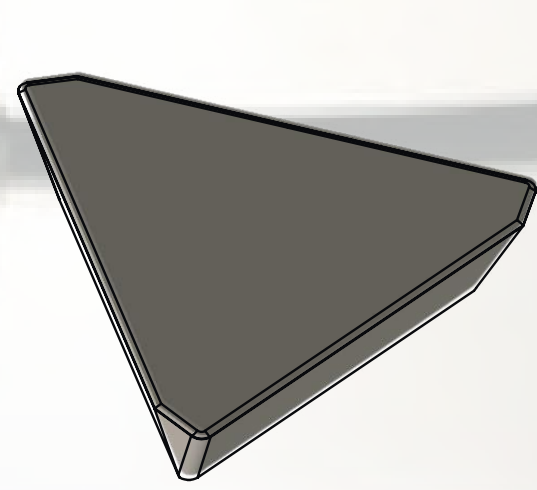


# MICRO-ADJUSTMENT FINISH FACE MILL SERIES

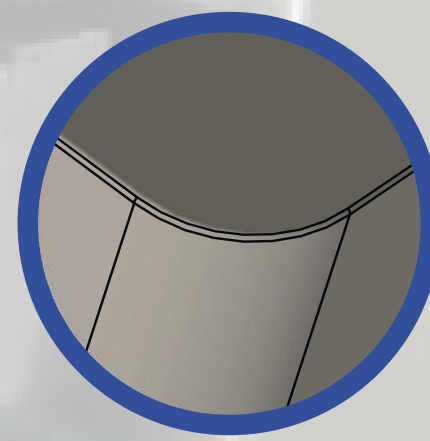
## TEEN1503

### MILLING INSERTS SERIES

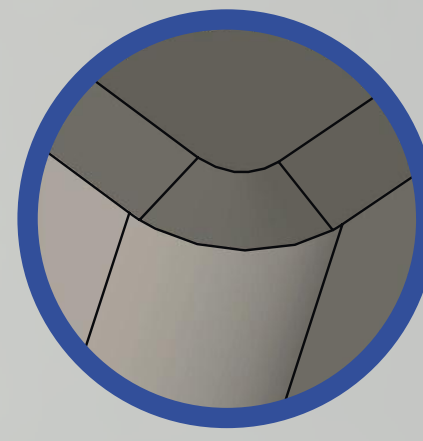
- Axial-side Adjustment: +1mm
- Cutting Diameter: 50-160mm
- Ra: 0.456μm



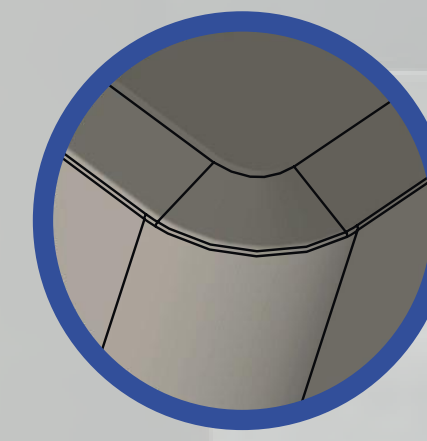
Micro Finish Machining



General Finish Machining



General Cutting



Strong Interrupted Cutting

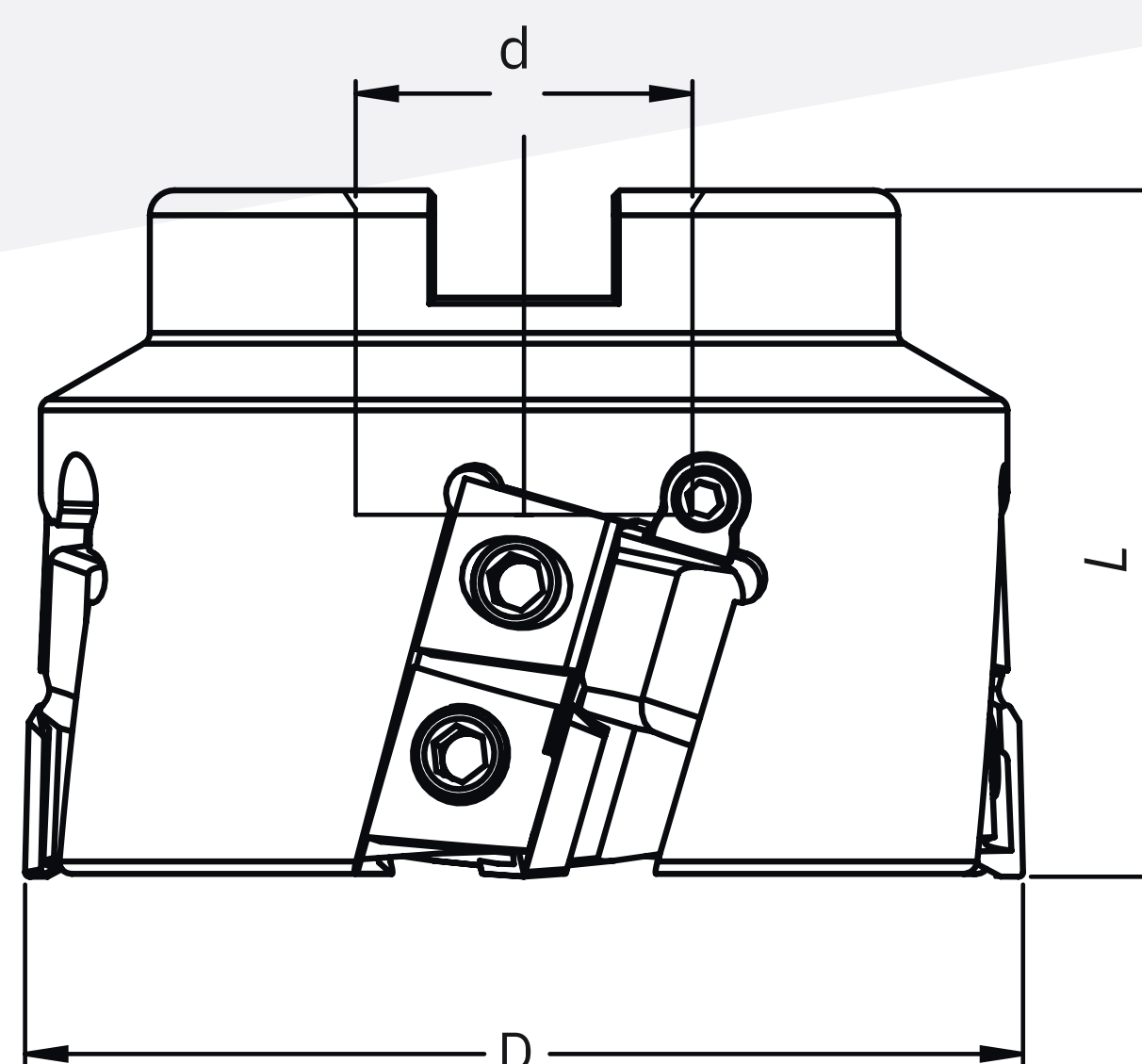
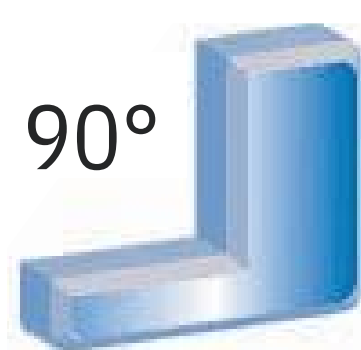
ISO	P	Alloyed Steels	○	○	□	□										Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting		
	M	Stainless Steels							●	□								
	K	Cast Iron						●	□									
N	Aluminum&Al																	
S	Refractory Alloys																	
H	Hard Material																	
Shape	Spec.	Cermet						Cermet Coated				(mm)				Drawing		
		HT						HT				Size						
		OM1205	OM1405	OM1205	OM1405	OM1205	OM1205	OM5435	OM5435			d	i	s	r			
	TEEN1503PEER1	●	●					●						9.22	-	3.18	-	
	TEEN1503PESR1			●	●				●					9.22	-	3.18	-	
	TEEN1503PEFR1	●												9.22	-	3.18	-	
	TEEN1503PETR1						●							9.22	-	3.18	-	

## TE 1503 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P Alloyed Steels		OM1205	TEEN1503PEER1	140(100-220)	0.2(0.1-0.3)
			TEEN1503PESR1	140(100-220)	0.2(0.1-0.3)
		OM1405	TEEN1503PEER1	120(100-220)	0.15(0.1-0.3)
			TEEN1503PESR1	120(100-220)	0.15(0.1-0.3)
M Stainless Steels		OM5435	TEEN1503PEER1	120(80-200)	0.2(0.1-0.3)
			TEEN1503PESR1	110(80-200)	0.15(0.1-0.3)
K Cast Iron		OM1205	TEEN1503PEFR1	160(100-220)	0.2(0.1-0.3)
			TEEN1503PETR1	150(100-220)	0.2(0.1-0.3)

# TEEN1503 MILLING INSERTS

## ATP Adjustable Indexable Face Milling Cutter



### Feature

- Ideal for high surface roughness face milling, and suitable for various materials of mechanical component contact surfaces.
- Be able to adjust the inserts height up to 1mm and achieve maximum Ra 0.456 $\mu$ m.
- Insert seat features a positioning design to secure the insert seat in place while cutting.
- Insert rake angle is 16°, which makes low resistance.

Spec.	D	L	d	T	Insert	Weight (KGS)
ATP-500-FMB22-TE15-3T	50	50	22	3	TE..1503	0.5
ATP-630-FMB22-TE15-4T	63	50	22	4	TE..1503	0.7
ATP-800-FMB27-TE15-4T	80	55	27	4	TE..1503	1.2
ATP-1000-FMB32-TE15-5T	100	55	32	5	TE..1503	2.1
ATP-1250-FMB40-TE15-6T	125	63	40	6	TE..1503	3.6
ATP-1600-FMB40-TE15-8T	160	63	40	8	TE..1503	6.8

### Accessories

Insert	Insert Seat	Clamp Screw	Insert Clamp	Insert SeatClamp	Wrench	Adjusting Screw	Wedge
TEEN1503	ATP-1630-TE15	GCS816-3	GSC-08	GSC-01	PL4、 PL2.5	M5-0.5P-LH-RH- 17-P2.5	HCM-AW-8L



# ACM / SCM

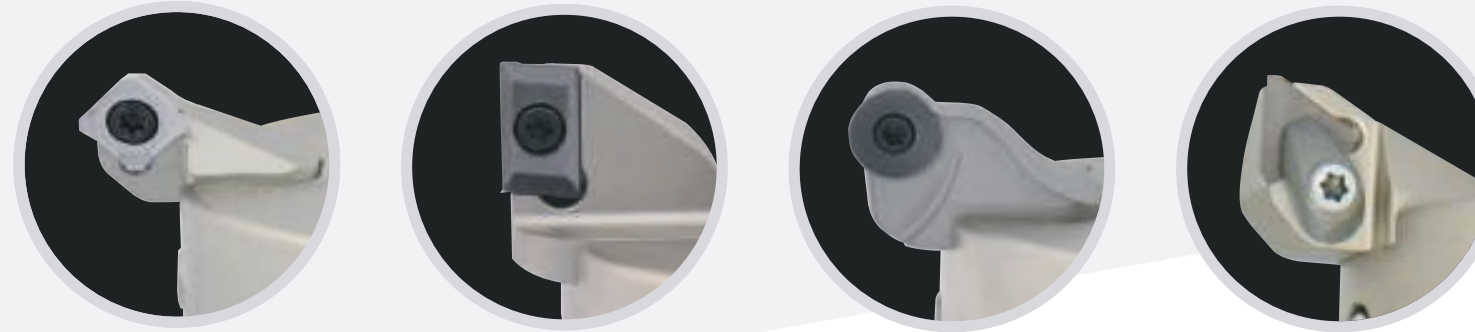
## CHANGEABLE MILLING CUTTER SERIES



The alloy steel cutting head is anodized to increase the rigidity.



ACM



SE..1204  
SE..12T3

AP..1604

RP..1204

TE..1503

5 interchangeable cartridges are available.

The aluminum alloy cutting head with electroless nickel surface treatment improve rigidity and increase wear resistance.



SCM

## ACM Aluminum Changeable Milling Cutter Insert

ISO	P	Alloyed Steels												Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting	
	M	Stainless Steels													
	K	Cast Iron													
	N	Aluminum&Al	□	□	○	○	□		○	●	□				
S	Refractory Alloys														
H	Hard Material														
Shape	Spec.	Ultra-hard microprogram					Polycrystalline diamond			(mm)				Drawing	
		HF					DP			Size					
		GH1	GH05	OM5005	OM5060	RM5005	PCD	PCD020	PCD100	d	i	s	r		
	APEX1604PDFR-701		●								9.525	16.4	4.76	0.2	
	APEX1604PDFR-F01			●	●						9.525	16.4	4.76	-	
	APEX160400PDFR-F01			●	●						9.525	16.4	4.76	-	
	APEX160404PDFR-F01			●	●						9.525	16.4	4.76	0.4	
	APEX160408PDFR-F01			●	●						9.525	16.4	4.76	0.8	
	APGW160404PDFR-F01							●	●		9.525	16.5	4.76	-	
	APGW1604PDFR-F01							●	●		9.525	16.5	4.76	-	
	SEET13T3AGFN-F01					●					13.4	-	3.97	2.55	
	SEHT1204AFFN	●			●						12.7	-	4.76	-	
	SEGW120404AFFN-F01							●	●		12.7	-	4.76	-	
	SEGW1204AFFN-F01							●	●		12.7	-	4.76	-	
	RPET1204MOE-M01			●							12	-	4.76	6	

The information related to insert TEEN1503PEER1, please refer to page.24.



# SCM Alloy Steel Changeable Milling Cutter Insert

ISO	P	Alloyed Steels													Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting
	M	Stainless Steels													
	K	Cast Iron													
N	Aluminum&Al	□	□	○	○	□					○	●			
S	Refractory Alloys														
H	Hard Material														
Shape	Spec.	BN		Layer coating ultra-micro				Cermet		(mm)				Drawing	
		BN		CHF				HF		Size					
		CBN250	CBN500	OM4010	OM4025	RM2140	RM4025	RM4130	OM1205	RM1205	d	i	s		r
	APGW1604PDER	●									9.525	16.5	4.76	-	
	APGW1604PDFR	●									9.525	16.5	4.76	-	
	APGW1604PDTR	●									9.525	16.5	4.76	-	
	APGW1604PDSR	●									9.525	16.5	4.76	-	
	APKT160408-M01								●		9.525	16.3	4.76	0.8	
	SEGW1204AFSN	●									12.7	-	4.76	-	
	SEGW1204AFTN	●									12.7	-	4.76	-	
	SEGW1204AFEN	●									12.7	-	4.76	-	
	SEGW1204AFFN	●									12.7	-	4.76	-	
	★ SEHT1204AFEN-M01			●	●						12.7	-	4.76	Facet	
	SEKW1204AFN				●				●		12.7	-	4.76	-	
	SEMT13T3AGEN-M02					●	●								
	RPET1204MOE-M01			●	●						12	-	4.76	6	
	RPMT1204MON								●		12	-	4.76	6	

★ Recommended

## RP 12 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4010	220~300	0.08~0.16	0.1~6.0
		OM4025	180~220	0.08~0.16	0.1~6.0
		RM4130	200~240	0.08~0.16	0.1~6.0
P	Alloyed Steels	OM4010	100~200	0.08~0.16	0.1~6.0
		OM4025	120~140	0.08~0.16	0.1~6.0
		RM4130	140~160	0.08~0.16	0.1~6.0
M	Stainless Steels	OM4010	80~140	0.08~0.14	0.1~3.0
		RM4130	100~140	0.08~0.14	0.1~3.0
K	Cast Iron	OM4025	220~350	0.08~0.25	0.1~6.0
N	Aluminum&Al	OM5005	700~1000	0.06~0.12	0.1~6.0

Unit of Length (mm)



## AP 16 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4025	120~300	0.15~0.40	3.0~8.0
		OM4025N	120~300	0.15~0.40	3.0~8.0
		RM4130	60~300	0.10~0.25	3.0~8.0
P	Alloyed Steels	OM4025	80~180	0.15~0.35	3.0~8.0
		RM4130	60~300	0.10~0.25	3.0~8.0
		RM1205	100~330	0.08~0.30	3.0~8.0
M	Stainless Steels	OM4025	120~160	0.15~0.35	3.0~8.0
		RM4130	120~160	0.10~0.25	3.0~8.0
K	Cast Iron	OM4025	160~250	0.15~0.30	3.0~8.0
		RM3130	160~250	0.15~0.30	3.0~8.0
N	Aluminum&Al	OM5005	400~1000	0.04~0.20	3.0~8.0
		OM5060	400~1000	0.04~0.20	3.0~8.0
		RM5005	400~1000	0.04~0.20	3.0~8.0
		GH05	300~800	0.04~0.20	3.0~8.0
		PCD100	1200~2000	0.04~0.20	0.5~1.0
H	Hard Material	CBN250	80~120	0.03-0.15	0.1-0.3

## SE 12 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4010	260~320	0.20~0.45	1.0~3.0
		OM4025	220~260	0.20~0.45	1.0~3.0
		RM4025	220~260	0.20~0.45	1.0~3.0
P	Alloyed Steels	OM1205	100~195	0.05~0.15	1.0~2.0
		OM4010	130~250	0.20~0.35	1.0~3.0
		OM4025	100~195	0.20~0.35	1.0~3.0
		RM4025	100~195	0.20~0.35	1.0~3.0
M	Stainless Steels	OM4010	180~220	0.10~0.30	1.0~2.0
		OM4025	140~180	0.10~0.30	1.0~2.0
		RM2140	130~250	0.10~0.30	1.0~2.0
		RM535	70~180	0.08~0.29	1.0~2.0
	Precipitation-Hardening	OM4010	90~120	0.15~0.20	0.2~1.0
		OM4025	70~85	0.15~0.20	0.2~1.0
K	Cast Iron	OM4010	160~300	0.12~0.35	1.0~3.0
		OM4025	180~300	0.15~0.35	1.0~3.0
		CBN500	700~1500	0.06~0.10	0.1~0.2
N	Aluminum&Al	OM5060	500~850	0.15~0.35	3.6~6.0
		GH1	275~450	0.15~0.35	3.0~6.0
		PCD100	1000~2000	0.06~0.10	0.05~0.1
H	Hard Material	CBN250	80~120	0.03~0.15	0.1~0.3

## SE 12 Cutting Parameter

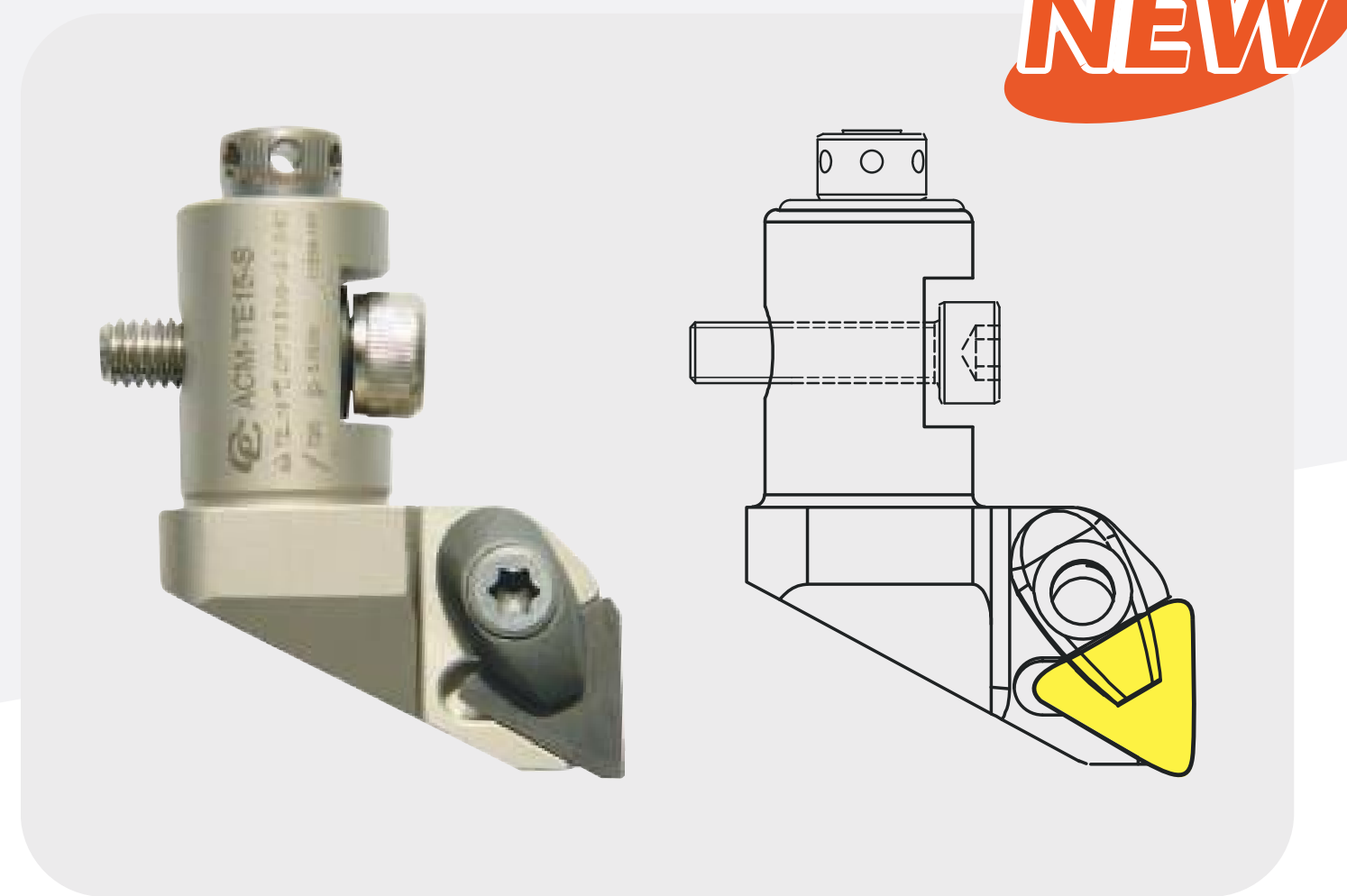
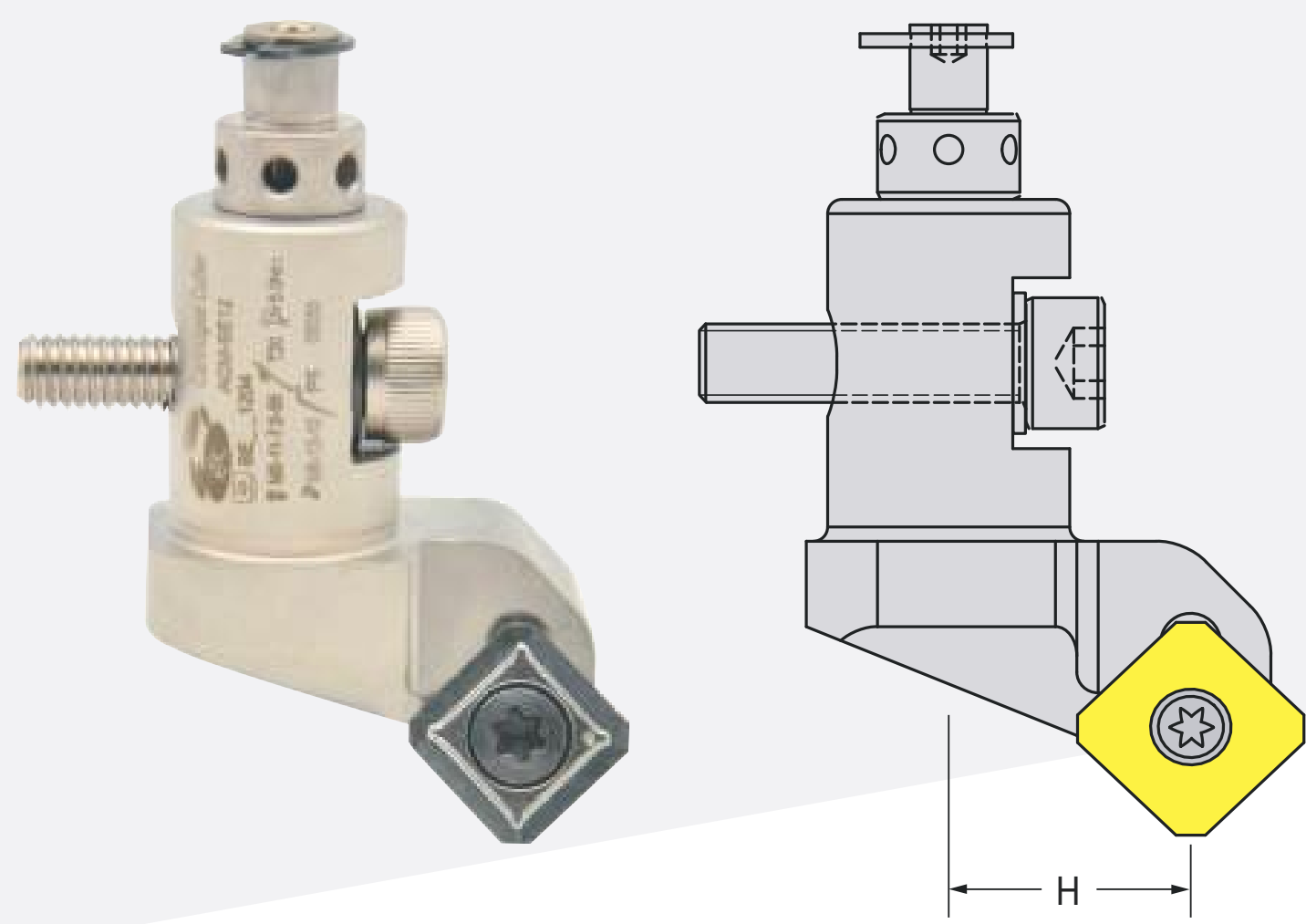
Machining Materials		Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Alloyed Steels	OM1205	TEEN1503PEER1	140(100-220)	0.2(0.1-0.3)
			TEEN1503PESR1	140(100-220)	0.2(0.1-0.3)
		OM1405	TEEN1503PEER1	120(100-220)	0.15(0.1-0.3)
			TEEN1503PESR1	120(100-220)	0.15(0.1-0.3)
M	Stainless Steels	OM5435	TEEN1503PEER1	120(80-200)	0.2(0.1-0.3)
			TEEN1503PESR1	110(80-200)	0.15(0.1-0.3)
K	Cast Iron	OM1205	TEEN1503PEFR1	160(100-220)	0.2(0.1-0.3)
			TEEN1503PETR1	150(100-220)	0.2(0.1-0.3)

■ Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).

■ Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)

# ACM/SCM Changeable Insert Seat



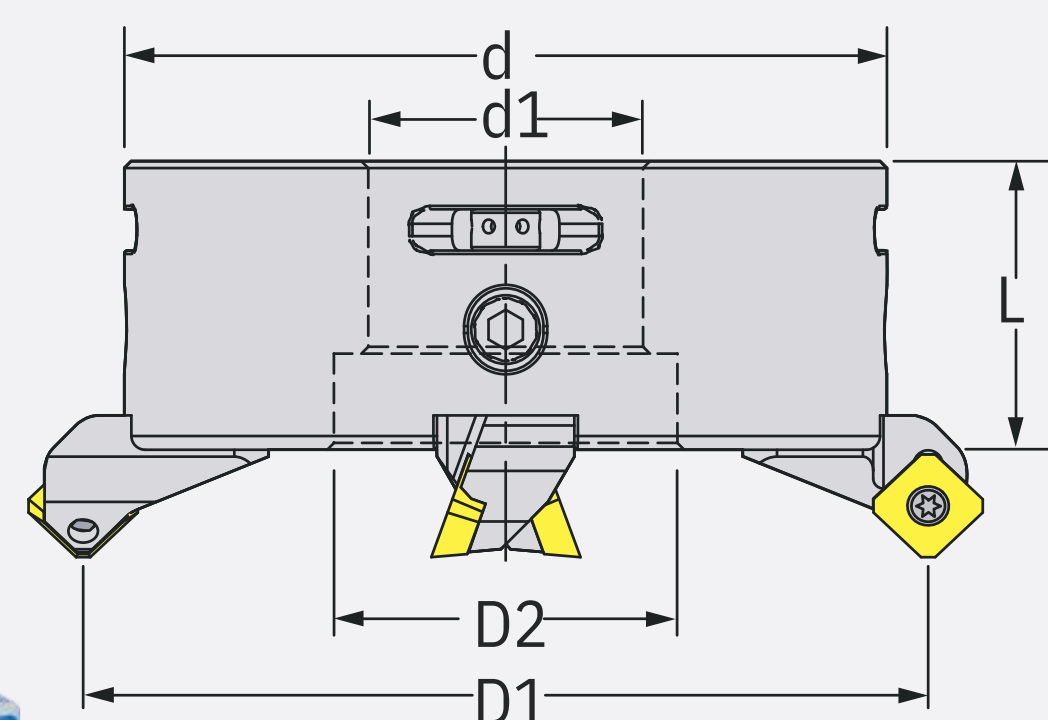
Spec.	H	Insert	(KGS) Weight
ACM-SE12-S	-	SE..1204	0.11
●ACM-SE12-A-S	-3	SE..1204	0.11
●ACM-SE12-B-S	+3	SE..1204	0.11
●ACM-SE12-C-S	-2	SE..1204	0.11
●ACM-SE12-D-S	+2	SE..1204	0.11
●ACM-SE12-E-S	-1	SE..1204	0.11
●ACM-SE12-F-S	+1	SE..1204	0.11
ACM-SE12-L-S	-	SE..1204	0.11
ACM-AP16-S	-	AP..1604	0.13
ACM-RP12-S	-	RP..1204	0.13
●ACM-SE12T3-S	-	SE..12T3	-
ACM-TE15-S	-	TE..15T3	-

- Available to order

## Accessories

Insert	Screw	Clamp	Wrench	(N.m) Torque
SE..1204	M5-11-7.0-55	-	T20	5.0
AP..1604	M4-10-5.7-60	-	T15	3.0
RP..1204	M4-10-5.0-43	-	T15	3.0
SE..12T3	M3.5-11.7-5.3-60	-	T15	3.0
TE..1503	M5-12-7.3-60	CPT15	T20	5.0

# ACM Aluminum Changeable Milling Cutter



## Feature

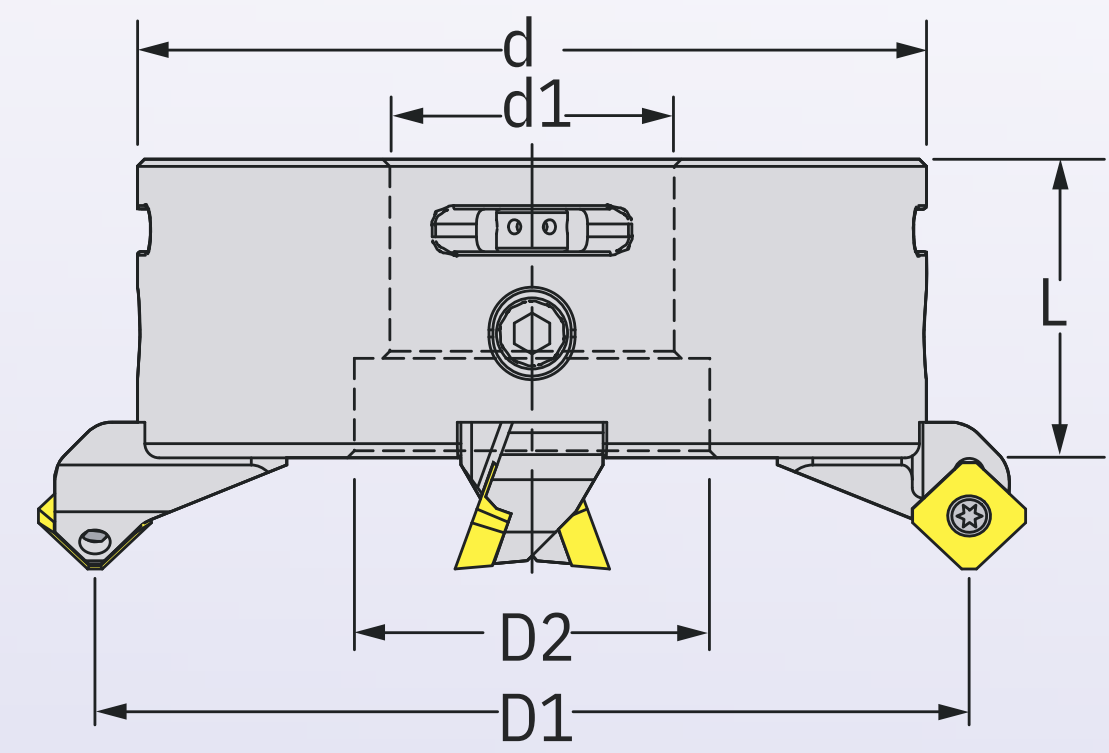
- Insert-embedded design reduce wind resistance, improve cutting efficiency.
- Close fit between insert holder and cutter. Insert holder can be well positioned.
- Light weight, reduced weight on insert holder and cutter.
- Made of specific aluminum alloy, enhanced high rigidity.



Spec.	L	D1	D2	d	d1	Flutes		Insert Seat	Screw	Weight (KGS)	Weight (KGS)
						Standard	Option				
ACM-80-FMB22-S	42	80	18	66	22	4	-	ACM-SE12ACM-AP16ACM-RP12ACM-SE12T3ACM-TE15	SH-M6-20	0.62	2.60
ACM-80-FMA25.4-S	42	80	20	66	25.4	4	-		SH-M6-20	0.64	2.90
ACM-100-FMB22-S	42	100	18	86	22	4	-		SH-M6-25	-	2.86
ACM-100-FMA25.4-S	42	100	20	86	25.4	4	-		SH-M6-25	0.90	2.80
ACM-125-FMB32-S	42	125	42	111	32	4	-		SH-M6-25	-	3.62
ACM-125-FMA31.75-S	42	125	42	111	31.75	4	-		SH-M6-25	1.16	3.15
ACM-160-FMB40-S	42	160	50	146	40	4	4		SH-M6-25	1.74	3.79
ACM-160-FMA38.1-S	42	160	46	146	38.1	4	4		SH-M6-25	1.76	3.60
ACM-200-FS60F-S	45	200	60	186	60	4	4		SH-M6-25	2.52	6.62
ACM-200-FMA38.1-S	45	200	48	186	38.1	4	4		SH-M6-25	2.50	7.03
ACM-200-FMA47.625-S	45	200	47.625	186	47.625	4	4		SH-M6-25	2.56	6.44
ACM-250-FS60F-S	47	250	60	236	60	4	8		SH-M6-25	3.86	8.40
ACM-250-FMA38.1-S	47	250	48	236	38.1	4	8		SH-M6-25	4.06	8.26
ACM-250-FMA47.625-S	47	250	47.625	236	47.625	4	8		SH-M6-25	4.00	7.92
ACM-315-FS60F-S	47	315	60	301	60	4	12		SH-M6-25	6.32	10.35
ACM-315-FMA38.1-S	47	315	48	301	38.1	4	12		SH-M6-25	-	10.24
ACM-315-FMA47.625-S	47	315	47.625	301	47.62	4	12		SH-M6-25	6.32	10.80
ACM-400-FMA47.625	47	400	47.625	386	47.625	4	12	SH-M6-25	10.10	21.76	

- S- dual micro-adjustment

## SCM Alloy Steel Changeable Milling Cutter



### Feature

- Insert-embedded design reduce wind resistance, improve cutting efficiency.
- Close fit between insert holder and cutter. Insert holder can be well positioned.
- Light weight, reduced weight on insert holder and cutter.
- Made of specific aluminum alloy, enhanced high rigidity.

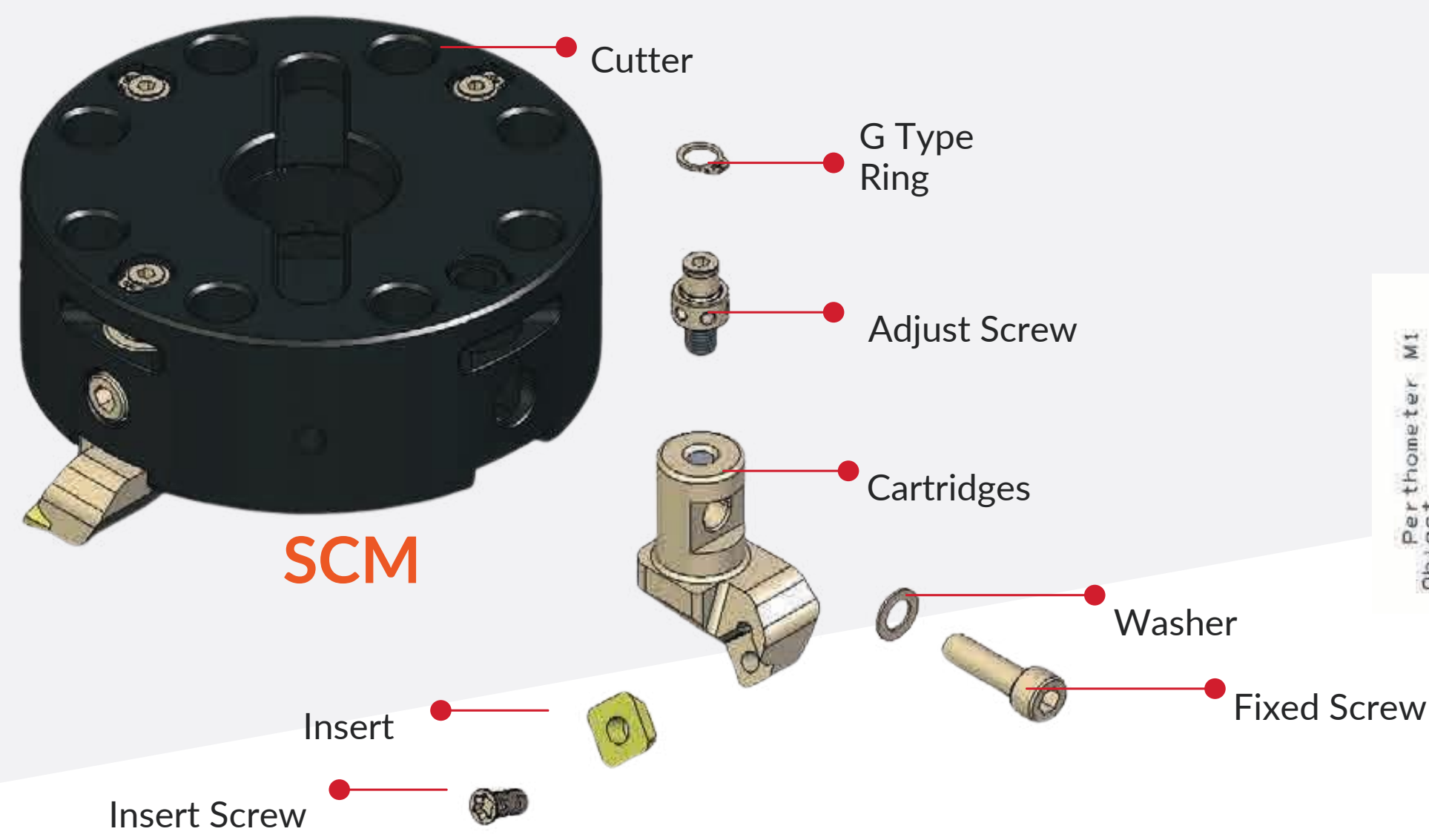
Spec.	L	D1	D2	d	d1	Flutes		Insert Seat	Screw	Weight (KGS)	Weight (KGS)
						Standard	Option				
SCM-80-FMB22-S	42	80	18	66	22	4	-	ACM-SE12ACM-AP16ACM-RP12ACM-SE12T3ACM-TE15	SH-M6-20	1.06	2.96
SCM-80-FMA25.4-S	42	80	20	66	25.4	4	-		SH-M6-20	1.02	3.00
SCM-100-FMB22-S	42	100	18	86	22	4	-		SH-M6-25	1.76	3.72
SCM-100-FMA25.4-S	42	100	20	86	25.4	4	-		SH-M6-25	1.74	4.15
SCM-125-FMB32-S	42	125	42	111	32	4	-		SH-M6-25	2.60	4.56
SCM-125-FMA31.75-S	42	125	42	111	31.75	4	-		SH-M6-25	2.52	4.86
SCM-160-FMB40-S	42	160	50	146	40	4	4		SH-M6-25	4.12	6.09
SCM-160-FMA38.1-S	42	160	46	146	38.1	4	4		SH-M6-25	4.20	6.45
SCM-200-FS60F-S	45	200	60	186	60	4	4		SH-M6-25	6.06	10.50
SCM-200-FMA38.1-S	45	200	48	186	38.1	4	4		SH-M6-25	6.46	10.40
SCM-200-FMA47.625-S	45	200	47.625	186	47.625	4	4		SH-M6-25	6.43	14.60
SCM-250-FS60F-S	47	250	60	236	60	4	8		SH-M6-25	10.54	14.50
SCM-250-FMA38.1-S	47	250	48	236	38.1	4	8		SH-M6-25	10.98	14.70
SCM-250-FMA47.625-S	47	250	47.625	236	47.625	4	8		SH-M6-25	10.70	14.66

- S- dual micro-adjustment

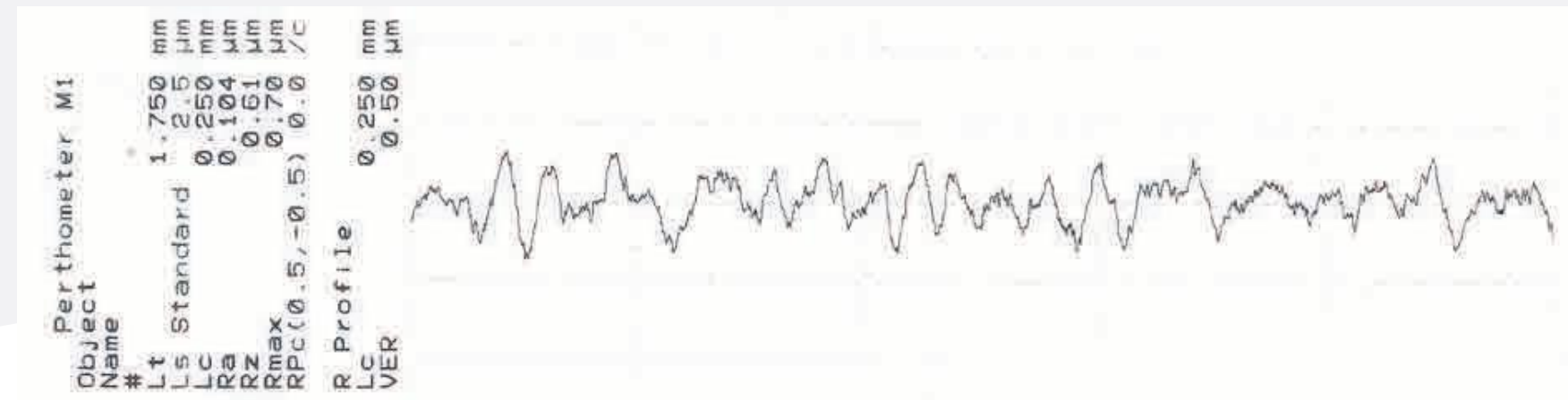
Unit of Length (mm)



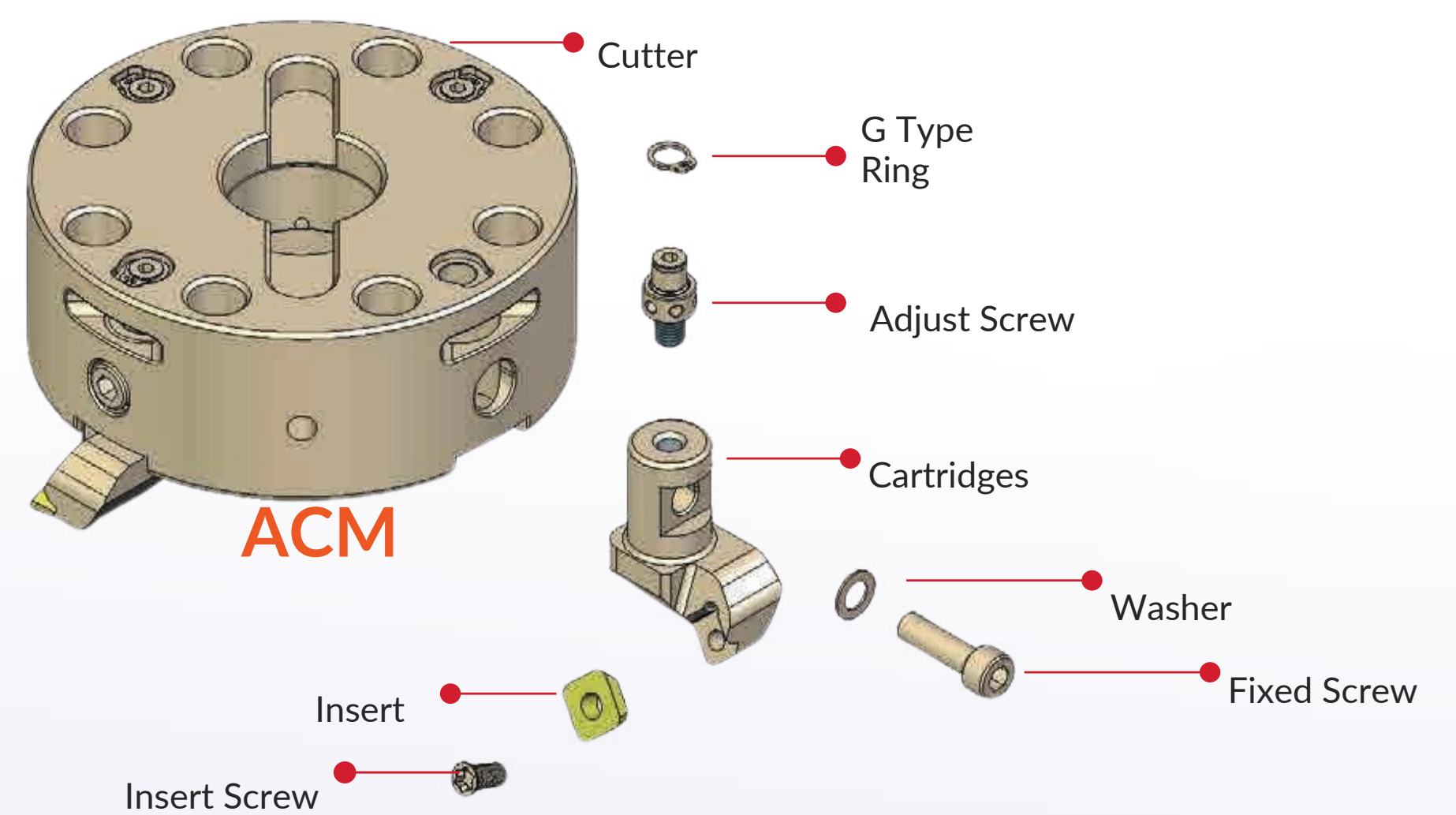
# ACM/SCM ALUMINUM CHANGEABLE MILLING CUTTER



Rz(Max):0.61um Ra0.10um



Processing Type :	Finishing cuts
Finishing cuts	Vertical M/C
Taper type:	BT40
Processing Materials:	si 10 si12% Aluminum alloy
Tool specifications:	ACM 125—FMA3175
Blade Material:	SEET1204AFFN-F01 PMG
Linear speed :	V=1500m/min
Rotate speed:	S=3800rpm
Bed feed:	F=4000mm/min
Feed per edge:	f=0.25rev
Depth of cut:	Ap=0.1mm
Cooling method	Water



## Alignment Operation:

To let the roughness of machined surface meet the requirement, make a micro-adjustment for each blade at same height. Each step as follows :



Use dial indicator to measure each insert height. Zero the dial indicator at 12 on the basis of the highest insert.



Use the spanner of P5 to loosen the fixed screw for other insert.



Use the spanner to make a micro adjustment at the direction of +. If adjust the insert height over then, please adjust at the direction of -



When all inserts are at the same height, use the spanner of P5 to lock tightly the screws. After that, measure again each insert height. And check if the dial indicator is zero. If no, please repeat above action.



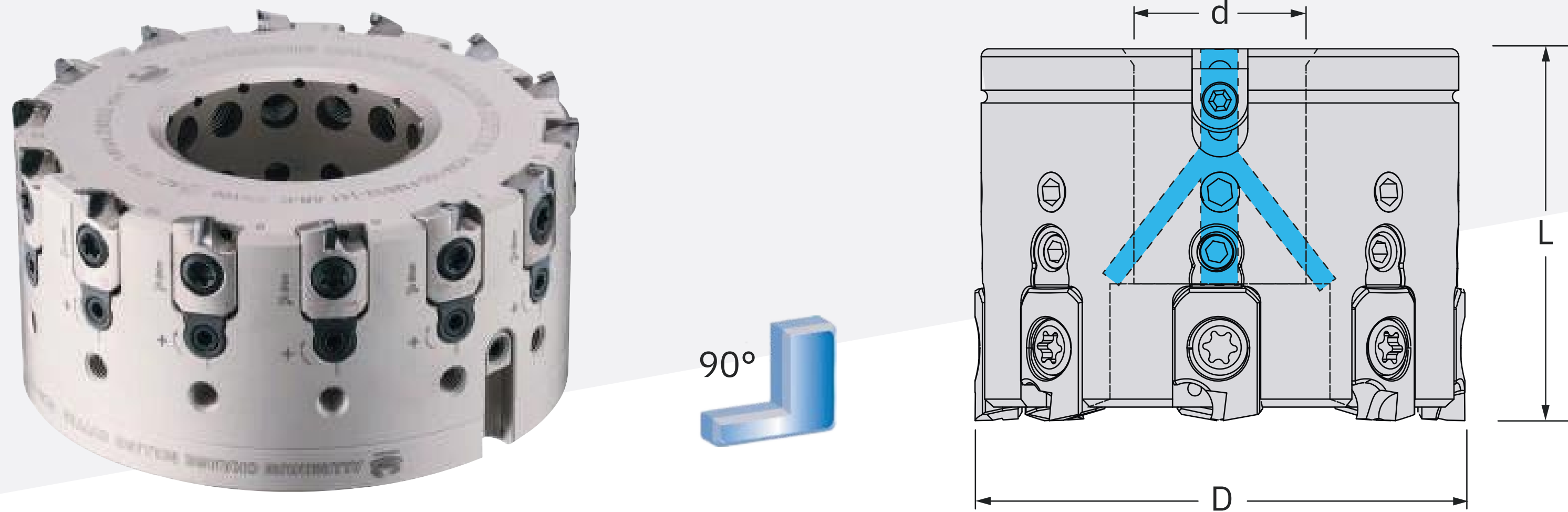
Each blade at the same height represents the alignment is ok.



Except for side-alignment, you can also adjust from the top. No need to disassemble the cutter head from the machine spindle, just check the each insert.



## HCM Aluminum Changeable Milling Cutter (Dynamic balancing & through hole)



### Feature

- Lightweight aluminum body.
- V- groove positioning design and results to stable process.
- Adjustable wedge with circular arc design provide better surface finish.
- Axial dynamic balance and through-tool coolant system.

Spec.	L	D	d	T	Spindle speed max	(KGS) Weight	(KGS) Weight
HCM-50-FMB16-6T-AB-C	50	48	16	6	max. 33000rpm	0.20	1.26
HCM-63-FMB22-8T-AB-C	63	48	22	8	max. 33000rpm	0.30	1.40
HCM-80-FMB27-10T-AB-C	80	50	27	10	max. 33000rpm	0.48	1.60
HCM-100-FMB32-14T-AB-C	100	50	32	14	max. 29500rpm	0.81	2.02
HCM-125-FMB40-18T-AB-C	125	63	40	18	max. 25500rpm	1.88	3.68

## HCM Aluminum Changeable Milling Cutter



### Feature

- Lightweight aluminum body.
- V- groove positioning design and results to stable process.
- $\mu$  grade can be adjusted.

Spec.	L	D	d	T	Spindle speed max	(KGS) Weight	(KGS) Weight
HCM-50-FMB16-6T	50	48	16	6	max. 33000rpm	0.19	1.26
HCM-63-FMB22-8T	63	48	22	8	max. 33000rpm	0.31	1.4
HCM-80-FMB27-10T	80	50	27	10	max. 33000rpm	0.49	1.6
HCM-100-FMB32-14T	100	50	32	14	max. 29500rpm	0.82	2.02
HCM-125-FMB40-18T	125	63	40	18	max. 25500rpm	1.63	3.68
HCM-160-FMB40-24T	160	63	40	24	max. 22200rpm	2.48	6.65
HCM-200-FS60F-28T	200	63	60	28	max. 18100rpm	3.42	7.56
HCM-250-FS60F-36T	250	63	60	36	max. 14500rpm	6.5	10.58
HCM-315-FS60F-46T	315	80	60	46	max. 11500rpm	12.44	16.6
HCM400-FS60F-58T	400	80	60	58	max. 9000rpm	20.76	28.22

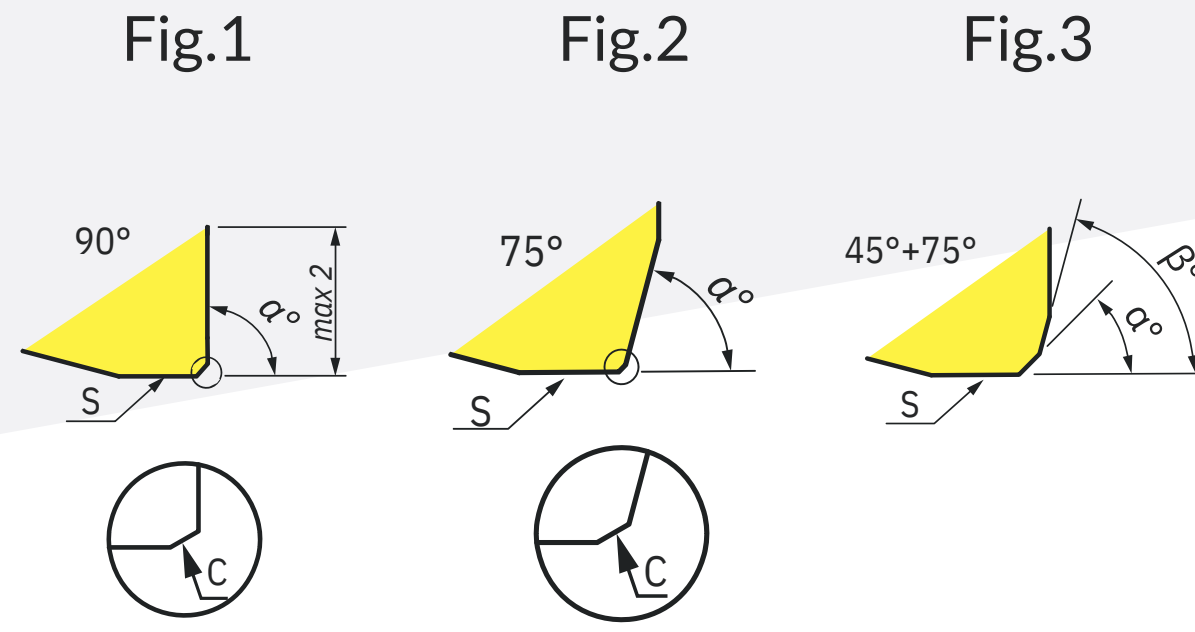
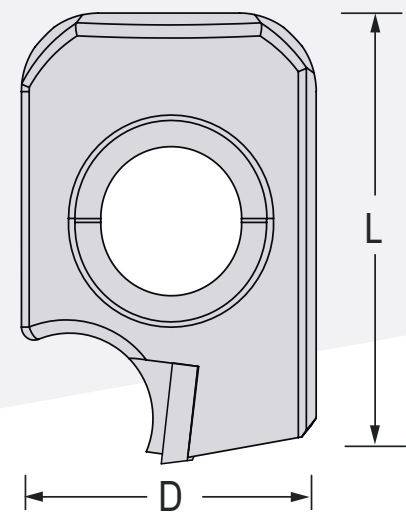
Unit of Length (mm)

# ALUMINUM CHANGEABLE MILLING CUTTER SERIES

## HCM Insert Seat



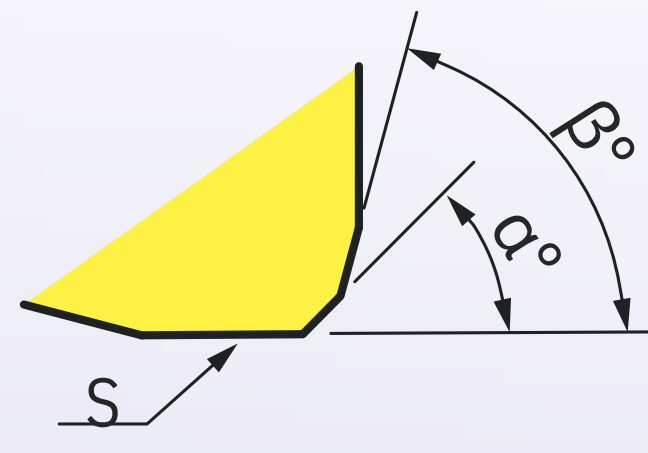
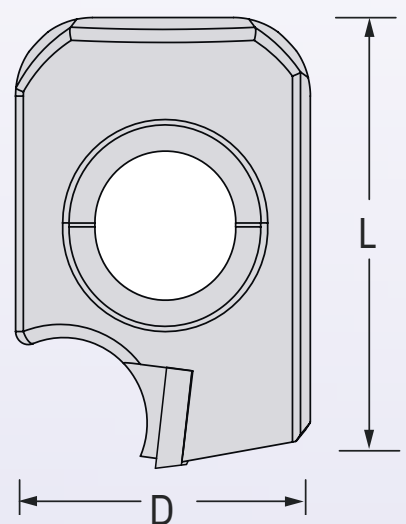
PCD  
CBN



Cutting Tool	Spec.	Polycrystalline Diamond		CBN	(mm)						Cutting Max.	Fig.
		DP		CBN	Size						mm	
		PCD		CBN250	L	D	$\alpha^\circ$	$\beta^\circ$	S	C	Ap	
HCM	ACMQ1711PAFR	●		●	17	11	90°	-	1.2	0.15	2	1
	ACMQ1711EAFR	●		●	17	11	75°	-	1.2	0.15	2	2
	ACMQ1711AAFR	●		●	17	11	45°	75°	1.2	-	1.13	3

● Please contact us for specific angle requirements

PCD  
CBN

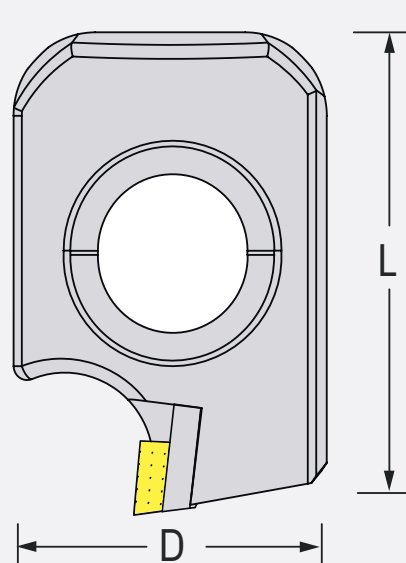


Wiper inserts :

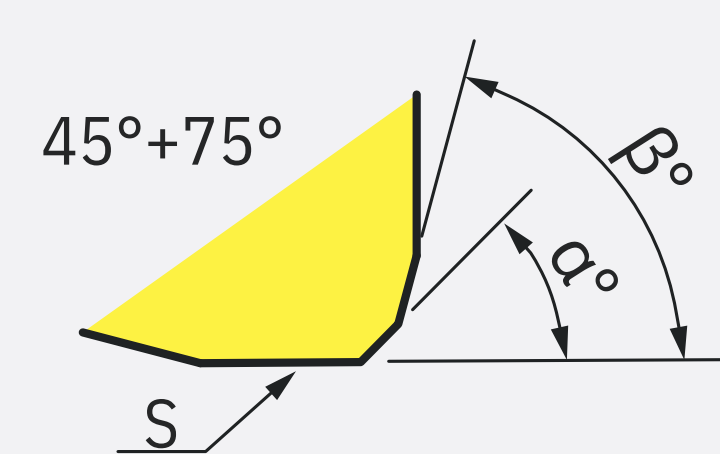
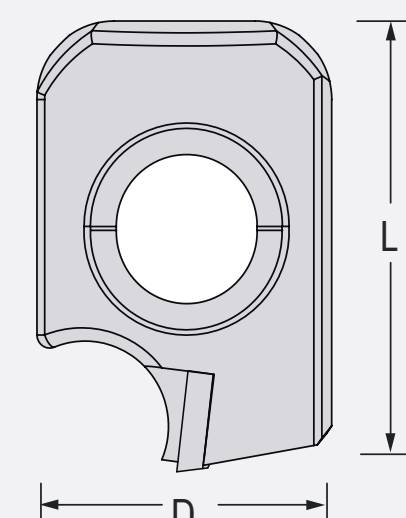
Cutting Tool	Spec.	polycrystalline Diamond		CBN	(mm)						Cutting Max.
		DP		CBN	Size						mm
		PCD		CBN250	L	D	$\alpha^\circ$	$\beta^\circ$	r	C	Ap
HCM	ACMQ1711AAFR-R300	●		●	17	11	45°	75°	300	-	2
	ACMQ1711AAFR-R500	●		●	17	11	45°	75°	500	-	1.13

● Please contact us for specific angle requirements

MD



WC



Single crystal diamond Insert :

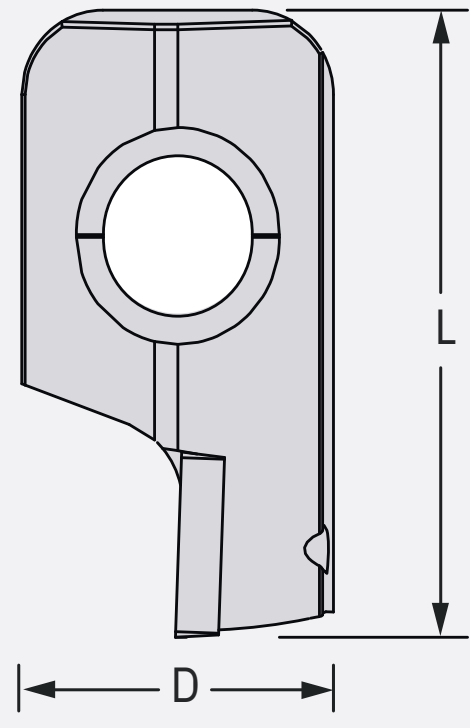
Cutting Tool	Spec.	Single crystal diamond		(mm)						Cutting Max.
		MD		Size						mm
		MD100		L	D	$\alpha^\circ$	$\beta^\circ$	s	C	Ap
HCM	ACMQ1711ACFR	●		17	11	45°	75°	1.2	-	1.13

Spec.	L	D	$\alpha^\circ$	$\beta^\circ$	s	(KGS) Weight
ACMQ1711ACFR-WC	17	11	45°	75°	1.2	0.02

Unit of Length (mm)



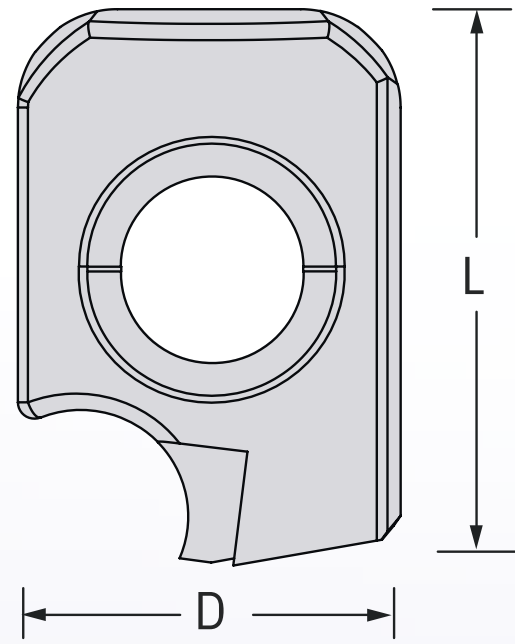
## HCM Indexable Insert Seat



Spec.	L	D	Insert	Screw	Wrench	(N.m) Torque	(KGS) Weight
ACMQ1711-TB06	22.13	11	TB..0601	M2-5.0-2.7-60	T6	0.6	0.02

Can collocation insert material.

## HCM Insert Base Seat



Spec.	L	D	(KGS) Weight
ACMQ1711-AS	17	11	0.02

Can be used for weight or self-welding head of the material.

Standard Accessories:

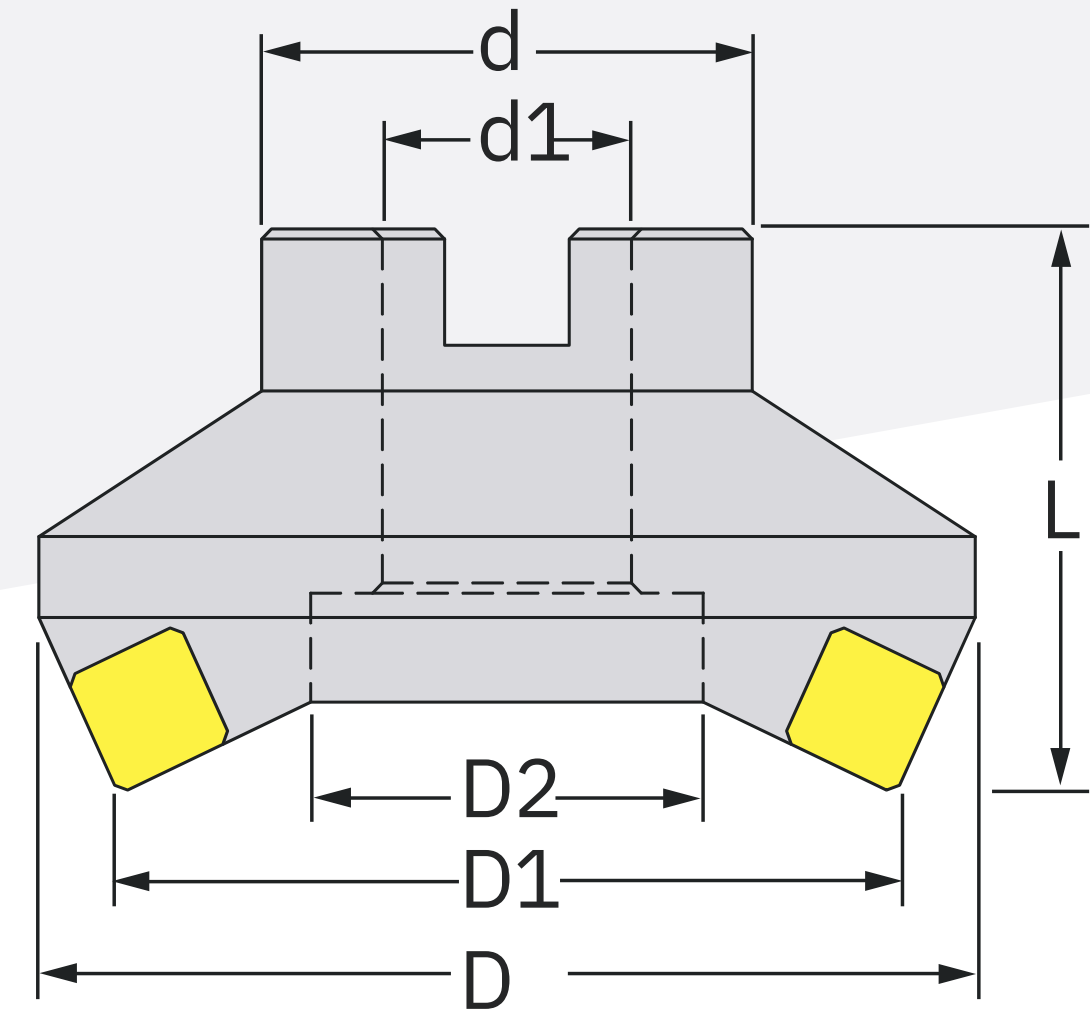
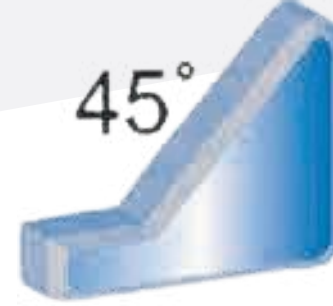
<b>Fig</b>					
<b>Spec.</b>	HCM-AW-8L	M8-1.25P-M5-0.8P-10L	M5-13.3-7.0-60-T25	M5-0.5P-LH-RH-17-P2.5	M5-0.8P-10L
<b>Name</b>	wedge adjustment	Flutes sleeve	insert holder screw	both headed screw	balance screw
<b>Function</b>	Dimension accuracy adjustment	Dimension accuracy adjustment	fix the holder	fix the wedge	mass-balance weight
<b>Fig</b>					
<b>Spec.</b>	TW-80-SB	BIT-T25-50L	PT2.5	T25	
<b>Name</b>	TW torque driver	50mm bits torx	T-type wrench	L-type wrench	
<b>Function</b>	lock screws				

Unit of Length (mm)

# ASP 45°INDEXABLE FACE MILLING CUTTER

445

545



Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
ASP-445-3	55	104	80	36	68	25.4	5	SE..1203	2.21
ASP-445-4	55	128	100	45	85	31.75	5		3.34
ASP-445-5	60	156	125	60	106	38.1	6		5.33
ASP-445-6	60	182	160	72	132	50.8	8		7.31
ASP-445-8	60	228	200	130	128	47.625	10		8.81
ASP-445-10	60	284	250	140	160	47.625	12		16.0
ASP-445-12	60	327	300	140	210	47.625	14		26.0
ASP-445-8-L	60	228	200	130	128	47.625	10		8.81
ASP-445-10-L	60	284	250	140	160	47.625	12		16.0
ASP-545-3	55	104	80	36	68	25.4	5		SE..1504
ASP-545-4	55	128	100	45	85	31.75	5	3.33	
ASP-545-5	60	156	125	60	106	38.1	6	5.32	
ASP-545-6	60	182	160	72	132	50.8	8	7.30	
ASP-545-8	60	228	200	130	128	47.625	10	8.69	
ASP-545-10	60	284	250	140	160	47.625	12	16.38	
ASP-545-12	60	327	300	140	210	47.625	14	26.38	
ASP-545-4-FMB32	55	128	100	45	85	32	5	3.33	
ASP-545-5-FMB40	60	156	125	60	106	40	6	5.32	
ASP-545-6-FMB40	60	182	160	72	132	40	8	7.30	
ASP-545-8-FMB60	60	228	200	130	128	60	10	8.69	
ASP-545-10-FMB60	60	284	250	140	160	60	12	16.93	
ASP-545-12-FMB60	60	327	300	140	210	60	14	26.2	

L: Left-handed

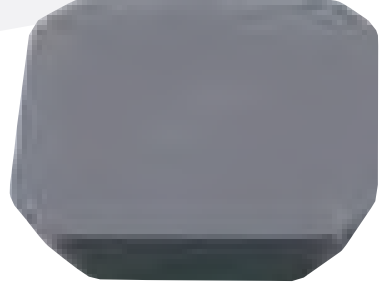
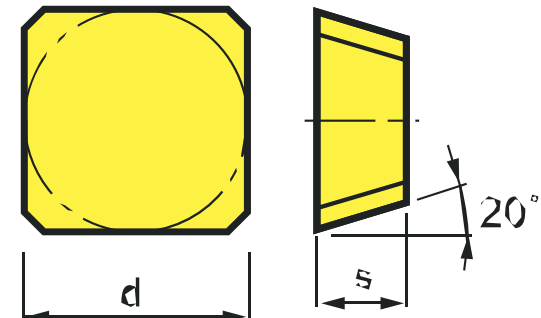
## Accessories

Insert	Screw	Shim Screw	Clamp	Shim	Wrench	(N.m) Torque
SE..1203	ASP1	ASP2	ASP3	ASP4	PT4	5.0
SE..1504						
★ SE..1504	ASP1	ASP2	ASP3	A	PT4	5.0

Left-handed clamp: ASP3-L Left-handed Shim: ASP4-L

Unit of Length (mm)

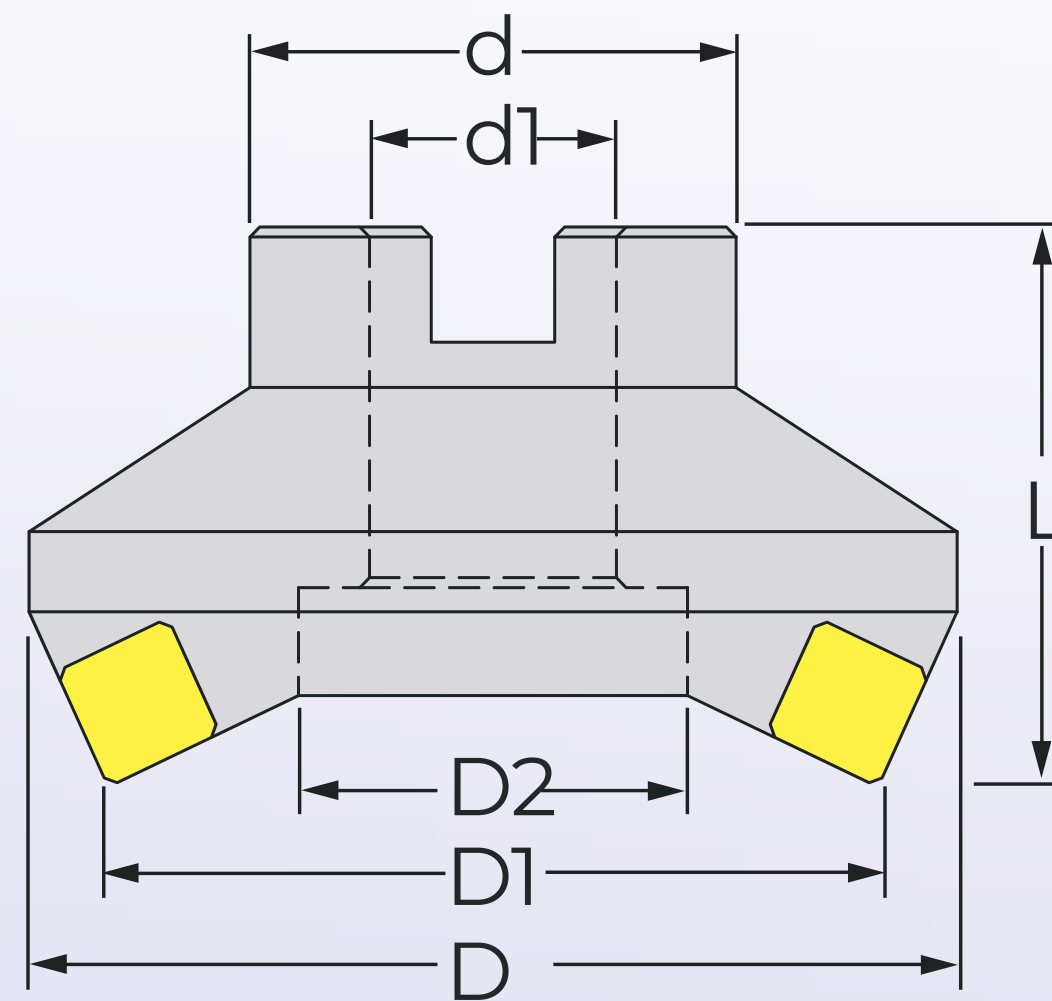
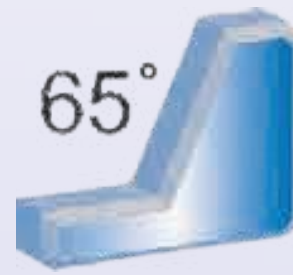


ISO	P	Alloyed Steels	○	○			Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting			
	M	Stainless Steels								
	K	Cast Iron			○					
	N	Aluminum&Al								
	S	Refractory Alloys								
H	Hard Material									
Shape	Spec.	Hard alloy				(mm)				Drawing
		HW				Size				
		TSP20	TSP25	TSK10		d	i	s	r	
	SEKN1203AFR		●	●		12.7	-	3.18	-	
	SEKN1504AFR	●		●		15.875	-	4.76	-	

## ASP 65° INDEXABLE FACE MILLING CUTTER

435

535

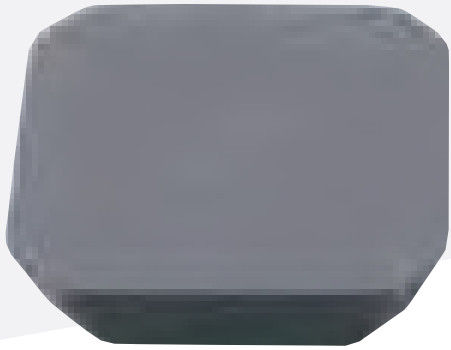
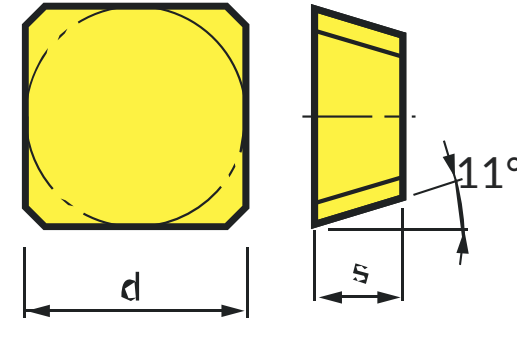


Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
ASP-435-3	55	96	80	36	70	25.4	5	SPKN1204 (ISO) SPK43C2SR (imperial)	2.16
ASP-435-4	55	118	100	45	80	31.75	5		2.96
ASP-435-5	60	142	125	55	96	38.1	6		4.80
ASP-435-6	60	177	160	72	128	50.8	8		7.24
ASP-435-8	60	218	200	130	128	47.625	10		8.90
ASP-435-10	60	273	250	130	200	47.625	12		19.0
ASP-435-12	60	320	300	130	210	47.625	14	25.0	
ASP-535-3	55	96	80	36	70	25.4	5	SPKN1504 (ISO) SPK53C2SR (imperial)	2.05
ASP-535-4	55	118	100	45	80	31.75	5		2.90
ASP-535-5	60	142	125	55	96	38.1	6		4.64
ASP-535-6	60	177	160	72	128	50.8	8		7.14
ASP-535-8	60	218	200	130	128	47.625	10		8.87
ASP-535-10	60	273	250	130	200	47.625	12		18.4
ASP-535-12	60	320	300	130	210	47.625	14	26.9	

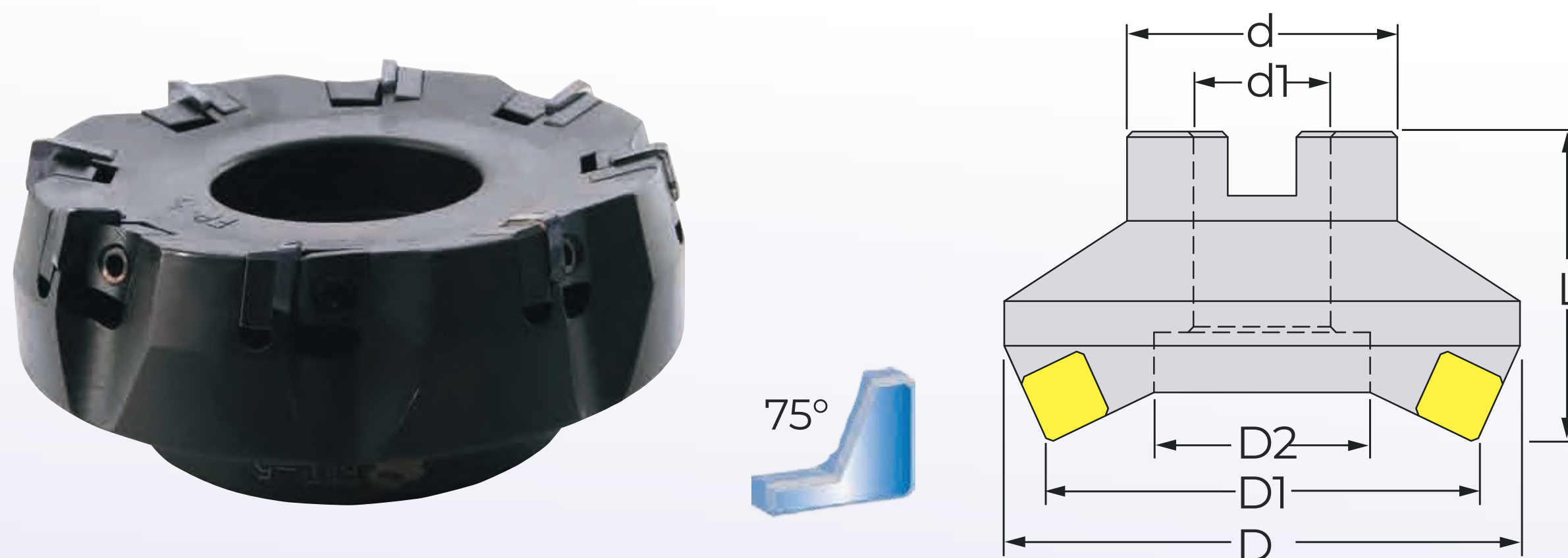
### Accessories

Insert	Screw	Shim Screw	Clamp	Shim	Wrench	(N.m) Torque
SPK43C2SR	ASP1	ASP2	ASP3	ASP4	PT4	5.0
SPK53C2SR						

Unit of Length (mm)

ISO	P	Alloyed Steels	○	○				Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting		
	M	Stainless Steels								
	K	Cast Iron			○					
	N	Aluminum&Al								
	S	Refractory Alloys								
	H	Hard Material								
Shape	Spec.	Hard alloy				(mm)				Drawing
		HW				Size				
		TSP20	TSP25	TSK10		d	i	s	r	
	SPK43C2SR		●	●		12.7	-	4.76	-	
	SPK53C2SR	●		●		15.875	-	4.76	-	

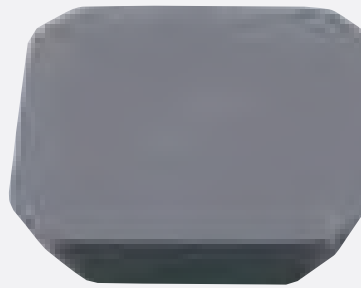
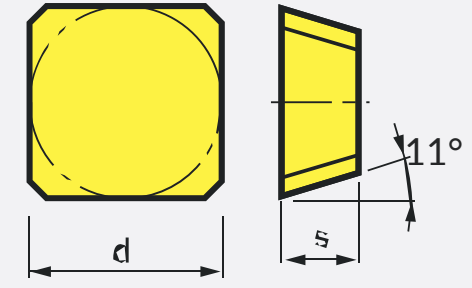
## BFP 75° INDEXABLE FACE MILLING CUTTER



Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
BFP-3	55	87	80	36	65	25.4	5	SP..1203	1.84
BFP-4	55	108	100	45	78	31.75	6	SP..1203	2.61
BFP-5	60	138	125	55	90	38.1	8	SP..1203	4.45
BFP-6	60	167	160	73	117	50.8	10	SP..1203	6.45
BFP-8	60	208	200	128	127	47.625	12	SP..1203	8.61
BFP-10	60	262	250	140	150	47.625	16	SP..1203	14.2
BFP-12	60	312	300	140	210	47.625	20	SP..1203	26.7

## Accessories

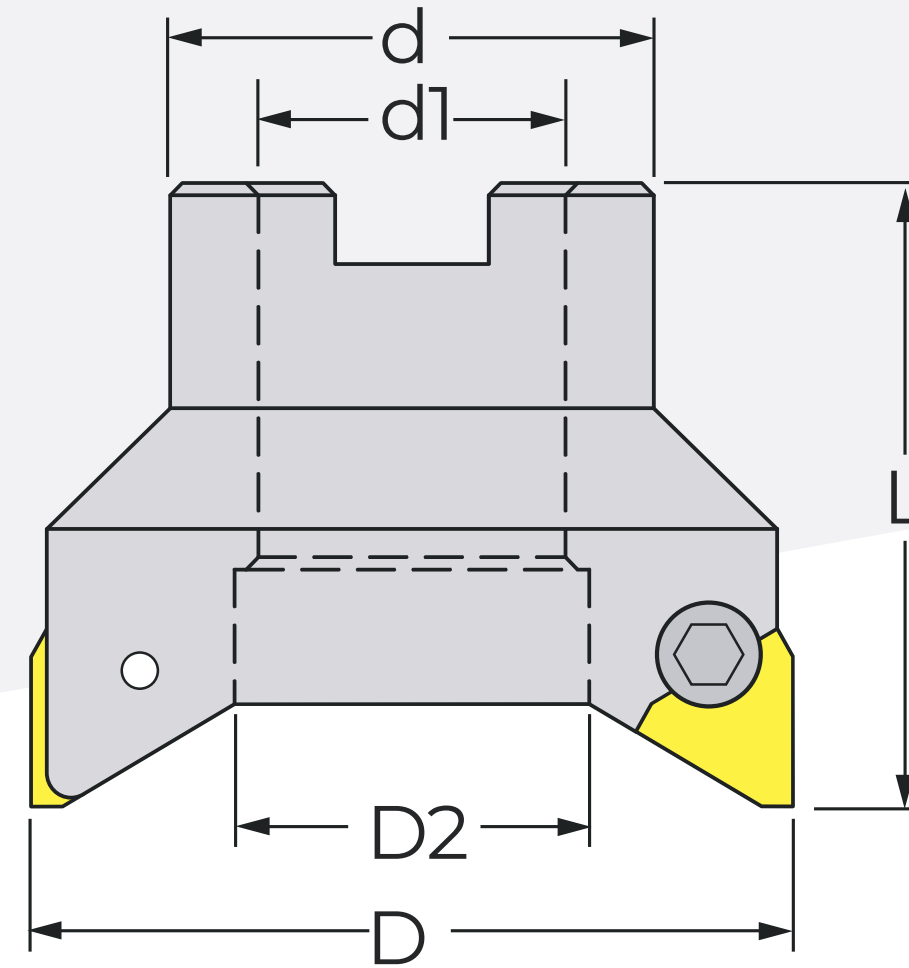
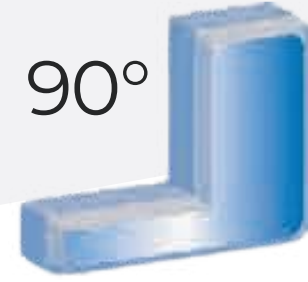
Insert	Screw	Shim Screw	Clamp	Shim	Wrench	(N.m) Torque
SP..1203	ASP1	ASP2	ASP3	ASP4	PT4	5.0

ISO	P	Alloyed Steels	○				Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting			
	M	Stainless Steels								
	K	Cast Iron		○						
	N	Aluminum&Al								
	S	Refractory Alloys								
	H	Hard Material								
Shape	Spec.	Hard alloy				(mm)				Drawing
		HW				Size				
		TSP25	TSK10			d	i	s	r	
	SPKN1203EDR	●	●			12.7	-	3.18	-	

Unit of Length (mm)



# TAP 90° INDEXABLE FACE MILLING CUTTER



Spec.	L	D	D2	d	d1	Flutes	Insert	(KGS) Weight
TAP-63	50	63	18.5	48	25.4	3	TP..2204	0.56
TAP-80	55	80	36	60	25.4	4	TP..2204	1.02
TAP-100	55	100	45	78	31.75	5	TP..2204	1.80
TAP-125	60	125	55	90	38.1	6	TP..2204	3.21
TAP-150	60	150	72	118	50.8	7	TP..2204	4.76
TAP-200	60	200	60	165	47.625	8	TP..2204	8.69
TAP-250	60	250	162	214	47.625	9	TP..2204	15.03
TAP-300	60	300	162	214	47.625	10	TP..2204	22.48

## Accessories

Insert	Screw	Shim Screw	Clamp	Shim	Wrench	(N.m) Torque
TP..2204	M8-U5/16-24P	TAP2	TAP3	PT5	6.0	5.0

Shape	Spec.	Hard alloy				(mm)				Drawing
		HW				Size				
		TSP25	TSK10			d	i	s	r	
	TPKN2204PDR	●	●			12.7	-	3.18	-	
	TPMN220412	●	●			12.7	-	3.18	-	

Cutting Condition :

- Continuous Cutting
- General Cutting
- Interrupted Cutting

Unit of Length (mm)

# INDEXABLE FACE MILLING CUTTER

## SP 12.43.53 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)
P	Low-Alloy Steels	TSP20	125~200	0.1~0.3
		TSP25	125~200	0.1~0.3
P	Alloyed Steels	TSP20	50~100	0.1~0.2
		TSP25	50~100	0.1~0.2
K	Cast Iron	TSK10	80~120	0.1~0.3

## SE 12.15 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)
P	Low-Alloy Steels	TSP20	125~200	0.1~0.3
		TSP25	125~200	0.1~0.3
P	Alloyed Steels	TSP20	50~100	0.1~0.2
		TSP25	50~100	0.1~0.2
K	Cast Iron	TSK10	80~120	0.1~0.3

## TP 22 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)
P	Low-Alloy Steels	TSP20	125~200	0.1~0.3
	Alloyed Steels	TSP20	50~100	0.1~0.2
K	Cast Iron	TSK10	80~120	0.1~0.3

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)



# MAS



Through Coolant

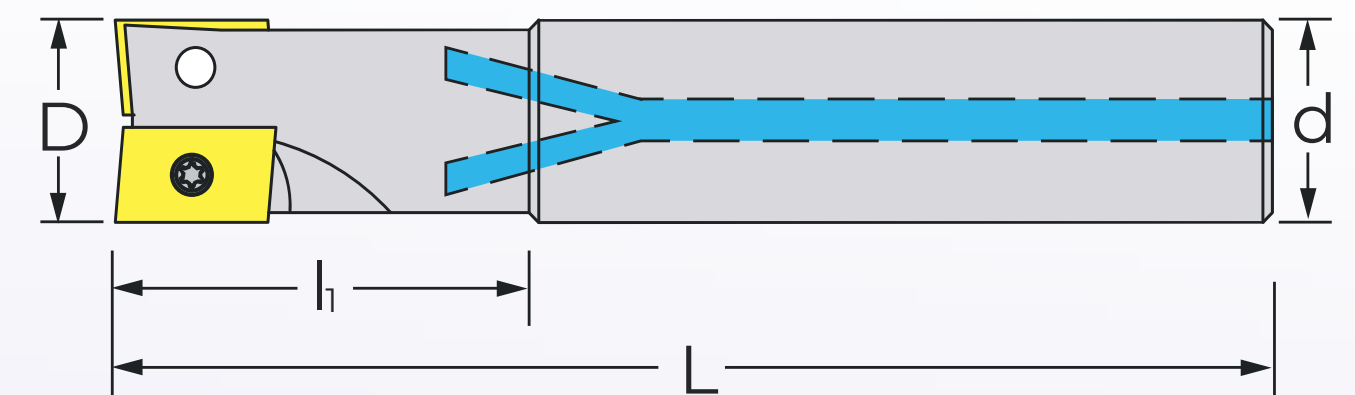
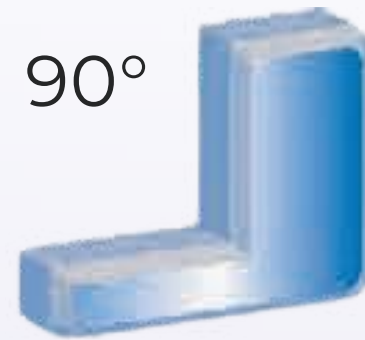
APKT060204



## Feature

- Multi-cutting-edge design improves machining efficiency.
- Made by special alloyed steel to enhance the stability of the cutting tool.
- The MAS type cutters are available from 10 to 63 mm. We also have screwed on type structure which can be combined with tungsten carbide extension.
- They are suitable for small and interference cutting especially for electronics industries.
- Low-resistance and high-precision design are good for interrupted cutting.
- Composite coating helps to improve insert life.

## MAS MINI INDEXABLE END MILL



## Feature

- Made by special alloyed steel to enhance the stability of the cutting tool.
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	l1	D	d	Flutes	Insert	(KGS) Weight
MAS-1008AP06-100L-2T-C	100	15	10	8	2	AP..0602	0.06
MAS-1010AP06-80L-2T-C	80	20	10	10	2	AP..0602	0.06
MAS-1110AP06-80L-2T-C	80	20	11	10	2	AP..0602	0.06
MAS-1210AP06-100L-2T-C	100	20	12	10	2	AP..0602	0.08
MAS-1212AP06-80L-2T-C	80	20	12	12	2	AP..0602	0.08
MAS-1212AP06-80L-3T-C	80	20	12	12	3	AP..0602	0.08
MAS-1412AP06-80L-3T-C	80	20	14	12	3	AP..0602	0.08
MAS-1614AP06-160L-3T-C	160	25	16	14	3	AP..0602	0.2
MAS-1616AP06-120L-3T-C	120	25	16	16	3	AP..0602	0.18
MAS-1616AP06-160L-3T-C	160	25	16	16	3	AP..0602	0.24
MAS-1616AP06-90L-4T-C	90	25	16	16	4	AP..0602	0.14
MAS-1816AP06-90L-4T-C	90	25	18	16	4	AP..0602	0.16
MAS-2018AP06-160L-4T-C	160	30	20	18	4	AP..0602	0.32
MAS-2020AP06-160L-4T-C	160	30	20	20	4	AP..0602	0.38
MAS-2020AP06-100L-5T-C	100	30	20	20	5	AP..0602	0.22
MAS-2120AP06-110L-5T-C	110	30	21	20	5	AP..0602	0.26
MAS-2520AP06-110L-7T-C	110	40	25	20	7	AP..0602	0.28
MAS-2525AP06-120L-7T-C	120	40	25	25	7	AP..0602	0.44
MAS-3225AP06-130L-8T-C	130	45	32	25	8	AP..0602	0.54
MAS-4032AP06-140L-10T-C	140	45	40	32	10	AP..0602	0.94

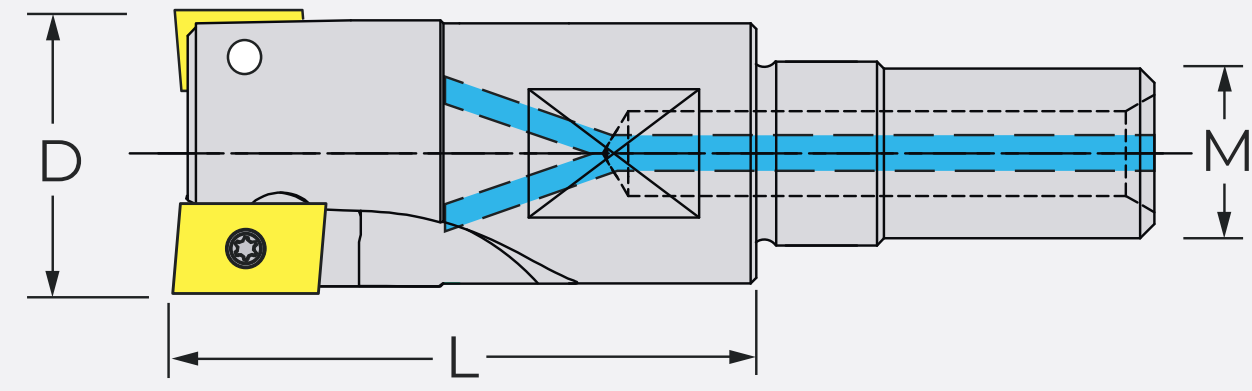
## Accessories

Insert	Screw	Wrench	(N.m) Torque
AP..0602	M1.8-3.9-2.45-60-TP6-EU	TP6-EU	0.6

Unit of Length (mm)



# MAS SCREW-ON END MILL



## Feature

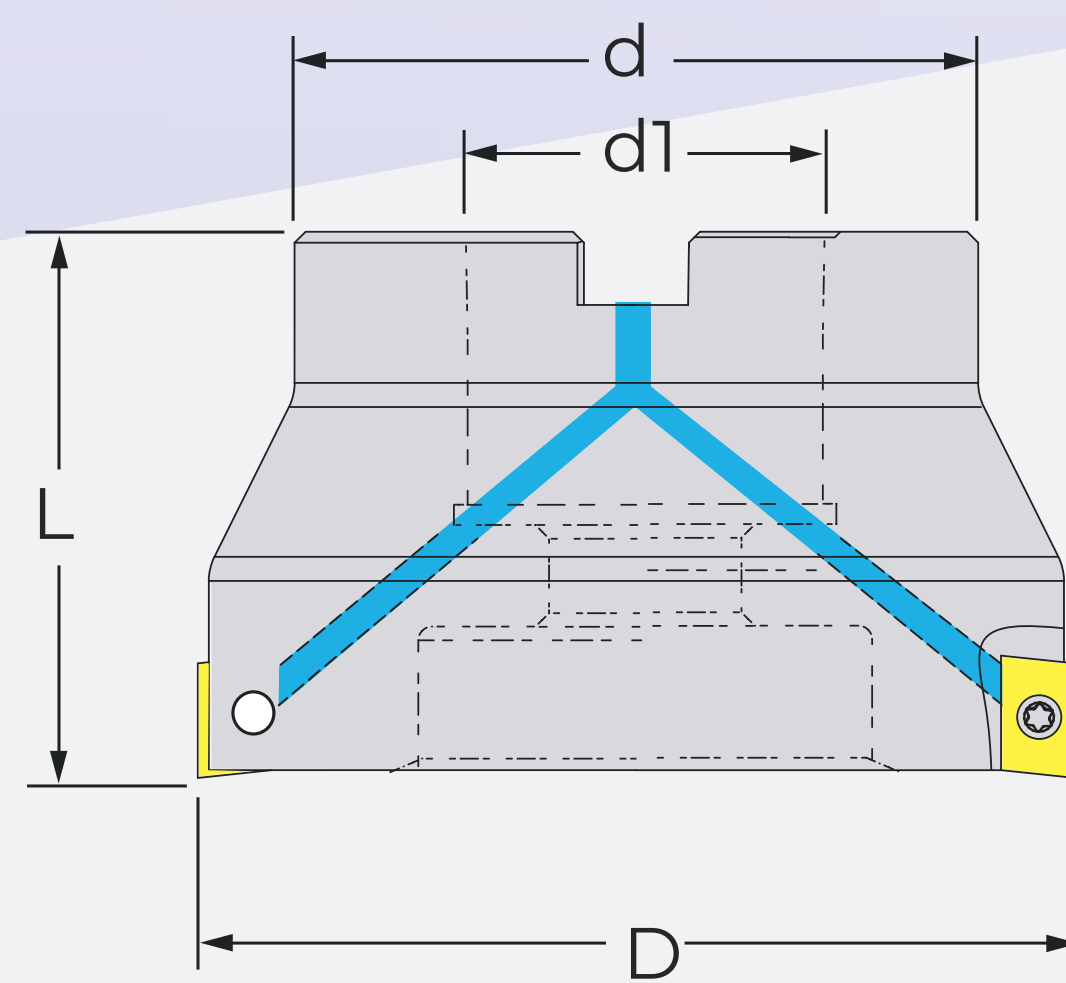
- Made of anti-vibration tool steel.
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	D	M	Flutes	Insert	(KGS) Weight
MAS-10-M6-AP06-C	20	10	M6	2	AP..0602	0.04
MAS-11-M6-AP06-C	20	11	M6	2	AP..0602	0.04
MAS-12-M6-AP06-C	20	12	M6	3	AP..0602	0.04
MAS-13-M6-AP06-C	20	13	M6	3	AP..0602	0.04
MAS-16-M8-AP06-C	25	16	M8	4	AP..0602	0.06
MAS-17-M8-AP06-C	25	17	M8	4	AP..0602	0.06
MAS-20-M10-AP06-C	30	20	M10	5	AP..0602	0.08
MAS-21-M10-AP06-C	30	21	M10	5	AP..0602	0.08
MAS-25-M12-AP06-C	35	25	M12	7	AP..0602	0.14
MAS-26-M12-AP06-C	35	26	M12	7	AP..0602	0.14
MAS-32-M16-AP06-C	43	32	M16	8	AP..0602	0.24
MAS-40-M16-AP06-C	50	40	M16	10	AP..0602	0.36

## Accessories

Insert	Screw	Wrench	(N.m) Torque
AP..0602	M1.8-3.9-2.45-60-TP6-EU	TP6-EU	0.6

# BGP FACE MILLING CUTTER



## Feature

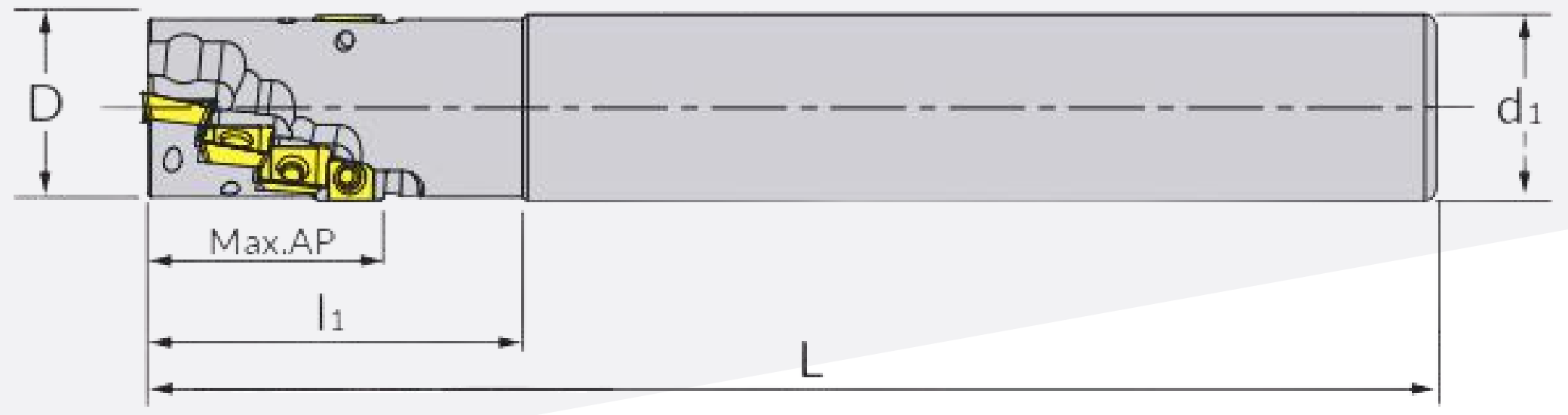
- Made by special alloyed steel to enhance the stability of the cutting tool.
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	D	d	d1	Flutes	Insert	(KGS) Weight
BGP-400-FMB16-AP06-10T-C	40	40	38.5	16	10	AP..0602	0.44
BGP-500-FMB22-AP06-12T-C	40	50	45	22	12	AP..0602	0.6
BGP-630-FMB22-AP06-14T-C	40	63	45	22	14	AP..0602	0.88

Unit of Length (mm)



# APE MINI ROUGH CUTTING END MILL


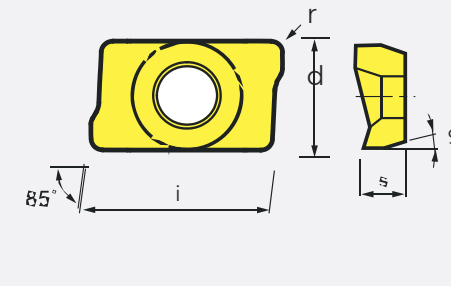

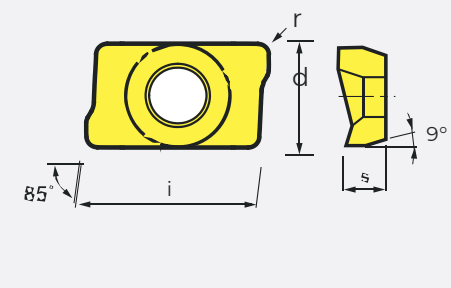


Spec.	Max. Ap	L	l1	D	d	T	Insert Qty	Insert	(KGS) Weight
APE-1216AP06-10L-2T	10	100	22	12	16	2	4	AP..0602	0.16
APE-1616AP06-15L-3T	15	110	26	16	16	3	9	AP..0602	-
APE-1616AP06-20L-2T	20	110	32	16	16	2	8	AP..0602	0.18
APE-1616AP06-30L-2T	30	110	40	16	16	2	10	AP..0602	0.18
APE-2020AP06-25L-3T	25	120	32	20	20	3	15	AP..0602	0.29

## Accessories

Insert	Screw	Wrench	(N.m) Torque
AP..0602	M1.8-3.9-2.45-60-TP6-EU	TP6-EU	0.5

# APE MINI ROUGH CUTTING END MILL

Shape	Spec.	Layer coated micro grain				(mm)				Drawing
		CHF		HF		Size				
		RM4130		RM5005	RM5060	d	i	s	r	
	APKT060204-M02	●				3.7	6.45	2.38	0.4	
	APKT060204-MT			●	●	3.7	6.45	2.38	0.4	

MT : Applicable to Aluminum

Unit of Length (mm)

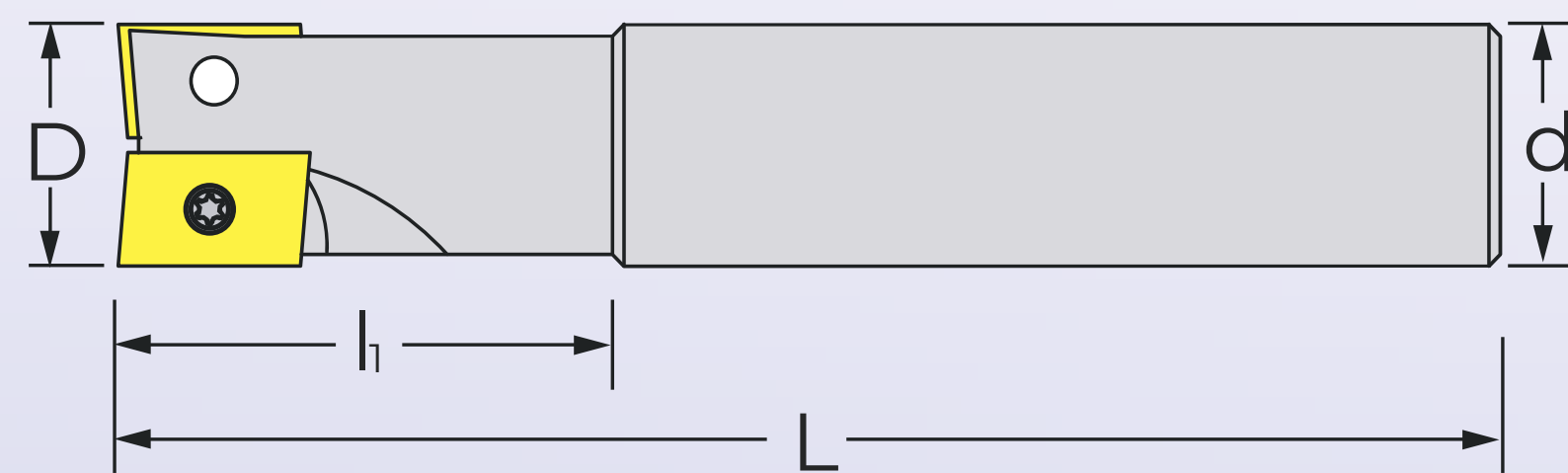
## BGP&MAS (Suitable for BGP & MAS)

Machining Materials	Materials	Vc(m/min)	fz(mm/rev)	
<b>P</b>	Alloyed Steels	RM4130	160(70~260)	0.12(0.08~0.16)
<b>M</b>	Stainless Steels	RM4130	120(90~140)	0.10(0.08~0.12)
<b>K</b>	Cast Iron	RM4130	140(100~240)	0.12(0.08~0.16)
<b>N</b>	Aluminum&Al	RM5005	400(300~800)	0.10(0.05~0.30)
		RM5060		

## APE(SuitableforAPE)

Machining Materials	Materials	Vc(m/min)	fz(mm/rev)	AE	
<b>P</b>	Alloyed Steels	RM4130	80(70-180)	0.10(0.06~0.20)	0.8-1.5
<b>M</b>	Stainless Steels	RM4130	70(70-120)	0.08(0.06~0.15)	0.5-1.0
<b>K</b>	Cast Iron	RM4130	80(70-140)	0.10(0.06~0.20)	1.0-2.0
<b>N</b>	Aluminum&Al	RM5005	300(250-600)	0.10(0.06~0.30)	1.0-2.0
		RM5060			

## MAS INDEXABLE HIGH SPEED END MILL



### Feature

- Made of anti-vibration tool steel.
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	l1	D	d	Flutes	Insert	(KGS) Weight
MAS-1012-100L	100	20	10	12	1	AP..1003	0.09
MAS-1212-100L	100	25	12	12	1	AP..1003	0.09
MAS-1616-120L	120	25	16	16	2	AP..1003	0.18
MAS-1616-160L	160	25	16	16	2	AP..1003	0.24
MAS-1716-120L	120	25	17	16	2	AP..1003	0.30
MAS-1716-180L	180	25	17	16	2	AP..1003	0.30
MAS-2020-120L	120	30	20	20	2	AP..1003	0.28
MAS-2020-150L	150	30	20	20	2	AP..1003	0.36
MAS-2020-200L	200	30	20	20	2	AP..1003	0.49
MAS-2120-150L	150	30	21	20	2	AP..1003	0.38
MAS-2120-200L	200	30	21	20	2	AP..1003	0.60

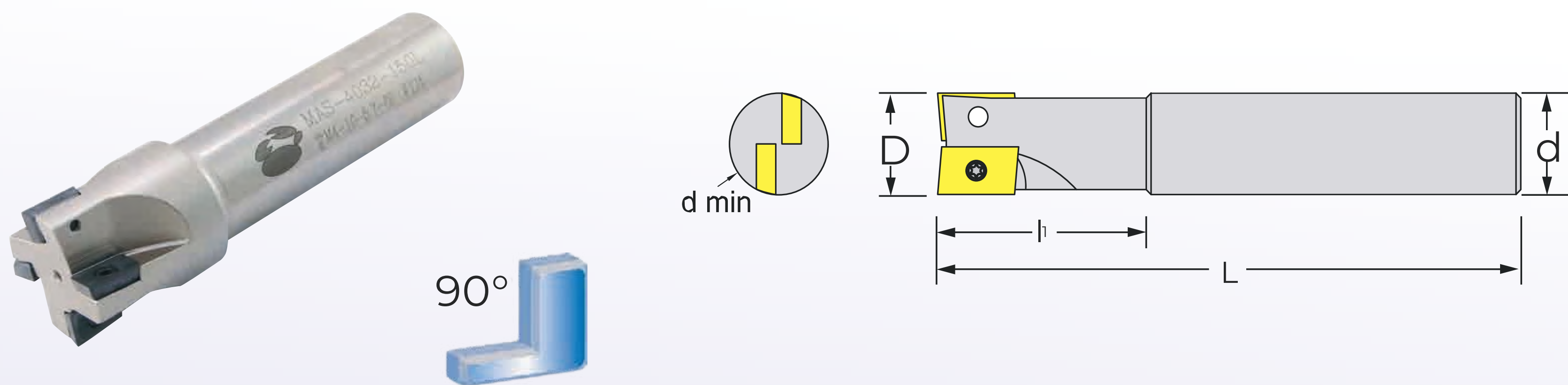
Unit of Length (mm)



## Accessories

Spec.	Insert	Screw	Wrench	(N.m) Torque
MAS-1012-100L	APKT1003	M2.5-5.0-3.7-43	T8	1.2
MAS-1212-100L	APKT1003	M2.5-6.45-3.7-43	T8	1.2
MAS-1616-120L	APKT1003	M2.5-5.0-3.7-43	T8	1.2
MAS-1616-160L	APKT1003	M2.5-5.0-3.7-43	T8	1.2
MAS-1716-120L	APKT1003	M2.5-5.0-3.7-43	T8	1.2
MAS-1716-180L	APKT1003	M2.5-5.0-3.7-43	T8	1.2
MAS-2020-120L	APKT1003	M2.5-6.45-3.7-43	T8	1.2
MAS-2020-150L	APKT1003	M2.5-6.45-3.7-43	T8	1.2
MAS-2020-200L	APKT1003	M2.5-6.45-3.7-43	T8	1.2
MAS-2120-150L	APKT1003	M2.5-6.45-3.7-43	T8	1.2
MAS-2120-200L	APKT1003	M2.5-6.45-3.7-43	T8	1.2

## MAS INDEXABLE HIGH SPEED END MILL



## Feature

- Made of anti-vibration tool steel. -
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	l1	D	d	Flutes	Insert	(KGS) Weight
MAS-2525-150L	150	40	25	25	2	AP..1604	0.55
MAS-2525-220L	220	40	25	25	2	AP..1604	0.81
MAS-3232-150L	150	45	32	32	2	AP..1604	0.88
MAS-3232-150L	150	45	32	32	3	AP..1604	0.87
MAS-3232-200L	200	45	32	32	2	AP..1604	1.20
MAS-3232-250L	250	45	32	32	2	AP..1604	1.53
MAS-4032-150L	150	45	40	32	4	AP..1604	0.99
MAS-4032-250L	250	45	40	32	4	AP..1604	1.62

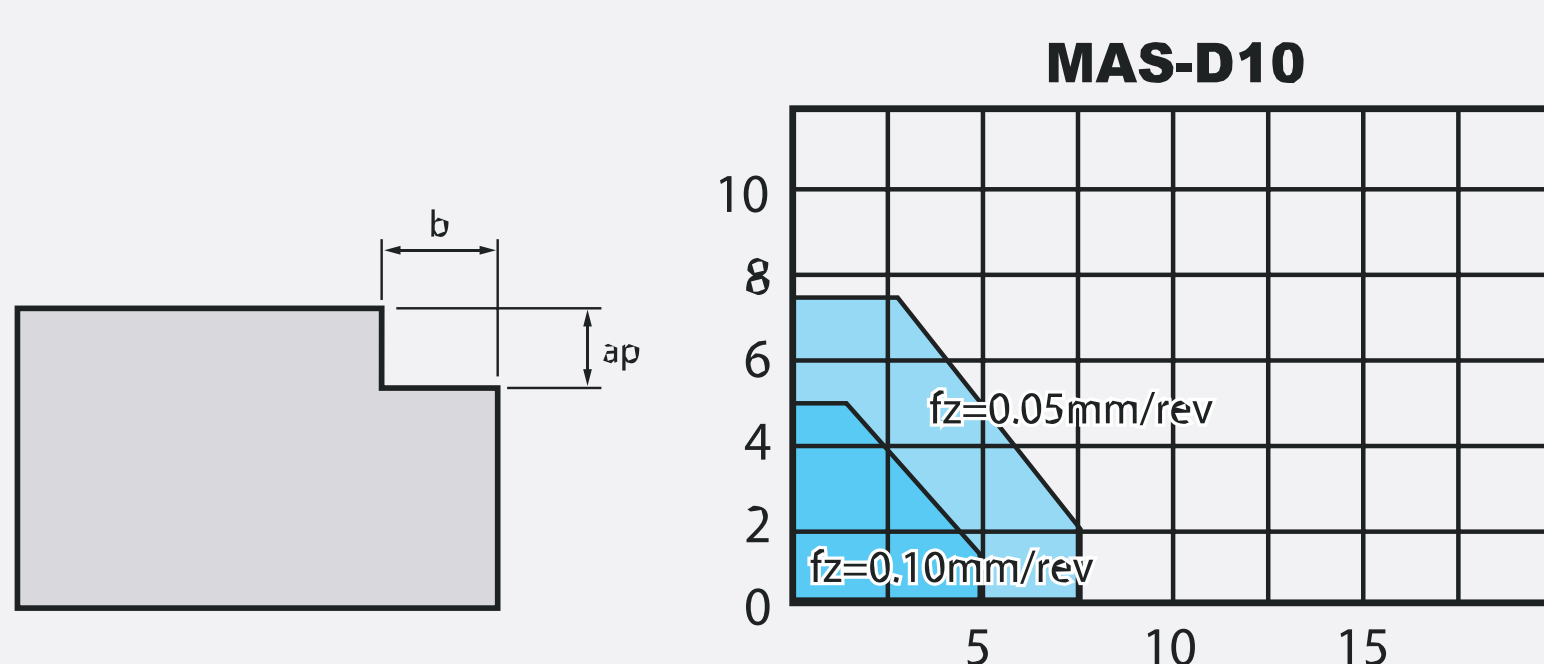
## Accessories

Insert	Screw	Wrench	(N.m) Torque
AP..1604	M4-10-5.7-60	T15	3.0

Unit of Length (mm)

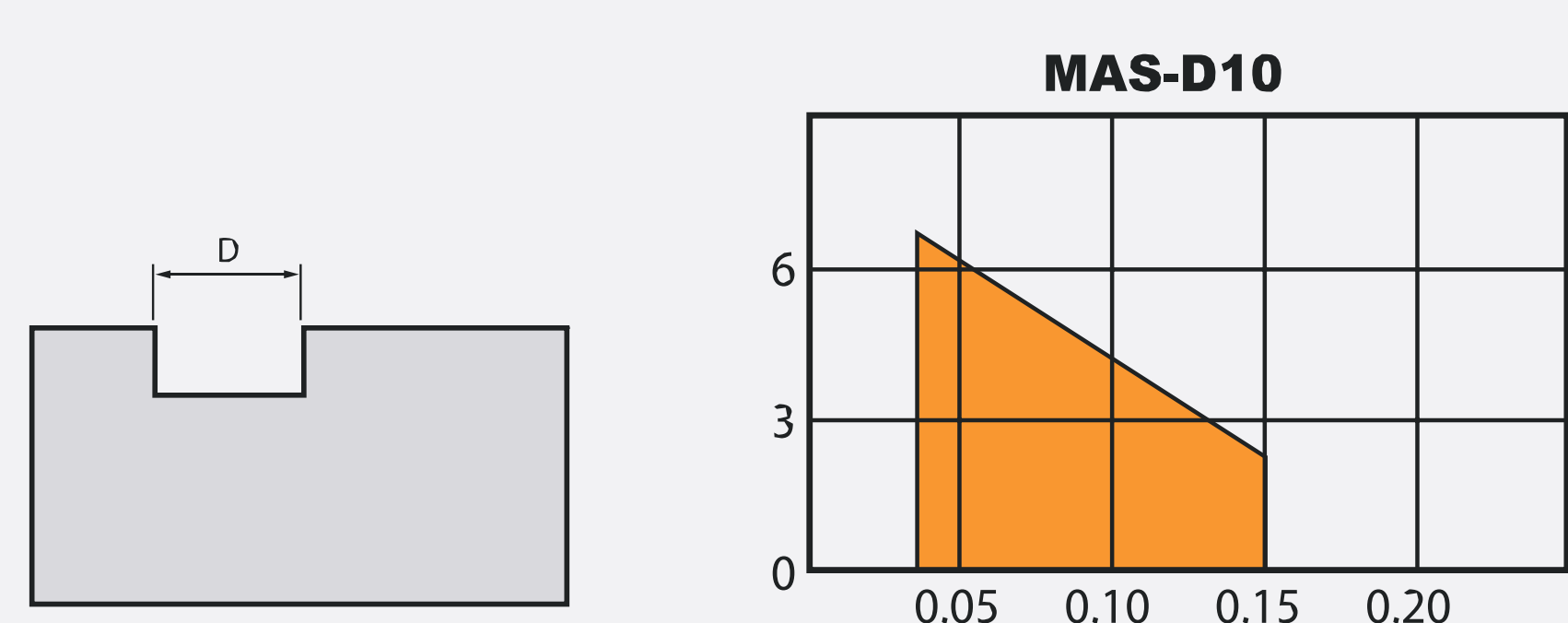
### Shoulder milling

Machining material :  
S58C(HB220)



### Grooving

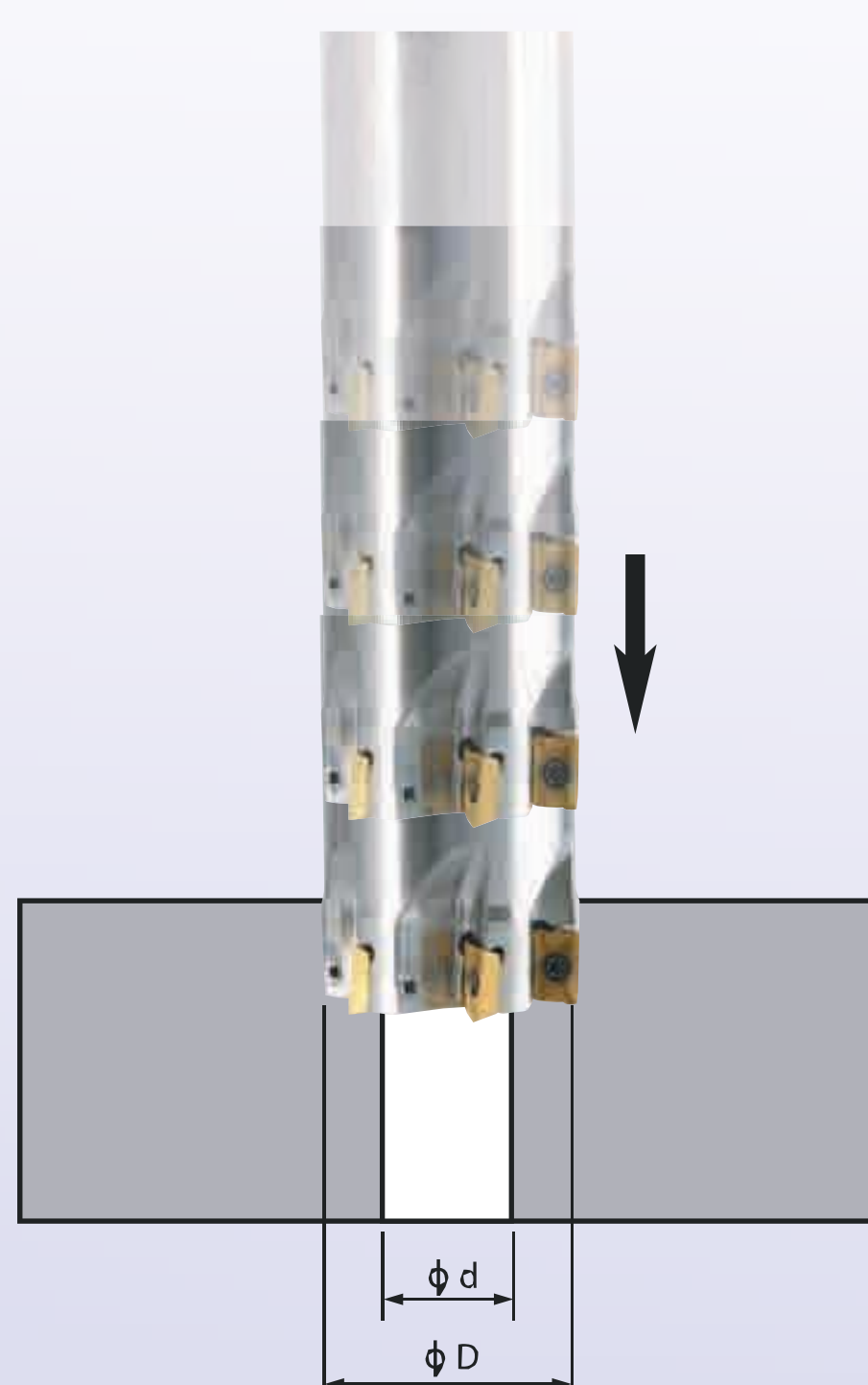
Machining material :  
S58C(HB280)



**AP\_10.16** Cutting Parameter

Machining Materials		Materials	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4025	220-300	0.14-0.24	1.0-2.0
		OM4025N	220-300	0.14-0.24	1.0-2.0
		RM4130	60-300	0.10-0.25	1.0-2.0
	Alloyed Steels	OM4025	100-195	0.12-0.20	1.0-2.0
RM4130		60-300	0.10-0.25	1.0-2.0	
M	Stainless Steels	OM4025	180-230	0.15-0.35	0.5-1.5
RM4130		120-160	0.10-0.25	0.5-1.5	
K	Cast Iron	OM4025	200-300	0.06-0.30	1.5-3.0
RM3130		200-300	0.06-0.30	1.5-3.0	
N	Aluminum&Al	OM5005	400-850	0.05-0.30	1.5-3.0
		OM5060	400-850	0.05-0.30	1.5-3.0
		RM5005	400-850	0.05-0.30	1.5-3.0
		GH05	300-700	0.04-0.25	1.5-3.0
S	Refractory Alloys	RM535	25~40	0.01~0.20	1.0~2.0

Countersink hole drilling



**MAS AP\_10**

Spec.	Diameter ØD(mm)	Lower hole diameter Ød(mm)
MAS-1012-100L	10	6
MAS-1212-100L	12	5
MAS-1616-120L	16	5.5
MAS-2020-120L	20	8

**MAS AP\_16**

Spec.	Diameter ØD(mm)	Lower hole diameter Ød(mm)
MAS-2525-150L	25	8
MAS-3232-150L	32	15
MAS-4032-150L	40	23

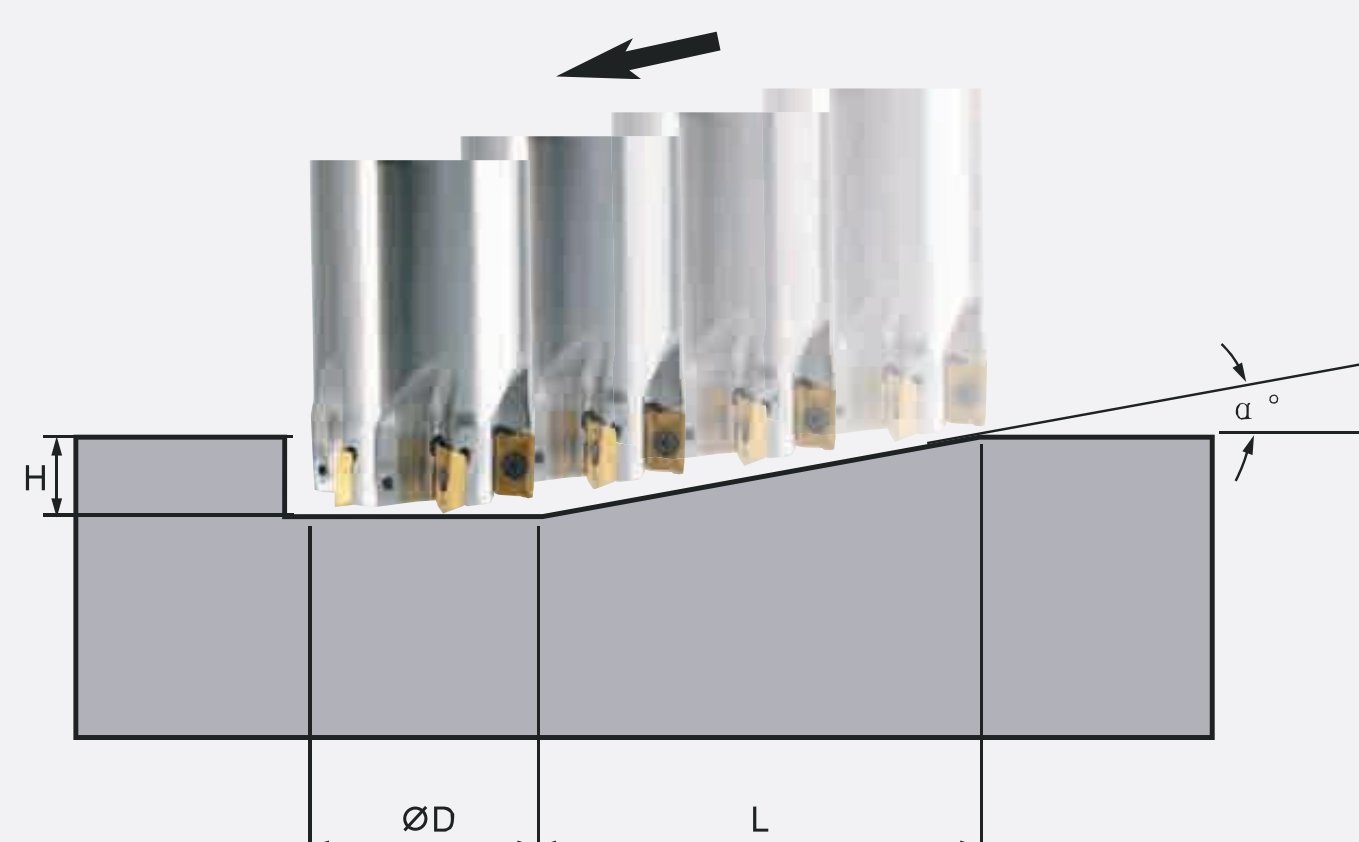
**MAS AP\_10**

Spec.	Diameter ØD(mm)	α° Max. inclined milling angle	L(mm) α° Max
MAS-1012-100L	10	5.0	91.5
MAS-1212-100L	12	32.0	14.4
MAS-1616-120L	16	15.0	33.5
MAS-2020-120L	20	7.5	128.7

**MAS AP\_16**

Spec.	Diameter ØD(mm)	α° Max. inclined milling angle	L(mm) α° Max
MAS-2525-150L	25	11.5	182
MAS-3232-150L	32	5.3	309
MAS-4032-150L	40	4.0	386

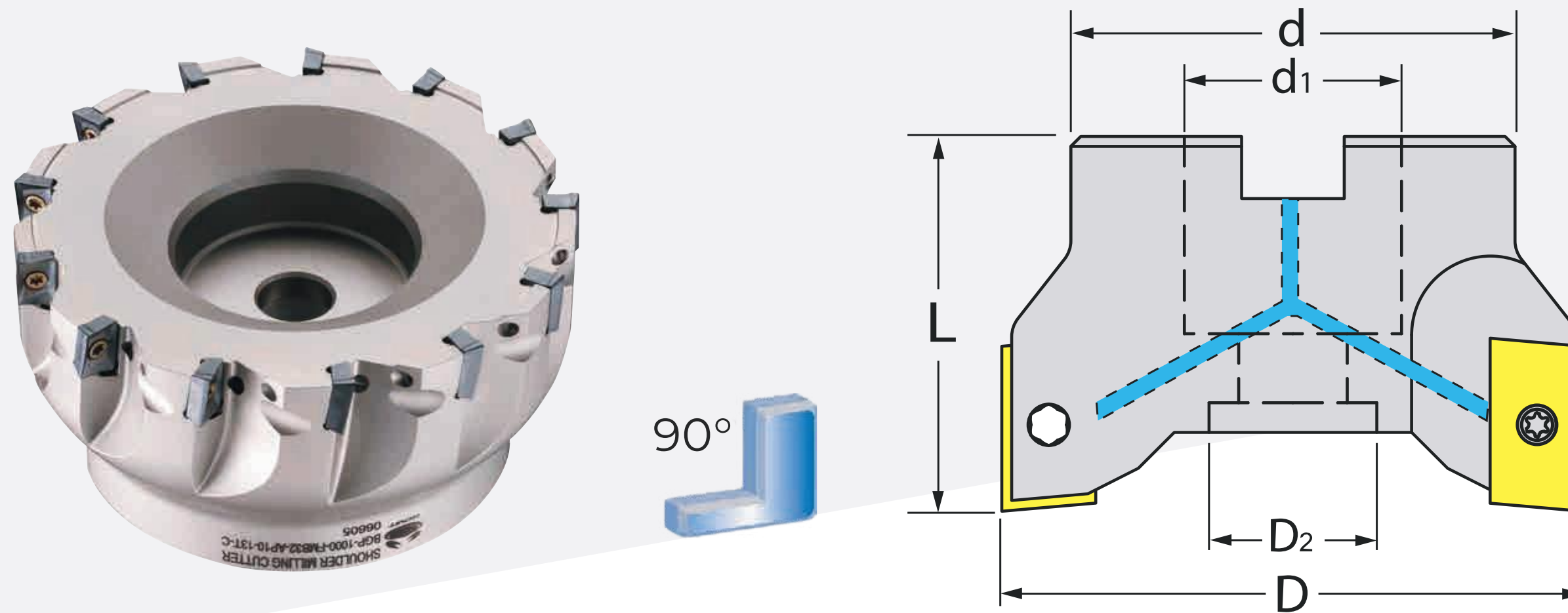
Inclined milling



Unit of Length (mm)



# BGP SQUARE SHOULDER MILLING CUTTER



## Feature

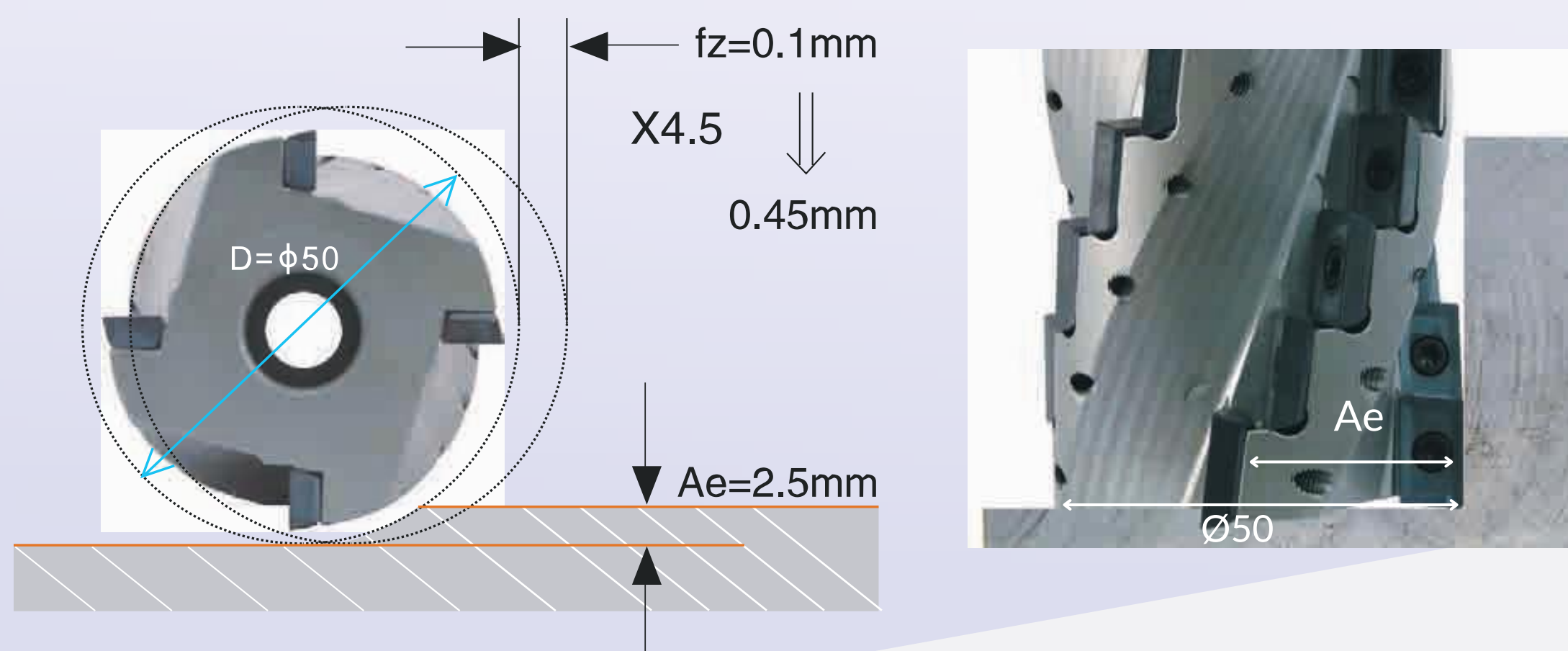
- Made of anti-vibration tool steel. -
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	D	D2	d	d1	Flutes	Insert	(KGS) Weight
BGP-500-FMB22-AP10-7T-C	40	50	18	40	22	7	AP..1003	0.54
BGP-630-FMB22-AP10-9T-C	40	60	18	48	22	9	AP..1003	0.76
BGP-800-FMB27-AP10-11T-C	50	80	32	62	27	11	AP..1003	1.36
BGP-1000-FMB32-AP10-13T-C	50	100	42	78	32	13	AP..1003	2.12
BGP-1250-FMB40-AP10-16T-C	63	125	50	89	40	16	AP..1003	3.66

## Accessories

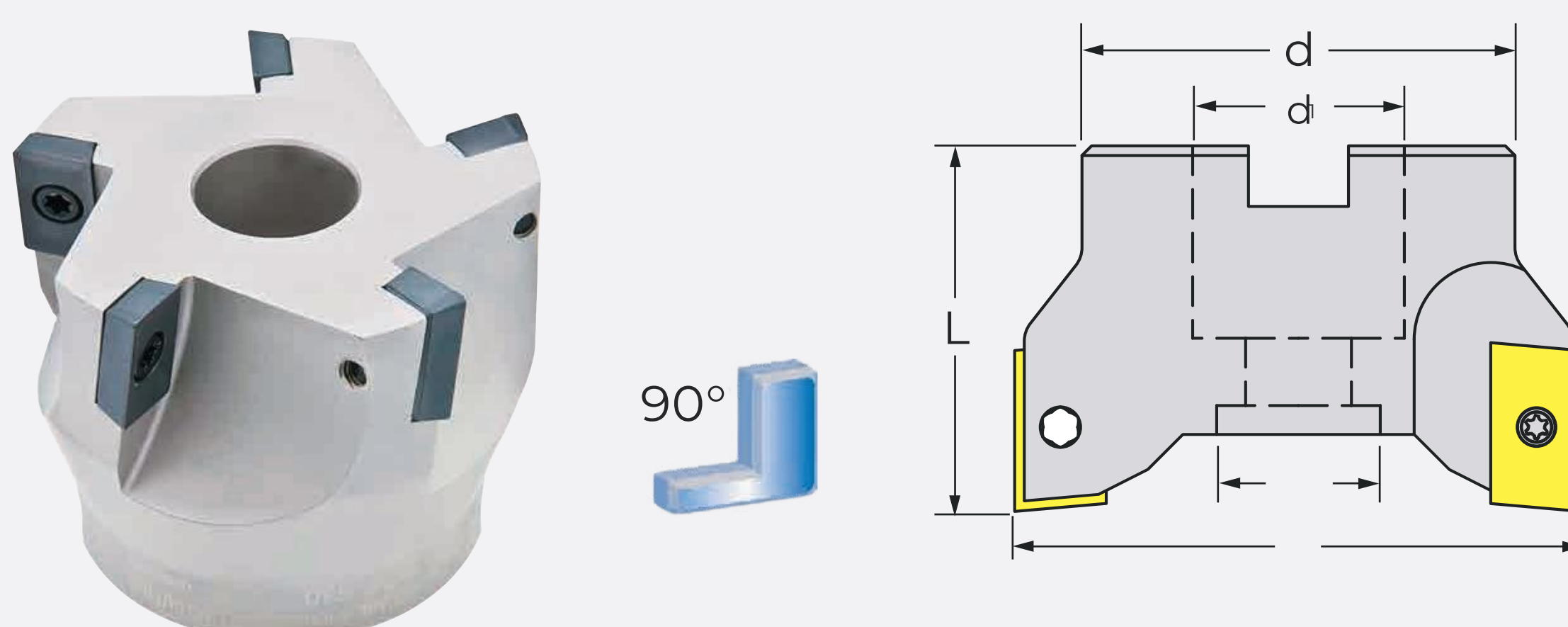
Insert	Screw	Wrench	(N.m) Torque
AP..1003	M2.5-6.3-3.7-43-T8-TIN	T8	1.2

## Example



Cutter outer diameter : $\phi 50$
Radial cutting : 2.5mm(5%)
Feeding speed x multiple : 4.5
Practical cutting speed: $Ae/D=100\% \rightarrow fz=0.1\text{mm/rev}$ $Ae/D=5\% \rightarrow \times 4.5 \rightarrow fz=0.45\text{mm/rev}$

# BGP SQUARE SHOULDER MILLING CUTTER



Unit of Length (mm)

## Feature

- Made of anti-vibration tool steel.
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	D	D2	d	d1	Flutes	Insert	(KGS) Weight
BGP-500	50	50	19	40	25.4	4	AP..1604	0.42
BGP-500-FMB22	50	50	18	40	22	4	AP..1604	0.46
BGP-630	50	63	19	50	25.4	5	AP..1604	0.72
BGP-630-FMB22	50	63	18	50	22	5	AP..1604	0.76
BGP-800	55	80	42	60	31.75	6	AP..1604	0.94
BGP-800-FMB27	55	80	42	60	27	6	AP..1604	0.99
BGP-1000	55	100	42	60	31.75	8	AP..1604	1.62
BGP-1000-FMB32	55	100	42	60	32	8	AP..1604	1.61
BGP-1250	63	125	60	85	38.1	8	AP..1604	3.09
BGP-1250-FMB40	63	125	60	85	40	8	AP..1604	3.07
BGP-1600	63	160	80	120	50.8	10	AP..1604	4.73
BGP-1600-FMB40	63	160	80	120	40	10	AP..1604	5.61

## Accessories

Insert	Screw	Wrench	(N.m) Torque
AP..1604	M4-10-5.7-60	T15	3.0

### AP\_10.16 Cutting Parameter

Machining Materials		Materials	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4025	220~300	0.14~0.24	1.0~2.0
		OM4025N	220~300	0.14~0.24	1.0~2.0
	Alloyed Steels	RM4130	60~300	0.10~0.25	1.0~2.0
		OM4025	100~195	0.12~0.20	1.0~2.0
M	Stainless Steels	RM4130	60~300	0.10~0.25	1.0~2.0
		OM4025	180~230	0.15~0.35	0.5~1.5
K	Cast Iron	RM4130	120~160	0.10~0.25	0.5~1.5
		OM4025	200~300	0.06~0.30	1.5~3.0
N	Aluminum&Al	RM3130	200~300	0.06~0.30	1.5~3.0
		OM5005	400~850	0.05~0.30	1.5~3.0
		OM5060	400~850	0.05~0.30	1.5~3.0
		RM5005	400~850	0.05~0.30	1.5~3.0
S	Refractory Alloys	GH05	300~700	0.04~0.25	1.5~3.0
		RM535	25~40	0.10~0.20	1.0~3.0

Unit of Length (mm)

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

## Formula of advancing cutting efficiency

Percentage between insert diameter and cutting width	Feeding speed x Multiple	Percentage between insert diameter and cutting width	Feeding speed x Multiple
1%	10.00	9%	3.3
2%	7.00	10%	3.2
3%	5.80	20%	2.2
4%	5.00	30%	1.8
5%	4.50	40%	1.6
6%	4.00	50%	1.4
7%	3.80	60%	1.3
8%	3.50	70<100%	1



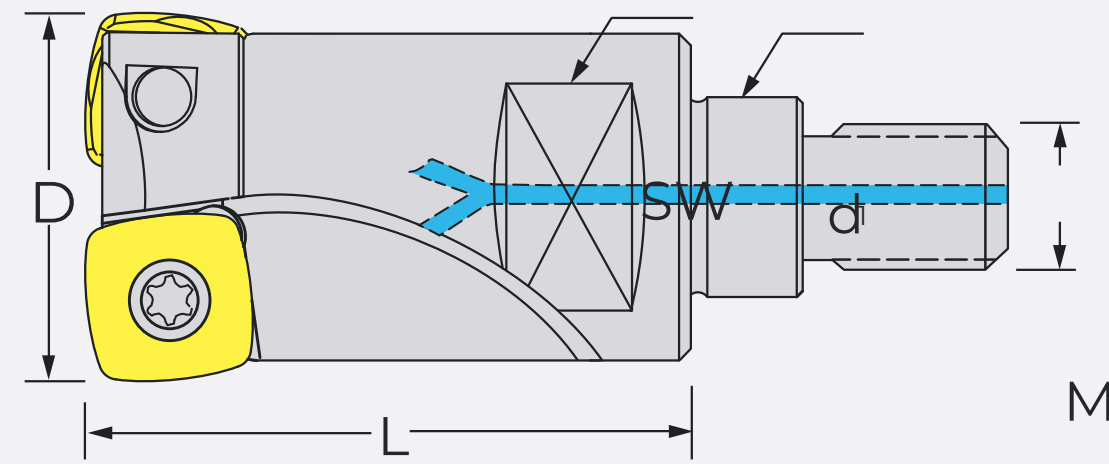
# RIGHT ANGLE MILLING INSERT

ISO	P	Alloyed Steels	○	○		○										Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting
	M	Stainless Steels	○			○										
	K	Cast Iron	○		○											
N	Aluminum&Al							□	□	○	□					
S	Refractory Alloys						○									
H	Hard Material															
Shape	Spec.	Layer coated micro grain					Micro grain cemented carbide					(mm)				Drawing
		CHF					HF					Size				
		OM4025	OM4025N	RM3130	RM4130	RM535	GH05	OM5005	OM5060	RM5005	RM5060	d	i	s	r	
	★APEX100304PDFR-F01							●	●			6.68	10.5	2.38	0.4	
	★ APEX1604PDFR-F01							●	●			9.525	16.4	4.76	-	
	★ APEX160400PDFR-F01							●	●			9.525	16.4	4.76	-	
	★ APEX160402PDFR-F01							●	●			9.525	16.4	4.76	0.2	
	★ APEX160404PDFR-F01							●	●			9.525	16.4	4.76	0.4	
	★ APEX160408PDFR-F01							●	●			9.525	16.4	4.76	0.8	
	APEX1604PDFR-701							●				9.525	16.4	4.76	0.2	
	APGT100304PDFR-F04									●		6.68	10.5	2.38	0.4	
	APGT1604PDFR-G2									●		9.525	16.5	4.76	0.8	
	APGT160408PDFR-F02									●		9.525	16.4	4.76	0.8	
	APHT1003PDFR-F03									●		6.68	10.4	3.47	0.8	
	APKT100304PDER-M04				●							6.68	10.5	2.38	0.4	
	APKT100308PDER-M04				●							6.68	10.5	3.47	0.8	
	APKT1003PDER-M05					●						6.68	10.5	3.47	-	
	APKT1604PDER-M05					●						9.525	16.4	4.76	0.4	
	★ APKT160408-M01	●	●									9.525	16.6	4.76	0.8	
	APKT160408PDER-M02			●	●							9.525	16.4	4.76	0.8	

★ Recommended

Unit of Length (mm)

## HAS SCREW-ON HIGH SPEED MILLING CUTTER

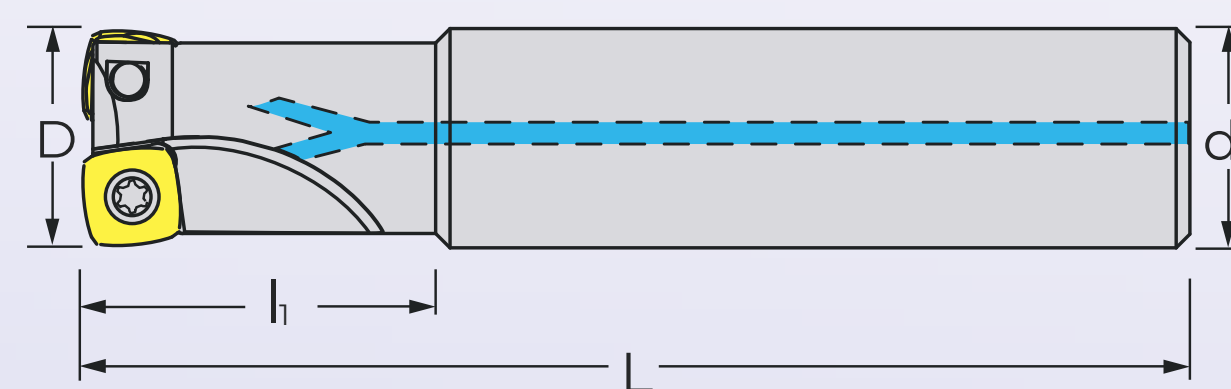


### Feature

- The cutting force is exerted in the axial direction. Compare with cutters using round inserts, cutters using square inserts are more durable.
- Available for high feeding cutting, and is able to shorten processing time. -There are 4 edges usable on each insert, effective cost-saving.

Spec.	L	D	d1	M	S	Locking force (N.m)	Flutes	Insert	(KGS) Weight
HAS-1616-M8-SP06-C	25	16	8.5	8	10	25	2	SP..0603	0.04
HAS-2020-M10-SP06-C	35	20	10.5	10	15	40	3	SP..0603	0.07
HAS-2525-M12-SP06-C	35	25	12.5	12	19	60	4	SP..0603	0.10
HAS-3232-M16-SP06-C	43	32	17	16	26	80	5	SP..0603	0.22
HAS-2525-M12-SD09-C	35	25	12.5	12	19	60	2	SD..0904	0.08
HAS-3232-M16-SD09-C	43	32	17	16	26	80	3	SD..0904	0.19
HAS-4040-M16-SD09-C	50	40	17	16	30	80	4	SD..0904	0.39

## HAS STRAIGHT SHANK HIGH SPEED MILLING CUTTER



### Feature

- The cutting force is exerted in the axial direction. Compare with cutters using round inserts, cutters using square inserts are more durable.
- Available for high feeding cutting, and is able to shorten processing time. -There are 4 edges usable on each insert, effective cost-saving.

Spec.	L	l1	D	d1	Flutes	Insert	(KGS) Weight
HAS-1616-120L-C	120	25	16	16	2	SP..0603	0.15
HAS-2020-120L-C	120	32	20	20	3	SP..0603	0.24
HAS-2525-150L-C	150	40	25	25	4	SP..0603	0.49
HAS-3232-150L-C	150	40	32	32	5	SP..0603	0.83
HAS-2525-120L-C	120	35	25	25	2	SD..0904	0.42
HAS-2625-120L-C	120	35	26	25	2	SD..0904	0.44
HAS-3232-130L-C	130	40	32	32	3	SD..0904	0.74
HAS-3332-130L-C	130	40	33	32	3	SD..0904	0.76
HAS-4032-170L-C	170	50	40	32	4	SD..0904	1.10

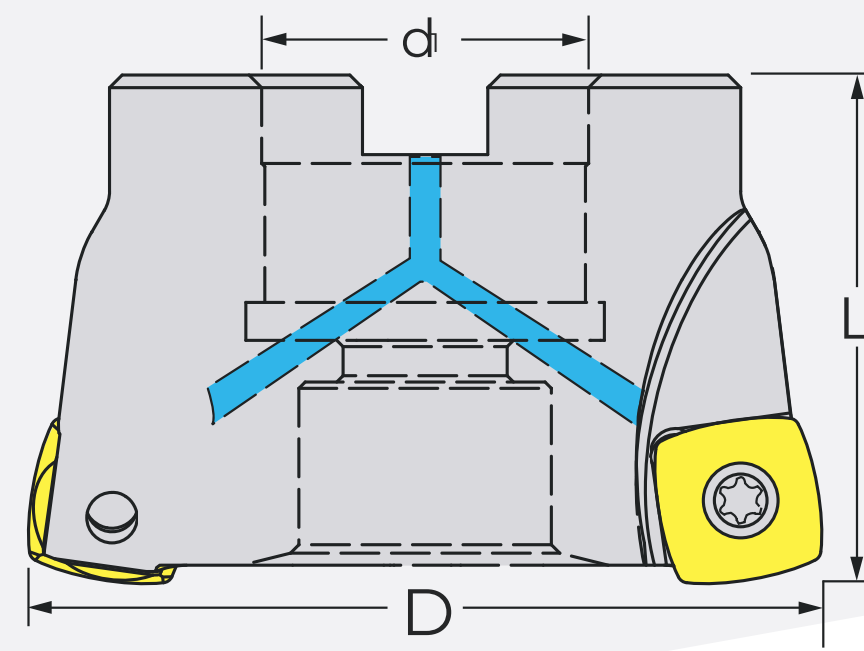
### Accessories

Insert	Screw	Wrench	(N.m) Torque
SP..0603	M2.5-6.3-3.7-43-T8-TIN	T8	1.2
SD..0904	M3.5-10-5.2-43-T15-TIN	T15	3.0

Unit of Length (mm)



# HGP SHELL HIGH SPEED MILLING CUTTER



## Feature

- The cutting force is exerted in the axial direction. Compare with cutters using round inserts, cutters using square inserts are more durable.
- Available for high feeding cutting, and is able to shorten processing time. -There are 4 edges usable on each insert, effective cost-saving.

Spec.	L	D	d1	Flutes	Insert	(KGS) Weight
HGP-500-FMB22-C	40	50	22	4	SD..1205	0.37
HGP-500-FMA25.4-C	40	50	25.4	4	SD..1205	0.38
HGP-630-FMB22-C	40	63	22	4	SD..1205	0.54
HGP-630-FMA25.4-C	40	63	25.4	4	SD..1205	0.66
HGP-800-FMB27-C	50	80	27	5	SD..1205	1.03
HGP-800-FMA31.75-C	50	80	31.75	5	SD..1205	1.04
HGP-1000-FMB32-C	50	100	32	6	SD..1205	1.54
HGP-1000-FMA31.75-C	50	100	31.75	6	SD..1205	1.54
HGP-1250-FMB40-C	63	125	40	8	SD..1205	3.38
HGP-1250-FMA38.1-C	63	125	38.1	8	SD..1205	3.37

## Accessories

Insert	Screw	Wrench	(N.m) Torque
SD..1205	M4-13-5.2-43-T15-TIN	T15	3.0

# HAS/HGP HIGH SPEED MILLING CUTTER

Shape	Spec.	Layer coated micro grain				Micro grain cemented carbide			(mm)				Drawing
		CHF				HF			Size				
		OM4010	OM4025	RM4025		OM5005			d	i	s	r	
	SDET090408EDER-M01	●	●						9.52	9.52	4.76	0.8	
	★ SDMT090408EDER-M04			●					9.52	9.52	4.76	0.8	
	SDET120508ER-M01	●	●						12.7	12.7	5.56	0.8	
	★ SDMT120512EDER-M04			●					12.7	12.7	5.56	0.8	
	SPET060308ER-M01	●	●			●			7	7	3.18	0.8	
	★ SPMT060308EDER-M04			●					7	7	3.18	0.8	

Unit of Length (mm)

# HAS/HGP HIGH SPEED MILLING CUTTER

## SP\_06/SD\_09.12 Cutting Parameter

### SP..0603

Machining Materials		Facing			Slotting			Plunging		
		Speed	Feed	D.O.C.	Speed	Feed	D.O.C.	Speed	Feed	D.O.C.
		Vc (m/min)	hm (mm)	ap max (mm)	Vc (m/min)	hm (mm)	ap max (mm)	Vc (m/min)	hm (mm)	ap max (mm)
P	Low-Alloy Steels	107-235	0.2-0.8	0.9	107-235	0.2-0.6	0.9	107-235	0.04-0.15	3
	Alloyed Steels	75-160	0.24).8	0.9	75-160	0.2-0.6	0.9	75-160	().04-0.1	3
M	Stainless Steels	115-265	0.15-0.8	0.9	115-265	0.15-0.6	0.9	115Q65	0.04-0.12	3
	Precipitation-Hardening	50-150	o. 15-0.8	0.9	50-150	o. 15-0.6	0.9	50-150	0.04-0.12	3
K	Cast Iron	152-335	0.2-0.8	0.9	152-335	0.2-0.6	0.9	152-335	0.04-0.12	3
N	Aluminum&Al	-	-	-	-	-	-	-	-	-
S	Refractory Alloys	25-60	0.15-0.5	0.9	25-60	0.1-0.4	0.9	25-60	0.04-0.08	3
H	Hard Material	35-100	0.2-0.5	0.9	35-100	0.2-0.4	0.9	35-100	0.04-0.08	3

### SD..0904

Machining Materials		Facing			Slotting			Plunging		
		Speed	Feed	D.O.C.	Speed	Feed	D.O.C.	Speed	Feed	D.O.C.
		Vc (m/min)	hm (mm)	ap max (mm)	Vc (m/min)	hm (mm)	ap max (mm)	Vc (m/min)	hm (mm)	ap max (mm)
P	Low-Alloy Steels	120-235	0.3-2.0	1.5	120-235	0.3-1.5	1.5	120-235	0.1-0.2	6
	Alloyed Steels	70-160	0.3-2.0	1.5	70-160	0.3-1.5	1.5	70-160	0.1-0.16	6
M	Stainless Steels	115-265	0.2-1.0	1.5	115-265	0.2-0.8	1.5	115-265	0.12-0.16	6
	Precipitation-Hardening	50-100	0.02-0.6	1.5	50-100	0.1-0.4	1.5	50-100	0.05-0.08	6
K	Cast Iron	150-395	0.3-2.0	1.5	150-395	0.3-1.5	1.5	150-395	0.1-0.2	6
N	Aluminum&Al	400-1000	0.3-1.5	1.5	400-1000	0.3-1.0	1.5	400-1000	0.1-0.3	6
S	Refractory Alloys	25-60	0.2-0.8	1.5	25-60	0.1-0.5	1.5	25-60	0.05-0.1	6
H	Hard Material	35-100	0.3-1.0	1.5	35-100	0.3-0.8	1.5	35-100	0.08-0.12	6

### SD..1205

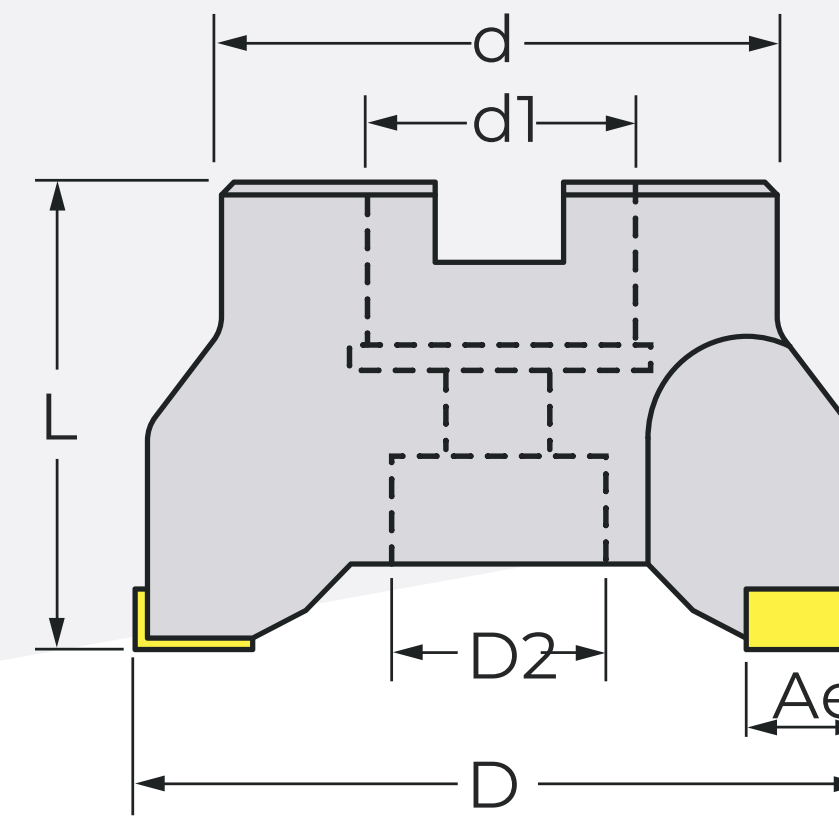
Machining Materials		Facing			Slotting			Plunging		
		Speed	Feed	D.O.C.	Speed	Feed	D.O.C.	Speed	Feed	D.O.C.
		Vc (m/min)	hm (mm)	ap max (mm)	Vc (m/min)	hm (mm)	ap max (mm)	Vc (m/min)	hm (mm)	ap max (mm)
P	Low-Alloy Steels	120-235	0.3-3.0	2.5	120-235	0.3-2.0	2	120-235	0.1-0.25	9
	Alloyed Steels	70-160	0.3-3.0	2.5	70-160	0.3-2.0	2	70-160	0.1-0.18	9
M	Stainless Steels	115-265	0.2-1.2	2.5	115-265	0.2-1.0	2	115-265	0.120.13	9
	Precipitation-Hardening	50-100	0.02-0.7	2.5	50-100	0.1-0.6	2	50-100	0.05-0.1	9
K	Cast Iron	150-395	0.3-3.0	2.5	150-395	0.3-2.0	2	150-395	0.1-0.25	9
N	Aluminum&Al	400-1000	0.3-1.5	2.5	400-1000	0.3-1.5	2	400-1000	0.1-0.4	9
S	Refractory Alloys	25-60	0.2-1.0	2.5	25-60	0.1-0.7	2	25-60	0.050.12	9
H	Hard Material	35-100	0.3-1.5	2.5	35-100	0.3-1.0	2	35-100	0.080.15	9

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)



# MSAE SQUARE SHOULDER MILLING CUTTER



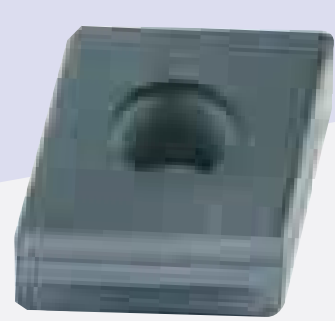
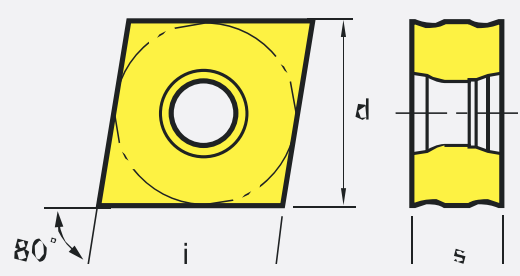
## Feature

- Made of anti-vibration tool steel
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	D	D2	d	d1	Ae	Flutes	Insert	(KGS) Weight
MSAE-50-FMB22	50	50	18	42	22	11	3	CN..1206	0.47
MSAE-63-FMB22	50	63	18	50	22	14	3	CN..1508	0.75
MSAE-80	55	80	42	60	25.4	14	4	CN..1508	1.05
MSAE-80-FMB27	55	80	42	60	27	14	4	CN..1508	1.03

## Accessories

Insert	Screw	Wrench	(N.m) Torque
CN..1206	M4-10-5.7-60	T15	3.0
CN..1508	M5-14-7.0-43	T20	5.0

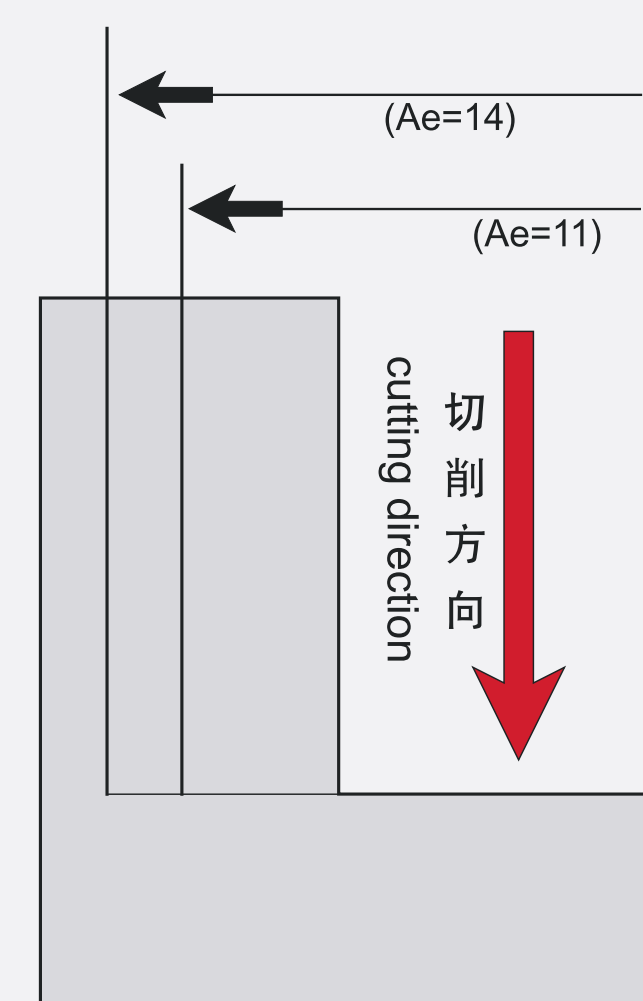
Shape	Spec.	Layer coated micro grain		(mm)				Drawing
		CHF		Size				
		OM4010	OM4025	d	i	s	r	
	CNEX120612-M01	●	●	12.7	-	6.35	1.2	
	CNEX150812-M01	●	●	15	-	8	1.2	

Unit of Length (mm)

- Cutting Condition :
- Continuous Cutting
  - General Cutting
  - Interrupted Cutting

## Feature

- High feeding, deep cutting, and smooth chip evacuation. Available for various processing. Could be applied to part processing, mold making.
- The insert can bear huge cutting resistance during high feeding. With bigger chip breaker which stores chips temporally, the cutter is free of vibration and is high cutting efficiency.
- The insert is designed with superior chip breaking, strong flutes and low cutting resistance which is suitable for plunge milling and semi-finishing.
- The insert is made of PVD (TiAlSi)N coated micro grain substrate, and is available for processing different materials.

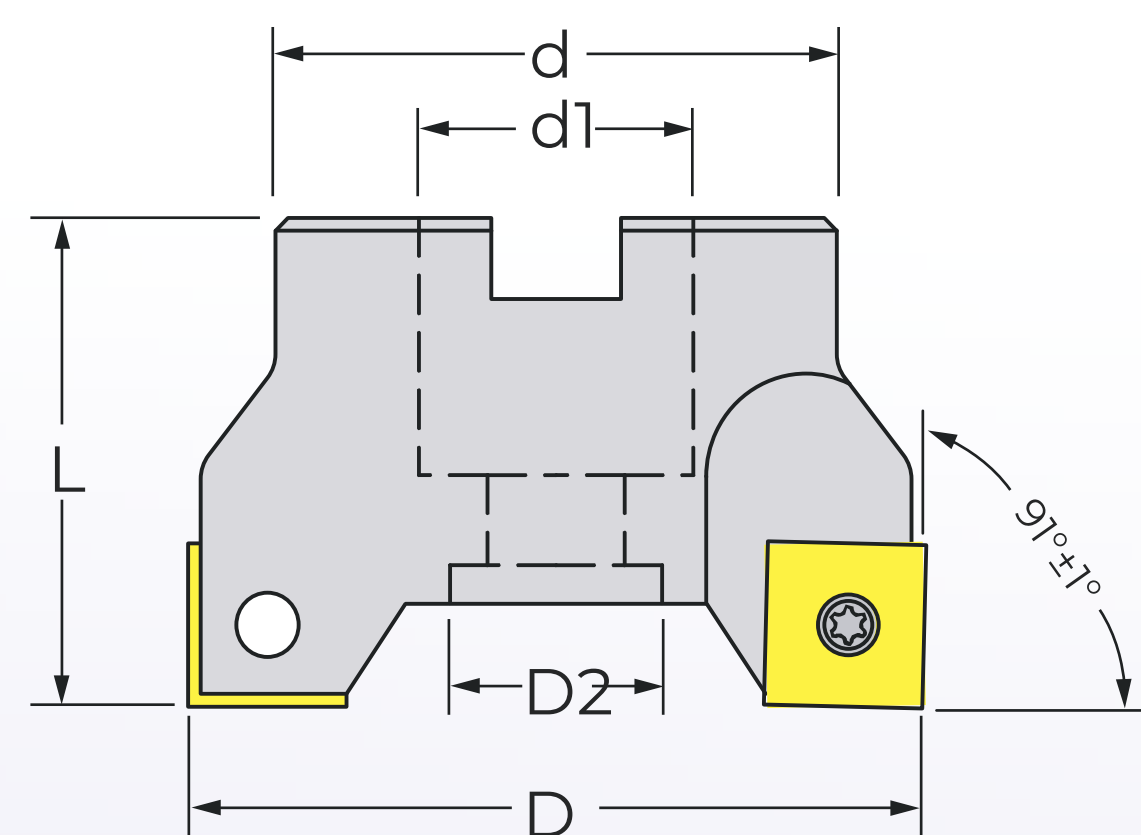
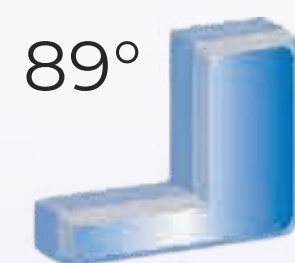


## CN\_12.15 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)
P	Low-Alloy Steels	OM4010	90~190	0.10~0.25
		OM4025	80~170	0.08~0.25
	Alloyed Steels	OM4010	70~160	0.08~0.20
		OM4025	70~160	0.08~0.20
M	Stainless Steels	OM4010	70~180	0.10~0.20
		OM4025	70~160	0.10~0.18
K	Cast Iron	OM4025	110~180	0.08~0.25

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

## SGP SQUARE SHOULDER MILLING CUTTER



### Feature

- Made of anti-vibration tool steel
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	D	D2	d	d1	Ae	Flutes	Insert	(KGS) Weight
SGP-50-FMB22	50	50	18	40	22	12	4	SP..1204	0.44
SGP-63	50	63	19	50	25.4	12	5	SP..1204	0.68
SGP-63-FMB22	50	63	18	50	22	12	5	SP..1204	0.71
SGP-80	50	80	32	60	25.4	12	6	SP..1204	0.93
SGP-80-FMB27	50	80	32	60	27	12	6	SP..1204	0.99
SGP-100	55	100	42	70	31.75	12	8	SP..1204	1.71
SGP-100-FMB32	55	100	42	70	32	12	8	SP..1204	1.71
SGP-125-FMB40	63	125	58	90	40	12	8	SP..1204	3.22
SGP-160-FMB40	63	160	58	130	40	12	10	SP..1204	6.22

### Accessories

Insert	Screw	Wrench	(N.m) Torque
SP..1204	M5-10-6.3-43	T20	5.0


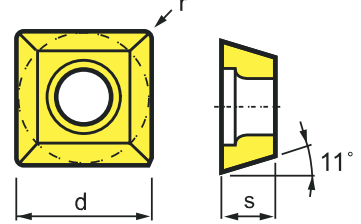

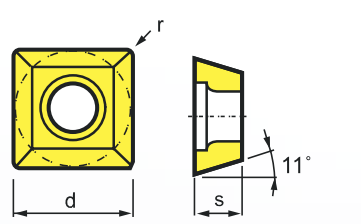
Unit of Length (mm)

- 4 indexable edges, effective cost-saving..
- Inserts are compatible with other rough cutting tools.
- Max. cutting amount is up to 10mm, and machining range is from 50mm to 100mm.
- Available for face milling and shoulder milling.





## SGP SQUARE SHOULDER MILLING CUTTER

Shape	Spec.	Layer coated micro grain			Micro grain cemented carbide				(mm)				Drawing	
		CHF			HF				Size					
		OM4010	OM4025	RM4025		OM5005				d	i	s		r
ISO	P	Alloyed Steels	○	○	○									Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting
	M	Stainless Steels	○	○	○									
	K	Cast Iron	○	○	○									
	N	Aluminum&Al						□						
	S	Refractory Alloys												
	H	Hard Material	○											
	SPET120408-M02		●	●			●			9.52	9.52	4.76	0.8	
	SPMT120408-R01				●					7	7	3.18	0.8	

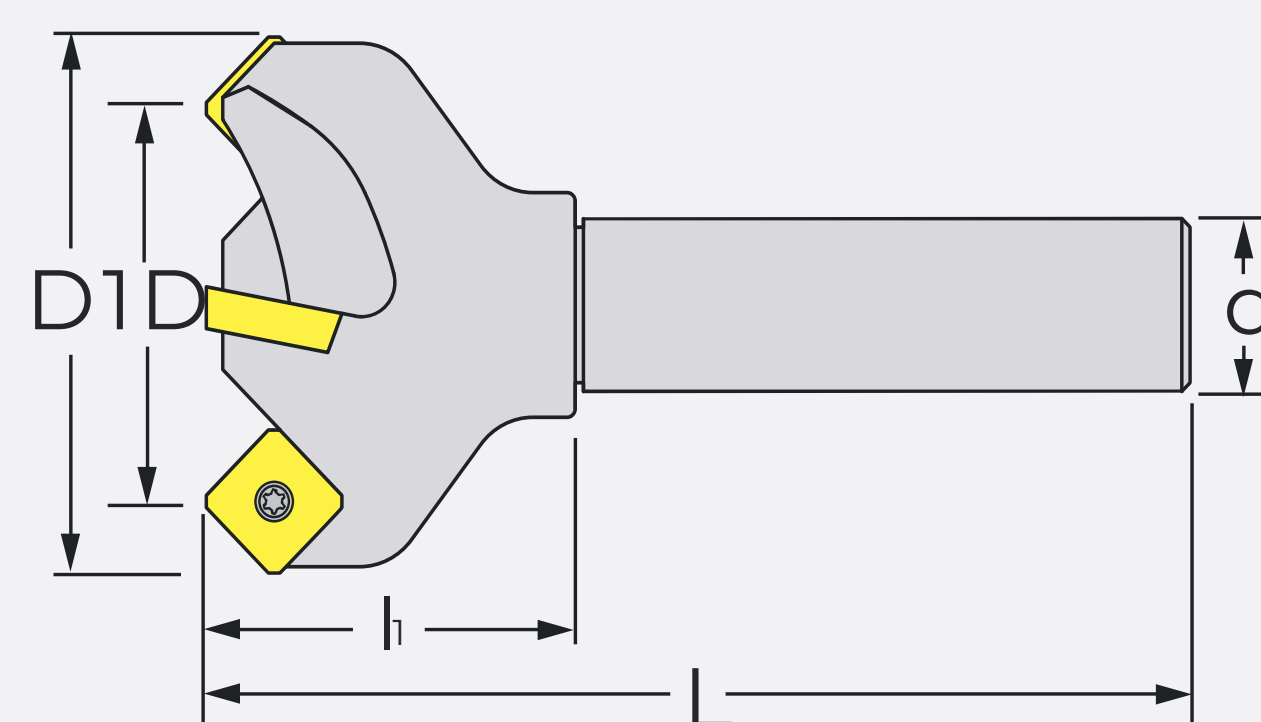
Unit of Length (mm)

## SP\_12 Cutting Parameter

Machining Materials		Materials	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4010	100-220	0.10-0.35	2.0-9.0
		OM4025	100-220	0.10-0.35	2.0-9.0
		RM4025	100-220	0.10-0.35	2.0-9.0
P	Alloyed Steels	OM4010	70-120	0.10-0.25	1.0-5.0
		OM4025	70-120	0.10-0.25	1.0-5.0
		RM4025	70-120	0,10-0.25	10-5.0
M	Stainless Steels	OM4010	130-200	0.120.030	3.0-8.0
		OM4025	130-200	0.12-0,30	3.0-8.0
K	Cast Iron	OM4010	100-210	0.10-0.20	2.0-9.0
		OM4025	100-210	0,10-0.20	2.0-9.0
N	Aluminum&Al	OM5005	450(500-700)	1.2(1.2-1.8)	2.0-9.0

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

## KE45°HIGH SPEED FACE MILLING CUTTER

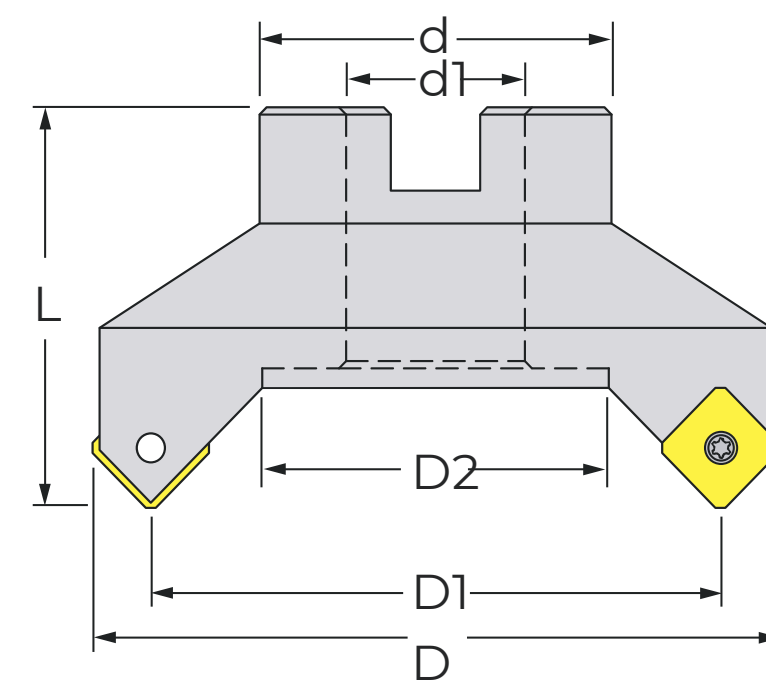


### Feature

- Made of anti-vibration tool steel
- After the heat treatment, we will finish the cutter again for better accuracy.

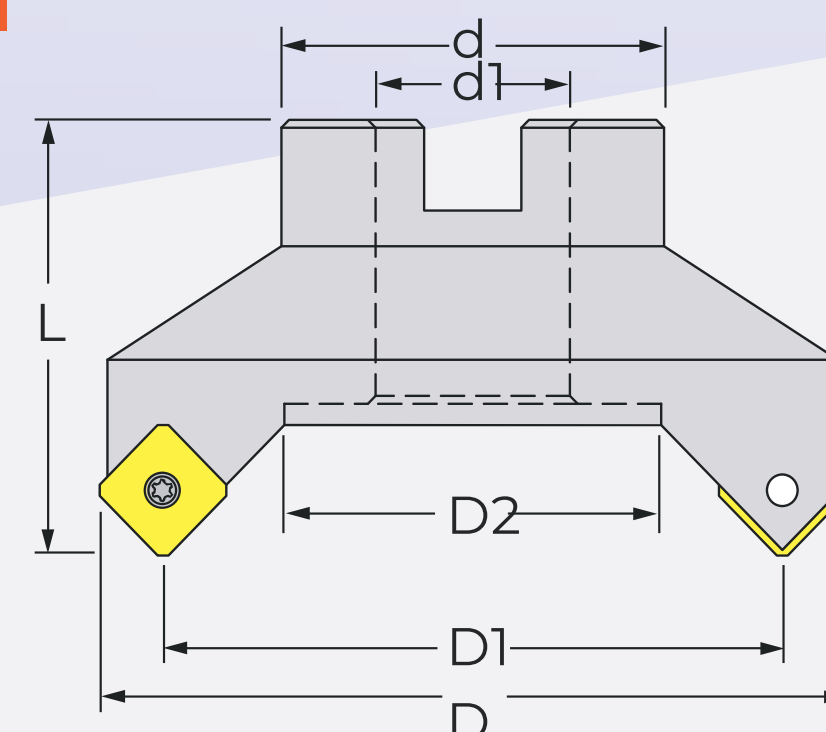
Spec.	L	D	D2	d	d1	Flutes	Insert	(KGS) Weight
C20-KE50	120	45	50	63.7	20	4	SE..1204	0.77
C25-KE50	120	45	50	63.7	25	4	SE..1204	0.85
C32-KE50	120	45	50	63.7	32	4	SE..1204	1.06
C25-KE63	120	45	63	75	25	5	SE..1204	1.14
C32-KE63	120	45	63	75	32	5	SE..1204	1.36

## KM45° FACE SHELL MILLING CUTTER



Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
KM-50-FMB22	40	63	50	18	46	22	4	SE..1204	0.52
KM-63	45	76	63	19	48	25.4	5	SE..1204	0.78
KM-63-FMB22	45	76	63	18	48	22	5	SE..1204	0.80
KM-80	50	95	80	45	60	31.75	6	SE..1204	1.15
KM-80-FMB27	50	95	80	44.2	60	27	6	SE..1204	1.21
KM-100	50	114	100	61.8	80	31.75	6	SE..1204	1.83
KM-100-FMB32	50	114	100	61.8	80	32	6	SE..1204	1.81
KM-125	63	140	125	72.1	90	38.1	8	SE..1204	3.07
KM-125-FMB40	63	140	125	72.1	90	40	8	SE..1204	3.04
KM-160	63	175	160	110.9	120	50.8	10	SE..1204	5.05
KM-160-FMB40	63	175	160	110.9	120	40	10	SE..1204	5.35
KM-200	63	215	200	145.9	160	47.625	12	SE..1204	7.62
KM-250	63	265	250	195.8	220	47.625	14	SE..1204	13.3

Counterclockwise



Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
KM-80-FMB27-L	50	95	80	44.2	60	27	6	SE..1204	1.17
KM-80-FMA31.75-L	50	94	80	45	60	31.75	6	SE..1204	0.66
KM-100-FMB32-L	50	114	100	61.8	80	32	6	SE..1204	1.83
KM-125-FMB40-L	63	140	125	72.1	90	40	8	SE..1204	3.07
KM-160-FMB40-L	63	175	160	110.9	120	40	10	SE..1204	5.05


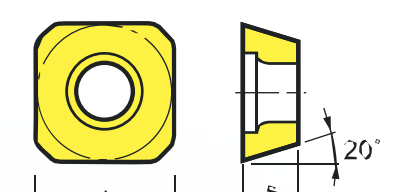

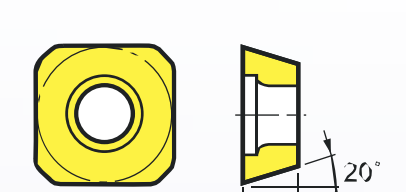

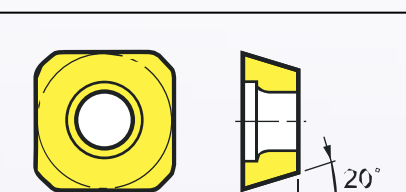

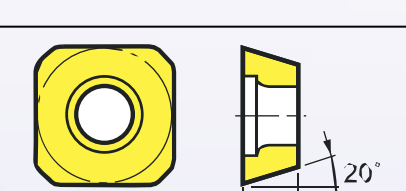
## Accessories

Insert	Screw	Wrench	(N.m) Torque
SP..1204	M5-10-6.3-43	T20	5.0

Unit of Length (mm)



# KM45° FACE SHELL MILLING CUTTER

ISO	P	Alloyed Steels	○	○			○							Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting
	M	Stainless Steels	○	○	○									
	K	Cast Iron	○	○										
	N	Aluminum&Al						□	□					
S	Refractory Alloys													
H	Hard Material	○					○							
Shape	Spec.	Layer coated micro grain				cermet		Micro grain cemented carbide		(mm)				Drawing
		CHF				HT		HF		Size				
		OM4010	OM4025	RM4230		OM1205		GH1	OM5060		d	i	s	
	★ SEHT1204AFEN-M01	●	●							12.7	-	4.76	Facet	
	SEHT1204AFFN-M02			●						12.7	-	4.76	Facet	
	SEHT1204AFFN						●	●		12.7	-	4.76	-	
	SEKW1204AFN		●			●				12.7	-	4.76	-	

★ Recommended

Unit of Length (mm)

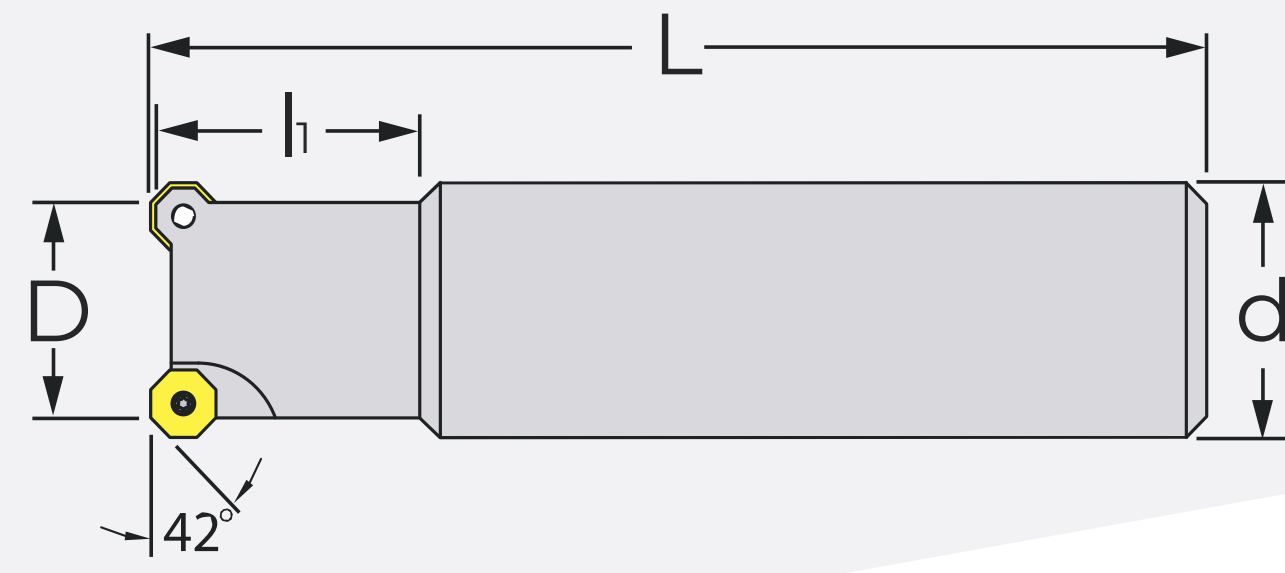
## SE\_12 Cutting Parameter

Machining Materials		Materials	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4010	260~320	0.20~0.45	1.0~3.0
		OM4025	220~260	0.20~0.45	1.0~3.0
		RM4025	220~260	0.20~0.45	1.0~3.0
	Alloyed Steels	OM1205	100~195	0.05~0.15	1.0~2.0
		OM4010	130~250	0.20~0.35	1.0~3.0
		OM4025	100~195	0.05~0.15	1.0~2.0
M	Stainless Steels	OM4010	180~220	0.10~0.30	1.0~2.0
		OM4025	140~180	0.10~0.30	1.0~2.0
	Precipitation-Hardening	OM4010	90~120	0.15~0.20	0.2~1.0
		OM4025	70~85	0.15~0.20	0.2~1.0
K	Cast Iron	OM4010	160~300	0.12~0.35	1.0~3.0
		OM4025	180~300	0.15~0.35	1.0~3.0
N	Aluminum&Al	OM5060	500~850	0.15~0.35	3.6~6.0
		GH1	275~450	0.15~0.35	3.0~6.0

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)

## SKM HIGH SPEED FACE MILLING CUTTER



### Feature

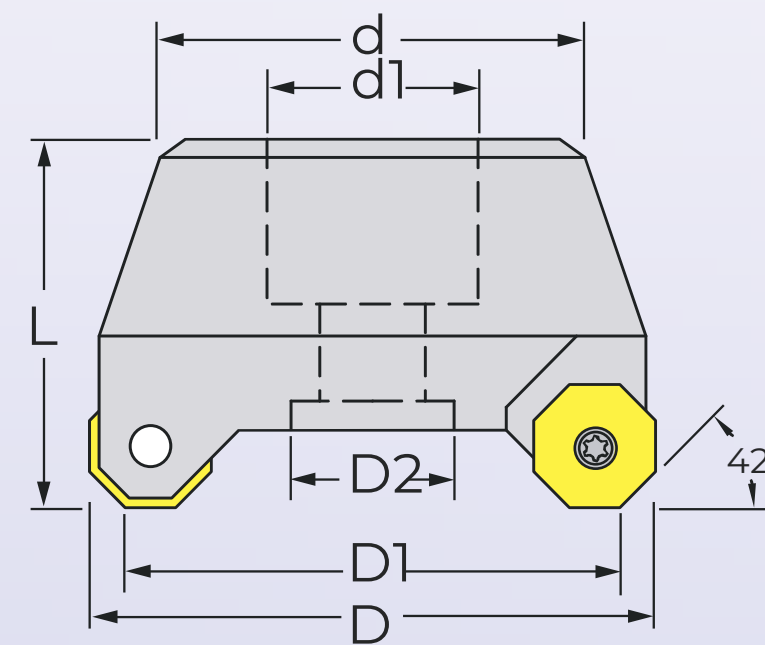
- Made of anti-vibration tool steel
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	l1	D	d	Flutes	Insert	(KGS) Weight
SKM-2520-120L	120	40	25	20	2	OD..0404	0.32
SKM-2525-120L	120	40	25	25	2	OD..0404	0.45
SKM-3225-120L	120	40	32	25	3	OD..0404	0.48
SKM-3232-120L	120	40	32	32	3	OD..0404	0.71
SKM-4032-120L	120	50	40	32	4	OD..0404	0.82

### Accessories

Insert	Screw	Wrench	(N.m) Torque
OD..0404	M4-10-5.7-60	T15	3.0

## SKM HIGH SPEED FACE SHELL MILLING CUTTER



### Feature

- Made of anti-vibration tool steel
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
SKM-50-FMB22	45	58	50	18	42.24	22	4	OD..0404	0.50
SKM-63	45	71	63	19	48.82	25.4	5	OD..0404	0.63
SKM-63-FMB22	45	71	63	18	48.82	22	5	OD..0404	0.67
SKM-80	50	88	80	44	61.78	31.75	6	OD..0404	1.13
SKM-80-FMB27	50	88	80	35	61.78	27	6	OD..0404	1.24
SKM-100	55	108	100	45	70	31.75	7	OD..0404	1.86
SKM-100-FMB32	55	108	100	45	70	32	7	OD..0404	1.86
SKM-125	58	133	125	60	90	38.1	8	OD..0404	3.13
SKM-160	63	168	160	93.81	125	50.8	10	OD..0404	5.83

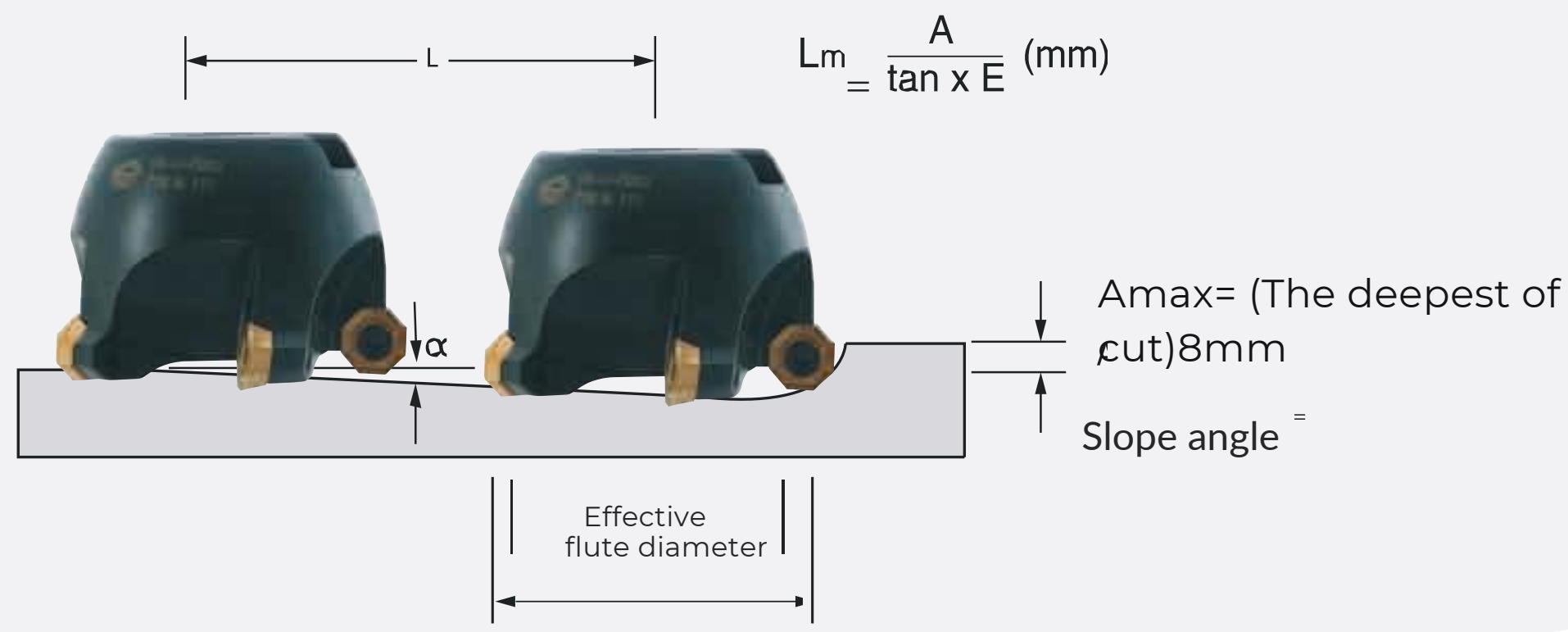
### Accessories

Insert	Screw	Wrench	(N.m) Torque
OD..0404	M4-10-5.7-60	T15	3.0

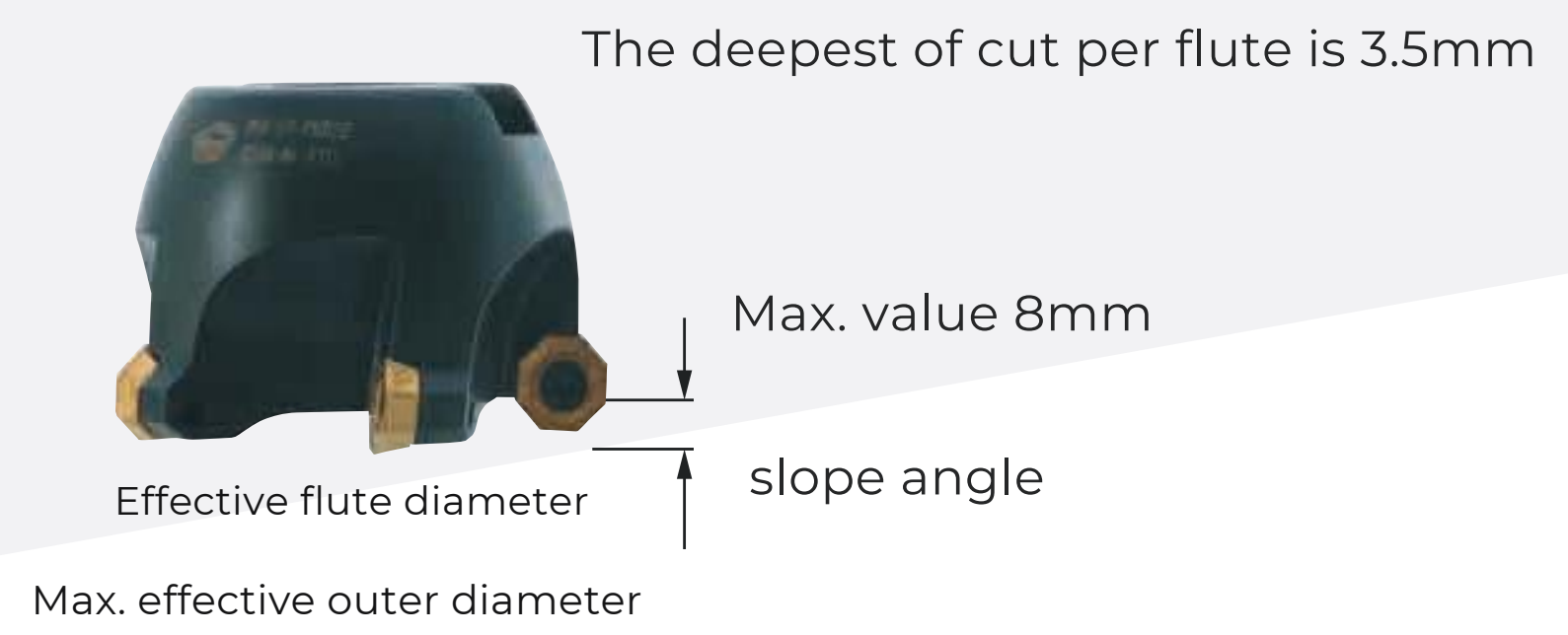
Unit of Length (mm)



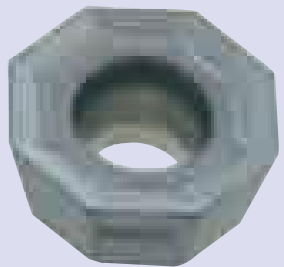
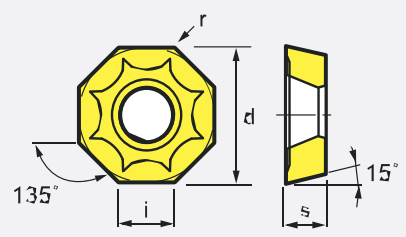
Inclination angle milling formula :



Formula to spiral milling



Spiral milling data				
Milling cutter		ØSpiral milling cutting diameter		incline
D effective flute diamter	Da Max. outer diameter	D Min.	D Max.	
Ø50	Ø60	Ø94	Ø118	6.0°
Ø63	Ø73	Ø120	Ø144	4.6°
Ø80	Ø90	Ø154	Ø178	3.3°
Ø100	Ø110	Ø194	Ø218	2.6°
Ø125	Ø135	Ø244	Ø268	2.0°
Ø160	Ø170	Ø314	Ø338	1.5°

ISO	P	Alloyed Steels	○	Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting			
	M	Stainless Steels					
	K	Cast Iron					
	N	Aluminum&Al					
	S	Refractory Alloys					
	H	Hard Material					
Shape	Spec.	Layer coated micro grain	(mm)				Drawing
		CHF	Size				
		OM4025	d	i	s	r	
	ODMT040408	●	12.7	4.6	4.76	0.8	

## SE\_12 Cutting Parameter

Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4025	130~330	0.08~0.40
	Alloyed Steels	OM4025	70~160	0.08~0.20

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)

# SFM FACE MILLING CUTTER



Fig.1

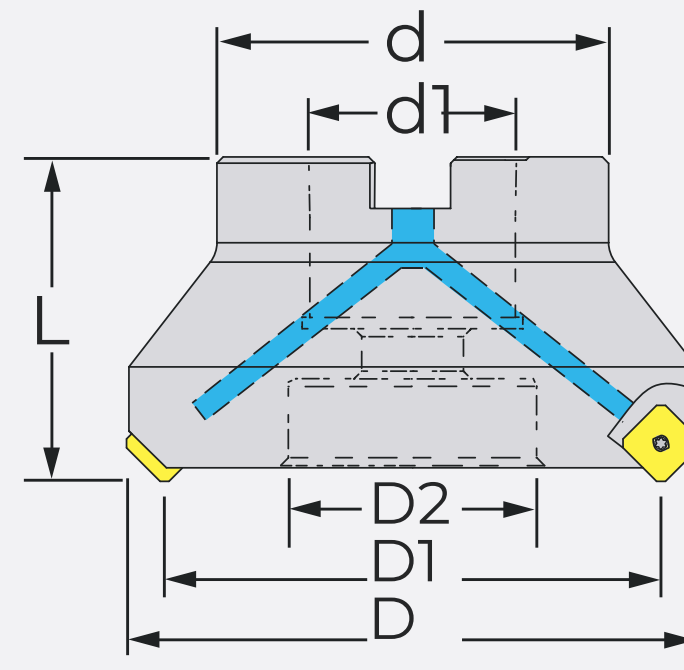
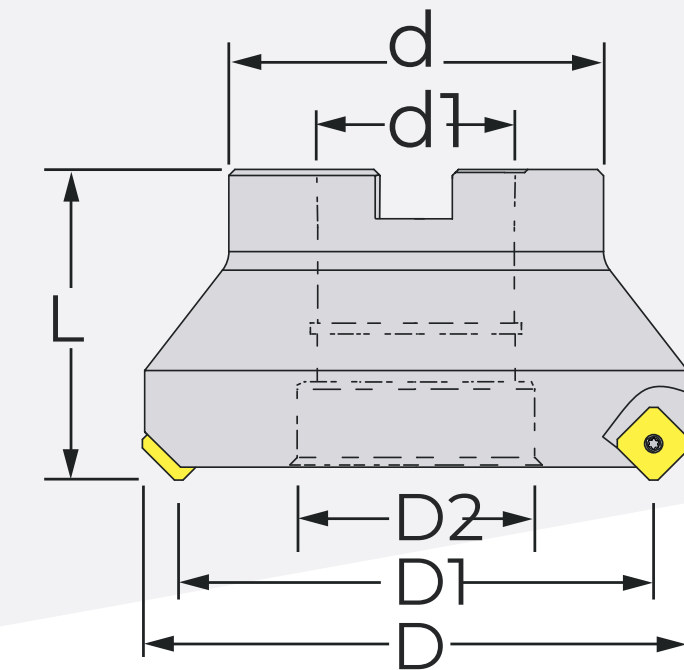


Fig.2



Spec.	L	D	D1	D2	d	d1	Flutes	Insert	Fig.	(KGS) Weight
SFM-50-FMB22-C	40	62	50	18	48	22	4	SE..13T3	1	0.64
SFM-50-FMA25.4-C	40	62	50	20	50	25.4	4	SE..13T3	1	0.54
SFM-63-FMB22-C	40	75	63	18	48	22	5	SE..13T3	1	0.70
SFM-63-FMA25.4-C	40	75	63	20	50	25.4	5	SE..13T3	1	0.68
SFM-80-FMB27-C	50	92	80	32	62	27	6	SE..13T3	1	1.28
SFM-80-FMA31.75-C	50	92	80	42	62	31.75	6	SE..13T3	1	1.20
SFM-100-FMB32-C	50	112	100	42	78	32	7	SE..13T3	1	1.98
SFM-100-FMA31.75-C	50	112	100	42	78	31.75	7	SE..13T3	1	2.04
SFM-125-FMB40-C	63	137	125	50	89	40	8	SE..13T3	1	3.57
SFM-125-FMA38.1-C	63	137	125	50	80	38.1	8	SE..13T3	1	3.24
SFM-160-FMB40	63	172	160	50	98	40	10	SE..13T3	2	5.30
SFM-160-FMA50.8	63	172	160	67	98	50.8	10	SE..13T3	2	4.80
SFM-200-FMB60	63	210.4	200	174	138	60	12	SE..13T3	2	6.78
SFM-200-FMA47.625	63	210.4	200	174	138	47.625	12	SE..13T3	2	7.18
SFM-250-FMB60	63	260.4	250	224	138	60	14	SE..13T3	2	10.40
SFM-250-FMA47.625	63	260.4	250	224	138	47.625	14	SE..13T3	2	10.72

# SFM SHRINK-FIT FACE MILLING CUTTER

Shrink-Fit



Fig.1

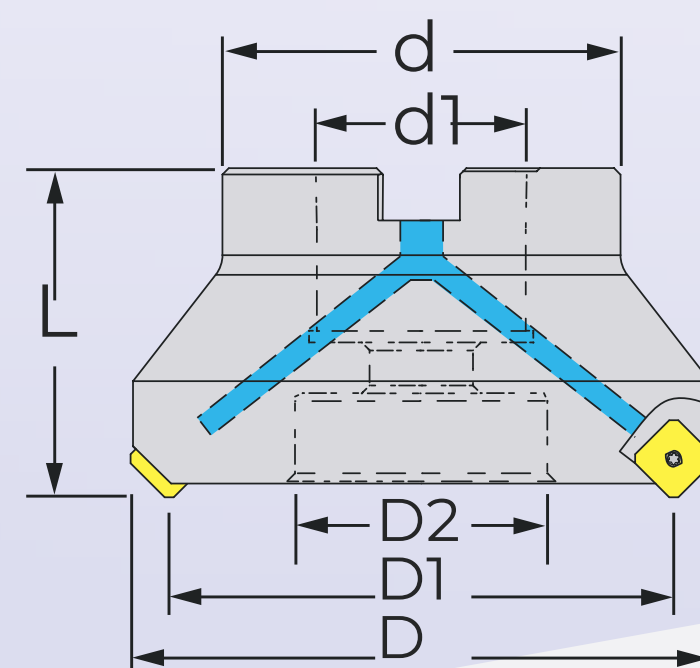
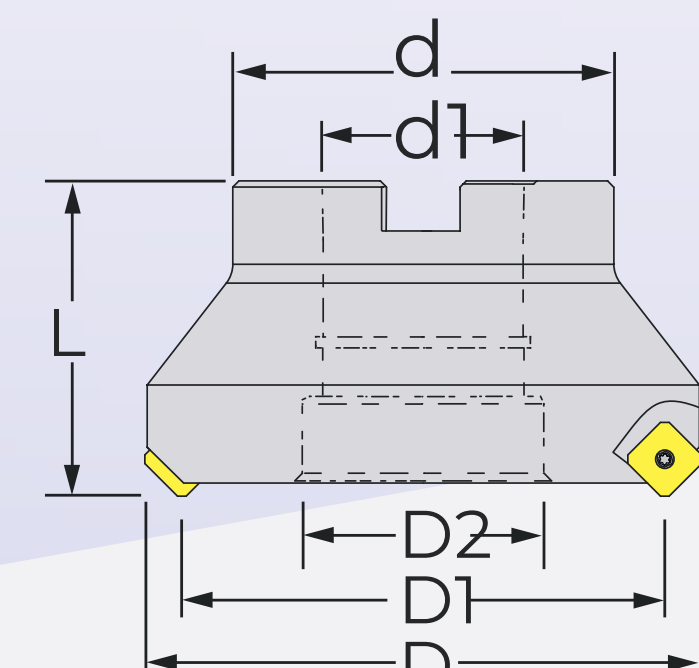


Fig.2



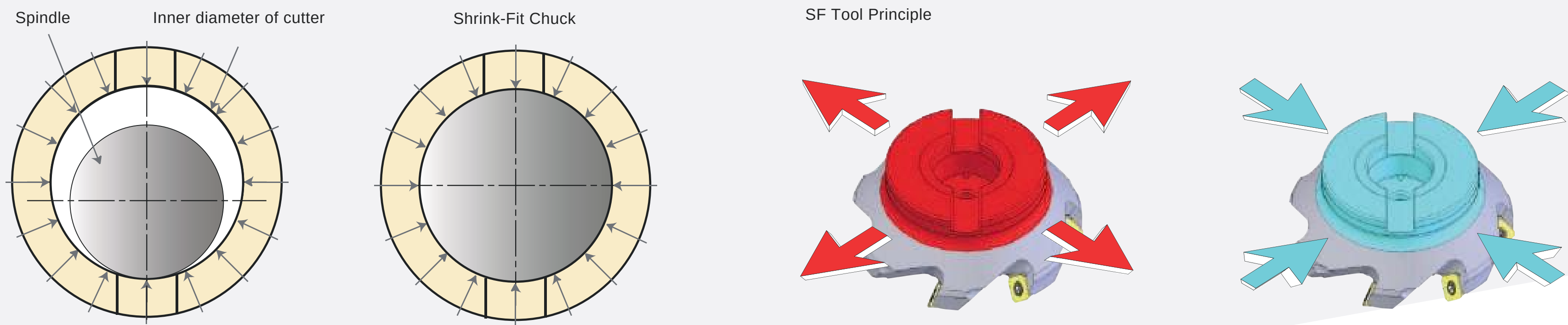
Spec.	L	D	D1	D2	d	d1	Flutes	Insert	Fig.	(KGS) Weight
SFM-50-SF-FMB22-C	40	62	50	18	48	22	4	SE..13T3	1	0.64
SFM-50-SF-FMA25.4-C	40	62	50	20	50	25.4	4	SE..13T3	1	0.54
SFM-63-SF-FMB22-C	40	75	63	18	48	22	5	SE..13T3	1	0.70
SFM-63-SF-FMA25.4-C	40	75	63	20	50	25.4	5	SE..13T3	1	0.68
SFM-80-SF-FMB27-C	50	92	80	32	62	27	6	SE..13T3	1	1.28
SFM-80-SF-FMA31.75-C	50	92	80	42	62	31.75	6	SE..13T3	1	1.20
SFM-100-SF-FMB32-C	50	112	100	42	78	32	7	SE..13T3	1	1.98
SFM-100-SF-FMA31.75-C	50	112	100	42	78	31.75	7	SE..13T3	1	2.04
SFM-125-SF-FMB40-C	63	137	125	50	89	40	8	SE..13T3	1	3.57
SFM-125-SF-FMA38.1-C	63	137	125	50	80	38.1	8	SE..13T3	1	3.24
SFM-160-SF-FMB40	63	172	160	50	98	40	10	SE..13T3	2	5.30
SFM-160-SF-FMA50.8	63	172	160	67	98	50.8	10	SE..13T3	2	4.80

## Accessories

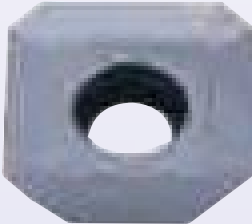
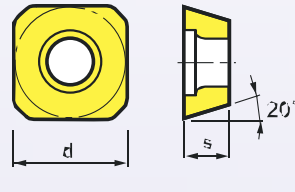
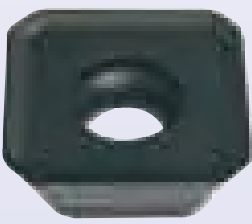
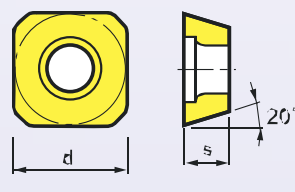
Insert	Screw	Wrench	(N.m) Torque
SE..13T3	M3.5-11.7-5.3-60	T15	3.0

Unit of Length (mm)





## SFM FACE MILLING CUTTER

ISO	P	Alloyed Steels		○					Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting	
	M	Stainless Steels	○							
	K	Cast Iron								
	N	Aluminum&Al				□				
S	Refractory Alloys	○								
H	Hard Material									
Shape	Spec.	Layer coated micro grain		Micro grain cemented carbide		(mm)				Drawing
		CHF		HF		Size				
		RM2140	RM4025	RM5005		d	i	s	r	
	SEET13T3AGFN-F01			●		13.4	-	3.97	2.55	
	SEMT13T3AGEN-M02	●	●			13.4	-	3.97	2.55	

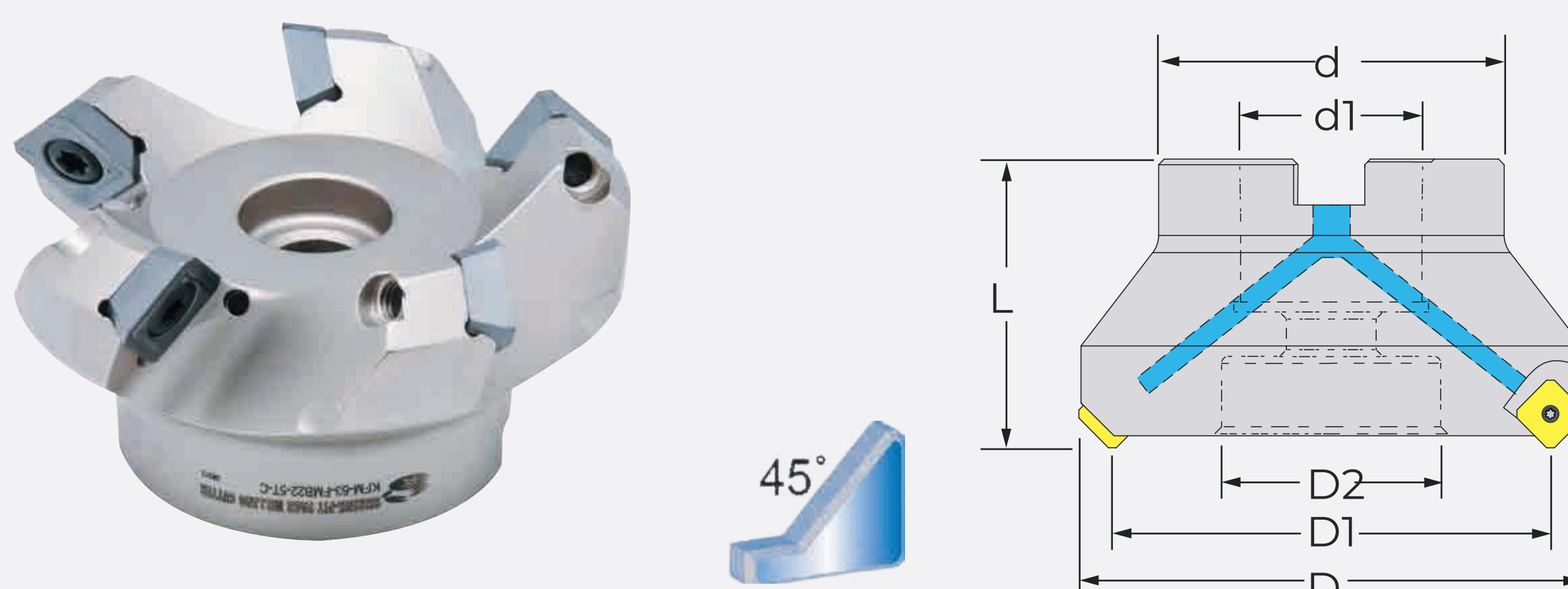
## SE\_13T3 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	fz(mm/rev)
P	Low-Alloy Steels	RM4025	220-260	0.20-0.45
	Alloyed Steels	RM4025	220-260	0.20-0.45
M	Stainless Steels	RM2140	130-250	0.20-0.35
N	Aluminum&Al	RM5005	500-850	0.15-0.35
S	Refractory Alloys	RM2140	130-250	0.20-0.35

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)

## KFM FACE MILLING CUTTER



Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
KFM-50-FMB22-C	40	62	50	18	48	22	4	SE..1204	0.51
KFM-50-FMA25.4-C	40	62	50	20	50	25.4	4	SE..1204	0.51
KFM-63-FMB22-C	40	75	63	18	48	22	5	SE..1204	0.73
KFM-63-FMA25.4-C	40	75	63	32	50	25.4	5	SE..1204	0.70
KFM-80-FMB27-C	50	92	80	32	62	27	6	SE..1204	1.31
KFM-80-FMA31.75-C	50	92	80	42	62	31.75	6	SE..1204	1.21
KFM-100-FMB32-C	50	112	100	42	78	32	7	SE..1204	2.00
KFM-100-FMA31.75-C	50	112	100	42	78	31.75	7	SE..1204	2.02
KFM-125-FMB40-C	63	137	125	50	89	40	8	SE..1204	3.53
KFM-125-FMA38.1-C	63	137	125	50	80	38.1	8	SE..1204	3.25

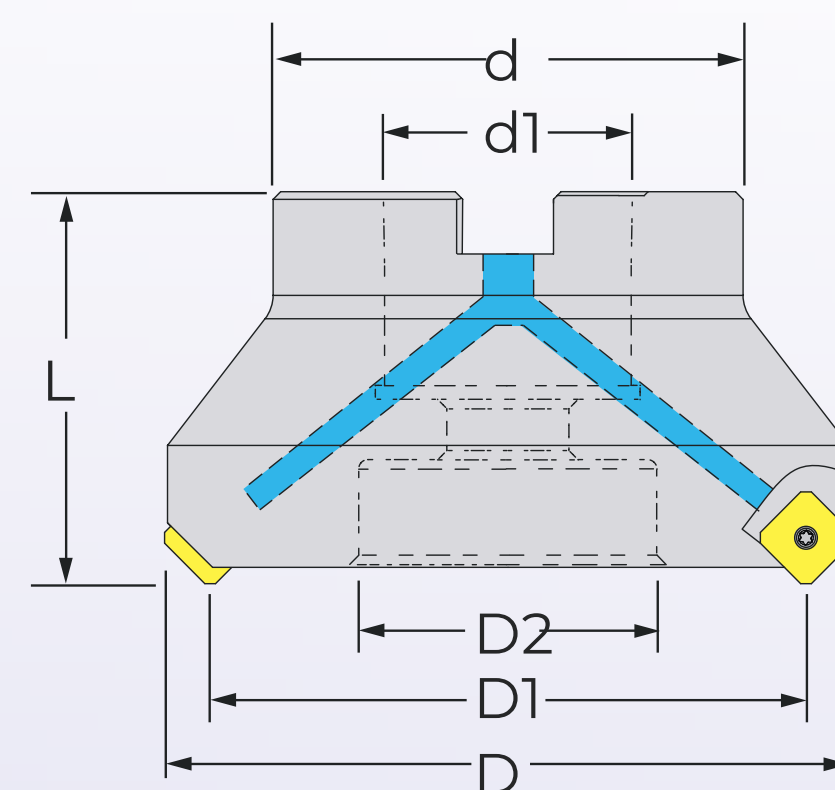
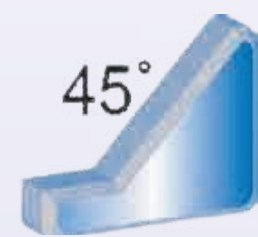
## Accessories

Insert	Screw	Wrench	(N.m) Torque
SE..1204	M5-11-7.0-55	T20	5.0

## KFM SHRINK FIT FACE MILLING CUTTER



Shrink-Fit

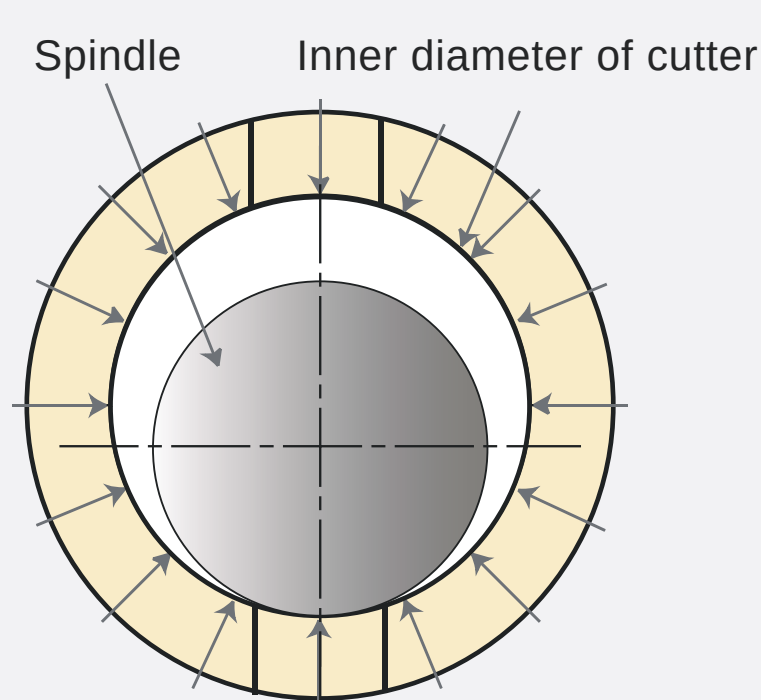


Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
KFM-50-SF-FMB22-C	40	62	50	18	48	22	4	SE..1204	0.51
KFM-50-SF-FMA25.4-C	40	62	50	20	50	25.4	4	SE..1204	0.51
KFM-63-SF-FMB22-C	40	75	63	18	48	22	5	SE..1204	0.73
KFM-63-SF-FMA25.4-C	40	75	63	32	50	25.4	5	SE..1204	0.70
KFM-80-SF-FMB27-C	50	92	80	32	62	27	6	SE..1204	1.31
KFM-80-SF-FMA31.75-C	50	92	80	42	62	31.75	6	SE..1204	1.21
KFM-100-SF-FMB32-C	50	112	100	42	78	32	7	SE..1204	2.00
KFM-100-SF-FMA31.75-C	50	112	100	42	78	31.75	7	SE..1204	2.02
KFM-125-SF-FMB40-C	63	137	125	50	89	40	8	SE..1204	3.53
KFM-125-SF-FMA38.1-C	63	137	125	50	80	38.1	8	SE..1204	3.25

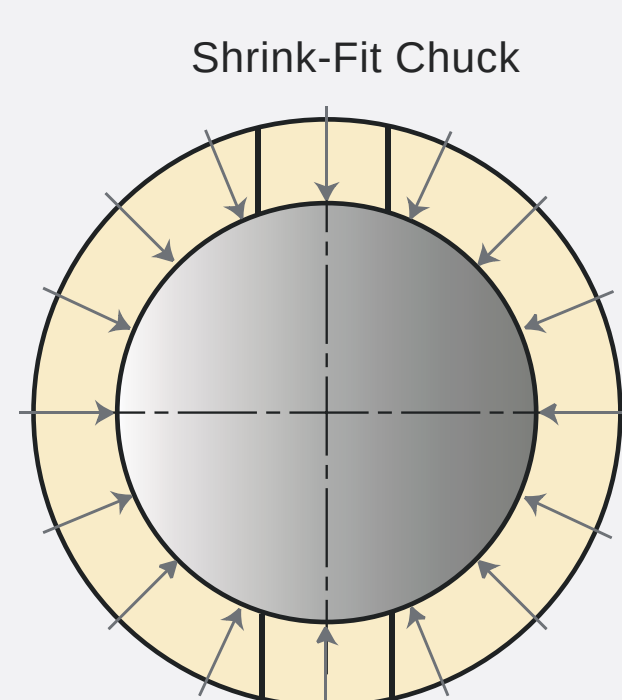
## Accessories

Insert	Screw	Wrench	(N.m) Torque
SE..1204	M5-11-7.0-55	T20	5.0

Unit of Length (mm)

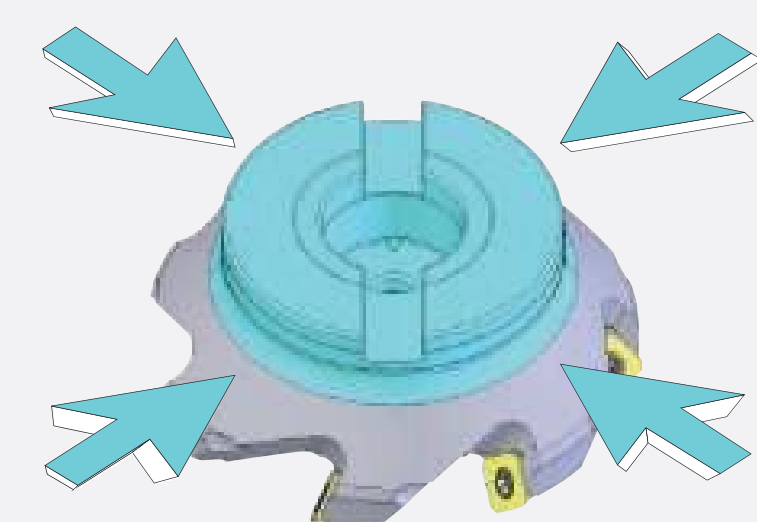
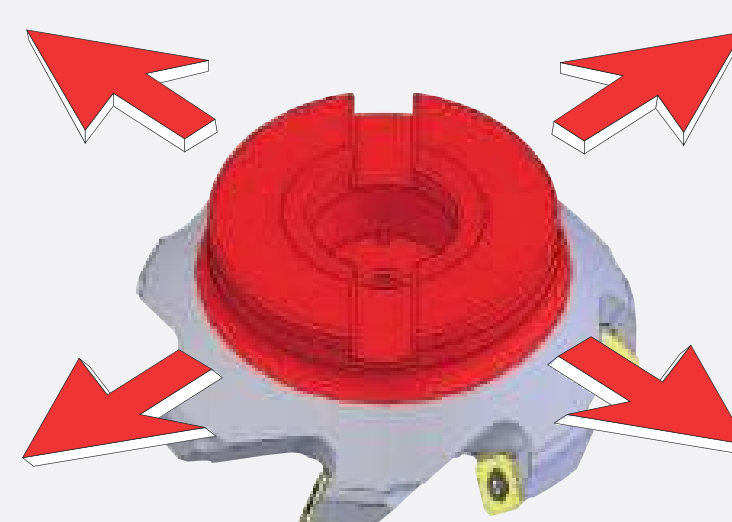


Conventional Chuck



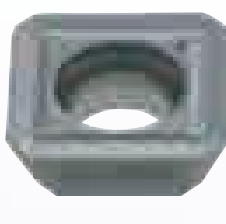
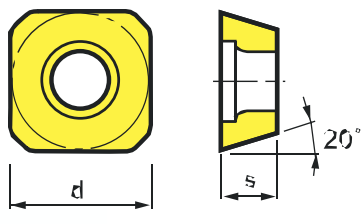

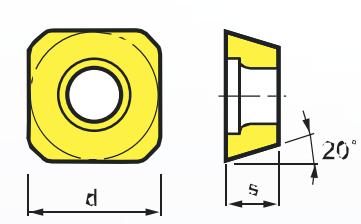

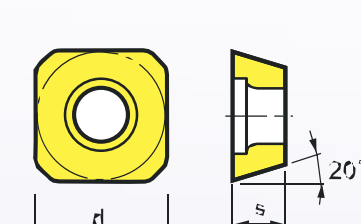
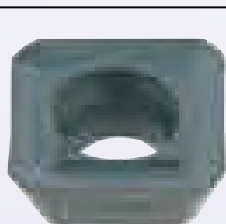
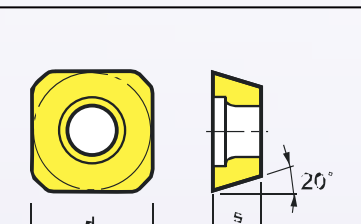
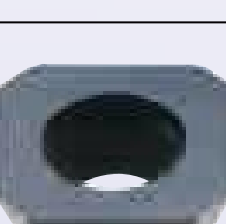
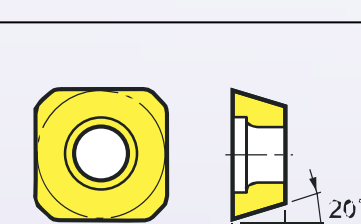
SF Chuck

SF Tool Principle





# KFM FACE MILLING CUTTER

ISO	P	Alloyed Steels	○	○	○	●								Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting		
	M	Stainless Steels	○	○	○	○										
	K	Cast Iron	○	○	○											
N	Aluminum&Al						□	□								
S	Refractory Alloys															
H	Hard Material	○														
Shape	Spec.	Layer coated micro grain					Micro grain cemented carbide				(mm)				Drawing	
		CHF					HF				Size					
		OM4010	OM4025	RM4025	RM4230	OM1025	OM5060	GH1					d	i		s
	★ SEHT1204AFEN-M01	●	●									13.4	-	3.97	2.55	
	SEHT1204AFEN-M02				●							13.4	-	3.97	2.55	
	SEHT1204AFFN						●	●								
	SEKT1204AFTN			●												
	SEKW1204AFN		●			●										

★ Recommended

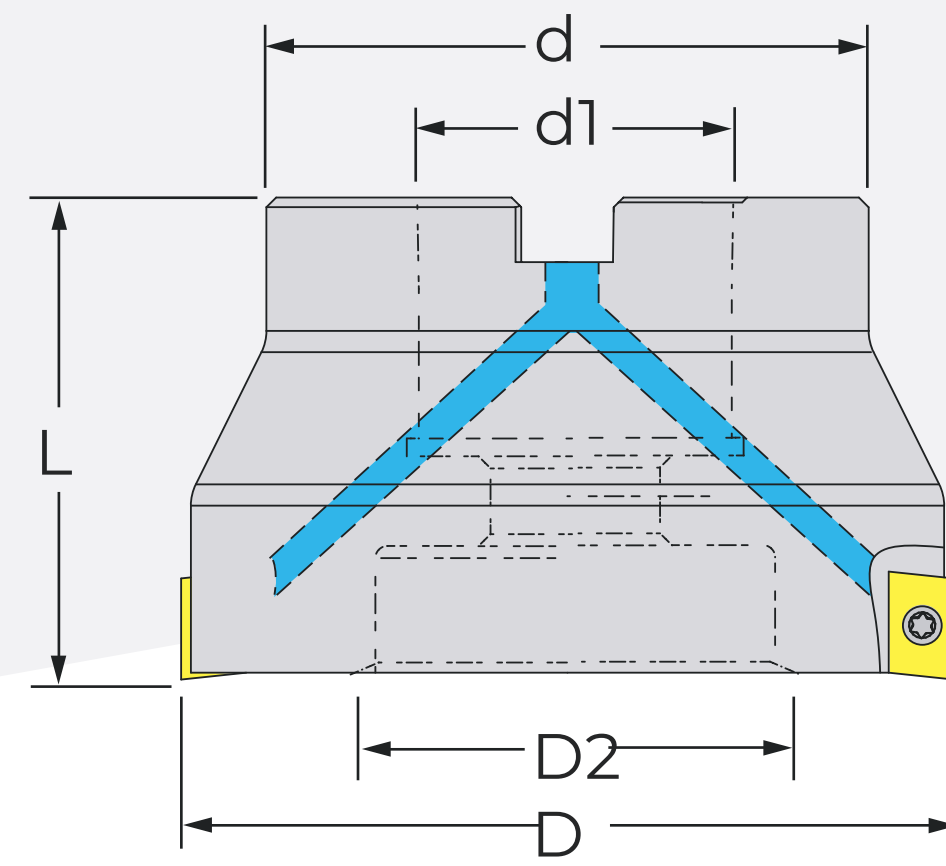
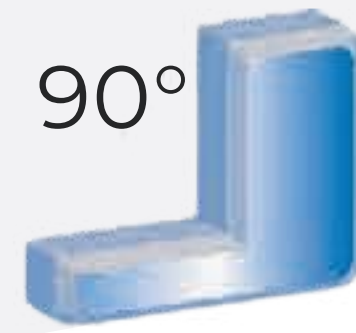
## SE\_12 Cutting Parameter

Machining Materials		Materials	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4010	260~320	0.20~0.45	1.0~3.0
		OM4025	220~260	0.20~0.45	1.0~3.0
		RM4025	220~260	0.20~0.45	1.0~3.0
P	Alloyed Steels	OM1205	100~195	0.05~0.15	1.0~2.0
		OM4010	130~250	0.20~0.35	1.0~3.0
		OM4025	100~195	0.05~0.15	1.0~2.0
		RM4025	100~195	0.20~0.35	1.0~3.0
M	Stainless Steels	OM4010	180~220	0.10~0.30	1.0~2.0
	OM4025	140~180	0.10~0.30	1.0~2.0	
M	Precipitation-Hardening	OM4010	90~120	0.15~0.20	0.2~1.0
		OM4025	70~85	0.15~0.20	0.2~1.0
K	Cast Iron	OM4010	160~300	0.12~0.35	1.0~3.0
		OM4025	180~300	0.15~0.35	1.0~3.0
N	Aluminum&Al	OM5060	500~850	0.15~0.35	3.6~6.0
		GH1	275~450	0.15~0.35	3.0~6.0

Unit of Length (mm)

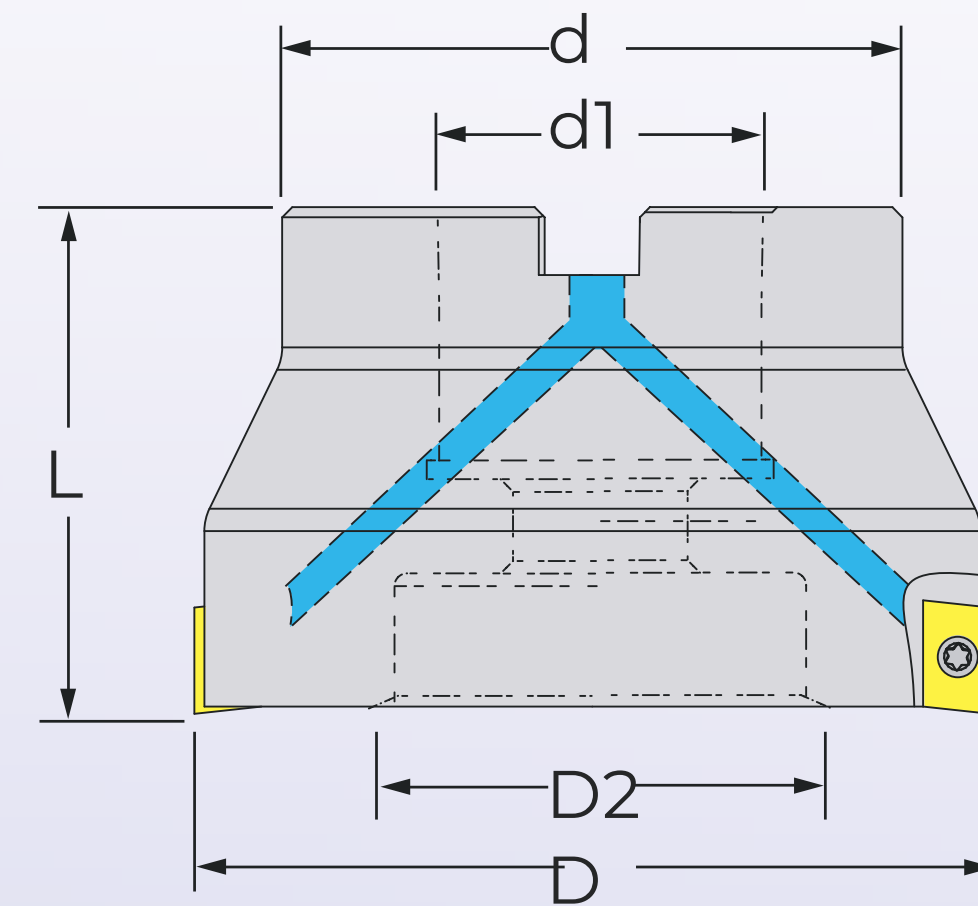
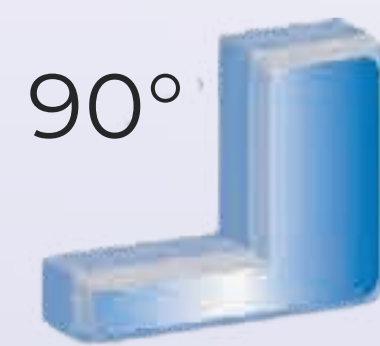
- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

## IFM FACE MILLING CUTTER



Spec.	L	D	D2	d	d1	Flutes	Insert	(KGS) Weight
IFM-50-FMB22-C	40	50	18	45	22	5	AP..1604	0.43
IFM-63-FMB22-C	40	63	18	48	22	5	AP..1604	0.57
IFM-80-FMB27-C	50	80	32	62	27	6	AP..1604	1.16
IFM-100-FMB32-C	50	100	42	78	32	7	AP..1604	1.90
IFM-125-FMB40-C	63	125	50	89	40	8	AP..1604	3.41

## IFM FACE MILLING CUTTER



Spec.	L	D	D2	d	d1	Flutes	Insert	(KGS) Weight
IFM-50-SF-FMB22-C	40	50	18	40	22	5	AP..1604	0.43
IFM-50-SF-FMA25.4-C	40	50	20	48.5	25.4	5	AP..1604	0.42
IFM-63-SF-FMB22-C	40	63	18	48	22	5	AP..1604	0.57
IFM-63-SF-FMA25.4-C	40	63	32	50	25.4	5	AP..1604	1.20
IFM-80-SF-FMB27-C	50	80	32	62	27	6	AP..1604	1.16
IFM-80-SF-FMA31.75-C	50	80	42	62	31.75	6	AP..1604	1.04
IFM-100-SF-FMB32-C	50	100	42	78	32	7	AP..1604	1.90
IFM-100-SF-FMA31.75-C	50	100	42	78	31.75	7	AP..1604	1.91
IFM-125-SF-FMB40-C	63	125	50	89	40	8	AP..1604	3.41
IFM-125-SF-FMA38.1-C	63	125	50	80	38.1	8	AP..1604	3.23

## Accessories

Insert	Screw	Wrench	(N.m) Torque
AP..1604	M4-10-5.7-60	T15	3.0

Unit of Length (mm)



# IFM FACE MILLING CUTTER

ISO	P	Alloyed Steels	○	○		○								Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting			
	M	Stainless Steels	○			○											
	K	Cast Iron	○		○												
N	Aluminum&Al						□	□	○	○							
S	Refractory Alloys					○											
H	Hard Material																
Shape	Spec.	Layer coated micro grain					Micro grain cemented carbide				(mm)				Drawing		
		CHF					HF				Size						
		OM4025	OM4025N	RM3130	RM4130	RM535					d	i	s	r			
	★ APEX1604PDFR-F01									●	●		9.525	16.4	4.76	-	
	★ APEX160400PDFR-F01									●	●		9.525	16.4	4.76	-	
	★ APEX160404PDFR-F01									●	●		9.525	16.4	4.76	0.4	
	★ APEX160408PDFR-F01									●	●		9.525	16.4	4.76	0.8	
	APEX1604PDFR-701									●			9.525	16.4	4.76	0.2	
	APGT1604PDFR-G2										●		9.525	16.5	4.76	0.8	
	APGT160408PDFR-F02										●		9.525	16.4	4.76	0.8	
	APKT1604PDER-M05										●		9.525	16.4	4.76	0.4	
	APKT160408PDER-M02				●	●							9.525	16.4	4.76	0.8	
	★ APKT160408-M01	●	●										9.525	16.6	4.76	0.8	

★ Recommended

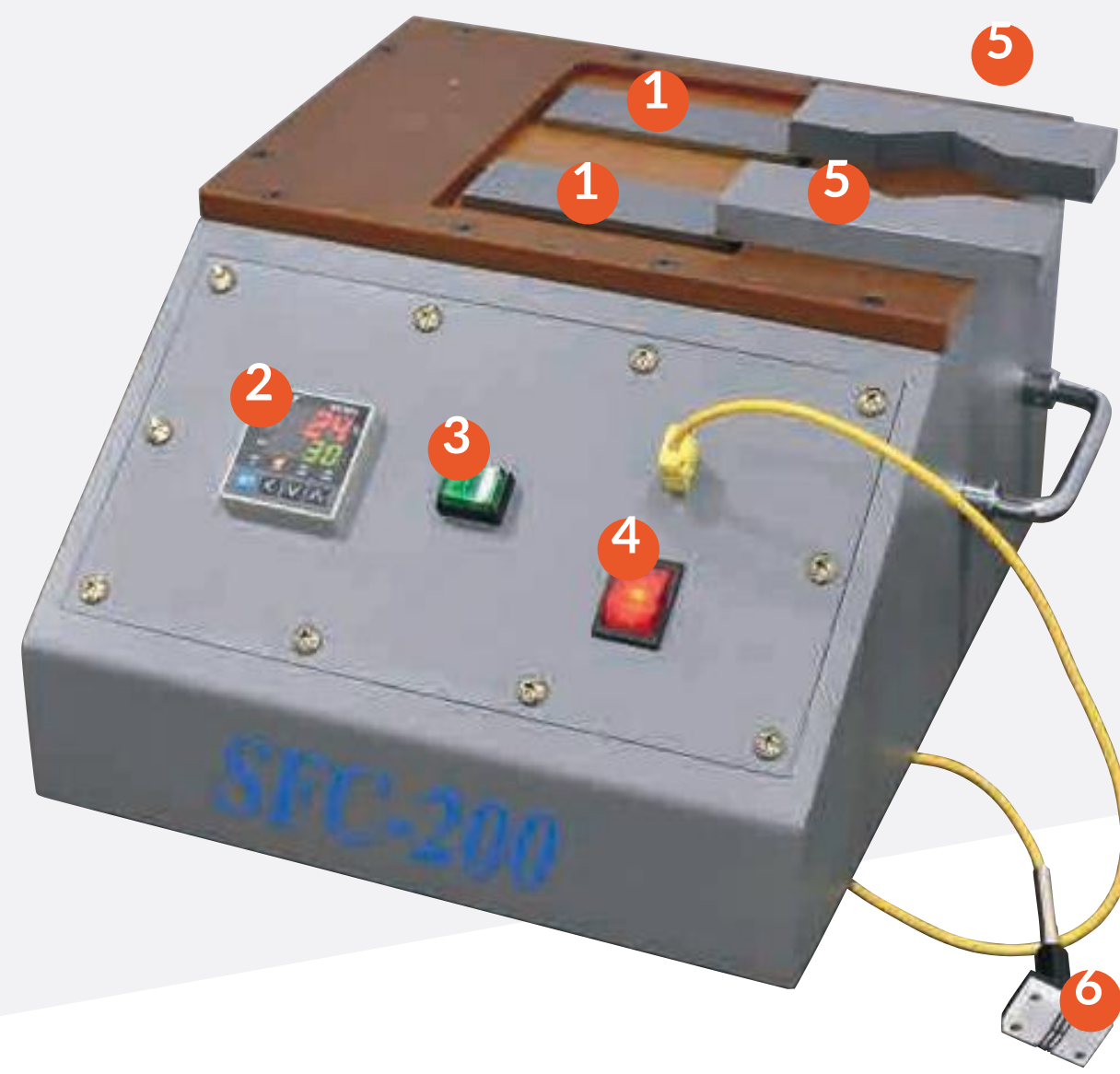
## SE\_12 Cutting Parameter

Machining Materials		Materials	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	Low-Alloy Steels	OM4025	120~300	0.15~0.40	3.0~8.0
		OM4025N	120~300	0.15~0.40	3.0~8.0
		RM4130	60~300	0.10~0.25	3.0~8.0
P	Alloyed Steels	OM4025	80~180	0.15~0.35	3.0~8.0
		RM4130	60~300	0.10~0.25	3.0~8.0
M	Stainless Steels	OM4025	120~160	0.15~0.35	3.0~8.0
		RM4130	120~160	0.10~0.25	3.0~8.0
K	Cast Iron	OM4025	160~250	0.15~0.30	3.0~8.0
		RM3130	160~250	0.15~0.30	3.0~8.0
N	Aluminum&Al	OM5005	400~1000	0.04~0.20	3.0~8.0
		OM5060	400~1000	0.04~0.20	3.0~8.0
		RM5005	400~1000	0.04~0.20	3.0~8.0
		GH05	300~800	0.04~0.20	3.0~8.0
S	Refractory Alloys	RM535	20~40	0.10~0.20	1.0~3.0

Unit of Length (mm)

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

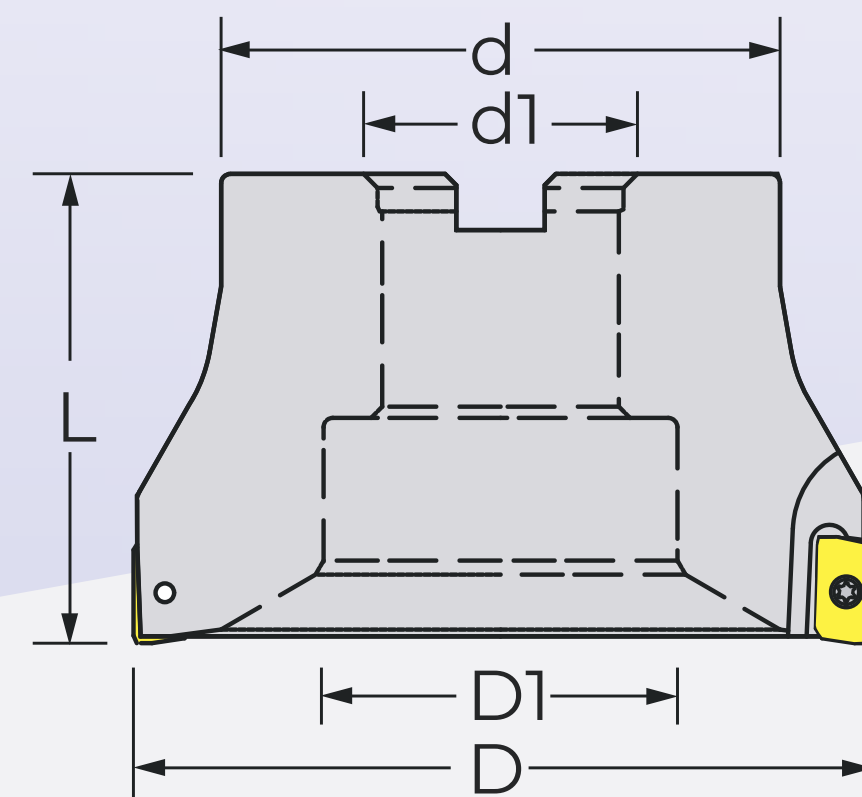
# SFC SHRINK-FIT MACHINE



- ① Positive and negative poles face
- ② Microcomputer Temperature Controller
- ③ Start heating
- ④ Turn on the power
- ⑤ V block
- ⑥ Temperature Stick

Spec.	SFC-200
Voltage	220V(Single-phase)
Out put	15A
Uni dimension (mm)	350(L)x190(W)x400(H)
Weight (KGS)	32
Cooling system	Gas-cooled
Range	Ø50~Ø160mm Face milling cutter
Heating time	Heating face milling cutter to 150°C ~ 160°C for 4 ~ 6 minutes. (Depending on the size and shape of face milling cutters may be.)
Cutting tool type	Required special type of supplemental cutting tool.
Tool Material	Special alloy steel
Function	Using the principle of heating to expand the inner hole to match tightly with the face milling shank.

# BAP SQUARE SHOULDER SHELL MILLING CUTTER



Spec.	L	D	D2	d	d1	Flutes	Insert	(KGS) Weight
BAP-500-FMB22-11	40	50	18	40	22	7	AP..1135	0.40
BAP-630-FMB22-11	40	63	18	50	22	8	AP..1135	0.66
BAP-630-FMA25.4-11	40	63	19	50	25.4	8	AP..1135	0.80
BAP-800-FMB27-11	50	80	43	60	27	9	AP..1135	1.20
BAP-800-FMA31.75-11	50	80	43	60	31.75	9	AP..1135	1.20
BAP-1000-FMB32-11	50	100	43	78	32	11	AP..1135	2.08
BAP-1000-FMA31.75-11	50	100	43	78	31.75	11	AP..1135	2.09

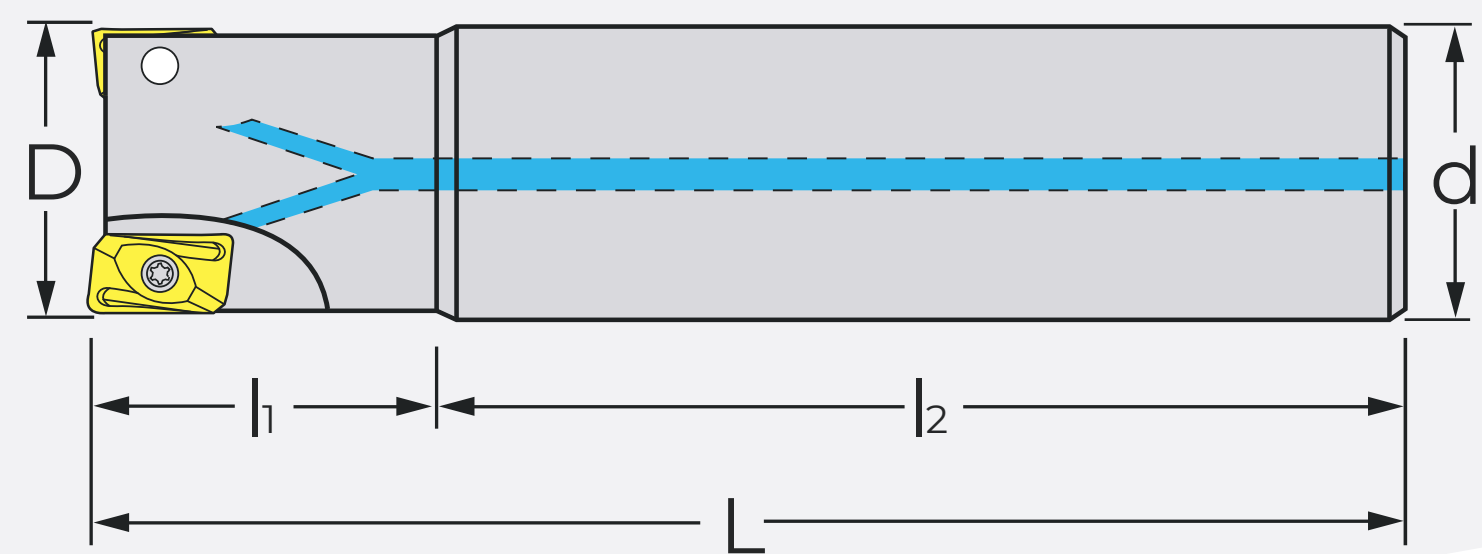
## Accessories

Insert	Screw	Wrench	(N.m) Torque
AP..1135	M2.5-6.0-3.5-60	T8	1.2

Unit of Length (mm)



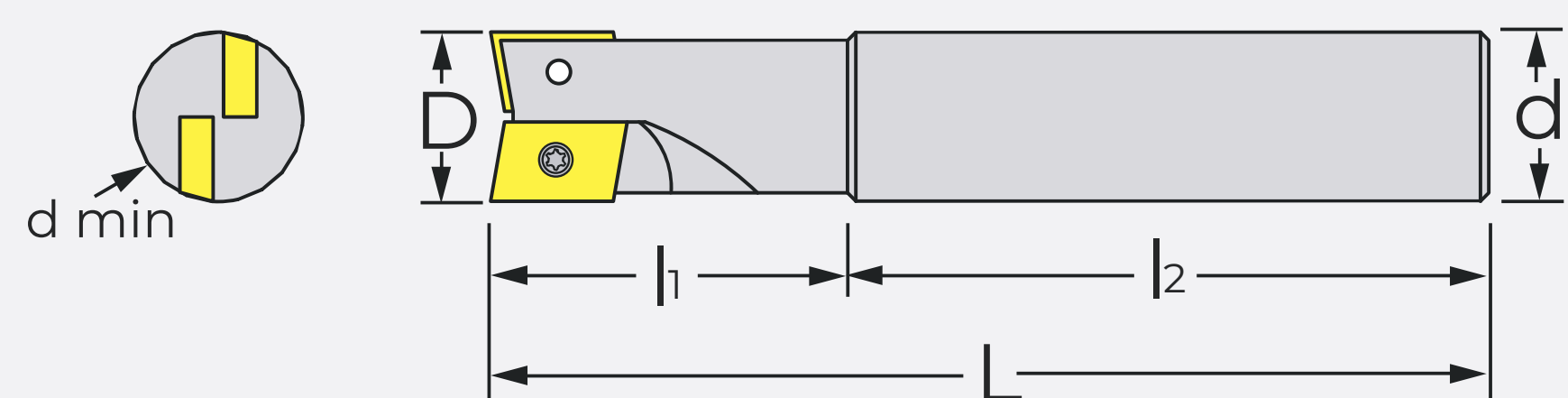
## M104 INDEXABLE SQUARE SHOULDER END MILL



Spec.	D-0.1	d	L	l1	l2	Flutes	Insert	Screw	Wrench	(N.m) Torque	(KGS) Weight
M104AP1190-1012-100-1T-C	10	12	100	25	75	1	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.10
M104AP1190-1212-100-1T-C	12	12	100	30	70	1	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.10
M104AP1190-1516-200-2T-C	15	16	200	30	170	2	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	-
M104AP1190-1616-120-2T-C	16	16	120	30	90	2	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.17
M104AP1190-1616-160-2T-C	16	16	160	30	130	2	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.31
M104AP1190-1716-150-2T-C	17	16	150	30	120	2	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.24
M104AP1190-1820-100-2T-C	18	20	100	28	72	2	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	-
M104AP1190-1920-200-2T-C	19	20	200	35	165	2	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.34
M104AP1190-2020-120-2T-C	20	20	120	35	85	2	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.28
M104AP1190-2020-150-2T-C	20	20	150	35	115	2	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.38
M104AP1190-2020-150-3T-C	20	20	150	35	115	3	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.34
M104AP1190-2020-200-3T-C	20	20	200	35	165	3	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.46
M104AP1190-2120-150-3T-C	21	20	150	35	115	3	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	-
M104AP1190-2220-150-3T-C	22	20	150	35	115	3	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.34
M104AP1190-2320-150-3T-C	23	20	150	35	115	3	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.50
M104AP1190-2525-150-3T-C	25	25	150	35	115	3	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	-
M104AP1190-2525-150-4T-C	25	25	150	35	115	4	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	-
M104AP1190-2625-150-4T-C	26	25	150	35	115	4	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.54
M104AP1190-3032-150-4T-C	30	32	150	45	115	4	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	-
M104AP1190-3132-150-4T-C	31	32	150	45	115	4	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.87
M104AP1190-3232-150-5T-C	32	32	150	45	115	5	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.86
M104AP1190-3332-150-5T-C	33	32	150	45	115	5	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.87
M104AP1190-3532-150-5T-C	35	32	150	45	115	5	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	0.94
M104AP1190-4032-150-6T-C	40	32	150	45	115	6	AP..1135	M2.5-5.5-3.3-60-T8-TIN	T8	1.2	1.04
M104AP1690-2525-150-2T-C	25	25	150	40	110	2	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	0.54
M104AP1690-2525-220-2T-C	25	25	220	40	180	2	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	0.80
M104AP1690-2525-300-2T-C	25	25	300	40	260	2	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	1.11
M104AP1690-2625-150-2T-C	26	25	150	40	110	2	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	0.55
M104AP1690-3232-150-3T-C	32	32	150	45	105	3	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	0.84
M104AP1690-3232-250-3T-C	32	32	250	45	205	3	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	1.54
M104AP1690-3232-300-3T-C	32	32	300	45	255	3	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	1.75
M104AP1690-3332-150-3T-C	33	32	150	45	105	3	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	0.84
M104AP1690-3532-300-3T-C	35	32	300	45	255	3	AP..1604	M4-10-5.4-60-T15-TIN	T15	3.0	1.82

Unit of Length (mm)


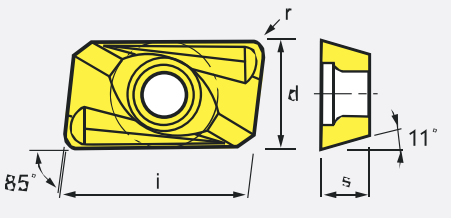
## ASSM INDEXABLE SQUARE SHOULDER END MILL





Spec.	L	I1	I1	D	d	Flutes	Insert	Screw	Wrench	(N.m) Torque	(KGS) Weight
ASSM-1012-100L	100	23	75	10	12	1	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.09
ASSM-1212-100L	100	30	70	12	12	1	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.10
ASSM-1615-150L	150	30	120	16	15	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.21
ASSM-1615-200L	200	30	170	16	15	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.28
ASSM-1616-120L	120	30	90	16	16	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.19
ASSM-1616-160L	160	30	130	16	16	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.25
ASSM-1716-150L	150	30	120	17	16	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.26
ASSM-2019-150L	150	35	115	20	19	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.34
ASSM-2019-200L	200	35	165	20	19	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.36
ASSM-2020-120L	120	35	85	20	20	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.30
ASSM-2020-150L	150	35	115	20	20	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.38
ASSM-2020-200L	200	35	165	20	20	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.50
ASSM-2120-150L	150	35	115	21	20	2	AP..1135	M2.5-6.0-3.5-60	T8	1.2	0.38
ASSM-2525-150L	150	40	110	25	25	2	AP..1604	M4-8.0-5.7-60	T15	3.0	0.55
ASSM-2525-220L	220	40	180	25	25	2	AP..1604	M4-8.0-5.7-60	T15	3.0	0.83
ASSM-2525-300L	300	40	260	25	25	2	AP..1604	M4-8.0-5.7-60	T15	3.0	1.13
ASSM-2625-150L	150	40	110	26	25	2	AP..1604	M4-8.0-5.7-60	T15	3.0	0.58
ASSM-3232-150L	150	45	105	32	32	2	AP..1604	M4-10-5.7-60	T15	3.0	0.90
ASSM-3232-250L	250	45	205	32	32	3	AP..1604	M4-10-5.7-60	T15	3.0	1.53
ASSM-3232-300L	300	45	255	32	32	3	AP..1604	M4-10-5.7-60	T15	3.0	1.84
ASSM-3332-150L	150	45	105	33	32	2	AP..1604	M4-10-5.7-60	T15	3.0	0.92
ASSM-3532-200L	200	45	155	35	32	3	AP..1604	M4-10-5.7-60	T15	3.0	1.24
ASSM-3532-250L	250	45	205	35	32	3	AP..1604	M4-10-5.7-60	T15	3.0	1.58
ASSM-3532-300L	300	45	255	35	32	3	AP..1604	M4-10-5.7-60	T15	3.0	1.87

## RIGHT ANGLE MILLING INSERT

Shape	Spec.	Layer coated micro grain			(mm)				Drawing
		CHF			Size				
		RM4130	RM4110		d	i	s	r	
	APMT113508PDER-M04	●	●		6.35	11	3.5	0.8	
	APMT1135PDER-M04	●			6.35	11	3.5	0.4	
	APMT1604PDER-M04	●	●		9.525	16.5	4.76	0.8	

## AP\_11.16 Cutting Parameter

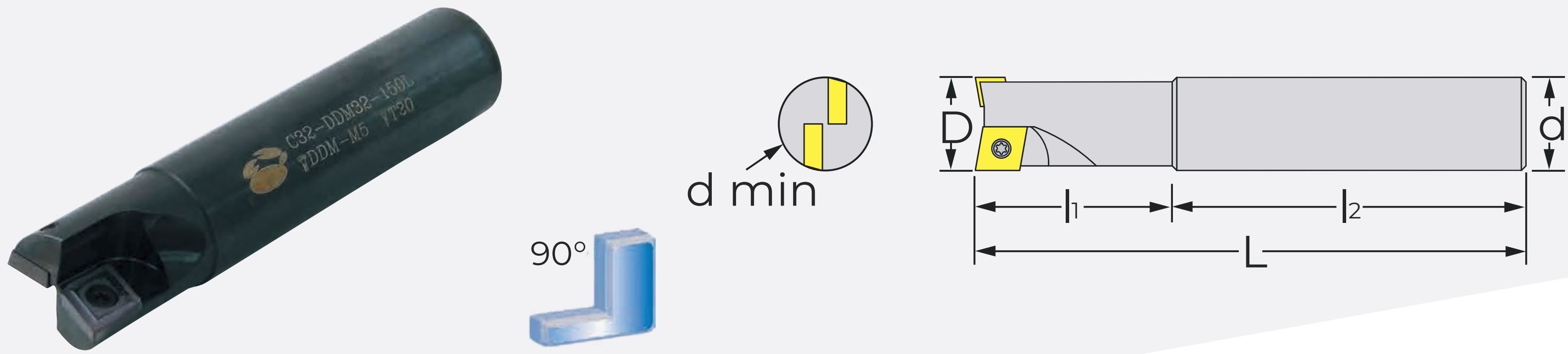
Machining Materials		Grade	Vc(m/min)	fz(mm/rev)
P	Low-Alloy Steels	RM4130	80~370	0.08~0.35
	Alloyed Steels	RM4130	60~250	0.10~0.25
		RM4110	100~160	0.07~0.15
M	Stainless Steels	RM4130	110~180	0.10~0.25
H	Hard Material	RM4110	100~150	0.05~0.15

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)



## DDM DRILLING END MILL CUTTER

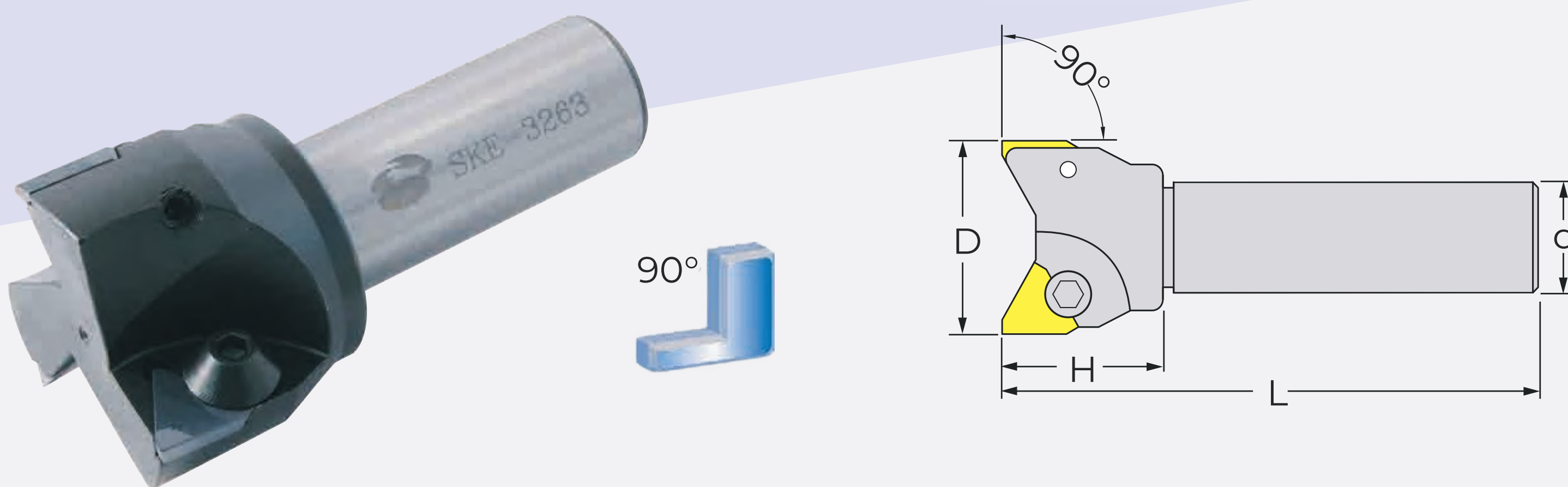


### Feature

- Made of anti-vibration tool steel
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	L	l1	l1	D	d	Flutes	Insert	Screw	Wrench	(N.m) Torque	(KGS) Weight
C10-DDM10-130L	130	30	100	10	10	1	CC..0602	M2.5-5.5-3.35-60	T8	1.2	0.09
C12-DDM12-120L	120	30	90	12	12	1	CP..0802	M2.5-5.5-3.35-60	T8	1.2	0.11
C12-DDM12-150L	150	40	110	12	12	1	CP..0802	M2.5-5.5-3.35-60	T8	1.2	0.14
C16-DDM16-120L	120	30	90	16	16	2	CC..0602	M2.5-5.5-3.35-60	T8	1.2	0.19
C16-DDM16-175L	175	40	135	16	16	2	CP..0802	M2.5-6.45-3.7-43	T8	1.2	0.19
C20-DDM20-120L	120	30	90	20	20	2	CC..0602	M2.5-5.5-3.35-60	T8	1.2	0.31
C20-DDM20-185L	185	50	135	20	20	2	CP..0902	M3.5-6.0-5.0-60	T15	3.0	0.46
C25-DDM25-150L	150	40	110	25	25	2	CP..0903	M4-8.75-5.6-60	T15	3.0	0.55
C25-DDM25-220L	220	70	150	25	25	2		M4-8.75-5.6-60	T15	3.0	0.82
C25-DDM25-300L	300	170	130	25	25	2	CP..1203	M4-8.75-5.6-60	T15	3.0	1.14
C32-DDM25-300L	300	170	130	25	32	2	CP..1204	M4-8.75-5.6-60	T15	3.0	1.58
C32-DDM32-150L	150	40	110	32	32	2		M5-11-7.5-60	T20	5.0	0.86
C32-DDM32-250L	250	80	170	32	32	2		M5-11-7.5-60	T20	5.0	1.50
C32-DDM32-300L	300	80	220	32	32	2		M5-11-7.5-60	T20	5.0	1.85
C32-DDM32-350L	350	80	270	32	32	2	CP..1604	M5-11-7.5-60	T20	5.0	2.18
C32-DDM40-170L	170	50	120	40	32	2	CP..1604	M5-11-7.5-60	T20	5.0	1.09
C32-DDM40-250L	250	50	200	40	32	2	CP..1904	M6-12-8.4-60	T25	7.5	1.63

## SKE 90° INDEXABLE SQUARE SHOULDER MILLING CUTTER



### Feature

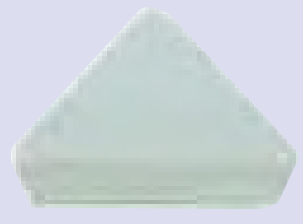
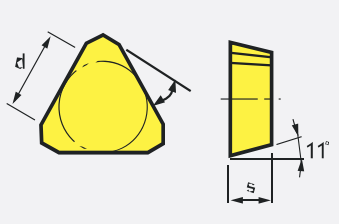

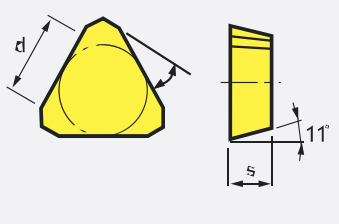
- Made of anti-vibration tool steel
- After the heat treatment, we will finish the cutter again for better accuracy.

Unit of Length (mm)

Spec.	L	D	d	H	Flutes	Insert	(KGS) Weight
SKE-2020	90	20	20	30	2	TP..1102	0.21
SKE-2025	100	25	20	30	2	TP..1102	0.26
SKE-2030	100	30	20	30	2	TP..1603	0.27
SKE-2035	100	35	20	40	2	TP..1603	0.32
SKE-2535	105	35	25	40	2	TP..1603	0.43
SKE-3235	110	35	32	40	2	TP..1603	0.64
SKE-2040	110	40	20	40	3	TP..1603	0.39
SKE-2540	110	40	25	40	3	TP..1603	0.48
SKE-3240	115	40	32	40	3	TP..1603	0.70
SKE-2045	105	45	20	40	3	TP..1603	0.48
SKE-2050	105	50	20	40	3	TP..1603	0.52
SKE-2550	110	50	25	40	3	TP..1603	0.63
SKE-3250	115	50	32	40	3	TP..1603	0.84
SKE-3263	125	63	32	45	3	TP..2204	1.20

## Accessories

Insert	Screw	Wrench	(N.m) Torque
TP..1102	M5-0.8P	T15	3.0
TP..1103	M5-0.8P	T15	3.0
TP..1603	M6-0.75P	PL4	5.0
TP..2204	M8-1.0P	PL5	6.0

Shape	Spec.	Carbide alloy			(mm)				Drawing
		HW			Size				
		TSP20	TSP25	TSK10	d	i	s	r	
	TPKN1603PDR		●	●	9.525	-	3.18	-	
	TPKN2204PDR	●		●	12.7	-	4.76	-	
	TPMN160308		●	●	9.525	-	3.18	0.8	
	TPMN220412	●		●	12.7	-	4.76	1.2	

## TP\_16.22 Cutting Parameter

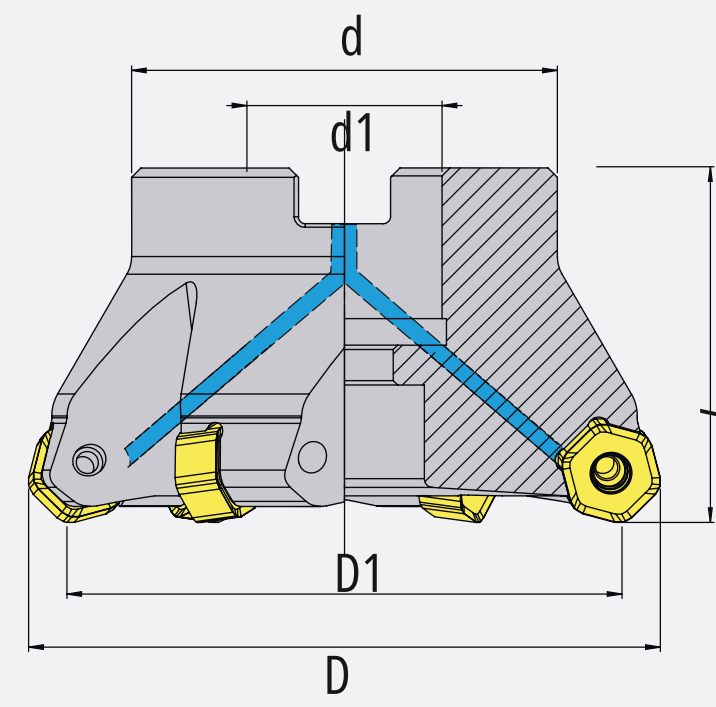
Machining Materials		Grade	Vc(m/min)	fz(mm/rev)
P	Low-Alloy Steels	TSP20	125~200	0.1~0.3
		TSP25	125~200	0.1~0.3
P	Alloyed Steels	TSP20	50~100	0.1~0.2
		TSP25	50~100	0.1~0.2
K	Cast Iron	TSK10	80~120	0.1~0.3

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)



## NAC 45°NEGATIVE ANGLE SHELL MILLING CUTTER

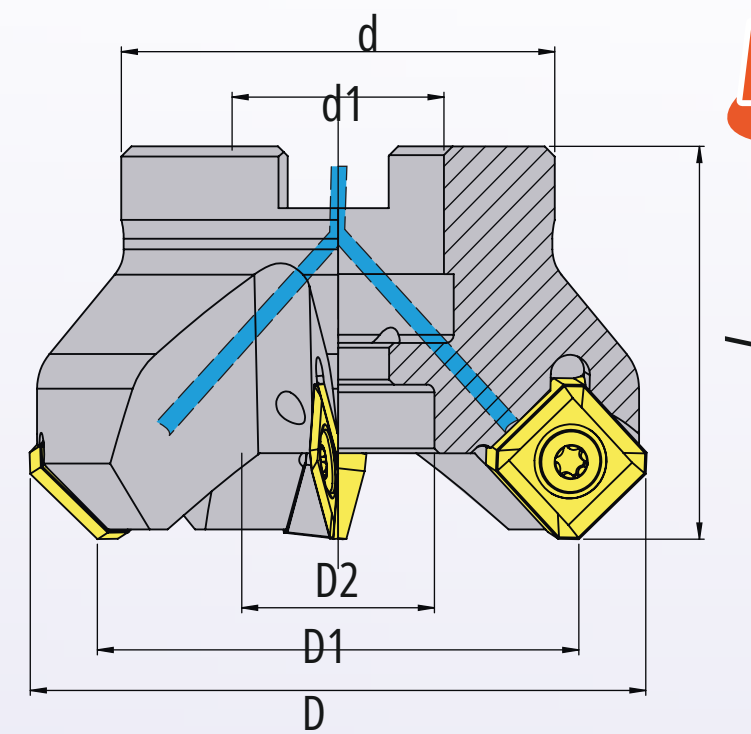


### Feature

- Negative insert with 8 cutting edges. Effective cost-saving.
- Ideal for a large area of cutting.

Spec.	L	D	D1	d	d1	Flutes	Insert	(KGS) Weight
NAC45-50-HN06-FMB22-5T-C	40	57	50	45	22	5	HN..0604	0.64
NAC45-63-HN06-FMB22-6T-C	40	72	63	48	22	6	HN..0604	0.80
NAC45-80-HN06-FMB27-7T-C	50	87	80	55	27	7	HN..0604	1.40
NAC45-100-HN06-FMB32-8T-C	50	107	100	73	32	8	HN..0604	2.10

## NAC 45°NEGATIVE ANGLE SHELL MILLING CUTTER



### Feature

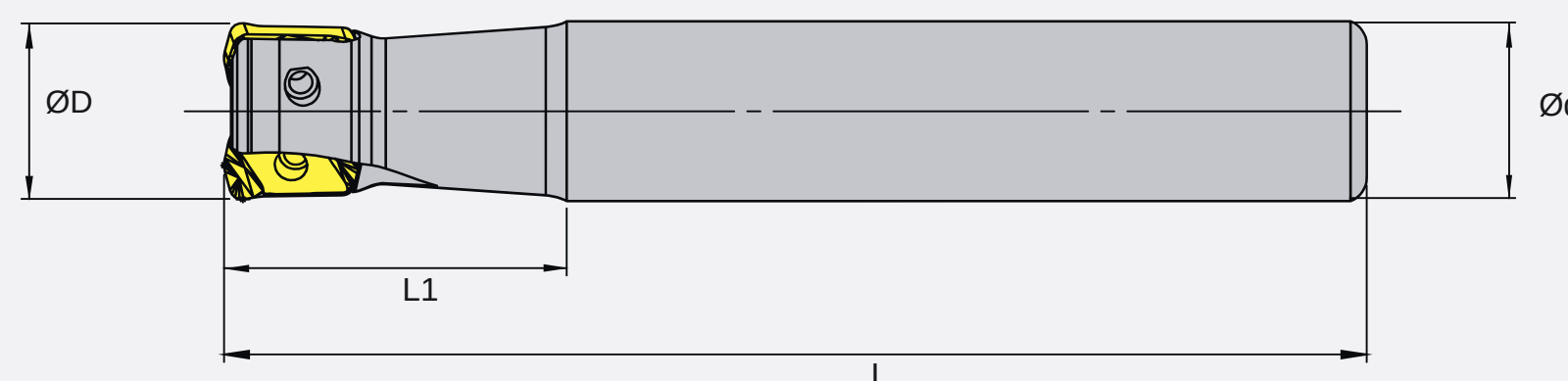
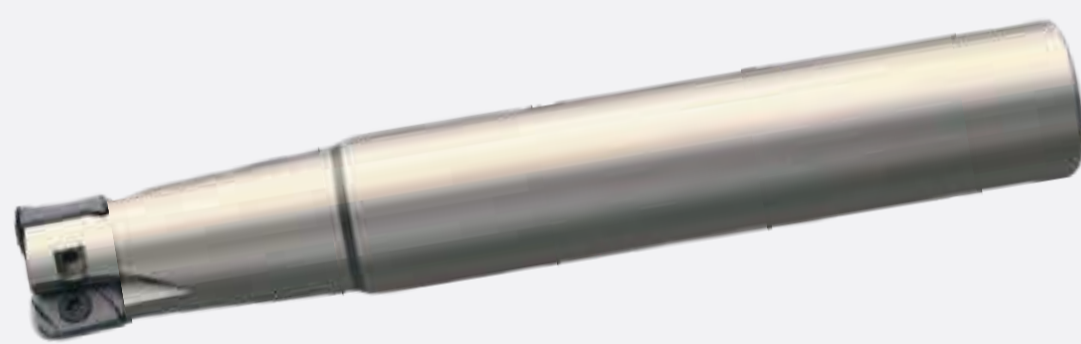
- Negative insert with 12 cutting edges. Effective cost-saving.
- Ideal for a large area of cutting.

Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
NAC45-50-SN12-FMB22-4T-C	50		40	27		22	4	SN..1206	0.57
NAC45-63-SN12-FMB22-6T-C	63		40	27		22	6	SN..1206	0.78
NAC45-80-SN12-FMB27-7T-C	80		50	32		27	7	SN..1206	1.39
NAC45-100-SN12-FMB32-8T-C	100		50	42		32	8	SN..1206	1.76
NAC45-125-SN12-FMB40-10T-C	125		63	50		40	10	SN..1206	3.5
NAC45-160-SN12-FMB40-12T-C	160		63	50		40	12	SN..1206	6

### Accessories

Insert	Screw	Wrench	(N.m) Torque
HN..0604	M3-7.0-4.3-43-T9-TIN	T19	1.4Nm
SN..1206	M4-7.1-13.6-60	T15	3.0m

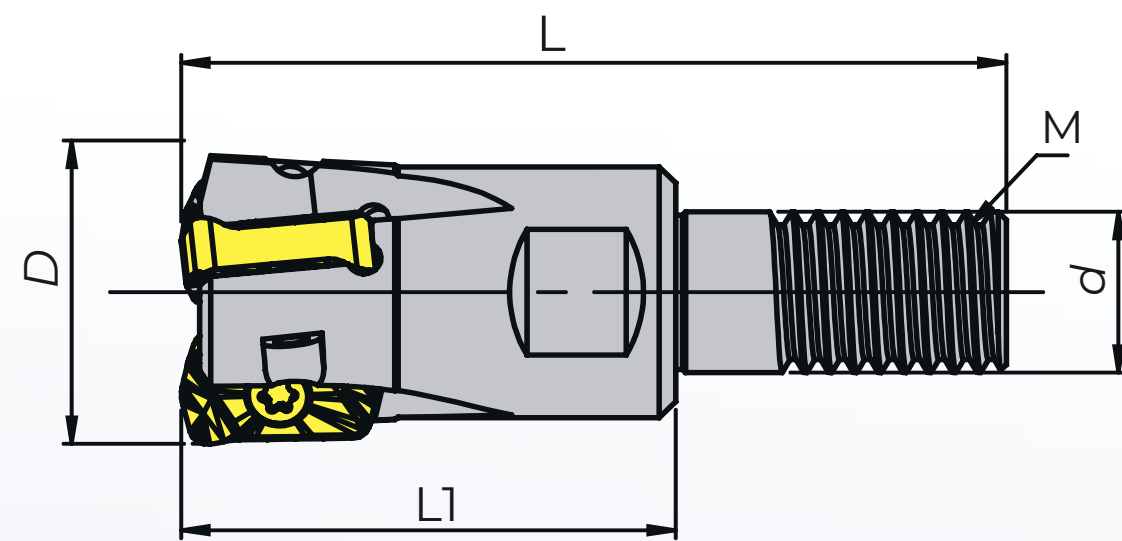
## NHF HIGH FEED MILLING END MILL



Unit of Length (mm)

Spec.	L	I1	D	d	T	Insert	(KGS) Weight
NHF-1516LN03-150L	150	30	15	16	2	LNMU0303	T8
NHF-1616LN03-150L	150	40	16	16	2		
NHF-1716LN03-150L	150	30	17	16	2		
NHF-2020LN03-150L	150	40	20	20	3		
NHF-2120LN03-150L	150	50	21	20	3		
NHF-2525LN03-150L	150	60	25	25	4		
NHF-2625LN03-150L	150	60	26	25	4		
NHF-2625LN03-200L	200	60	26	25	4		
NHF-3232LN03-150L	150	45	32	32	5		
NHF-3532LN03-220L	220	60	35	32	5		

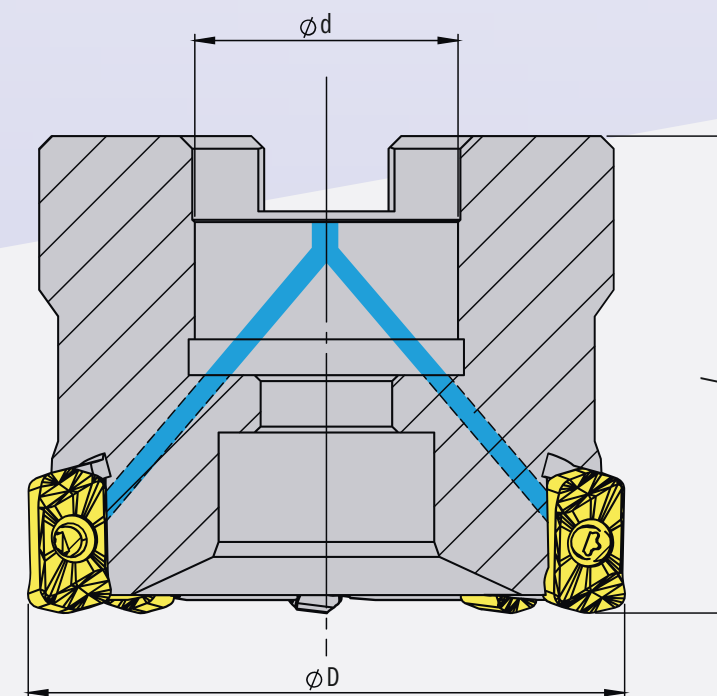
## NHF HIGH FEED SCREW-ON MILLING END MILL



Spec.	L	I1	D	d	M	T	Insert	(KGS) Weight
NHF-17M08-LN03	43	26	17	8.5	M08	2	LNMU0303	T8
NHF-21M10-LN03	49	30	21	8.5	M10	3		
NHF-26M12-LN03	57	35	26	8.5	M12	4		
NHF-35M16-LN03	66	43	35	8.5	M16	4		

## NHF HIGH FEED FACE MILLING CUTTER


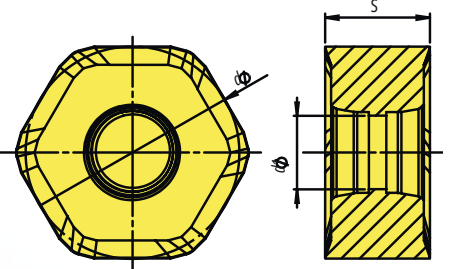

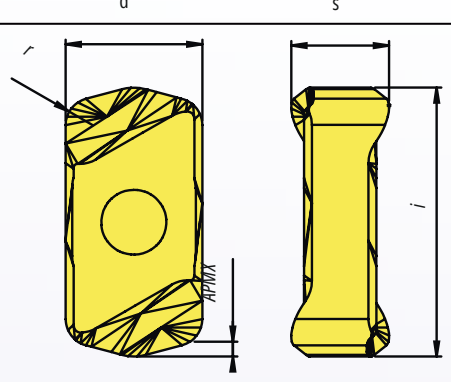
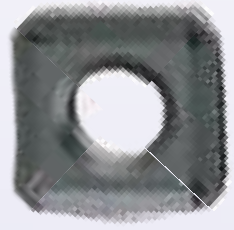
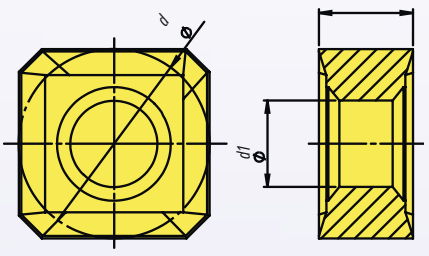
**NEW**



Spec.	D	d	L	M	T
NHF-40-FMB16-LN03-C	40	16	40	M8	6
NHF-50-FMB22-LN03-C	50	22	50	M10	8

Unit of Length (mm)



ISO	P	Alloyed Steels	○	○									Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting	
	M	Stainless Steels	○	○										
	K	Cast Iron	○	○										
	N	Aluminum&Al												
	S	Refractory Alloys												
	H	Hard Material	○											
Shape	Spec.	Layer coated micro grain					Micro grain cemented carbide			(mm)				Drawing
		CHF					HF			Size				
		RM1125	OM4025	OM5035	RM4025	RM3130		OM5005			d	i	s	
	HNGX0604ANEN-M01		●	●			●			10.5	-	5.2	-	
	LNMU0303ZER-MJ	●								6	11.9	4.3	1.2	
	SNMU1206ANEN-M01				●	●				12.7	-	6.35	-	

### LN 03 Cutting Parameter

	Machining Materials	Grade	Vc(m/min)	fz(mm/rev)
P	Alloyed Steels	RM1125	150(100~200)	0.7(0.5~1.2)
K	Cast Iron	RM1125	150(80~250)	0.7(0.5~1.2)

### HN 06 Cutting Parameter

	Machining Materials	Grade	Vc(m/min)	fz(mm/rev)
P	Alloyed Steels	OM4025	220(150~300)	0.15(0.08~0.25)
M	Stainless Steels	OM5035	120(100~200)	0.12(0.08~0.20)
K	Cast Iron	OM4025	180(130~240)	0.15(0.08~0.25)

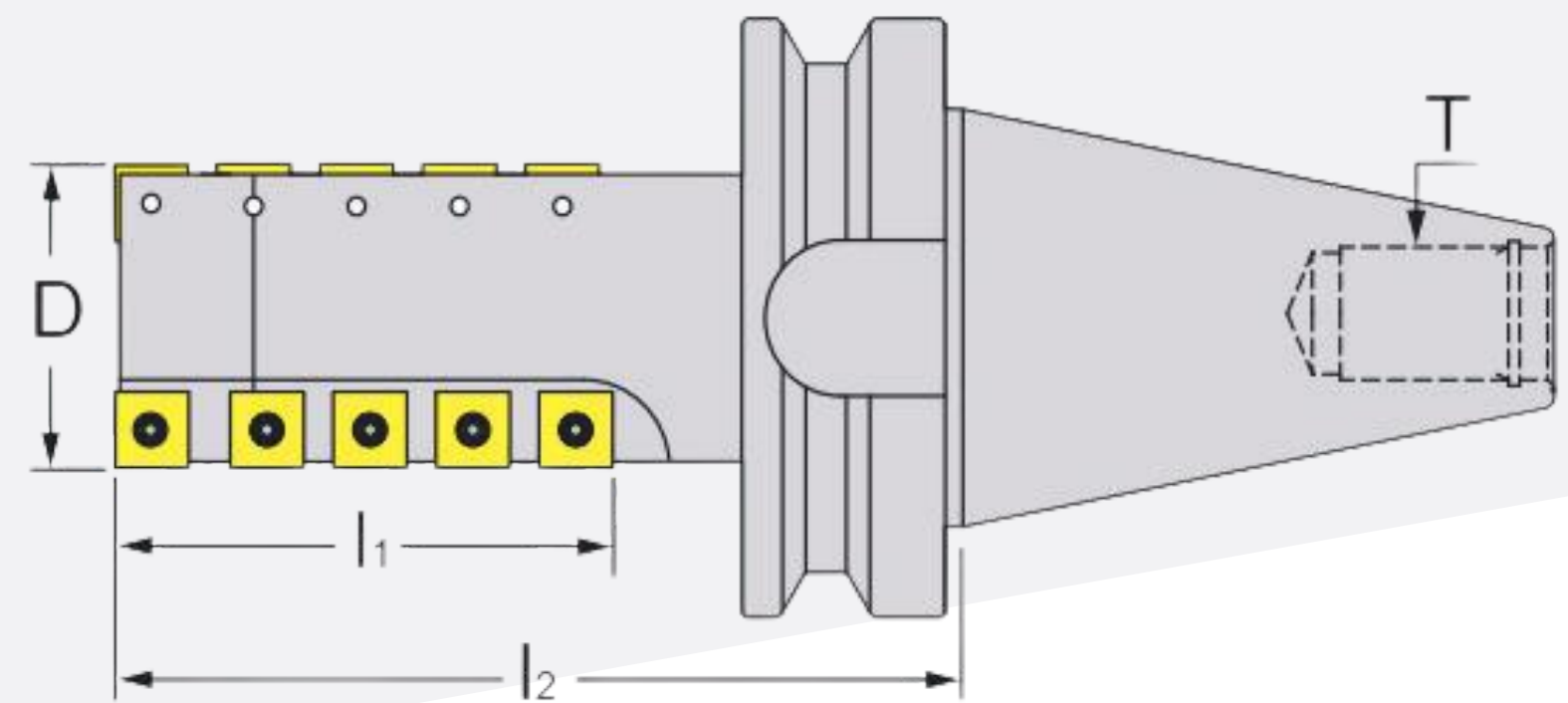
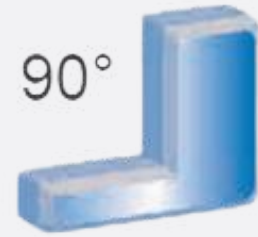
### SN 12 Cutting Parameter

	Machining Materials	Grade	Vc(m/min)	fz(mm/rev)
P	Alloyed Steels	RM4025	220(170~320)	0.20(0.10~0.35)
K	Cast Iron	RM3130	180(130~240)	0.20(0.10~0.35)

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)

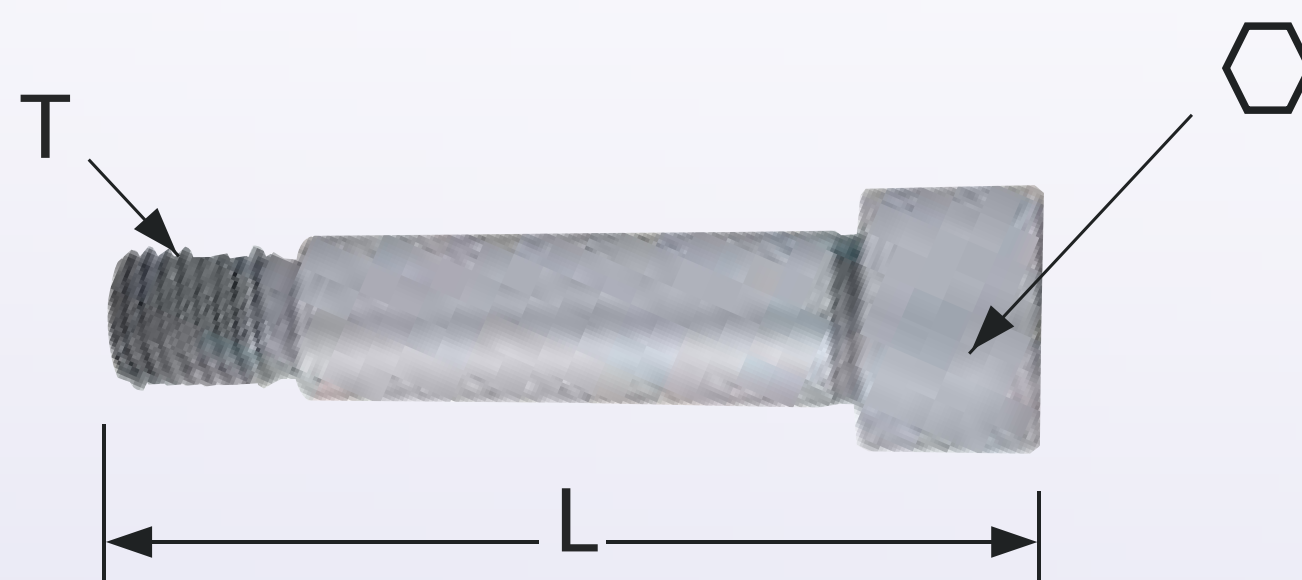
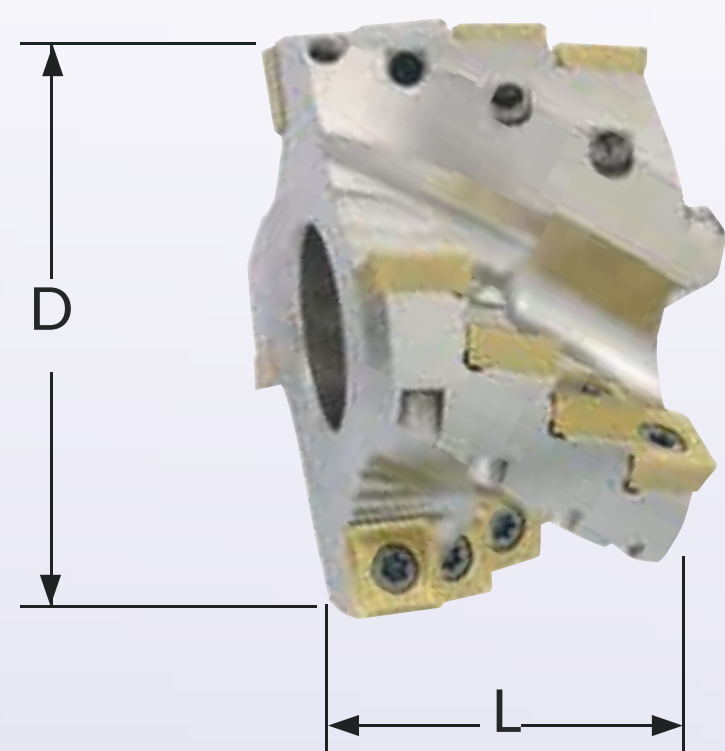
## BT/CBMC INDEXABLE ROUGH CUTTING END MILL



Spec.	l1	l2	D	T	Flutes	Insert	Insert Qty	(KGS) Weight
BT50-CBMC63-200L	200	285	63	M24×3.0P	3	SP..1204	57	7.40
BT50-CBMC63-260L	260	345	63	M24×3.0P	3	SP..1204	75	8.10
BT50-CBMC80-200L	200	285	80	M24×3.0P	4	SP..1204	76	10.0

### Accessories

Insert	Screw	Wrench	(N.m) Torque
SP..1204	M5-10-6.3-43	T20K	5.0



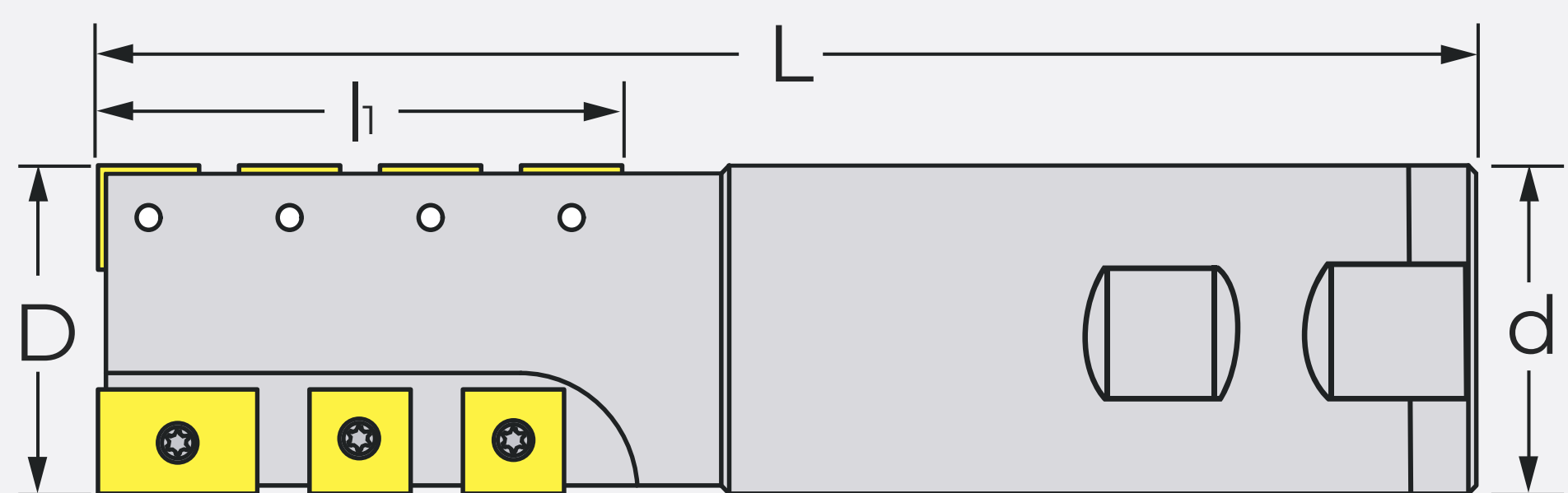
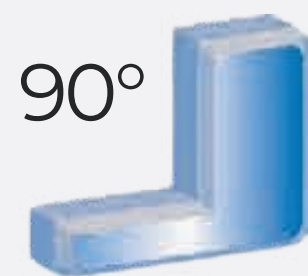
### Example



Spec.	L	D	Flutes	Insert Qty.	(KGS) Weight
CBMC63-42L	42	63	3	12	0.60
CBMC80-42L	42	80	4	16	1.00

Spec.	L	T	Wrench	(KGS) Weight
CBMC63-M16-83L	83	M16	10	0.14
CBMC80-M16-93L	93	M16	12	0.20

## SPE ROUGH CUTTING END MILL



Unit of Length (mm)

### Feature

- Made of anti-vibration tool steel.
- After the heat treatment, we will finish the cutter again for better accuracy.

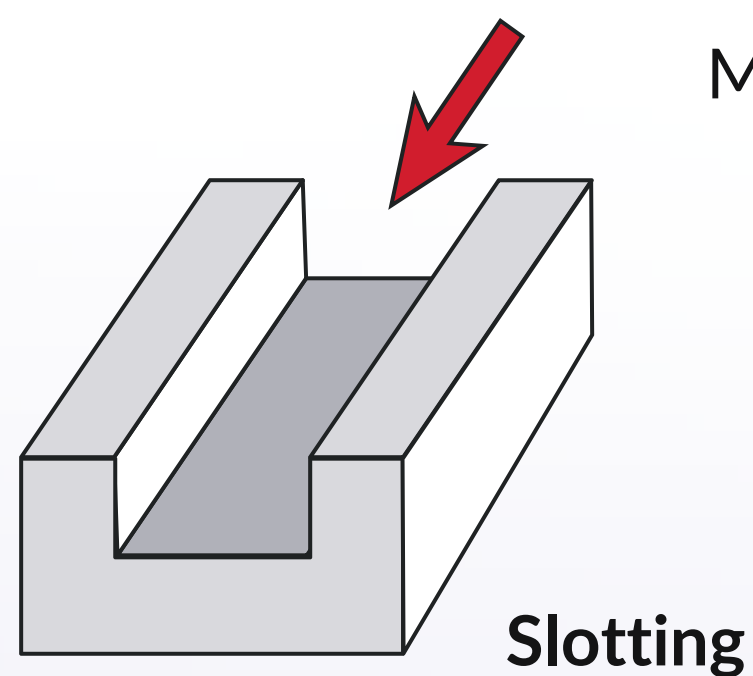


# SPE ROUGH CUTTING END MILL

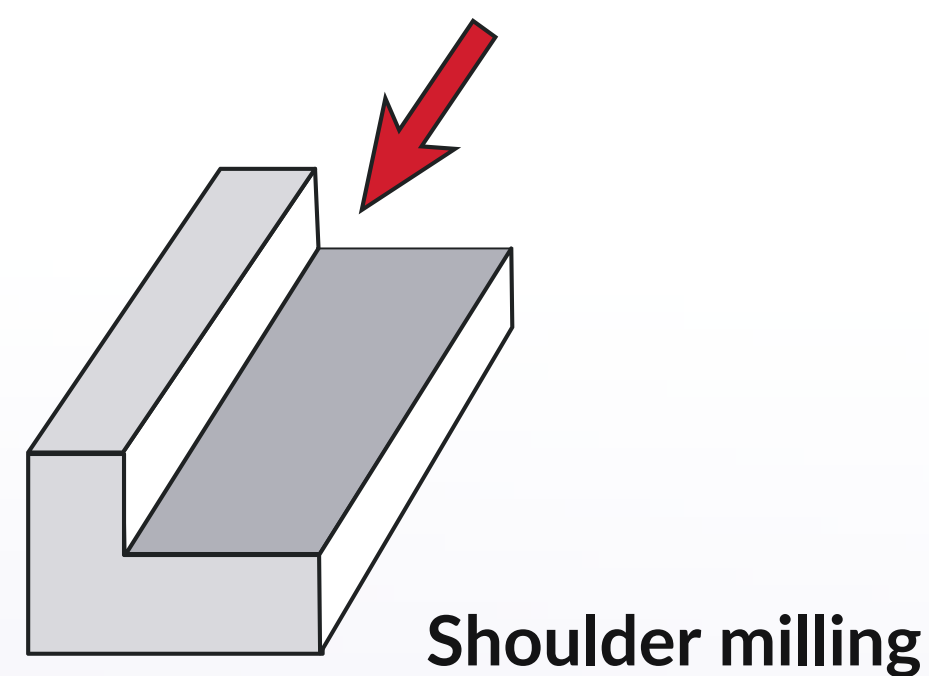
Spec.	Profile	L	l1	D	d	Flutes	Insert	Insert Qty	(KGS) Weight	Insert Qty	(KGS) Weight
SPE-40-56L-2T	A	173	56	40	42	2	LP..1504	1	SP..1204	5	1.45
SPE-40-50L-4T	A	155	64	40	32	4	AP..1503	2	SD..0903	16	0.92
SPE-50-97L-4T	B	224	97	50	50.8	4	LP..1504	2	SP..1204	18	2.69
SPE-50-158L-4T	B	284	158	50	50.8	4	LP..1504	2	SP..1204	30	3.15

## Accessories

Insert	Screw	Wrench	(N.m) Torque
LP..1504	M5-11-6.4-43	T20	5.0
AP..1503	M4-10-5.0-43	T15	3.0
SD..0903	M4-10-5.0-43	T15	3.0
SP..1204	M5-11-6.4-43	T20	5.0



Maximum cutting depth. Ap.  
12mm



Shape	Spec.	Layer coated micro grain			Micro grain cemented carbide			(mm)				Drawing	
		CHF			HF			Size					
		OM4010	OM4025	RM4025	OM5005				d	i	s		r
	APMT1503-R01	●	●						9.52	15	3.18	0.8	
	LPMT1504-R01		●						12.7	15.88	4.76	-	
	SDMT090308-R01	●	●						9.52	-	3.18	0.8	
	SPET120408-M02	●	●		●				12.7	-	4.76	0.8	
	SPMT120408-R01		●						12.7	-	4.76	0.8	

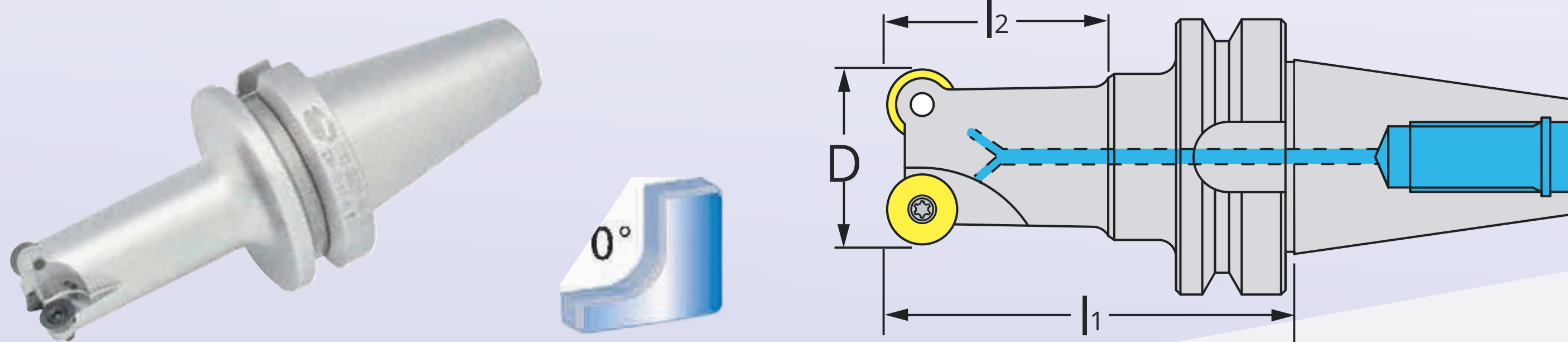
Unit of Length (mm)

## AP 15.SP 12.SD 09.LP 15 Cutting Parameter

Machining Materials	Processing Type	Grade	Vc(m/min)	fz(mm/rev)		
P	Low-Alloy Steels	Slotting	OM4010	90~120	0.05~0.10	
		Side Milling		110~140	0.08~0.13	
		Alloyed Steels	Slotting	OM4025	90~110	0.05~0.10
			Side Milling		110~130	0.08~0.13
			Slotting	RM4025	90~110	0.05~0.10
			Side Milling		110~130	0.08~0.13
				OM4010	70~100	0.05~0.10
					Side Milling	90~120
				OM4025	70~90	0.05~0.10
					Side Milling	90~110
			RM4025	70~90	0.05~0.10	
				Side Milling	90~110	0.06~0.15
M	Stainless Steels	Slotting	OM4010	130~190	0.06~0.15	
		Side Milling	OM4025	130~170	0.06~0.15	
K	Cast Iron	Slotting	OM4025	70~90	0.18~0.12	
		Side Milling		90~150	0.10~0.15	
N	Aluminum&Al	Slotting	OM5005	450(500~700)	1.2(1.2~1.8)	
		Side Milling				

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

## BT/STR CORNER ROUNDING END MILL



### Feature

- Made of anti-vibration tool steel.
- After the heat treatment, we will finish the cutter again for better accuracy.

Spec.	l1	l2	D	Flutes	Insert	(KGS) Weight
BT40-STR3.5R16-90L-2T	90	40	16	2	RD..0702	1.29
BT40-STR3.5R16-120L-2T	120	65	16	2	RD..0702	1.30
● BT40-STR3.5R20-90L-3T	90	45	20	3	RD..0702	1.32
BT40-STR3.5R20-120L-3T	120	70	20	3	RD..0702	1.33
● BT40-STR3.5R25-90L-3T	90	40	25	3	RD..0702	1.36
BT40-STR3.5R25-120L-3T	120	70	25	3	RD..0702	1.41
BT40-STR3.5R30-120L-4T	120	85	30	4	RD..0702	1.52
● BT40-STR5R30-90L-3T	90	55	30	3	RD..1003	1.31
● BT40-STR5R35-90L-4T	90	60	35	4	RD..1003	1.42
BT40-STR5R35-120L-4T	120	85	35	4	RD..1003	1.59

- Clamp screw included

Unit of Length (mm)



## Accessories

Insert	Screw	Wrench	Clamp Screw	Clamp Wrench	(N.m) Torque
RD..0702	M2.5-6.45-3.7-43	T8	M3.5-8.0-5.0-60	T15	3.0
RD..1003	M3.5-8.0-5.0-60	T15	M4-8.0-5.7-60	T15	3.0

The axial depth is related to effective diameter on a round tooth milling cutter. Please be aware when calculating cutting parameter.

### Feeding per Flutes

$$f_z = h_m \times \sqrt{\frac{D}{A_p}} \times \sqrt{\frac{D_w}{A_p}}$$

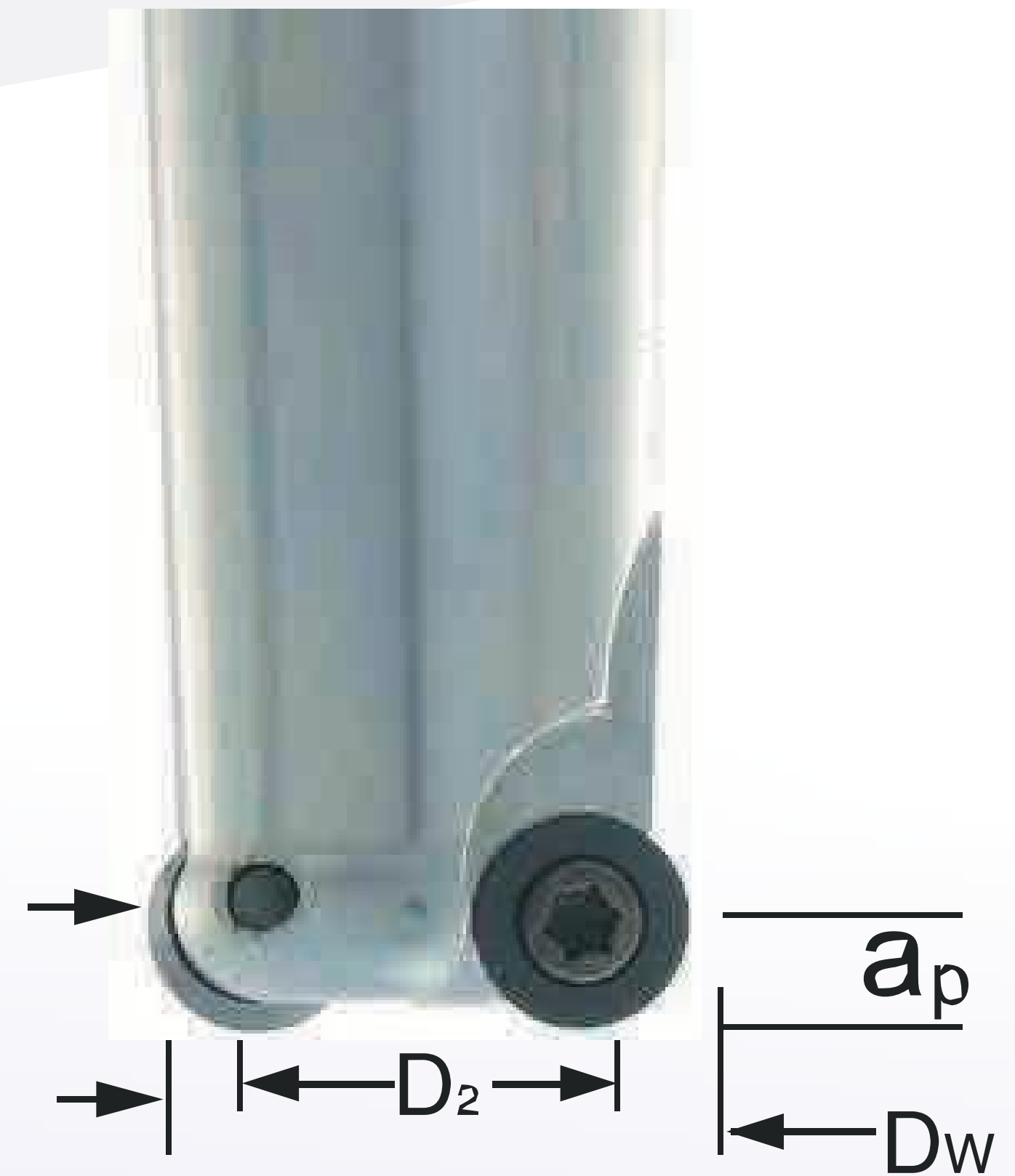
Average chip thickness

$$h_m = \frac{f_z}{\sqrt{\frac{D}{A_p}} \times \sqrt{\frac{D_w}{A_p}}}$$

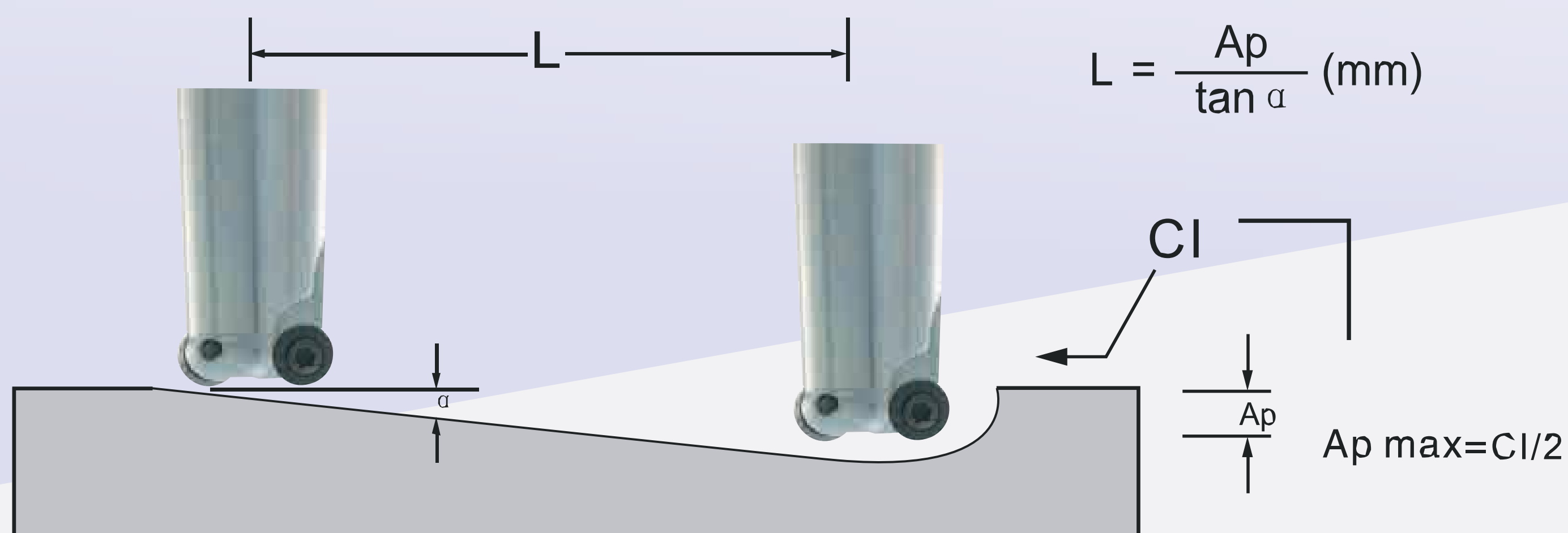
### Effective diameter

$$D_w = D_2 + 2 \times \sqrt{r^2 - (r - A_p)^2}$$

$D_w$  = Effective diameter (mm)  
 $D_2$  = Centre-to-centre distance of cutter (mm)  
 $r$  = Radius of Insert (mm)  
 $A_p$  = Depth (mm)



### Max. inclined cutting



Spec.	Tap Drill Size. (mm)		Max. inclined cutting angle	Max. inclined cutting Length
	Min.	Max.		
STR-3.5R16	16	23	13°	15.16
STR-3.5R20	20	27	14.5°	13.53
STR-3.5R25	25	32	10°	19.85
STR-5R25	25	32	10°	19.85
STR-5R30	30	40	14°	20.05
STR-5R35	35	45	14°	20.05

Unit of Length (mm)

# SOM Modular combination



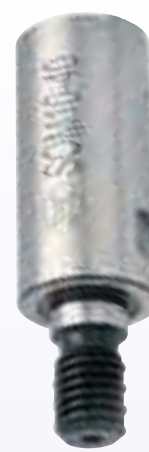
SBT/SOM  
Screwed End  
Mill Holder



C/M Straight Shank  
Tungsten Carbide  
Extension Shank



CAT/SOM  
Screwed-on End  
Mill Holder



SOM Screwed-on End  
Mill Extension Shank



MAS Screwed-on  
End Mill Cutter



STR Screwed-on  
End Mill Cutter



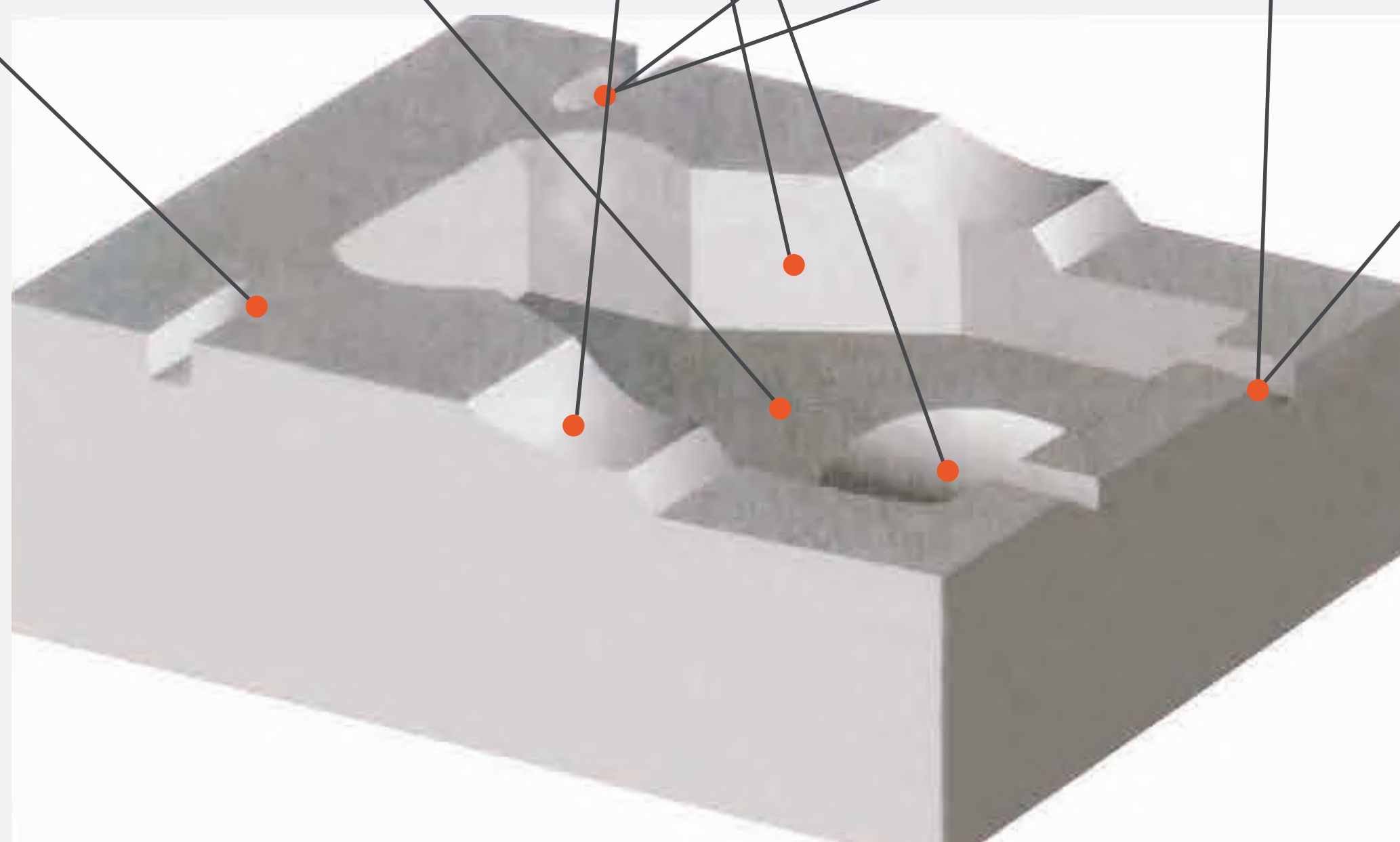
BR Screwed-on Rounded  
Corner End Mill Cutter



NHF High Feed Screwed-  
on End mill Cutter



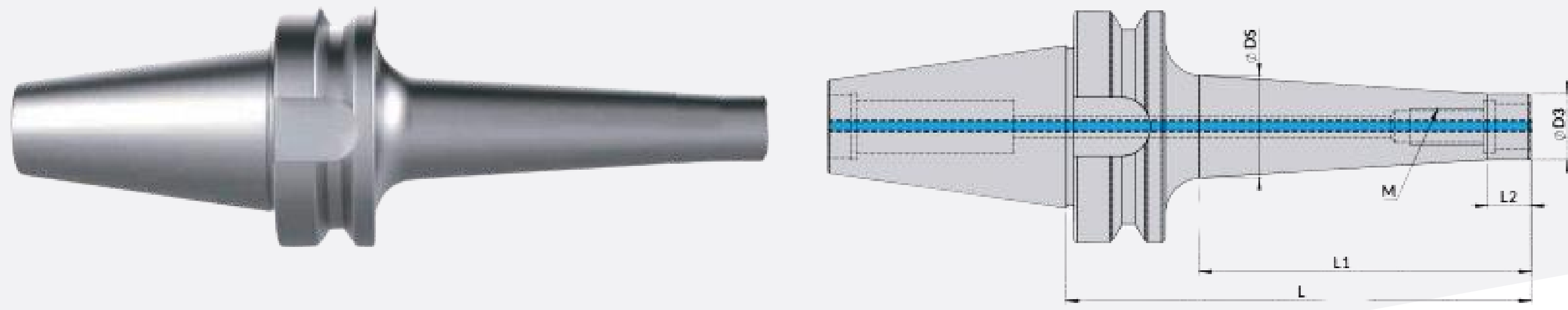
HAS Screwed-on High  
Speed Mill Cutter



Through-hole design for better water coolant and anti-vibration

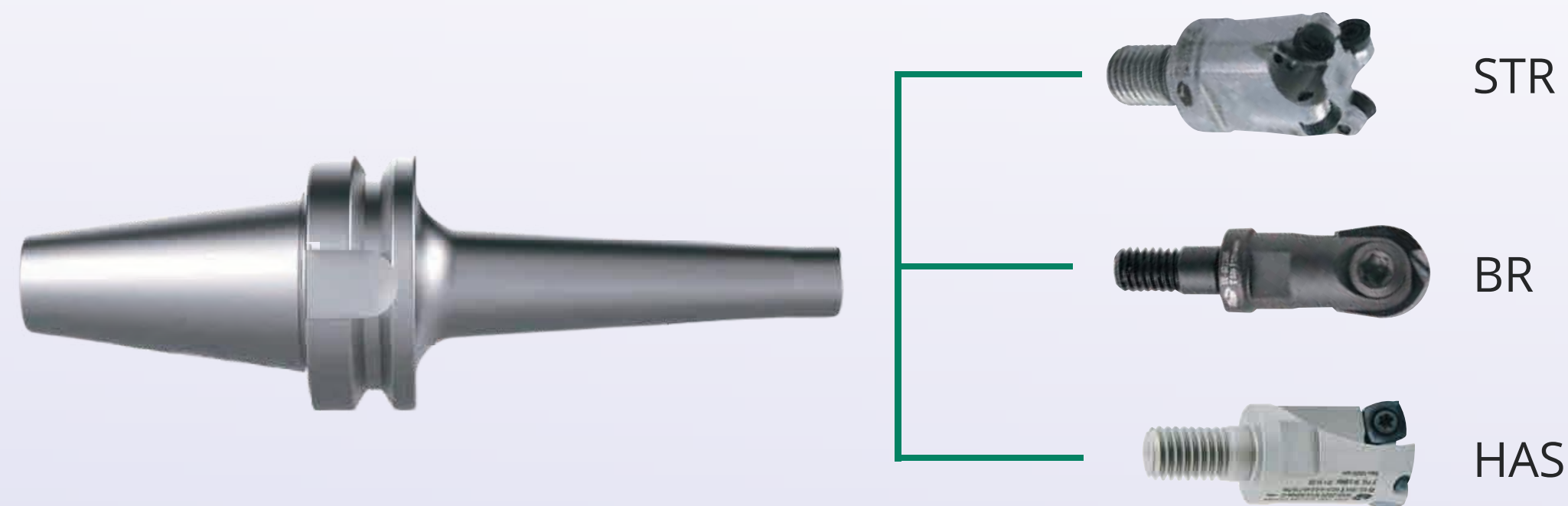


## BT/STR CORNER ROUNDING END MILL

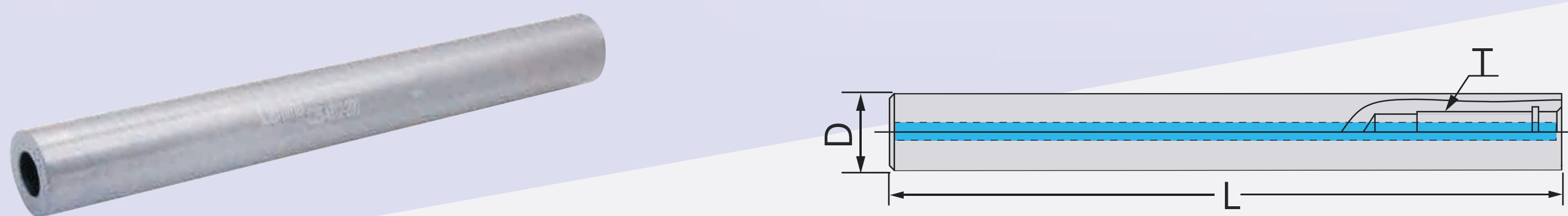


Spec.	M	Ds	D3	L	I1	I2
SBT40-SOM6-110	M6	25	9.7	110	80	10
SBT40-SOM8-105	M8	30	15	105	75	10
SBT40-SOM10-100	M10	35	18	100	70	10
SBT40-SOM10-130	M10	35	18	130	100	10
SBT40-SOM12-95	M12	40	21	95	65	10
SBT40-SOM12-130	M12	40	21	130	100	10
SBT40-SOM16-90	M16	48	28	90	60	10
SBT40-SOM16-140	M16	48	28	140	110	10
SBT50-SOM12-150	M12	41	21	150	105	30
SBT50-SOM12-200	M12	42.5	21	200	155	30
SBT50-SOM16-150	M16	49	28	150	105	30
SBT50-SOM16-200	M16	50	28	200	155	35

### Example



## C/M STRAIGHT TUNGSTEN CARBIDE EXTENSION SHANK



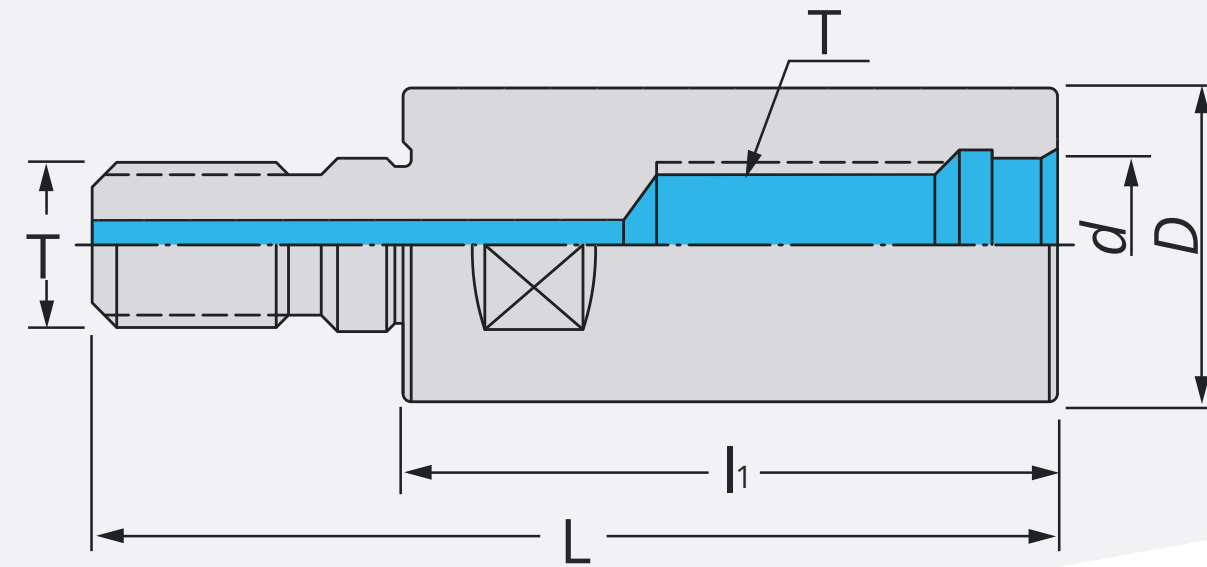
### Feature

-Through-hole design for better water coolant and anti-vibration.

Spec.	L	D	T	(KGS) Weight
C10-M5-150-C	150	10	M5X0.8P	0.16
C12-M6-100-C	100	12	M6×1.0P	0.16
C12-M6-150-C	150	12	M6×1.0P	0.24
C16-M8-100-C	100	16	M8×1.25P	0.26
C16-M8-150-C	150	16	M8×1.25P	0.57
C16-M8-200-C	200	16	M8×1.25P	0.54
C20-M10-150-C	150	20	M10×1.5P	0.60
C20-M10-200-C	200	20	M10×1.5P	0.85
C25-M12-200-C	200	25	M12×1.75P	1.30
C25-M12-250-C	250	25	M12×1.75P	1.60

Unit of Length (mm)

## SOM SCREW-ON END MILL EXTENSION SHANK

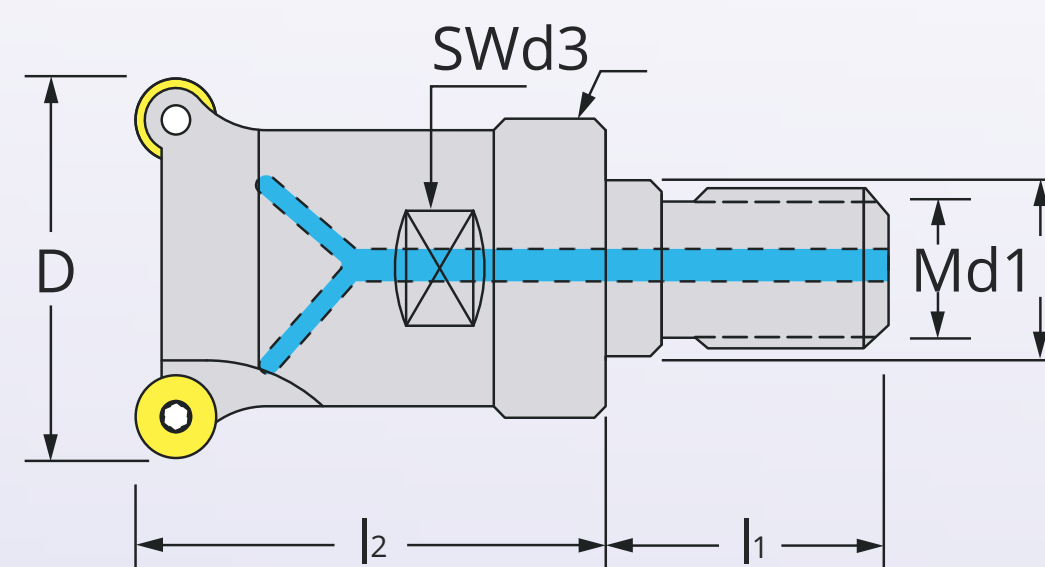


### Feature

- Through-hole design for better water coolant and anti-vibration. -
- Made of anti-vibration material. -
- Thread accuracy grade 1, 4H.

Spec.	L	l1	D	d	T	(KGS) Weight
SOM6-25	42	25	13	6.5	M6×1.0P	0.03
SOM8-32	50	32	15	8.5	M8×1.25P	0.06
SOM10-40	59	40	19	10.5	M10×1.5P	0.09
SOM12-50	73	50	21	12.5	M12×1.75P	0.13
SOM16-60	85	60	25	17	M16×2.0P	0.23

## STR SCREW-ON END MILLING CUTTER



### Feature

- Made of anti-vibration tool steel. -
- After the heat treatment, we will finish the cutter again for better accuracy

Spec.	l1	l2	D	d1	d3	M	SM	Flutes	Insert	(KGS) Weight
STR-2.5R12M6-2T	17	22	12	6.5	10	6	8	2	RD..0501	0.03
STR-3.5R16M8-2T	18	23	16	8.5	13.5	8	12	2	RD..0702	0.05
STR-3.5R20M10-3T	19	30	20	10.5	18	10	14	3	RD..0702	0.08
● STR-3.5R25M12-3T	23	35	25	12.5	21	12	17	3	RD..0702	0.12
● STR-5R25M12-2T	23	35	25	12.5	21	12	17	2	RD..1003	0.11
● STR-5R30M16-3T	25	42	30	17	26	16	21	3	RD..1003	0.19
● STR-5R35M16-4T	25	42	35	17	29	16	21	4	RD..1003	0.23

- Clamp screw included

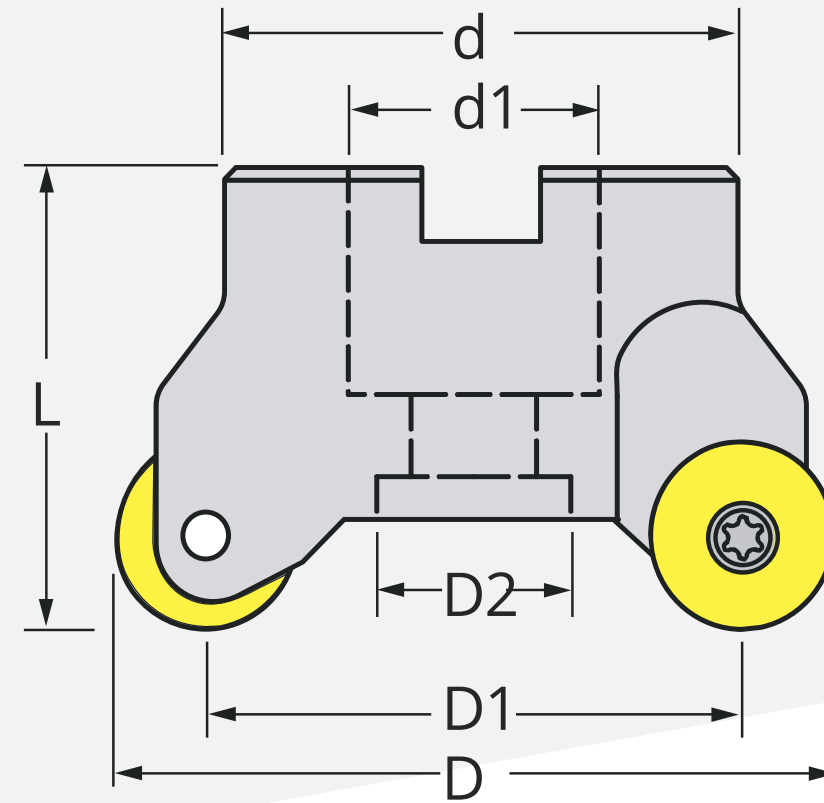
### Accessories

Insert	Screw	Wrench	(N.m) Torque	Clamp Screw	Clamp Wrench	(N.m) Torque
RD..0501	M2-3.8-2.68-43	T6	0.6	M2-3.8-2.68-43	T6	0.6
RD..0702	M2.5-6.45-3.7-43	T8	1.2	M3.5-8.0-5.0-60	T15	3.0
RD..1003	M3.5-8.0-5.0-60	T15	3.0	M4-8.0-5.7-60	T15	3.0

Unit of Length (mm)



# STR ROUND INSERT END MILLING CUTTER



## Feature

- Made of anti-vibration tool steel. -
- After the heat treatment, we will finish the cutter again for better accuracy

Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
STR-5R50-FMB22-5T	50	50	40	18	40	22	5	RD..1003	0.45

ISO	P	Alloyed Steels	○	○	○	Cutting Condition : ● Continuous Cutting ○ General Cutting □ Interrupted Cutting			
	M	Stainless Steels		○	○				
	K	Cast Iron							
N	Aluminum&Al								
S	Refractory Alloys								
H	Hard Material	○							
Shape	Spec.	Carbide alloy			(mm)				Drawing
		HC			Size				
		OM0125	OM1115	OM2115	d	i	s	r	
	RDKW0501MO	●		●	5	-	1.51	2.5	
	RDKW0702MO	●	●	●	7	-	2.38	3.5	
	RDKW1003MO		●	●	10	-	3.18	5	

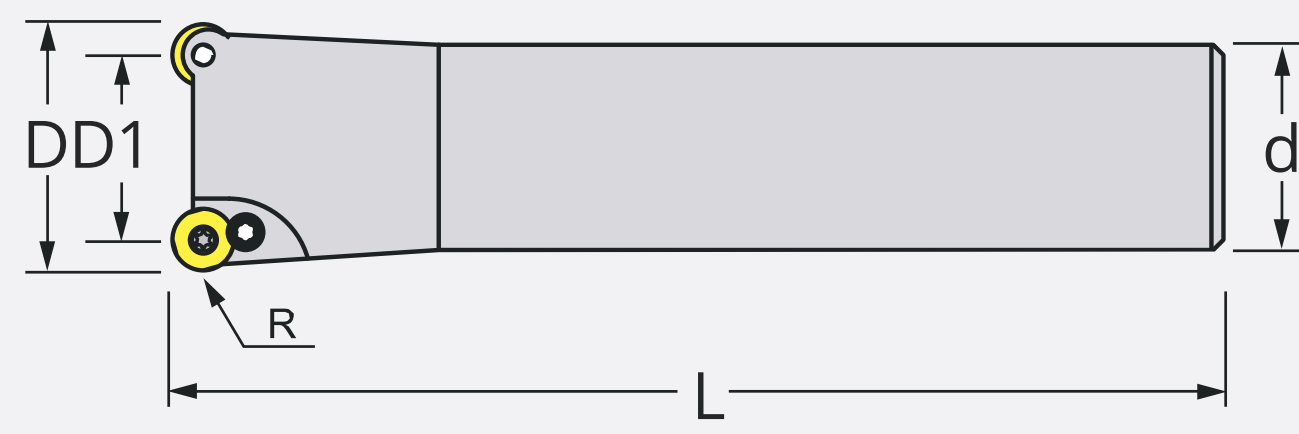
## RD 05.07.10 Cutting Parameter

Machining Materials		Grade	Vc(m/min)	Average chip thickness (mm)	Ap(mm)
P	Low-Alloy Steels	OM1115	160~300	0.14~0.04	0.10~0.50
		OM2115	120~250	0.08~0.25	0.10~0.50
	Alloyed Steels	OM1115	160~300	0.14~0.04	0.10~0.50
		OM2115	120~250	0.08~0.25	0.10~0.50
		OM0125	60~220	0.14~0.30	0.10~0.30
M	Stainless Steels	OM1115	70~100	0.06~0.10	0.10~0.25
		OM2115	70~100	0.06~0.10	0.10~0.25
H	Hard Material	OM0125	60~110	0.14~0.40	0.05~0.20

- Spindle Speed=(1000× Cutting speed)÷(3.14× Cutter outer diameter).
- Feeding Speed(mm/min)= Feed per Flutes× Flutes× Spindle speed.

Unit of Length (mm)

## GR ROUND INSERT END MILLING CUTTER

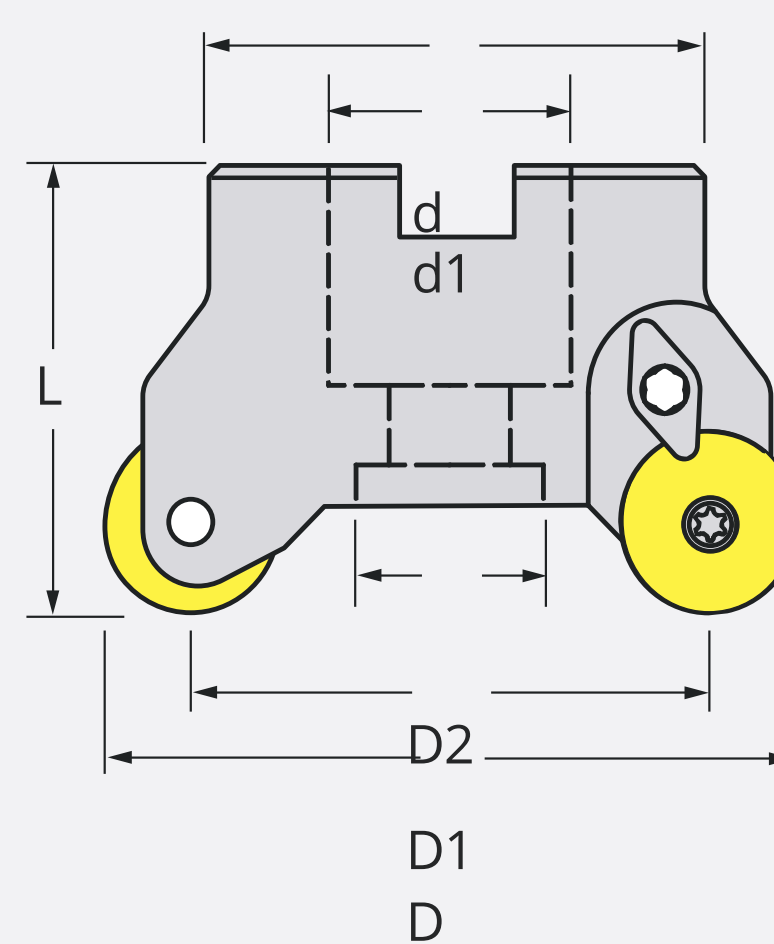


### Feature

- Made of anti-vibration tool steel. -
- After the heat treatment, we will finish the cutter again for better accuracy

Spec.	L	D	D1	d	R	Flutes	Insert	(KGS) Weight
GR-4R1212-130L	130	12	8	12	4R	1	RD..0802	0.15
GR-4R1616-150L	150	16	8	16	4R	1	RD..0802	0.25
GR-4R1616-200L	200	16	8	16	4R	1	RD..0802	0.34
GR-4R2019-150L	150	20	12	19	4R	2	RD..0802	0.35
GR-4R2019-200L	200	20	12	19	4R	2	RD..0802	0.46
GR-4R2020-150L	150	20	12	20	4R	2	RD..0802	0.37
GR-4R2020-200L	200	20	12	20	4R	2	RD..0802	0.51
GR-5R2525-150L	150	25	15	25	5R	2	RD..10T3	0.55
GR-5R2525-200L	200	25	15	25	5R	2	RD..10T3	0.74
GR-5R2525-250L	250	25	15	25	5R	2	RD..10T3	0.93
GR-5R3025-150L	150	30	20	25	5R	2	RD..10T3	0.55
GR-5R3025-200L	200	30	20	25	5R	2	RD..10T3	0.78
GR-5R3532-150L	150	35	25	32	5R	3	RD..10T3	0.92
GR-5R3532-200L	200	35	25	32	5R	3	RD..10T3	1.25
GR-5R3532-250L	250	35	25	32	5R	3	RD..10T3	1.57
GR-5R3532-300L	300	35	25	32	5R	3	RD..10T3	1.87
GR-5R3532-350L	350	35	25	32	5R	3	RD..10T3	2.24
GR-5R4032-180L	180	40	30	32	5R	3	RD..10T3	1.15
GR-5R4032-230L	230	40	30	32	5R	3	RD..10T3	1.47
GR-8R5032-200L	200	50	34	32	8R	3	RD..1604	1.31

## GR ROUND INSERT END MILLING CUTTER



### Feature

- Made of anti-vibration tool steel. -
- After the heat treatment, we will finish the cutter again for better accuracy


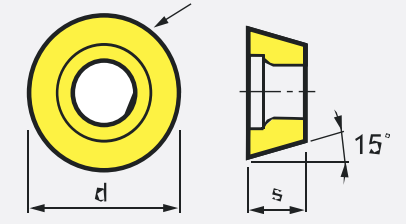

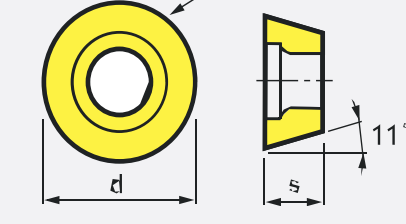
Unit of Length (mm)



Spec.	L	D	D1	D2	d	d1	Flutes	Insert	(KGS) Weight
GR-5R50-FMB22	50	50	40	18	40	22	4	RD..10T3	0.42
GR-6R50-FMB22	50	50	38	18	40	22	4	RD..1204	0.29
GR-6R63-FMB22	50	63	51	18	50	22	4	RD..1204	0.54
GR-8R63-FMB22	50	63	47	18	50	22	4	RD..1604	0.62
GR-8R66	50	66	50	19	50	25.4	4	RD..1604	0.61
GR-8R66-FMB22	50	66	50	18	50	22	4	RD..1604	0.65
GR-8R80	55	80	64	19	62	25.4	5	RD..1604	1.07
GR-8R80-FMB27	55	80	64	19	62	27	5	RD..1604	1.06
GR-8R100	55	100	84	42	70	31.75	6	RD..1604	1.63
GR-8R100-FMB32	55	100	84	42	70	32	6	RD..1604	1.62

## Accessories

Insert	Screw	Wrench	(N.m) Torque	Clamp Screw	Clamp	Wrench	(N.m) Torque
RD..0802	M3-6.0-3.7-43	T10	2.0	M3.5-8.0-5.5-60	GR-4R.5R	T15	3.0
RD..10T3	M4-10-5.0-43	T15	3.0	M3.5-8.0-5.5-60	GR-4R.5R	T15	3.0
RD..1204	M4-9.5-5.5-55	T15	3.0	M5-11-7.5-60	GR-6R.8R	T20	5.0
RD..1604	M5-11-7.5-60	T20	5.0	M5-11-7.5-60	GR-6R.8R	T20	5.0


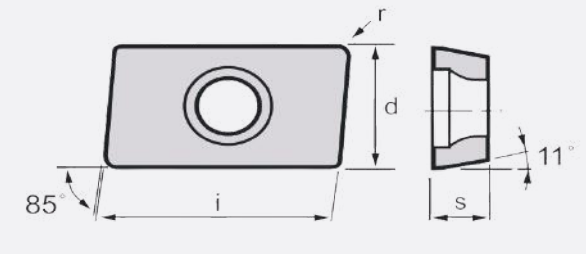

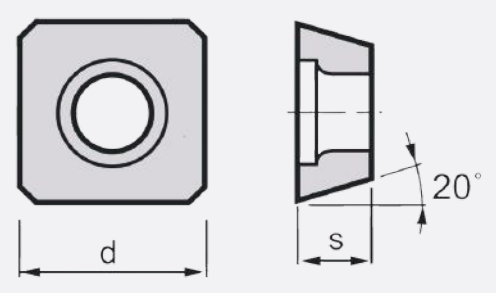

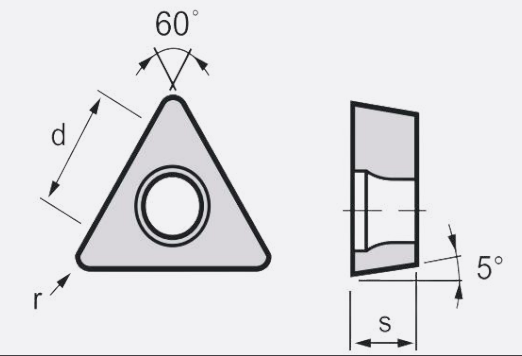
Shape	Spec.	Layer coated micro grain			Micro grain cemented carbide			(mm)				Drawing
		CHF			HF			Size				
		RM4130			OM5005	OM5060	RM5005	d	i	s	r	
	RDET1604MOF-F01				●	●		16	-	4.76	8	
	RDGT1604MO-F01						●	16	-	4.76	8	
	RDET1003MOF-F01				●			10	-	3.18	5	
	RDGT1003MO-F01						●	10	-	3.18	5	
	RDMT0802MOTN	●						8	-	2.38	4	
	RDMT10T3MOTN	●						10	-	3.97	5	
	RDMT1204MOTN	●						12	-	4.76	6	
	RDMT1604MOTN	●						16	-	4.76	8	

Unit of Length (mm)

Machining Materials	Grade	Cutter outer diameter										
		Ø12mm(4R)		Ø16mm(4R)		Ø20mm(4R)		Ø25mm(5R)		Ø32mm(5R)		
		S (rpm)	F(mm/min)	S (rpm)	F(mm/min)	S (rpm)	F(mm/min)	S (rpm)	F(mm/min)	S (rpm)	F(mm/min)	
P	Low-Alloy Steels	RM4130	5,255	525	3,940	1,180	4,380	3,500	3,500	2,794	2,739	3,290
	Alloyed Steels	RM4130	3,795	478	2,847	854	2,629	1,056	2,100	836	1,640	979
M	Stainless Steels	RM4130	5,254	524	3,941	1,181	3,489	1,749	2,805	1,408	2,189	1,639
K	Cast Iron	RM4130	3,795	379	2,846	853	3,146	2,519	2,519	2,013	1,969	2,365

Machining Materials	Grade	Cutter outer diameter										
		Ø12mm(4R)		Ø16mm(4R)		Ø20mm(4R)		Ø25mm(5R)		Ø32mm(5R)		
		S (rpm)	F(mm/min)	S (rpm)	F(mm/min)	S (rpm)	F(mm/min)	S (rpm)	F(mm/min)	S (rpm)	F(mm/min)	
P	Low-Alloy Steels	RM4130	5,255	525	3,940	1,180	4,380	3,500	3,500	2,794	2,739	3,290
	Alloyed Steels	RM4130	3,795	478	2,847	854	2,629	1,056	2,100	836	1,640	979
M	Stainless Steels	RM4130	5,254	524	3,941	1,181	3,489	1,749	2,805	1,408	2,189	1,639
K	Cast Iron	RM4130	3,795	379	2,846	853	3,146	2,519	2,519	2,013	1,969	2,365

## BLANK INSERTS

Shape	Spec.	Carbide Alloy			(mm)			Drawing
		HC			Size			
		BM			d	i	s	
	APMW1003	●			16	-	4.76	
	APMW1604	●			16	-	4.76	
	SEMW1204	●			13.1	-	5.1	
	TBMW0601	●			13.1	-	5.1	

Unit of Length (mm)





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