

DL Series Solid Carbide Mini Bars 迷你鎢鋼搪刀



- Suitable for small holes boring, internal grooving, face grooving and threading machining.
- Mini boring diameter 1.0mm.
- 適用於小孔徑之內部搪孔、開槽、端面開槽及螺紋加工
- 最小搪孔徑 1.0mm

→ Page C113

DE Series Solid Carbide Modular Bars 模組化鎢鋼搪刀



- Easy tool changeover and position repeatability ($\pm 0.05\text{mm}$).
- Double ended design for two different shank sizes.
- Mini boring diameter 1.0mm.
- 刀具更換更迅速，擁有優異的重複定位精度 ($\pm 0.05\text{mm}$)
- 雙端設計，可用於兩種不同柄徑尺寸刀具
- 最小搪孔徑 1.0mm

→ Page C122

ETU Series Solid Endmills 全鎢鋼銑刀 (短全長)



- Short total length design.
- Cutting dia. 1~12mm with 6mm shank dia. is suitable for automatic lathe.
- Sharp cutting edge produces an excellent surface finish.
- 短全長設計
- 刀具外徑 1~12mm, 刀柄尺寸 6mm 適用於自動車床
- 鋒利的切削刃可產生出色的表面光潔度

→ Page C131

ETW Series Carbide Slitting Saws 全鎢鋼小徑鋸片



- Suitable for small parts cutting off or slot machining.
- Saw arbor shank from $\varnothing 6 \sim \varnothing 10\text{mm}$.
- Carbide saw diameters from 15 ~ 30mm.
- 適用於小型零組件切斷或槽加工
- 提供鋸片軸心柄徑從 $\varnothing 6 \sim \varnothing 10\text{mm}$
- 鋸片尺寸由 15~30mm

→ Page C132

SAKG Series Indexable Turning Tools 多功能捨棄式車刀

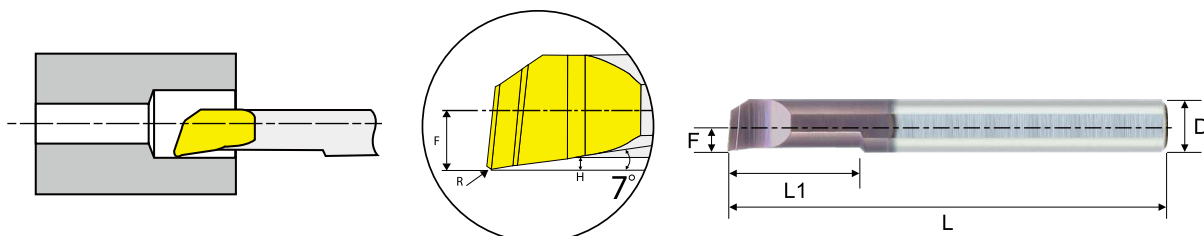


- Back turning / Parting off / Profiling / Grooving / Threading for small to mid-sized parts.
- Insert is more stable on holder by two screw clamping.
- 適用於小型至中型零組件多功能車削 (後掃, 切斷, 切槽, 輪廓, 螺紋加工)
- 使用兩顆螺絲將刀片更穩定的固定至刀桿上

→ Page C136

DLBSR Carbide Mini Internal Boring Bars (7°)

迷你鎢鋼內徑搪刀 (7°)

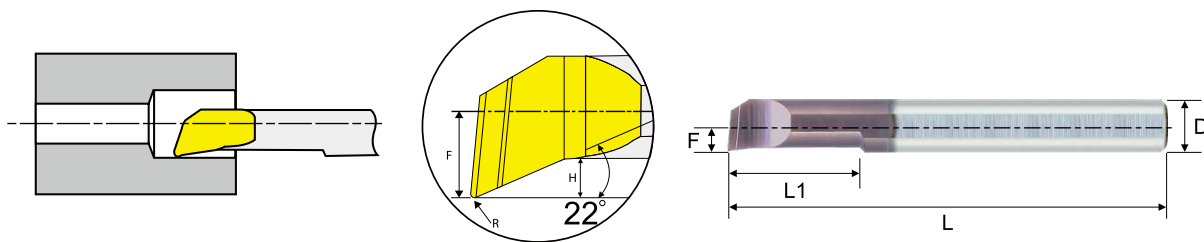


Order No. 訂購編碼	F	L1	L	R	D	H	Min. Bore Dia.
DLBSR08051507U	0.8	5	50	0.15	3	0.1	2.4
DLBSR08101507U	0.8	10	50	0.15	3	0.1	2.4
DLBSR13100507U	1.3	10	50	0.05	3	0.2	3.1
DLBSR13150507U	1.3	15	50	0.05	3	0.2	3.1
DLBSR13151007U	1.3	15	50	0.10	3	0.2	3.1
DLBSR13102007U	1.3	10	50	0.20	3	0.2	3.1
DLBSR13152007U	1.3	15	50	0.20	3	0.2	3.1
DLBSR17101007U	1.7	10	50	0.10	4	0.2	4.1
DLBSR17151007U	1.7	15	50	0.10	4	0.2	4.1
DLBSR17221007U	1.7	22	50	0.10	4	0.2	4.1
DLBSR17102007U	1.7	10	50	0.20	4	0.2	4.1
DLBSR17152007U	1.7	15	50	0.20	4	0.2	4.1
DLBSR17222007U	1.7	22	50	0.20	4	0.2	4.1
DLBSR21151007U	2.1	15	50	0.10	5	0.3	5.1
DLBSR21221007U	2.1	22	50	0.10	5	0.3	5.1
DLBSR21301007U	2.1	30	75	0.10	5	0.3	5.1
DLBSR21152007U	2.1	15	50	0.20	5	0.3	5.1
DLBSR21222007U	2.1	22	50	0.20	5	0.3	5.1
DLBSR21302007U	2.1	30	75	0.20	5	0.3	5.1
DLBSR28150507U	2.8	15	50	0.05	6	0.3	6.1
DLBSR28151007U	2.8	15	50	0.10	6	0.3	6.1
DLBSR28152007U	2.8	15	50	0.20	6	0.3	6.1
DLBSR28222007U	2.8	22	50	0.20	6	0.3	6.1
DLBSR28302007U	2.8	30	60	0.20	6	0.3	6.1

* For left hand tools specify DLBSL instead of DLBSR.

DLBSR Carbide Mini Internal Boring Bars (22°)

迷你鎢鋼內徑搪刀 (22°)



Order No. 訂購編碼	F	L1	L	R	D	H	Min. Bore Dia.
DLBSR04030522U	0.4	3	50	0.05	4	0.2	1.0
DLBSR04050522U	0.4	5	50	0.05	4	0.2	1.0
DLBSR08060522U	0.8	6	50	0.05	4	0.4	2.0
DLBSR08100522U	0.8	10	50	0.05	4	0.4	2.0
DLBSR08140522U	0.8	14	50	0.05	4	0.4	2.0
DLBSR13091022U	1.3	9	50	0.10	4	0.6	3.0
DLBSR13151022U	1.3	15	50	0.10	4	0.6	3.0
DLBSR13211022U	1.3	21	50	0.10	4	0.6	3.0
DLBSR18121022U	1.8	12	50	0.10	4	0.8	4.0
DLBSR18201022U	1.8	20	50	0.10	4	0.8	4.0
DLBSR18281022U	1.8	28	60	0.10	4	0.8	4.0
DLBSR23152022U	2.3	15	50	0.20	6	1.0	5.0
DLBSR23252022U	2.3	25	50	0.20	6	1.0	5.0
DLBSR23302022U	2.3	30	60	0.20	6	1.0	5.0
DLBSR28182022U	2.8	18	50	0.20	6	1.2	6.0
DLBSR28302022U	2.8	30	60	0.20	6	1.2	6.0
DLBSR28422022U	2.8	42	65	0.20	6	1.2	6.0

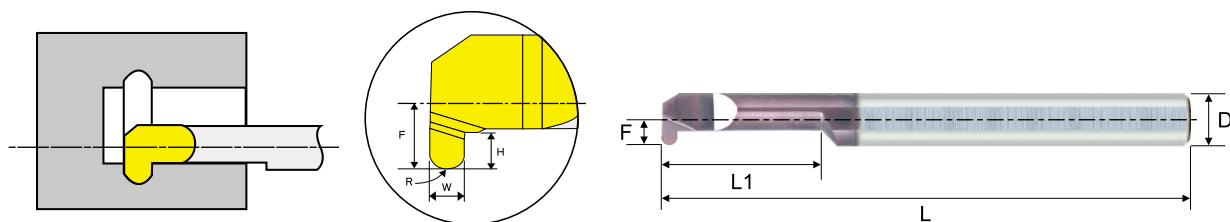
* For left hand tools specify DLBSL instead of DLBSR.

迷你鎢鋼內徑開槽刀



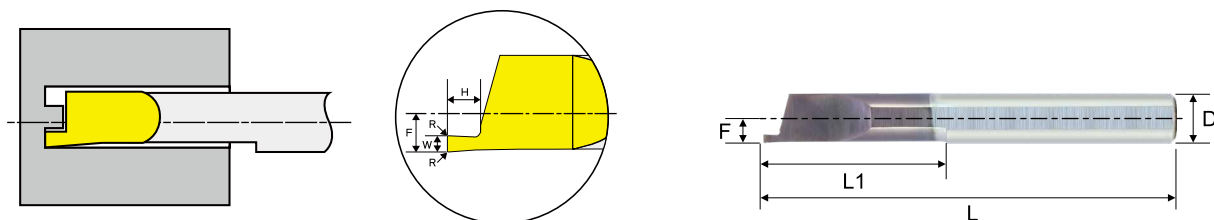
* For left hand tools specify DLGSL instead of DLGSR.

迷你鎢鋼內徑 R 開槽刀

[illegible]

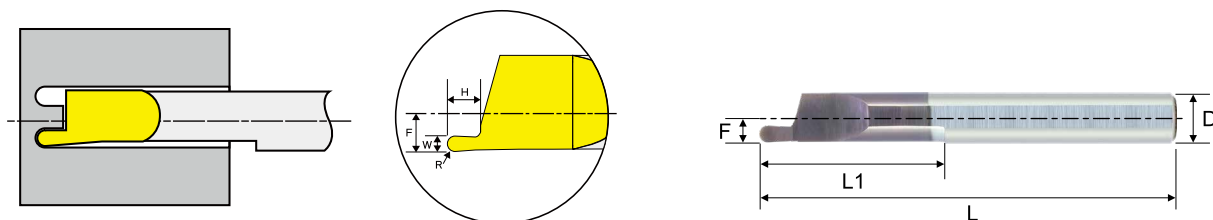
* For left hand tools specify DLGBL instead of DLGBR.

迷你鎢鋼內徑端面開槽刀

[illegible]

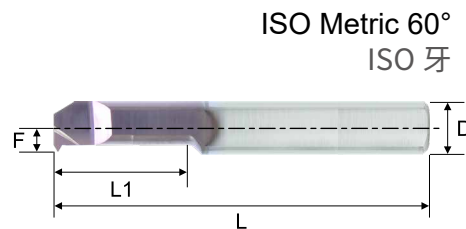
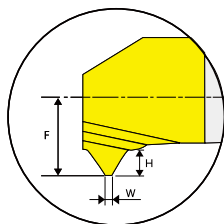
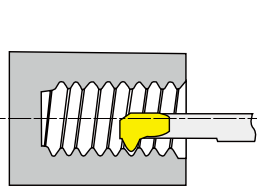
Turning

迷你鎢鋼內徑端面 R 開槽刀

[illegible]

C118

迷你鎢鋼內徑螺紋搪刀

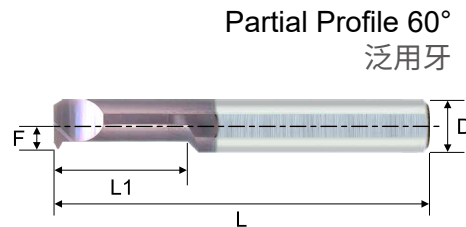


ISO Metric 60°
ISO 牙

Turning

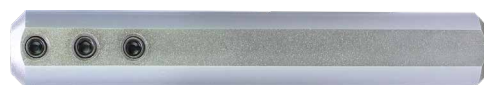
C119

迷你鎢鋼內徑螺紋搪刀

Partial Profile 60°
泛用牙[illegible]

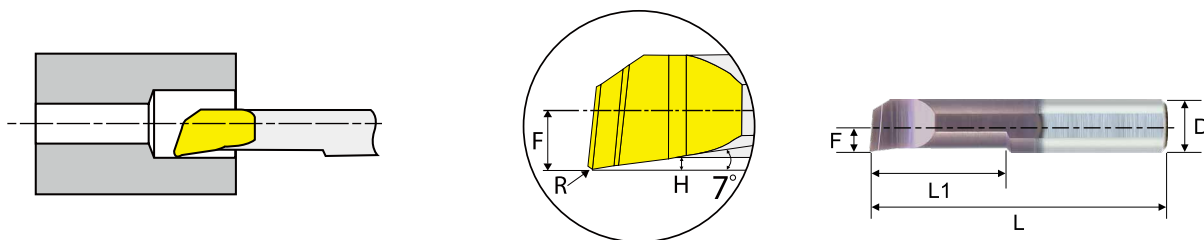
C120

迷你鎢鋼內徑搪刀套筒

[illegible]

DEBSR Carbide Modular Internal Boring Bars (7°)

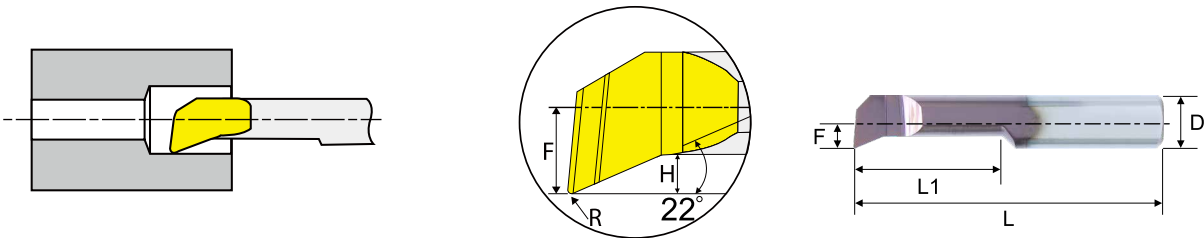
模組化鎢鋼內徑搪刀 (7°)



Order No. 訂購編碼	F	L1	L (±0.05mm)	R	D	H	Min. Bore Dia.
DEBSR08051507U	0.8	5	21.5	0.15	3	0.1	2.4
DEBSR08101507U	0.8	10	26.5	0.15	3	0.1	2.4
DEBSR13100507U	1.3	10	26.5	0.05	3	0.2	3.1
DEBSR13150507U	1.3	15	31.5	0.05	3	0.2	3.1
DEBSR13151007U	1.3	15	31.5	0.10	3	0.2	3.1
DEBSR13102007U	1.3	10	26.5	0.20	3	0.2	3.1
DEBSR13152007U	1.3	15	31.5	0.20	3	0.2	3.1
DEBSR17101007U	1.7	10	26.5	0.10	4	0.2	4.1
DEBSR17151007U	1.7	15	31.5	0.10	4	0.2	4.1
DEBSR17221007U	1.7	22	38.5	0.10	4	0.2	4.1
DEBSR17102007U	1.7	10	26.5	0.20	4	0.2	4.1
DEBSR17152007U	1.7	15	31.5	0.20	4	0.2	4.1
DEBSR17222007U	1.7	22	38.5	0.20	4	0.2	4.1
DEBSR21151007U	2.1	15	31.5	0.10	5	0.3	5.1
DEBSR21221007U	2.1	22	38.5	0.10	5	0.3	5.1
DEBSR21301007U	2.1	30	46.5	0.10	5	0.3	5.1
DEBSR21152007U	2.1	15	31.5	0.20	5	0.3	5.1
DEBSR21222007U	2.1	22	38.5	0.20	5	0.3	5.1
DEBSR21302007U	2.1	30	46.5	0.20	5	0.3	5.1
DEBSR28150507U	2.8	15	31.5	0.05	6	0.3	6.1
DEBSR28151007U	2.8	15	31.5	0.10	6	0.3	6.1
DEBSR28152007U	2.8	15	31.5	0.20	6	0.3	6.1
DEBSR28222007U	2.8	22	38.5	0.20	6	0.3	6.1
DEBSR28302007U	2.8	30	46.5	0.20	6	0.3	6.1

* For left hand tools specify DEBSL instead of DEBSR.

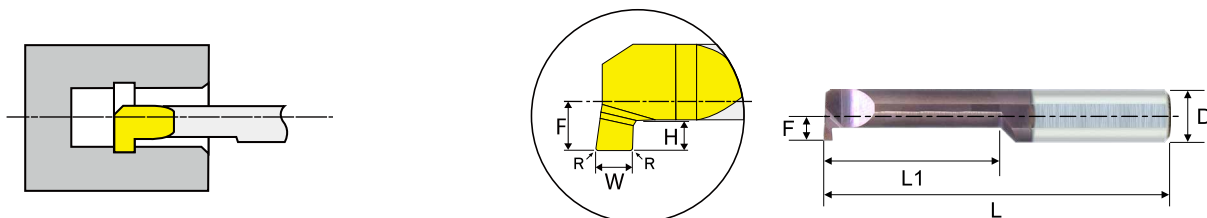
DEBSR Carbide Modular Internal Boring Bars (22°) 模組化鎢鋼內徑搪刀 (22°)



Order No. 訂購編碼	F	L1	L (±0.05mm)	R	D	H	Min. Bore Dia.
DEBSR04030522U	0.4	3	19.5	0.05	4	0.2	1.0
DEBSR04050522U	0.4	5	21.5	0.05	4	0.2	1.0
DEBSR08060522U	0.8	6	22.5	0.05	4	0.4	2.0
DEBSR08100522U	0.8	10	26.5	0.05	4	0.4	2.0
DEBSR08140522U	0.8	14	30.5	0.05	4	0.4	2.0
DEBSR13091022U	1.3	9	25.5	0.10	4	0.6	3.0
DEBSR13151022U	1.3	15	31.5	0.10	4	0.6	3.0
DEBSR13211022U	1.3	21	37.5	0.10	4	0.6	3.0
DEBSR18121022U	1.8	12	28.5	0.10	4	0.8	4.0
DEBSR18201022U	1.8	20	36.5	0.10	4	0.8	4.0
DEBSR18281022U	1.8	28	44.5	0.10	4	0.8	4.0
DEBSR23152022U	2.3	15	31.5	0.20	6	1.0	5.0
DEBSR23252022U	2.3	25	41.5	0.20	6	1.0	5.0
DEBSR23302022U	2.3	30	46.5	0.20	6	1.0	5.0
DEBSR28182022U	2.8	18	34.5	0.20	6	1.2	6.0
DEBSR28302022U	2.8	30	46.5	0.20	6	1.2	6.0
DEBSR28422022U	2.8	42	58.5	0.20	6	1.2	6.0

* For left hand tools specify DEBSL instead of DEBSR.

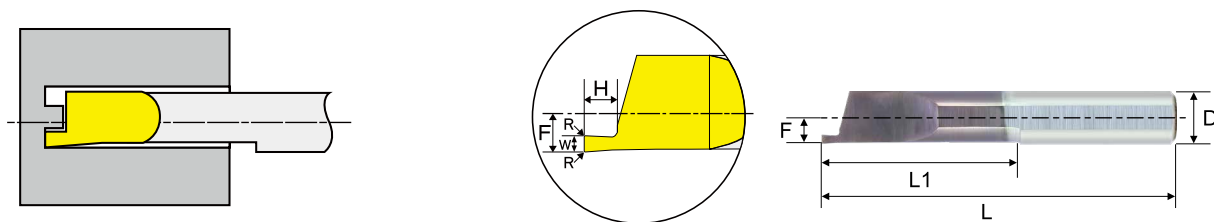
Turning

[illegible]

* For left hand tools specify DEGSL instead of DEGSR.

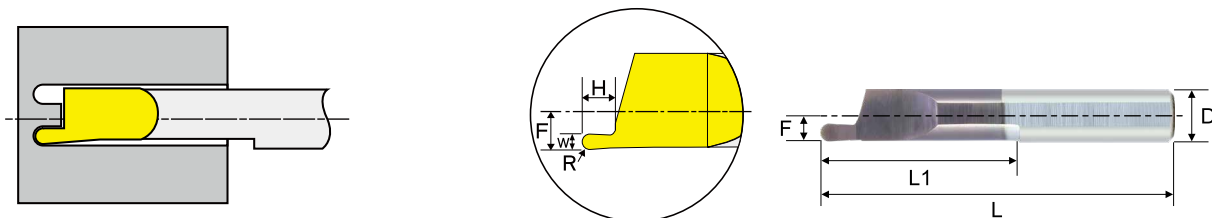


* For left hand tools specify DEGBL instead of DEGBR.



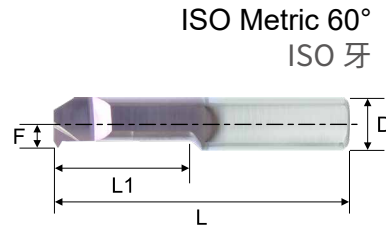
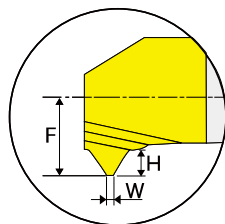
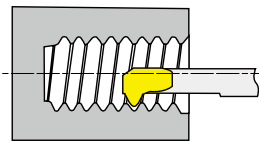
* For left hand tools specify DEFSL instead of DEFSR.

模組化鎢鋼內徑端面 R 開槽刀

[illegible]

Turning

模組化鎢鋼內徑螺紋搪刀

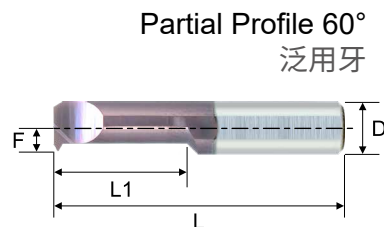


ISO Metric 60°
ISO 牙

[illegible]

C128

模組化鎢鋼內徑螺紋搪刀



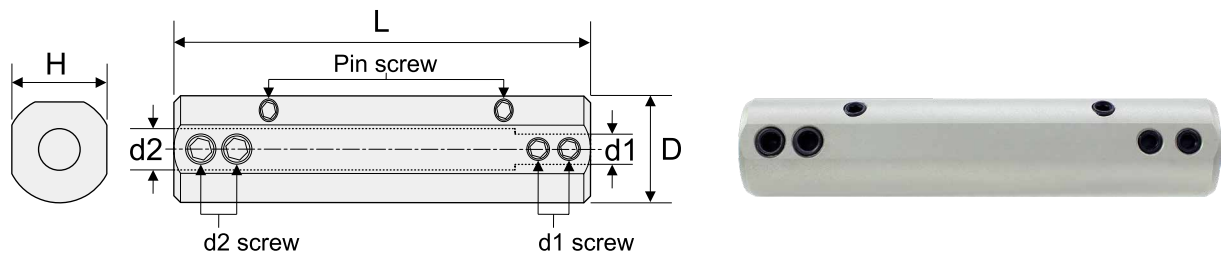
Turning

[illegible]

C129

DES Carbide Modular Bars - Double Sizes Sleeves

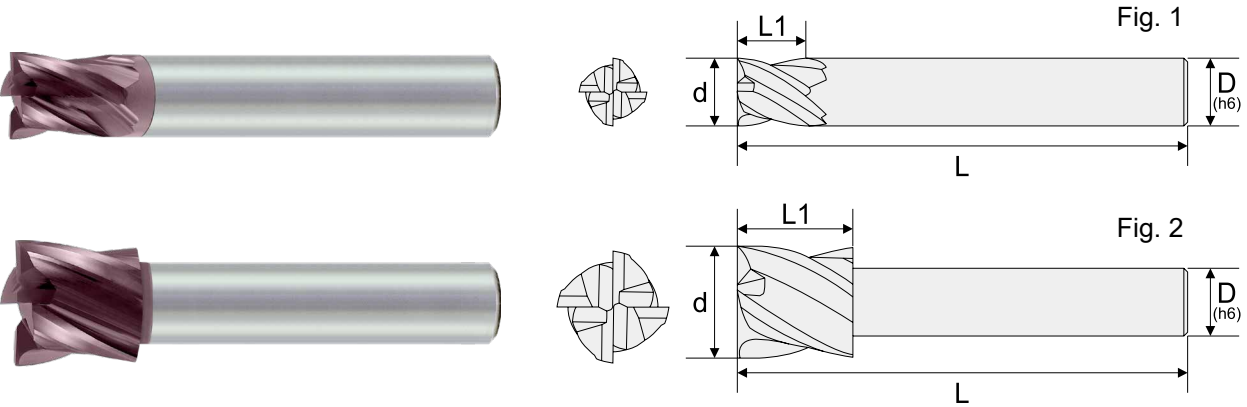
模組化鎢鋼內徑搪刀雙柄套筒



Order No. 訂購編碼	D	d1	d2	L	H	Spare parts
DES1635075	16	3	5	75	15	①
DES1646075	16	4	6	75	15	②

Spare parts	d1		d2		Pin	
	Screw 	Wrench 	Screw 	Wrench 	Screw 	Wrench 
①	ITHM405	IPL20	ITHM405	IPL20	ITTS412	IPL20
②	ITHM405	IPL20	ITHM505	IPL25	ITTS412	IPL20

ETU Series - Carbide Endmills (Short Total Length) 全鎢鋼銑刀 (短全長)

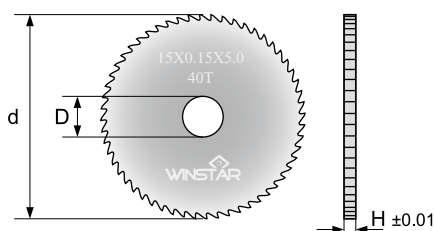


Order No. 訂購編碼	Dia (d)	CL (L1)	OAL (L)	Shank (D)	Flutes (F)	Coating	Fig
ETSSC401000U	1.0	1.0	40	6	4	UNICO	1
ETSSC401500U	1.5	1.5	40	6	4	UNICO	1
ETSSC402000U	2.0	2.0	40	6	4	UNICO	1
ETSSC402500U	2.5	2.5	40	6	4	UNICO	1
ETSSC403000U	3.0	3.0	40	6	4	UNICO	1
ETSSC404000U	4.0	4.0	40	6	4	UNICO	2
ETSSC405000U	5.0	5.0	40	6	4	UNICO	2
ETSSC406000U	6.0	6.0	40	6	4	UNICO	2
ETSSC408000U	8.0	8.0	40	6	4	UNICO	2
ETSSC410000U	10.0	10.0	40	6	4	UNICO	2
ETSSC412000U	12.0	10.0	40	6	4	UNICO	2

Turning

ETWSF Carbide Slitting Saws

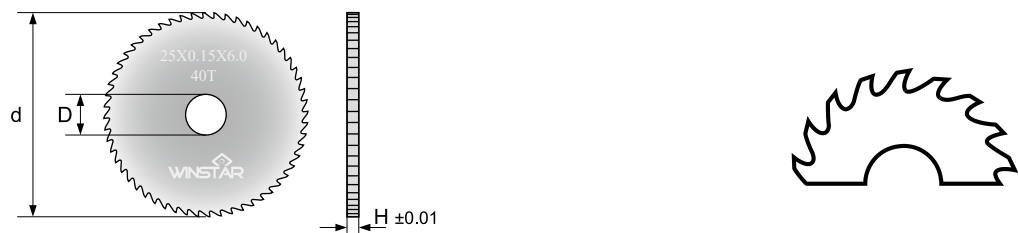
全鋤鋼小徑鋸片



Order No. 訂購編碼	d	H	D	T
ETWSF04015015	15	0.15	5	40
ETWSF04015020	15	0.20	5	40
ETWSF04015025	15	0.25	5	40
ETWSF04015030	15	0.30	5	40
ETWSF04015040	15	0.40	5	40
ETWSF04015050	15	0.50	5	40
ETWSF04015060	15	0.60	5	40
ETWSF04015070	15	0.70	5	40
ETWSF04015080	15	0.80	5	40
ETWSF04015090	15	0.90	5	40
ETWSF04015100	15	1.00	5	40
ETWSF05020015	20	0.15	5	56
ETWSF05020020	20	0.20	5	56
ETWSF05020025	20	0.25	5	56
ETWSF05020030	20	0.30	5	56
ETWSF05020040	20	0.40	5	56
ETWSF05020050	20	0.50	5	56
ETWSF05020060	20	0.60	5	56
ETWSF05020070	20	0.70	5	56
ETWSF05020080	20	0.80	5	56
ETWSF05020090	20	0.90	5	56
ETWSF05020100	20	1.00	5	56
ETWSF05020120	20	1.20	5	56
ETWSF05020150	20	1.50	5	56

* Other diameters make to order.

ETWSF Carbide Slitting Saws 全鋤鋼小徑鋸片

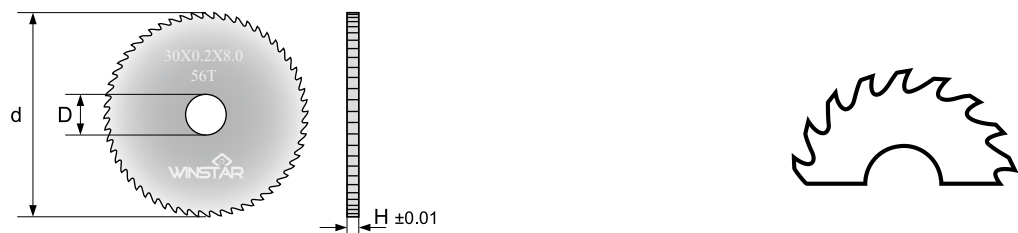


Order No. 訂購編碼	d	H	D	T
ETWSF04025015	25	0.15	6	40
ETWSF04025020	25	0.20	6	40
ETWSF04025025	25	0.25	6	40
ETWSF04025030	25	0.30	6	40
ETWSF04025040	25	0.40	6	40
ETWSF04025050	25	0.50	6	40
ETWSF04025060	25	0.60	6	40
ETWSF04025070	25	0.70	6	40
ETWSF04025080	25	0.80	6	40
ETWSF04025090	25	0.90	6	40
ETWSF04025100	25	1.00	6	40
ETWSF04025120	25	1.20	6	40
ETWSF04025150	25	1.50	6	40
ETWSF07025015	25	0.15	6	72
ETWSF07025020	25	0.20	6	72
ETWSF07025025	25	0.25	6	72
ETWSF07025030	25	0.30	6	72
ETWSF07025040	25	0.40	6	72
ETWSF07025050	25	0.50	6	72
ETWSF07025060	25	0.60	6	72
ETWSF07025070	25	0.70	6	72
ETWSF07025080	25	0.80	6	72
ETWSF07025090	25	0.90	6	72
ETWSF07025100	25	1.00	6	72
ETWSF07025120	25	1.20	6	72
ETWSF07025150	25	1.50	6	72

* Other diameters make to order.

Turning

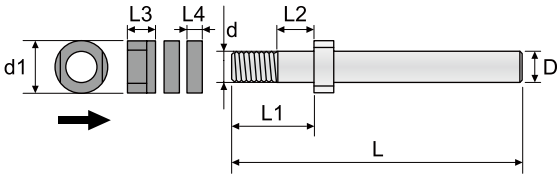
ETWLF Carbide Slitting Saws 全鎢鋼小徑鋸片



Order No. 訂購編碼	d	H	D	T
ETWLF05030020	30	0.20	8	56
ETWLF05030025	30	0.25	8	56
ETWLF05030030	30	0.30	8	56
ETWLF05030040	30	0.40	8	56
ETWLF05030050	30	0.50	8	56
ETWLF05030060	30	0.60	8	56
ETWLF05030070	30	0.70	8	56
ETWLF05030080	30	0.80	8	56
ETWLF05030090	30	0.90	8	56
ETWLF05030100	30	1.00	8	56
ETWLF05030110	30	1.10	8	56
ETWLF05030120	30	1.20	8	56
ETWLF05030150	30	1.50	8	56
ETWLF05030200	30	2.00	8	56

* Other diameters make to order.

ETWSA Carbide Slitting Saws - Arbors 全钨钢小径锯片 - 轴心



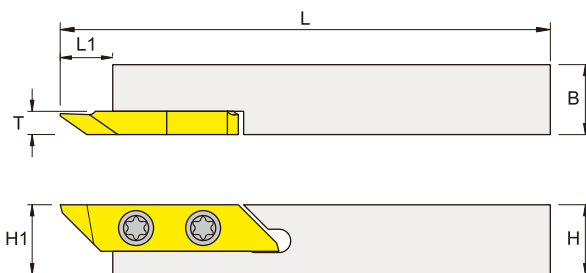
Order No. 訂購編碼	d	D	d1	L1	L2	L	L3	L4
ETWSA050065	5	6	10	12	5.2	50	5	3.0
ETWSA050076	5	7	13	16	7.5	60	8.8	4.0
ETWSA060065	6	6	10	12	5.2	50	5.1	3.2
ETWSA060076	6	7	13	16	7.5	60	8.8	4.0
ETWSA060106	6	10	16	11	5.2	60	5.5	1.5 / 3.0
ETWSA060109	6	10	13	16	7.5	90	8.2	4.2
ETWSA080106	8	10	13	16	7.5	60	7.5	4.2

Turning

Recommended Cutting Conditions 建議切削數據

Working Material	Carbon Steel (S35C,S45C,S50C)		Alloy Steel (SCM,SKT,SKD)		Stainless Steel (SUS304)		Cast Iron (FC,FCD)		Aluminum / Copper		Hardened Steel (SKT,SKD)	
Hardness	HRC < 30		HRC 30 ~ 45		-		HRC < 30		-		HRC 45 ~ 55	
Vc	54 - 68 - 82 m/min		36 - 45 - 54 m/min		48 - 59 - 70 m/min		54 - 68 - 82 m/min		120 - 150 - 180 m/min		23 - 29 - 35 m/min	
Diameter (mm)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)
15	1450	220	950	150	1250	180	1450	220	3180	560	620	90
20	1080	240	720	160	940	200	1080	240	2390	580	460	100
25	860	260	570	170	750	220	860	260	1900	600	370	110
30	740	280	470	180	630	240	740	280	1590	620	310	120

Tool Holder Specifications 刀桿規格



Right-hand shown

Order No. 訂購編碼	Item Specification	Dimensions (mm)					Insert	Screw 	Wrench 
		H(H1)	B	L	L1	T			
ISAKGR1010K	SAKGR-1010K-374	10	10	125	9	4	SAK...	IMS3509A	ITK15
ISAKGL1010K	SAKGL-1010K-374	10	10	125	9	4			
ISAKGR1212K	SAKGR-1212K-374	12	12	125	9	4			
ISAKGL1212K	SAKGL-1212K-374	12	12	125	9	4			
ISAKGR1212M	SAKGR-1212M-374	12	12	150	9	4			
ISAKGL1212M	SAKGL-1212M-374	12	12	150	9	4			
ISAKGR1616M	SAKGR-1616M-374	16	16	150	9	4			
ISAKGL1616M	SAKGL-1616M-374	16	16	150	9	4			
ISAKGR2020K	SAKGR-2020K-374	20	20	125	9	4			
ISAKGL2020K	SAKGL-2020K-374	20	20	125	9	4			
ISAKGR2525M	SAKGR-2525M-374	25	25	150	9	4			
ISAKGL2525M	SAKGL-2525M-374	25	25	150	9	4			

Recommended Cutting Conditions 建議切削數據

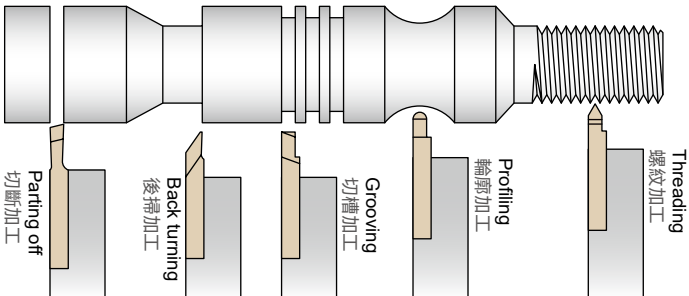
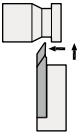
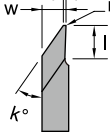
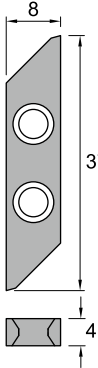
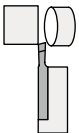
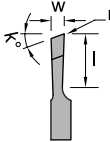
For Back turning, Parting off and Grooving

Working Material	Vc (m/min)	fr (mm/rev)
Carbon Steel / Alloy Steel	50 ~ 200	0.02 ~ 0.10
Stainless Steel	50 ~ 200	0.02 ~ 0.10
Cast Iron	50 ~ 200	0.02 ~ 0.10
Aluminum Alloy	200 ~ 300	0.05 ~ 0.15
High Temperature Alloy	80 ~ 120	0.03 ~ 0.07
Hardened Steel	80 ~ 120	0.03 ~ 0.07

SAKG Indexable Turning Inserts

SAKG 多功能車刀片

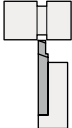
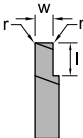
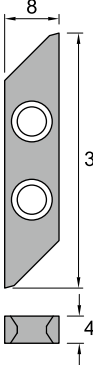
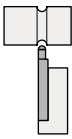
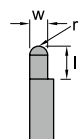
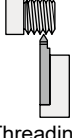
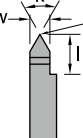
Insert Specifications 刀片規格

													
Inserts	Designation	Grade No.					Dimensions (mm)					Drawing	
		CP6025					w	r	l	k	t		
 Back turning 後掃加工		SAKBR20005	✓					2.0	-	5.0	35	0.5	
		SAKBR20015	✓					2.0	0.1	5.0	35	0.5	
		SAKBR20025	✓					2.0	0.2	5.0	35	0.5	
		SAKBR30015	✓					3.0	0.1	5.0	35	0.75	
		SAKBR30025	✓					3.0	0.2	5.0	35	0.75	
 Parting off 切斷加工		SAKCR15018	✓					1.5	0.1	8.5	15	-	
		SAKCR20019	✓					2.0	0.1	9.0	15	-	
		SAKCR25019	✓					2.5	0.1	9.0	15	-	
		SAKCR30019	✓					3.0	0.1	9.0	15	-	

Turning

SAKG Indexable Turning InsertsSAKG 多功能車刀片

Insert Specifications 刀片規格

Inserts		Designation	Grade No.					Dimensions (mm)					Drawing
			CP6025					w	r	l	k	pitch	
 Grooving 切槽加工		SAKGR10013	✓					1.0	0.1	3.0	-	-	
		SAKGR15013	✓					1.5	0.1	3.0	-	-	
		SAKGR15025	✓					1.5	0.2	5.0	-	-	
		SAKGR15027	✓					1.5	0.2	7.0	-	-	
		SAKGR20015	✓					2.0	0.1	5.0	-	-	
		SAKGR20025	✓					2.0	0.2	5.0	-	-	
		SAKGR20027	✓					2.0	0.2	7.0	-	-	
		SAKGR20029	✓					2.0	0.2	9.0	-	-	
		SAKGR25015	✓					2.5	0.1	5.0	-	-	
		SAKGR25025	✓					2.5	0.2	5.0	-	-	
		SAKGR25029	✓					2.5	0.2	9.0	-	-	
		SAKGR30015	✓					3.0	0.1	5.0	-	-	
		SAKGR30019	✓					3.0	0.1	9.0	-	-	
		SAKGR30025	✓					3.0	0.2	5.0	-	-	
		SAKGR30027	✓					3.0	0.2	7.0	-	-	
		SAKGR30029	✓					3.0	0.2	9.0	-	-	
 Profiling 輪廓加工		SAKPR10053	✓					1.0	0.5	3.0	-	-	
		SAKPR15075	✓					1.5	0.75	5.0	-	-	
		SAKPR20105	✓					2.0	1.0	5.0	-	-	
		SAKPR25125	✓					2.5	1.25	5.0	-	-	
		SAKPR30158	✓					3.0	1.5	8.0	-	-	
 Threading 螺紋加工		SAKTR20655	✓					2.0	0.05	6.0	55	0.5~2	
		SAKTR30655	✓					3.0	0.1	6.0	55	1~3	
		SAKTR20660	✓					2.0	0.05	6.0	60	0.5~2	
		SAKTR30660	✓					3.0	0.1	6.0	60	1~3	