Synwell

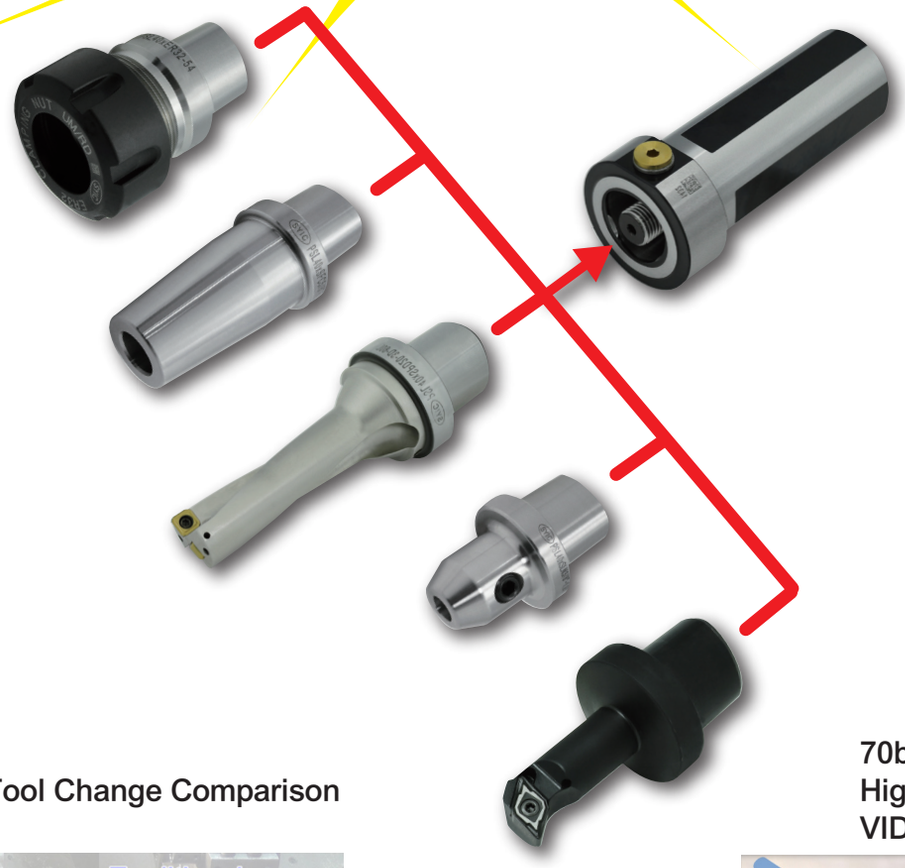
MILLING CUTTER SERIES

NO.78-1502A



PSL system for lathe

SAVE YOUR TIME



PSL Quick Tool Change Comparison VIDEO:



70bar
High Water Pressure Drilling VIDEO:



Quick Change

tool change : time

Before ER collet chuck ≧3Mins

Now PSLsystem =30S

Efficiency improves!

G01 Z-120: (φ14)

Before ER collet chuck F0.1 84S

Now PSLsystem +70bar F0.25 30S

*For more info. of PSL system for lathe, please refer to catalog NO. 83.

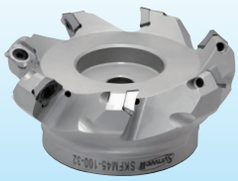
ANGLE HEAD HOLDERS

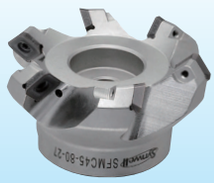


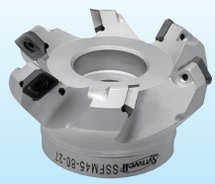
*For more info. of Angle head holders, please refer to catalog NO. 79.

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P.7 - KFMC

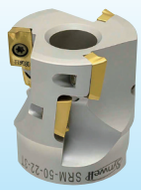

P.7 - SKFM


P.9 - SFMC


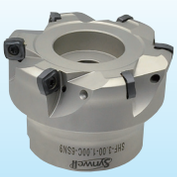
P.9 - SSFM


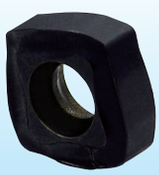
P.11 - IFMC


P.12 - SIFM

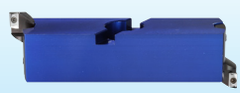

P.12 - SRM


P.14 - HF


P.14 - SHF


P.15 - SNKX09T3-HF


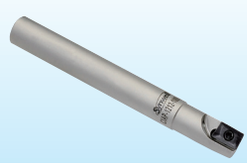
P.17 - SQP


P.18 - U776


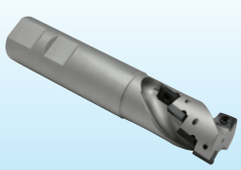
P.19 - U777

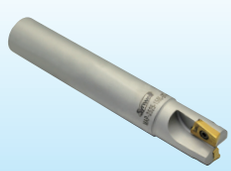

P.20 - SBT / CIAP


P.22~23 - IAP


P.24~25 - CIAP


P.27 - IEM90


P.28 - CPE


P.30 - MAP


P.31~32 - CMAP


P.35 - HFEM


P.37 - PLHF

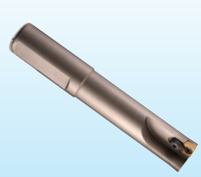

P.38~40 - PLIM


P.42~44 - PLIMM

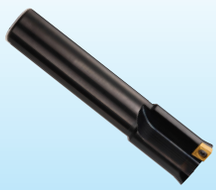

P.46 - PLSS

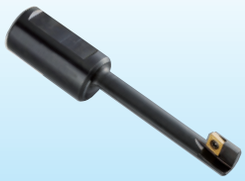

P.47 - BFC

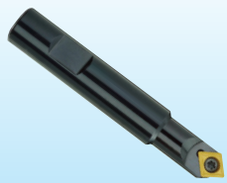

P.48 - MJT

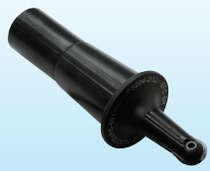

P.49 - MJA


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P.50 - MJR 

P.51 - MJF 

P.52 - MJD 

P.57 - HLB / BFC 

P.58 - HLB / R 

P.58 - HLB / MCK 

P.59 - HLB / PCK 

P.60 - HLB / PMB 

P.61 - HLB / FR 

P.62 - HLB / GR 

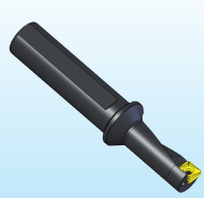
P.63 - HLB / IAP 

P.64 - HLB / CIAP 

P.65 - HLB / MAP 

P.66 - HLB / CMAP 

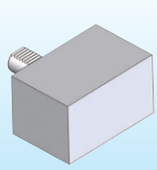
P.67 - HLB / HF 

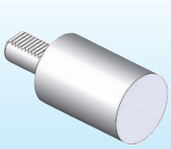
P.70~71 - MTC 

P.73~76 - WD 

P.77~82 - SPD 

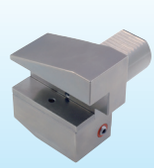
P.83 - HWAS 

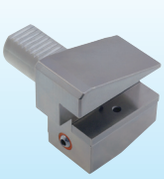
P.88 - VDI 

P.88 - VDI 

P.89 - VDI / B1 

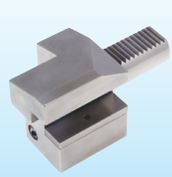
P.89 - VDI / B2 

P.90 - VDI / B3 

P.90 - VDI / B4 

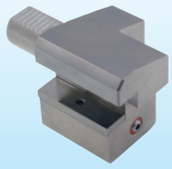
P.91 - VDI / C1 

P.91 - VDI / C2 

P.92 - VDI / C3 

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P.92 - VDI / C4



P.93 - VDI / E1



P.94 - VDI / E2



P.95 - VDE / E3



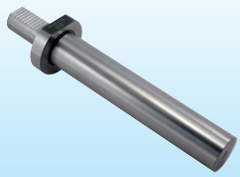
P.95 - VDI / ER



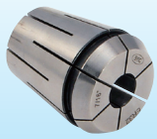
P.96 - VDI / SPU



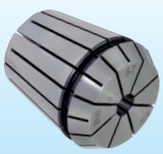
P.96 - TEST MANDREL



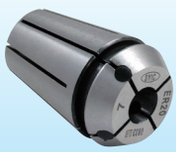
P.98 - STELL SEALED COLLET



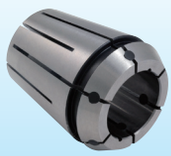
P.98 - ER COLLET



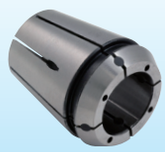
P.98 - ER SEALED COLLET



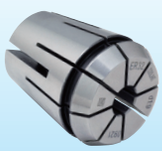
P.98 - ER - FID



P.98 - ER - FOD



P.98 - ER TCO RIGID TAP SEALED COLLET



P.99 - EOC COLLET



P.99 - SYOZ COLLET



P.99 - POWER GOOD ER CLAMPING NUT



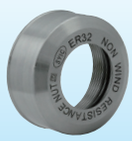
P.99 - HIGH SPEED POWER GOOD NUT



P.99 - POWER GOOD EOC CLAMPING NUT



P.100 - HLB / HF



P.100 - ER SPANNER



P.100 - SPANNER FOR EOC CLAMPING NUT



P.100 - NUT ADAPTERS



P.100 - NUT ADAPTERS



P.101 - ER TORQUE WRENCH



P.101 - WRENCH



P.101 - TORQUE WRENCH

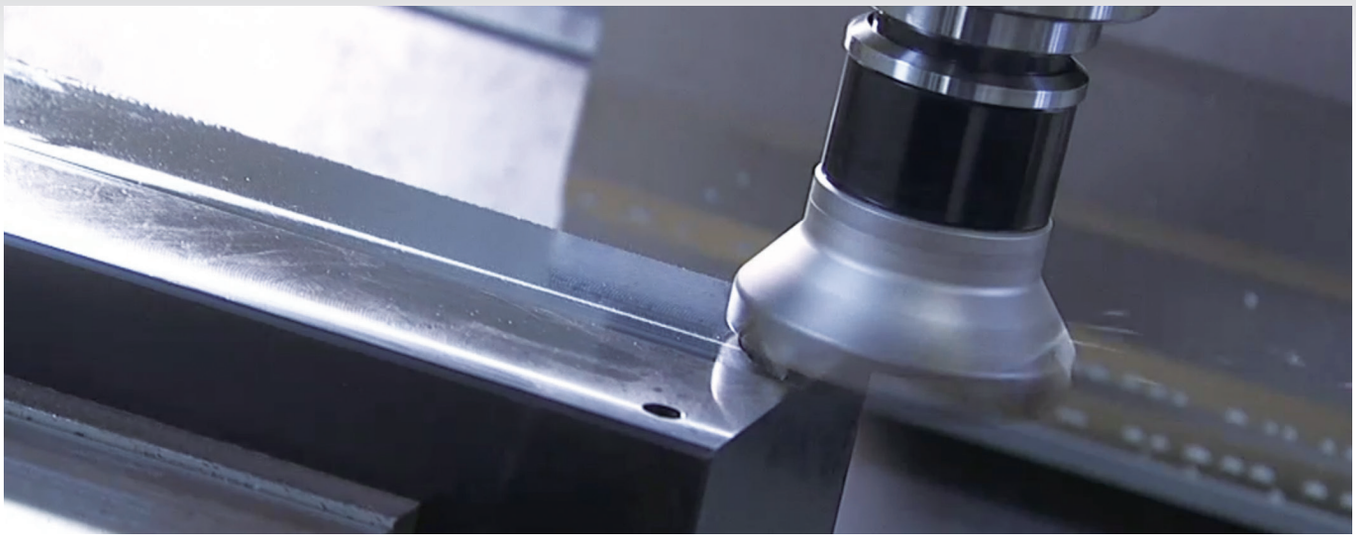


Synwell

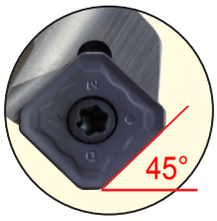
CUTTING TOOL SYSTEM

MILLING

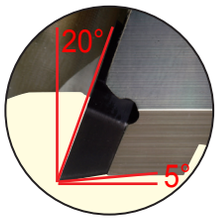
series



- Low cutting resistance because of the design of high rake and double positive angle.



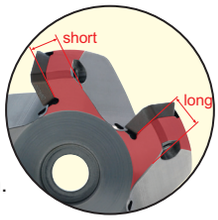
- Good sharpness because of the design of AR+20°, R.R.+5° for insert tip.



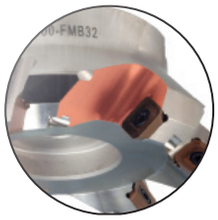
- After heat treatment, the connection between insert and insert seat is more closely-contacted, having high hardness, good toughness with good effect of vibration resistance and superior precision.



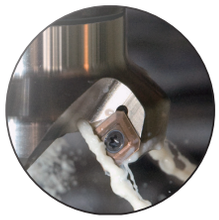
- Smooth cutting, low noises and reduced wear rate of inserts are provided because of the design of differential pitch.



- Suitable for big table feed cutting because of the design of larger metal removal space.

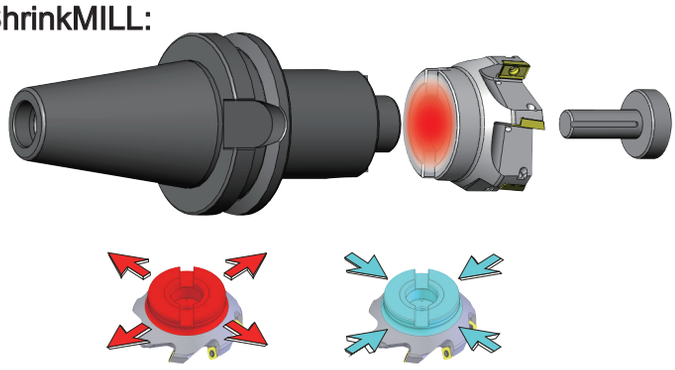


- The design of coolant holes extends the use life of inserts and is good for metal chips removal and heat dissipation.



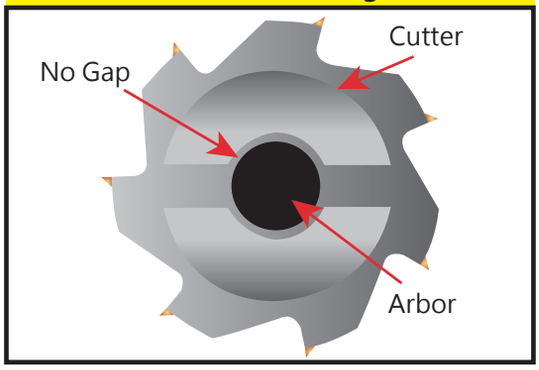
- Different designs of the teeth have different specialities and functions, which help customers with different manufacturing solutions.
- It's made of high alloy factor Cr. After special treatment, the body is not easy to get rusty and has good durability.

ShrinkMILL:



ShrinkFIT technology

Shrink Fit Face Milling Cutter



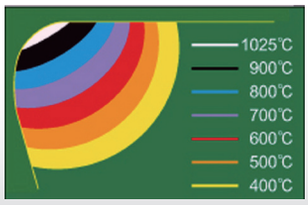
More rigid, powerful and accurate connection between cutter and arbor!

Comparison Chart of Color Temperature

Cutter with coolant holes design;



Cutter without coolant holes design;



What superiorities are there to use cutter with coolant holes? Please refer to the left charts.

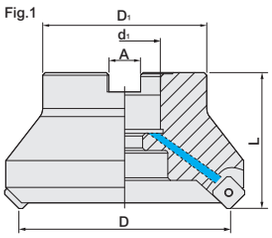
- Extending the use life of inserts by 40%.
- Reducing the cost of cutters.
- Improving the productivity.
- Decreasing the surface roughness.

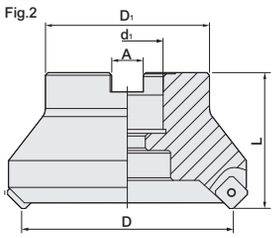
Good cooling fluid can reduce the heat of insert tips.

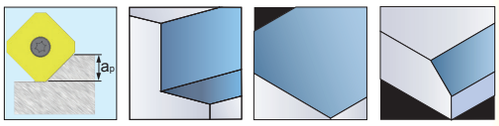
KFMC 45° FACE MILLING CUTTER

KFMC 45° 殼型銑刀









- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SE..1204	M5-11-7.0-55	T20

- Inserts are optional accessories. Needs to be purchased additionally.

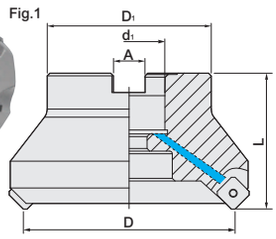
MODEL NO.	TYPE	D	D1	d1	L	A	ap max.	TEETH	INSERT	Fig
154.408.22.040	KFMC45-40-22	40	40	22	40	10.4	6	4	SE..1204	1
154.408.22.050	KFMC45-50-22	50	48					5		
154.408.22.050-5T	KFMC45-50-22-5T									
154.408.22.063	KFMC45-63-22	63								
154.408.27.080	KFMC45-80-27	80	62	27	50	12.4		6		
154.408.32.100	KFMC45-100-32	100	78	32		14.4		7		
154.408.40.125	KFMC45-125-40	125	89	40	63	16.4		8		
154.408.40.160	KFMC45-160-40	160						10		
154.408.68.080	KFMC45-80-25.4	80	50	25.4	50	9.5	6	6	SE..1204	1
154.408.72.080	KFMC45-80-31.75		62	31.75		12.7				
154.408.72.100	KFMC45-100-31.75	100	78					7		
154.408.77.125	KFMC45-125-38.1	125	80	38.1	63	15.9		8		
154.402.86.160	KFM45-160-50.8	160	98	50.8		19.45		10		2
154.402.84.200	KFM45-200-47.625	200	128.75	47.625		25.4		12		

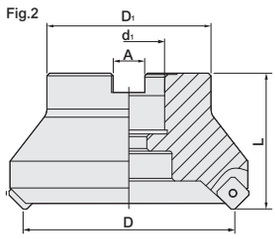
SKFM 45° SHRINK FIT FACE MILLING CUTTER

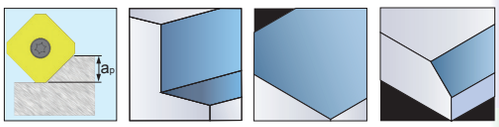
SKFM 45° 熱膨脹殼型銑刀

台灣精品2015 TAIWAN EXCELLENCE









- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SE..1204	M5-11-7.0-55	T20

- Inserts are optional accessories. Needs to be purchased additionally.

MODEL NO.	TYPE	D	D1	d1	L	A	ap max.	TEETH	INSERT	Fig
154.628.22.040	SKFM45-40-22	40	40	22	40	10.4	6	4	SE..1204	1
154.628.22.050	SKFM45-50-22	50	48					5		
154.628.22.050-5T	SKFM45-50-22-5T									
154.628.22.063	SKFM45-63-22	63								
154.628.27.080	SKFM45-80-27	80	62	27	50	12.4		6		
154.628.32.100	SKFM45-100-32	100	78	32		14.4		7		
154.628.40.125	SKFM45-125-40	125	89	40	63	16.4		8		
154.628.40.160	SKFM45-160-40	160						10		
154.628.68.080	SKFM45-80-25.4	80	50	25.4	50	9.5	6	6	SE..1204	1
154.628.72.100	SKFM45-100-31.75	100	78	31.75		12.7		7		
154.628.77.125	SKFM45-125-38.1	125	80	38.1	63	15.9		8		
154.628.86.160	SKFM45-160-50.8	160	98	50.8		19.45		10		2
154.628.84.200	SKFM45-200-47.625	200	128.75	47.625		25.4		12		

KFMC 45° FACE MILLING CUTTER

Machining Materials	GRADE		
	PL30	GH1	OM5060
P	△		
M	△		
K	△		
N		△	△
S			
H			

TYPE	GRADE			DIMENSION			
	PL30	GH1	OM5060	d	i	s	r
SEKT1204AFTN	V			12.7	12.7	4.76	-
SEHT1204AFFN		V	V				

Cutting Conditions

Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	PL30	90 ~ 230	0.15 ~ 0.45	0.5 ~ 7
M	PL30	100 ~ 210	0.12 ~ 0.35	0.5 ~ 5
K	PL30	120 ~ 250	0.15 ~ 0.5	0.5 ~ 7
N	GH1	300 ~ 600	0.08 ~ 0.25	0.5 ~ 6
	OM5060			

- Spindle Revolution = (1000 ×cutting speed) ÷ (3.14 × the external dia. of cutting tool)
- Table feed(mm/min) = table feed of each tooth × total teeth of cutting tool × spindle revolution

SFMC 45° FACE MILLING CUTTER

SFMC 45° 殼型銑刀



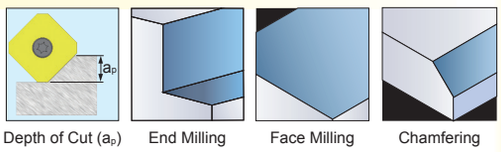




Fig.1

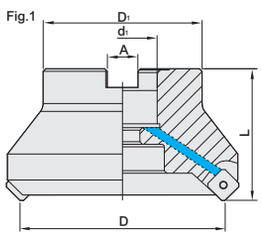
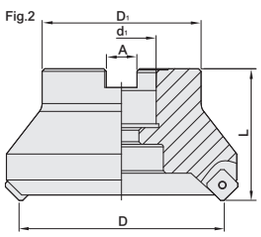


Fig.2



- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SE..13T3	M3.5-10-5.5-60	T15

- Inserts are optional accessories. Needs to be purchased additionally.

MODEL NO.	TYPE	D	D_1	d_1	L	A	a_p max.	TEETH	INSERT	Fig
154.661.22.040	SFMC45-40-22	40	40	22	40	10.4	6	3	SE..13T3	1
154.661.22.050	SFMC45-50-22	50	48					5		
154.661.22.063	SFMC45-63-22	63								
154.661.27.080	SFMC45-80-27	80	62	27	50	12.4		6		
154.661.32.100	SFMC45-100-32	100	78	32		14.4		7		
154.661.40.125	SFMC45-125-40	125	89	40	63	16.4		8		
154.661.40.160	SFMC45-160-40	160	98					10		
154.661.68.063	SFMC45-63-25.4	63	50	25.4	40	9.5	6	5	SE..13T3	1
154.661.72.080	SFMC45-80-31.75	80	62	31.75	50	12.7		6		
154.661.72.100	SFMC45-100-31.75	100	78					7		
154.661.77.125	SFMC45-125-38.1	125	80	38.1	63	15.9		8		
154.652.86.125	SFM45-125-50.8			50.8		19.45		8		2
154.652.84.200	SFM45-200-47.625	200	138	47.625		25.4		12		

SSFM 45° SHRINK FIT FACE MILLING CUTTER

SSFM 45° 熱膨脹殼型銑刀



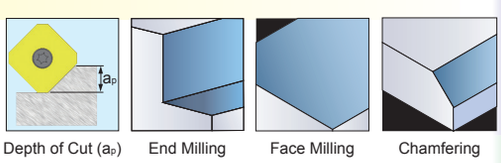




Fig.1

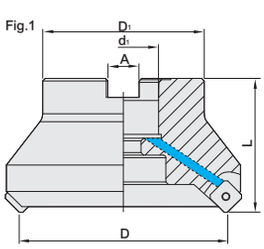
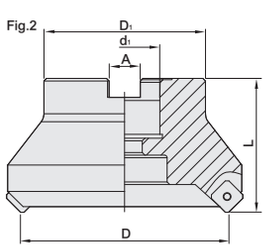


Fig.2



- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SE..13T3	M3.5-10-5.5-60	T15

- Inserts are optional accessories. Needs to be purchased additionally.

MODEL NO.	TYPE	D	D_1	d_1	L	A	a_p max.	TEETH	INSERT	Fig
154.629.22.040	SSFM45-40-22	40	40	22	40	10.4	6	3	SE..13T3	1
154.629.22.050	SSFM45-50-22	50	48			10.4		5		
154.629.22.063	SSFM45-63-22	63								
154.629.27.080	SSFM45-80-27	80	62	27	50	12.4		6		
154.629.32.100	SSFM45-100-32	100	78	32		14.4		7		
154.629.40.125	SSFM45-125-40	125	89	40	63	16.4		8		
154.629.40.160	SSFM45-160-40	160	98					10		
154.629.68.063	SSFM45-63-25.4	63	50	25.4	40	9.5	6	5	SE..13T3	1
154.629.72.080	SSFM45-80-31.75	80	62	31.75	50	12.7		6		
154.629.72.100	SSFM45-100-31.75	100	78					7		
154.629.77.125	SSFM45-125-38.1	125	80	38.1	63	15.9		8		2
154.629.86.125	SSFM45-125-50.8			50.8		19.45				

SSFM 45° SHRINK FIT FACE MILLING CUTTER

Machining Materials	GRADE	
	PL30	RM4010
P	△	△
M	△	△
K	△	△
N		
S		△
H		

TYPE	GRADE		DIMENSION			
	PL30	RM4010	d	i	s	r
SEKT12T3AGSN	V		13.4	-	3.97	-
SEET12T3 - DM		V				

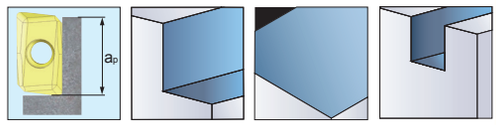
Cutting Conditions

Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	PL30	90 ~ 230	0.15 ~ 0.45	0.5 ~ 7
	RM4010	130 ~ 350	0.1 ~ 0.3	0.5 ~ 6
M	PL30	100 ~ 210	0.12 ~ 0.35	0.5 ~ 5
	RM4010	100 ~ 270	0.1 ~ 0.3	0.5 ~ 6
K	PL30	120 ~ 250	0.15 ~ 0.5	0.5 ~ 7
	RM4010	120 ~ 300	0.1 ~ 0.2	0.5 ~ 6
S	RM4010	20 ~ 50	0.1 ~ 0.2	0.5 ~ 6

- Spindle Revolution = (1000 ×cutting speed) ÷ (3.14 × the external dia. of cutting tool)
- Table feed(mm/min) = table feed of each tooth × total teeth of cutting tool × spindle revolution

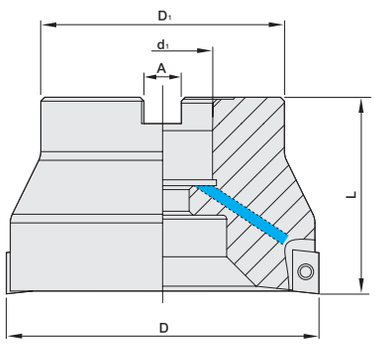
IFMC SQUARE SHOULDER MILLING CUTTER

IFMC 直角殼型銑刀



Depth of Cut (a_p) | End Milling | Face Milling | Slotting





MODEL NO.	TYPE	D	D_1	d_1	L	A	a_p max.	TEETH	INSERT
154.241S.22.050	IFMC90-50-22-AP10	50	40	22	40	10.4	10	7	AP..1003
154.241S.22.063	IFMC90-63-22-AP10	63	48					9	
154.241S.27.080	IFMC90-80-27-AP10	80	62	27	50	12.4		11	
154.241S.32.100	IFMC90-100-32-AP10	100	78	32		14.4		13	
154.241S.40.125	IFMC90-125-40-AP10	125	89	40	63	16.4		16	
154.241S.68.050	IFMC90-50-25.4-AP10	50	45	25.4	40	9.5	10	7	AP..1003
154.241S.68.063	IFMC90-63-25.4-AP10	63	50					9	
154.241S.72.080	IFMC90-80-31.75-AP10	80	62	31.75	50	12.7		11	
154.241S.72.100	IFMC90-100-31.75-AP10	100	78					13	
154.241S.77.125	IFMC90-125-38.1-AP10	125	80	38.1	63	15.9		16	

MODEL NO.	TYPE	D	D_1	d_1	L	A	a_p max.	TEETH	INSERT
154.242.22.050	IFMC90-50-22	50	45	22	40	10.4	16	5	AP..1604
154.242.22.063	IFMC90-63-22	63	48						
154.242.27.080	IFMC90-80-27	80	62	27	50	12.4		6	
154.242.32.100	IFMC90-100-32	100	78	32		14.4		7	
154.242.40.125	IFMC90-125-40	125	89	40	63	16.4		8	
154.242.68.050	IFMC90-50-25.4	50	48.5	25.4	40	9.5	16	5	AP..1604
154.242.68.063	IFMC90-63-25.4	63	50						
154.242.72.080	IFMC90-80-31.75	80	62	31.75	50	12.7		6	
154.242.72.100	IFMC90-100-31.75	100	78					7	
154.242.77.125	IFMC90-125-38.1	125	80	38.1	63	15.9		8	

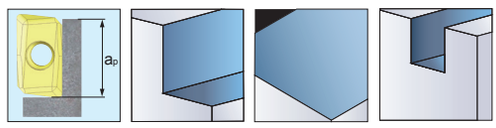
● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

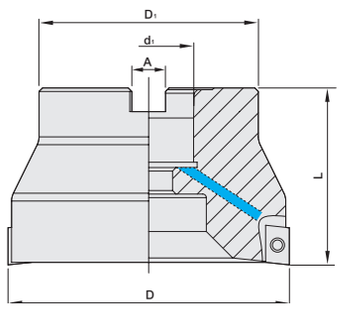
● Inserts are optional accessories. Needs to be purchased additionally.

SIFM SHRINK FIT SQUARE SHOULDER MILLING CUTTER

SIFM 熱膨脹直角殼型銑刀







- ACCESSORIES:

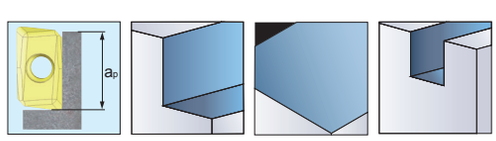
INSERT	INSERT SCREW	WRENCH
AP..1604	M4-10-5.7-60	T15

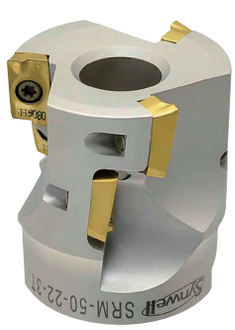
- Inserts are optional accessories. Needs to be purchased additionally.

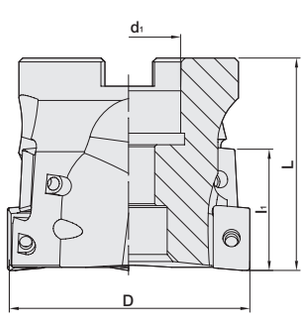
MODEL NO.	TYPE	D	D_1	d_1	L	A	a_p max.	TEETH	INSERT
154.630.22.050	SIFM90-50-22	50	45	22	40	10.4	16	5	AP..1604
154.630.22.063	SIFM90-63-22	63	48						
154.630.27.080	SIFM90-80-27	80	62	27	50	12.4		6	
154.630.32.100	SIFM90-100-32	100	78	32		14.4		7	
154.630.40.125	SIFM90-125-40	125	89	40	63	16.4		8	
154.630.68.050	SIFM90-50-25.4	50	48.5	25.4	40	9.5	16	5	AP..1604
154.630.68.063	SIFM90-63-25.4	63	50						
154.630.72.080	SIFM90-80-31.75	80	62	31.75	50	12.7		6	
154.630.72.100	SIFM90-100-31.75	100	78					7	
154.630.77.125	SIFM90-125-38.1	125	80	38.1	63	15.9		8	

SRM SHELL ROUGH FIXATION MILL

SRM 殼型粗銑刀







- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1604	M4-10-5.7-60	T15

- Inserts are optional accessories. Needs to be purchased additionally.

MODEL NO.	TYPE	D	d_1	L	l_1	a_p max.	TEETH	INSERT
154.662.22.050	SRM-50-22-3T	50	22	55	31	30	3	AP..1604
154.663.22.050	SRM-50-22-4T						4	
154.663.27.063	SRM-63-27-4T	63	27					
154.664.27.063	SRM-63-27-5T						5	
154.663.32.080	SRM-80-32-4T	80	32				4	
154.664.32.080	SRM-80-32-5T						5	

Machining Materials	GRADE				
	PL30	GH05	RM4130	RM5005	RM5060
P	△		△		
M	△		△		
K	△		△		
N		△		△	△
S					
H					

TYPE	GRADE				
	PL30	GH05	RM4130	RM5005	RM5060
APKT1003PDTR	v				
APKT100304PDER-M04			v		
APKT1604PDTR	v				
APKT160408PDER-M02			v		
APGT100304PDFR-F04				v	
APGT160408PDFR-F02				v	
APEX1604PDFR-701		v			v

Cutting Conditions

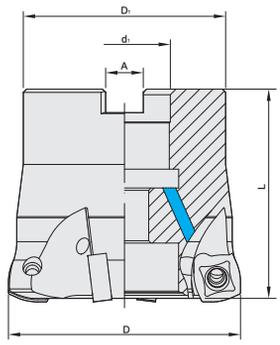
Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	PL30	90 ~ 230	0.15 ~ 0.25	0.5 ~ 15
	RM4130			
M	PL30	100 ~ 210	0.12 ~ 0.22	0.5 ~ 15
	RM4130			
K	PL30	120 ~ 250	0.12 ~ 0.22	0.5 ~ 15
	RM4130			
N	GH05	300 ~ 600	0.06 ~ 0.25	0.5 ~ 15
	RM5005			
	RM5060			

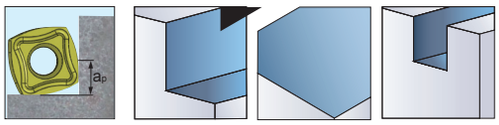
- Spindle Revolution = (1000 ×cutting speed) ÷ (3.14 × the external dia. of cutting tool)
- Table feed(mm/min) = table feed of each tooth × total teeth of cutting tool × spindle revolution

HIGH FEED FACE MILLS

HF 大進給殼型銑刀







Depth of Cut (a_p) | End Milling | Face Milling | Slotting

- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SNKX09T3	M3.5-9.3-4.8-60	T10

- Inserts are optional accessories. Needs to be purchased additionally.

METRIC

MODEL NO.	TYPE	D_1	D	d_1	L	A	a_p max.	TEETH	INSERT
154.268.22.050	HF-50-22C-4SN9	48	50	22	40	10.4	1	4	SNKX09T3
154.268.22.063	HF-63-22C-5SN9	50	63					5	
154.268.27.080	HF-80-27C-6SN9	63	80	27	50	12.4		6	
154.268.32.100	HF-100-32C-7SN9	78	100	32		14.4		7	
154.268.40.125	HF-125-40C-8SN9	89	125	40	63	16.4		8	

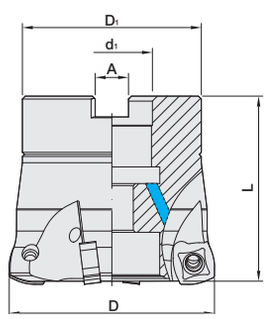
INCHES

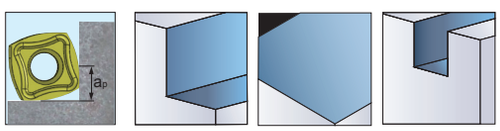
MODEL NO.	TYPE	D_1	D	d_1	L	A	a_p max.	TEETH	INSERT
9202123	HF-2.00-.750C-4SN9	1.69	2.00	0.75	1.75	0.31	0.04	4	SNKX09T3
9212124	HF-2.50-.750C-5SN9	1.69	2.50	0.75	1.75	0.31		5	
9353123	HF-3.00-1.00C-6SN9	2.17	3.00	1.00	2.00	0.37		6	
9474123	HF-4.00-1.25C-7SN9	2.76	4.00	1.25	2.00	0.50		7	

ShrinkMILL HIGH FEED CUTTER

SHF 大進給熱膨脹殼型銑刀







Depth of Cut (a_p) | End Milling | Face Milling | Slotting

- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SNKX09T3	M3.5-9.3-4.8-60	T10

- Inserts are optional accessories. Needs to be purchased additionally.

INCHES

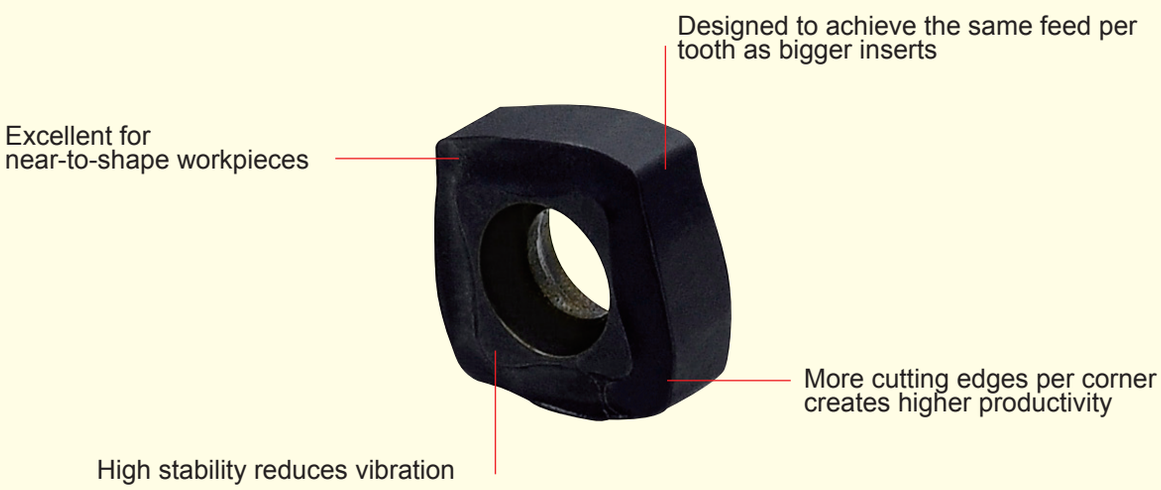
MODEL NO.	TYPE	D_1	D	d_1	L	A	a_p max.	TEETH	INSERT
9223123	SHF-2.00-.750C-4SN9	1.69	2.00	0.75	1.75	0.31	0.04	4	SNKX09T3
9233124	SHF-2.50-.750C-5SN9	1.69	2.50	0.75	1.75	0.31		5	
9363123	SHF-3.00-1.00C-6SN9	2.17	3.00	1.00	2.00	0.37		6	
9484123	SHF-4.00-1.25C-7SN9	2.76	4.00	1.25	2.00	0.50		7	



The Power of 8!

Milling with 8 Cutting Edges

SNKX 09T3-HF-LT30



Tool introduces the SNKX High Feed Insert

Tool is pleased to announce the release of its revolutionary high feed SNKX 09T3 insert.

For the first time in the market you can have an 8 cutting edges square insert for high feed milling, with 09 size.

Features:

- Perfect for copying.
- Excels in plunge milling.
- Great for roughing operations on pockets and 3D surfaces.
- High productivity(more cutting edges per corner).

Benefits:

- 8 cutting edges.
- Long tool life.
- Excellent for dry machining of moulds and dies.

Machining Materials	GRADE
	LT30
P	△
M	△
K	△
N	
S	△
H	

TYPE	GRADE
	LT30
SNKX 09T3-HF	v

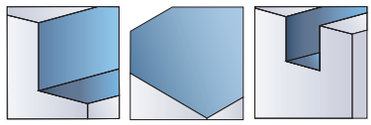
Cutting Conditions

Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	PL30	120 ~ 280	0.25 ~ 2	0.1 ~ 1.0
M	PL30	100 ~ 210	0.15 ~ 1.35	0.1 ~ 1.0
K	PL30	120 ~ 280	0.2 ~ 2.4	0.1 ~ 1.0
S	GH05	28 ~ 60	0.17 ~ 1.05	0.1 ~ 1.0

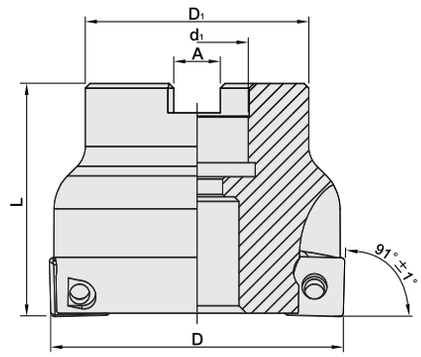
- Spindle Revolution = (1000 ×cutting speed) ÷ (3.14 × the external dia. of cutting tool)
- Table feed(mm/min) = table feed of each tooth × total teeth of cutting tool × spindle revolution

SQP SQUARE SHOULDER MILLING CUTTER

SQP 直角殼型銑刀







- The material of SQP is superior Alloy Tool Steel, which improves rigidity and anti-vibration ability.
- The material is treated with fine processing after hardening, which improves cutter's stability during the cutting process.
- Used for end milling, face milling and slotting.





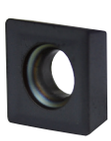


METRIC

MODEL NO.	TYPE	D	D_1	d_1	L	A	TEETH	INSERT
154.688.22.050	SQP-50-22	50	40	22	40	10.4	4	SP..1204
154.688.22.063	SQP-63-22	63	50		50		5	
154.688.27.080	SQP-80-27	80	60	27		12.4	6	
154.688.32.100	SQP-100-32	100	70	32	55	14.4	8	
154.688.40.125	SQP-125-40	125	90	40	63	16.4	8	
154.688.40.160	SQP-160-40	160	130				10	

INCHES

MODEL NO.	TYPE	D	D_1	d_1	L	A	TEETH	INSERT
154.688.68.063	SQP-63-25.4	63	50	25.4	50	9.5	5	SP..1204
154.688.68.080	SQP-80-25.4	80	60				6	
154.688.72.100	SQP-100-31.75	100	70	31.75	55	12.7	8	



TYPE	INSERT SCREW	WRENCH
SPMT 120408 TN PL30	M5-10-6.3-43	T20

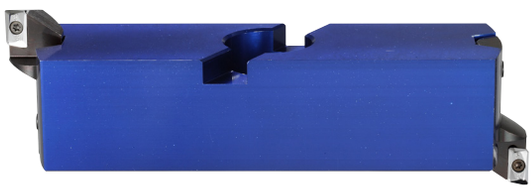
- Inserts are optional accessories. Needs to be purchased additionally.

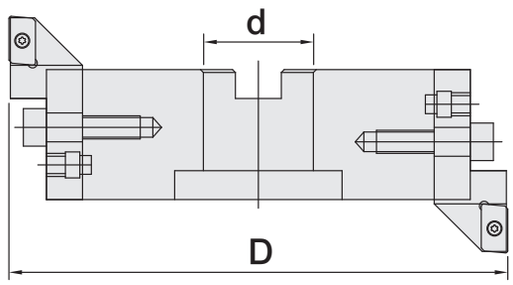
Cutting Conditions

Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	PL 30	90 ~ 230	0.09 ~ 0.17	0.5 ~ 12
M	PL 30	100 ~ 210	0.09 ~ 0.13	0.5 ~ 12
K	PL 30	120 ~ 250	0.09 ~ 0.17	0.5 ~ 12

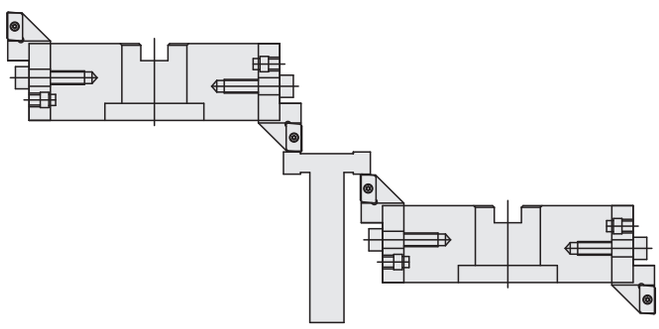
U776 ALUMINUIM CUTTER -DUAL FUNCTIONS BY ONE TOOL

U776 鋁合金刀頭 一刀兩用





T W PAT NO. M355771



MODEL NO.	TYPE	D	d	TEETH	INSERT HOLDERS
154.286.77.200	U776-200-38.1	200	38.1	2	M3-SE1204 M3-APGT1605 M3-APMT1604
154.286.77.240	U776-240-38.1	240			

● ACCESSORIES:



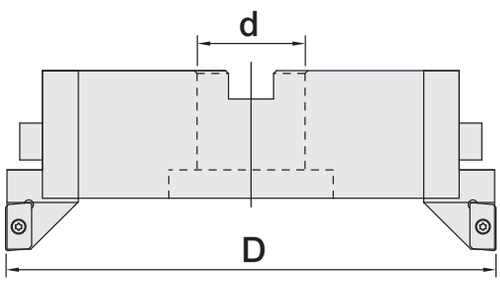
INSERT HOLDERS	INSERT	INSERT SCREW	WRENCH
M3-SE1204	SE..1204	M5003-2	T20
M3-APGT1605	AP..1605	M3501-1	T15
M3-APMT1604	AP..1604	M4001-3	

● Inserts are optional accessories. Needs to be purchased additionally.

U777 ALUMINUIM CUTTER -DUAL FUNCTIONS BY ONE TOOL

U777 鋁合金刀頭





T W PAT NO. M355771

MODEL NO.	TYPE	D	d	TEETH	INSERT HOLDERS
154.287.22.200	U777-80-22	80	22	4	M3-SE1204 M3-APGT1605 M3-APMT1604
154.287.68.240	U777-110-25.4	110	25.4		
154.287.77.130	U777-130-38.1	130	38.1		
154.287.77.170	U777-170-38.1	170			
154.287.77.210	U777-210-38.1	210			
154.287.77.250	U777-250-38.1	250			
154.287.77.320	U777-320-38.1	320		6	

● ACCESSORIES:



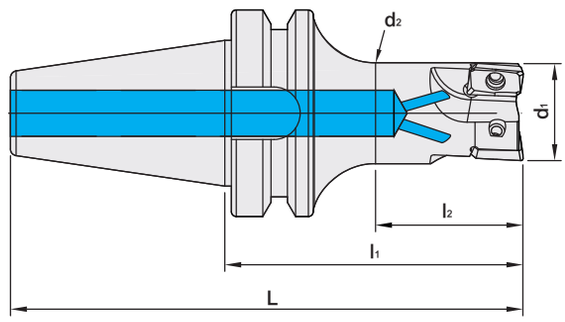
INSERT HOLDERS	INSERT	INSERT SCREW	WRENCH
M3-SE1204	SE..1204	M5003-2	T20
M3-APGT1605	AP..1605	M3501-1	T15
M3-APMT1604	AP..1604	M4001-3	

● Inserts are optional accessories. Needs to be purchased additionally.

SBT / CIAP INDEXABLE END MILL CUTTER

SBT / CIAP 鋼體模霸刀桿





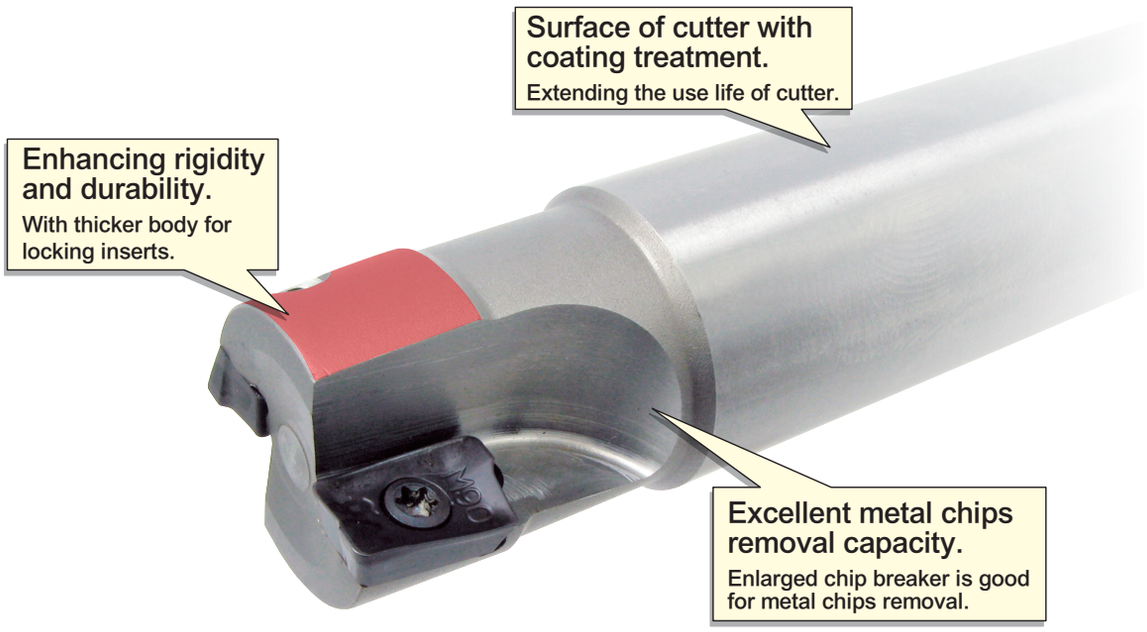
MODEL NO.	TYPE	d_1	d_2	L	l_1	l_2	TEETH	INSERT
25.244C.16.065	SBT30xCIAP16-65-2T	16	15.5	113.4	65	33	2	AP..1003
25.245C.20.065	SBT30xCIAP20-65-3T	20	19.2				3	
25.246C.25.065	SBT30xCIAP25-65-4T	25	23.6			35	4	
25.247C.32.065	SBT30xCIAP32-65-5T	32	31.5			38	5	
26.244C.16.090	SBT40xCIAP16-90-2T	16	15.3	155.4	90	39	2	
26.245C.20.090	SBT40xCIAP20-90-3T	20	19.2			33	3	
26.246C.25.090	SBT40xCIAP25-90-4T	25	23.6			45	4	
26.244C.25.090	SBT40xCIAP25-90-2T		23.8				2	AP..1604
26.247C.32.090	SBT40xCIAP32-90-5T	32	30.5				5	AP..1003
26.245C.32.090	SBT40xCIAP32-90-3T		30.8				3	AP..1604
26.248C.40.090	SBT40xCIAP40-90-6T	40	38.5				6	AP..1003
26.246C.40.090	SBT40xCIAP40-90-4T		38.6				4	AP..1604
26.246C.50.090	SBT40xCIAP50-90-4T	50	48.6			47	4	
26.247C.63.090	SBT40xCIAP63-90-5T	63	61.6			63	5	
27.244C.25.090	SBT50xCIAP25-90-2T	25	23.8	191.8	90	40	2	
27.245C.32.090	SBT50xCIAP32-90-3T	32	30.8				3	
27.246C.40.090	SBT50xCIAP40-90-4T	40	38.6				4	
27.246C.50.090	SBT50xCIAP50-90-4T	50	48.6				4	
27.247C.63.090	SBT50xCIAP63-90-5T	60	61.6				5	

● ACCESSORIES:

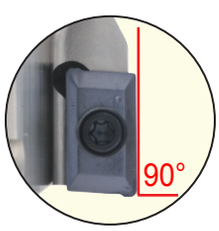
INSERT	SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

● Inserts are optional accessories. Needs to be purchased additionally.

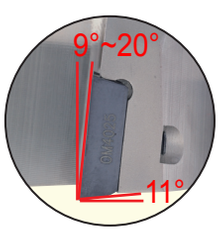
INDEXABLE END MILL CUTTER



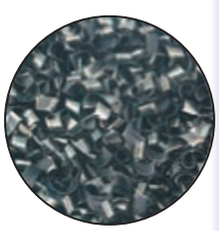
- Providing perfect processing surface when this cutter is being used to process on the machine table.



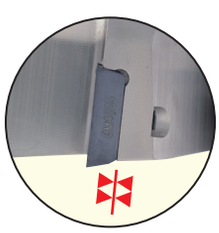
- Good sharpness because of the design of AR+9°~20°, R.R.+11° for insert tip.



- Excellent design of cutting angle and good metal chips removal, leading to longer use life of inserts.



- After heat treatment, the connection between insert and insert seat is more closely-contacted, having high hardness, good toughness with good effect of vibration resistance and superior precision.

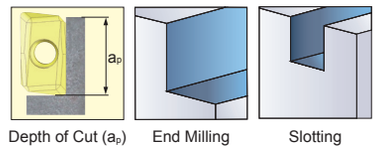




- Roundness: ≦ 1.0μ.
- HRC: 42°~ 44°.
- Surface Roughness: Ra0.5μ.
- Tolerance of Tool Shank: h6.
- Extending the Use Life of Cutters:There is coating on the surface of cutting tool, which is rustproof and extends the use life of cutters.
- Stable Insert Seat: The insert seat with special design can effectively avoid the influence from the tolerance of the inserts and provide best cutting surface.
- Excellent Metal Chips Removal Capacity: Enlarged chipbreaker effectively discharges the metal chips, fastens table feed and raises processing efficiency.
- Top Vibration Resistance: The body is made of special steel, which provides excellent vibration resistance and extends the use life of cutters.
- Superior Right Angle: Providing perfect processing surface when this cutter is being used to process on the machine table.

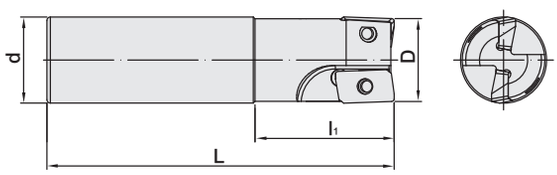
INDEXABLE END MILL CUTTER

IAP 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





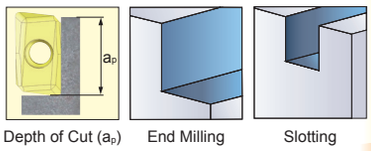
MODEL NO.	TYPE	D	d	L	l_1	TEETH	INSERT
154.243.1012.100	IAP-1012-100L-1T	10	12	100	20	1	AP..1003
154.243.1212.100	IAP-1212-100L-1T	12		100	25		
154.244.1616.100	IAP-1616-100L-2T	16	16	100		2	
154.244.1616.120	IAP-1616-120L-2T			120			
154.244.1616.160	IAP-1616-160L-2T			160			
154.244.1616.200	IAP-1616-200L-2T			200			
154.244.2020.120	IAP-2020-120L-2T	20	20	120			
154.245.2020.120	IAP-2020-120L-3T			120		3	
154.244.2020.150	IAP-2020-150L-2T			150		2	
154.245.2020.150	IAP-2020-150L-3T			150		3	
154.244.2020.200	IAP-2020-200L-2T			200		2	
154.244.2120.150	IAP-2120-150L-2T	21		150			
154.244.2220.150	IAP-2220-150L-2T	22		150			
154.244.2525.150	IAP-2525-150L-2T	25	25	150			
154.245.2525.150	IAP-2525-150L-3T			150		3	
154.246.2525.150	IAP-2525-150L-4T			150		4	
154.246.2525.200	IAP-2525-200L-4T			200			
154.244.25425.150	IAP-25.425-150L-2T	25.4		150		2	
154.244.25425.200	IAP-25.425-200L-2T			200			
154.244.2625.150	IAP-2625-150L-2T	26		150			
154.244.2625.200	IAP-2625-200L-2T			200			
154.245.2725.150	IAP-2725-150L-3T	27		150		3	
154.246.2725.200	IAP-2725-200L-4T			200		4	
154.245.3232.150	IAP-3232-150L-3T	32	32	150	40	3	
154.247.3232.150	IAP-3232-150L-5T			150	30	5	
154.247.3232.200	IAP-3232-200L-5T			200			
154.245A.3232.150	IAP-3232-150L-3TA			150	40	3	AP..1604
154.244.3232.200	IAP-3232-200L-2T			200		2	
154.244.3232.250	IAP-3232-250L-2T			250			
154.246.4032.150	IAP-4032-150L-4T	40		150		4	
154.246.4032.250	IAP-4032-250L-4T			250			

● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

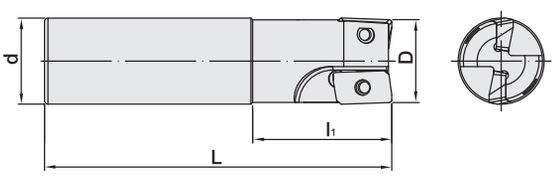
● Inserts are optional accessories. Needs to be purchased additionally.

IAP 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





INCHES

MODEL NO.	TYPE	D	d	L	l_1	TEETH	INSERT
154.243.5858.400	IAP-1/2-1/2-4-1T	0.5	0.5	4	0.787	1	AP..1003
154.244.6158.275	IAP-5/8-1/2-2.75-2T	0.625		2.75	0.906	2	
154.244.6161.500	IAP-5/8-5/8-5-2T		0.625	5	1.024		
154.245.6461.305	IAP-3/4-5/8-3.05-3T	0.75		3.05		3	
154.244.6464.500	IAP-3/4-3/4-5-2T		0.75	5	1.142	2	
154.245.6864.325	IAP-1-3/4-3.25-3T	1		3.25		3	
154.245.6868.375	IAP-1-1-3.75-3T		1	3.75	1.26		
154.246.7268.375	IAP-1¼-1-3.75-4T	1.25				4	
154.246.7272.400	IAP-1¼-1¼-4-4T		1.25	4	1.575		
154.247.7772.435	IAP-1½-1¼-4.35-5T	1.5		4.35	1.969	5	
154.244.6464.520	IAP-3/4-3/4-5.2-2T	0.75	0.75	5.2	2.362	2	
154.245.6868.600	IAP-1-1-6-3T	1	1	6		3	
154.247.7772.945	IAP-1½-1¼-9.45-5T	1.5	1.25	9.45	2.559	5	
154.244A.6864.350	IAP-1-3/4-3.5-2TA	1	0.75	3.5	1.417	2	AP..1604
154.244A.6868.375	IAP-1-1-3.75-2TA		1	3.75			
154.245A.7268.400	IAP-1¼-1-4-3TA	1.25		4	1.575	3	
154.245A.7272.400	IAP-1¼-1¼-4-3TA		1.25				
154.245A.7272.600	IAP-1¼-1¼-6-3TA			6			
154.246A.7772.435	IAP-1½-1¼-4.35-4TA	1.5		4.35	1.969	4	
154.244A.6868.630	IAP-1-1-6.3-2TA	1	1	6.3	2.362	2	
154.244A.7272.787	IAP-1¼-1¼-7.87-2TA	1.25	1.25	7.87	2.559		
154.244A.7772.945	IAP-1½-1¼-9.45-2TA	1.5		9.45			

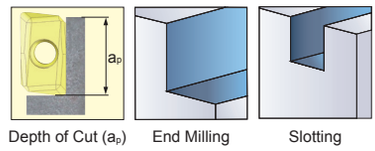
● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

● Inserts are optional accessories. Needs to be purchased additionally.

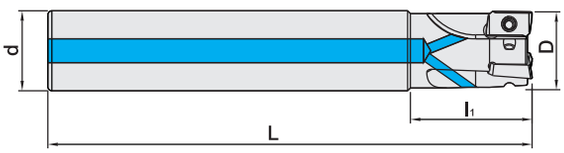
INDEXABLE END MILL CUTTER

CIAP 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





● Coolant-thru design.

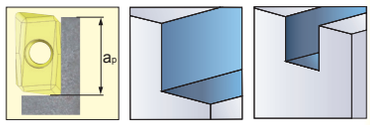
MODEL NO.	TYPE	D	d	L	l_1	TEETH	INSERT
154.243C.1012.100	CIAP-1012-100L-1T	10	12	100	20	1	AP..1003
154.243C.1212.100	CIAP-1212-100L-1T	12		100	25		
154.244C.1616.100	CIAP-1616-100L-2T	16	16	100		2	
154.244C.1616.120	CIAP-1616-120L-2T			120			
154.244C.1616.160	CIAP-1616-160L-2T			160			
154.244C.1616.200	CIAP-1616-200L-2T			200			
154.244C.2020.120	CIAP-2020-120L-2T	20	20	120			
154.245C.2020.120	CIAP-2020-120L-3T			120		3	
154.244C.2020.150	CIAP-2020-150L-2T			150		2	
154.245C.2020.150	CIAP-2020-150L-3T			150		3	
154.244C.2020.200	CIAP-2020-200L-2T			200		2	
154.244C.2120.150	CIAP-2120-150L-2T	21		150			
154.244C.2220.150	CIAP-2220-150L-2T	22		150			
154.244C.2525.150	CIAP-2525-150L-2T	25	25	150			
154.245C.2525.150	CIAP-2525-150L-3T			150		3	
154.246C.2525.150	CIAP-2525-150L-4T			150		4	
154.246C.2525.200	CIAP-2525-200L-4T			200			
154.244C.25425.150	CIAP-25.425-150L-2T	25.4		150		2	
154.244C.25425.200	CIAP-25.425-200L-2T			200			
154.244C.2625.150	CIAP-2625-150L-2T	26		150			
154.244C.2625.200	CIAP-2625-200L-2T			200			
154.245C.2725.150	CIAP-2725-150L-3T	27		150		3	
154.246C.2725.200	CIAP-2725-200L-4T			200		4	
154.245C.3232.150	CIAP-3232-150L-3T	32	32	150	40	3	
154.247C.3232.150	CIAP-3232-150L-5T			150	30	5	
154.247C.3232.200	CIAP-3232-200L-5T			200			
154.245CA.3232.150	CIAP-3232-150L-3TA			150	40	3	AP..1604
154.244C.3232.200	CIAP-3232-200L-2T			200		2	
154.244C.3232.250	CIAP-3232-250L-2T			250			
154.246C.4032.150	CIAP-4032-150L-4T	40		150		4	
154.246C.4032.250	CIAP-4032-250L-4T			250			

● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

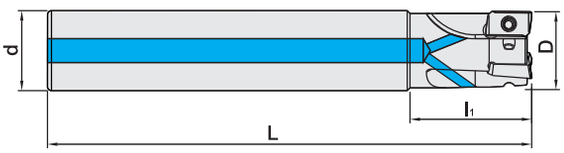
● Inserts are optional accessories. Needs to be purchased additionally.

CIAP 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





● Coolant-thru design.

INCHES

MODEL NO.	TYPE	D	d	L	l_1	TEETH	INSERT
154.243C.5858.400	CIAP-1/2-1/2-4-1T	0.5	0.5	4	0.787	1	AP..1003
154.244C.6158.275	CIAP-5/8-1/2-2.75-2T	0.625		2.75	0.906	2	
154.244C.6161.500	CIAP-5/8-5/8-5-2T		0.625	5	1.024		
154.245C.6461.305	CIAP-3/4-5/8-3.05-3T	0.75		3.05		3	
154.244C.6464.500	CIAP-3/4-3/4-5-2T		0.75	5	1.142	2	
154.245C.6864.325	CIAP-1-3/4-3.25-3T	1		3.25		3	
154.245C.6868.375	CIAP-1-1-3.75-3T		1	3.75	1.26		
154.246C.7268.375	CIAP-1¼-1-3.75-4T	1.25				4	
154.246C.7272.400	CIAP-1¼-1¼-4-4T		1.25	4	1.575		
154.247C.7772.435	CIAP-1½-1¼-4.35-5T	1.5		4.35	1.969	5	
154.244C.6464.520	CIAP-3/4-3/4-5.2-2T	0.75	0.75	5.2	2.362	2	
154.245C.6868.600	CIAP-1-1-6-3T	1	1	6		3	
154.247C.7772.945	CIAP-1½-1¼-9.45-5T	1.5	1.25	9.45	2.559	5	
154.244CA.6864.350	CIAP-1-3/4-3.5-2TA	1	0.75	3.5	1.417	2	AP..1604
154.244CA.6868.375	CIAP-1-1-3.75-2TA		1	3.75			
154.245CA.7268.400	CIAP-1¼-1-4-3TA	1.25		4	1.575	3	
154.245CA.7272.400	CIAP-1¼-1¼-4-3TA		1.25				
154.245CA.7272.600	CIAP-1¼-1¼-6-3TA			6			
154.246CA.7772.435	CIAP-1½-1¼-4.35-4TA	1.5		4.35	1.969	4	
154.244CA.6868.630	CIAP-1-1-6.3-2TA	1	1	6.3	2.362	2	
154.244CA.7272.787	CIAP-1¼-1¼-7.87-2TA	1.25	1.25	7.87	2.559		
154.244CA.7772.945	CIAP-1½-1¼-9.45-2TA	1.5		9.45			

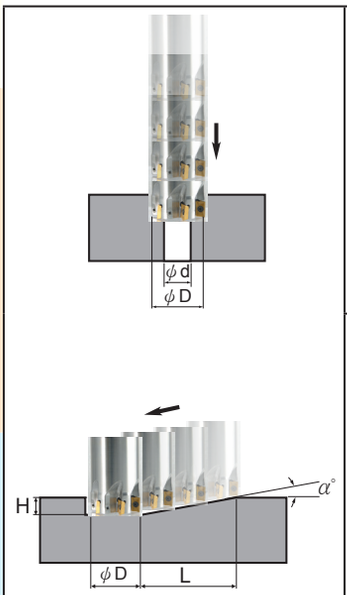
● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

● Inserts are optional accessories. Needs to be purchased additionally.

Synwell

INDEXABLE END MILL CUTTER



IAP AP_10

TYPE	Diameter of Cutter ϕ D (mm)	Internal Diameter ϕ d (mm)
IAP-1012-100L	10	5
IAP-1212-100L	12	5
IAP-1616-120L	16	5.5
IAP-2020-120L	20	6

IAP AP_16

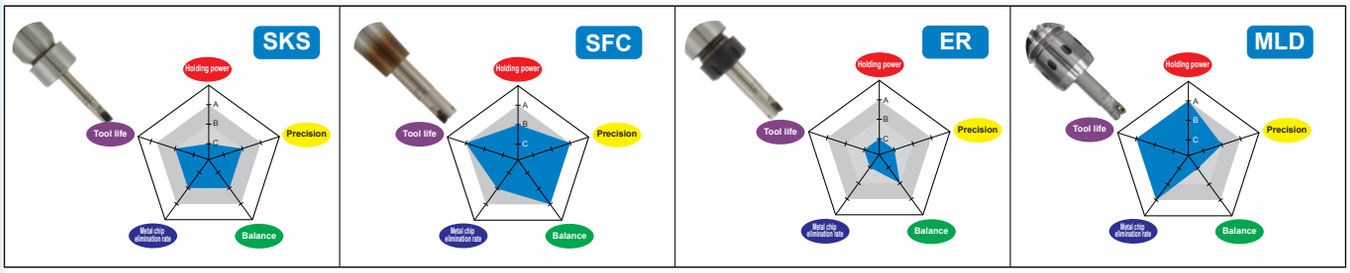
TYPE	Diameter of Cutter ϕ D (mm)	Internal Diameter ϕ d (mm)
IAP-2525-150L	25	8
IAP-3232-150L	32	15
IAP-3232-150L	40	23

IAP AP_10

TYPE	Diameter of Cutter ϕ D(mm)	Max. Rake Milling Angle a°	L(mm) a° max
IAP-1012-100L	10	5	91.5
IAP-1212-100L	12	32	14.4
IAP-1616-120L	16	15	33.5
IAP-2020-120L	20	7.5	128.7

IAP AP_16

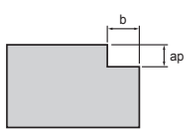
TYPE	Diameter of Cutter ϕ D(mm)	Max. Rake Milling Angle a°	L(mm) a° max
IAP-2525-150L	25	11.5	182
IAP-3232-150L	32	5.3	309
IAP-3232-150L	40	4	386

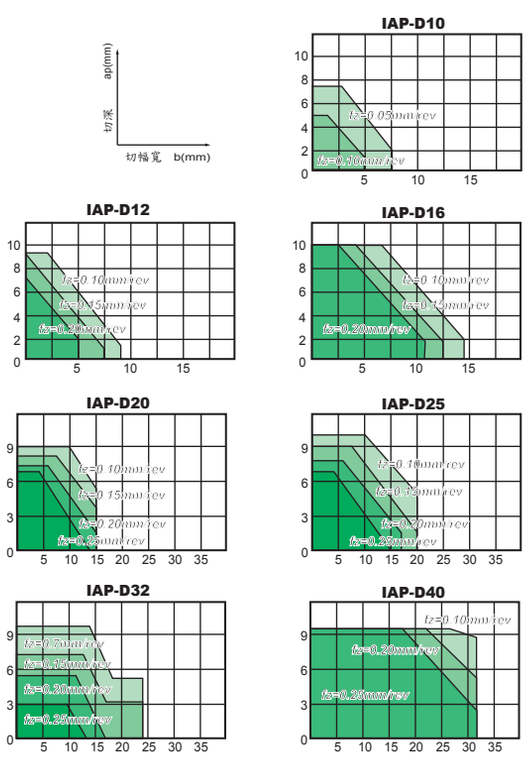


Shoulder Milling

Material

S58C(HB220)

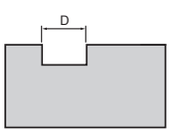


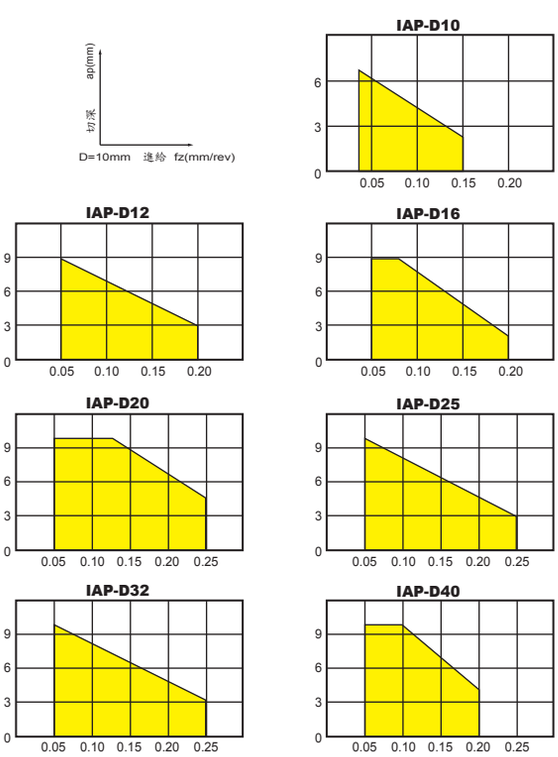


Slotting Milling

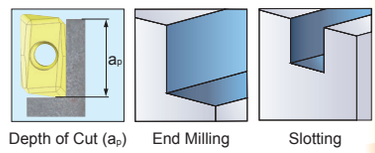
Material

S58C(HB280)



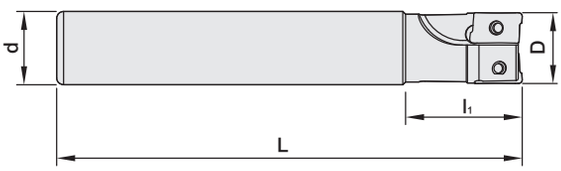


IEM90 強力直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





INCHES - W/O Coolant

MODEL NO.	TYPE	D	d	L	l_1	TEETH	INSERT
1631234	IEM90-.500-.500-4.00-1-10	0.5	0.5	4	0.787	1	AP..1003
1641235	IEM90-.625-.625-5.00-2-10	0.625	0.625	5	0.984	2	
1651236	IEM90-.750-.750-5.00-2-10	0.75	0.75				
1661237	IEM90-1.00-1.00-6.00-3-10	1	1	6		3	
1676238	IEM90-1.25-1.25-6.00-3-16	1.25	1.25		1.772		AP..1604
1686239	IEM90-1.50-1.25-6.00-4-16	1.5				4	

INCHES - Coolant Thru

MODEL NO.	TYPE	D	d	L	l_1	TEETH	INSERT
1632234	IEM90-.500-.500C-4.00-1-10	0.5	0.5	4	0.787	1	AP..1003
1642235	IEM90-.625-.625C-5.00-2-10	0.625	0.625	5	0.984	2	
1652236	IEM90-.750-.750C-5.00-2-10	0.75	0.75				
1662237	IEM90-1.00-1.00C-6.00-3-10	1	1	6		3	
1672238	IEM90-1.25-1.25C-6.00-3-16	1.25	1.25		1.772		AP..1604
1682239	IEM90-1.50-1.25C-6.00-4-16	1.5	1.25			4	

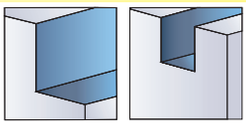
● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

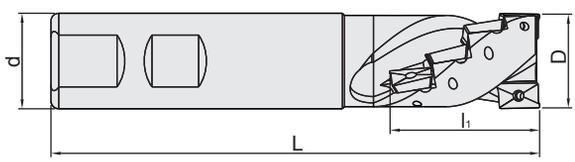
● Inserts are optional accessories. Needs to be purchased additionally.

CPE ROUGH CUTTING END MILL

CPE 粗切削銑刀


End Milling Slotting





- The material of CPE is superior Alloy Tool Steel, which improves rigidity and anti-vibration ability.
- The material is treated with fine processing after hardening, which improves end mill's stability during the cutting process.
- Used for rough milling.







MODEL NO.	TYPE	d	D	L	l_1	No. of eff. edge lines	No. of inserts	INSERT
154.63.2020.028	CPE-2020-28L-2T	20	20	107	28	2	5	AP..1003
154.63.2525.037	CPE-2525-37L-2T	25	25	125	37	2	8	
154.63.3232.046	CPE-3232-46L-3T	32	32	135	46	3	15	

- ACCESSORIES:

INSERT	SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8

- Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE END MILL CUTTER

Machining Materials	GRADE					
	PL30	GH05	RM4130	RM5005	RM5060	FK15
P	△		△			
M	△		△			
K	△		△			
N		△		△	△	△
S						
H						

TYPE	GRADE					
	PL30	GH05	RM4130	RM5005	RM5060	FK15
APKT1003PDTR	v					
APKT1003PDER						v
APKT1003PDER-M04			v			
APGT100304PDFR-F04				v		
APHT1003PDFR-F03				v		
APKT1604PDTR	v					
APKT160408PDER-M02			v			
APGT160408PDFR-F02				v		
APEX1604PDFR-701		v			v	

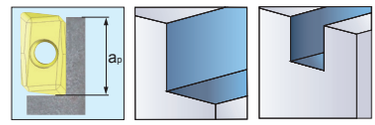
Cutting Conditions

Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	PL30	90 ~ 230	0.15 ~ 0.25	0.5 ~ 15
	RM4130			
M	PL30	100 ~ 210	0.12 ~ 0.22	0.5 ~ 15
	RM4130			
K	PL30	120 ~ 250	0.12 ~ 0.22	0.5 ~ 15
	RM4130			
N	GH05	300 ~ 600	0.06 ~ 0.25	0.5 ~ 15
	RM5005			
	RM5060			
	FK15			

- Spindle Revolution = (1000 ×cutting speed) ÷ (3.14 × the external dia. of cutting tool)
- Table feed(mm/min) = table feed of each tooth × total teeth of cutting tool × spindle revolution

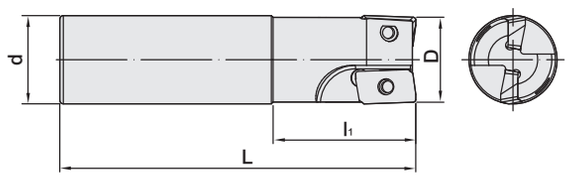
INDEXABLE END MILL CUTTER

MAP 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





MODEL NO.	TYPE	D	d (h6)	L	l_1	TEETH	INSERT
154.467.1012.100	MAP-1012-100L-1T	10	12	100	25	1	AP..1135
154.467.1212.100	MAP-1212-100L-1T	12					
154.468.1615.150	MAP-1615-150L-2T	16	15	150		2	
154.468.1615.200	MAP-1615-200L-2T			200			
154.468.1616.120	MAP-1616-120L-2T		16	120			
154.468.1616.160	MAP-1616-160L-2T			160			
154.468.2019.150	MAP-2019-150L-2T	20	19	150	30		
154.468.2019.200	MAP-2019-200L-2T			200			
154.468.2020.120	MAP-2020-120L-2T		20	120			
154.468.2020.150	MAP-2020-150L-2T			150			
154.468.2020.200	MAP-2020-200L-2T			200			
154.468.2120.150	MAP-2120-150L-2T	21		150	35		
154.468.2220.150	MAP-2220-150L-2T	22					
154.469.2525.150	MAP-2525-150L-3T	25	25			3	
154.470.2525.150	MAP-2525-150L-4T					4	
154.469.2525.200	MAP-2525-200L-3T			200		3	
154.470.2525.200	MAP-2525-200L-4T					4	
154.468.2525.150	MAP-2525-150L-2T			150		2	AP..1604
154.468.2525.200	MAP-2525-200L-2T			200			
154.468.2525.300	MAP-2525-300L-2T			300			
154.468.6825.150	MAP-25.425-150L-2T	25.4		150			
154.468.6825.200	MAP-25.425-200L-2T			200			
154.468.2625.150	MAP-2625-150L-2T	26		150			
154.468.2625.200	MAP-2625-200L-2T			200			
154.468.2725.150	MAP-2725-150L-2T	27		150			
154.468.2725.200	MAP-2725-200L-2T			200			
154.468.3232.150	MAP-3232-150L-2T	32	32	150	45		
154.469.3232.150	MAP-3232-150L-3T			150		3	
154.469.3232.250	MAP-3232-250L-3T			250			
154.469.3232.300	MAP-3232-300L-3T			300			
154.469.3532.200	MAP-3532-200L-3T	35		200			
154.469.3532.250	MAP-3532-250L-3T			250			
154.469.3532.300	MAP-3532-300L-3T			300			

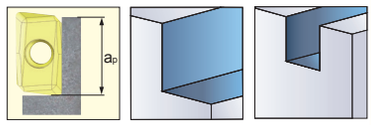
● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1135	M2.5-6.0-3.5-60	T8
AP..1604	M4-10-5.7-60	T15

● Inserts are optional accessories. Needs to be purchased additionally.

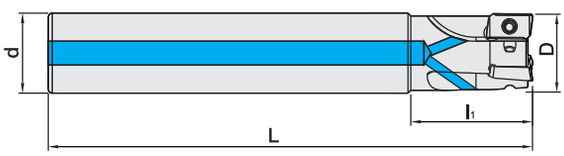
INDEXABLE END MILL CUTTER

CMAP 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





- Coolant-thru design.

MODEL NO.	TYPE	D	d (h6)	L	l_1	TEETH	INSERT
154.467C.1012.100	CMAP-1012-100L-1T	10	12	100	25	1	AP..1135
154.467C.1212.100	CMAP-1212-100L-1T	12			30		
154.468C.1516.150	CMAP-1516-150L-2T	15	16	150		2	
154.468C.1516.200	CMAP-1516-200L-2T			200			
154.468C.1616.120	CMAP-1616-120L-2T	16		120			
154.468C.1616.160	CMAP-1616-160L-2T			160			
154.468C.1716.150	CMAP-1716-150L-2T	17		150			
154.468C.1820.100	CMAP-1820-100L-2T	18	20	100	28		
154.468C.1820.150	CMAP-1820-150L-2T			150	35		
154.468C.1920.150	CMAP-1920-150L-2T	19					
154.468C.1920.200	CMAP-1920-200L-2T			200			
154.469C.2020.120	CMAP-2020-120L-3T	20		120		3	
154.469C.2020.150	CMAP-2020-150L-3T			150			
154.469C.2020.200	CMAP-2020-200L-3T			200			
154.469C.2120.150	CMAP-2120-150L-3T	21		150			
154.469C.2220.150	CMAP-2220-150L-3T	22					
154.469C.2320.150	CMAP-2320-150L-3T	23					
154.469C.2425.125	CMAP-2425-125L-3T	24	25	125		4	
154.470C.2525.150	CMAP-2525-150L-4T	25		150			
154.470C.2625.150	CMAP-2625-150L-4T	26					
154.470C.2725.150	CMAP-2725-150L-4T	27					
154.470C.2825.150	CMAP-2825-150L-4T	28					
154.470C.2925.150	CMAP-2925-150L-4T	29					
154.470C.3032.150	CMAP-3032-150L-4T	30	32		45	5	
154.470C.3132.150	CMAP-3132-150L-4T	31					
154.471C.3232.150	CMAP-3232-150L-5T	32					
154.471C.3332.150	CMAP-3332-150L-5T	33					
154.471C.3432.150	CMAP-3432-150L-5T	34					
154.471C.3532.150	CMAP-3532-150L-5T	35					
154.472C.4032.150	CMAP-4032-150L-6T	40				6	
154.472C.5032.150	CMAP-5032-150L-6T	50					

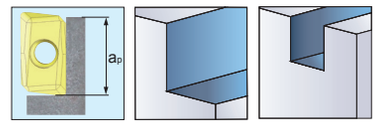
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1135	M2.5-6.0-3.5-60	T8

- Inserts are optional accessories. Needs to be purchased additionally.

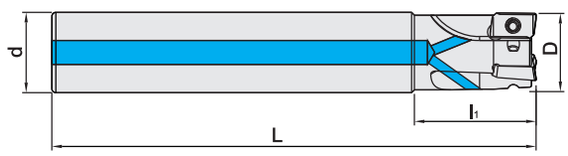
INDEXABLE END MILL CUTTER

CMAP 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





● Coolant-thru design.

MODEL NO.	TYPE	D	d (h6)	L	l_1	TEETH	INSERT
154.468C.2525.150	CMAP-2525-150L-2T	25	25	150	40	2	AP..1604
154.468C.2525.220	CMAP-2525-220L-2T			220			
154.468C.2525.300	CMAP-2525-300L-2T			300			
154.468C.2625.150	CMAP-2625-150L-2T	26		150			
154.469C.3232.150	CMAP-3232-150L-3T	32	32	150	45	3	
154.469C.3232.200	CMAP-3232-200L-3T			200			
154.469C.3232.250	CMAP-3232-250L-3T			250			
154.469C.3232.300	CMAP-3232-300L-3T			300			
154.469C.3332.150	CMAP-3332-150L-3T	33		150			
154.469C.3532.200	CMAP-3532-200L-3T	35		200			
154.469C.3532.250	CMAP-3532-250L-3T			250			
154.469C.3532.300	CMAP-3532-300L-3T			300			
154.470C.4032.150	CMAP-4032-150L-4T	40		150		4	
154.470C.4032.200	CMAP-4032-200L-4T			200			

● ACCESSORIES:

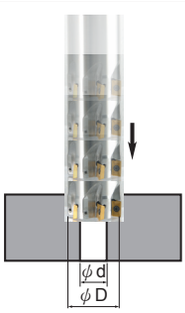
INSERT	INSERT SCREW	WRENCH
AP..1135	M2.5-6.0-3.5-60	T8
AP..1604	M4-10-5.7-60	T15

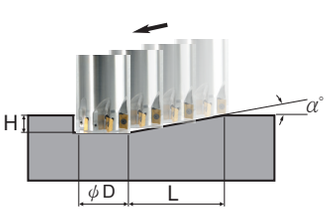
● Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE END MILL CUTTER

Machining Materials	GRADE			Indication of classification
	JSP25	TT9080	RM4130	
P	△	▲	△	▲ : 1st choice
M	△	△	△	△ : 2nd choice
K	△		△	
N				
S		△		
H		△		

TYPE	GRADE		
	JSP25	TT9080	RM4130
APMT1135PDER - G04	V		
APMT1135PDER		V	
APMT1135PDER-M04			V
APMT1604PDER - G08	V		
APMT1604PDER		V	
APMT1604PDER-M04			V





MAP AP_11

TYPE	Diameter of Cutter ϕ D (mm)	Internal Diameter ϕ d (mm)
MAP-1012-100L	10	5
MAP-1212-100L	12	5
MAP-1616-120L	16	5.5
MAP-2020-120L	20	6

MAP AP_16

TYPE	Diameter of Cutter ϕ D (mm)	Internal Diameter ϕ d (mm)
MAP-2525-150L	25	8
MAP-3232-150L	32	15
MAP-3232-150L	40	23

MAP AP_11

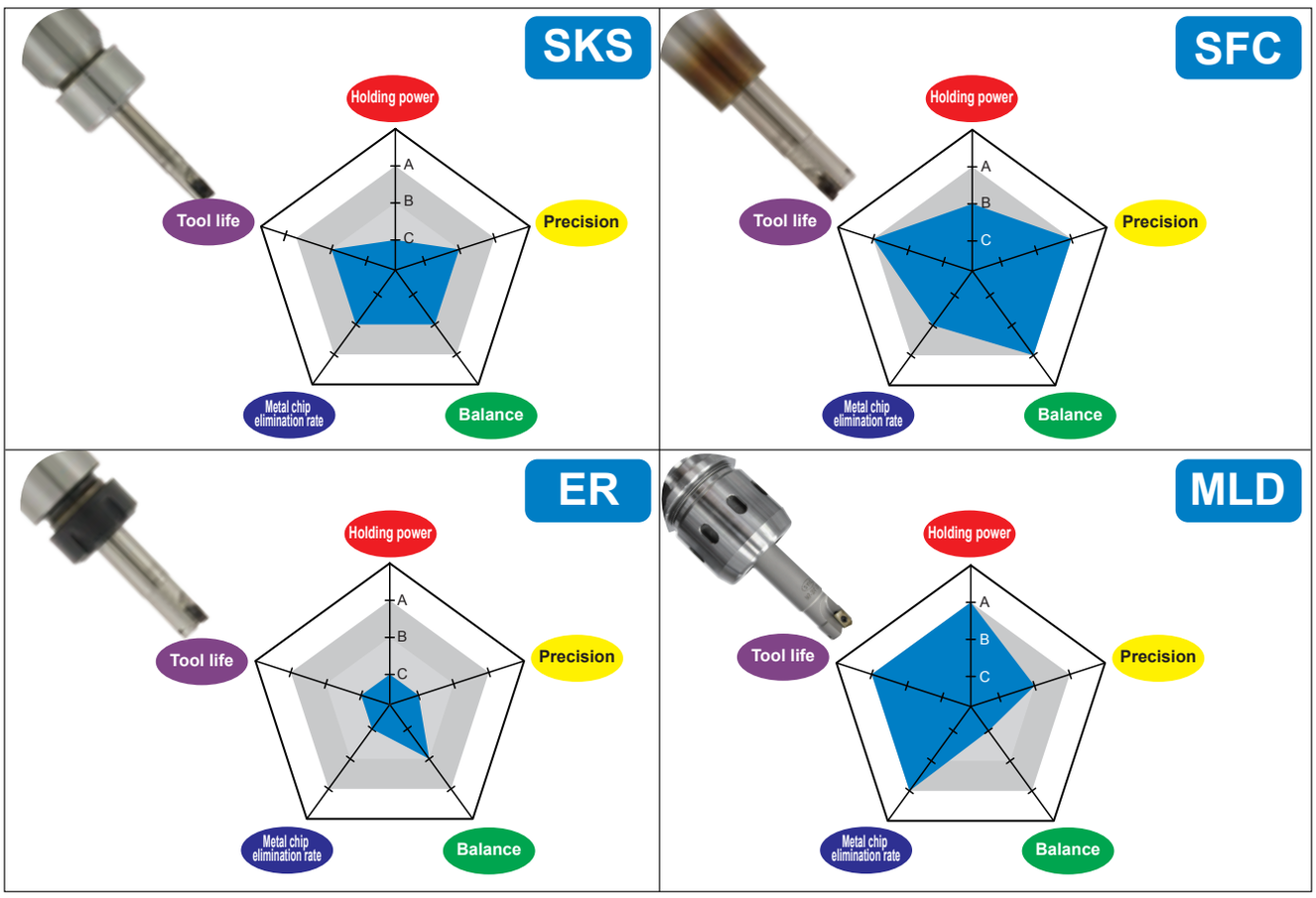
TYPE	Diameter of Cutter ϕ D(mm)	Max. Rake Milling Angle a°	L(mm) a° max
MAP-1012-100L	10	5	91.5
MAP-1212-100L	12	32	14.4
MAP-1616-120L	16	15	33.5
MAP-2020-120L	20	7.5	128.7

MAP AP_16

TYPE	Diameter of Cutter ϕ D(mm)	Max. Rake Milling Angle a°	L(mm) a° max
MAP-2525-150L	25	11.5	182
MAP-3232-150L	32	5.3	309
MAP-3232-150L	40	4	386

Synwell

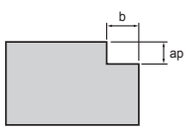
INDEXABLE END MILL CUTTER

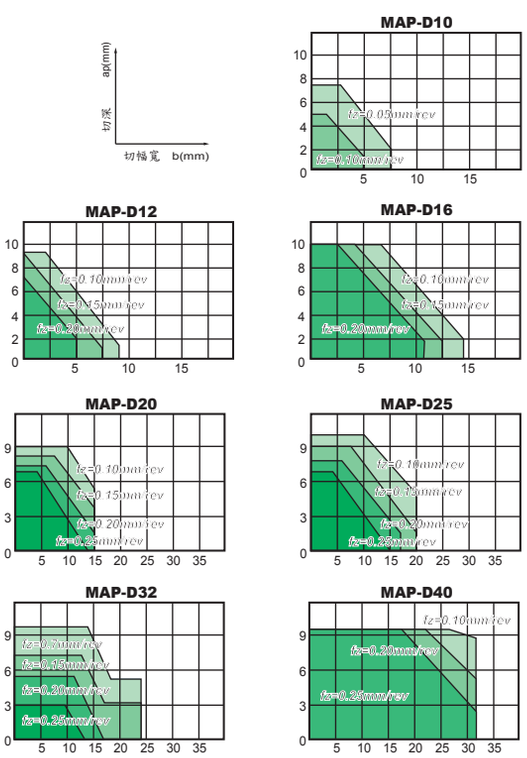


Shoulder Milling

Material

S58C(HB220)

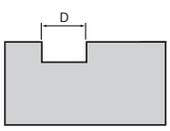


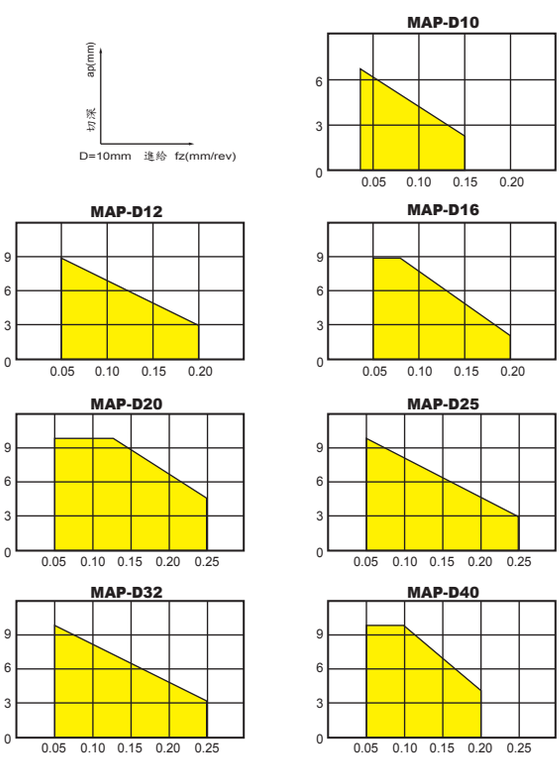


Slotting Milling

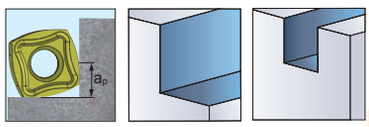
Material

S58C(HB280)

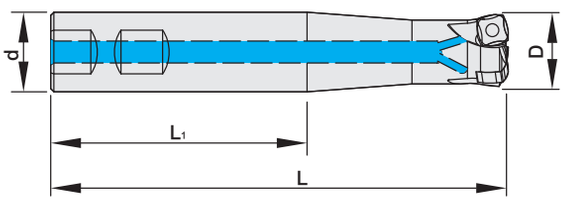




HFEM 大進給端銑刀







Features:
- 8 Corners
- Runs in steel, cast iron & hardened materials.

Benefits:
- Less inventory = lower cost.
- Higher productivity and lower cost per corner.
- Cost per corner is cut into half.

METRIC

MODEL NO.	TYPE	D	d	L	L_1	TEETH	a_p max.	INSERT
154.267C.2525.120	HFEM-25-25CW-120-3SN9	25	25	120	60	3	1	SNKX09T3
154.267C.2525.200	HFEM-25-25CW-200-3SN9			200	100			
154.267C.3232.120	HFEM-32-32CW-120-4SN9	32	32	120	60	4		
154.267C.3232.200	HFEM-32-32CW-200-3SN9			200	100	3		

INCHES

MODEL NO.	TYPE	D	d	L	L_1	TEETH	a_p max.	INSERT
6602118	HFEM-1.00-1.00CW-5.00-3SN9	1.00	1.00	5.00	2.36	3	0.04	SNKX09T3
6602117	HFEM-1.00-1.00CW-8.00-3SN9			8.00	3.94			
6702119	HFEM-1.25-1.25CW-5.00-4SN9	1.25	1.25	5.00	2.36	4		
6702120	HFEM-1.25-1.25CW-8.00-3SN9			8.00	3.94	3		

- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SNKX09T3	M3.5-9.3-4.8-60	T10

- Inserts are optional accessories. Needs to be purchased additionally.

POWERLOC END MILLS

We're Making a Better Connection
Between the Cutting Tool and Spindle.

PowerLOC
Square Shank End Mill





Problem

- Inaccuracy of indexable end mill shanks
- Slippage (axial tool movement)
- Inability to remove the steel tool shanks from high technology ShrinkFIT chucks

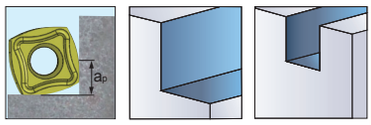
Solution

- Develop a shank that works with collet chucks and ShrinkFIT holders
- Reduced diameter for ShrinkFIT Technology
- Develop a square on the back of the shank to eliminate any tool pressure slippage

Advantages & Benefits

- Extend tool life or increase feed rates
- Use indexable end mills in the two most accurate toolholders – Collet Chucks and ShrinkFIT

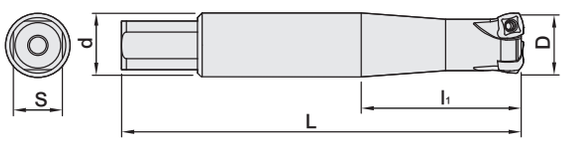
PLHF 大進給端銑刀



Depth of Cut (a_p) | End Milling | Slotting



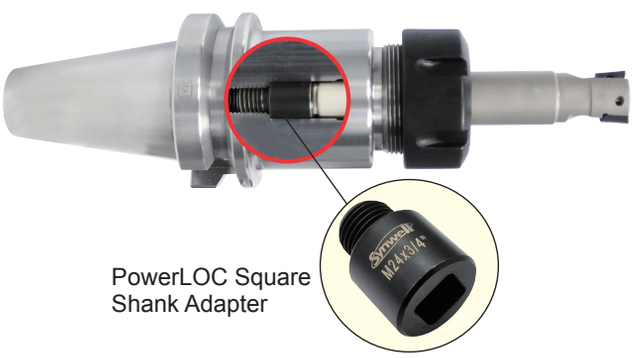
TW PAT NO. M400906
CN PAT NO. ZL201020694421.6



Features:
- PowerLOC Square Shank.
- Takes 8 cornered inserts.
- Cost per corner is cut into half.
- Runs in steel, cast iron & hardened materials.

Benefits:
- Eliminate costly milling chucks.
- Reduce Scrap.
- No tool slippage.
- Eliminate inaccurate end mill holders that cause chatter and short tool life.
- Faster feed rates.
- Extend insert life up to 2X.

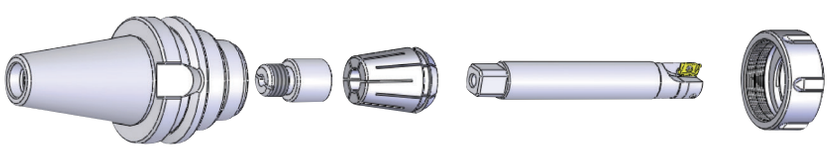
More options:



PowerLOC Square Shank Adapter

For the information of PowerLOC Square Shank Adapter, please refer to P.47.

We're Making a Better Connection
Between the Cutting Tool and Spindle.



INCHES

MODEL NO.	TYPE	D	d	L	l_1	TEETH	S	a_p max.	INSERT
6612118	PLHF-1.00-1.00C-5.00-3SN9	1.00	1.00	5.00	2.50	3	0.75	0.04	SNKX09T3
6612117	PLHF-1.00-1.00C-8.00-3SN9			8.00		3			
6712119	PLHF-1.25-1.25C-5.00-4SN9	1.25	1.25	5.00		4			
6712120	PLHF-1.25-1.25C-8.00-3SN9			8.00		3			

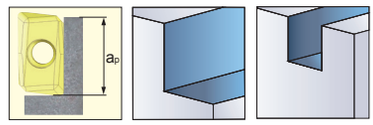
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SNKX09T3	M3.5-9.3-4.8-60	T5

- Inserts are optional accessories. Needs to be purchased additionally.

POWERLOC INDEXABLE END MILLS

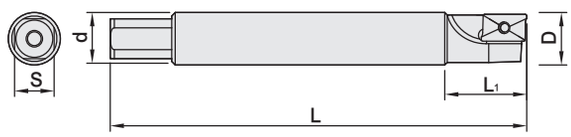
PLIM 直角高速銑刀



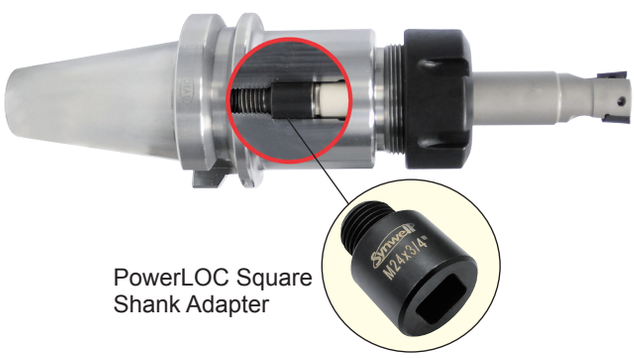
Depth of Cut (a_p) End Milling Slotting



TW PAT NO. M400906
CN PAT NO. ZL201020694421.6



More options:



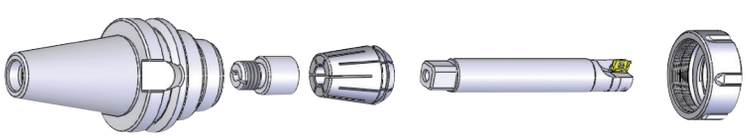
PowerLOC Square Shank Adapter

For the information of PowerLOC Square Shank Adapter, please refer to P.47.

How PowerLOC End Mills Reduce Scrap to Save Money

- PowerLOC Square Drive eliminates tool slippage issues for more accurate cutting, especially under heavy loads.
- Overall better balance, greater rigidity, and accuracy (5μ T.I.R.) of the toolholder and end mill reduces wear on cutting inserts, extending life.
- Longer insert life = less down time for tool changes, and make more parts per insert.

We're Making a Better Connection
Between the Cutting Tool and Spindle.



INCHES - W/O Coolant

MODEL NO.	TYPE	D	d	L	L_1	TEETH	S	INSERT
1632345	PLIM-.500-.500-4.00-1-10	0.50	0.50	4.00	0.79	1	0.38	AP..1003
1654345	PLIM-.750-.750-5.00-2-10	0.75	0.75	5.00	0.98	2	0.563	
1665345	PLIM-1.00-1.00-6.00-3-10	1.00	1.00	6.00	0.98	3	0.75	

INCHES - Coolant Thru

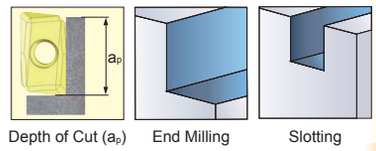
MODEL NO.	TYPE	D	d	L	L_1	TEETH	S	INSERT
1633345	PLIM-.500-.500C-4.00-1-10	0.50	0.50	4.00	0.79	1	0.38	AP..1003
1655345	PLIM-.750-.750C-5.00-2-10	0.75	0.75	5.00	0.98	2	0.563	
1666345	PLIM-1.00-1.00C-6.00-3-10	1.00	1.00	6.00	0.98	3	0.75	

- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8

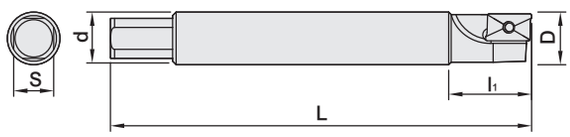
- Inserts are optional accessories. Needs to be purchased additionally.

PLIM 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





MODEL NO.	TYPE	D	d	L	l_1	TEETH	S	INSERT
154.503.1616.100	PLIM16-16-100-2-10	16	16	100	25	2	9.652	AP..1003
154.503.1616.120	PLIM16-16-120-2-10			120				
154.503.1616.160	PLIM16-16-160-2-10			160				
154.503.1616.200	PLIM16-16-200-2-10			200				
154.503.2020.120	PLIM20-20-120-2-10	20	20	120			14.288	
154.504.2020.120	PLIM20-20-120-3-10			120		3		
154.503.2020.150	PLIM20-20-150-2-10			150		2		
154.504.2020.150	PLIM20-20-150-3-10			150		3		
154.503.2020.200	PLIM20-20-200-2-10			200		2		
154.503.2120.150	PLIM21-20-150-2-10	21		150				
154.503.2220.150	PLIM22-20-150-2-10	22		150				
154.503.2525.150	PLIM25-25-150-2-10	25	25	150			19.05	
154.504.2525.150	PLIM25-25-150-3-10			150		3		
154.505.2525.150	PLIM25-25-150-4-10			150		4		
154.505.2525.200	PLIM25-25-200-4-10			200				
154.503.25425.150	PLIM25.4-25-150-2-10	25.4		150		2		
154.503.25425.200	PLIM25.4-25-200-2-10			200				
154.503.2625.150	PLIM26-25-150-2-10	26		150				
154.503.2625.200	PLIM26-25-200-2-10			200				
154.504.2725.150	PLIM27-25-150-3-10	27		150		3		
154.505.2725.200	PLIM27-25-200-4-10			200		4		
154.504.3232.150	PLIM32-32-150-3-10	32	32	150	40	3		
154.506.3232.150	PLIM32-32-150-5-10			150	30	5		
154.506.3232.200	PLIM32-32-200-5-10			200				
154.504A.3232.150	PLIM32-32-150-3-16			150	40	3		AP..1604
154.503.3232.200	PLIM32-32-200-2-16			200		2		
154.503.3232.250	PLIM32-32-250-2-16			250				

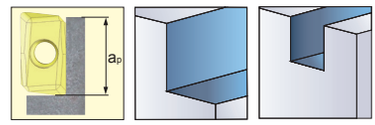
● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

● Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE END MILL CUTTER

PLIM 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





- Coolant-thru design.

MODEL NO.	TYPE	D	d	L	l_1	TEETH	S	INSERT
154.503C.1616.100	PLIM16-16C-100-2-10	16	16	100	25	2	9.652	AP..1003
154.503C.1616.120	PLIM16-16C-120-2-10			120				
154.503C.1616.160	PLIM16-16C-160-2-10			160				
154.503C.1616.200	PLIM16-16C-200-2-10			200				
154.503C.2020.120	PLIM20-20C-120-2-10	20	20	120		2	14.288	
154.504C.2020.120	PLIM20-20C-120-3-10			120		3		
154.503C.2020.150	PLIM20-20C-150-2-10			150		2		
154.504C.2020.150	PLIM20-20C-150-3-10			150		3		
154.503C.2020.200	PLIM20-20C-200-2-10			200		2		
154.503C.2120.150	PLIM21-20C-150-2-10	21		150				
154.503C.2220.150	PLIM22-20C-150-2-10	22		150				
154.503C.2525.150	PLIM25-25C-150-2-10	25	25	150			19.05	
154.504C.2525.150	PLIM25-25C-150-3-10			150		3		
154.505C.2525.150	PLIM25-25C-150-4-10			150		4		
154.505C.2525.200	PLIM25-25C-200-4-10			200				
154.503C.25425.150	PLIM25.4-25C-150-2-10	25.4		150		2		
154.503C.25425.200	PLIM25.4-25C-200-2-10			200				
154.503C.2625.150	PLIM26-25C-150-2-10	26		150				
154.503C.2625.200	PLIM26-25C-200-2-10			200				
154.504C.2725.150	PLIM27-25C-150-3-10	27		150		3		
154.505C.2725.200	PLIM27-25C-200-4-10			200		4		
154.504C.3232.150	PLIM32-32C-150-3-10	32	32	150	40	3		
154.506C.3232.150	PLIM32-32C-150-5-10			150	30	5		
154.506C.3232.200	PLIM32-32C-200-5-10			200				
154.504CA.3232.150	PLIM32-32C-150-3-16			150	40	3		AP..1604
154.503C.3232.200	PLIM32-32C-200-2-16			200		2		
154.503C.3232.250	PLIM32-32C-250-2-16			250				
154.505C.4032.150	PLIM40-32C-150-4-16	40		150		4		
154.505C.4032.250	PLIM40-32C-250-4-16			250				

- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

- Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE END MILL CUTTER

Machining Materials	GRADE					
	PL30	GH05	RM4130	RM5005	RM5060	FK15
P	△		△			
M	△		△			
K	△		△			
N		△		△	△	△
S						
H						

TYPE	GRADE					
	PL30	GH05	RM4130	RM5005	RM5060	FK15
APKT1003PDTR	v					
APKT1003PDER						v
APKT1003PDER-M04			v			
APGT100304PDFR-F04				v		
APHT1003PDFR-F03				v		
APKT1604PDTR	v					
APKT160408PDER-M02			v			
APGT160408PDFR-F02				v		
APEX1604PDFR-701		v			v	

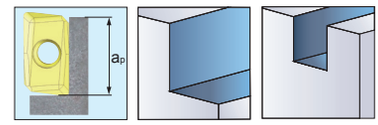
Cutting Conditions

Machining Materials	Grade	Vc(m/min)	fz(mm/rev)	Ap(mm)
P	PL30	90 ~ 230	0.15 ~ 0.25	0.5 ~ 15
	RM4130			
M	PL30	100 ~ 210	0.12 ~ 0.22	0.5 ~ 15
	RM4130			
K	PL30	120 ~ 250	0.12 ~ 0.22	0.5 ~ 15
	RM4130			
N	GH05	300 ~ 600	0.06 ~ 0.25	0.5 ~ 15
	RM5005			
	RM5060			
	FK15			

- Spindle Revolution = (1000 ×cutting speed) ÷ (3.14 × the external dia. of cutting tool)
- Table feed(mm/min) = table feed of each tooth × total teeth of cutting tool × spindle revolution

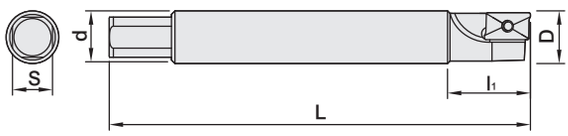
INDEXABLE END MILL CUTTER

PLIMM 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





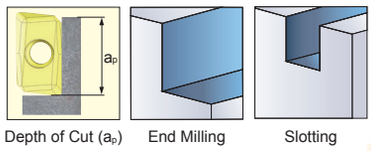
MODEL NO.	TYPE	D	d (h6)	L	l_1	TEETH	S	INSERT
154.509.1616.120	PLIMM16-16-120-2-11	16	16	120	25	2	9.652	AP..1135
154.509.1616.160	PLIMM16-16-160-2-11			160				
154.509.2019.150	PLIMM20-19-150-2-11	20	19	150	30		14.288	
154.509.2019.200	PLIMM20-19-200-2-11			200				
154.509.2020.120	PLIMM20-20-120-2-11		20	120				
154.509.2020.150	PLIMM20-20-150-2-11			150				
154.509.2020.200	PLIMM20-20-200-2-11			200				
154.509.2120.150	PLIMM21-20-150-2-11	21		150	35			
154.509.2220.150	PLIMM22-20-150-2-11	22						
154.510.2525.150	PLIMM25-25-150-3-11	25	25			3	19.05	
154.511.2525.150	PLIMM25-25-150-4-11					4		
154.510.2525.200	PLIMM25-25-200-3-11			200		3		
154.511.2525.200	PLIMM25-25-200-4-11					4		
154.509.2525.150	PLIMM25-25-150-2-16			150		2		AP..1604
154.509.2525.200	PLIMM25-25-200-2-16			200				
154.509.2525.300	PLIMM25-25-300-2-16			300				
154.509.6825.150	PLIMM25.4-25-150-2-16	25.4		150				
154.509.6825.200	PLIMM25.4-25-200-2-16			200				
154.509.2625.150	PLIMM26-25-150-2-16	26		150				
154.509.2625.200	PLIMM26-25-200-2-16			200				
154.509.2725.150	PLIMM27-25-150-2-16	27		150				
154.509.2725.200	PLIMM27-25-200-2-16			200				
154.509.3232.150	PLIMM32-32-150-2-16	32	32	150	45			
154.510.3232.150	PLIMM32-32-150-3-16			150		3		
154.510.3232.250	PLIMM32-32-250-3-16			250				
154.510.3232.300	PLIMM32-32-300-3-16			300				
154.510.3532.200	PLIMM35-32-200-3-16	35		200				
154.510.3532.250	PLIMM35-32-250-3-16			250				
154.510.3532.300	PLIMM35-32-300-3-16			300				

● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1135	M2.5-6.0-3.5-60	T8
AP..1604	M4-10-5.7-60	T15

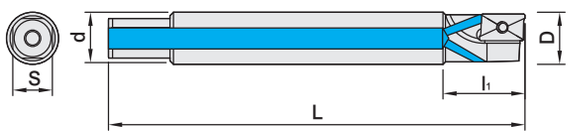
● Inserts are optional accessories. Needs to be purchased additionally.

PLIMM 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





- Coolant-thru design.

MODEL NO.	TYPE	D	d (h6)	L	l_1	TEETH	S	INSERT
154.509C.1616.120	PLIMM16-16C-120-2-11	16	16	120	30	2	9.652	AP..1135
154.509C.1616.160	PLIMM16-16C-160-2-11			160				
154.509C.1716.150	PLIMM17-16C-150-2-11	17		150				
154.509C.1820.100	PLIMM18-20C-100-2-11	18	20	100	28			
154.509C.1820.150	PLIMM18-20C-150-2-11			150	35			
154.509C.1920.150	PLIMM19-20C-150-2-11	19						
154.509C.1920.200	PLIMM19-20C-200-2-11			200				
154.510C.2020.120	PLIMM20-20C-120-3-11	20		120		3	14.288	
154.510C.2020.150	PLIMM20-20C-150-3-11			150				
154.510C.2020.200	PLIMM20-20C-200-3-11			200				
154.510C.2120.150	PLIMM21-20C-150-3-11	21		150				
154.510C.2220.150	PLIMM22-20C-150-3-11	22						
154.510C.2320.150	PLIMM23-20C-150-3-11	23						
154.510C.2425.125	PLIMM24-25C-125-3-11	24	25	125			19.05	
154.511C.2525.150	PLIMM25-25C-150-4-11	25		150		4		
154.511C.2625.150	PLIMM26-25C-150-4-11	26						
154.511C.2725.150	PLIMM27-25C-150-4-11	27						
154.511C.2825.150	PLIMM28-25C-150-4-11	28						
154.511C.2925.150	PLIMM29-25C-150-4-11	29						
154.511C.3032.150	PLIMM30-32C-150-4-11	30	32		45			
154.511C.3132.150	PLIMM31-32C-150-4-11	31						
154.512C.3232.150	PLIMM32-32C-150-5-11	32				5		
154.512C.3332.150	PLIMM33-32C-150-5-11	33						
154.512C.3432.150	PLIMM34-32C-150-5-11	34						
154.512C.3532.150	PLIMM35-32C-150-5-11	35						
154.513C.4032.150	PLIMM40-32C-150-6-11	40				6		
154.513C.5032.150	PLIMM50-32C-150-6-11	50						

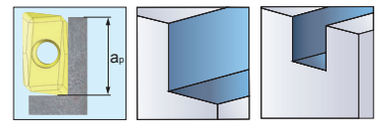
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1135	M2.5-6.0-3.5-60	T8
AP..1604	M4-10-5.7-60	T15

- Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE END MILL CUTTER

PLIMM 直角高速銑刀



Depth of Cut (a_p) End Milling Slotting





● Coolant-thru design.

MODEL NO.	TYPE	D	d (h6)	L	l_1	TEETH	S	INSERT
154.509C.2525.150	PLIMM25-25C-150-2-16	25	25	150	40	2	19.05	AP..1604
154.509C.2525.220	PLIMM25-25C-220-2-16			220				
154.509C.2525.300	PLIMM25-25C-300-2-16			300				
154.509C.2625.150	PLIMM26-25C-150-2-16	26		150				
154.510C.3232.150	PLIMM32-32C-150-3-16	32	32	150	45	3		
154.510C.3232.200	PLIMM32-32C-200-3-16			200				
154.510C.3232.250	PLIMM32-32C-250-3-16			250				
154.510C.3232.300	PLIMM32-32C-300-3-16			300				
154.510C.3332.150	PLIMM33-32C-150-3-16	33		150				
154.510C.3532.200	PLIMM35-32C-200-3-16	35		200				
154.510C.3532.250	PLIMM35-32C-250-3-16			250				
154.510C.3532.300	PLIMM35-32C-300-3-16			300				
154.511C.4032.150	PLIMM40-32C-150-4-16	40		150		4		
154.511C.4032.200	PLIMM40-32C-200-4-16			200				

● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
AP..1135	M2.5-6.0-3.5-60	T8
AP..1604	M4-10-5.7-60	T15

● Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE END MILL CUTTER

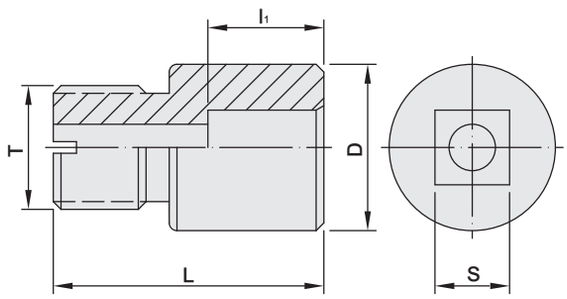
Machining Materials	GRADE			Indication of classification ▲ : 1st choice △ : 2nd choice
	JSP25	TT9080	RM4130	
P	△	▲	△	
M	△	△	△	
K	△		△	
N				
S		△		
H		△		

TYPE	GRADE		
	JSP25	TT9080	RM4130
APMT1135PDER - G04	V		
APMT1135PDER		V	
APMT1135PDER-M04			V
APMT1604PDER - G08	V		
APMT1604PDER		V	
APMT1604PDER-M04			V

SQUARE SHANK ADAPTER
COOLANT THRU

四角榫舌



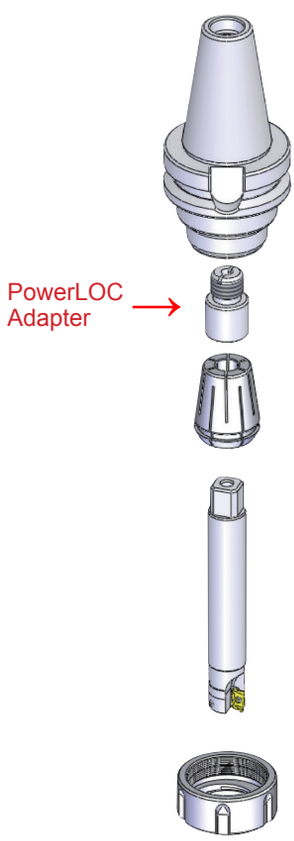


T W PAT NO. M408428
J P PAT NO. 3168351
D E PAT NO. Nr. 202011004740.7

Adapts ER Chucks into PowerLOC Milling Holders:

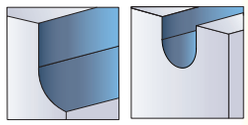
PowerLOC Square Shank Adapters turn our standard collet chucks into milling holders capable of performing heavier milling jobs than you ever thought possible.

We're Making a Better Connection
Between the Cutting Tool and Spindle.



MODEL NO.	TYPE	L	l_1	D	S	T	WEIGHT (KGS)
9398765	PLSS1/2" x M16	35	15	21.5	9.652	M16 x 2.0P	0.03
9397764	PLSS3/4" x M16				14.288		0.04
9396764	PLSS1/2" x M20	40		29	9.652	M20 x 2.0P	0.12
9396763	PLSS3/4" x M20				14.288		0.12
9396762	PLSS1" x M20				19.05		0.12
9396766	PLSS1-1/4" x M24			34	19.05	M24 x 2.0P	0.18

BFC 球頭精銑刀


End Milling Slotting



T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103

Fig.1

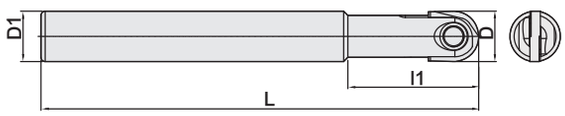
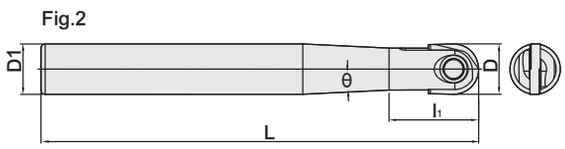


Fig.2



- The material of BFC is superior Alloy Tool Steel, which improves rigidity and anti-vibration ability and extends use life.
- The material is treated with fine processing after hardening, which improves cutter's stability during the cutting process.
- It's easy for locking and applicable for various types of inserts according to the machining types to optimize the usage of BFC.
- Used for 3D copying, slope milling, chamfering, hole positioning, end milling and slotting.







MODEL NO.	TYPE	D	D_1	L	l_1	Θ	Fig.	INSERT
154.35.1004.140	BFC-C10-R4-140L	8	10	140	30	-	2	P3204-D08
154.35.1005.130	BFC-C10-R5-130L	10		130			1	P3204-D10
154.35.1205.150	BFC-C12-R5-150L		12	150	35		2	P3204-D10
154.35.1206.130	BFC-C12-R6-130L	12		130	32		1	P3204-D12
154.35.1606.160	BFC-C16-R6-160L		16	160	58		2	P3204-D12
154.35.1608.150	BFC-C16-R8-150L	16		150	36		1	P3204-D16
154.35.2008.200	BFC-C20-R8-200L		20	200	65	3	2	P3204-D16
154.35.2010.160	BFC-C20-R10-160L	20		160	45	-	1	P3204-D20
154.35.2510.250	BFC-C25-R10-250L		25	250	76	3	2	P3204-D20
154.35.25125.180	BFC-C25-R12.5-180L	25		180	45	-	1	P3204-D25
154.35.32125.250	BFC-C32-R12.5-250L		32	250	98	3	2	P3204-D25

- Inserts are optional accessories. Needs to be purchased additionally.



TYPE	GRADE	MATERIAL	TYPE	GRADE	MATERIAL
P3204-D08	PL 30	P - M - K - H	P3204-D16	PL 30	P - M - K - H
P3204-D10			P3204-D20		
P3204-D12			P3204-D25		

P=steel, M=stainless steel, K=cast iron, H=hardened material

Cutting Conditions

Machining Materials	Grade	Vc (m/min)	fz (mm/rev)
P	PL30	180~200	0.08~0.20
	PL30	100~140	0.08~0.12
M	PL30	160~200	0.08~0.12
K	PL30	175~220	0.08~0.14
H	PL30	30~80	0.05~0.30

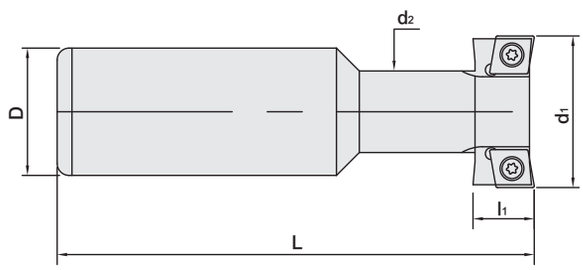
- Spindle Revolution = (1000 ×cutting speed) ÷ (3.14 × the external dia. of cutting tool)
- Table feed(mm/min) = table feed of each tooth × total teeth of cutting tool × spindle revolution

Synwell

T-SLOT MILLING CUTTER

MJT 型槽端銑刀





MODEL NO.	TYPE	D	d_1	d_2	L	l_1	TEETH	INSERT
154.283.3225.120	MJT32-25-11	32	25	13	120	11	4	CC..0602
154.283.3232.120	MJT32-32-14		32	16		14		CP..0802
154.283.3245.140	MJT32-45-11		45	21	140	11	6	CC..0602
154.283.3250.150	MJT32-50-22		50	24	150	22	4	CP..1204
154.283.3263.5.140	MJT32-63.5-15		63.5	32	140	15	6	CP..0903
154.283.3275.140	MJT32-75-17		75			17		

● ACCESSORIES:

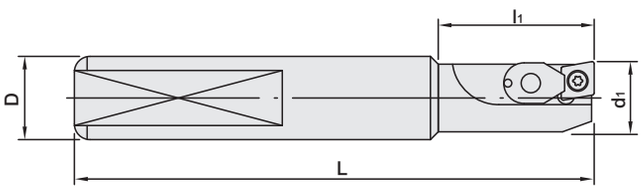
INSERT	INSERT SCREW	WRENCH
CC..0602	M22503-3	T8
CP..0802		
CP..1204	M5	T20
CP..0903	M3501-1	T15

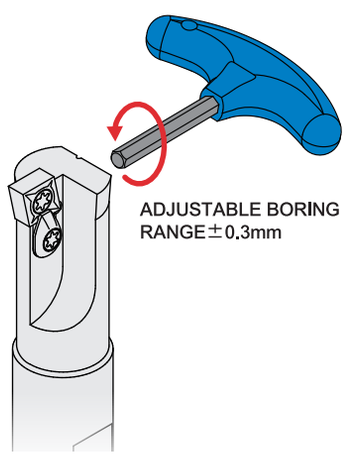
● Inserts are optional accessories. Needs to be purchased additionally.

MJA 可調整式精搪刀



T W PAT NO. M355767





MODEL NO.	TYPE	D	d_1		L	l_1	INSERT
			Min.	Max.			
154.284.1212.100	MJA1212-100	12	11.9	12.2	100	20	CCM(G)T060204
154.284.1615.100	MJA1615-100	16	14.9	15.2		30	
154.284.1616.110	MJA1616-110		15.9	16.2	110		
154.284.2020.120	MJA2020-120	20	19.9	20.2	120	35	
154.284.2022.120	MJA2022-120		21.9	22.2			
154.284.2525.130	MJA2525-130	25	24.9	25.2	130	40	CCM(G)T09T304
154.284.2525.4.130	MJA2525.4-130		25.3	25.6			
154.284.2530.140	MJA2530-140		29.9	30.2	140	50	
154.284.2532.140	MJA2532-140		31.9	32.2			
154.284.3235.150	MJA3235-150	32	34.9	35.2	150		
154.284.3240.150	MJA3240-150		39.9	40.2			
154.284.3242.150	MJA3242-150		41.9	42.2			

● ACCESSORIES:

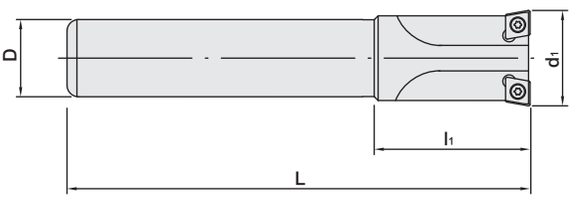
INSERT	INSERT SCREW	WRENCH
CCM(G)T060204	M2502-2	T8
CCM(G)T09T304	M3501-1	T15

● Inserts are optional accessories. Needs to be purchased additionally.

TWO EDGED ROUGH BORING BAR

MJR 雙刃粗搪刀





MODEL NO.	TYPE	D	d_1	L	l_1	INSERT
154.285.109.7.090	MJR10-9.7-90	10	9.7	90	30	WD..T0420
154.285.1011.090	MJR10-11-90		11			
154.285.1211.7.090	MJR12-11.7-90	12	11.7			WD..0525
154.285.1213.090	MJR12-13-90		13			
154.285.1214.090	MJR12-14-90		14			
154.285.1215.090	MJR12-15-90		15			
154.285.1615.7.100	MJR16-15.7-100	16	15.7	100	40	CC..0602
154.285.1616.120	MJR16-16-120		16	120		
154.285.1616.7.100	MJR16-16.7-100		16.7	100		
154.285.1617.7.100	MJR16-17.7-100		17.7			
154.285.1618.7.110	MJR16-18.7-110		18.7	110		
154.285.1619.7.110	MJR16-19.7-110		19.7			
154.285.2020.120	MJR20-20-120	20	20	120	50	
154.285.2020.7.110	MJR20-20.7-110		20.7	110		
154.285.2021.7.110	MJR20-21.7-110		21.7			
154.285.2022.7.120	MJR20-22.7-120		22.7	120		
154.285.2023.7.120	MJR20-23.7-120		23.7			
154.285.2024.7.120	MJR20-24.7-120		24.7			
154.285.2525.130	MJR25-25-130	25	25	130		
154.285.2525.7.130	MJR25-25.7-130		25.7			CC..09T3
154.285.2526.7.130	MJR25-26.7-130		26.7			
154.285.2527.7.130	MJR25-27.7-130		27.7			
154.285.2528.7.130	MJR25-28.7-130		28.7			
154.285.2529.7.130	MJR25-29.7-130		29.7			
154.285.2531.7.130	MJR25-31.7-130		31.7			
154.285.3233.7.150	MJR32-33.7-150	32	33.7	150		
154.285.3234.7.150	MJR32-34.7-150		34.7			
154.285.3239.7.150	MJR32-39.7-150		39.7			
154.285.3241.7.150	MJR32-41.7-150		41.7			
154.285.3244.7.180	MJR32-44.7-180		44.7	180		
154.285.3246.7.180	MJR32-46.7-180		46.7			
154.285.3249.7.180	MJR32-49.7-180		49.7			

● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
WD..0420	M1801-2	T6	CC..0602	M2503-3	T8
WD..0525	M2001-3	T6	CC..09T3	M3501-1	T15

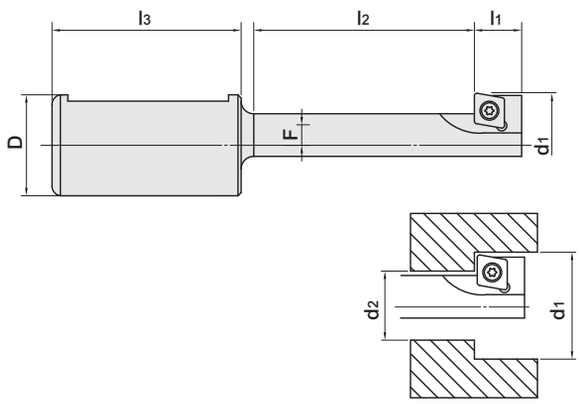
● Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE BACK BORING BAR

MJF 捨棄式背搪刀



T W PAT NO. M355767



MODEL NO.	TYPE	D	d_1	d_2	l_1	l_2	l_3	F	INSERTS
154.288.2014.040	MJF20-14-40	20	14	9	13	40	60	2.8	CP..0502
154.288.2018.050	MJF20-18-50		18	11		50		4	CC..0602
154.288.2020.050	MJF20-20-50		20	13				3.9	
154.288.2023.060	MJF20-23-60		23	15		60		4.5	
154.288.2026.060	MJF20-26-60		26	17			56	4.9	CC..09T3
154.288.2525.050	MJF25-25-50	25	25	14		50		6	CC..0602
154.288.2528.060	MJF25-28-60		28	16	15	60		6.5	CC..09T3
154.288.2532.060	MJF25-32-60		32	18				7.5	
154.288.3233.070	MJF32-33-70	32	33	21		70	60	6.4	
154.288.3240.080	MJF32-40-80		40	25		80		7.9	

● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
CP..0502	M2201-1	T7
CC..0602	M2503-3	T8
CC..09T3	M3501-1	T15

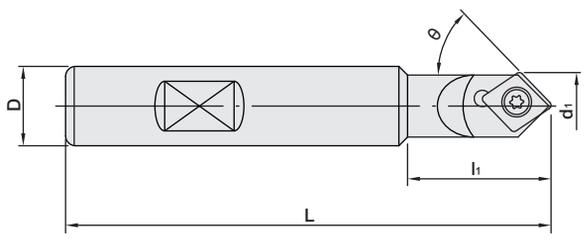
● Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE CHAMFER CUTTER

MJD 捨棄式倒角刀



T W PAT NO. M358684



●Indexable chamfer cutter must be used with special inserts.

45° spotting and chamfering

MODEL NO.	TYPE	D h7	d1	L	l1	θ	INSERTS
154.280.10.130-CC06	MJD10-130-CC06	9	10	130	29	45°	CCM(G)T060204C
154.280.12.098-CC06	MJD12-98-CC06		12	98			
154.280.12.130-CC06	MJD12-130-CC06			130			
154.280.12.130-CC09	MJD12-130-CC09	14					CCM(G)T09T304(8)C
154.280.12.130-CP09	MJD12-130-CP09						CPM(G)T090308C
154.280.16.098-CC06	MJD16-98-CC06	9	16	98			CCM(G)T060204C
154.280.16.098-CC09	MJD16-98-CC09	14					CCM(G)T09T304(8)C
154.280.16.098-CP09	MJD16-98-CP09						CPM(G)T090308C
154.280.16.098-SC09	MJD16-98-SC09	13					SCMT09T304C
154.280.20.120-TC16	MJD20-120-TC16	22	20	120	42		TCMT16T308C
154.280.25.120-TC22	MJD25-120-TC22	28	25		40		TCMT220408C

120° spotting and chamfering

MODEL NO.	TYPE	D h7	d1	L	l1	θ	INSERTS
154.281.16.098-CC06	MJD16-98-CC06-30	10.8	16	98	29	30°	CCM(G)T060204C
154.281.16.098-CC09	MJD16-98-CC09-30	16					CCM(G)T09T304(8)C

60° spotting and chamfering

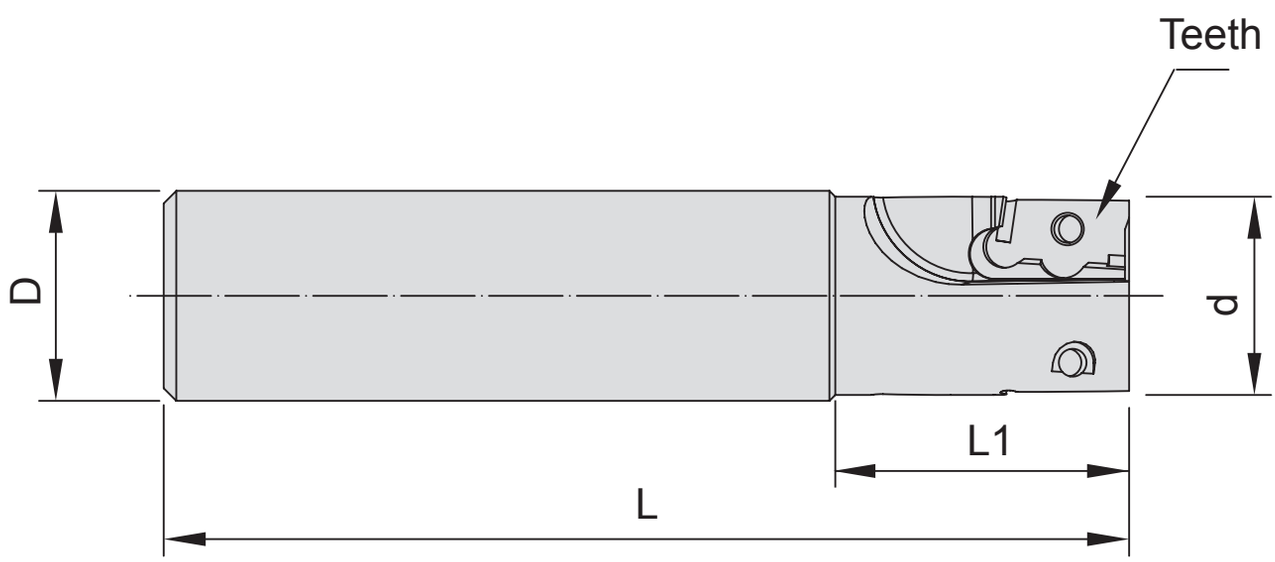
MODEL NO.	TYPE	D h7	d1	L	l1	θ	INSERTS
154.282.16.098-DC09	MJD16-98-DC09-60	7	16	98	29	60°	DCMT070204C
154.282.16.098-DC11	MJD16-98-DC11-60	11.5					DCMT11T304C

● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
CCM(G)T060204C	M2502-2	T7	TCMT16T308C	M5	T20
CCM(G)T09T304(8)C	M3501-1	T15	TCMT220408C		
CPM(G)T090308C			DCMT070204C	M2502-2	T8
SCMT09T304C	M5	T20	DCMT11T304C	M3501-1	T15

● Inserts are optional accessories. Needs to be purchased additionally.

Order of special types of End Mill Cutter is accepted.
Please inform detailed dimensions according to the following drawing before making a purchase order.



UNIT: mm

D		TEETH	
d		INSERT	
L		QUANTITY	
L1			

● The min. quantity for each custom-made type is 3 pieces.

MEMO

Synwell

Synwell

CUTTING TOOL SYSTEM

HLB FACE CONTACT TYPE

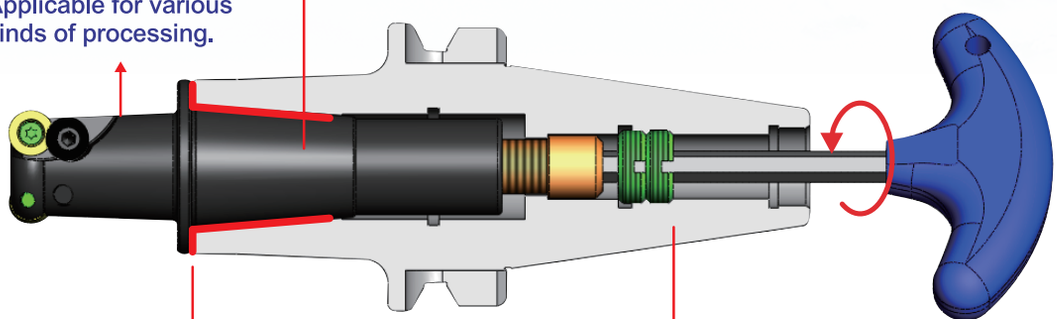
series

HBL SLIM-FIT COLLET CHUCK SYSTEM

HBL COLLET CHUCK +
HLB FACE CONTACT TYPE CUTTING TOOLS

HLB CUTTING TOOL-
ONE PIECE DESIGN with SLC COLLET TAPER
→Eliminate the gap between HLB cutter and HBL tool holder. The taper of HLB cutter remains 4° slanted design, which improves holding power, concentricity and rigidity.

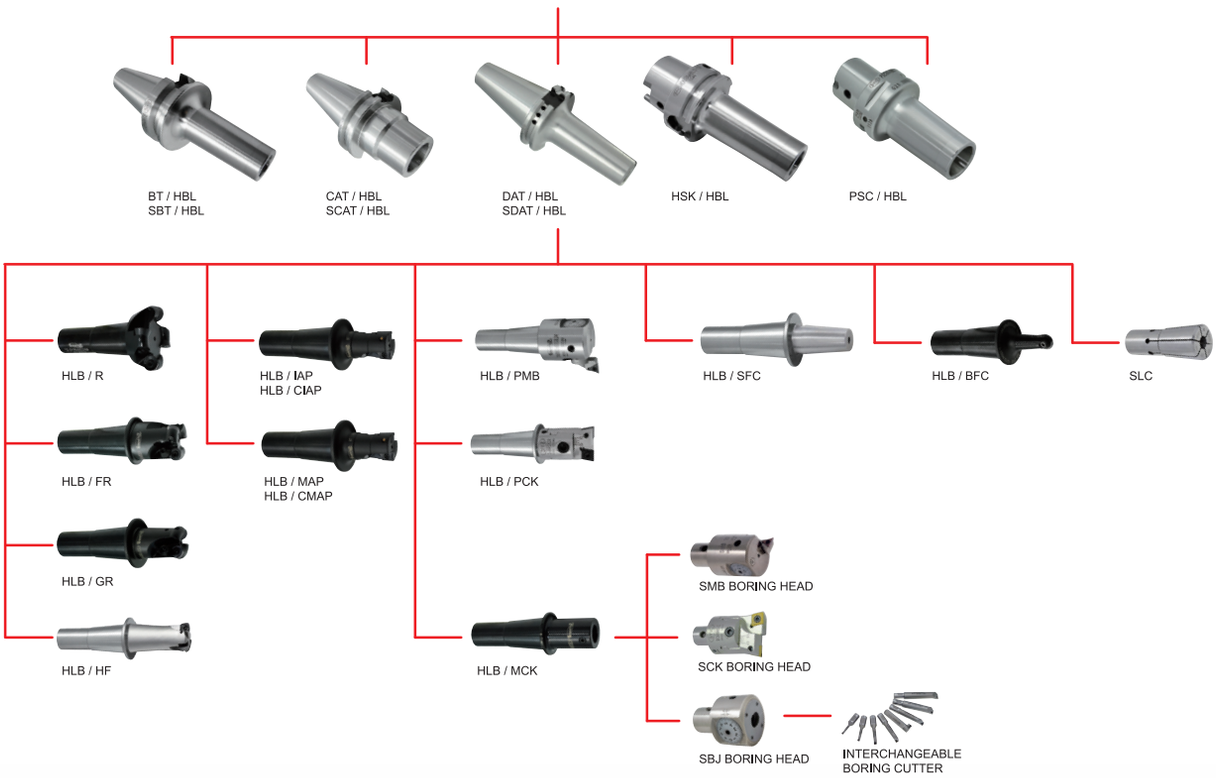
MODULAR DESIGN
→Reduce the purchase cost of tool holder. Applicable for various kinds of processing.



TWO-FACE CONTACT
→Two-face contact between collet taper, collet flange and the end of HBL tool holder, which increases the rigidity of machining.

HBL DRAWBAR CLAMPING DESIGN
→Strengthen the axial clamping force.

HBL SYSTEM



*For more info. of HBL Slim-Fit Collet Chuck, please refer to catalog NO. 85.

HLB FACE CONTACT TYPE
BALL NOSE FINISH END MILL CUTTER

HLB 端面緊貼型圓鼻刀具



T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103

Fig.1

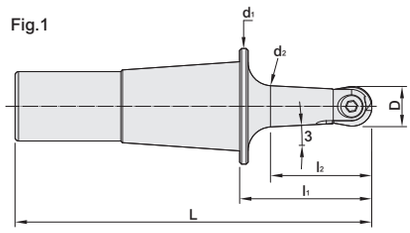
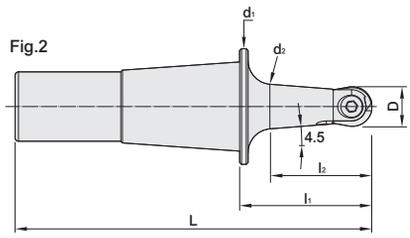
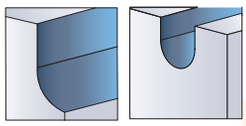


Fig.2




End Milling Slotting

MODEL NO.	TYPE	D	d_1	d_2	L	l_1	l_2	Fig.	INSERT
261.35.R4.040	HLB12xBFC4-40	8	31.75	9.7	95	40	29.4	1	P3204-D08
261.35.R4.040D	HLB12xBFC4-40D			11.1				2	
261.35.R5.040	HLB12xBFC5-40	10		11.6				1	P3204-D10
261.35.R5.040D	HLB12xBFC5-40D			12.9			29.6	2	
261.35.R6.040	HLB12xBFC6-40	12		12.3				1	P3204-D12
261.35.R6.040D	HLB12xBFC6-40D			13.3				2	
261.35.R8.040	HLB12xBFC8-40	16		16.4			29.4	1	P3204-D16
261.35.R8.040D	HLB12xBFC8-40D			17.5			29.6	2	
261.35.R10.040	HLB12xBFC10-40	20		20.4			32.3	1	P3204-D20
261.35.R10.040D	HLB12xBFC10-40D			21.7			32.4	2	
261.35.R12.5.040	HLB12xBFC12.5-40	25		25.6			36	1	P3204-D25
261.35.R12.5.040D	HLB12xBFC12.5-40D			26.9			36.8	2	
262.35.R4.040	HLB20xBFC4-40	8	38.1	9.7	108	40	29.4	1	P3204-D08
262.35.R4.040D	HLB20xBFC4-40D			11.1				2	
262.35.R5.040	HLB20xBFC5-40	10		11.6				1	P3204-D10
262.35.R5.040D	HLB20xBFC5-40D			12.9			29.6	2	
262.35.R6.040	HLB20xBFC6-40	12		12.3				1	P3204-D12
262.35.R6.040D	HLB20xBFC6-40D			13.3				2	
262.35.R8.040	HLB20xBFC8-40	16		16.4			29.4	1	P3204-D16
262.35.R8.040D	HLB20xBFC8-40D			17.5			29.6	2	
262.35.R10.040	HLB20xBFC10-40	20		20.4			32.3	1	P3204-D20
262.35.R10.040D	HLB20xBFC10-40D			21.7			32.4	2	
262.35.R12.5.040	HLB20xBFC12.5-40	25		25.2			32.3	1	P3204-D25
262.35.R12.5.040D	HLB20xBFC12.5-40D			26.3			32.4	2	
263.35.R4.040	HLB25xBFC4-40	8	44.45	9.0	118	40	29.5	1	P3204-D08
263.35.R4.040D	HLB25xBFC4-40D			10.0				2	
263.35.R5.040	HLB25xBFC5-40	10		10.7				1	P3204-D10
263.35.R5.040D	HLB25xBFC5-40D			11.8			29	2	
263.35.R6.040	HLB25xBFC6-40	12		12.3				1	P3204-D12
263.35.R6.040D	HLB25xBFC6-40D			13.3			29.6	2	
263.35.R8.040	HLB25xBFC8-40	16		15.3			29.5	1	P3204-D16
263.35.R8.040D	HLB25xBFC8-40D			16.1			29.6	2	
263.35.R10.040	HLB25xBFC10-40	20		18.9			32.3	1	P3204-D20
263.35.R10.040D	HLB25xBFC10-40D			19.5			32.4	2	
263.35.R12.5.040	HLB25xBFC12.5-40	25		23.5			32.3	1	P3204-D25
263.35.R12.5.040D	HLB25xBFC12.5-40D			23.9			32.4	2	

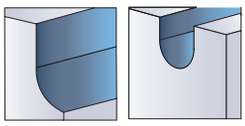
● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
P3204-D08	BFC-4R	T8	P3204-D16	BFC-8R	T20
P3204-D10	BFC-5R	T15	P3204-D20	BFC-10R	
P3204-D12	BFC-6R	T20	P3204-D25	BFC-12.5R	T30

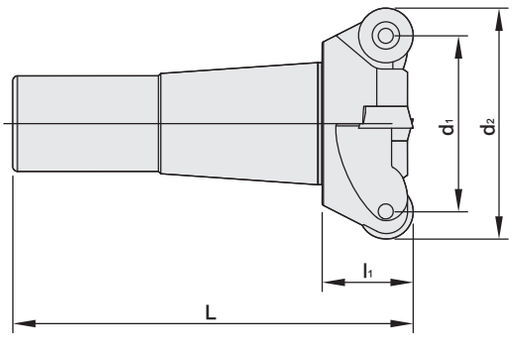
● Inserts are optional accessories. Needs to be purchased additionally.

HLB FACE CONTACT TYPE
BALL NOSE FINISH END MILL CUTTER

HLB 端面緊貼型圓刃刀具







T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103

- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
RD..1204	M4-10-5.7-60	T15

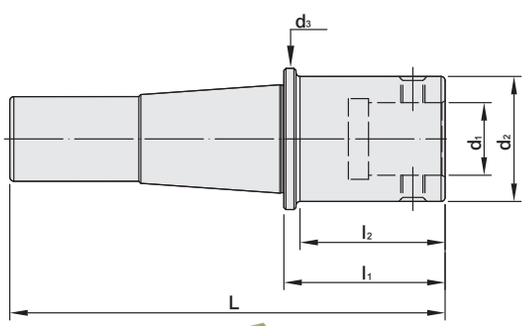
- Inserts are optional accessories.
  Needs to be purchased additionally.

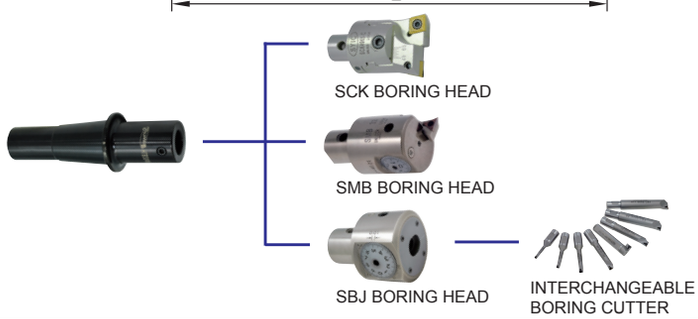
MODEL NO.	TYPE	d_1	d_2	L	l_1	TEETH	INSERT
262B.35.86.R12	HLB20xR12-2”	38.8	50.8	88	20	4	RD..1204
263B.35.86.R12	HLB25xR12-2”			98			

HLB / MCK FACE CONTACT TYPE
BORING HEAD SHANK

HLB / MCK 端面緊貼型搪孔夾頭柄







T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103

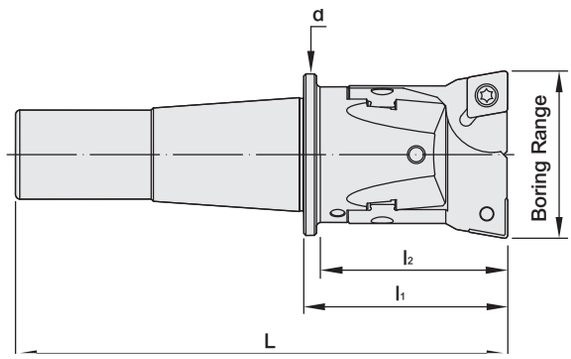
MODEL NO.	TYPE	L	l_1	l_2	d_1	d_2	d_3	T
262.487.01.040	HLB20xMCK1-40	108	40	34	11	19	38.1	M4x0.5P
262.487.02.040	HLB20xMCK2-40				14	23.5		M5x0.5P
262.487.03.040	HLB20xMCK3-40			30	18	31		M6x0.75P
263.487.01.040	HLB25xMCK1-40	118		34	11	19	44.45	M4x0.5P
263.487.02.040	HLB25xMCK2-40				14	23.5		M5x0.5P
263.487.03.040	HLB25xMCK3-40			30	18	31		M6x0.75P

HLB / PCK FACE CONTACT TYPE ROUGH BORING HEAD

HLB / PCK 端面緊貼型粗搪頭



T W PAT NO. M 280258



MODEL NO.	TYPE	BORING RANGE		d	L	l_1	l_2	INSERT
		MIN.	MAX.					
262.650.24.068	HLB20xPCK2430-68	24	30	38.1	141	73	68	CC..0602
262.650.29.084	HLB20xPCK2940-84	29	40		157	89	84	CC..09T3
262.650.39.090	HLB20xPCK3950-90	39	50		163	95	90	
263.650.24.068	HLB25xPCK2430-68	24	30	44.45	151	73	68	CC..0602
263.650.29.084	HLB25xPCK2940-84	29	40		167	89	84	CC..09T3
263.650.39.090	HLB25xPCK3950-90	39	50		173	95	90	
263.650.49.090	HLB25xPCK4965-90	49	65		171.5	93.5	90	CC..1204

● ACCESSORIES:

INSERT	SCREW	WRENCH
CC..0602	M2.5-6.45-3.7	T8
CC..09T3	M4-10-5.7-4.3	T15
CC..1204	M5-11-7.5-60	T20

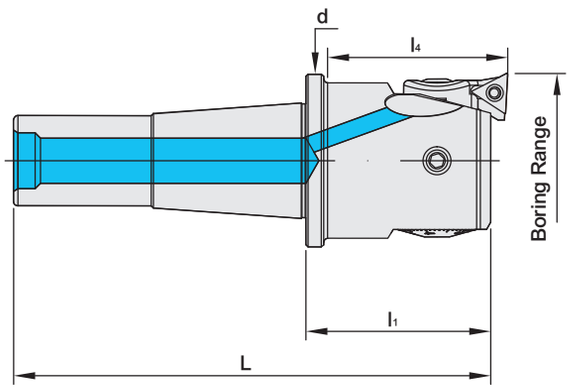
● Inserts are optional accessories. Needs to be purchased additionally.

HLB / PMB FACE CONTACT TYPE FINISH BORING HEAD

HLB / PMB 端面緊貼型精搪頭



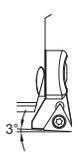
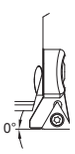
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C N PAT NO. ZL200820102784.9
D E PAT NO. Nr.202009009848.6
U S PAT NO. US8109699 B2
T W PAT NO. M381470
C N PAT NO. ZL200920139100.7
E S PAT NO. 1072386

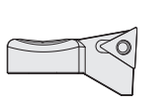
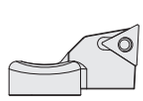
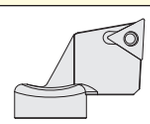


- The body of PMB Finish Boring Head is always designed to have coolant outlet.
- There are 3 types of insert seats and the boring range of insert seat can be enlarged by exchanging another insert seat.

For example: there are different boring ranges for different insert seats of SMB25.

- TYPES FOR INSERT SEAT:

TYPE	DRAWING	SUITABLE FINISH BORING HEAD	TYPE	DRAWING	SUITABLE FINISH BORING HEAD
SIC25 - 1		PMB25	SIC25 - 1E		PMB25
SIC25 - 2			SIC25 - 2E		
SIC25 - 3			SIC25 - 3E		
SIC32 - 1		PMB32	SIC32 - 1E		PMB32
SIC32 - 2			SIC32 - 2E		
SIC32 - 3			SIC32 - 3E		
SIC41 - 1		PMB41	SIC41 - 1E		PMB41
SIC41 - 2			SIC41 - 2E		
SIC41 - 3			SIC41 - 3E		

STANDARD INSERT SEAT	OPTIONAL INSERT SEAT	
SIC25 - 1	SIC25 - 2	SIC25 - 3
ϕ25 ~ ϕ33	ϕ32 ~ ϕ40	ϕ39 ~ ϕ49
		

- SYIC_-1 insert seat is a standard accessory.

SYIC_-2 and SYIC_-3 insert seats are optional accessories and need to be purchased additionally.

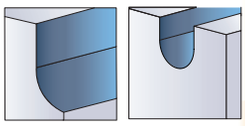
MODEL NO.	TYPE	INSERT SEAT	INSERT	BORING RANGE	d	L	l_1	l_2
262.657.25.068	HLB20xPMB25-68	SIC25 - 1	TB..06 TP..08	25 ~ 33	38.1	138	70	68
		SIC25 - 2		32 ~ 40				
		SIC25 - 3		39 ~ 47				
262.657.32.084	HLB20xPMB32-84	SIC32 - 1		32 ~ 42		151	83	84
		SIC32 - 2		41 ~ 51				
		SIC32 - 3		50 ~ 60				
262.657.41.090	HLB20xPMB41-90	SIC41 - 1	TP..09 TC..11	41 ~ 54		157	89	90
		SIC41 - 2		50 ~ 63				
		SIC41 - 3		61 ~ 74				
263.657.25.068	HLB25xPMB25-68	SIC25 - 1	TB..06 TP..08	25 ~ 33	44.45	148	70	68
		SIC25 - 2		32 ~ 40				
		SIC25 - 3		39 ~ 47				
263.657.32.084	HLB25xPMB32-84	SIC32 - 1		32 ~ 42		161	83	84
		SIC32 - 2		41 ~ 51				
		SIC32 - 3		50 ~ 60				
263.657.41.090	HLB25xPMB41-90	SIC41 - 1	TP..09 TC..11	41 ~ 54		168	90	90
		SIC41 - 2		50 ~ 63				
		SIC41 - 3		61 ~ 74				

- ACCESSORIES:

INSERT	SCREW	WRENCH	INSERT	SCREW	WRENCH
TB..0601	M2-5.0-2.7-60	T6	TP..0902	M2.5-6.0-3.5-60	T8
TP..0802			TC..1102		

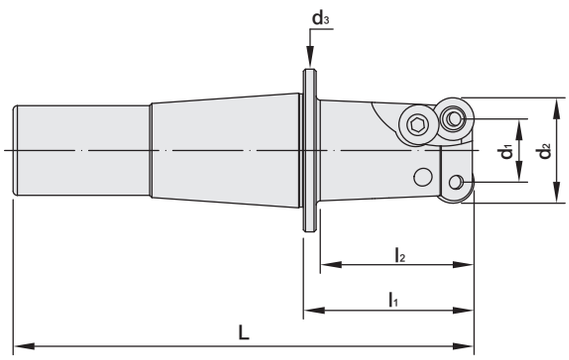
- Inserts are optional accessories. Needs to be purchased additionally.

HLB / FR 端面緊貼型圓刃刀具





T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103



MODEL NO.	TYPE	d_1	d_2	d_3	L	l_1	l_2	TEETH	INSERT
262.158.25.040	HLB20xFR25-40	15	25	38.1	108	40	36	2	RP..1003
262.158.30.040	HLB20xFR30-40	20	30						
262.158.32.040	HLB20xFR32-40	22	32					3	
262.158.35.040	HLB20xFR35-40	25	35						
263.158.25.040	HLB25xFR25-40	15	25	44.45	108	40	36	2	
263.158.30.040	HLB25xFR30-40	20	30						
263.158.32.040	HLB25xFR32-40	22	32					3	
263.158.35.040	HLB25xFR35-40	25	35						

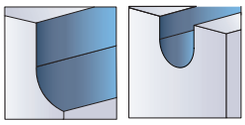
● ACCESSORIES:

INSERT	SCREW	CLAMP	CLAMP SCREW	WRENCH
RP..1003	M4-1.0-5.7-60	HR-5R	M5-0.8P	T15

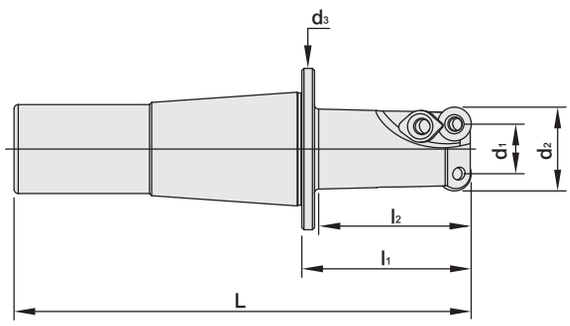
● Inserts are optional accessories. Needs to be purchased additionally.

HLB / GR FACE CONTACT TYPE BALL NOSE END MILL CUTTER

HLB / GR 端面緊貼型圓刃刀具


End Milling Slotting





T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103

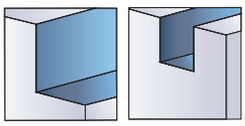
MODEL NO.	TYPE	d_1	d_2	d_3	L	l_1	l_2	TEETH	INSERT
262.260.20.040	HLB20xGR20-40	12	20	38.1	108	40	36	2	RD..0802
262.260.25.040	HLB20xGR25-40	15	25						RD..10T3
262.260.30.040	HLB20xGR30-40	20	30						
262.260.32.040	HLB20xGR32-40	22	32					3	
262.260.35.040	HLB20xGR35-40	25	35						
263.260.20.040	HLB25xGR20-40	12	20	44.45	118	40	36	2	RD..0802
263.260.25.040	HLB25xGR25-40	15	25						RD..10T3
263.260.30.040	HLB25xGR30-40	20	30					3	
263.260.32.040	HLB25xGR32-40	22	32						
263.260.35.040	HLB25xGR35-40	25	35						

● ACCESSORIES:

INSERT	SCREW	WRENCH	CLAMP	CLAMP SCREW	CLAMP WRENCH
RD..0802	M3-6.0-3.7-43	T10	GR-5R	M3.5-8.0-5.5-60	T15
RD..10T3	M4-10-5.0-43	T15			

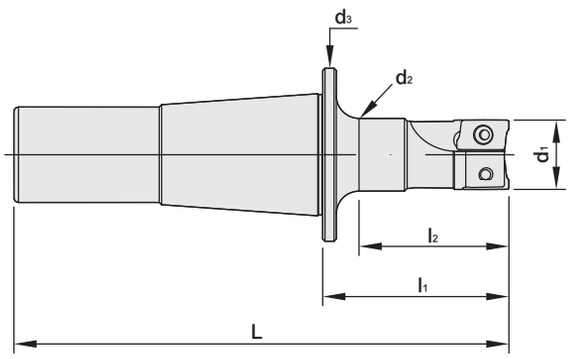
● Inserts are optional accessories. Needs to be purchased additionally.

HLB / IAP 端面緊貼型 90° 刀具


End Milling Slotting



T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103



MODEL NO.	TYPE	d_1	d_2	d_3	L	l_1	l_2	TEETH	INSERT
261.243.10.040	HLB12xIAP10-40-1T	10	12	31.75	95	40	32	1	AP..1003
261.243.12.040	HLB12xIAP12-40-1T	12	12					1	
261.244.16.040	HLB12xIAP16-40-2T	16	16					2	
262.243.10.040	HLB20xIAP10-40-1T	10	12	38.1	108		32	1	AP..1003
262.243.12.040	HLB20xIAP12-40-1T	12	12						
262.244.16.040	HLB20xIAP16-40-2T	16	16					2	
262.244.20.040	HLB20xIAP20-40-2T	20	20						
262.245.20.040	HLB20xIAP20-40-3T							3	
262.244.25.040	HLB20xIAP25-40-2T	25	25					2	
262.245.25.040	HLB20xIAP25-40-3T							3	
262.246.25.040	HLB20xIAP25-40-4T							4	
262.244.32.040	HLB20xIAP32-40-2T	32	30.8				35	2	AP..1604
262.245.32.040	HLB20xIAP32-40-3T							3	
263.243.10.040	HLB25xIAP10-40-1T	10	12	44.45	118		32	1	AP..1003
263.243.12.040	HLB25xIAP12-40-1T	12	12						
263.244.16.040	HLB25xIAP16-40-2T	16	16					2	
263.244.20.040	HLB25xIAP20-40-2T	20	20						
263.245.20.040	HLB25xIAP20-40-3T							3	
263.244.25.040	HLB25xIAP25-40-2T	25	25				34	2	
263.245.25.040	HLB25xIAP25-40-3T							3	
263.246.25.040	HLB25xIAP25-40-4T							4	
263.244.32.040	HLB25xIAP32-40-2T	32	30.8					2	AP..1604
263.245.32.040	HLB25xIAP32-40-3T							3	

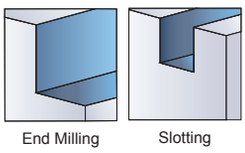
● ACCESSORIES:

INSERT	SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

● Inserts are optional accessories. Needs to be purchased additionally.

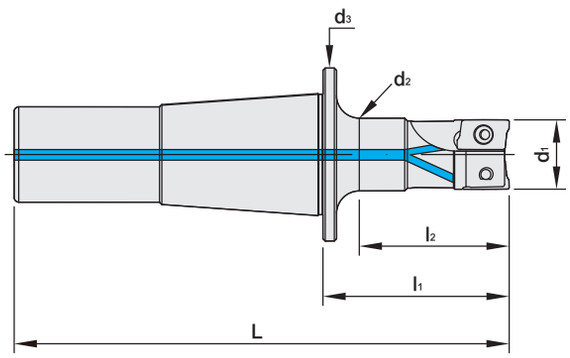
HLB / CIAP FACE CONTACT TYPE 90° END MILL CUTTER

HLB / CIAP 端面緊貼型 90° 刀具





T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103



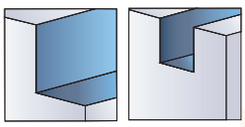
MODEL NO.	TYPE	d_1	d_2	d_3	L	l_1	l_2	TEETH	INSERT
261.243C.10.040	HLB12xCIAP10-40-1T	10	12	31.75	95	40	32	1	AP..1003
261.243C.12.040	HLB12xCIAP12-40-1T	12	12					1	
261.244C.16.040	HLB12xCIAP16-40-2T	16	16					2	
262.243C.10.040	HLB20xCIAP10-40-1T	10	12	38.1	108	40	32	1	AP..1003
262.243C.12.040	HLB20xCIAP12-40-1T	12							
262.244C.16.040	HLB20xCIAP16-40-2T	16	16					2	
262.244C.20.040	HLB20xCIAP20-40-2T	20	20						
262.245C.20.040	HLB20xCIAP20-40-3T							3	
262.244C.25.040	HLB20xCIAP25-40-2T	25	25					2	
262.245C.25.040	HLB20xCIAP25-40-3T							3	
262.246C.25.040	HLB20xCIAP25-40-4T							4	
262.244C.32.040	HLB20xCIAP32-40-2T	32	30.8				35	2	AP..1604
262.245C.32.040	HLB20xCIAP32-40-3T							3	
263.243C.10.040	HLB25xCIAP10-40-1T	10	12	44.5	118	40	32	1	AP..1003
263.243C.12.040	HLB25xCIAP12-40-1T	12							
263.244C.16.040	HLB25xCIAP16-40-2T	16	16					2	
263.244C.20.040	HLB25xCIAP20-40-2T	20	20						
263.245C.20.040	HLB25xCIAP20-40-3T							3	
263.244C.25.040	HLB25xCIAP25-40-2T	25	25				34	2	
263.245C.25.040	HLB25xCIAP25-40-3T							3	
263.246C.25.040	HLB25xCIAP25-40-4T							4	
263.244C.32.040	HLB25xCIAP32-40-2T	32	30.8					2	AP..1604
263.245C.32.040	HLB25xCIAP32-40-3T							3	

● ACCESSORIES:

INSERT	SCREW	WRENCH
AP..1003	M2.5-6.45-3.7-60	T8
AP..1604	M4-10-5.7-60	T15

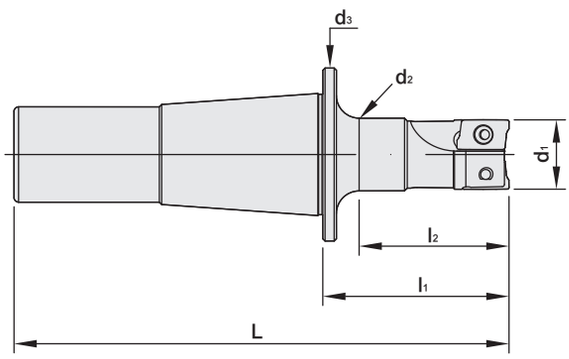
● Inserts are optional accessories. Needs to be purchased additionally.

HLB / MAP 端面緊貼型 90° 刀具


End Milling Slotting



T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103



MODEL NO.	TYPE	d_1	d_2	d_3	L	l_1	l_2	TEETH	INSERT
261.467.10.040	HLB12xMAP10-40-1T	10	12	31.75	95	40	32	1	AP..1135
261.467.12.040	HLB12xMAP12-40-1T	12	11						
261.468.16.040	HLB12xMAP16-40-2T	16	16				34	2	
262.467.10.040	HLB20xMAP10-40-1T	10	12	38.1	108		32	1	AP..1135
262.467.12.040	HLB20xMAP12-40-1T	12	11						
262.468.16.040	HLB20xMAP16-40-2T	16	16				34	2	
262.468.20.040	HLB20xMAP20-40-2T	20	16.8						
262.469.25.040	HLB20xMAP25-40-3T	25	23.5					3	
262.470.25.040	HLB20xMAP25-40-4T							4	
262.468.32.040	HLB20xMAP32-40-2T	32	31.45				35	2	AP..1604
262.469.32.040	HLB20xMAP32-40-3T							3	
263.467.10.040	HLB25xMAP10-40-1T	10	12	44.45	118		32	1	AP..1135
263.467.12.040	HLB25xMAP12-40-1T	12	11						
263.468.16.040	HLB25xMAP16-40-2T	16	16				34	2	
263.468.20.040	HLB25xMAP20-40-2T	20	16.8						
263.469.25.040	HLB25xMAP25-40-3T	25	23.5					3	
263.470.25.040	HLB25xMAP25-40-4T							4	
263.468.32.040	HLB25xMAP32-40-2T	32	31.45					2	AP..1604
263.469.32.040	HLB25xMAP32-40-3T							3	

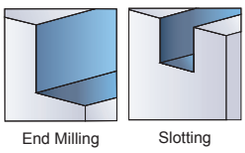
● ACCESSORIES:

INSERT	SCREW	WRENCH
AP..1135	M2.5-6.0-3.5-60	T8
AP..1604	M4-10-5.7-60	T15

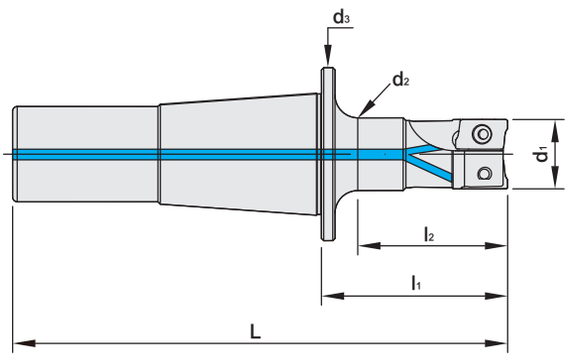
● Inserts are optional accessories. Needs to be purchased additionally.

HLB / CMAP FACE CONTACT TYPE 90° END MILL CUTTER

HLB / CMAP 端面緊貼型 90° 刀具







T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103

MODEL NO.	TYPE	d_1	d_2	d_3	L	l_1	l_2	TEETH	INSERT
261.467C.10.040	HLB12xCMAP10-40-1T	10	12	31.75	95	40	32	1	AP..1135
261.467C.12.040	HLB12xCMAP12-40-1T	12	11						
261.468C.16.040	HLB12xCMAP16-40-2T	16	16				34	2	
262.467C.10.040	HLB20xCMAP10-40-1T	10	12	38.1	108		32	1	AP..1135
262.467C.12.040	HLB20xCMAP12-40-1T	12	11						
262.468C.16.040	HLB20xCMAP16-40-2T	16	16				34	2	
262.468C.20.040	HLB20xCMAP20-40-2T	20	16.8						
262.469C.25.040	HLB20xCMAP25-40-3T	25	23.5					3	
262.470C.25.040	HLB20xCMAP25-40-4T							4	
262.468C.32.040	HLB20xCMAP32-40-2T	32	31.45				35	2	AP..1604
262.469C.32.040	HLB20xCMAP32-40-3T							3	
263.467C.10.040	HLB25xCMAP10-40-1T	10	12	44.45	118		32	1	AP..1135
263.467C.12.040	HLB25xCMAP12-40-1T	12	11						
263.468C.16.040	HLB25xCMAP16-40-2T	16	16				34	2	
263.468C.20.040	HLB25xCMAP20-40-2T	20	16.8						
263.469C.25.040	HLB25xCMAP25-40-3T	25	23.5					3	
263.470C.25.040	HLB25xCMAP25-40-4T							4	
263.468C.32.040	HLB25xCMAP32-40-2T	32	31.45					2	AP..1604
263.469C.32.040	HLB25xCMAP32-40-3T							3	

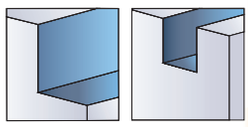
● ACCESSORIES:

INSERT	SCREW	WRENCH
AP..1135	M2.5-6.0-3.5-60	T8
AP..1604	M4-10-5.7-60	T15

● Inserts are optional accessories. Needs to be purchased additionally.

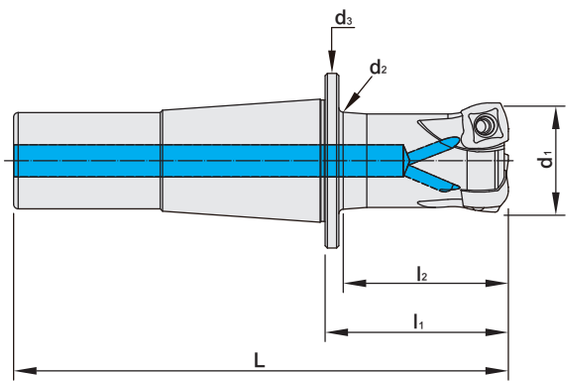
HLB / HF FACE CONTACT TYPE HIGH-FEED END MILL CUTTER

HLB / HF 端面緊貼型大進給刀具


End Milling Slotting



T W PAT NO. M488361
J P PAT NO. 3193771
D E PAT NO. Nr.202014103



MODEL NO.	TYPE	d_1	d_2	d_3	L	l_1	l_2	TEETH	INSERT
262.269.25.040	HLB20xHF25-40-3T	25	20.9	38.1	108	40	36	3	SNKX09T3
262.269.32.040	HLB20xHF32-40-3T	32	27.9						
262.270.32.040	HLB20xHF32-40-4T							4	
263.269.25.040	HLB25xHF25-40-3T	25	20.9	44.45	118			3	SNKX09T3
263.269.32.040	HLB25xHF32-40-3T	32	27.9						
263.270.32.040	HLB25xHF32-40-4T							4	

● ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SNKX09T3	M3.5-9.3-4.8-60	T5

● Inserts are optional accessories. Needs to be purchased additionally.

MEMO

Synwell

Synwell

CUTTING TOOL SYSTEM

INDEXABLE HIGH SPEED DRILL

series

ECOCUT CLASSIC

MTC 複合式刀具



Fig.1

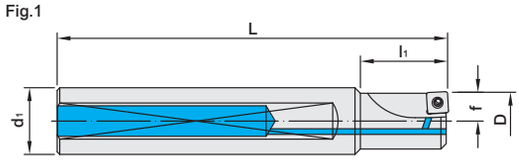
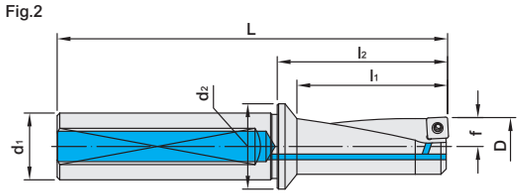
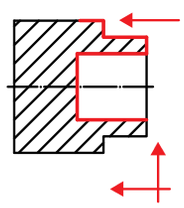


Fig.2



- MTC Multifunctional Cutter is applicable for drilling and internal & external turning in lathes.



1.5 times long

MODEL NO.	TYPE	D	d1	d2	L	l1	l2	f	RANGE	Fig	INSERTS
156.489.0812.12R	MTC08-C12-12R	8	12		80	12		4	7.85 ~ 8.3		XC..0401
156.489.0812.12L	MTC08-C12-12L										
156.489.1012.15R	MTC10-C12-15R	10	15		90	15		5	9.85 ~ 10.5		XC..0502
156.489.1012.15L	MTC10-C12-15L										
156.489.1216.18R	MTC12-C16-18R	12	18		100	18		6	11.85 ~ 12.5		XC..0602
156.489.1216.18L	MTC12-C16-18L										
156.489.1416.21R	MTC14-C16-21R	14	21		110	21		7	13.85 ~ 14.5		XC..0703
156.489.1416.21L	MTC14-C16-21L										
156.489.1620.24R	MTC16-C20-24R	16	24	-	125	24	-	8	15.85 ~ 16.5	1	XC..0803
156.489.1620.24L	MTC16-C20-24L										
156.489.1825.27R	MTC18-C25-27R	18	27		135	27		9	17.85 ~ 18.5		XC..09T3
156.489.1825.27L	MTC18-C25-27L										
156.489.2025.30R	MTC20-C25-30R	20	30		150	30		10	19.8 ~ 20.5		XC..10T3
156.489.2025.30L	MTC20-C25-30L										
156.489.2532.37.5R	MTC25-C32-37.5R	25	37.5		180	37.5		12.5	24.8 ~ 25.8		XC..1304
156.489.2532.37.5L	MTC25-C32-37.5L										
156.489.3240.48R	MTC32-C40-48R	32	48		200	48		16	31.8 ~ 33		XC..1705
156.489.3240.48L	MTC32-C40-48L										

2.25 times long

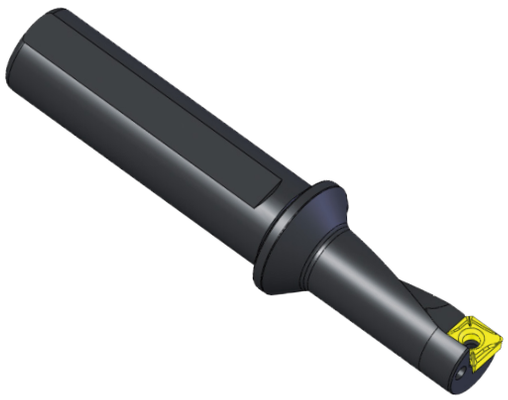
MODEL NO.	TYPE	D	d1	d2	L	l1	l2	f	RANGE	Fig	INSERTS
156.489.0810.18R	MTC08-C10-18R	8	10	12	60	18	22	4	7.85 ~ 8.3		XC..0401
156.489.0810.18L	MTC08-C10-18L										
156.489.1012.22.5R	MTC10-C12-22.5R	10	12	16	69.5	22.5	27.5	5	9.85 ~ 10.5		XC..0502
156.489.1012.22.5L	MTC10-C12-22.5L										
156.489.1216.27R	MTC12-C16-27R	12	16	20	78	27	33	6	11.85 ~ 12.5		XC..0602
156.489.1216.27L	MTC12-C16-27L										
156.489.1416.31.5R	MTC14-C16-31.5R	14			83.5	31.5	38.5	7	13.85 ~ 14.5		XC..0703
156.489.1416.31.5L	MTC14-C16-31.5L										
156.489.1620.36R	MTC16-C20-36R	16	20	25	94	36	44	8	15.85 ~ 16.5	2	XC..0803
156.489.1620.36L	MTC16-C20-36L										
156.489.1825.40.5R	MTC18-C25-40.5R	18	25	32	109.5	40.5	53.5	9	17.85 ~ 18.5		XC..09T3
146.489.1825.40.5L	MTC18-C25-40.5L										
146.489.2025.45R	MTC20-C25-45R	20			111	45	55	10	19.8 ~ 20.5		XC..10T3
146.489.2025.45L	MTC20-C25-45L										
146.489.2532.56.5R	MTC25-C32-56.5R	25	32	40	129	56.5	69	12.5	24.8 ~ 25.8		XC..1304
146.489.2532.56.5L	MTC25-C32-56.5L										
146.489.3240.72R	MTC32-C40-72R	32		50	158	72	88	16	31.8 ~ 33		XC..1705
146.489.3240.72L	MTC32-C40-72L										

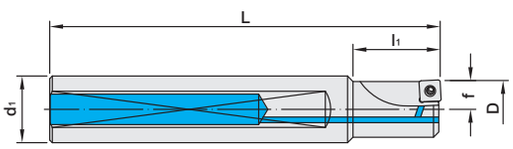
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
XC..0401	M1.8	T6	XC..0703	M2.5	T8	XC..10T3	M3.5	T15
XC..0502	M2.0		XC..0803	M3.0		XC..1304	M4.5	T20
XC..0602	M2.2	T7	XC..09T3			XC..1705		

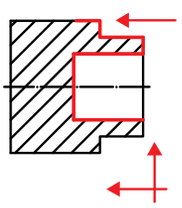
- Inserts are optional accessories. Needs to be purchased additionally.

MTC 複合式刀具





- MTC Multifunctional Cutter is applicable for drilling and internal & external turning in lathes.



3 times long

MODEL NO.	TYPE	D	d_1	d_2	L	l_1	l_2	f	RANGE	INSERTS
156.489.0812.24R	MTC08-C12-24R	8	12		80	24		4	7.85 ~ 8.3	XC..0401
156.489.0812.24L	MTC08-C12-24L									
156.489.1012.30R	MTC10-C12-30R	10			85	30		5	9.85 ~ 10.5	XC..0502
156.489.1012.30L	MTC10-C12-30L									
156.489.1216.36R	MTC12-C16-36R	12	16		95	36		6	11.85 ~ 12.5	XC..0602
156.489.1216.36L	MTC12-C16-36L									
156.489.1416.42R	MTC14-C16-42R	14			100	42		7	13.85 ~ 14.5	XC..0703
156.489.1416.42L	MTC14-C16-42L									
156.489.1620.48R	MTC16-C20-48R	16	20	-	110	48	-	8	15.85 ~ 16.5	XC..0803
156.489.1620.48L	MTC16-C20-48L									
156.489.1825.54R	MTC18-C25-54R	18	25		125	54		9	17.85 ~ 18.5	XC..09T3
156.489.1825.54L	MTC18-C25-54L									
156.489.2025.60R	MTC20-C25-60R	20			130	60		10	19.8 ~ 20.5	XC..10T3
156.489.2025.60L	MTC20-C25-60L									
156.489.2532.75R	MTC25-C32-75R	25	32		150	75		12.5	24.8 ~ 25.8	XC..1304
156.489.2532.75L	MTC25-C32-75L									
156.489.3240.96R	MTC32-C40-96R	32	40		185	96		16	31.8 ~ 33	XC..1705
156.489.3240.96L	MTC32-C40-96L									

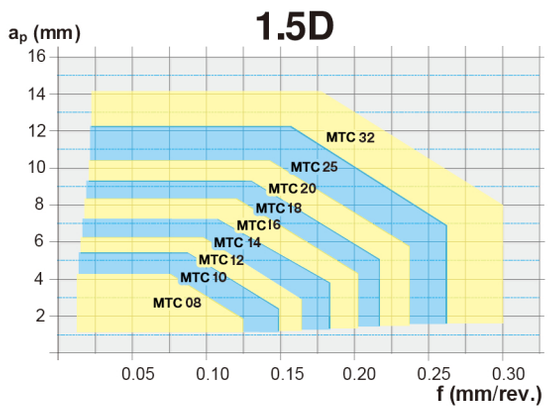
- ACCESSORIES:

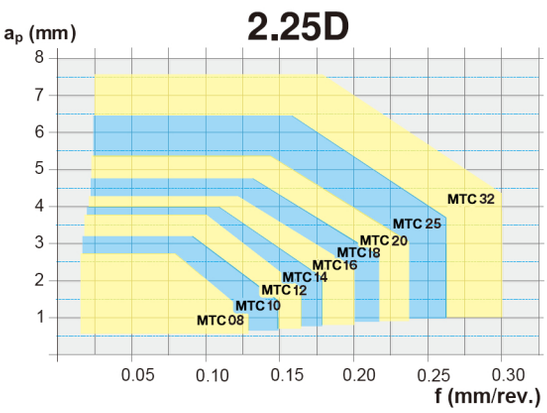
INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
XC..0401	M1.8	T6	XC..0703	M2.5	T8	XC..10T3	M3.5	T15
XC..0502	M2.0		XC..0803	M3.0		XC..1304	M4.5	T20
XC..0602	M2.2	T7	XC..09T3			XC..1705		

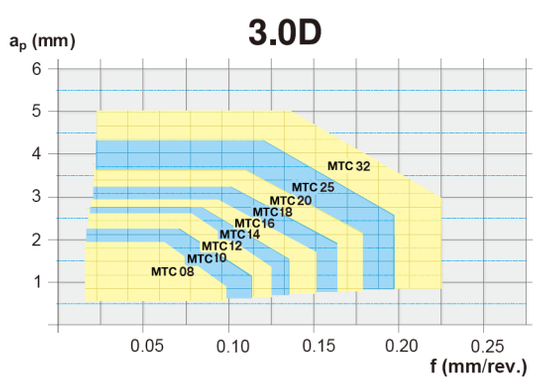
- Inserts are optional accessories. Needs to be purchased additionally.

Synwell

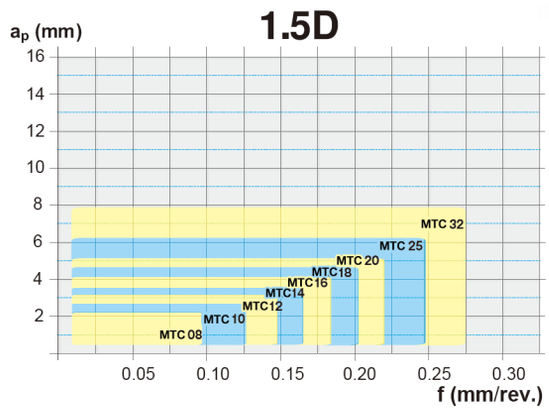
Internal and external turning

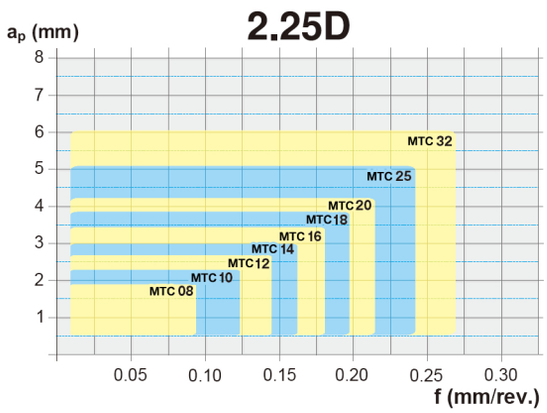


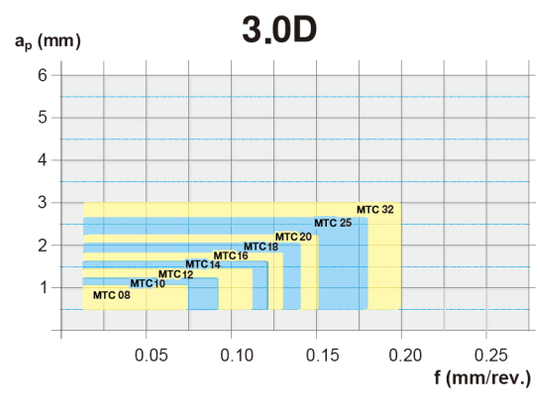




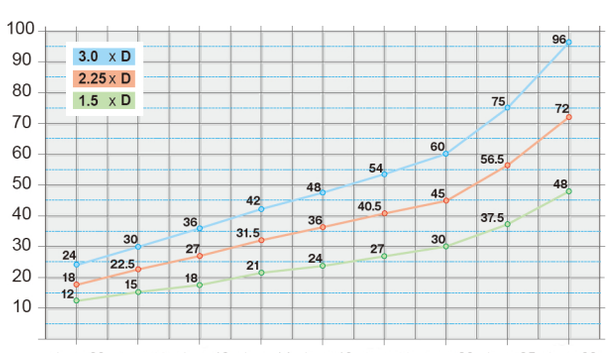
Face turning



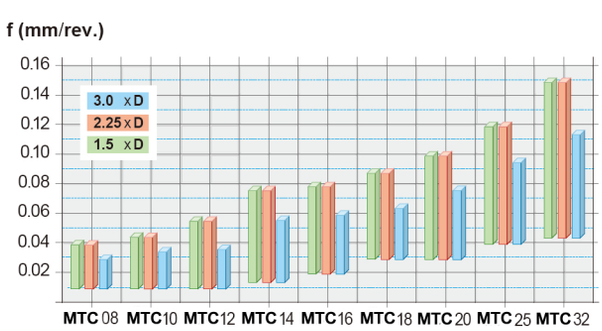




Cutting depth



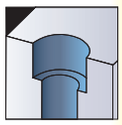
Cutting speed



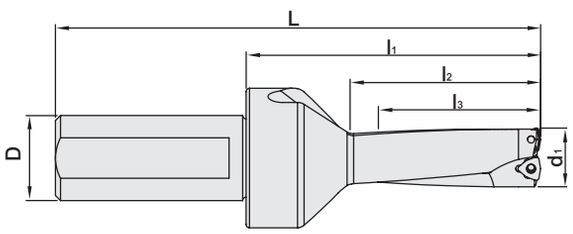
INDEXABLE HIGH SPEED DRILL

WD 捨棄式快速鑽頭





Counter Boring



- Drilling depth is three times longer than the diameter of the High Speed Drill.
- The material is anti-vibration tool steel.
- The whole body is treated with fine grinding after hardening in order to raise the rigidity and stability and prevent from deformation.
- There is special coating on the surface of the high speed drill, which decreases the wear rate and extends the use life of the drill.

MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.811.1525.045	WD15-C25-3D-45L	25	15	118	68	47	45	WC..0302
156.811.1625.048	WD16-C25-3D-48L		16	124	74	53	48	
156.811.1725.051	WD17-C25-3D-51L		17	127	77	56	51	
156.811.1825.054	WD18-C25-3D-54L		18	131	81	59	54	
156.811.1925.057	WD19-C25-3D-57L		19	134	84	62	57	
156.811.2025.060	WD20-C25-3D-60L		20	142	89	66	60	
156.811.2125.063	WD21-C25-3D-63L		21	145	92	68	63	WC..0402
156.811.2225.066	WD22-C25-3D-66L		22	148	95	71	66	
156.811.2325.069	WD23-C25-3D-69L		23	151	99	74	69	
156.811.2432.072	WD24-C32-3D-72L	32	24	163	103	78	72	
156.811.2532.075	WD25-C32-3D-75L		25	167	107	81	75	
156.811.2632.078	WD26-C32-3D-78L		26	170	110	83	78	WC..0503
156.811.2732.081	WD27-C32-3D-81L		27	173	113	86	81	
156.811.2832.084	WD28-C32-3D-84L		28	177	117	89	84	
156.811.2932.087	WD29-C32-3D-87L		29	180	120	92	87	
156.811.3032.090	WD30-C32-3D-90L		30	185	125	96	90	
156.811.3132.093	WD31-C32-3D-93L		31	189	129	99	93	WC..06T3
156.811.3232.096	WD32-C32-3D-96L		32	192	132	102	96	
156.811.3332.099	WD33-C32-3D-99L		33	196	136	105	99	
156.811.3432.102	WD34-C32-3D-102L		34	199	139	108	102	
156.811.3532.105	WD35-C32-3D-105L		35	203	143	111	105	
156.811.3632.108	WD36-C32-3D-108L		36				108	
156.811.3732.111	WD37-C32-3D-111L		37	210	150	117	111	
156.811.3832.114	WD38-C32-3D-114L		38	214	154	120	114	
156.811.3932.117	WD39-C32-3D-117L		39	217	157	123	117	

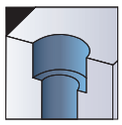
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
WC..0302	M2.5-5.5-3.35-60	T8	WC..06T3	M3.5-8.0-5.0-43	T15
WC..0402	M2.5-6.0-3.5-60	T8	WC..0804	M4-10-5.7-60	
WC..0503	M3-8.0-4.4-60	T9			

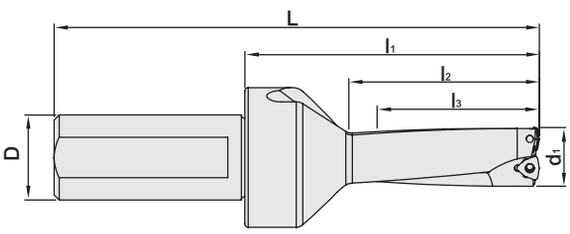
- Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE HIGH SPEED DRILL

WD 捨棄式快速鑽頭


Counter Boring





- Drilling depth is three times longer than the diameter of the High Speed Drill.
- The material is anti-vibration tool steel.
- The whole body is treated with fine grinding after hardening in order to raise the rigidity and stability and prevent from deformation.
- There is special coating on the surface of the high speed drill, which decreases the wear rate and extends the use life of the drill.

MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.811.4040.120	WD40-C40-3D-120L	40	40	231	161	126	120	WC..06T3
156.811.4140.123	WD41-C40-3D-123L		41	235	165	129	123	
156.811.4240.126	WD42-C40-3D-126L		42	238	168	132	126	WC..0804
156.811.4340.129	WD43-C40-3D-129L		43	241	171	135	129	
156.811.4440.132	WD44-C40-3D-132L		44	245	175	138	132	
156.811.4540.135	WD45-C40-3D-135L		45	248	178	141	135	
156.811.4640.138	WD46-C40-3D-138L		46	252	182	144	138	
156.811.4740.141	WD47-C40-3D-141L		47	255	185	147	141	
156.811.4840.144	WD48-C40-3D-144L		48	259	189	150	144	
156.811.4940.147	WD49-C40-3D-147L		49	262	192	153	147	
156.811.5040.150	WD50-C40-3D-150L		50			158	150	
156.811.5140.153	WD51-C40-3D-153L		51			162	153	
156.811.5240.156	WD52-C40-3D-156L		52			165	156	
156.811.5340.159	WD53-C40-3D-159L		53			168	159	
156.811.5440.162	WD54-C40-3D-162L		54			170	162	
156.811.5540.165	WD55-C40-3D-165L		55			175	165	
156.811.5640.168	WD56-C40-3D-168L		56	275	205	180	168	
156.811.5740.171	WD57-C40-3D-171L		57			185	171	
156.811.5840.174	WD58-C40-3D-174L		58	280			174	
156.811.5940.177	WD59-C40-3D-177L		59	285		187	177	
156.811.6040.180	WD60-C40-3D-180L		60			190	180	

- ACCESSORIES:

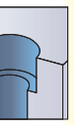
INSERT	INSERT SCREW	WRENCH
WC..06T3	M3.5-8.0-5.0-43	T15
WC..0804	M4-10-5.7-60	

- Inserts are optional accessories. Needs to be purchased additionally.

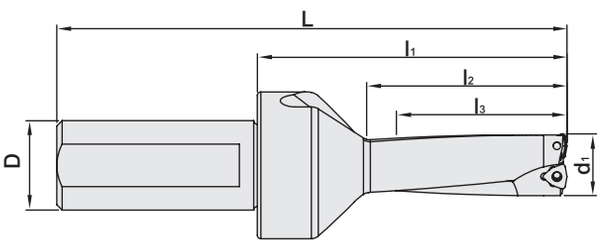
INDEXABLE HIGH SPEED DRILL

WD 捨棄式快速鑽頭





Counter Boring



- Drilling depth is three times longer than the diameter of the High Speed Drill.
- The material is anti-vibration tool steel.
- The whole body is treated with fine grinding after hardening in order to raise the rigidity and stability and prevent from deformation.
- There is special coating on the surface of the high speed drill, which decreases the wear rate and extends the use life of the drill.

MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.811.15525.045	WD15.5-C25-3D-45L	25	15.5	118	68	47	45	WC..0302
156.811.16525.048	WD16.5-C25-3D-48L		16.5	124	74	53	48	
156.811.17525.051	WD17.5-C25-3D-51L		17.5	127	77	56	51	
156.811.18525.054	WD18.5-C25-3D-54L		18.5	131	81	59	54	
156.811.19525.057	WD19.5-C25-3D-57L		19.5	134	84	62	57	
156.811.20525.060	WD20.5-C25-3D-60L		20.5	142	89	66	60	
156.811.21525.063	WD21.5-C25-3D-63L		21.5	145	92	68	63	WC..0402
156.811.22525.066	WD22.5-C25-3D-66L		22.5	148	95	71	66	
156.811.23525.069	WD23.5-C25-3D-69L		23.5	151	99	74	69	
156.811.24532.072	WD24.5-C32-3D-72L	32	24.5	163	103	78	72	
156.811.25532.075	WD25.5-C32-3D-75L		25.5	167	107	81	75	

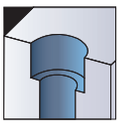
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
WC..0302	M2.5-5.5-3.35-60	T8
WC..0402	M2.5-6.0-3.5-60	

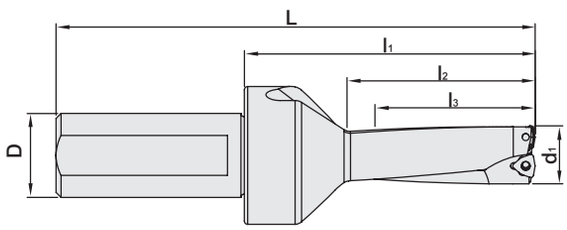
- Inserts are optional accessories. Needs to be purchased additionally.

INDEXABLE HIGH SPEED DRILL

WD 捨棄式快速鑽頭


Counter Boring





- Drilling depth is four times longer than the diameter of the High Speed Drill.
- The material is anti-vibration tool steel.
- The whole body is treated with fine grinding after hardening in order to raise the rigidity and stability and prevent from deformation.
- There is special coating on the surface of the high speed drill, which decreases the wear rate and extends the use life of the drill.

MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.811.1525.060	WD15-C25-4D-60L	25	15	133	83	62	60	WC..0302
156.811.1625.064	WD16-C25-4D-64L		16	140	90	69	64	
156.811.1725.068	WD17-C25-4D-68L		17	144	94	73	68	
156.811.1825.072	WD18-C25-4D-72L		18	149	99	77	72	
156.811.1925.076	WD19-C25-4D-76L		19	153	103	81	76	
156.811.2025.080	WD20-C25-4D-80L		20	162	109	86	80	
156.811.2125.084	WD21-C25-4D-84L		21	166	113	89	84	WC..0402
156.811.2225.088	WD22-C25-4D-88L		22	170	117	93	88	
156.811.2325.092	WD23-C25-4D-92L		23	174	122	97	92	
156.811.2432.096	WD24-C32-4D-96L	32	24	187	127	102	96	
156.811.2532.100	WD25-C32-4D-100L		25	192	132	106	100	
156.811.2632.104	WD26-C32-4D-104L		26	196	136	109	104	WC..0503
156.811.2732.108	WD27-C32-4D-108L		27	200	140	113	108	
156.811.2832.112	WD28-C32-4D-112L		28	205	145	117	112	
156.811.2932.116	WD29-C32-4D-116L		29	209	149	121	116	
156.811.3032.120	WD30-C32-4D-120L		30	215	155	126	120	
156.811.3132.124	WD31-C32-4D-124L		31	220	160	130	124	WC..06T3
156.811.3232.128	WD32-C32-4D-128L		32	224	164	134	128	
156.811.3332.132	WD33-C32-4D-132L		33	229	169	138	132	
156.811.3432.136	WD34-C32-4D-136L		34	233	173	142	136	
156.811.3532.140	WD35-C32-4D-140L		35	238	178	146	140	
156.811.3632.144	WD36-C32-4D-144L		36	233	172	149	144	
156.811.3732.148	WD37-C32-4D-148L		37	277	176	153	148	
156.811.3832.152	WD38-C32-4D-152L		38	241	180	157	152	
156.811.3932.156	WD39-C32-4D-156L		39	256	196	162	156	
156.811.4140.164	WD41-C40-4D-164L	40	41	276	208	170	164	WC..0804
156.811.4440.176	WD44-C40-4D-176L		44	289	219	182	176	
156.811.4740.188	WD47-C40-4D-188L		47	302	231	194	188	
156.811.4940.196	WD49-C40-4D-196L		49	311	241	202	196	
156.811.5440.216	WD54-C40-4D-216L		54	316	261	222	216	
156.811.5940.236	WD59-C40-4D-236L		59	344	281	242	236	

- ACCESSORIES:

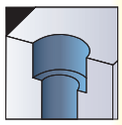
INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
WC..0302	M2.5-5.5-3.35-60	T8	WC..06T3	M3.5-8.0-5.0-43	T15
WC..0402	M2.5-6.0-3.5-60	T8	WC..0804	M4-10-5.7-60	
WC..0503	M3-8.0-4.4-60	T9			

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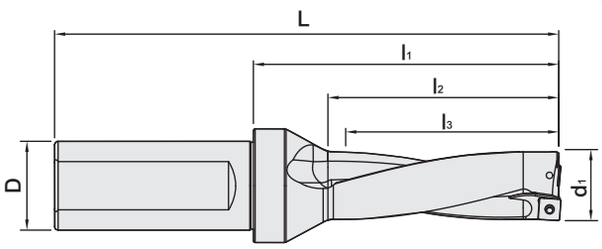
INDEXABLE HIGH SPEED DRILL

SPD 捨棄式快速鑽頭





Counter Boring



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MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.685.1325.039	SPD13-C25-3D-39L	25	13	119	63	44	39	SP..0502
156.685.1425.042	SPD14-C25-3D-42L		14	122	66	47	42	
156.685.1525.045	SPD15-C25-3D-45L		15	125	69	50	45	
156.685.1625.048	SPD16-C25-3D-48L		16	130	74	53	48	SP..0602
156.685.1725.051	SPD17-C25-3D-51L		17	133	77	56	51	
156.685.1825.054	SPD18-C25-3D-54L		18	136	80	59	54	
156.685.1925.057	SPD19-C25-3D-57L		19	139	83	62	57	
156.685.2025.060	SPD20-C25-3D-60L		20	142	86	65	60	
156.685.2125.063	SPD21-C25-3D-63L		21	145	89	68	63	
156.685.2225.066	SPD22-C25-3D-66L		22	154	94	71	66	SP..07T3
156.685.2332.069	SPD23-C32-3D-69L	32	23	157	97	74	69	
156.685.2432.072	SPD24-C32-3D-72L		24	160	100	77	72	
156.685.2532.075	SPD25-C32-3D-75L		25	163	103	80	75	
156.685.2632.078	SPD26-C32-3D-78L		26	166	106	83	78	
156.685.2732.081	SPD27-C32-3D-81L		27	169	109	86	81	

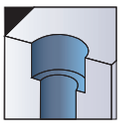
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SP..0502	M2-4.3-2.7-60	T6
SP..0602	M2.2-5.2-3.1-60	T7
SP..07T3	M2.5-6.33-3.5-48	T8

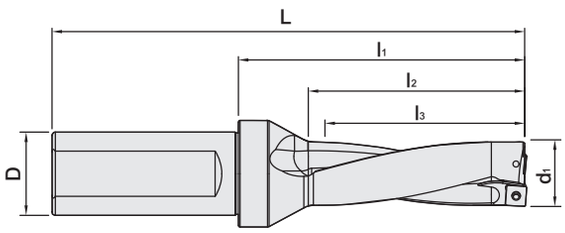
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INDEXABLE HIGH SPEED DRILL

SPD 捨棄式快速鑽頭


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MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.685.2832.084	SPD28-C32-3D-84L	32	28	174	114	89	84	SP..0904
156.685.2932.087	SPD29-C32-3D-87L		29	177	117	92	87	
156.685.3032.090	SPD30-C32-3D-90L		30	180	120	95	90	
156.685.3132.093	SPD31-C32-3D-93L		31	183	123	98	93	
156.685.3232.096	SPD32-C32-3D-96L		32	186	126	101	96	
156.685.3332.099	SPD33-C32-3D-99L		33	189	129	104	99	
156.685.3432.102	SPD34-C32-3D-102L		34	192	132	107	102	SP..1104
156.685.3532.105	SPD35-C32-3D-105L		35	195	135	110	105	
156.685.3632.108	SPD36-C32-3D-108L		36	198	138	113	108	
156.685.3732.111	SPD37-C32-3D-111L		37	201	141	116	111	
156.685.3832.114	SPD38-C32-3D-114L		38	204	144	119	114	
156.685.3932.117	SPD39-C32-3D-117L		39	207	147	122	117	
156.685.4040.120	SPD40-C40-3D-120L	40	40	224	154	125	120	
156.685.4140.123	SPD41-C40-3D-123L		41	227	157	128	123	
156.685.4240.126	SPD42-C40-3D-126L		42	230	160	131	126	SP..1405
156.685.4340.129	SPD43-C40-3D-129L		43	233	163	134	129	
156.685.4440.132	SPD44-C40-3D-132L		44	236	166	137	132	
156.685.4540.135	SPD45-C40-3D-135L		45	239	169	140	135	
156.685.4640.138	SPD46-C40-3D-138L		46	242	172	143	138	
156.685.4740.141	SPD47-C40-3D-141L		47	245	175	146	141	
156.685.4840.144	SPD48-C40-3D-144L		48	248	178	149	144	
156.685.4940.147	SPD49-C40-3D-147L		49	251	181	152	147	
156.685.5040.150	SPD50-C40-3D-150L		50	254	184	155	150	

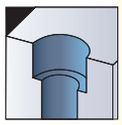
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SP..0904	M3.5-8.4-5.0-60	T10
SP..1104	M4-9.35-5.65-60	T15
SP..1405	M5-12.8-7.0-60	T20

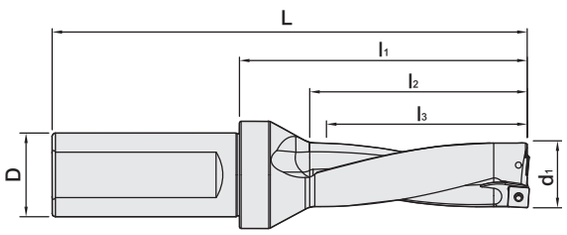
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SPD 捨棄式快速鑽頭





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MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.685.13525.40.5	SPD13.5-C25-3D-40.5L	25	13.5	120.5	64.5	45.5	40.5	SP..0502
156.685.14525.43.5	SPD14.5-C25-3D-43.5L		14.5	123.5	67.5	48.5	43.5	
156.685.15525.46.5	SPD15.5-C25-3D-46.5L		15.5	128.5	72.5	51.5	46.5	SP..0602
156.685.16525.49.5	SPD16.5-C25-3D-49.5L		16.5	131.5	75.5	54.5	49.5	
156.685.17525.52.5	SPD17.5-C25-3D-52.5L		17.5	134.5	78.5	57.5	52.5	
156.685.18525.55.5	SPD18.5-C25-3D-55.5L		18.5	137.5	81.5	60.5	55.5	
156.685.19525.58.5	SPD19.5-C25-3D-58.5L		19.5	140.5	84.5	63.5	58.5	
156.685.20525.61.5	SPD20.5-C25-3D-61.5L		20.5	143.5	87.5	66.5	61.5	
156.685.21525.64.5	SPD21.5-C25-3D-64.5L		21.5	146.5	90.5	69.5	64.5	
156.685.22532.67.5	SPD22.5-C32-3D-67.5L	32	22.5	155.5	95.5	72.5	67.5	SP..07T3
156.685.23532.70.5	SPD23.5-C32-3D-70.5L		23.5	158.5	98.5	75.5	70.5	
156.685.24532.73.5	SPD24.5-C32-3D-73.5L		24.5	161.5	101.5	78.5	73.5	
156.685.25532.76.5	SPD25.5-C32-3D-76.5L		25.5	164.5	104.5	81.5	76.5	
156.685.26532.79.5	SPD26.5-C32-3D-79.5L		26.5	167.5	107.5	84.5	79.5	
156.685.27532.82.5	SPD27.5-C32-3D-82.5L		27.5	170.5	110.5	87.5	82.5	
156.685.28532.85.5	SPD28.5-C32-3D-85.5L		28.5	175.5	115.5	90.5	85.5	SP..0904
156.685.29532.88.5	SPD29.5-C32-3D-88.5L		29.5	178.5	118.5	93.5	88.5	
156.685.30532.91.5	SPD30.5-C32-3D-91.5L		30.5	181.5	121.5	96.5	91.5	
156.685.31532.94.5	SPD31.5-C32-3D-94.5L		31.5	184.5	124.5	99.5	94.5	
156.685.32532.97.5	SPD32.5-C32-3D-97.5L		32.5	187.5	127.5	102.5	97.5	
156.685.33532.100.5	SPD33.5-C32-3D-100.5L		33.5	190.5	130.5	105.5	100.5	

- ACCESSORIES:

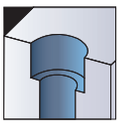
INSERT	INSERT SCREW	WRENCH
SP..0502	M2-4.3-2.7-60	T6
SP..0602	M2.2-5.2-3.1-60	T7
SP..07T3	M2.5-6.33-3.5-48	T8
SP..0904	M3.5-8.4-5.0-60	T10

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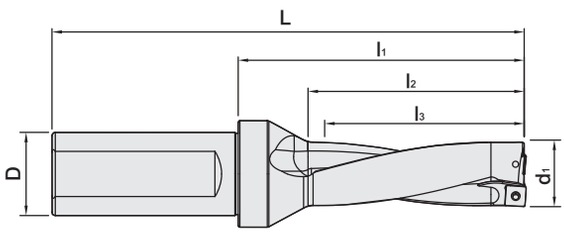
INDEXABLE HIGH SPEED DRILL

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MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.685.1325.052	SPD13-C25-4D-52L	25	13	132	76	57	52	SP..0502
156.685.1425.056	SPD14-C25-4D-56L		14	136	80	61	56	
156.685.1525.060	SPD15-C25-4D-60L		15	140	84	65	60	
156.685.1625.064	SPD16-C25-4D-64L		16	146	90	69	64	SP..0602
156.685.1725.068	SPD17-C25-4D-68L		17	150	94	73	68	
156.685.1825.072	SPD18-C25-4D-72L		18	154	98	77	72	
156.685.1925.076	SPD19-C25-4D-76L		19	158	102	81	76	
156.685.2025.080	SPD20-C25-4D-80L		20	162	106	85	80	
156.685.2125.084	SPD21-C25-4D-84L		21	166	110	89	84	
156.685.2232.088	SPD22-C32-4D-88L	32	22	176	116	93	88	SP..07T3
156.685.2332.092	SPD23-C32-4D-92L		23	180	120	97	92	
156.685.2432.096	SPD24-C32-4D-96L		24	184	124	101	96	
156.685.2532.100	SPD25-C32-4D-100L		25	188	128	105	100	
156.685.2632.104	SPD26-C32-4D-104L		26	192	132	109	104	
156.685.2732.108	SPD27-C32-4D-108L		27	196	136	113	108	
156.685.2832.112	SPD28-C32-4D-112L		28	202	142	117	112	SP..0904
156.685.2932.116	SPD29-C32-4D-116L		29	206	146	121	116	
156.685.3032.120	SPD30-C32-4D-120L		30	210	150	125	120	
156.685.3132.124	SPD31-C32-4D-124L		31	214	154	129	124	
156.685.3232.128	SPD32-C32-4D-128L		32	218	158	133	128	
156.685.3332.132	SPD33-C32-4D-132L		33	222	162	137	132	
156.685.3432.136	SPD34-C32-4D-136L		34	226	166	141	136	SP..1104
156.685.3532.140	SPD35-C32-4D-140L		35	230	170	145	140	
156.685.3632.144	SPD36-C32-4D-144L		36	234	174	149	144	
156.685.3732.148	SPD37-C32-4D-148L		37	238	178	153	148	
156.685.3832.152	SPD38-C32-4D-152L		38	242	182	157	152	
156.685.3932.156	SPD39-C32-4D-156L		39	246	186	161	156	

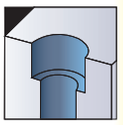
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
SP..0502	M2-4.3-2.7-60	T6	SP..0904	M3.5-8.4-5.0-60	T10
SP..0602	M2.2-5.2-3.1-60	T7	SP..1104	M4-9.35-5.65-60	T15
SP..07T3	M2.5-6.33-3.5-48	T8			

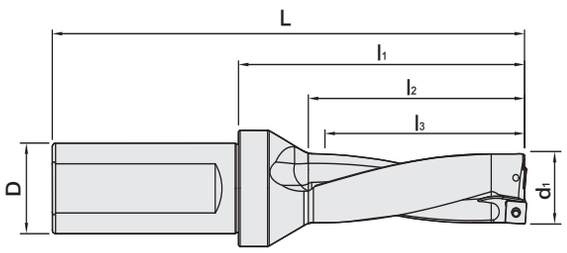
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MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.685.4040.160	SPD40-C40-4D-160L	40	40	264	194	165	160	SP..1405
156.685.4140.164	SPD41-C40-4D-164L		41	268	198	169	164	
156.685.4240.168	SPD42-C40-4D-168L		42	272	202	173	168	
156.685.4340.172	SPD43-C40-4D-172L		43	276	206	177	172	
156.685.4440.176	SPD44-C40-4D-176L		44	280	210	181	176	
156.685.4540.180	SPD45-C40-4D-180L		45	284	214	185	180	
156.685.4640.184	SPD46-C40-4D-184L		46	288	218	189	184	
156.685.4740.188	SPD47-C40-4D-188L		47	292	222	193	188	
156.685.4840.192	SPD48-C40-4D-192L		48	296	226	197	192	
156.685.4940.196	SPD49-C40-4D-196L		49	300	230	201	196	
156.685.5040.200	SPD50-C40-4D-200L		50	304	234	205	200	

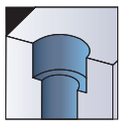
- ACCESSORIES:

INSERT	INSERT SCREW	WRENCH
SP..1405	M5-12.8-7.0-60	T20

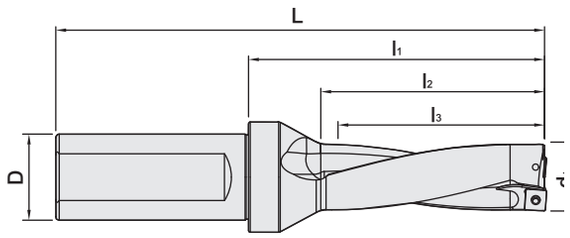
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MODEL NO.	TYPE	D	d_1	L	l_1	l_2	l_3	INSERTS
156.685.1625.080	SPD16-C25-5D-80L	25	16	162	56	85	80	SP..0602
156.685.1725.085	SPD17-C25-5D-85L		17	167		90	85	
156.685.1825.090	SPD18-C25-5D-90L		18	172		95	90	
156.685.1925.095	SPD19-C25-5D-95L		19	177		100	95	
156.685.2025.100	SPD20-C25-5D-100L		20	182		105	100	
156.685.2125.105	SPD21-C25-5D-105L		21	187		110	105	
156.685.2232.110	SPD22-C32-5D-110L	32	22	198	60	115	110	SP..07T3
156.685.2332.115	SPD23-C32-5D-115L		23	203		120	115	
156.685.2432.120	SPD24-C32-5D-120L		24	208		125	120	
156.685.2532.125	SPD25-C32-5D-125L		25	213		130	125	
156.685.2632.130	SPD26-C32-5D-130L		26	218		135	130	
156.685.2732.135	SPD27-C32-5D-135L		27	223		140	135	
156.685.2832.140	SPD28-C32-5D-140L		28	230		145	140	SP..0904
156.685.2932.145	SPD29-C32-5D-145L		29	235		150	145	
156.685.3032.150	SPD30-C32-5D-150L		30	240		155	150	
156.685.3132.155	SPD31-C32-5D-155L		31	245		160	155	
156.685.3232.160	SPD32-C32-5D-160L		32	250		165	160	
156.685.3332.165	SPD33-C32-5D-165L		33	255		170	165	
156.685.3432.170	SPD34-C32-5D-170L		34	260		175	170	SP..1104
156.685.3532.175	SPD35-C32-5D-175L		35	265		180	175	
156.685.3632.180	SPD36-C32-5D-180L		36	270		185	180	
156.685.3732.185	SPD37-C32-5D-185L		37	275		190	185	
156.685.3832.190	SPD38-C32-5D-190L		38	280		195	190	
156.685.3932.195	SPD39-C32-5D-195L		39	285		200	195	
156.685.4032.200	SPD40-C32-5D-200L	40	40	304	70	205	200	
156.685.4132.205	SPD41-C32-5D-205L		41	309		210	205	

- ACCESSORIES:

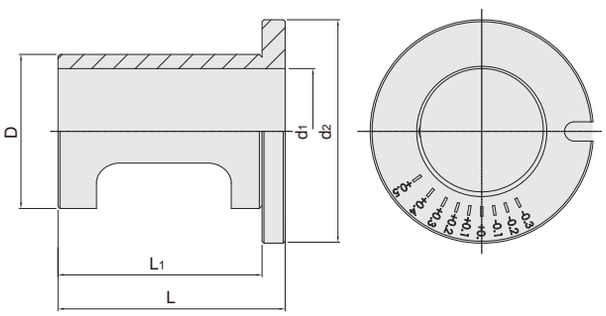
INSERT	INSERT SCREW	WRENCH	INSERT	INSERT SCREW	WRENCH
SP..0602	M2.2-5.2-3.1-60	T7	SP..0904	M3.5-8.4-5.0-60	T10
SP..07T3	M2.5-6.33-3.5-48	T8	SP..1104	M4-9.35-5.65-60	T15

- Inserts are optional accessories. Needs to be purchased additionally.

ECCENTRIC SLEEVES

HWAS 偏心套筒

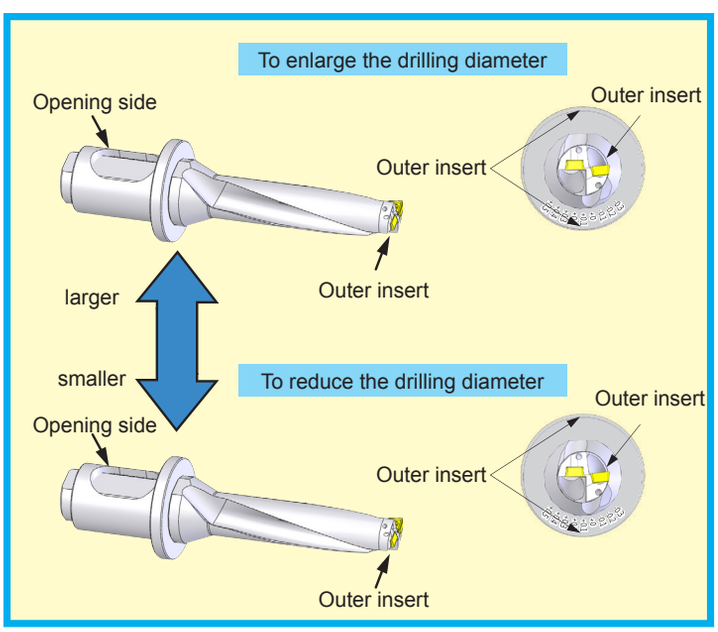




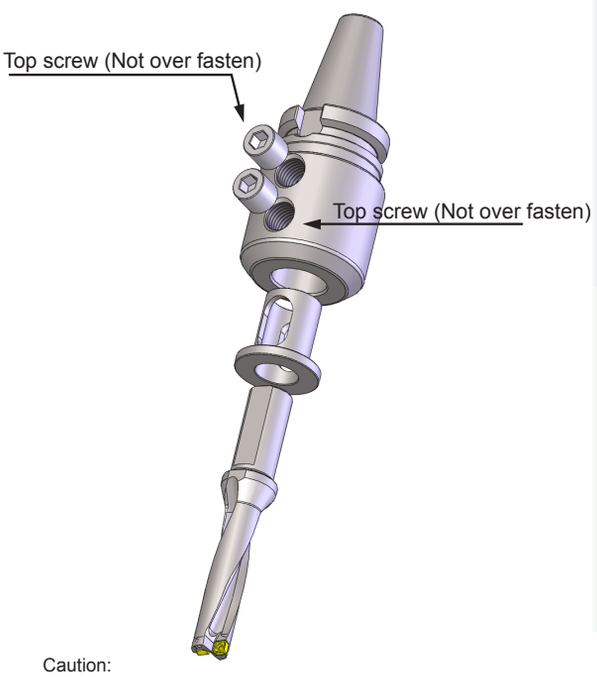
Application Method:

- Eccentric sleeve is the special design for indexable drills.
- The adjustment range of drilling diameter is from +0.1mm or -0.1mm.
- Eccentric sleeve is required when the holes are to be threaded and the pre-drilling diameters need to be adjusted.

① Set the outer insert horizontally and let the outer insert be 90° horizontal to the reference line on the sleeve (Fig. 1)
② To enlarge the drilling diameter, make the opening side of sleeve, which shows reading of +0.1mm, align with the flat side of drill shank; to reduce the drilling diameter, make the opening side of sleeve, which shows reading of -0.1mm, align with the flat side of drill shank.
③ The bottom screw needs to be fastened directly on the drill body. The top screw need to be fastened, but not over fastened to damage the sleeve. (Fig.2)



(Fig.1) Method of adjusting drilling diameter, e.g. ϕ10mm indexable drill



Caution:
Eccentric sleeve is not applicable for ER collet chucks

MODEL NO.	TYPE	D	d1	d2	L	L1	Adjustment range
270.C3225.48	HWAS-C3225	32	25	49	54	48	+0.5~-0.2
270.C4032.53	HWAS-C4032	40	32	58	59	53	+0.5~-0.2

MEMO

Synwell

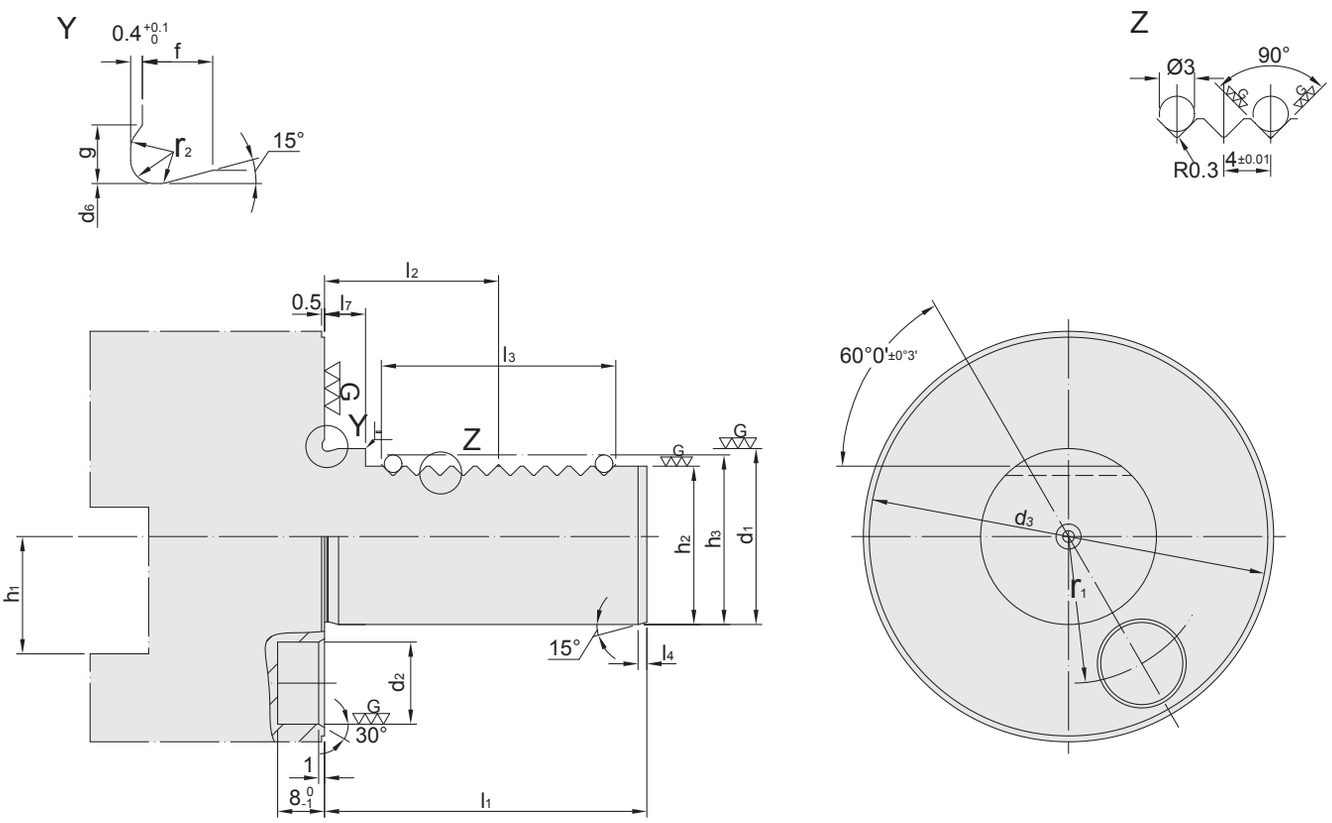
Synwell

CUTTING TOOL SYSTEM

VDI Static Tool Holder, Cylindrical According

DIN ISO 10889

DIN ISO 10889

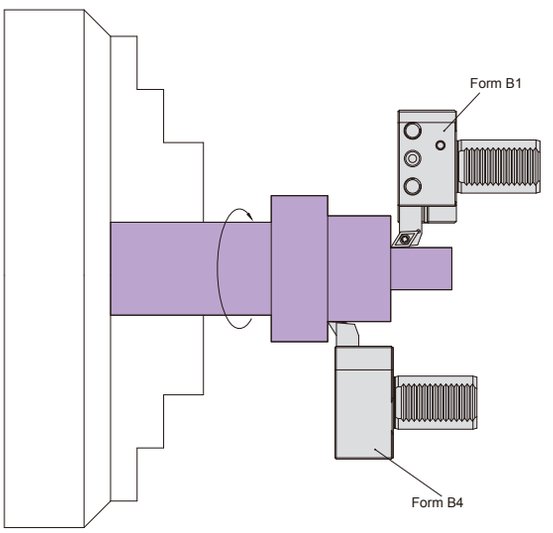


G = Rz 2.5

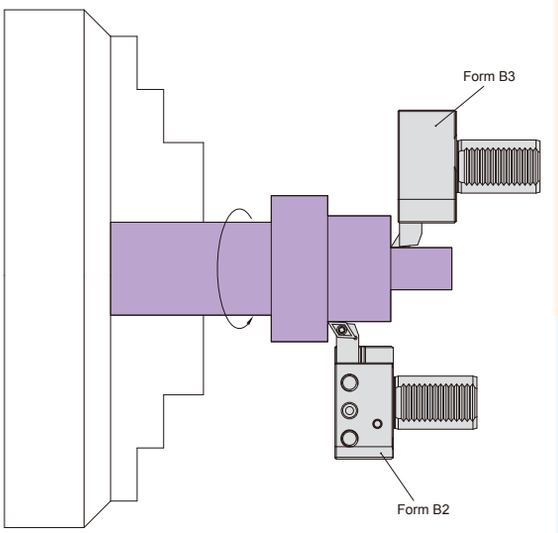
- DIN ISO 10889 Tool Holders have features as the following:
  Advanced structure, high manufacturing precision, easy operation and strong exchangeability function, etc.
- DIN ISO 10889 Tool Holders have such tapers as VDI16, VDI20, VDI30, VDI40, VDI50, VDI60, VDI80, etc. It's available for customers to choose suitable types according to their requests, such as turning tool holder,boring bar holder,high speed drill tool holder,drill chuck tool holder,cutting tool holder, etc.

d_1 h1	l_1 ±0.3	d_2		d_3	d_6 0 -0.1	f	g	h_1 max	h_2 ±0.1	l_2 ±0.05	l_3 min	l_4 -1 0	l_7	r_1 ±0.02	r_2	O-Ring
16	32	8	H6	40	15.4	2	1.7	12	15	12.7	16	2	3.5	14.5	0.6	15 x 15
20	40	10	H6	50	19.1	2.4	2	16	18	21.7	24	2	7	18	0.8	18.77 x 1.78
25	48	10	H6	58	24.1	2.4	2	16	23.5	21.7	24	2	7	21	0.8	23.52 x 1.78
30	55	14	H8	68	29.1	2.4	2	20	27	29.7	40	2	7	25	0.8	28.3 x 1.78
40	63	14	H8	83	38.7	3.7	2.8	25	36	29.7	40	3	7	32	1.2	37.77 x 2.62
50	78	16	H8	98	48.7	3.7	2.8	32	45	35.7	48	3	8	37	1.2	47.29 x 2.62
60	94	16	H8	123	58.7	4.3	3.7	32	55	43.7	56	4	10	48	1.6	56.74 x 3.53
80	124	20	H8	158	78.7	4.3	3.7	40	72	59.7	80	4	10	65	1.6	75.79 x 3.53

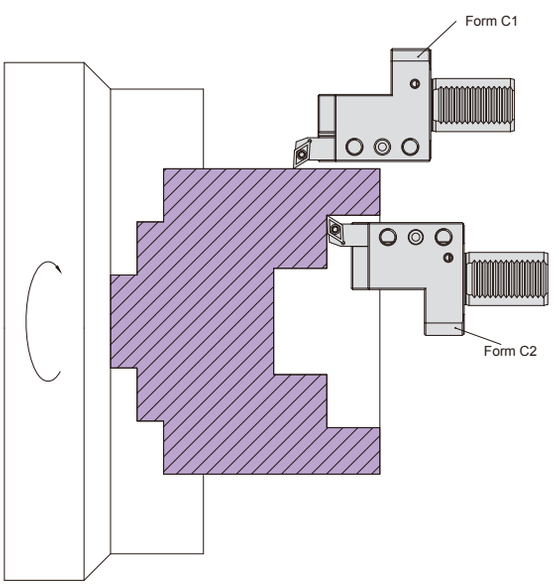
Spindle rotates counterclockwise:



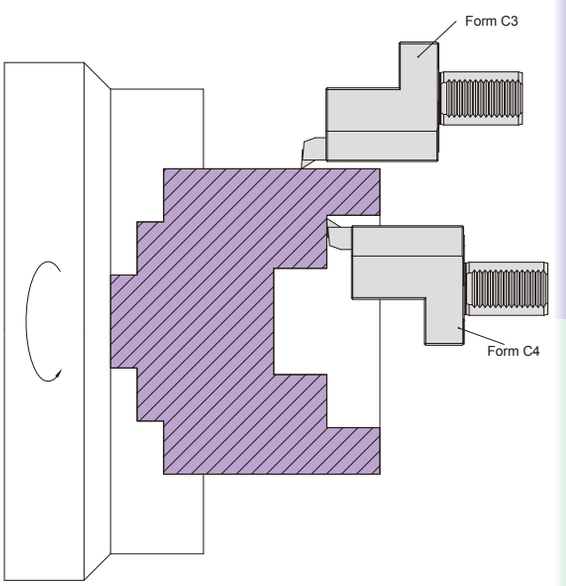
Spindle rotates clockwise:



Spindle rotates counterclockwise:



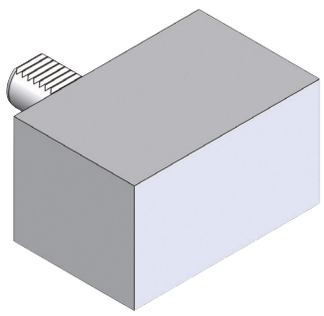
Spindle rotates clockwise:

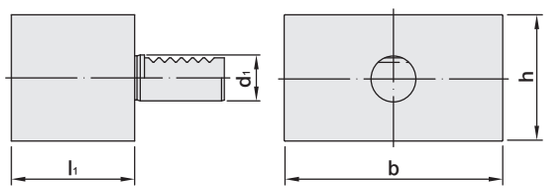


TOOL HOLDER BLANK

VDI 素材

Form A1
DIN ISO 10889-2





● Material.

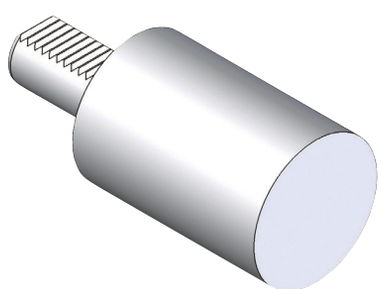
MODEL NO.	TYPE $d_1 \times l_1$	d_1	l_1	b	h
150.A1.30.85	30 x 85	30	85	130	76
150.A1.40.100	40 x 100	40	100	151	96
150.A1.50.125	50 x 125	50	125	160	120

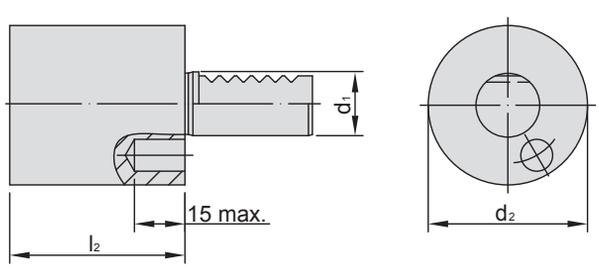
Synwell

TOOL HOLDER BLANK

VDI 素材

Form A2
DIN ISO 10889-2





● Material.

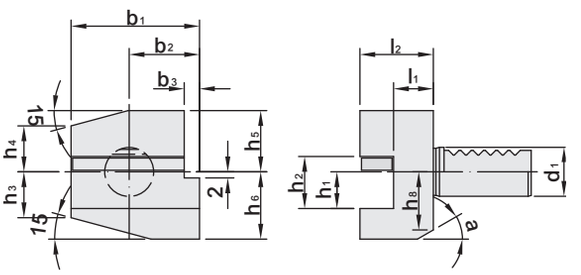
MODEL NO.	TYPE $d_1 \times l_2$	d_1	d_2	l_2
150.A2.30.100	30 x 100	30	68	100
150.A2.30.160	30 x 160			160
150.A2.30.240	30 x 240			240
150.A2.40.120	40 x 120	40	83	120
150.A2.40.160	40 x 160			160
150.A2.40.200	40 x 200			200
150.A2.40.320	40 x 320			320
150.A2.50.400	50 x 400	50	50	400

TURNING TOOL HOLDER

外徑刀座

Form B1
DIN ISO 10889-3





- Radial-right handed.
- Short tool holder.
- With coolant hole.

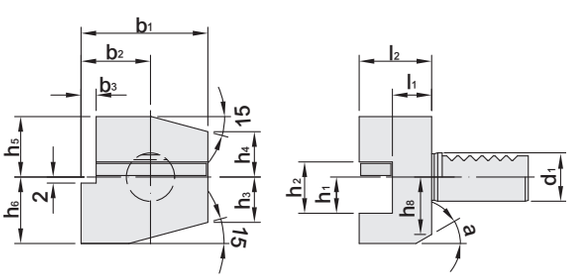
MODEL NO.	TYPE $d_1 \times h_1 \times l_2$	d_1	b_1	b_2	b_3	h_1	h_2	h_3	h_4	h_5	h_6	h_8	l_1	l_2	a
150.B1.30.20.40	30 x 20 x 40	30	70	35	10	20	29	26	22	28	38	30	22	40	25°
150.B1.30.20.60	30 x 20 x 60												42	60	
150.B1.40.25.44	40 x 25 x 44	40	85	42.5	12.5	25	34	35	30	32.5	48	-	22	44	-
150.B1.50.32.55	50 x 32 x 55	50	100	50	16	32	41	42	35	35	60		30	55	

TURNING TOOL HOLDER

外徑刀座

Form B2
DIN ISO 10889-3





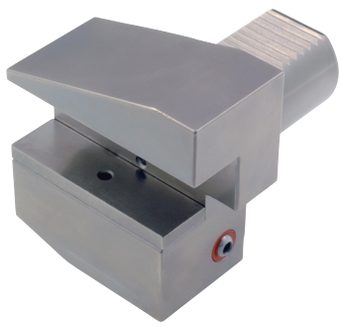
- Radial-left handed.
- Short tool holder.
- With coolant hole.

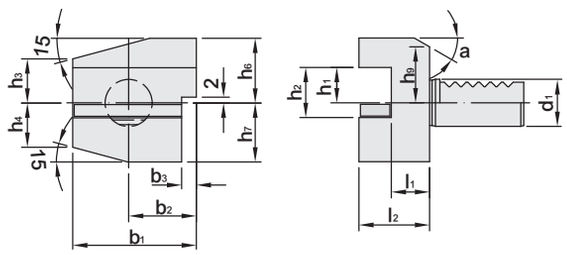
MODEL NO.	TYPE $d_1 \times h_1 \times l_2$	d_1	b_1	b_2	b_3	h_1	h_2	h_3	h_4	h_5	h_6	h_8	l_1	l_2	a
150.B2.30.20.40	30 x 20 x 40	30	70	35	10	20	29	26	22	28	38	30	22	40	25°
150.B2.30.20.60	30 x 20 x 60												42	60	
150.B2.40.25.44	40 x 25 x 44	40	85	42.5	12.5	25	34	35	30	32.5	48	-	22	44	-
150.B2.50.32.55	50 x 32 x 55	50	100	50	16	32	41	42	35	35	60		30	55	

TURNING TOOL HOLDER

外徑刀座

Form B3
DIN ISO 10889-3





- Radial-right handed.
- Short tool holder.
- Turning insert downwards.
- With coolant hole.

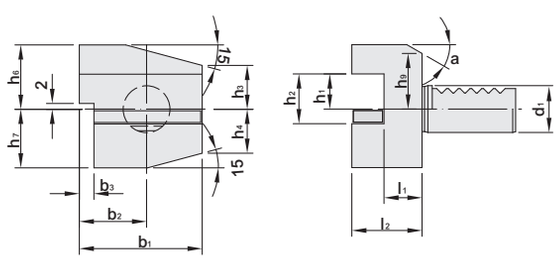
MODEL NO.	TYPE $d_1 \times h_1 \times l_2$	d_1	b_1	b_2	b_3	h_1	h_2	h_3	h_4	h_6	h_7	h_9	l_1	l_2	a
150.B3.30.20.40	30 x 20 x 40	30	70	35	10	20	29	26	22	38	35	28	22	40	25°
150.B3.30.20.60	30 x 20 x 60												42	60	
150.B3.40.25.44	40 x 25 x 44	40	85	42.5	12.5	25	34	35	30	48	42.5	-	22	44	-
150.B3.50.32.55	50 x 32 x 55	50	100	50	16	32	41	42	35	60	50		30	55	

TURNING TOOL HOLDER

外徑刀座

Form B4
DIN ISO 10889-3





- Radial-left handed.
- Short tool holder.
- Turning insert downwards.
- With coolant hole.

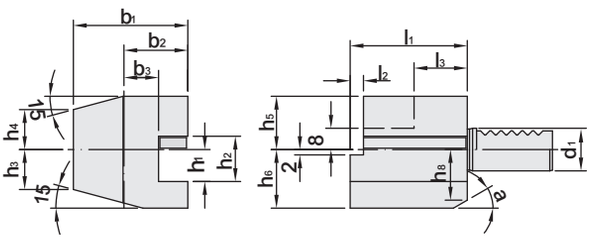
MODEL NO.	TYPE $d_1 \times h_1 \times l_2$	d_1	b_1	b_2	b_3	h_1	h_2	h_3	h_4	h_6	h_7	h_9	l_1	l_2	a
150.B4.30.20.40	30 x 20 x 40	30	70	35	10	20	29	26	22	38	35	28	22	40	25°
150.B4.30.20.60	30 x 20 x 60												42	60	
150.B4.40.25.44	40 x 25 x 44	40	85	42.5	12.5	25	34	35	30	48	42.5	-	22	44	-
150.B4.50.32.55	50 x 32 x 55	50	100	50	16	32	41	42	35	60	50		30	55	

FACE TURNING TOOL HOLDER

端面刀座

Form C1
DIN ISO 10889-4





- Axial-right handed.
- Short tool holder.
- With coolant hole.

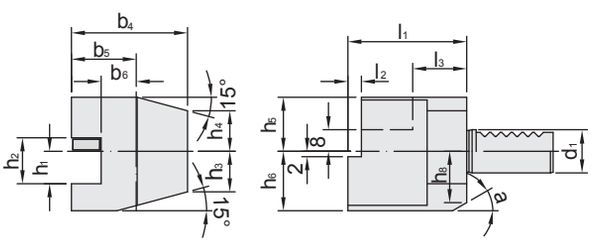
MODEL NO.	TYPE $d_1 \times h_1$	d_1	b_1	b_2	b_3	h_1	h_2	h_3	h_4	h_5	h_6	h_8	l_1	l_2	l_3	a
150.C1.30.20	30 x 20	30	70	35	17	20	29	26	22	28	38	30	70	10	30	25°
150.C1.40.25	40 x 25	40	85	42.5	21	25	34	35	30	32.5	48	-	85	12.5	30	-
150.C1.50.32	50 x 32	50	100	50	26	32	41	42	35	35	60		100	16	40	

FACE TURNING TOOL HOLDER

端面刀座

Form C2
DIN ISO 10889-4





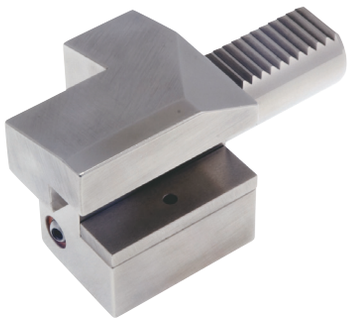
- Axial-Left Handed.
- Short Tool Holder.
- With Coolant Hole.

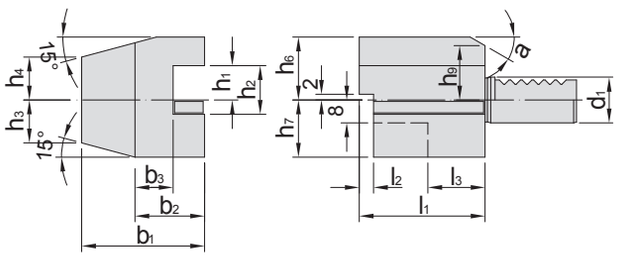
MODEL NO.	TYPE $d_1 \times h_1$	d_1	b_4	b_5	b_6	h_1	h_2	h_3	h_4	h_5	h_6	h_8	l_1	l_2	l_3	a
150.C2.30.20	30 x 20	30	76	41	23	20	29	26	22	28	38	30	70	10	30	25°
150.C2.40.25	40 x 25	40	90	47.5	25.5	25	34	35	30	32.5	48	-	85	12.5	30	-
150.C2.50.32	50 x 32	50	105	55	30.5	32	41	42	35	35	60		100	16	40	

FACE TURNING TOOL HOLDER

端面刀座

Form C3
DIN ISO 10889-4





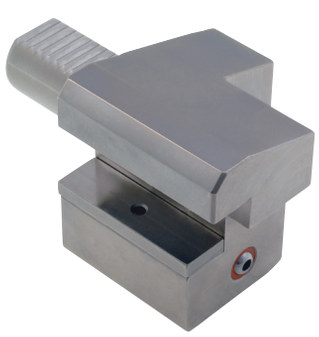
- Axial-right handed.
- Short tool holder.
- Turning insert downwards.
- With coolant hole.

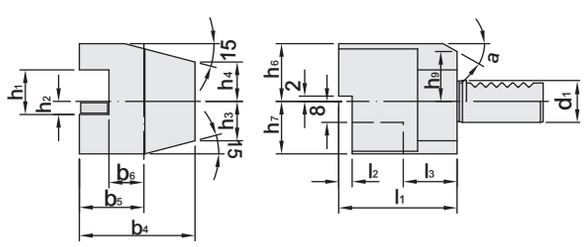
MODEL NO.	TYPE $d_1 \times h_1$	d_1	b_1	b_2	b_3	h_1	h_2	h_3	h_4	h_6	h_7	h_9	l_1	l_2	l_3	a
150.C3.30.20	30 x 20	30	70	35	17	20	29	26	22	28	35	28	70	10	30	25°
150.C3.40.25	40 x 25	40	85	42.5	21	25	34	35	30	48	42.5	-	85	12.5		-
150.C3.50.32	50 x 32	50	100	50	26	32	41	42	35	60	50		100	16	40	

FACE TURNING TOOL HOLDER

端面刀座

Form C4
DIN ISO 10889-4





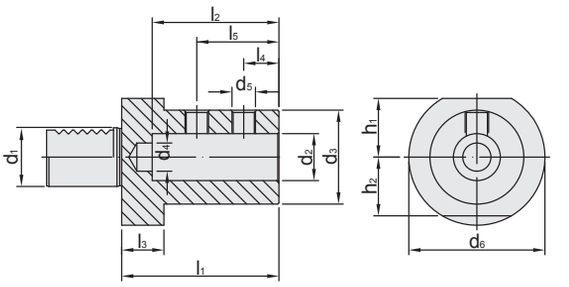
- Axial-right handed.
- Short tool holder.
- Turning insert downwards.
- With coolant hole.

MODEL NO.	TYPE $d_1 \times h_1$	d_1	b_4	b_5	b_6	h_1	h_2	h_3	h_4	h_6	h_7	h_9	l_1	l_2	l_3	a
150.C4.30.20	30 x 20	30	76	41	23	20	29	26	22	38	35	28	70	10	30	25°
150.C4.40.25	40 x 25	40	90	47.5	25.5	25	34	35	30	48	42.5	-	85	12.5		-
150.C4.50.32	50 x 32	50	105	55	30.5	32	41	42	35	60	50		100	16	40	

內孔刀座

Form E1
DIN ISO 10889-6





- Tolerance of internal hole: H5.
- Applicable for High Speed Drill.
- With center coolant.

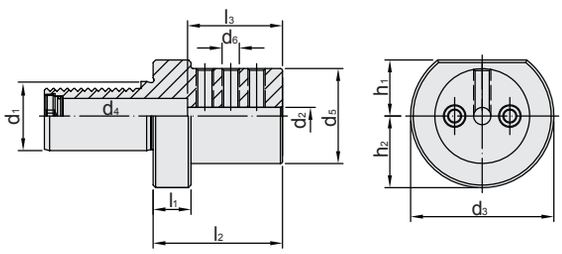
MODEL NO.	TYPE d_1 x d_2	d_1	d_2	d_3	d_4	d_5	d_6	h_1	h_2	l_1	l_2	l_3	l_4	l_5
150.E1.30.20	30 x 20	30	20	40	12	M10x1	68	28	30	67	54	22	15	35
150.E1.30.25	30 x 25		25	45	17	M12x1				71	59		17	40
150.E1.30.32	30 x 32		32	52	24					75	63			44
150.E1.30.40	30 x 40		40	65		M16x1				90	73		22	50
150.E1.40.18	40 x 18	40	18	40	12	M10x1	83	32.5	-	67	54		15	35
150.E1.40.20	40 x 20		20											
150.E1.40.25	40 x 25		25	45	17	M12x1				75	59		17	40
150.E1.40.32	40 x 32		32	52	24						63			44
150.E1.40.40	40 x 40		40	65	32	M16x1				90	73		22	50
150.E1.40.50	40 x 50		50	83						100	83		24	60
150.E1.50.20	50 x 20	50	20	40	12	M10x1	98	35		67	54	30	15	35
150.E1.50.25	50 x 25		25	45	17	M12x1				80	59		17	40
150.E1.50.32	50 x 32		32	52	24						63			44
150.E1.50.40	50 x 40		40	65	32	M16x1				90	73		22	50
150.E1.50.50	50 x 50		50	75	42					100	83		24	60

BORING BAR HOLDER

內孔刀座

Form E2
DIN ISO 10889-6





- Tolerance of internal hole: H5.
- Applicable for internal boring bar.
- With center coolant and side coolant(coolant holes).

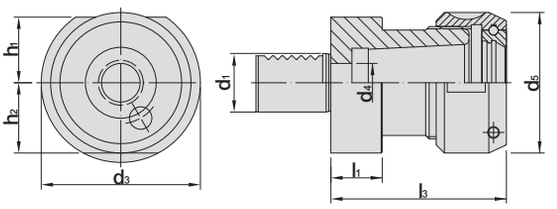
MODEL NO.	TYPE d_1 x d_2	d_1	d_2	d_3	d_4	d_5	d_6	h_1	h_2	l_1	l_2	l_3
150.E2.30.08	30 x 8	30	8	68	6	55	M6	28	30	22	60	51
150.E2.30.10	30 x 10		10		8		M8					
150.E2.30.12	30 x 12		12		10							52
150.E2.30.14	30 x 14		14									51
150.E2.30.16	30 x 16		16		12							52
150.E2.30.18	30 x 18		18		10							51
150.E2.30.20	30 x 20		20		16.5							
150.E2.30.25	30 x 25		25		16							
150.E2.30.32	30 x 32		32			68					75	61
150.E2.40.10	40 x 10	40	10	83	8	55	M10	32.5	-			
150.E2.40.12	40 x 12		12		10		M8					
150.E2.40.14	40 x 14		14				M10					
150.E2.40.16	40 x 16		16		16.5		M8					
150.E2.40.18	40 x 18		18		10							
150.E2.40.20	40 x 20		20		16.5		M10					
150.E2.40.25	40 x 25		25		20.5							
150.E2.40.32	40 x 32		32			83					90	76
150.E2.40.40	40 x 40		40				M12					75
150.E2.40.50	40 x 50		50									
150.E2.50.12	50 x 12	50	12	98	10	55	M8	35		30	75	61
150.E2.50.16	50 x 16		16		12	68	M10				90	76
150.E2.50.20	50 x 20		20		16		M12					
150.E2.50.25	50 x 25		25		20							
150.E2.50.32	50 x 32		32		25							
150.E2.50.40	50 x 40		40			98						
150.E2.50.50	50 x 50		50								100	86

COLLET CHUCK HOLDER
FOR EOC COLLETS

EOC 套筒式刀座

Form E3
DIN ISO 10889-6





● Optional Accessories

EOC Collet B Type  P.98

● Standard Accessories

EOC Power Good Clamping Nut  P.99

Spanner  P.100

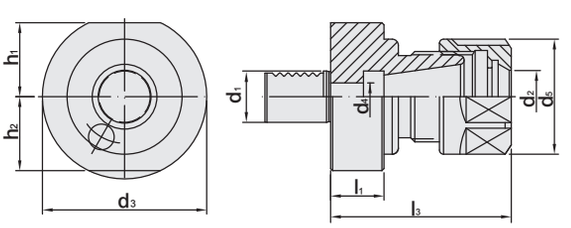
MODEL NO.	TYPE	d_1	d_3	d_4 min	d_5	h_1	h_2	l_1	l_3
150.E3.30.25	30 x EOC25	30	68	16.5	60	28	30	22	75
150.E3.40.25	40 x EOC25	40	83	20.5		32.5	-		
150.E3.40.32	40 x EOC32				72				90
150.E3.50.25	50 x EOC25	50	98	25.5	60	35		30	75
150.E3.50.32	50 x EOC32				72				90

COLLET CHUCK HOLDER
FOR ER COLLETS

ER 套筒式刀座

Form E4
DIN ISO 10889-6
DIN ISO 15488





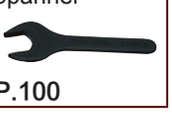
Feature:
- It can match with ER Collets (DIN-15488 standard) and can clamp all kinds of straight shank tools.
- Rigidity can be raised by using ER Power Good Clamping Nut.
- Matching with Wind Resistance Nut can raise clamping power, stability and precision.

● Optional Accessories

Collet  P.98

● Standard Accessories

Clamping Nut  P.99

Spanner  P.100

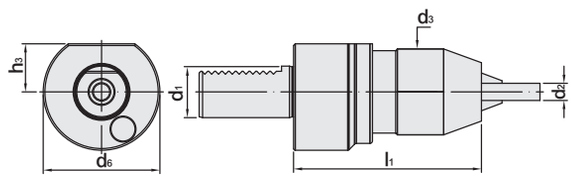
MODEL NO.	TYPE	d_1	d_2 ER	d_3	d_4 min	d_5	h_1	h_2	l_1	l_3
150.E4.30.25	30 x ER25		25	68	16.5	42	28	30	22	57
150.E4.30.32	30 x ER32		32			50				62
150.E4.30.40	30 x ER40		40			63				70
150.E4.40.25	40 x ER25	40	25	83	20.5	42	32.5	-		57
150.E4.40.32	40 x ER32		32			50				62
150.E4.40.40	40 x ER40		40			63				75
150.E4.50.40	50 x ER40			98		63	35		30	

DRILL CHUCK

VDI 車刀架

Type SPU





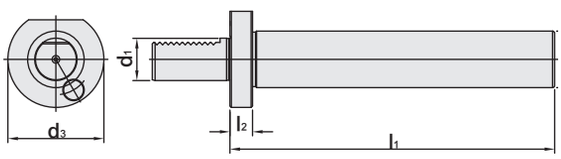
MODEL NO.	TYPE	d_1	d_2	d_3	d_6	h_3	l_1
150.30.669.08	30 x SPU8	30	0.5-8	36	68	28	75
150.30.669.13	30 x SPU13		1-13	50			109
150.30.669.16	30 x SPU16		3-16	57			115
150.40.669.08	40 x SPU8	40	0.5-8	36	83	32.5	75
150.40.669.13	40 x SPU13		1-13	50			90
150.40.669.16	40 x SPU16		3-16	57			110
150.50.669.13	50 x SPU13	50	1-13		98	35	100
150.50.669.16	50 x SPU16		3-16				90

TEST MANDREL

VDI 校驗棒

Type BC







Taper Precision	AT2
Roundness	0.001mm
Surface Roughness	Ra<0.4
Concentricity	0.005mm

MODEL NO.	TYPE	d_1	d_2	d_3	l_1	l_2
150.30.40.230	30 x 40 x 230	30	40	68	230	15
150.40.40.200	40 x 40 x 200	40		83	200	
150.50.40.200	50 x 40 x 200	50		98		

Synwell

CUTTING TOOL SYSTEM

ACCESSORIES

ACCESSORIES

● STEEL SEALED COLLET

ER 斜槽止水筒夾

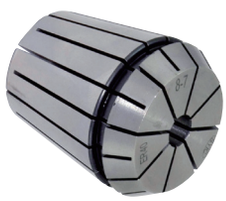


MODEL NO.	TYPE	WATER PRESSURE	SIZE RANGE
SYIC - 04543	ER16	70 kgf/cm^2	3.0 ~ 10.0
SYIC - 04544	ER20		3.0 ~ 13.0
SYIC - 04545	ER25		3.0 ~ 16.0
SYIC - 04546	ER32		3.0 ~ 20.0
SYIC - 04547	ER40		3.0 ~ 26.0



● ER COLLET

ER 彈性筒夾



MODEL NO.	TYPE	WATER PRESSURE	SIZE RANGE
SYIC - 04208	ER8	70 kgf/cm^2	1 ~ 5.0
SYIC - 04211	ER11		1 ~ 7.0
SYIC - 04216	ER16		1 ~ 10.0
SYIC - 04220	ER20		1 ~ 13.0
SYIC - 04225	ER25		1 ~ 16.0
SYIC - 04232	ER32		2 ~ 20.0
SYIC - 04240	ER40		3 ~ 26.0
SYIC - 04250	ER50		6 ~ 34.0

● ER SEALED COLLET

ER 止水筒夾

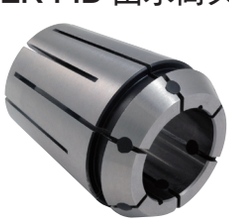


MODEL NO.	TYPE	WATER PRESSURE	SIZE RANGE
SYIC - 08316	ER16	70 kgf/cm^2	3 ~ 10
SYIC - 08320	ER20		3 ~ 13
SYIC - 08325	ER25		3 ~ 16
SYIC - 08332	ER32		3 ~ 20
SYIC - 08340	ER40		3 ~ 26



● ER COOLANT COLLET(FID TYPE)

ER-FID 出水筒夾



MODEL NO.	TYPE	WATER PRESSURE	SIZE RANGE
202.126.16	ER16 - FID	21 kgf/cm^2	3 ~ 7
202.126.20	ER20 - FID		3 ~ 9
202.126.25	ER25 - FID		3 ~ 14
202.126.32	ER32 - FID		3 ~ 20
202.126.40	ER40 - FID		4 ~ 26



● ER COOLANT COLLET(FOD TYPE)

ER-FOD 出水筒夾

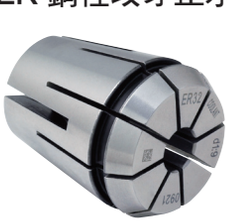


MODEL NO.	TYPE	WATER PRESSURE	SIZE RANGE
202.127.16	ER16 - FOD	21 kgf/cm^2	3 ~ 7
202.127.20	ER20 - FOD		4 ~ 9
202.127.25	ER25 - FOD		3~ 14
202.127.32	ER32 - FOD		3 ~ 20
202.127.40	ER40 - FOD		4 ~ 26
202.127.50	ER50 - FOD		6 ~ 34



● ER TCO RIGID TAP SEALED COLLET

ER 鋼性攻牙止水筒夾



MODEL NO.	TYPE	WATER PRESSURE	CAPACITY
254.16	ER - TCO16	70 kgf/cm^2	M5 ~ M10
254.20	ER - TCO20		M5 ~ M17
254.25	ER - TCO25		M5 ~ M22
254.32	ER - TCO32		M5 ~ M27
254.40	ER - TCO40		



● EOC COLLET
EOC B 型 彈性筒夾



MODEL NO.	TYPE	D	L
SYIC - 83533	EOC32 - B	43.7	60

● SYOZ COLLET
SYOZ 型 彈性筒夾



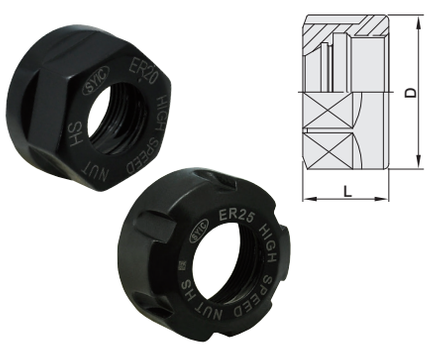
MODEL NO.	TYPE	E-NO
SYIC - 83868 - M	SYOZ - 25 - M	462E
SYIC - 83868 - I	SYOZ - 25 - INCH	-

● POWER GOOD ER CLAMPING NUT
ER 包固得螺帽



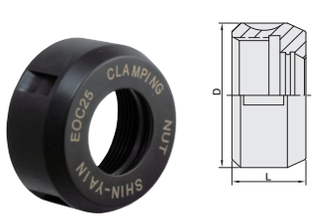
MODEL NO.	TYPE	D	L
SYIC - 04501P	ER11 - A	19	11.3
SYIC - 04502P	ER16 - A	28	17.5
SYIC - 04503P	ER20 - A	34	19
SYIC - 04506P	ER16 - UM/RD	31.7	18
SYIC - 04507P	ER20 - UM/RD	35	19.5
SYIC - 04508P	ER25 - UM/RD	42	20
SYIC - 04509P	ER32 - UM/RD	50	22.5
SYIC - 04510P	ER40 - UM/RD	63	25.5
SYIC - 04511P	ER50 - UM/RD	78	35.5

● HIGH SPEED POWER GOOD NUT
ER 高速型包固得螺帽



MODEL NO.	TYPE	D	L
SYIC - 08652P	ER11 - HS	19	11.3
SYIC - 08654P	ER16 - HS	18	17.5
SYIC - 08656P	ER20 - HS	34	19
SYIC - 08655P	ER16 - HS	32	18
SYIC - 08657P	ER20 - HS	35	19.5
SYIC - 08658P	ER25 - HS	42	20
SYIC - 08660P	ER32 - HS	50	22.5
SYIC - 08662P	ER40 - HS	63	25.5

● POWER GOOD EOC CLAMPING NUT
EOC 包固得栓緊螺帽

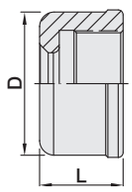


MODEL NO.	TYPE	D	L
SYIC - 83638P	EOC25	60	30
SYIC - 83639P	EOC32	72	33.5

ACCESSORIES

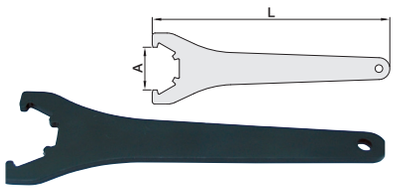
● ER NON WIND RESISTANCE NUT
ER 無風阻螺帽



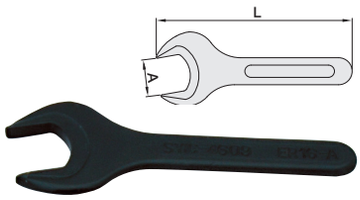


MODEL NO.	TYPE	D	L
206.130.16	ER16	30	17.5
206.130.20	ER20	34	19
206.130.25	ER25	42	20
206.130.32	ER32	50	22.5

● ER SPANNER (WRENCH)
ER 扳手

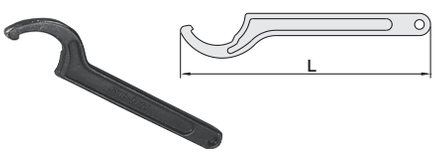


MODEL NO.	TYPE	L	A
SYIC - 04615	ER25 UM/RD	206	37
SYIC - 04616	ER32 UM/RD	253	46.5
SYIC - 04617	ER40 UM/RD	289	58
SYIC - 05618	ER50 UM/RD	351	74



MODEL NO.	TYPE	L	A
SYIC - 04608	ER11 - A	120	17
SYIC - 04609	ER16 - A	140	25
SYIC - 04610	ER20 - A	160	30

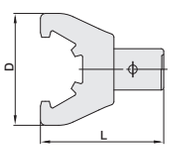
● SPANNER FOR EOC CLAMPING NUT
EOC 扳手



MODEL NO.	TYPE	L
SYIC - 83691	EOC25	260

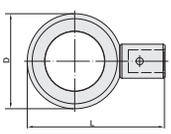
● NUT ADAPTERS FOR EXCHANGEABLE TORQUE WRENCH
螺帽轉接頭 (扭力扳手用)





MODEL NO.	TYPE	D	L
SYIC - 04582	ER16	53	79
SYIC - 04584	ER20	60	75
SYIC - 04586	ER25	65	72
SYIC - 04588	ER32	75	72
SYIC - 04590	ER40	90	85





MODEL NO.	TYPE	D	L
287.128.11	ER11 W-TDQ	43	73.35
287.128.16	ER16 W-TDQ	55	95.35
287.128.20	ER20 W-TDQ / SKS13 W-RDQ	59	89.6
287.128.25	ER25 W-TDQ	67	97.35
287.128.32	ER32 W-TDQ	75	105.5

● ER TORQUE WRENCH
ER 單向扳手



MODEL NO.	TYPE	D	L
286.129.11	ER11 W-RDQ	43	119.85
286.129.16	ER16 W-RDQ	55	169.85
286.129.20	ER20 W-RDQ / SKS13 W-RDQ	59	172.1
286.129.25	ER25 W-RDQ	67	175.85
286.129.32	ER32 W-RDQ	75	180
285.30	ER16	30	195
285.34	ER20	34	235
285.50	ER32	50	235

● WRENCH
握把式星型扳手



MODEL NO.	TYPE	L
B11 - B - 25T6	T6 - 74	154
B11 - B - 25T7	T7 - 74	
B11 - B - 25T8	T8 - 74	
B11 - B - 25T9	T9 - 74	
B11 - B - 25T10	T10 - 100	100
B11 - B - 25T15	T15 - 100	200
B11 - B - 25T20	T20 - 100	

● SPIGOT INTERCHANGEABLE DIGITAL TORQUE WRENCH
數顯 LCD 扭力扳手



Fig.1 Fig.2 Fig.3 Fig.4

MODEL NO.	TYPE	LENGTH	RANGE		Fig
SYIC - 04575 - 135	DG - 135	365	10 - 135 N.m	7.4 - 99.6 ft/lbs	1
SYIC - 04575 - 200	DG - 200	540	20 - 200 N.m	14.8 - 147 ft/lbs	
SYIC - 04575 - 340	DG - 340	769	34 - 340 N.m	25 - 250.9 ft/lbs	
SYIC - 283.DG252	DG - 252	373	10 - 350 N.m	7.4 - 99.6 ft/lbs	2
SYIC - 283.DG253	DG - 253	548	20 - 200 N.m	14.8 - 147 ft/lbs	
SYIC - 283.DG254	DG - 254	748	34 - 340 N.m	25 - 250.9 ft/lbs	
SYIC - 283.DG264	DG - 264	373	10 - 350 N.m	7.4 - 99.6 ft/lbs	3
SYIC - 283.DG265	DG - 265	548	20 - 200 N.m	14.8 - 147 ft/lbs	
SYIC - 283.DG266	DG - 266	748	34 - 340 N.m	25 - 250.9 ft/lbs	
SYIC - 283.DG271	DG - 271	373	10 - 350 N.m	7.4 - 99.6 ft/lbs	4
SYIC - 283.DG272	DG - 272	548	20 - 200 N.m	14.8 - 147 ft/lbs	
SYIC - 283.DG273	DG - 273	748	34 - 340 N.m	25 - 250.9 ft/lbs	

MEMO

Synwell

MEMO

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