

# CUTTING TOOL

KAWAN LAMA INDUSTRIAL CATALOG 6

# **08**





# 08 CUTTING TOOL

**Arbor**  
Arbor .....300

**Band Saw Blade**  
Bl – metal band saw blade ..... 307, 310 – 316  
Bl– metal tooth selection chart .....317  
Bl – metal product selection.....306  
Carbide band saw blades.....308 – 309

**Chamfering**  
Chamfering .....275

**Circular Saw**  
Circular saw blade for steel .....301

**Cutting Tool for Metal Working**  
Carbide tip saw .....302  
Universal pipe machine dies.....302  
Valve seat and face cutter set.....305

**Drill**  
Carbide drill .....273 – 274  
Core drill.....299  
Drill bit .....291  
Drill set.....293, 296  
Glass and tile drill bit .....301  
High speed steel drill bit .....290  
Hss drill .....270 – 272  
Masonry drill.....292  
Sds plus shank chisel.....293  
Twist drill set & twist drill .....295

**End Mill**  
Carbide end mill series .....279  
HSS end mill series .....276 – 278  
HSS end mills and twist drill .....294

**External Turning**  
Tac tool holder for external turning.....252 – 254  
Turning x.....251

**Feed Mill**  
High speed using t-dia insert.....261  
Insert for super high-feed milling.....262  
Tac tool holder for super high-feed milling .....261

**Gauge**  
Gauge series .....287 – 288  
Round dies .....288

**Hole Saw**  
Diamond hole saw .....293  
Hole cutter .....298  
Hole saw.....297  
Hole saw for metal working.....297, 300  
Hole saw set.....298

**Insert**  
Insert carbide .....233 – 235  
Negative insert .....236 – 242  
Positive insert.....243 – 248

**Internal Turning**  
Tac tool holder for internal turning.....255

**PCBN Tool**  
T-CBN (PCBN) insert .....249 – 250

**Reamer**  
Carbide reamer.....280

**Rolling Dies**  
Rolling dies series .....289

**Special Tool**  
Special tool.....269

**Tab and Dies**  
Hand tap in set .....303 – 304

**Tac Mill**  
High precision square milling .....263  
Hybrid tac mill.....259 – 260  
Tac tool holder for super high-feed milling .....263

**Tap**  
Fluteless tap series .....285  
Spiral fluted tap series.....283 – 284

Spiral pointed tap series.....281 – 282  
Straight fluted taps (hand tap).....286  
Tap series .....281

**Tec Mill**  
Docto and doquad .....258

**Thread Restoring**  
Thread restoring.....290

**Tung Cut**  
Tac tool holder for external grooving.....256

**Tung Meister**  
Tung meister.....267 – 268

**Tung Rec**  
Tung rec .....264

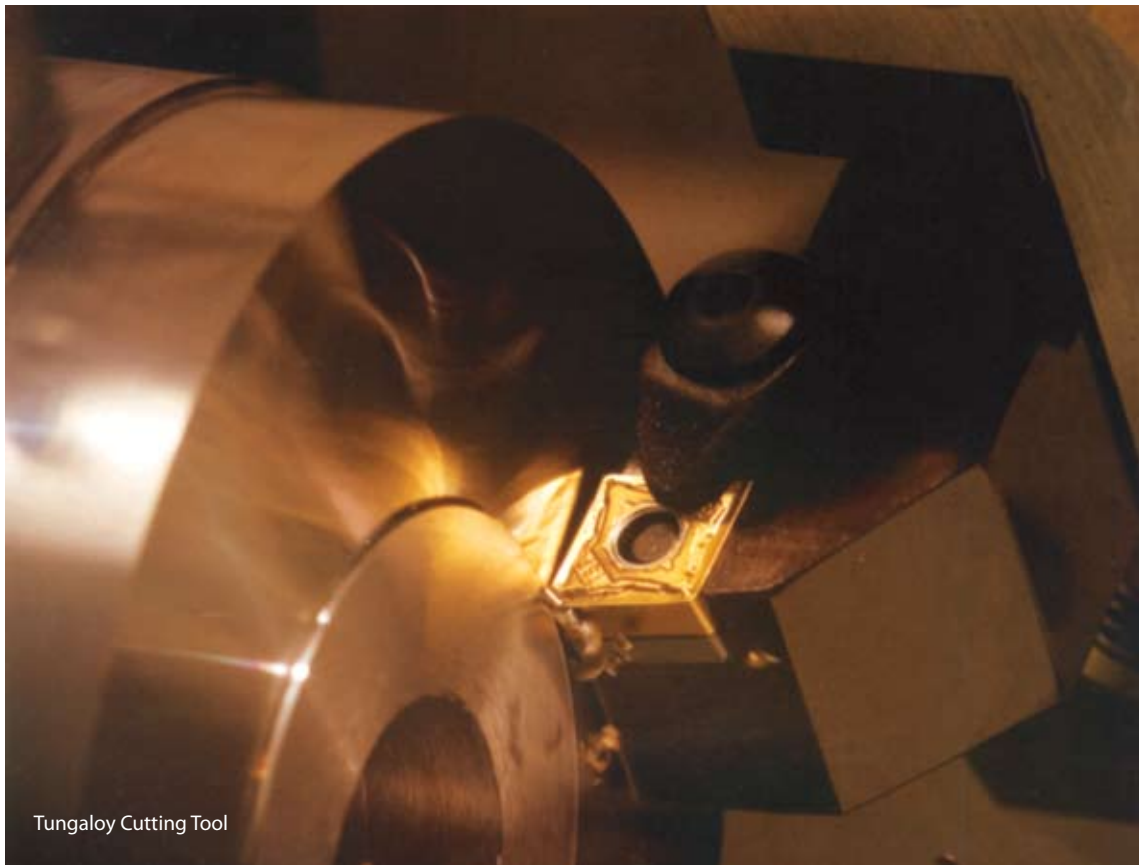
**Tungdrill**  
Tac tool holder for general drilling .....266  
Tungdrill twisted .....265

**Tungquad**  
Tungquad .....257

From **QUALITY BRANDS** :



Tungaloy's insert are a simple way to select the proper grade for the material to be machined



Tungaloy Cutting Tool

## Guide of TAC Insert Navigation System

A choices the best condition for the insert, applicable for work material, and standard cutting condition.

### Printed label

15NW10	
CPMT080204-PS	
GT730	
1430321	10
16177	
<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">P</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px; margin-left: 5px;">M</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px; margin-left: 5px;">K</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px; margin-left: 5px;">N</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px; margin-left: 5px;">S</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px; margin-left: 5px;">H</span>	
f=0.15 (0.08 - 0.3) mm/rev .006 (.003 - .012) ipr	
P (Steel)	
Vc=200 (150 - 300) m/min 656 (492 - 984) sfm	

← Feed standard of chipbreaker  
Upper ISO (Metric system)  
Lower Inch system

← Work materials

← Cutting speed of grade  
Upper ISO (Metric system)  
Lower Inch system

0.15 (0.08 - 0.3) mm/rev

① 1st choice  
② Standard cutting condition

200 (150 - 300) m/min

① 1st choice  
② Standard cutting condition

### Work Materials

- P** Steels, for example: Low carbon steels, alloy steels (HB180) S10C, SCM415, SCr420H etc
- M** Stainless Steels, for example: Austenitic SUS304
- K** Cast irons, for example: Grey cast irons FC200 etc
- N** Nonferrous metals, for example: Aluminium alloys
- S** Difficult-to-cut materials, for example: Ni-base alloys INCONEL718
- H** Hard materials, for example: Hardened steels SKD11 etc (HRC60)

• Please change cutting speed depending on hardness of work materials.

# Nomenclature for TAC<sup>®</sup> Inserts

• Conforms to "indexable inserts for cutting tools-designation" (JIS B4120-1998, and 1832 /AM1-1998)

Symbol	Shape	Nose Angle (Degree)	Figure
H	Hexagonal	120°	
O	Octagonal	135°	
P	Pentagonal	108°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
M		86°	
V		35°	
Y	Y-Shape (Tungaloy's Symbol)	25°	
W	Trigon	80°	
L	Rectangular	90°	
A	Parallelogram	85°	
B		82°	
K		55°	
R		Round	

① Shape

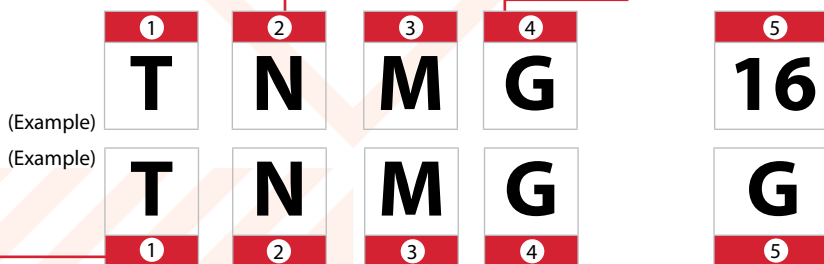
Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Others

② Relief Angle

Symbol (Class)	Tolerance (mm)		
	Corner Height (m)	Thickness (s)	I.C.dia.( $\phi$ d)
A	±0.005	±0.025	±0.025
F	±0.005	±0.025	±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
J	±0.005	±0.025	±0.005~±0.13
K	±0.013	±0.025	±0.05~±0.13
L	±0.025	±0.025	±0.05~±0.13
M	±0.08~±0.18	±0.13	±0.05~±0.13
N	±0.08~±0.18	±0.025	±0.05~±0.13
C	±0.13~±0.38	±0.13	±0.08~±0.25

③ Accuracy

**Notes:** With respect to the nose angles of rhombic and parallelogram shaped inserts, use the smaller angle respectively



④ Groove and hole					
Symbol	Hole	Shape of Hole	Chipbreaker	Shape	
N	Without	-	Without		
R			Single-sided		
F			Double-sided		
A	With	Cylindrical Hole	Without		
M			Single-sided		
G			Double-sided		
W			Partly cylindrical hole, single-side 40°~60° counter sink	Without	
T				Single-sided	
Q			Partly cylindrical hole, single-side 40°~60° counter sink	Without	
U	Double-sided				
B	Partly cylindrical hole, single-side 70°~90° counter sink	Without			
H		Single-sided			
C	Partly cylindrical hole, single-side 70°~90° counter sink	Without			
J		Double-sided			
X	-	-	-	-	

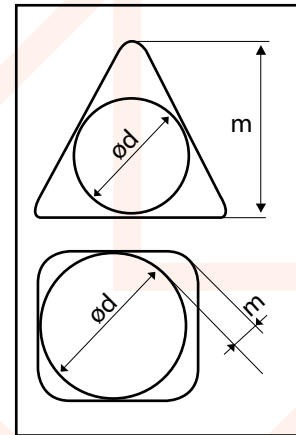
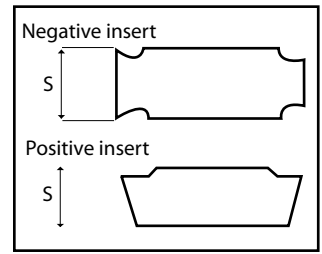
⑤ Cutting edge length																		
R		S		C		W		T		D		V		K		I.C.dia. (mm)		
Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length	Symbol	Length			
		03	3.97	03	4.0			06	6.9	04	4.8					3.97		
		04	4.76	04	4.8			08	8.2	05	5.8					4.76		
05	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5		
		05	5.56	05	5.6	03	3.8	09	9.6	06	6.8					5.56		
06	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6		
		06	6.35	06	6.5	04	4.3	11	11	07	7.8	11	11.2			6.35		
08	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8		
09	9.525	09	9.525	09	9.7	06	6.5	16	16.5	11	11.6	16	16.6	16	19.7	9.525		
10	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10		
12	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12		
12	12.7	12	12.7	12	12.9	08	8.7	22	22	15	15.5	22	22.1			12.7		
15	15.875	15	15.875	16	16.1	10	10.9	27	27.5	19	19.4					15.875		
16	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16		
19	19.05	19	19.05	19	19.3	13	13	33	33	23	23.3					19.05		
20	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20		
		22	22.225	22	22.6			38	38.5	27	27.1					22.225		
25	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25		
25	25.4	25	25.4	25	25.8			44	44	31	31					25.4		
31	31.75	31	31.75	32	32.2			55	55	38	38.8					31.75		
32	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32		

• Detailed accuracy for J,K,L,M,N and U classes for inserts those corner angles are larger than 55°

Unit: mm

Inscribe Circle	Tolerance on Inscribe Circle Dia. (∅d)		Tolerance On Corner Height (m)		Insert Shapes Applied
	J,K,L,M,N (Class)	U (Class)	J,K,L,M,N (Class)	U (Class)	
6.35	±0.05	±0.08	±0.08	±0.13	H  W
9.525					
12.7	±0.08	±0.13	±0.13	±0.2	O  R
15.875					
19.05	±0.1	±0.18	±0.15	±0.27	P
25.4					
31.75	±0.13	±0.25	±0.18	±0.38	S
32					
					T
					C,E,M

**Notes on Insert Thickness :**  
With regard to the inserts thickness for chipbreaker inserts, the thickness (s) drawn in the outlined insert shapes on pages xx to xx is defined as "s" (height from the bottom face to the cutting edge) shown in the figure at right.

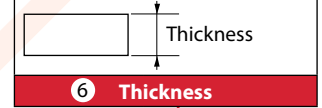


Symbol	Thickness (mm)
01	1.59
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

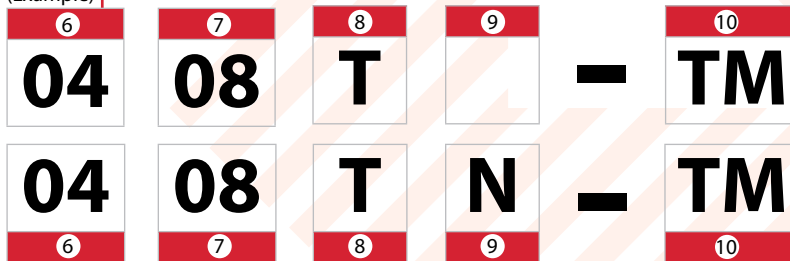
For M-type inserts those corner angles are 55°

Unit: mm

Inscribe Circle	Tolerance On Inscribe Circle Dia. (∅d)		Tolerance On Corner Height (m)	Insert Shapes Applied
	J,K,L,M,N (Class)	U (Class)		
6.35	±0.05	±0.08	±0.11	D
9.525				
12.7	±0.08	±0.15	±0.18	
15.875				
19.05	±0.1	±0.18	±0.16	V
6.35				
9.525				Y



(Example)



(Optional symbol) (Optional symbol) (Supplementary symbol)

7 Corner radius	
Symbol	Corner radius rc (mm)
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2

8 Symbols of Major Cutting Edge		
Symbol	Condition of Cutting Edge	Shape
F	Sharp edge	
E	Honed sharpened edge	
W.T	Honed chamfered edge	
S	Combination honed edge	

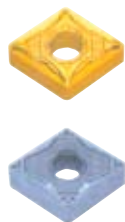
9 Head of Insert	
Symbol	Hand
R	Right
L	Left
N	Neutral

10 Chipbreaker			
Symbol	Applications	Symbol	Applications
O1 (TF)	Precision finishing (basic selection)	P	Finishing of Aluminium alloys
TS	Finishing (basic selection)	W	Finishing (angular type)
TSF	Finishing (basic selection for cermets)	PF	Precision finishing (positive type)
TM	Medium cutting (basic selection)	PS	Finish to light cutting (positive type)
TH	Medium to heavy cutting (basic selection)	PM	Medium cutting (positive type)
TU	Heavy cutting	AL	Finish to medium cutting of Aluminium alloys
DM	Medium cutting	RS	Medium cutting (for round inserts)
SS	Finishing of stainless and mild steels	W	Finishing (angular type)
SM	Medium cutting of stainless steels	H	Finishing (parallel)
S	Medium cutting of stainless steels	11	Finishing
SA	For heat-resisting alloys and stainless steels	17	Finishing ("Zebra braker")
ZF	Finishing and copying	23	Finishing (positive inserts)
ZM	Finish to medium cutting and copying	24	Finishing (positive inserts)
NS	Finishing and copying	27	Finishing ("Zebra braker")
NM	Finish to medium cutting and copying	32Y	Medium cutting
AS	Small depth of cut and high feed	33	Medium cutting (toughness breaker)
AFW	Small depth of cut and high feed (wiper type inserts)	37	Medium cutting ("Zebra breaker")
ASW	Small depth of cut and high feed (wiper type inserts)	38	Medium cutting (low cutting force)
CB	Medium cutting	51	Small depth of cut and high feed
CM	Medium cutting of cast irons	57	Heavy cutting
All round	All-round type. Medium cutting	61	Small depth of cut and high feed (for round inserts)
A	Finishing (Right and left hand)	65	Heavy cutting (three step breaker)
B	Finishing (Right and left hand)	S1	Finishing (for KNMX type)
C	Finishing (Right and left hand)	J08,J10	For small lathes
D	Finishing (Right and left hand)		

# NEGATIVE INSERT

► Negative Turning Insert C

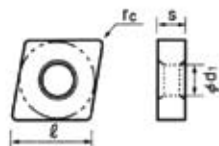
INSERT



**Rhombic, with hole**

**80°** **Negative**

**CN**



**CNMG 12 04 04 -**

Cutting edge length( $l$ ) Thickness( $s$ ) Corner radius( $r_c$ ) Chipbreaker symbol

	0903	1204	1606	1906	2509
$\phi d_1$	3.61	5.16	6.35	7.93	9.12

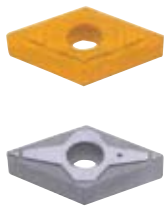
Order No.	Type	Grade	Cutting Application	Material
TGZ000001	CNMG120404-TSF	T9005	Finishing	Steel
TGZ000002		T9115		
TGZ000003		T9125		
TGZ000004		T6030		Stainless
TGZ000005	CNMG120408-TSF	T9005	Finishing	Steel
TGZ000006		T9115		
TGZ000007		T9125		
TGZ000008		T6030		Stainless
TGZ000009	CNMG120404-SS	T6020	Finishing	Stainless
TGZ000010		T6030		
TGZ000011	CNMG120408-SS	T6020	Finishing	Stainless
TGZ000012		T6030		
TGZ000013	CNMG120404-CF	T5105	Finishing	Cast Iron
TGZ000014		T5115		
TGZ000015	CNMG120408-CF	T5105	Finishing	Cast Iron
TGZ000016		T5115		
TGZ000017	CNMG120412-CF	T5105	Finishing	Cast Iron
TGZ000018		T5115		
TGZ000019	CNMG120404-HMM	AH905	Finishing To Medium	Super Alloy
TGZ000020	CNMG120408-HMM			
TGZ000021	CNMG120412-HMM			
TGZ000022	CNMG160608-HMM			
TGZ000023	CNMG160612-HMM			
TGZ000024	CNMG160616-HMM			
TGZ000025	CNMG120404-TM	T9005	Medium	Steel
TGZ000026		T9115		
TGZ000027		T9125		
TGZ000028		T6030		Stainless
TGZ000029	CNMG120408-TM	T9005	Medium	Steel
TGZ000030		T9115		
TGZ000031		T9125		
TGZ000032		T6030		Stainless
TGZ000033	CNMG120412-TM	T9005	Medium	Steel
TGZ000034		T9115		
TGZ000035		T9125		
TGZ000036		T6030		Stainless
TGZ000037	CNMG160612-TM	T9005	Medium	Steel
TGZ000038		T9115		
TGZ000039		T9125		
TGZ000040		T6030		
TGZ000041	CNMG190608-TM	T9005	Medium	Steel
TGZ000042		T9115		
TGZ000043		T9125		
TGZ000044	CNMG190612-TM	T9005	Medium	Steel
TGZ000045		T9115		
TGZ000046		T9125		
TGZ000047	CNMG120404-SM	T6020	Medium	Stainless
TGZ000048		T6030		
TGZ000049	CNMG120408-SM	T6020	Medium	Stainless
TGZ000050		T6030		
TGZ000051		T5105		
TGZ000052	CNMG120404-CM	T5115	Medium	Cast Iron
TGZ000053		T5125		
TGZ000054		T5105		
TGZ000055	CNMG120408-CM	T5115	Medium	Cast Iron
TGZ000056		T5125		
TGZ000057		T5105		
TGZ000058	CNMG120412-CM	T5115	Medium	Cast Iron
TGZ000059		T5125		
TGZ000060		T9005		
TGZ000061	CNMG120408-TH	T9115	Heavy	Steel
TGZ000062		T9125		
TGZ000063		T6030		Stainless

Order No.	Type	Grade	Cutting Application	Material
TGZ000064	CNMG120412-TH	T9005	Heavy I	Steel
TGZ000065		T9115		
TGZ000066		T9125		
TGZ000067		T6030		Stainless
TGZ000068	CNMG160612-TH	T9005	Heavy	Steel
TGZ000069		T9115		
TGZ000070		T9125		
TGZ000071		T6030		Stainless
TGZ000072	CNMG160616-TH	T9005	Heavy	Steel
TGZ000073		T9115		
TGZ000074		T9125		
TGZ000075		T6030		Stainless
TGZ000076	CNMG190612-TH	T9005	Heavy	Steel
TGZ000077		T9115		
TGZ000078		T9125		
TGZ000079		T6030		Stainless
TGZ000080	CNMG190616-TH	T9005	Heavy	Steel
TGZ000081		T9115		
TGZ000082		T9125		
TGZ000083		T6030		Stainless
TGZ000084	CNMG120404-CH	T5105	Heavy	Cast Iron
TGZ000085		T5115		
TGZ000086		T5125		
TGZ000087	CNMG120408-CH	T5105	Heavy	Cast Iron
TGZ000088		T5115		
TGZ000089		T5125		
TGZ000090	CNMG120412-CH	T5105	Heavy	Cast Iron
TGZ000091		T5115		
TGZ000092		T5125		
TGZ000093	CNMG160612-CH	T5105	Heavy	Cast Iron
TGZ000094		T5115		
TGZ000095		T5125		
TGZ000096	CNMG160616-CH	T5105	Heavy	Cast Iron
TGZ000097		T5115		
TGZ000098		T5125		
TGZ000099	CNMG190612-CH	T5105	Heavy	Cast Iron
TGZ000100		T5115		
TGZ000101		T5125		
TGZ000102	CNMG190616-CH	T5105	Heavy	Cast Iron
TGZ000103		T5115		
TGZ000104		T5125		



# NEGATIVE INSERT

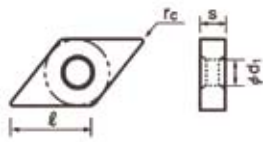
► Negative Turning Insert D



**Rhombic, with hole**

**55° Negative**

**DN** □ □



**DNMG 15 04 04 -** □ □

Cutting edge length(ℓ) Thickness(s) Corner radius(rc) Chipbreaker symbol

□ □	11 □ □	15 □ □	15 □ □
	3.81	5.16	5.16

Order No.	Catalog No	Cutting Application	Material	
TGZ000104	DNMG150412	T9005	Medium	Steel
TGZ000105		T9115		
TGZ000106		T9125		
TGZ000107	DNMG150404-TM	T6030	Medium	Stainless
TGZ000108		T9005		
TGZ000109		T9115		
TGZ000110	T9125	Medium	Steel	
TGZ000111	T6030			Stainless
TGZ000112	T9005			
TGZ000113	T9115	Medium	Steel	
TGZ000114	T9125			
TGZ000115	T6030			Medium
TGZ000116	T9005			
TGZ000117	T9115	Medium	Steel	
TGZ000118	T9125			
TGZ000119	T6030			Medium
TGZ000120	T9005			
TGZ000121	T9115	Medium	Steel	
TGZ000122	T9125			
TGZ000123	T6030			Medium
TGZ000124	T6020			
TGZ000125	T6030	Medium	Stainless	
TGZ000126	T6020			
TGZ000127	T6030			Medium
TGZ000128	T6020			
TGZ000129	T6030	Medium	Stainless	
TGZ000130	T5105			
TGZ000131	T5115			Medium
TGZ000132	T5125			
TGZ000133	T5105	Medium	Cast Iron	
TGZ000134	T5115			
TGZ000135	T5125			Medium
TGZ000136	T5105			
TGZ000137	T5115	Medium	Cast Iron	
TGZ000138	T5125			
TGZ000139	T9005			Heavy
TGZ000140	T9115			
TGZ000141	T9125	Heavy	Stainless	
TGZ000142	T6030			
TGZ000143	T9005			Heavy
TGZ000144	T9115			
TGZ000145	T9125	Heavy	Stainless	
TGZ000146	T6030			
TGZ000147	T5105			Heavy
TGZ000148	T5115			
TGZ000149	T5125	Heavy	Cast Iron	
TGZ000150	T5105			
TGZ000151	T5115			Heavy
TGZ000152	T5125			
TGZ000153	T5105	Heavy	Cast Iron	
TGZ000154	T5115			
TGZ000155	T5125			Finishing To Medium
TGZ000156	T9005			
TGZ000157	T5115	Finishing To Medium	Cast Iron	
TGZ000158	T5125			
TGZ000159	T9005			Finishing To Medium
TGZ000160	T5115			
TGZ000161	T5125			

Order No.	Catalog No	Cutting Application	Material		
TGZ000162	DNMA150412	T9005	Finishing to Medium	Steel	
TGZ000163		T5115			
TGZ000164		T5125			Cast Iron
TGZ000165	DNMG150404-TSF	T9005	Finishing	Steel	
TGZ000166		T9115			
TGZ000167		T9125			Stainless
TGZ000168	T6030	Medium	Steel		
TGZ000169	T9005				
TGZ000170	T9115			Medium	Stainless
TGZ000171	T9125				
TGZ000172	T6030	Medium	Stainless		
TGZ000173	T6020				
TGZ000174	T6030			Medium	Stainless
TGZ000175	GH330				
TGZ000176	T6020	Medium	Stainless		
TGZ000177	T6030				
TGZ000178	GH330			Medium	Stainless
TGZ000179	T6020				
TGZ000180	T6030	Medium	Stainless		
TGZ000181	T5105				
TGZ000182	T5115			Medium	Cast Iron
TGZ000183	T5105				
TGZ000184	T5115	Medium	Cast Iron		
TGZ000185	T5105				
TGZ000186	T5115			Medium	Cast Iron
TGZ000187	DNMG150404-HMM	Finishing To Medium	Super Alloy		
TGZ000188	DNMG150408-HMM				
TGZ000189	DNMG150412-HMM				

Range extended with new "AH725" grade, for steels and stainless steels!



INSERT



**NEW COMER**

**YNMG 16 type**

Corner Angular 25°!



# NEGATIVE INSERT

## ► Negative Turning Insert S

INSERT

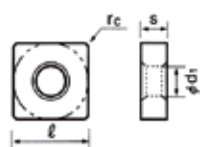


Square, with hole

90°

Negative

SN      



### SNMG 12 04 04 -

Cutting edge length( $l$ ) Thickness( $s$ ) Corner radius( $r_c$ ) Chipbreaker symbol  $\phi d_1$

	0903	1204	1506	1906	2507
SN	3.81	5.16	6.35	7.93	9.12

Order No.	Type	Grade	Cutting Condition	Material
TGZ000189	SNMG120404-TSF	T9005	Finishing	Steel
TGZ000190		T9115		
TGZ000191		T9125		
TGZ000192	SNMG120408-TSF	T9005	Finishing	Steel
TGZ000193		T9115		
TGZ000194		T9125		
TGZ000195	SNMG120412-TSF	T9005	Finishing	Steel
TGZ000196		T9115		
TGZ000197		T9125		
TGZ000198	SNMG120404-SS	T6020	Finishing	Stainless
TGZ000199		T6030		
TGZ000200		GH330		
TGZ000201	SNMG120408-SS	T6020	Finishing	Stainless
TGZ000202		T6030		
TGZ000203		GH330		
TGZ000204	SNMG120412-SS	T6020	Finishing	Stainless
TGZ000205		T6030		
TGZ000206		GH330		
TGZ000207	SNMG120408-CF	T5105	Finishing	Cast Iron
TGZ000208		T5115		
TGZ000209	SNMG120412-CF	T5105	Finishing	Cast Iron
TGZ000210		T5115		
TGZ000211	SNMG120408-HMM	AH905	Finishing To Medium	Super Alloy
TGZ000212	SNMG120412-HMM	AH905	Finishing To Medium	Super Alloy
TGZ000213	SNMG090304-TM	T9115	Medium	Steel
TGZ000214		T9125		
TGZ000215	SNMG1090308-TM	T9115	Medium	Steel
TGZ000216		T9125		
TGZ000217	SNMG120404-TM	T9005	Medium	Steel
TGZ000218		T9115		
TGZ000219		T9125		
TGZ000220		T6030		
TGZ000221	SNMG120408-TM	T9005	Medium	Steel
TGZ000222		T9115		
TGZ000223		T9125		
TGZ000224		T6030		
TGZ000225	SNMG120412-TM	T9005	Medium	Steel
TGZ000226		T9115		
TGZ000227		T9125		
TGZ000228		T6030		
TGZ000229	SNMG120408-SM	T6020	Medium	Stainless
TGZ000230		T6030		
TGZ000231	SNMG120412-SM	T6020	Medium	Stainless
TGZ000232		T6030		
TGZ000233	SNMG120408-CM	T5105	Medium	Cast Iron
TGZ000234		T5115		
TGZ000235		T5125		
TGZ000236	SNMG120412-CM	T5105	Medium	Cast Iron
TGZ000237		T5115		
TGZ000238		T5125		
TGZ000239	SNMG120408-TH	T9005	Heavy	Steel
TGZ000240		T9115		
TGZ000241		T9125		
TGZ000242		T6030		

Order No.	Catalog No	Cutting Application	Material
TGZ000244	SNMG120412-TH	T9005	Steel
TGZ000245		T9115	
TGZ000246		T9125	
TGZ000247		T6030	
TGZ000248	SNMG120408-CH	T5105	Cast Iron
TGZ000249		T5115	
TGZ000250	SNMG120412-CH	T5125	Cast Iron
TGZ000251		T5105	
TGZ000252		T5115	
TGZ000253		T5125	
TGZ000254	SNMG120416-CH	T5105	Cast Iron
TGZ000255		T5115	
TGZ000256		T5125	
TGZ000257	SNMA120404	T9005	Finishing To Medium
TGZ000258		GT720	



For More Information,  
please contact **CUTTING TOOL DIVISON**

Telp : (62-21)582-8282  
e-mail : pscuttools@kawanlama.com



# NEGATIVE INSERT

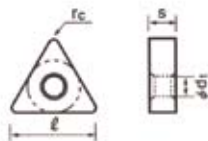
## ► Negative Turning Insert T



**Triangular, with hole**

**60°** **Negative**

**TN**



**TNMG 16 04 04 -**

Cutting edge length(*l*) Thickness(*s*) Corner radius(*r<sub>c</sub>*) Chipbreaker symbol

φd <sub>1</sub>	110□□	160□□	160□□	220□□
TN□□	2.25	3.81	3.81	5.16

INSERT

Order No.	Catalog No	Cutting application	Material
TGZ000258	TNMG160404-TSF	T9005	Steel
TGZ000259		T9115	
TGZ000260		T9125	
TGZ000261	TNMG160408-TSF	T9005	Steel
TGZ000262		T9115	
TGZ000263		T9125	
TGZ000264		T6030	
TGZ000265	TNMG160404-SS	T6020	Stainless
TGZ000266		T6030	
TGZ000267		GH330	
TGZ000268	TNMG160408-SS	T6020	Stainless
TGZ000269		T6030	
TGZ000270		GH330	
TGZ000271	TNMG160412-SS	T6020	Stainless
TGZ000272		T6030	
TGZ000273		GH330	
TGZ000274	TNMG160404-CF	T5105	Cast iron
TGZ000275		T5115	
TGZ000276	TNMG160408-CF	T5105	Cast iron
TGZ000277		T5115	
TGZ000278	TNMG160404-TM	T9005	Steel
TGZ000279		T9115	
TGZ000280		T9125	
TGZ000281		T6030	
TGZ000282	TNMG160408-TM	T9005	Steel
TGZ000283		T9115	
TGZ000284		T9125	
TGZ000285	TNMG160412-TM	T6030	Stainless
TGZ000286		T9005	
TGZ000287		T9115	
TGZ000288		T9125	
TGZ000289	TNMG160404-SM	T6020	Stainless
TGZ000290		T6030	
TGZ000291		T6020	
TGZ000292	TNMG160408-SM	T6020	Stainless
TGZ000293		T6030	

Order No.	Catalog No	Cutting application	Material	
TGZ000295	TNMG160412-SM	T6020	Medium	
TGZ000296		T6030		
TGZ000297	TNMG160404-CM	T5105	Medium	
TGZ000298		T5115		
TGZ000299		T5125		
TGZ000300	TNMG160408-CM	T5105	Medium	
TGZ000301		T5115		
TGZ000302	TNMG160412-CM	T5125	Medium	
TGZ000303		T5105		
TGZ000304		T5115		
TGZ000305	TNMG160408-TH	T5125	Heavy	
TGZ000306		T9005		Steel
TGZ000307		T9115		
TGZ000308	TNMG160412-TH	T9125	Stainless	
TGZ000309		T6030		
TGZ000310		T9005		Heavy
TGZ000311		T9115		
TGZ000312	T9125			
TGZ000313	TNMG160404-CH	T6030	Stainless	
TGZ000314		T5105		Heavy
TGZ000315		T5115		
TGZ000316	TNMG160408-CH	T5125	Cast iron	
TGZ000317		T5105		
TGZ000318		T5115		
TGZ000319	TNMG160412-CH	T5125	Heavy	
TGZ000320		T5105		Cast iron
TGZ000321		T5115		
TGZ000322	TNMA160404	T5125	Finishing to Medium	
TGZ000323		T9005		Steel
TGZ000324		T5105		
TGZ000325		T5115		
TGZ000326	TNMA160408	T5125	Cast iron	
TGZ000327		T9005		Finishing to Medium
TGZ000328		T5105		
TGZ000329		T5115		
TGZ000330	TNMA160412	T5125	Stainless	
TGZ000331		T9005		Finishing to Medium
TGZ000332		T5105		
TGZ000333		T5115		
TGZ000334	TNMA160412	T5125	Cast iron	
		T5115		



CVD coated grade for turning of stainless steels

**T6000** Series

Combination of special substrates and extremely high coating adhesion

**SS**

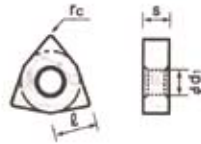
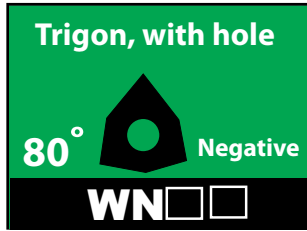
for finishing

**SM**

1st choice

# NEGATIVE INSERT

► Negative Turning Insert W



**WNUMG 08 04 04 -**

Cutting edge length(L) Thickness(s) Corner radius(Rc) Chipbreaker symbol

φ d <sub>1</sub>	060	080	100	130
WNUMG	3.81	5.16	6.35	7.93

INSERT

8

Order No.	Catalog No.	Grade	Cutting Application	Material
TGZ000335	WNUMG080404-TSF	T9115	Finishing	Steel
TGZ000336		T9125		
TGZ000337	WNUMG080408-TSF	T9115	Finishing	Steel
TGZ000338		T9125		
TGZ000339	WNUMG080404-SS	T6020	Finishing	Stainless
TGZ000340		T6030		
TGZ000341		GH330		
TGZ000342		T6020		
TGZ000343	WNUMG080408-SS	T6030	Finishing	Stainless
TGZ000344		GH330		
TGZ000345	WNUMG080404-CF	T5105	Finishing	Cast Iron
TGZ000346		T5115		
TGZ000347	WNUMG080408-CF	T5105	Finishing	Cast Iron
TGZ000348		T5115		
TGZ000349	WNUMG080404-HMM	AH905	Finishing to Medium	Super Alloy
TGZ000350	WNUMG080408-HMM			
TGZ000351	WNUMG080412-HMM			
TGZ000352	WNUMG080404-TM	T9005	Medium	Steel
TGZ000353		T9115		
TGZ000354		T9125		
TGZ000355	WNUMG080408-TM	T9005	Medium	Steel
TGZ000356		T9115		
TGZ000357		T9125		
TGZ000358	WNUMG080412-TM	T9005	Medium	Steel
TGZ000359		T9115		
TGZ000360		T9125		Stainless
TGZ000361		T6030		
TGZ000362	WNUMG080404-SM	T6020	Medium	Stainless
TGZ000363		T6030		
TGZ000364	WNUMG080408-SM	T6020	Medium	Stainless
TGZ000365		T6030		
TGZ000366	WNUMG080412-SM	T6020	Medium	Stainless
TGZ000367		T6030		
TGZ000368	WNUMG080408-CM	T5105	Medium	Cast Iron
TGZ000369		T5115		
TGZ000370		T5125		

Order No.	Catalog No.	Grade	Cutting Application	Material
TGZ000372	WNUMG080412-CM	T5105	Medium	Cast Iron
TGZ000373		T5115		
TGZ000374		T5125		
TGZ000375	WNUMG080408-TH	T9005	Medium to Heavy	Steel
TGZ000376		T9115		
TGZ000377		T9125		Stainless
TGZ000378		T6030		
TGZ000379	WNUMG080412-TH	T9005	Medium to Heavy	Steel
TGZ000380		T9115		
TGZ000381		T9125		Stainless
TGZ000382	T6030			
TGZ000383	WNUMG080408-CH	T5105	Medium to Heavy	Cast Iron
TGZ000384		T5115		
TGZ000385		T5125		
TGZ000386	WNUMG080412-CH	T5105	Medium to Heavy	Cast Iron
TGZ000387		T5115		
TGZ000388		T5125		
TGZ000389	WNMA080404	T9005	Finishing to Medium	Steel
TGZ000390		T5105		
TGZ000391		T5115		Cast Iron
TGZ000392	WNMA080408	T9005	Finishing to Medium	
TGZ000393		T5115		Cast Iron
TGZ000394	WNMA080412	T9005	Finishing to Medium	
TGZ000395		T5115		Cast Iron



For More Information,  
please contact **CUTTING TOOLS DIVISON**

Telp : (62-21)582-8282  
e-mail : pscuttools@kawanlama.com



# NEGATIVE INSERT

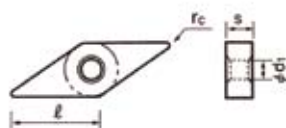
► Negative Turning Insert V



Rhombic, with hole

35° Negative

VN □ □



**VNMG 16 04 04 -** □ □

Cutting edge length (l) Thickness (s) Corner radius (rc) Chipbreaker symbol  $\phi ds$

	1604□□
VN□□	3.81

Order No.	Catalog No	Cutting Application	Material
TGZ000396	VNMG160404-TSF	T9005	Steel
TGZ000397		T9115	
TGZ000398		T9125	
TGZ000399	VNMG160408-TSF	T9005	Steel
TGZ000400		T9115	
TGZ000401		T9125	
TGZ000402	VNMG160412-TSF	T9005	Steel
TGZ000403		T9115	
TGZ000404		T9125	
TGZ000405	VNMG160404-SS	T6020	Stainless
TGZ000406		T6030	
TGZ000407		GH330	
TGZ000408	VNMG160408-SS	T6020	Stainless
TGZ000409		T6030	
TGZ000410		GH330	
TGZ000411	VNMG160412-SS	T6020	Stainless
TGZ000412		T6030	
TGZ000413		GH330	
TGZ000414	VNMG160404-CF	T5105	Cast Iron
TGZ000415		T5115	
TGZ000416	VNMG160408-CF	T5105	Cast Iron
TGZ000417		T5115	
TGZ000418	VNMG160404-HMM	AH905	Super Alloy
TGZ000419	VNMG160408-HMM	AH905	
TGZ000420	VNMG160412-HMM	AH905	
TGZ000421	VNMG160404-TM	T9005	Steel
TGZ000422		T9115	
TGZ000423		T9125	

Order No.	Catalog No	Cutting Application	Material
TGZ000424	VNMG160408-TM	T6030	Stainless Steel
TGZ000425		T9005	Steel
TGZ000426		T9115	
TGZ000427	VNMG160412-TM	T9125	Medium
TGZ000428		T9005	
TGZ000429		T9115	
TGZ000430		T9125	
TGZ000431	VNMG160408-SM	T6030	Stainless
TGZ000432		T6020	Medium
TGZ000433	T6030	Stainless	
TGZ000434	VNMG160408-CM	T5105	Medium
TGZ000424		T5115	
TGZ000425		T5125	
TGZ000426	VNMG160412-CM	T5105	Medium
TGZ000427		T5115	
TGZ000428		T5125	
TGZ000429	VNMA160404	T9005	Steel
TGZ000430		T5105	Medium
TGZ000431		T5115	
TGZ000432	VNMA160408	T9005	Steel
TGZ000433		T5105	Medium
TGZ000434		T5115	

**CH**  
Chipbreaker with reinforced cutting-edge

CVD coated grade for turning grey cast iron and ductile cast iron.  
**T5100 Series**  
T5100 Trilogy. Three types of insert grades and three chipbreaker types can be applied to almost all machining.

**CF**  
Low cutting-force chipbreaker

**CM**  
1st choice chipbreaker

## NEGATIVE INSERT

### ► Negative Turning Insert R

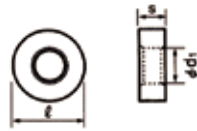


**Round, with hole**

**Round, with hole**

**Negative**

**RN** □ □



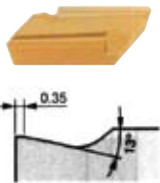
**RNMG 12 04 00 -** □ □

Cutting edge length(l) Thickness(s) Corner radius(rc) Chipbreaker symbol

Grade	090300	120400	150600	190600	250900	310900
RN	3.81	5.16	6.43	7.93	9.22	12.78

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000435	RNMG090300-61	T9005	Heavy	Steel
TGZ000436		T9015		
TGZ000437		T9025		
TGZ000438	RNMG120400-61	T9005	Heavy	Steel
TGZ000439		T9015		
TGZ000440		T9025		
TGZ000441	RNMG150600-61	T9005	Heavy	Steel
TGZ000442		T9015		
TGZ000443		T9025		
TGZ000444	RNGA120400	LX11	Finishing to Medium	Hard Material
TGZ000445	RNGN120400	FX105	Finishing to Medium	Cast Iron
TGZ000446		LX11		Hard Material
TGZ000447	RNGN120700	LX11	Finishing to Medium	Hard Material

### ► Negative Turning Insert K



**Parallelogram, Without Hole**

**55° Negative**

**KNMX**



**KNMX 16 04 05 R -** □ □

Cutting edge length(l) Thickness(s) Corner radius(rc) Hand of insert Chipbreaker symbol

Order No.	Catalog No	Grade	Cutting application	Material
TGZ000448	KNMX160405L-S1	GH330	Finishing	Stainless
TGZ000449		T9015		Steel
TGZ000450		GH330		Stainless
TGZ000451	KNMX160410R-S1	T9015	Finishing	Steel
TGZ000452	KNMX160410L-S1	T9015	Finishing	Steel



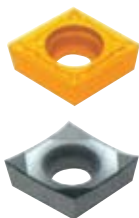
# HSK SYSTEM

### Features :

- Used for high-efficiency, high quality machining on machining centers, turning centers and special purpose machines
- High speed operations are possible (More than 10,000min<sup>-1</sup>)
- High rigidity and excellent resistance to bending and cutting torque. Three to six times those of conventional BT shank holder
- Highly accurate repeatability for repeated head changing
- Ensures high-speed, high-feed machining, and highly rapid tool changing
- Extended application to modular tooling

# POSITIVE INSERT

► Positive Turning Insert C



Rhombic, with hole

80° Positive 7°

**CC**

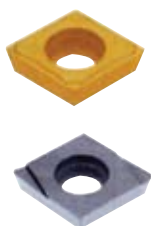
## CCGT 06 02 02 -

Cutting edge length(l) Thickness(s) Corner radius(r<sub>c</sub>) Chipbreaker symbol

0602 <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px; vertical-align: middle;"></span> 09T3 <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px; vertical-align: middle;"></span> 1204 <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px; vertical-align: middle;"></span>
CC <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px; vertical-align: middle;"></span> T(W) 2.8 4.4 5.5

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000453	<b>CCMT09T302-PS</b>	T9115	Finishing to Medium	Steel
TGZ000454		T9125		
TGZ000455		T6020		Stainless
TGZ000456		T6030		
TGZ000457		AH725		
TGZ000458	<b>CCMT09T304-PS</b>	T9115	Finishing to Medium	Steel
TGZ000459		T9125		
TGZ000460		T6020		Stainless
TGZ000461		T6030		
TGZ000462		AH725		Steel
TGZ000463		<b>CCMT09T308-PS</b>		T9115
TGZ000464	T9125			
TGZ000465	T6020		Stainless	
TGZ000466	T6030			
TGZ000467	AH725			Steel

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000468	<b>CCGT09T304-AL</b>	KS05F	Finishing to Medium	Non Ferrous
TGZ000469	<b>CCGT09T308-AL</b>	KS05F	Finishing to Medium	Non Ferrous
TGZ000470	<b>CCMT09T304-PM</b>	T9015	Finishing to Medium	Steel
TGZ000471		T9025		
TGZ000472		T6020		Stainless
TGZ000473		T6030		
TGZ000468	<b>CCMT09T308-PM</b>	GH730	Finishing to Medium	Steel
TGZ000469		T9015		Steel
TGZ000470		T9025		
TGZ000471		T6020		Stainless
TGZ000472		T6030		
TGZ000473	GH730	Steel		



Rhombic, with hole

80° Positive 11°

**CP**

## CPGT 05 02 02 -

Cutting edge length(l) Thickness(s) Corner radius(r<sub>c</sub>) Chipbreaker symbol

0602 <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px; vertical-align: middle;"></span> 09T3 <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px; vertical-align: middle;"></span> 1204 <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px; vertical-align: middle;"></span>
CC <span style="border: 1px solid black; display: inline-block; width: 10px; height: 10px; vertical-align: middle;"></span> T(W) 2.8 4.4 5.5

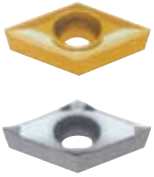
Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000474	<b>CPMT090304-PS</b>	T9115	Finishing to Medium	Steel
TGZ000475		T9125		
TGZ000476		T6020		Stainless
TGZ000477		T6030		
TGZ000478		AH725		
TGZ000479	NS730	Steel		
TGZ000480	<b>CPMT090308-PS</b>	T9115	Finishing to Medium	Steel
TGZ000481		T9125		
TGZ000482		T6020		Stainless
TGZ000483		T6030		
TGZ000484		AH725		Steel
TGZ000485		NS730		

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000486	<b>CPMT090304-PM</b>	T9015	Finishing to Medium	Steel
TGZ000487		T9025		
TGZ000488		T6020		Stainless
TGZ000489		T6030		
TGZ000490		AH725		
TGZ000491	NS730	Steel		
TGZ000492	<b>CPMT090308-PM</b>	T9015	Finishing to Medium	Steel
TGZ000493		T9025		
TGZ000494		T6020		Stainless
TGZ000495		T6030		
TGZ000496		AH725		Steel
TGZ000497		NS730		


# POSITIVE INSERT

► Positive Turning Insert D

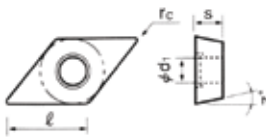
INSERT



Rhombic, with hole

55°

Positive  
7°

DC



DCGT 07 02 02 -    

Cutting edge length( $l$ ) Thickness( $s$ ) Corner radius( $r_c$ ) Chipbreaker symbol

DC <span style="border: 1px solid black; padding: 0 2px;"> </span> T <span style="border: 1px solid black; padding: 0 2px;"> </span> W	0702 <span style="border: 1px solid black; padding: 0 2px;"> </span> <span style="border: 1px solid black; padding: 0 2px;"> </span>	11T <span style="border: 1px solid black; padding: 0 2px;"> </span> <span style="border: 1px solid black; padding: 0 2px;"> </span>
	2.8	4.4

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000498	DCMT11T302-PS	T9115	Finishing To Medium	Steel
TGZ000499		T9125		
TGZ000500		T6020		Stainless
TGZ000501		T6030		
TGZ000502		GH730		
TGZ000503	DCMT11T304-PS	T9115	Finishing To Medium	Steel
TGZ000504		T9125		
TGZ000505		T6020		Stainless
TGZ000506		T6030		
TGZ000507		GH730		
TGZ000508	DCMT11T308-PS	T9115	Finishing To Medium	Steel
TGZ000509		T9125		
TGZ000510		T6020		Stainless
TGZ000511		T6030		
TGZ000512		GH730		

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000513	DCGT11T302-AL	KS05F	Finishing To Medium	Non Ferrous
TGZ000514	DCGT11T304-AL	KS05F	Finishing To Medium	Non Ferrous
TGZ000515	DCGT11T308-AL	KS05F	Finishing To Medium	Non Ferrous
TGZ000516	DCMT11T304-PM	T9015	Medium	Steel
TGZ000517		T9025		
TGZ000518		T6020		Stainless
TGZ000519		T6030		
TGZ000520		GH730		
TGZ000521	AH725	Steel		
TGZ000522	DCMT11T308-PM	T9015	Medium	Steel
TGZ000523		T9025		
TGZ000524		T6020		Stainless
TGZ000525		T6030		
TGZ000526		GH730		
TGZ000527		AH725		Steel

8

## GIGA JET DRILL DSX-type

Internal coolant supply

• **Best suited to MQL (semy-dry) machining**

Performs excellent chip control in MQL (semi-dry) machining

• **Best suited to machining of stainless steels**

The high-speed, high-feed capabilities and the excellent chip control allo high-efficiency drilling



# POSITIVE INSERT

## ► Positive Turning Insert S



Square, with hole

90°

Positive  
7°

SC

### SCMT 07 02 04 -

Cutting edge length(l) Thickness(s) Corner radius(rc) Chipbreaker symbol

	0702	09T3	1204
SC(T)(W)	3.4	4.4	5.5

Order No.	Catalog No	Cutting Application	Material
TGZ000528	SCMT09T304-PS	T9115	Steel
TGZ000529		T9125	
TGZ000530		T6030	St.St
TGZ000531	SCMT09T308-PS	T9115	Steel
TGZ000532		T9125	St.St
TGZ000533		T6030	



Square, with hole

90°

Positive  
11°

SP

### SPMT 09 03 04 -

Cutting edge length(l) Thickness(s) Corner radius(rc) Chipbreaker symbol

	0702	09T3	1204
SC(T)(W)	3.4	4.4	5.5

Order No.	Catalog No	Cutting Application	Material
TGZ000534	SPMT090304-PS	T9115	Steel
TGZ000535		T9125	
TGZ000536		T6030	St.St
TGZ000537	SPMT090308-PS	T9115	Steel
TGZ000538		T9125	St.St
TGZ000539		T6030	

## ► Positive Turning Insert W



Trigon, with hole

80°

Positive  
5°

WB

### WBG T 03 01 02 -

Cutting edge length(l) Thickness(s) Corner radius(rc) Chipbreaker symbol

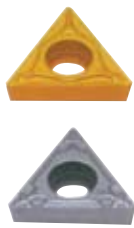
	0301	0601	0802
WBG T	2.3	2.3	2.3

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000540	WBG T030102L-W08	GH110	Finishing	Non Ferrous
TGZ000541		TH10		Cast Iron
TGZ000542		NS530		Steel
TGZ000543		UX30		
TGZ000544	WBG T080202L-W11	NS530	Finishing	Steel
TGZ000545	WBG T080204L-W11	NS530	Finishing	Steel

# POSITIVE INSERT

## ► Positive Turning Insert T

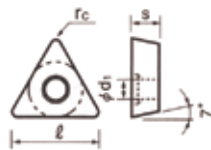
INSERT



**Triangular, with hole**

**90°** **Positive**  
**7°**

**TC**



**TCGT 09 02 02 -**

Cutting edge length( $l$ ) Thickness( $s$ ) Corner radius( $r_c$ ) Chipbreaker symbol

$\phi d_1$	0902	1102	16T3
TC	2.5	2.8	4.4

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000546	TCGT090204-01	GT530	Precision Finishing	Steel
TGZ000547		NS520		
TGZ000548		NS530		
TGZ000549		TH10		
TGZ000550	TCGT110204-01	NS520	Precision Finishing	Steel
TGZ000551		NS530		
TGZ000552	TCGT110208-01	NS530	Precision Finishing	Steel
TGZ000553	TCMT110204-PS	T6020	Finishing to Medium	Stainless
TGZ000554		T6030		Steel
TGZ000555		T9115		Steel

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000572	TCMT110208-PS	T9125	Finishing to Medium	Steel
TGZ000573		GH730		
TGZ000574	TCGT110202-AL	KS05F	Finishing to Medium	Non Ferrous
TGZ000575	TCGT110204-AL	KS05F	Finishing to Medium	Non Ferrous
TGZ000576	TCMT110204-PM	T9015	Medium	Steel
TGZ000577		T9025		Stainless
TGZ000578		T6020		
TGZ000579		T6030		
TGZ000580	TCMT110208-PM	T9015	Medium	Steel
TGZ000581		T9025		Stainless
TGZ000582		T6020		
TGZ000583		T6030		

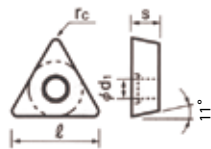
8



**Triangular, with hole**

**90°** **Positive**  
**11°**

**TP**



**TPGT 09 02 02 -**

Cutting edge length( $l$ ) Thickness( $s$ ) Corner radius( $r_c$ ) Chipbreaker symbol

$\phi d_1$	0902	1102	16T3
TC	2.5	2.8	4.4

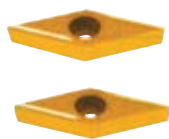
Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000556	TPGT090202-01	GT530	Precision Finishing	Steel
TGZ000557		NS530		
TGZ000558	TPGT090204-01	GT530	Precision Finishing	Steel
TGZ000559		NS520		
TGZ000560		NS530		
TGZ000561	TPGT110202-01	GT530	Precision Finishing	Steel
TGZ000562		NS530		
TGZ000563	TPGT110204-01	GT530	Precision Finishing	Steel
TGZ000564		NS520		
TGZ000565		NS530		
TGZ000566		TH10		Cast Iron
TGZ000567	TPGT110208-01	NS530	Precision Finishing	Steel
TGZ000568	TPMT090202-PS	T9115	Finishing to Medium	Steel
TGZ000569		T9125		Stainless
TGZ000570		T6020		
TGZ000571		T6030		

Order No.	Catalog No.	Grade	Cutting Condition	Material
TGZ000584	TPMT090204-PS	T9115	Finishing to Medium	Steel
TGZ000585		T9125		Stainless
TGZ000586		T6020		
TGZ000587		T6030		
TGZ000588	TPMT090208-PS	T9115	Finishing to Medium	Steel
TGZ000589		T9125		Stainless
TGZ000590		T6020		
TGZ000591	T6030			
TGZ000592	TPMT110204-PM	T9015	Medium	Steel
TGZ000593		T9025		Stainless
TGZ000594		T6020		
TGZ000595		T6030		
TGZ000596	TPMT110208-PM	T9015	Medium	Steel
TGZ000597		T9025		Stainless
TGZ000598		T6020		
TGZ000599		T6030		
TGZ000600	TPMR110304-PS	T9125	Finishing to Medium	Steel
TGZ000601	TPMR110308-PS	T9125	Finishing to Medium	Steel



# POSITIVE INSERT

► Positive Turning Insert V



Rhombic, with hole

**35°** Positive **5°**

**VB** □ □

## VBMT 11 03 02 - □ □

Cutting edge length(l) Thickness(s) Corner radius(fc) Chipbreaker symbol

	1103 □ □	1604 □ □
VB □ T	2.8	4.4

Order No.	Catalog No		Cutting application	Material
TGZ000602	VBMT110304-PF	T9015	Finishing to Medium	Steel
TGZ000603		T9025		
TGZ000604		T6020		Stainless
TGZ000605		T6030		
TGZ000606		GT730		
TGZ000607	VBMT110308-PF	T9015	Finishing to Medium	Steel
TGZ000608		T9025		Stainless
TGZ000609		T6020		
TGZ000610		T6030		
TGZ000611	VBMT110302-PS	T9115	Finishing to Medium	Steel
TGZ000612		T9125		Stainless
TGZ000613		T6030		
TGZ000614	VBMT110304-PS	T9115	Finishing to Medium	Steel
TGZ000615		T9125		Stainless
TGZ000616		T6030		
TGZ000617	VBMT110308-PS	T9115	Finishing to Medium	Steel
TGZ000618		T9125		Stainless
TGZ000619		T6030		

Rhombic, with hole

**35°** Positive **7°**

**VC** □ □

## VCMT 11 03 02 - □ □

Cutting edge length(l) Thickness(s) Corner radius(fc) Chipbreaker symbol

	1103 □ □	1604 □ □
VB □ T	2.8	4.4

Order No.	Catalog No		Cutting application	Material
TGZ000620	VCMT110308-PS	T9125	Finishing to Medium	Stainless
TGZ000621		T6030		
TGZ000622		T9125		Steel
TGZ000623		T6030		Stainless
TGZ000624	VCGT160404-AL	KS05F	Finishing to Medium	Non Ferrous
TGZ000625	VCGT160408-AL	KS05F	Finishing to Medium	Non Ferrous
TGZ000626	VCGT160412-AL	KS05F	Finishing to Medium	Non Ferrous

# POSITIVE INSERT

► Positive Turning Insert R

PCBN INSERT



Round, with hole

Positive  
7°

RC

RCGT 06 02 M0 -

Cutting edge length(l) Thickness(s) Corner radius(rc) Chipbreaker symbol  
Hole dia.(ød1) : See as follows.

Order No.	Catalog No		Cutting Application	Material
TGZ000627	RCMT10T3M0-RS	T9015	Finishing to Medium	Steel
TGZ000628		T9025		
TGZ000629	RCMT1204M0-RS	T9015	Finishing to Medium	Steel
TGZ000630		T9025		
TGZ000631	RCMT1606M0-RS	T9015	Finishing to Medium	Steel
TGZ000632		T9025		
TGZ000633	RCGT0602M0-AL	KS05F	Finishing to Medium	Non Ferrous
TGZ000634	RCGT0803M0-AL	KS05F	Finishing to Medium	Non Ferrous
TGZ000635	RCGT1003M0-AL	KS05F	Finishing to Medium	Non Ferrous
TGZ000636	RCMT0502M0-61	T9015	Heavy	Steel
TGZ000637		T9025		Cast Iron
TGZ000638		TH10		Cast Iron
TGZ000639	RCMT0602M0-61	T9015	Heavy	Steel
TGZ000640		T9025		Cast Iron
TGZ000641		TH10		Cast Iron
TGZ000642	RCMT0803M0-61	T9015	Heavy	Steel
TGZ000643		T9025		Cast Iron
TGZ000644		TH10		Cast Iron

8

## T-CBN series

For hardened steels and hard materials.

**BXM10 BXM20  
BX310 BX330 BX360 BX380**

For ferrous sintered materials.  
**BX470 BX480 BX950**

For grey cast irons and ductile cast irons.

**BXC90  
BX930 BX950 BX850**

For super alloys and difficult-to-cut materials.  
**BX950 BX480**



# T-CBN (PCBN) INSERT

TCBN-Negative Insert C								
Order No.	Catalog No.		Grade	Cutting Application	Material			
TGZ000645	2QP-CNGA120404		BXM20	Continuous to Interrupted	Hardened Steel 60 HRC			
TGZ000646			BXM10	Continuous High Speed Machining	Hardened Steel 60 HRC			
TGZ000647			BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC			
TGZ000648			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron			
TGZ000649	2QP-CNGA120408			BXM20	Continuous to Interrupted	Hardened Steel 60 HRC		
TGZ000650				BXM10	Continuous High Speed Machining	Hardened Steel 60 HRC		
TGZ000651				BX480	Continuous to Heavily Interrupted	Super Alloy		
TGZ000652				BX930	High Speed Continuous to Lightly Interrupted	Cast Iron		
TGZ000653	2QP-CNGA120412				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000654					BX380	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000655					BX480	Continuous to Heavily Interrupted	Super Alloy	
TGZ000656					BX930	High Speed Continuous to Lightly Interrupted	Cast Iron	
TCBN-Negative Insert D								
TGZ000657	2QP-DNGA150404				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000658					BXM10	Continuous High Speed Machining	Hardened Steel 60 HRC	
TGZ000659					BX930	High Speed Continuous to Lightly Interrupted	Cast Iron	
TGZ000660	2QP-DNGA150408				BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000661					BXM10	Continuous High Speed Machining	Hardened Steel 60 HRC	
TGZ000662					BX930	High Speed Continuous to Lightly Interrupted	Cast Iron	
TGZ000663	2QP-DNGA150412					BXM10	Continuous to Lightly Interrupted	Hardened Steel 60 HRC
TGZ000664				BX480		Continuous to Heavily Interrupted	Super Alloy	
TGZ000665				BX930		High Speed Continuous to Lightly Interrupted	Cast Iron	
TCBN-Negative insert S								
TGZ000666	2QP-SNGA120404					BXM20	Continuous to Interrupted	Hardened Steel 60 HRC
TGZ000667						BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC
TGZ000668		BX480				Continuous to Heavily Interrupted	Super Alloy	
TGZ000669		BX930				High Speed Continuous to Lightly Interrupted	Cast Iron	
TGZ000670	2QP-SNGA120408					BXM20	Continuous to Interrupted	Hardened Steel 60 HRC
TGZ000671			BX360			Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000672			BX480			Continuous to Heavily Interrupted	Super Alloy	
TGZ000673			BX930			High Speed Continuous to Lightly Interrupted	Cast Iron	
TGZ000674	2QP-SNGA120412				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000675					BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000676					BX480	Continuous to Heavily Interrupted	Super Alloy	
TGZ000677					BX930	High Speed Continuous to Lightly Interrupted	Cast Iron	
TCBN-Negative Insert T								
TGZ000678	3QP-TNGA160404				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000679					BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000680					BX480	Continuous to Heavily Interrupted	Super Alloy	
TGZ000681		BX930			High Speed Continuous to Lightly Interrupted	Cast Iron		
TGZ000682	3QP-TNGA160408				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000683					BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000684					BX480	Continuous to Heavily Interrupted	Super Alloy	
TGZ000685			BX930		High Speed Continuous to Lightly Interrupted	Cast Iron		
TGZ000686	3QP-TNGA160412				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000687					BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000688					BX480	Continuous to Heavily Interrupted	Super Alloy	
TGZ000689					BX930	High Speed Continuous to Lightly Interrupted	Cast Iron	
T-CBN Negative Insert V								
TGZ000690	2QP-VNGA160404				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000691					BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000692					BX480	Continuous to Heavily Interrupted	Super Alloy	
TGZ000693		BX930			High Speed Continuous to Lightly Interrupted	Cast Iron		
TGZ000694	2QP-VNGA160408				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000695					BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000696					BX480	Continuous to Heavily Interrupted	Super Alloy	
TGZ000697			BX930		High Speed Continuous to Lightly Interrupted	Cast Iron		
T-CBN Negative Insert W								
TGZ000698	3QP-WNGA080408				BXM20	Continuous to Interrupted	Hardened Steel 60 HRC	
TGZ000699					BX360	Medium to Heavily Interrupted Machining	Hardened Steel 60 HRC	
TGZ000700					BX480	Continuous to Heavily Interrupted	Super Alloy	
TGZ000701				BX930	High Speed Continuous to Lightly Interrupted	Cast Iron		

# T-CBN (PCBN) INSERT

PCBN INSERT

## TCBN-Positive Insert C

Order No.	Catalog No.		Grade	Cutting Application	Material
TGZ000702	2QP-CCMW060202		BX330	Continuous Light Interrupted	Hardened Steel 60 HRC
TGZ000703			BX360	Medium to Heavily Interrupted	Hardened Steel 60 HRC
TGZ000704			BXC30	Continuous High-Speed	Hardened Steel 60 HRC
TGZ000705	BX330		Continuous Light Interrupted	Hardened Steel 60 HRC	
TGZ000706	2QP-CCMW060204		BX930	High Speed Continuous to Lightly Interrupted	Cast Iron
TGZ000707	2QP-CCMW09T304		BX950	Continuous to Heavy Interrupted	Super Alloy
TGZ000708			BXC30	Continuous High-Speed	Hardened Steel 60 HRC
TGZ000709			BX330	Continuous Light Interrupted	Hardened Steel 60 HRC
TGZ000710			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron
TGZ000711			BX950	Continuous to Heavy Interrupted	Super Alloy
TGZ000712	2QP-CCMW09T308	BXC30	Continuous High Speed	Hardened Steel 60 HRC	
TGZ000713		BX330	Continuous Light Interrupted	Hardened Steel 60 HRC	

## T-CBN Positive Insert D

TGZ000714	2QP-DCMW11T304		BXC30	Continuous High Speed	Hardened Steel 60 HRC
TGZ000715			BX330	Continuous Light Interrupted	Hardened Steel 60 HRC
TGZ000716			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron
TGZ000717	BX950		Continuous to Heavy Interrupted	Super Alloy	
TGZ000718	2QP-DCMW11T308		BXC30	Continuous High Speed	Hardened Steel 60 HRC
TGZ000719			BX330	Continuous Light Interrupted	Hardened Steel 60 HRC

## T-CBN Positive Insert S

TGZ000720	2QP-SPMN090304		BX330	Continuous High Speed	Hardened Steel 60 HRC
TGZ000721			BX360	Medium to Heavily Interrupted	Hardened Steel 60 HRC
TGZ000722			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron

## T-CBN Positive Insert T

TGZ000723	3QP-TPMN110304		BX330	Continuous High Speed	Hardened Steel 60 HRC
TGZ000724			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron
TGZ000725			BX950	Continuous to Heavy Interrupted	Super Alloy
TGZ000726	3QP-TPMN110308		BX330	Continuous High Speed	Hardened Steel 60 HRC
TGZ000727			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron
TGZ000728			BX950	Continuous to Heavy Interrupted	Super Alloy
TGZ000729	3QP-TPMW090204		BXC30	Continuous High Speed	Hardened Steel 60 HRC
TGZ000730			BX330	Continuous Light Interrupted	Hardened Steel 60 HRC
TGZ000731			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron
TGZ000732	3QP-TPMW110302		BXC30	Continuous High Speed	Hardened Steel 60 HRC
TGZ000733		BX330	Continuous Light Interrupted	Hardened Steel 60 HRC	
TGZ000734		BX930	High Speed Continuous to Lightly Interrupted	Cast Iron	
TGZ000735	3QP-TPMW110304	BXC30	Continuous High Speed	Hardened Steel 60 HRC	
TGZ000736		BX330	Continuous Light Interrupted	Hardened Steel 60 HRC	
TGZ000737		BX950	Continuous to Heavy Interrupted	Super Alloy	

## T-CBN Positive Insert V

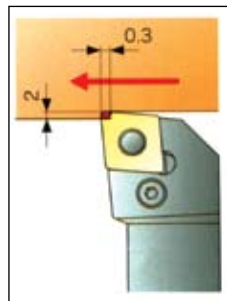
TGZ000738	2QP-VBMW110304		BXC30	Continuous High Speed	Hardened Steel 60 HRC
TGZ000739			BX330	Continuous Light Interrupted	Hardened Steel 60 HRC
TGZ000740			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron
TGZ000741	2QP-VBMW160404		BXC30	Continuous High Speed	Hardened Steel 60 HRC
TGZ000742			BX330	Continuous Light Interrupted	Hardened Steel 60 HRC
TGZ000743			BX360	Medium to Heavily Interrupted	Hardened Steel 60 HRC
TGZ000744	2QP-VCMW160404		BX330	Continuous Light Interrupted	Hardened Steel 60 HRC
TGZ000745			BX360	Medium to Heavily Interrupted	Hardened Steel 60 HRC
TGZ000746			BX930	High Speed Continuous to Lightly Interrupted	Cast Iron

# TURNING X

Double Clamp



▶ External Turning

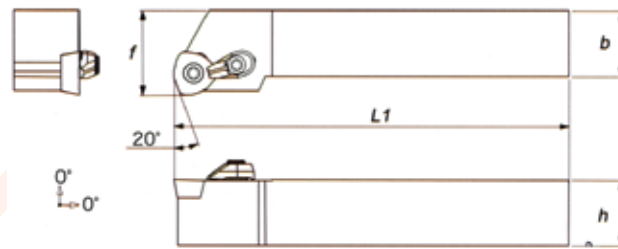
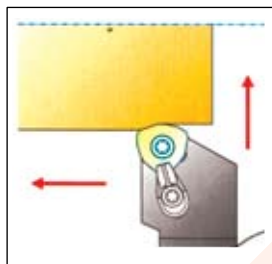


Specifications	
Vc(m/min)	150
ap (mm)	2
f (mm/rev)	0.3
Material	SS400

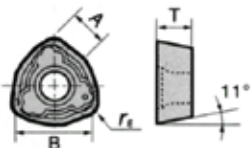
Highfeed



Specifications	
Vc(m/min)	150
ap (mm)	2
f (mm/rev)	2.5
Material	SS400

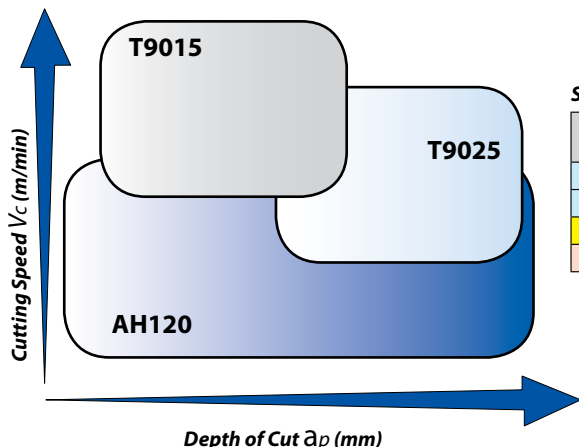


Order No.	Cat. No.	Type		Dimensions (mm)				Applicable Insert	Clamp Set	Screw	Spanner
		R	L	h	b	L1	f				
	XWXPR/L2525M09	●	●	25	25	150	32	WPMT090725ZPR/L-ML	CSY-20	CSPB-5	IP-20T
	XWXPR/L3232P09	●	●	32	32	170	40				
	XWXPR/L4040S09	●	●	40	40	200	50				



Order No.	Cat. No.	Tolerance	Grade			Dimension (mm)			
			T9115	T9125	AH120	A	B	T	rε
	WPMT090725ZPR-ML	M	●	●	●	9	15	7	2.5
	WPMT090725ZPL-ML		●	●	●				

Application Diagram



Standard Application

Material	Size	Chip Breaker	Speed Vc(m/min)	Depth of Cut ap(mm)	Feeding f(mm/rev)
(SS400,S25C)180HB	T9025	ML	150(100-250)	0.5-2.5	1.5(0.5-2.5)
(S50C,SCM440)300HB	T9015				
(SUS304,SUS316)250HB	T9025				
(FC250,FCD400)	T9015				

# TAC TOOLHOLDER FOR EXTERNAL TURNING

## ► Negative Rake

Order No.	Catalog No.	h	b	l1	Applicable Insert	Shape
TGZ000747	ACLNL2020K12-A	20	20	125	CN__ 1204__	
TGZ000748	ACLNR2525M12-A	25	25	150		
TGZ000749	ACLNL2525M12-A	25	25	150		
TGZ000750	AWLNL2020K08-A	20	20	125	WN__ 0804__	
TGZ000751	AWLNR2525M08-A	25	25	150		
TGZ000752	AWLNL2525M08-A	25	25	150		
TGZ000753	ADJNR2020K15-A	20	20	125	DN__ 1504__	
TGZ000754	ADJNL2020K15-A	20	20	125		
TGZ000755	ADJNR2525M15-A	25	25	150		
TGZ000756	ADJNL2525M15-A	25	25	150	TN__ 1604__	
TGZ000757	ATGNR2020K16-A	20	20	125		
TGZ000758	ATGNL2020K16-A	20	20	125		
TGZ000759	ATGNR2525M16-A	25	25	150	CN__ 0903__	
TGZ000760	ATGNL2525M16-A	25	25	150		
TGZ000761	PCLNR2020K09	20	20	125		
TGZ000762	PCLNL2020K09	20	20	125	CN__ 1204__	
TGZ000763	PCLNR2525M09	25	25	150		
TGZ000764	PCLNL2525M09	25	25	150		
TGZ000765	PCLNR1616	16	16	100	CN__ 1606__	
TGZ000766	PCLNL1616	16	16	100		
TGZ000767	PCLNR2020	20	20	125		
TGZ000768	PCLNL2020	20	20	125	CN__ 1204__	
TGZ000769	PCLNR2525M4	25	25	150		
TGZ000770	PCLNL2525M4	25	25	150		
TGZ000771	PCLNR3225P4	32	25	170	CN__ 1606__	
TGZ000772	PCLNL3225P4	32	25	170		
TGZ000773	PCLNR2525M16E	25	25	150		
TGZ000774	PCLNL2525M16E	25	25	150	CN__ 1204__	
TGZ000775	PCLNR3232P16E	32	32	170		
TGZ000776	PCLNR3232	32	32	170		
TGZ000777	PCLNL3232	32	32	170	DN__ 1104__	
TGZ000778	DCLNR2020K12	20	20	125		
TGZ000779	DCLNL2020K12	20	20	125		
TGZ000780	DCLNR2525M12	25	25	150	DN__ 1504__	
TGZ000781	DCLNL2525M12	25	25	150		
TGZ000782	PDJNR1616H11	16	16	100		
TGZ000783	PDJNL1616H11	16	16	100	DN__ 1506__	
TGZ000784	PDJNR2525M11	25	25	150		
TGZ000785	PDJNL2525M11	25	25	150		
TGZ000786	PDJNR2020	20	20	125	TN__ 1604__	
TGZ000787	PDJNL2020	20	20	125		
TGZ000788	PDJNR2520	25	20	150		
TGZ000789	PDJNL2520	25	20	150	TN__ 1604__	
TGZ000790	PDJNR2525	25	25	150		
TGZ000791	PDJNL2525	25	25	150		
TGZ000792	PDJNR3225	32	25	170	TN__ 1604__	
TGZ000793	PDJNL3225	32	25	170		
TGZ000794	PDJNR2020K15E	20	20	125		
TGZ000795	PDJNR2525M15E	25	25	150	TN__ 1604__	
TGZ000796	PDJNL2525M15E	25	25	150		
TGZ000797	PTGNR1616	16	16	100		
TGZ000798	PTGNL1616	16	16	100	TN__ 1604__	
TGZ000799	PTGNR2020	20	20	125		
TGZ000800	PTGNL2020	20	20	125		
TGZ000801	PTGNR2525M3	25	25	150	TN__ 2204__	
TGZ000802	PTGNL2525M3	25	25	150		
TGZ000803	PTGNR2525M4	25	25	150		
TGZ000804	PTGNL2525M4	25	25	150	TN__ 2204__	
TGZ000805	PTGNR3225P4	32	25	170		

# TAC TOOLHOLDER FOR EXTERNAL TURNING

► Negative Rake

Order No.	Catalog No.	h	b	l1	Applicable Insert	Shape
TGZ000806	ASSNR2020K12-A	20	20	125	SN__1204__	
TGZ000807	ASSNL2020K12-A	20	20	125		
TGZ000808	ASSNR2525M12-A	25	25	150		
TGZ000809	ASSNL2525M12-A	25	25	150		
TGZ000810	PSSNR2525	25	25	141		
TGZ000811	PSSNL2525	25	25	141	SN__1906__	
TGZ000812	PSSNR3232	32	32	157.5		
TGZ000813	PSSNL3232	32	32	157.5	VN__1604__	
TGZ000814	AVJNR2020K16-A	20	20	125		
TGZ000815	AVJNL2020K16-A	20	20	125	YN__1604__	
TGZ000816	AVJNR2525M16-A	25	25	150	VN__1604__	
TGZ000817	AVJNL2525M16-A	25	25	150	YN__1604__	
TGZ000818	SCLCR1616H09	16	16	100	CC__09T3__	
TGZ000819	SCLCL1616H09	16	16	100	CC__1204__	
TGZ000820	SCLCR2020K12	20	20	125		
TGZ000821	SCLCL2020K12	20	20	125	DC__11T3__	
TGZ000822	SDJCR2020K11	20	20	125		
TGZ000823	SDJCL2020K11	20	20	125	VC__1604__	
TGZ000824	SDJCR2525M11	25	25	150		
TGZ000825	SDJCL2525M11	25	25	150	VC__1604__	
TGZ000826	SVJCR2020K16	20	20	125		
TGZ000827	SVJCL2020K16	20	20	125	VC__1604__	
TGZ000828	SVJCR2525M16	25	25	150		
TGZ000829	SVJCL2525M16	25	25	150	RCMT0502MO-61	
TGZ000830	SVVCN2020K16	20	20	125		
TGZ000831	SVVCN2525M16	25	25	150	RCMT0502MO-61	
TGZ000832	SRACR1010H05	10	10	100		
TGZ000833	SRACR2525M05	25	25	150		
TGZ000834	SRACL2525M05	25	25	150		

EXTERNAL TURNING



CAD

Right hand (R) shown.

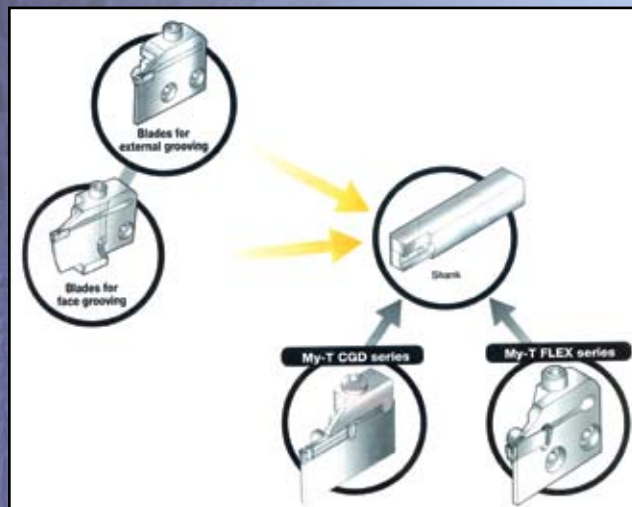
## FEATURE OF MY T-SERIES

### My-T CGD series

- Two corner type inserts
- G-class inserts which excels in accuracy of cutting-edge width, can perform precision grooving

### My-T Flex series

- Two corner type inserts. Multi-type toolholders allowing traversing
- Excellent chattering resistance and good chip control characteristics allow the use of these tools in a wide range of machining operations



# TAC TOOLHOLDER FOR EXTERNAL TURNING

► Positive Rake

EXTERNAL TURNING

Order No.	Catalog No.	h	b	l1	Applicable Insert	Shape
TGZ000835	SCLCR1616H09	16	16	100	CC_ _ 09T3	
TGZ000836	SCLCL1616H09					
TGZ000837	SCLCR2020K12	20	20	125	CC_ _ 1204	
TGZ000838	SCLCL2020K12					
TGZ000839	SDJCR2020K11	20	20	125	DC_ _ 11T3	
TGZ000840	SDJCL2020K11					
TGZ000841	SDJCR2525M11	25	25	150		
TGZ000842	SDJCL2525M11					
TGZ000843	SVJCR2020K16	20	20	125	VC_ _ 1604	
TGZ000844	SVJCL2020K16					
TGZ000845	SVJCR2525M16	25	25	150		
TGZ000846	SVJCL2525M16					
TGZ000847	SVVCN2020K16	20	20	125	RCMT0502M0-61	
TGZ000848	SVVCN2525M16	25	25	150		
TGZ000849	SRACR1010H05	10	10	100	RC_T0602M0	
TGZ000850	SRACR2525M05	25	25	150		
TGZ000851	SRACR1212H06	12	12	100	RC_T083M0	
TGZ000852	SRACL1212H06	12	12	100		
TGZ000853	SRACR2020K06	20	20	125	RC_T083M0	
TGZ000854	SRACL2020K06	20	20	125		
TGZ000855	SRACR2525M06	25	25	150	RC_T0602M0	
TGZ000856	SRACL2525M06	25	25	150		
TGZ000857	SRACR2020K08	20	20	125	RC_T083M0	
TGZ000858	SRACL2020K08	20	20	125		
TGZ000859	SRACR1616H08	16	16	100	RC_T083M0	
TGZ000860	SRACL1616H08	16	16	100		
TGZ000861	SRACR2525M08	25	25	150	RC_T0602M0	
TGZ000862	SRACL2525M08	25	25	150		
TGZ000863	SRDCN2020K06	20	20	125	RC_T083M0	
TGZ000864	SRDCN2525M06	25	25	150		
	SRDC2020K08	20	20	125		
TGZ000865	SRDCN2525M08	25	25	150	RC_T1003M0	
	SRDCN2020K10	20	20	125		
TGZ000866	SRDCN2525M10	25	25	150	RC_T1003M0	



# TAC TOOLHOLDER FOR INTERNAL TURNING

► Positive Rake

Order No.	Catalog No	D	d	I1	I2	Applicable Insert		Shape
TGZ000867	A08H-STUPR07-D080	8	8	100	19.5	TPGM	0710	
TGZ000868	A08H-STUPL07-D080	8	8	100	19.5			
TGZ000869	A08H-STUPR09-D100	10	8	100	16	TP__	0920	
TGZ000870	A08H-STUPL09-D100	10	8	100	16			
TGZ000871	A10K-STUPR1103-D120	12	10	125	20			
TGZ000872	A10K-STUPL1103-D120	12	10	125	20			
TGZ000873	A12M-STUPR1103-D140	14	12	150	24			
TGZ000874	A12M-STUPL1103-D140	14	12	150	24			
TGZ000875	A16Q-STUPR1103-D180	18	16	180	32			
TGZ000876	A16Q-STUPL1103-D180	18	16	180	32			
TGZ000877	A20R-STUPR1103-D220	22	20	200	36			
TGZ000878	A20R-STUPL1103-D220	22	20	200	36			
TGZ000879	A25S-STUPR16-D270	27	25	250	45	16T3		
TGZ000880	A25S-STUPL16-D270	27	25	250	45			
TGZ000881	A32T-STUPR16-D340	34	32	300	50			
TGZ000882	A32T-STUPL16-D340	34	32	300	50			
TGZ000883	A08H-SWUBR03-D060	6	8	100	18	WB__	0301	
TGZ000884	A08H-SWUBR03-D070	7	8	100	20			
TGZ000885	A08H-SCLCR06-D100	10	8	100	16	CC__	0602	
TGZ000886	A08H-SCLCL06-D100	10	8	100	16			
TGZ000887	A10K-SCLCR06-D120	12	10	125	20	DC__	0702	
TGZ000888	A10K-SCLCL06-D120	12	10	125	20			
TGZ000889	A12M-SCLCR06-D140	14	12	150	24			
TGZ000890	A12M-SCLCL06-D140	14	12	150	24			
TGZ000891	A16Q-SCLCR09-D180	18	16	180	32			
TGZ000892	A16Q-SCLCL09-D180	18	16	180	32			
TGZ000893	A20R-SDQCR11-D250	25	20	200	36			
TGZ000894	A20R-SDQCL11-D250	25	20	200	36			
TGZ000895	A25S-SDQCR11-D300	30	25	250	45			
TGZ000896	A25S-SDQCL11-D300	30	25	250	45			
							11T3	

INTERNAL TURNING

## Shank Material

### Steel



Stream Jet Bar

- Economical.
- Min. bore dia. : Ø4.5 - Ø63mm.
- Screw-on, clamp-on, pin-lock and multi-clamp types are stocked.

### Carbide



Stream Jet Bar

- Finishing accuracy is good by excellent resistance to chatter.
- Screw-on and clamp-on types (min. bore dia.: Ø4.5 - Ø34mm) are standard stocked.

### "Tsuppari-Ichiban"



- Provides highly rigid shank reinforced with carbide plates.
- Good resistance to chatter.
- Low cost, close to steel shank.
- Machining up to L/D = is possible.
- Min. bore dia.: Ø20mm for P-type, Ø14mm for S-type.
- Also available in oil-hole shank type.

For More Information,

please contact **CUTTING TOOLS DIVISON**

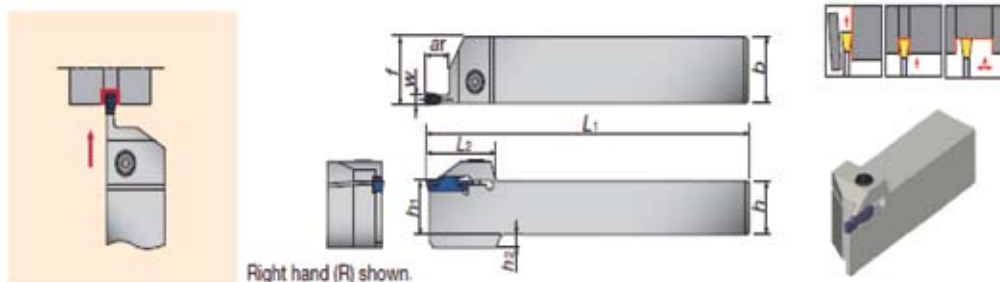
Telp : (62-21)582-8282

e-mail : pscuttools@kawanlama.com



# TAC TOOL HOLDER FOR EXTERNAL GROOVING

TUNG CUT

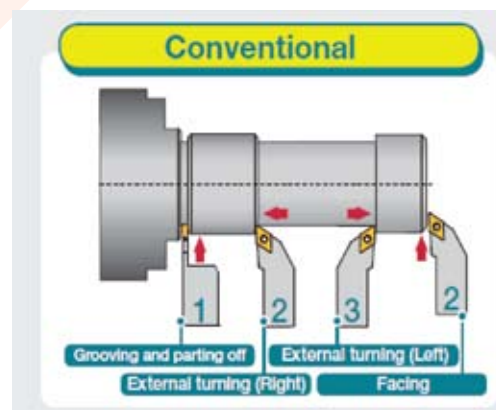


▶ **Toolholders (Mono block type)**

Insert Seat Size	Catalog No.	Dimensions								Insert	Max groove depth
		h1	b	h	L	f	w	h2	l2		
2	CTER/L1616-2T08	16	16	16	110	16.1	2	4	33	DGM/SGM DGS/SGS DGE DTX DTE DTR	8
	CTER/L2020-2T08	20	20	20	125	20.1	2	-	33		8
	CTER/L2525-2T08	25	25	25	150	25.1	2	-	33		8
3	CTER/L1616-3T09	16	16	16	110	16.3	3	4	32		9
	CTER/L2020-3T09	20	20	20	125	20.3	3	-	32		9
	CTER/L2525-3T09	25	25	25	150	25.3	3	-	32		9
4	CTER/L1616-4T10	16	16	16	110	16.5	4	4	32		10
	CTER/L2020-4T10	20	20	20	125	20.5	4	-	32		10
	CTER/L2525-4T10	25	25	25	150	25.5	4	-	32		10

▶ **DGM Insert (External grooving and parting off, 2 corners)**

Insert Seat Size	Catalog No.	Grade		Dimensions (mm)				
		AH725	GH130	w	r $\epsilon$	L	h	k
2	DGM 2-020	•	•	2	0.2	20	5	-
	DGM 2-020-6R/L	•	•	2	0.2	20	5	6°
3	DGM 3-020	•	•	3	0.2	20	5	-
	DGM 3-020-6R/L	•	•	3	0.2	20	5	6°
4	DGM 4-030	•	•	4	0.3	20	5	-
	DGM 4-030-4R/L	•	•	4	0.3	20	5	4°



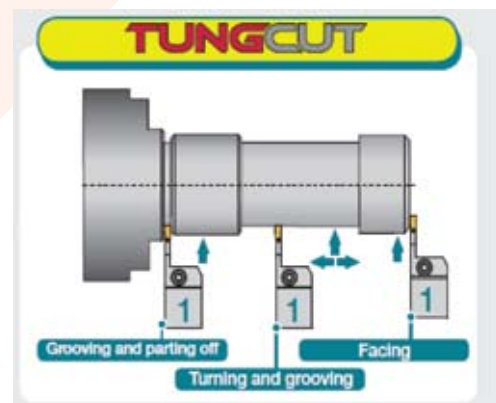
▶ **SGM Insert (External deep grooving and parting off, 1 corner)**

Insert Seat Size	Catalog No.	Grade		Dimensions (mm)				
		AH725	GH130	w	r $\epsilon$	L	h	k
2	DGM 2-020	•	•	2	0.2	20	5	-
	DGM 2-020-6R/L	•	•	2	0.2	20	5	6°
3	DGM 3-020	•	•	3	0.2	20	5	-
	DGM 3-020-6R/L	•	•	3	0.2	20	5	6°
4	DGM 4-030	•	•	4	0.3	20	5	-
	DGM 4-030-4R/L	•	•	4	0.3	20	5	4°



▶ **DTR Insert Profiling and undercutting (Ground)**

Insert Seat Size	Catalog No.	Grade		Dimensions (mm)			
		AH725	GH130	w	r $\epsilon$	L	h
3	DTR 300-150	•	•	3	1.5	20	5
4	DTR 400-200	•	•	4	2	20	5



## Highly Efficient Small Diameter Cutter


**HOLDER**

Bore Type

Cat. No.	Stock	No. of Inserts	Dimensions							Weight (kg)	Air hole	Cutter Mounting screw	Inserts
			ØDc	ØDb	Ød	ℓ	Lf	b	a				
TPD05R032M16.E06	●	6	32	30	16	20	32	5.6	8.4	0.1	With	Cm8x30H	SDMT050204PN-MJ SDHT050204FN-AJ
TPD05R040M16.E08	●	8	40	38	22	22	40	6.3	10.4	0.2	With	Cm10x30H	

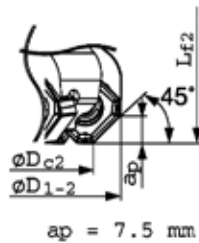
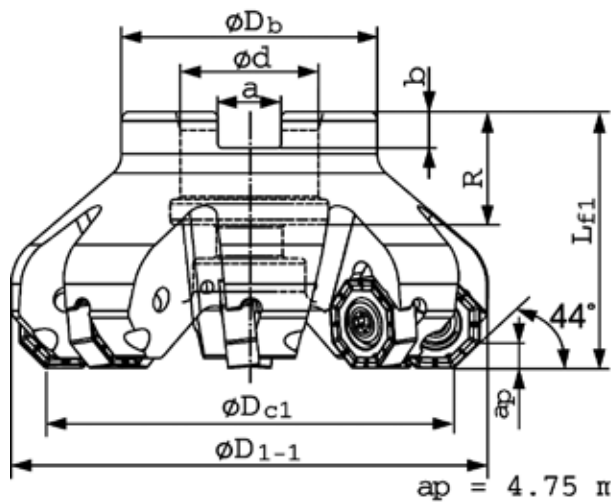
Shank Type

Cat. No.	Stock	No. of Inserts	Dimensions					Weight (kg)	Air hole	Shank Type	Insert
			ØDc	ØDb	ℓs	Lf	L				
EPD05R012M12.0-02	●	2	12	12	62	18	80	0.1	with	straight	SDMT050204PN-MJ SDHT050204FN-AJ
EPD05R016M16.0-03	●	3	16	16	90	20	110	0.2	with	straight	
EPD05R020M20.0W04	●	4	20	20	80	25	105	0.2	with	straight	
EPD05R025M20.0W05	●	5	25	20	90	25	115	0.3	with	straight	
EPD05R032M20.0W06	●	6	32	25	98	32	130	0.5	with	straight	
EPD05R040M20.0W08	●	8	40	32	100	40	140	0.8	with	straight	

Insert for Bore Type and Shank Type

Cat. No.	Accuracy	Honing	Stock			Dimensions ( Mm )			Cutter
			Coated grades		Carbide	A	T	rε	
			AH725	AH140	TH10				
SDMT050204PN-MJ	M	with	●	●		20	32	5.6	TPD05...
SDHT050204FN-AJ	H	without			●	22	40	6.3	EPD05...

# DOOCTO & DOQUAD



Replacement parts

Description	Cat. No.	
Applicable cutter	TAN07R...	TAN07R160M...
Clamping screw	CSPE-5L150	
Wrench	Torx Bit	BLD IP20/S7
	Grip	H-TB
Mono block type substitution wrench	IP-20T	

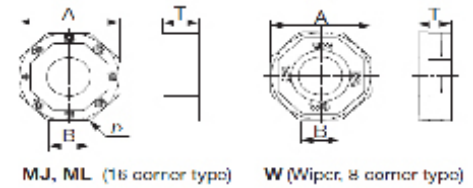
**HOLDER CUTTER**  
Screw on type

Type	Cat. No.	Stock	No. of Inserts	Dimensions					Weight (kg)	Air hole	Center bolt
				$\phi dc1$	$\phi dc2$	$\phi d$	$Lf1$	$Lf2$			
coarse	TAN07R080M25.4-06	●	6	80	77.3	25.4	50	51.4	1	with	CM12x30H
	TAN07R100M31.7-07	●	7	100	97.3	31.75	50	51.4	1.5	with	TMBA-M16H
	TAN07R125M38.1-08	●	8	125	122.3	38.1	63	64.4	2.5	with	TMBA-M20H
	TAN07R160M50.8-10	●	10	160	157.3	50.8	63	64.4	4	without	-
close	TAN07R080M25.4-08	●	8	80	77.3	25.4	50	51.4	1	with	CM12x30H
	TAN07R100M31.7-10	●	10	100	97.3	31.75	50	51.4	1.5	with	TMBA-M16H
	TAN07R125M38.1-12	●	12	125	122.3	38.1	63	64.4	2.5	with	TMBA-M20H
	TAN07R160M50.8-15	●	15	160	157.3	50.8	63	64.4	4	without	-

## DOOCTO

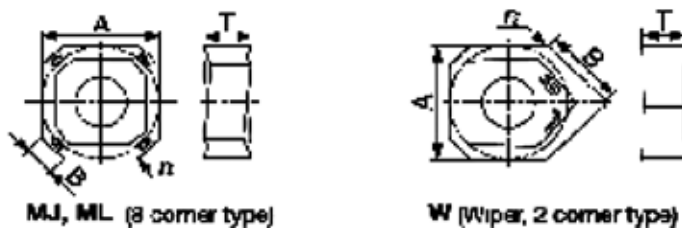
**OCTAGONAL INSERT**

Cat. No.	Accuracy	Honing	Stock			Dimensions (mm)			
			AH120	AH140	AH725	A	B	T	$r\epsilon$
ONMU0705ANPN-MJ	M	with	●	●	●	17.3	7.2	6.2	0.8
ONHU0705ANPN-MJ	H	with	●	●	●	17.3	7.2	6.2	0.8
ONMU0705ANPN-ML	M	with	●	●	●	17.3	7.2	6.2	0.8
ONHU0705ANTN-ML	H	with	●	●	●	17.3	7.2	6.2	0.8
ONHU0705ANPR-W	H	with	●	●	●	17.5	6.4	5.8	-



## DOQUAD

**SQUARE INSERT**



Attention for wiper inserts

**DOOCTO**

Just one wiper insert is needed in a cutter  
Feed rate:  $f < 5.5 \text{ mm/rev}$

**DOQUAD**

Just one wiper insert is needed in a cutter  
Feed rate:  $f < 9.5 \text{ mm/rev}$

Cat. No.	Accuracy	Honing	Stock			Dimensions (mm)			
			AH120	AH140	AH725	A	B	T	$r\epsilon$
SNMU1706ANPR-MJ	M	with	●	●	●	17.3	4.4	6.98	0.8
SNHU1706ANPR-MJ	H	with	●	●	●	17.3	4.4	6.98	0.8
SNMU1706ANTR-ML	M	with	●	●	●	17.3	4.4	6.98	0.8
SNHU1706ANTR-ML	H	with	●	●	●	17.3	4.4	6.98	0.8
SNHU1706ANFN-W	H	without	●	●	●	17.5	11	6.5	0.4

# HYBRID TAC MILL

## ► EPH Type-Combination of Solid Endmill and Tac Endmill

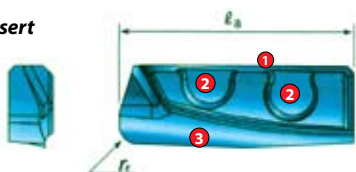


Tool assembly and replacement parts



Order No.	Body Cat No.	Dimension						Clamping Screw	Wrench	Applicable Insert
		No. Of Teeth	Tool Dia Ø Dc	Tool Dia Ø Ds	Edge Length ap	Overall Length L	Neck Length L1			
	<b>EPH11R010M10.0-2</b>	2	10	10	10	80	21	CSP-2H	IP-6F	XHGR1102 □□□ R- □□
	<b>EPH13R012M12.0-2</b>	2	12	12	12	80	25	CSPB-2.2SH	IP-7D	XHGR1302 □□□ R- □□
	<b>EPH18R016M16.0-2</b>	2	16	16	16	100	33	CSPB-2.5SH	IP-7D	XHGR18T2 □□□ R- □□
	<b>EPH18R016M16.0-3</b>	3								

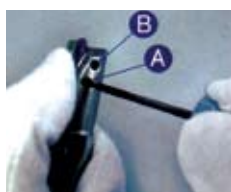
### ► Insert



- 1 Excellent positioning accuracy resulting from the axially long base face
- 2 Cavities for clamping
- 3 The cutting edge geometry comparable to that of a solid endmill is produced from precision grinding, providing the high accuracy and cutting edge sharpness

Order No.	Insert Cat. No.	Grade AH730	Dimension		Application	Applicable Holder
			la	Corner re		
TGZ000897	XHGR110202ER-MJ	●	11	0.2	Steel	EPH11R010M10.0-2
TGZ000898	XHGR110205ER-MJ	●		0.5		
TGZ000899	XHGR110210ER-MJ	●		1		
TGZ000900	XHGR110215ER-MJ	●		1.5		
TGZ000901	XHGR110220ER-MJ	●		2		
TGZ000902	XHGR130202ER-MJ	●	13	0.2	Stainless	EPH13R012M12.0-2
TGZ000903	XHGR130205ER-MJ	●		0.5		
TGZ000904	XHGR130210ER-MJ	●		1		
TGZ000905	XHGR130215ER-MJ	●		1.5		
TGZ000906	XHGR130220ER-MJ	●		2		
TGZ000907	XHGR18T202ER-MJ	●	18	0.2	Cast iron	EPH18R016M16.0-2 EPH18R016M16.0-3
TGZ000908	XHGR18T205ER-MJ	●		0.5		
TGZ000909	XHGR18T210ER-MJ	●		1		
TGZ000910	XHGR18T215ER-MJ	●		1.5		
TGZ000911	XHGR18T220ER-MJ	●		2		

Order No.	Insert Cat. No.	Grade DS1200	Dimension		Application	Applicable Holder
			la	Corner re		
TGZ000912	XHGR110200FR-AJ	●	11	0.0	Non-Ferrous	EPH11R010M10.0-2
TGZ000913	XHGR110205FR-AJ	●		0.5		
TGZ000914	XHGR110210FR-AJ	●		1		
TGZ000915	XHGR110215FR-AJ	●		1.5		
TGZ000916	XHGR110220FR-AJ	●		2		
TGZ000917	XHGR130200FR-AJ	●	13	0.0	Non-Ferrous	EPH13R012M12.0-2
TGZ000918	XHGR130205FR-AJ	●		0.5		
TGZ000919	XHGR130210FR-AJ	●		1		
TGZ000920	XHGR130215FR-AJ	●		1.5		
TGZ000921	XHGR130220FR-AJ	●		2		
TGZ000922	XHGR18T200FR-AJ	●	18	0.0	Non-Ferrous	EPH18R016M16.0-2 EPH18R016M16.0-3
TGZ000923	XHGR18T205FR-AJ	●		0.5		
TGZ000924	XHGR18T210FR-AJ	●		1		
TGZ000925	XHGR18T215FR-AJ	●		1.5		
TGZ000926	XHGR18T220FR-AJ	●		2		



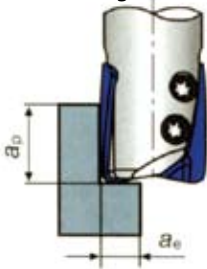
### Insert Mounting Procedure

1. After loosening the clamping screws, insert the insert tool pocket of the body while pushing it with your finger
2. Lightly fasten the clamping screws in order of A and B
3. For all the inserts, carry out the above steps no.1 and no.2
4. Securely tighten the clamping screws in order of A and B (Refer to the standard tightening torque values)
5. For all the inserts, carry out the above step no.4
6. Check the condition of insert seating, clearance between the insert and insert pocket, the tool diameter, and the peripheral edge run out

# HYBRID TAC MILL

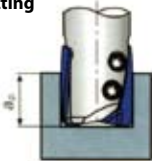
## Standard Cutting Conditions

### Side Cutting



Work Material for Side Cutting	Carbon Steels and Alloy Steels	Alloy Steels and prehardened Steels		Cast Iron		Alluminum Alloys (Si<12%)		Alluminum Alloys (Si>13%)			
Hardness	<30HRC	30~40HRC		-		-		-			
Cutting Speed (m/min)	V <sub>C</sub> =60~180		V <sub>C</sub> =50~150		V <sub>C</sub> =80~200		V <sub>C</sub> =100~300		V <sub>C</sub> =80~180		
Conditions	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	
Tool dia. (mm)	Ø10	3820	610	3180	320	4460	710	6370	890	4140	500
	Ø12	3180	510	2650	270	3710	590	5300	740	3450	410
	Ø16	2390	380	1990	200	2790	450	3980	560	2590	310
Depth of Cut (mm)	a <sub>p</sub> <0.8D a <sub>e</sub> <0.15D		a <sub>p</sub> <0.6D a <sub>e</sub> <0.2D		a <sub>p</sub> <1.0D a <sub>e</sub> <1.0D		a <sub>p</sub> <1.0D a <sub>e</sub> <1.0D				

### Slotting



Work Material for Slotting	Carbon Steels and Alloy Steels	Alloy Steels and prehardened Steels		Cast Iron		Alluminum Alloys (Si<12%)		Alluminum Alloys (Si>13%)			
Hardness	<30HRC	30~40HRC		-		-		-			
Cutting Speed (m/min)	V <sub>C</sub> =50~150		V <sub>C</sub> =30~110		V <sub>C</sub> =60~180		V <sub>C</sub> =80~220		V <sub>C</sub> =60~160		
Conditions	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	No. of rev.n min <sup>-1</sup>	Feed V <sub>f</sub> mm/min	
Tool dia. (mm)	Ø10	3180	380	2230	220	3820	540	4780	670	3500	420
	Ø12	2650	320	1860	190	3180	450	3980	560	2920	350
	Ø16	1990	240	1390	140	2390	340	2980	420	2190	260
Depth of Cut (mm)	a <sub>p</sub> <0.2D		a <sub>p</sub> <0.15D		a <sub>p</sub> <0.2D		a <sub>p</sub> <0.2D				

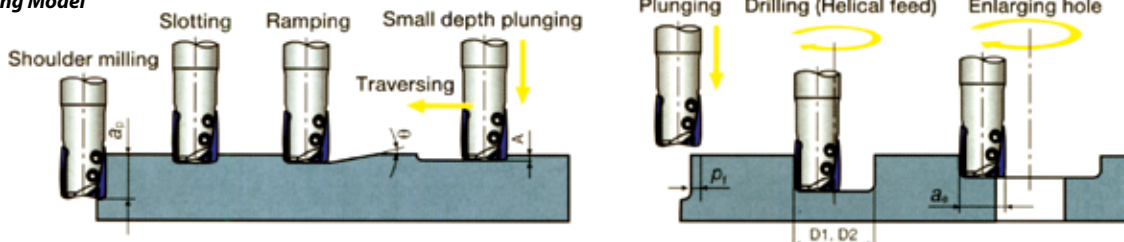
### Notes:

- Above cutting conditions are applied to the two toothed cutters
- When using are three toothed cutter, only the feed should be increased by approximately 20% without changing the number of revolutions
- When slotting, use a rigid machine
- In slotting or pocketing where chips tend to stay in the cutting zone, use an air blast to remove chips for preventing chip recutting
- When chips tend to weld excessively on the cutting edge such as in machining aluminum alloys, use a water soluble cutting fluid

a<sub>e</sub>:Radial depth of cut a<sub>p</sub>:Axial depth of cut

- In the case of cutting a casting skin or a heavily interrupted work surface, decrease the feed per tooth and the maximum depth of cut to 1/2 to 2/3 times the values shown in the table
- Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed
- Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure that the machine is normally running.

### Machining Model



Order No.	Cat. No.	Tool dia.	Max. Depth of Cut (a <sub>p</sub> )	Max. Ramping Angle (θ°)	Max. Plunging Depth (A)	Max. Peck Feed in Plunging (ρ <sub>f</sub> )	Min. Machinable Hole Dia (D1)	Max. Machinable Hole Dia. (D2)*	Max. Cutting Width in Enlarging Hole (de)*
TGZ000927	EPH11R010M10.0-2	Ø10	10	3	0.3	3	13	19.5	9.7
TGZ000928	EPH13R012M12.0-2	Ø12	12	3.5	0.3	3	16	23.5	11.7
TGZ000929	EPH18R016M16.0-2	Ø16	16	3.5	0.5	4	22	30.5	15.7
TGZ000930	EPH18R016M16.0-3								

\* Where, the insert corner radius ≤0.2mm



Insert Corner R r <sub>i</sub> (mm)	Required Rework To Body Corner
0 ≤ r <sub>i</sub> ≤ 1.0	No Additional Work
1.0 < r <sub>i</sub> ≤ 2.0	R2.0

### Notes on using large radius inserts:

When using inserts which have a large corner radius in excess of 1.0mm, additional work is needed to the corner of the body

### Allowable Revolutions:

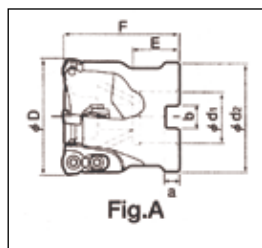
The maximum allowable number of revolutions of this cutter is 15,000min<sup>-1</sup>. Avoid using the cutter at revolutions in excess of the above number because it can cause breakage of the machine and the tool and hazardous flying-out of broken tool parts. Caution: The maximum allowable revolution mentioned above is applied to the case where the cutter used in the following conditions

- The clamping screw should be torqued to the value specified for each cutter size
- The face mill arbor and collet chuck to be used should be well balanced. Be sure that the safety of use at the allowable revolutions is certified
- The inserts to be used should be of the same type and same grade
- The inserts and parts should be used in the specified number
- Any modification should not be applied to the inserts, parts and cutter body

The maximum allowable number of revolutions shown above is determined only in consideration of keeping balance of the rotating body with the centrifugal force. Any consideration is not paid to optimum cutting speed corresponding to the insert grade to be used. When using the cutter also refer to the standard cutting conditions for the insert grade.

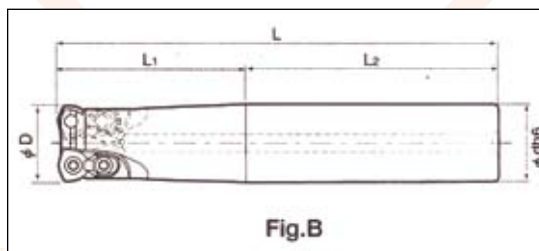
# TAC TOOLHOLDER FOR SUPER HIGH-FEED MILLING

## TXP Holder



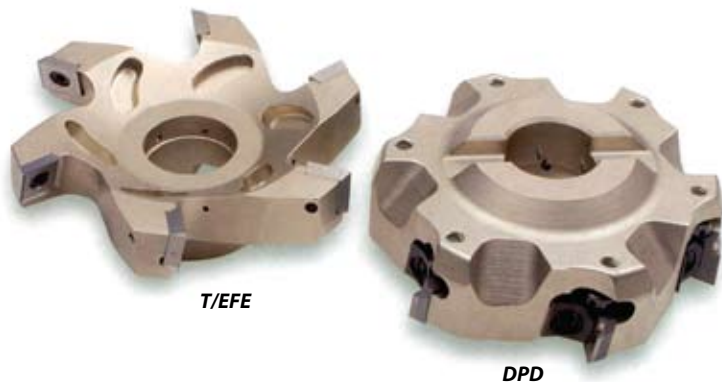
Order No.	Catalog No.	No. Of Teeth	Dimension								Air Hole	Applicable Insert
			Ød	Effective Dia.	E	F	a	b	Ød1	Ød2		
TGZ000931	TXP06050RA	4	50	41.4	20	50	6	10	22	47	WITH	WPMT06X415ZPR (-___)
TGZ000932	TXP06050R2						5	8	22.225			
TGZ000933	TXP08050RA	3	50	38.6	19.5	50	6	10	22	59	WITH	WPMT080615Z_R (-___)
TGZ000934	TXP08050R2						5	8	22.25			
TGZ000935	TXP08063RA	4	63	51.6	20	50	6	10	22	59	WITH	WPMT080615Z_R (-___)
TGZ000936	TXP08063R2						5	8	22.25			
TGZ000937	TXP09063R	3	63	49.4	20	50	6	10	22	59	WITH	WPMT090725Z_R (-___)
TGZ000938	TXP09063R2						5	8	22.25			

## EXP Holder



Order No.	Catalog No.	No. of Insert	Dimension						Applicable Insert
			ØD	Effective Dia.	L	L1	L2	Ød	
TGZ000939	EXP05020RS	2	20	12.4	130	50	80	20	WPMW/WPMT05H315_
TGZ000940	EXP06025RS		25	16.4	140	60		25	WPMW/WPMT06X415_
TGZ000941	EXP06032RS		32	23.4	150	70		32	WPMW/WPMT06X415_
TGZ000942	EXP05020RL		20	12.4	180	100		20	WPMW/WPMT05H315_
TGZ000943	EXP06025RL		25	16.4	200	120	25	WPMW/WPMT06X415_	
TGZ000944	EXP06032RL		32	23.4			32	WPMW/WPMT06X415	
TGZ000945	EXP05020RLL		20	12.4	250	130	120	20	WPMW/WPMT05H315_
TGZ000946	EXP06025RLL		25	16.4	300	180		25	WPMW/WPMT06X415_
TGZ000947	EXP06032RLL		32	23.4				32	WPMW/WPMT06X415_

## HIGH SPEED USING T-DIA INSERT

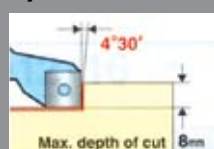


### DPD



- Machinable at Vc+4,000m/min
- Together with dedicated inserts, allows improved surface finish and reduced burr occurrence

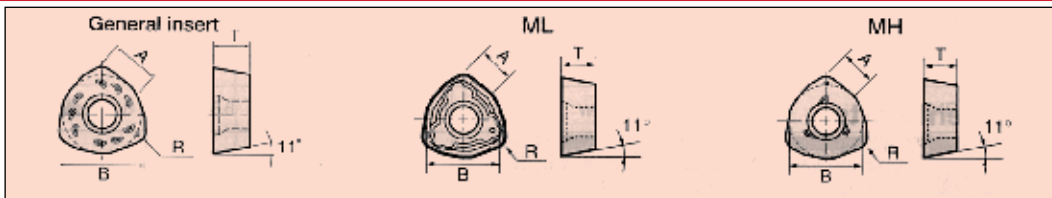
### T/EFE



- Performs excellent ability even on a BT30-taper machining taper!
- Super lightweight general purpose TAC Mills

# INSERT FOR SUPER HIGH-FEED MILLING

▶ Insert for T/EXP



Order No.	Catalog No	
TGZ000948	WPMW05H315ZPR	AH120
TGZ000949		T3130
TGZ000950		TH140
TGZ000951	WPMT05H315ZPR-ML	AH120
TGZ000952		AH140
TGZ000953	WPMT05H315ZPR-MH	AH120
TGZ000954		AH140
TGZ000955	WPMW06X415ZPR	AH120
TGZ000956		AH140
TGZ000957		T3130
TGZ000958	WPMT06X415ZPR-ML	AH120
TGZ000959		AH140
TGZ000960	WPMT06X415ZPR-MH	AH120
TGZ000961		AH140

Order No.	Catalog No	
TGZ000962	WPMT080615ZSR	AH120
TGZ000963		AH140
TGZ000964		T3130
TGZ000965	WPMT080615ZPR-ML	AH120
TGZ000966		AH140
TGZ000967	WPMT080615ZSR	AH120
TGZ000968		AH140
TGZ000969	WPMT090725ZSR	AH120
TGZ000970		AH140
TGZ000971		T3130
TGZ000972	WPMT090725ZPR-ML	AH120
TGZ000973		AH140
TGZ000974	WPMT090725ZPR-MH	AH120
TGZ000975		AH140

▶ Standard Cutting Conditions

## TYPE INSERT 05-06

Work materials	Inserts grades	Cutting speed Vc(m/min)	Feed per tooth fz (mm/tooth)	ø20,21 (2 teeth)	ø25,26 (2 teeth)	ø32,33 (2 or 3 teeth)	ø40 (3 teeth)	ø50 (4 teeth)
Carbon steels (JIS S50Cetc.) <300HB	AH120 (T3130)	100~250	0.5~2.0	Vc=150m/min, fz=0.8mm/t ap=1.0mm, ae=1.0Dmm	Vc=150m/min, fz=1.0mm/t, ap=1.0mm, ae=1.0Dmm			
				When plunging in small depth: fz=0.2mm/t				
Alloy steels (JIS5SCM440etc.) <300HB	AH120 (T3130)	100~200	0.5~2.0	Vc=130m/min, fz=0.8mm/t ap=1.0mm, ae=1.0Dmm	Vc=130m/min, fz=0.8mm/t, ap=1.0mm, ae=1.0Dmm			
				When plunging in small depth: fz=0.2mm/t				
Prehardened steels (NAK80, PX5 etc.)30~40HRC	AH120 (T3130)	80~150	0.5~1.0	Vc=100m/min, fz=0.5mm/t ap=1.0mm, ae=1.0Dmm	Vc=100m/min, fz=0.5mm/t, ap=1.0mm, ae=1.0Dmm			
				When plunging in small depth: fz=0.1mm/t				
Hard Materials 40~50HRC	AH120	50~80	0.5~1.0	Vc=60m/min, fz=0.5mm/t ap=1.0mm, ae=1.0Dmm	Vc=60m/min, fz=0.5mm/t, ap=1.0mm, ae=1.0Dmm			
				When plunging in small depth: fz=0.1mm/t				
Cast irons (FC250 etc.)	T1015	100~250	0.8~2.5	Vc=150m/min, fz=1.0mm/t ap=1.0mm, ae=1.0Dmm	Vc=180m/min, fz=1.5mm/t, ap=1.0mm, ae=1.0Dmm			
				When plunging in small depth: fz=0.2mm/t				
Stainless steels (SUS304,316 etc.)	AH140	100~200	0.5~2.0	Vc=130m/min, fz=0.8mm/t ap=1.0mm, ae=1.0Dmm	Vc=130m/min, fz=1.0mm/t, ap=1.0mm, ae=1.0Dmm			
				When plunging in small depth: fz=0.2mm/t				

## TYPE INSERT 08

Work materials	Inserts grades	Cutting speed Vc(m/min)	Feed per tooth fz (mm/tooth)	ø40 (2 teeth)	ø50 (3 teeth)	ø63 (4 teeth)	ø80 (5 teeth)	ø100 (6 teeth)	ø125 (7 teeth)	ø160 (8teeth)
Carbon steels (JIS S50C etc.) <300HB	AH120 (T3130)	150~250	0.5~2.0	Vc=180m/min, fz=1.0mm/t ap=1.0mm, ae=40Dmm	Vc=200m/min, fz=1.5mm/t ap=1.0mm, ae=1.0Dmm					
				When plunging in small depth: fz=0.2mm/t						
Alloy steels (JIS5SCM440etc.) <300HB	AH120 (T3130)	100~200	0.5~2.0	Vc=130m/min, fz=1.0mm/t ap=1.0mm, ae=40Dmm	Vc=150m/min, fz=1.5mm/t ap=1.0mm, ae=1.0Dmm					
				When plunging in small depth: fz=0.2mm/t						
Prehardened steels (NAK80, PX5 etc.)30~40HRC	AH120 (T3130)	80~150	0.5~1.0	Vc=100m/min, fz=0.5mm/t ap=1.0mm, ae=40Dmm	Vc=120m/min, fz=0.8mm/t ap=1.0mm, ae=1.0Dmm					
				When plunging in small depth: fz=0.1mm/t						
Hard Materials 40~50HRC	AH120	50~80	0.5~1.0	Vc=70m/min, fz=0.6mm/t, ap=1.0mm, ae=1.0Dmm						
				When plunging in small depth: fz=0.1mm/t						
Cast irons (FC250 etc.)	T1015	150~250	0.8~2.5	Vc=180m/min, fz=1.5mm/t ap=1.0mm, ae=40Dmm	Vc=200m/min, fz=2.0mm/t ap=1.0mm, ae=1.0Dmm					
				When plunging in small depth: fz=0.2mm/t						
Stainless steels (SUS304,316 etc.)	AH140	100~200	0.5~2.0	Vc=130m/min, fz=1.0mm/t ap=1.0mm, ae=40Dmm	Vc=150m/min, fz=1.5mm/t ap=1.0mm, ae=1.0Dmm					
				When plunging in small depth: fz=0.2mm/t						



# TAC TOOLHOLDER FOR SUPER HIGH-FEED MILLING

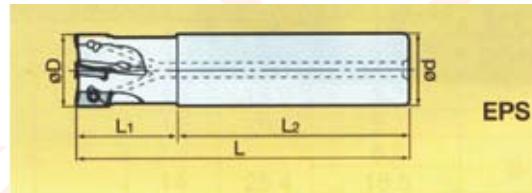
► **Standard Cutting Conditions**

## TYPE INSERT 09

Work materials	Inserts grades	Cutting speed V <sub>c</sub> (m/min)	Feed per tooth f <sub>z</sub> (mm/tooth)	ø50 (2 teeth)	ø63 (3 teeth)	ø80 (4 teeth)	ø100 (5 teeth)	ø125 (6 teeth)	ø160 (7 teeth)
Carbon steels (JIS S50C etc.)<300HB	AH120 (T3030)	150~250	0.5~2.0	VC=200m/min, fz=1.5mm/t, ap=2.0mm, ae=1.0Dmm When plunging in small depth: fz=0.2mm/t					
Alloy steels (JIS SCM440 etc.) <300HB	AH120 (T3030)	100~200	0.5~2.0	VC=150m/min, fz=1.5mm/t, ap=2.0mm, ae=1.0Dmm When plunging in small depth: fz=0.2mm/t					
Prehardened steels (NAK80, PX5 etc.) 30~40HRC	AH120 (T3030)	80~150	0.5~1.0	VC=120m/min, fz=0.8mm/t, ap=2.0mm, ae=1.0Dmm When plunging in small depth: fz=0.1mm/t					
Hard Materials 40~50HRC	AH120	50~80	0.5~1.0	VC=80m/min, fz=0.7mm/t, ap=2.0mm, ae=1.0Dmm When plunging in small depth: fz=0.1mm/t					
Cast irons (FC250 etc.)	T1015	150~250	0.8~2.5	VC=200m/min, fz=2.0mm/t, ap=2.0mm, ae=1.0Dmm When plunging in small depth: fz=0.2mm/t					
Stainless steels (SUS304,316 etc.)	AH140	100~200	0.5~2.0	VC=150m/min, fz=1.5mm/t, ap=2.0mm, ae=1.0Dmm When plunging in small depth: fz=0.2mm/t					

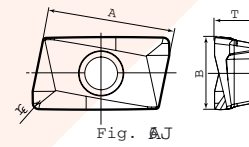
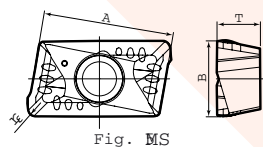
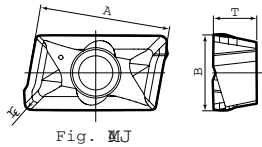
## HIGH PRECISION SQUARE MILLING

► **EPS Holder**



Order No.	Catalog No	No of Teeth	Dimensions					Applicable Insert	Clamping Screw
			ØD	L	L1	L2	Ød		
TGZ000976	EPS11012RS	1	12	85	25	60	16	AS_T11T3 __ PD_R-__	CSPB-2.5S
TGZ000977	EPS11020RS	2	20						
TGZ000978	EPS11025RS	3	25	115	35	80	25		
TGZ000979	EPS11030RS		30						
TGZ000980	EPS11032RS	32	120	40		32			
TGZ000981	EPS11012RL	1	12	125	30	95	16		CSPB-2.5
TGZ000982	EPS11020RL	2	20	185	50	135	20		
TGZ000983	EPS11025RL		25	220	70	150	25		
TGZ000984	EPS11030RL		30						

► **ASMT Insert**

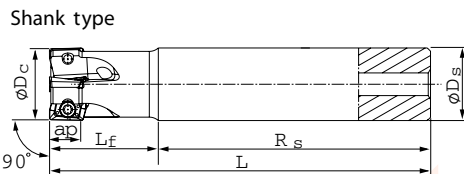
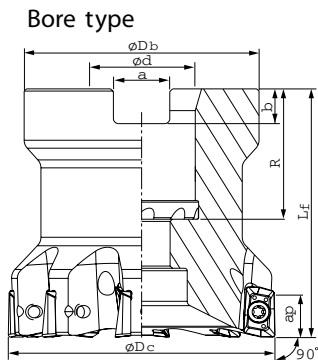


Order No.	Catalog No	
TGZ000985	ASMT11T304PDPR-MJ	
TGZ000986		AH120
TGZ000987		T3130
TGZ000988	ASMT11T304PDPR-MJ	
TGZ000989		T3130
TGZ000990		T1115
TGZ000991	ASMT11T304PDPR-MS	
TGZ000992		AH140
TGZ000993		AH130
TGZ000994	ASMT11T304PDPR-AJ	KS05F
		DS1100

# TUNG REC

## Milling Cutter TPO07/EP007R

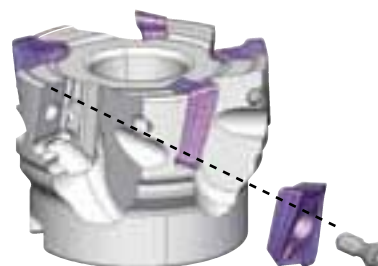
TUNG REC



### Bore Type Components

Description	Replacement Parts	Cat. No.
Clamping screw	CSTB-2.5L046	
Wrench	T-7DB	

Max. depth of cut : Max.  $ap = 0.276$  (in)



### Bore Type

Cat. No.	Stock	No. of Inserts	Dimensions (in)							Weight (kg)	Air hole	** Coolant thru center bolt	Inserts
			$\phi D_c$	$\phi D_b$	$L_f$	$d$	$b$	$a$	$r$				
TPO07R200U0075A12	●	12	2.00	1.69	1.57	0.75	0.20	0.31	0.79	0.30	With	C0.375X1.125H	AOMT0702... AOGT0702...

\*\* Coolant thru center bolt sold separately

### Shank Type

Cat. No.	Stock	No. of Inserts	Dimensions (in)					Air hole	Inserts	Shank Style
			$\phi D_c$	$r_s$	$L_f$	$L$	$\phi D_s$			
EPO07R100U0075-03	●	3	1.00	2.00	1.50	3.50	0.75	With	AOMT0702... AOGT0702...	Cylindrical
EPO07R050U0050-02	●	2	0.50	2.25	0.75	3.00	0.50	With		
EPO07R063U0063-04	●	4	0.63	2.56	0.94	3.50	0.63	With		
EPO07R075U0075-05	●	5	0.75	2.87	1.13	4.00	0.75	With		
EPO07R100U0100W07	●	7	1.00	2.28	1.50	3.78	1.00	With		Weldon

8

## Milling Cutter TPO07/EP007R

Insert for Bore Type and Shank Type

Fig. 1 MJ

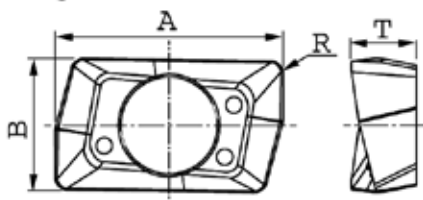


Fig. 2 HJ

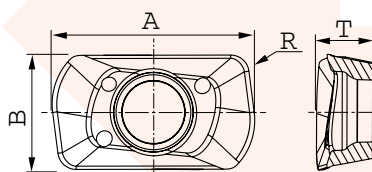
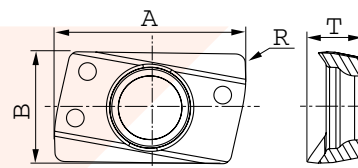


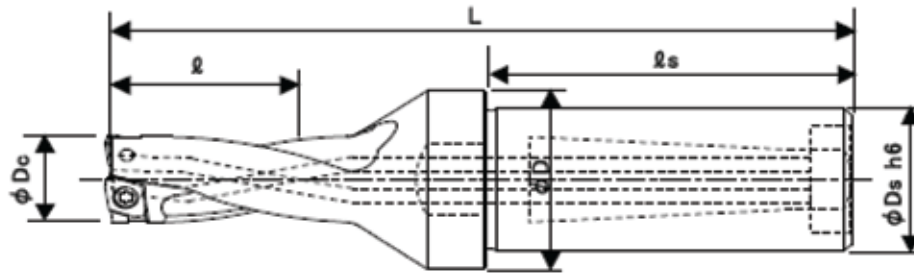
Fig. 3 AJ



Cat. No.	Accuracy	Honing	Grades			Dimensions (in)				Shape	Cutter
			Coated		Carbide	A	B	T	R		
			AH725	AH140							
AOMT070202PDPR-MJ	M	With	●	●		.32	.19	.10	.008	Fig. 1	EPO07R TPO07R
AOMT070204PDPR-MJ	M	With	●	●		.32	.19	.10	.016	Fig. 1	
AOMT070208PDPR-MJ	M	With	●	●		.32	.19	.10	.032	Fig. 1	
AOMT070216PDPR-MJ	M	With	●	●		.32	.19	.10	.063	Fig. 1	
AOMT070210PDPR-HJ	M	With	●	●		.35	.19	.10	.040	Fig. 2	
AOGT070204PDFR-AJ	G	Without			●	.32	.19	.10	.016	Fig. 3	

# TUNGDRILL TWISTED

► TDX Drill

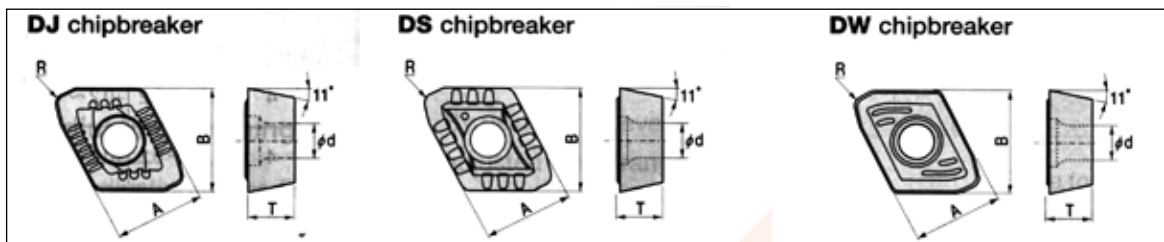


Catalog No.	Dimensions						Applicable Insert
	ØD	ØD1	ØD2	L1	L2	L	
TDX140W20-2	14	20	25	28	43	92	XPMT040104R-D*
TDX150W20-2	15			30		95	XPMT050204R-D*
TDX160W20-2	16		32	32		98	50
TDX180W25-2	18	25	32	36	111		
TDX200W25-2	20			40	117		
TDX210W25-2	21			42	120		
TDX240W25-2	24	37	37	48	50	129	XPMT07H308R-D*
TDX250W25-2	25			50		132	
TDX260W25-2	26			52		135	
TDX280W32-2	28	32	40	56	55	146	XPMT08T308R-D*
TDX300W32-2	30			60		152	
TDX320W32-2	32			64		158	
TDX360W40-2	36	40	50	72	65	180	XPMT110412R-D*
TDX380W40-2	38			76		186	
TDX400W40-2	40			80		192	
TDX140W20-3	14	20	25	42	43	106	XPMT040104R-D*
TDX150W20-3	15			45		110	XPMT050204R-D*
TDX160W20-3	16		32	48		114	50
TDX180W25-3	18	25	32	54	129		
TDX200W25-3	20			60	137		
TDX210W25-3	21			63	141		
TDX240W25-3	24	37	37	72	50	153	XPMT07H308R-D*
TDX250W25-3	25			75		157	
TDX260W25-3	26			78		161	
TDX280W32-3	28	32	40	84	55	174	XPMT08T308R-D*
TDX300W32-3	30			90		182	
TDX320W32-3	32			96		190	
TDX360W40-3	36	40	50	108	65	216	XPMT110412R-D*
TDX380W40-3	38			114		224	
TDX400W40-3	40			120		232	
TDX140W20-4	14	20	25	56	43	123	XPMT040104R-D*
TDX150W20-4	15			60		128	XPMT050204R-D*
TDX160W20-4	16		32	64		132	50
TDX180W25-4	18	25	32	72	150		
TDX200W25-4	20			80	160		
TDX210W25-4	21			84	164		
TDX240W25-4	24	37	37	96	50	178	XPMT07H308R-D*
TDX250W25-4	25			100		183	
TDX260W25-4	26			104		187	
TDX280W32-4	28	32	40	112	55	203	XPMT08T308R-D*
TDX300W32-4	30			120		213	
TDX320W32-4	32			128		222	
TDX360W40-4	36	40	50	144	65	252	XPMT110412R-D*
TDX380W40-4	38			152		262	
TDX400W40-4	40			160		272	



# TAC TOOLHOLDER FOR GENERAL DRILLING

## ▶ Insert for TDX Drill



Order No.	Catalog No		Order No.	Catalog No	
TGZ000995	XPMT040104R-DJ	AH740	TGZ001019	XPMT07H308R-DS	AH120
TGZ000996		AH725	TGZ001020		AH725
TGZ000997		T1115	TGZ001021	XPMT08T308R-DS	AH120
TGZ000998	AH740	TGZ001022	AH725		
TGZ000999	XPMT050204R-DJ	AH725	TGZ001023	XPMT110412R-DS	AH120
TGZ001000		T1115	TGZ001024		AH725
TGZ001001	XPMT06X308R-DJ	AH740	TGZ001025	XPMT040104R-DW	AH120
TGZ001002		AH725	TGZ001026		AH740
TGZ001003		T1115	TGZ001027		AH725
TGZ001004	XPMT07H308R-DJ	AH740	TGZ001028	XPMT050204R-DW	AH120
TGZ001005		AH725	TGZ001029		AH740
TGZ001006		T1115	TGZ001030		AH725
TGZ001007	XPMT08T308R-DJ	AH740	TGZ001031	XPMT06X308R-DW	AH120
TGZ001008		AH725	TGZ001032		AH740
TGZ001009		T1115	TGZ001033		AH725
TGZ001010	XPMT110412R-DJ	AH740	TGZ001034	XPMT07H308R-DW	AH120
TGZ001011		AH725	TGZ001035		AH740
TGZ001012		T1115	TGZ001036		AH725
TGZ001013	XPMT040104R-DS	AH120	TGZ001037	XPMT08T308R-DW	AH120
TGZ001014		AH725	TGZ001038		AH740
TGZ001015	XPMT050204R-DS	AH120	TGZ001039	XPMT110412R-DW	AH725
TGZ001016		AH725	TGZ001040		AH120
TGZ001017	XPMT06X308R-DS	AH120	TGZ001041	AH740	
TGZ001018		AH725	TGZ001042	AH725	

## ▶ Cutting Conditions

Work material	First choice	High-feed machining	High-speed machining	Troubleshooting			Cutting speed Vc (m/min)	Feed f (mm/rev)					
				Breakage	Wear	Surface finish		Series (L/D)	Ø12.5 ~ Ø14.5	Ø15.0 ~ Ø17.0	Ø17.5 ~ Ø26.0	Ø27.0 ~ Ø32.0	Ø33.0 ~ Ø54.0
Low carbon steels (C < 0.3) JIS S5400, S490, S25C, etc.	DS AH120			DS		DW	160-240-320	2D, 3D	0.02-0.04-0.06	0.02-0.04-0.06	0.04-0.07-0.10	0.04-0.07-0.10	0.04-0.07-0.10
				GH730		AH120		4D, 5D	0.02-0.04-0.06	0.02-0.04-0.06	0.04-0.07-0.10	0.04-0.07-0.10	0.04-0.07-0.10
Carbon steels (C > 0.3) JIS S45C, S55C, etc.	DJ AH725	DW AH725	DS AH120	DW	DJ	DW	80-140-250	2D, 3D	0.02-0.04-0.10	0.04-0.08-0.12	0.06-0.10-0.13	0.06-0.11-0.15	0.08-0.13-0.18
				AH725	T1115	AH725		4D, 5D	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.08-0.10	0.06-0.09-0.12	0.08-0.11-0.14
Low alloy steels JIS SCM415, etc.	DS AH725			DS		DW	160-210-250	2D, 3D	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.09-0.12	0.06-0.09-0.12	0.06-0.10-0.14
				AH725		AH725		4D, 5D	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.09-0.12	0.06-0.09-0.12	0.06-0.10-0.14
Alloy steels (C > 0.3) JIS SCM440, SCr420, etc.	DJ AH725	DW AH725	DS AH120	DW	DJ	DW	80-140-200	2D, 3D	0.04-0.07-0.10	0.04-0.08-0.12	0.06-0.10-0.13	0.06-0.11-0.15	0.08-0.13-0.18
				AH725	T1115	AH725		4D, 5D	0.04-0.06-0.08	0.04-0.06-0.08	0.06-0.08-0.10	0.06-0.09-0.12	0.08-0.11-0.14
Stainless steels (Austenitic) JIS SUS304, SUS316, etc.	DS AH723			DS		DW	100-150-200	2D, 3D	0.02-0.05-0.08	0.02-0.05-0.08	0.04-0.07-0.10	0.04-0.08-0.12	0.04-0.08-0.12
				AH120		AH120		4D, 5D	0.02-0.05-0.08	0.02-0.05-0.08	0.04-0.07-0.10	0.04-0.08-0.12	0.04-0.08-0.12
Stainless steels (Martensitic and ferritic) JIS SUS304, SUS316, etc.	DS AH725			DS		DW	100-160-220	2D, 3D	0.02-0.05-0.08	0.02-0.05-0.08	0.04-0.07-0.10	0.04-0.08-0.12	0.04-0.08-0.12
				AH120		AH120		4D, 5D	0.02-0.05-0.08	0.02-0.05-0.08	0.04-0.07-0.10	0.04-0.08-0.12	0.04-0.08-0.12
Stainless steels (Precipitation hardening) JIS SUS630, etc.	DS AH120			DS		DW	80-100-120	2D, 3D	0.04-0.06-0.08	0.04-0.06-0.08	0.04-0.06-0.08	0.04-0.07-0.10	0.06-0.08-0.10
				AH120		AH120		4D, 5D	0.04-0.06-0.08	0.04-0.06-0.08	0.04-0.06-0.08	0.04-0.07-0.10	0.06-0.08-0.10
Gray cast irons JIS FC250, etc.	DJ T1115	DJ AH725		DJ		DW	80-170-250	2D, 3D	0.04-0.09-0.12	0.04-0.09-0.12	0.06-0.11-0.15	0.06-0.12-0.18	0.08-0.14-0.20
				AH725		AH740		4D, 5D	0.06-0.08-0.10	0.06-0.08-0.10	0.06-0.09-0.12	0.06-0.10-0.14	0.08-0.12-0.16
Ductile cast irons JIS FCD700, etc.	DJ T1115	DJ AH725		DJ		DW	80-140-200	2D, 3D	0.04-0.08-0.12	0.04-0.08-0.12	0.06-0.11-0.15	0.06-0.12-0.18	0.08-0.14-0.20
				AH725		AH740		4D, 5D	0.04-0.07-0.10	0.04-0.07-0.10	0.06-0.09-0.12	0.06-0.10-0.14	0.08-0.12-0.16
Aluminum alloys JIS A2017, ADC12, etc.	DW AH725						200-300-400	2D, 3D	0.10-0.11-0.12	0.10-0.12-0.15	0.15-0.18-0.20	0.15-0.18-0.20	0.15-0.20-0.25
								4D, 5D	0.08-0.10-0.12	0.08-0.10-0.12	0.12-0.14-0.16	0.12-0.14-0.16	0.12-0.16-0.20

Note:

- When using the smaller side of the diameter range, the feed rate should be set lower.
- For work materials of ≤ 40 HRC, the feed rate should be set below 1/2.
- For difficult-to-cut materials (heat-resistant alloys, etc.), the cutting speed should be set below 1/5 that of carbon steels.
- For high-feed machining, apply a feed rate that is approximately 1.5 times the standard feed conditions.
- High-speed machining means cutting speeds over 150m/min.
- When using DW insert for troubleshooting, use it within the range of standard cutting conditions.

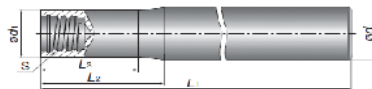
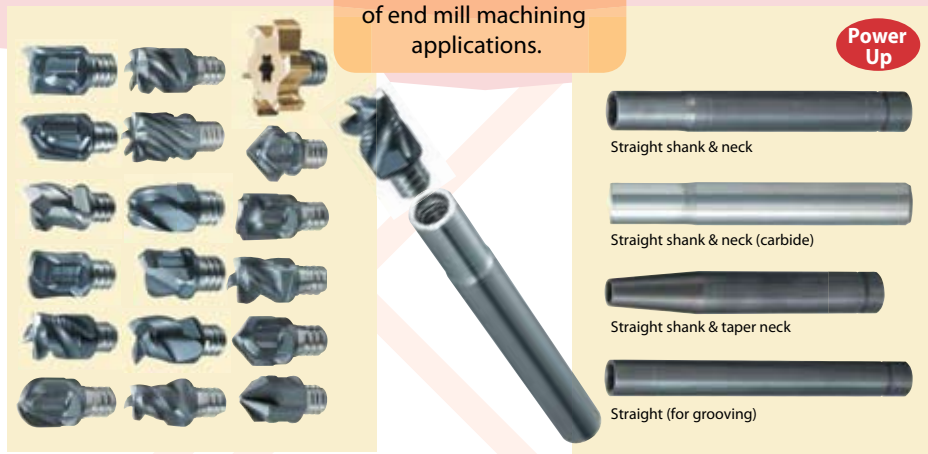
► Indexable and Mills



**1 Wide range of cutting heads**  
23 kinds of cutting heads are available. The head exchange is easy and highly accurate with the precision thread.

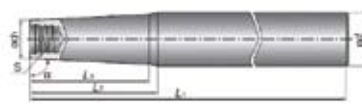
Flexible combinations  
TungMeister can be applied to all kinds of end mill machining applications.

**2 Three kinds of shank material**  
Users can choose the most suitable combination according to the machining parameters, length and rigidity required.



**Straight shank & neck with coolant hole**

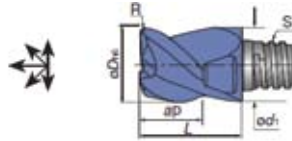
Cat. No.	Dimensions (mm)						Shank style	Shank material
	ød	ød1	L1	L2	L3	S		
VSSD08L060S05-S	8	7.6	60	15	12.5	S05	Cylindrical	Steel
VSSD10L075S06-S	10	9.6	75	20	17.5	S06		
VSSD12L090S08-S	12	11.5	90	16	13.5	S08		
VSSD16L100S10-S	16	15.2	100	20	18	S10		
VSSD20L120S12-S	20	18.3	120	25	20.5	S12		
VSSD08L090S05-C	8	7.6	90	40	38.5	S05	Cylindrical	Carbide
VSSD10L090S06-C	10	9.6	90	40	38.5	S06		
VSSD12L130S08-C	12	11.5	130	80	78	S08		
VSSD16L130S10-C	16	15.2	130	80	78	S10		
VSSD20L200S12-C	20	18.3	200	120	117	S12		



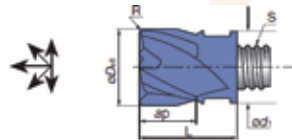
**Straight shank & taper neck**

Cat. No.	Dimensions (mm)							Shank material
	α	ød	ød1	L1	L2	L3	S	
VTSD12L080S05-S	85°	12	7.6	80	25	-	S05	Steel
VTSD16L160S06-S	89°	16	9.6	160	55	46.5	S06	
VTSD20L170S08-S	89°	20	11.5	170	80	69.5	S08	
VTSD25L170S10-S	85°	25	15.2	170	56	-	S10	
VTSD32L190S12-S	85°	32	18.3	190	80	-	S12	
VTSD16L150S05-C	89°	16	7.6	150	100	91	S05	Carbide
VTSD16L170S06-C	89°	16	9.6	170	120	116.5	S06	
VTSD20L170S08-C	89°	20	11.5	170	120	112	S08	
VTSD20L210S10-C	89°	20	15.2	210	160	-	S10	
VTSD25L250S12-C	89°	25	18.3	250	140	136.6	S12	

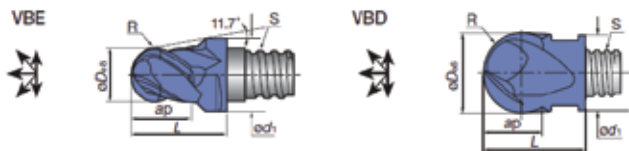
► Indexable end Mills



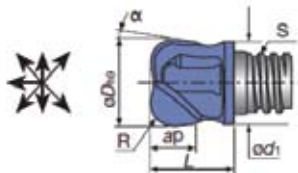
Cat. No.	Grade AH725	No.of flutes	Helix angle	Dimensions (mm)						Wrench
				øD	ød1	ap	R	S	L	
VEE080L05.0R00-03S05	•	3	45°	8	7.7	5	0	S05	10	KEYV-S05
VEE100L07.0R00-03S06	•	3	45°	10	9.7	7	0	S06	13	KEYV-S06
VEE120L09.0R00-03S08	•	3	45°	12	11.7	9	0	S08	16.5	KEYV-S08



Cat. No.	Grade AH725	No.of flutes	Helix angle	Dimensions (mm)						Wrench
				øD	ød1	ap	R	S	L	
VEE060L05.0R00-04S05	•	4	45°	6	8	5	0	S05	10	KEYV-S05
VEE080L05.0R00-04S05	•	4	45°	8	7.7	5	0	S05	10	
VED080L05.0R05-04S05	•	4	30°	8	7.7	5	0.5	S05	10	
VEE100L07.0R00-04S06	•	4	45°	10	9.7	7	0	S06	13	KEYV-S06
VED100L07.0R05-04S06	•	4	30°	10	9.7	7	0.5	S06	13	
VEE120L09.0R00-04S08	•	4	45°	12	11.7	9	0	S08	16.5	KEYV-S08
VED120L09.0R05-04S08	•	4	30°	12	11.7	9	0.5	S08	16.5	
VEE160L12.0R00-04S10	•	4	45°	16	15.3	12	0	S10	20.5	KEYV-S10
VED160L12.0R05-04S10	•	4	30°	16	15.3	12	0.5	S10	20.5	



Cat. No.	Grades AH725	No.of flutes	Helix angle	Dimensions (mm)						Wrench
				øD	ød1	ap	R	S	L	
VBE060L05.5-BG-04S05	•	4	45°	6	8	5.5	2.987	S05	10	KEYV-S05
VBD080L05.0-BG-04S05	•	4	30°	8	7.7	5	3.982	S05	10	KEYV-S05
VBD100L07.0-BG-04S06	•	4	30°	10	9.7	7	4.982	S06	13	KEYV-S06
VBD120L09.0-BG-04S08	•	4	30°	12	11.7	9	5.978	S08	16.5	KEYV-S08
VBD160L12.0-BG-04S10	•	4	30°	16	15.3	12	7.978	S10	20.5	KEYV-S10
VBD200L15.0-BG-04S12	•	4	30°	20	18.3	15	9.972	S12	25.5	KEYV-S12



Cat. No.	Grade AH725	No.of flutes	Helix angle	Dimensions (mm)						Wrench
				øD	ød1	ap	R	α	S	
VRC100L07.0R05-02S06	•	2	15°	10	9.5	7	0.5	5°	S06	KEYV-S06
VRC100L07.0R10-02S06	•	2	15°	10	9.5	7	1	5°	S06	KEYV-S06
VRB120L06.2R20-02S08	•	2	0°	12	11.5	6.2	2	7°	S08	KEYV-S08
VRB120L06.1R25-02S08	•	2	0°	12	11.5	5.8	2.5	7°	S08	KEYV-S08
VRB160L08.0R50-02S10	•	2	0°	16	15.2	8	5	7°	S10	KEYV-S10
VRB200L11.1R30-02S12	•	2	0°	20	18.3	11	3	7°	S12	KEYV-S12
VRB200L11.5R40-02S12	•	2	0°	20	18.3	11.3	4	7°	S12	KEYV-S12

## SPECIAL TOOL

Specially made upon request, insert type and solid type.  
Features: HSS, Carbide, and Diamond Tools



### DRILLS, STEP DRILLS



### REAMERS



### CUTTING TOOLS



### GUN DRILLS, GUN REAMERS



### END MILLS



### BURNISHINGS



# HSS DRILL

## ▶ Guide of (Tool Specification) Icons

### 1 Tool Materials

<b>PCD</b>	Polycrystalline Diamond PCD	<b>HSS-Co</b>	Cobalt HSS
<b>CARBIDE</b>	Tungsten Carbide	<b>HSSE</b>	High Vanadium HSS
<b>XPM</b>	High grade Powder Metallurgy HSS (XPM)	<b>HSS</b>	HSS
<b>CPM</b>	Powder Metallurgy HSS (CPM)		

### 3 Tolerance for drill diameter

<b>h8</b>	Tolerance for drill diameter
-----------	------------------------------

### 4 Shank

<b>SHANK h6</b>	Tolerance for shank diameter
<b>SHANK FIT</b>	Suitable for the shrink holder system

### 5 Helix Angle

<b>30°</b>	Display helix angle of flute for drills and taps
------------	--

### 6 Cutting Conditions

<b>切削条件</b>	Indicates page No. for recommended drilling conditions.
-------------	---

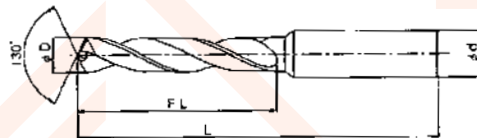
### 2 Surface Treatment

<b>WX</b>	WX (TiAlN) coating	<b>DIA</b>	Diamond coating
<b>FX</b>	FX (TiAlN) coating	<b>CrN</b>	CrN coating
<b>V</b>	V (composite multi-layered) coating	<b>SS</b>	Smooth coating
<b>TiCN</b>	TiCN coating	<b>H</b>	Steam Oxide
<b>TiN</b>	TiN coating	<b>N</b>	Nitride

# HSS DRILL

## ▶ EX-GDR

Regular Drill for General Application



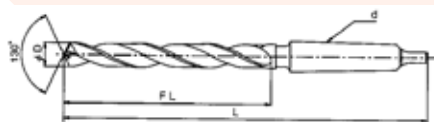
Non step processing to depth 4-5 times the hole diameter allows this drill to be used for numerous high speed application.  
 - Drill dia.<13 (with plain straight shank).  
 - Drill dia.>13 (straight and flat shank).

Order No.	EDP.No	D	FL	L	d
OSZ000001	60520	2.00	24	56	3
OSZ000002	60525	2.50	30	62	3
OSZ000003	60530	3.00	33	65	3
OSZ000004	60535	3.50	39	71	4
OSZ000005	60540	4.00	43	75	4
OSZ000006	60545	4.50	47	91	6
OSZ000007	60550	5.00	52	96	6
OSZ000008	60555	5.50	57	101	6
OSZ000009	60560	6.00	57	101	6
OSZ000010	60565	6.50	63	107	8
OSZ000011	60570	7.00	69	113	8
OSZ000012	60575	7.50	69	113	8
OSZ000013	60580	8.00	75	119	8
OSZ000014	60585	8.50	75	125	10
OSZ000015	60590	9.00	81	131	10
OSZ000016	60595	9.50	81	131	10
OSZ000017	60600	10.00	87	137	10

Order No.	EDP.No	D	FL	L	d
OSZ000025	60605	10.50	87	144	12
OSZ000026	60610	11.00	94	151	12
OSZ000027	60615	11.50	94	151	12
OSZ000028	60620	12.00	101	158	12
OSZ000029	60625	12.50	101	158	12
OSZ000030	60630	13.00	101	158	12
OSZ000031	60640	14.00	90	150	16
OSZ000032	60645	14.50	95	155	16
OSZ000033	60650	15.00	95	161	20
OSZ000034	60655	15.50	100	166	20
OSZ000035	60660	16.00	100	166	20
OSZ000036	60665	16.50	106	172	20
OSZ000037	60680	18.00	112	178	20
OSZ000038	60690	19.00	118	194	25
OSZ000039	60700	20.00	125	201	25
OSZ000040	60725	22.50	136	212	25
OSZ000041	60780	28.00	150	230	32

## ▶ EX-MT-GDR

Regular with Morse Tapper Shank for General Application



This drill is suitable for lathe and multi-spindle specialized machines.

Order No.	EDP.No	D	FL	L	d
OSZ000018	64560	6.0	57	137	MT1
OSZ000019	64565	6.5	63	143	MT1
OSZ000020	64610	11.0	94	177	MT1
OSZ000021	64620	12.0	101	184	MT1
OSZ000022	64635	13.5	106	189	MT1
OSZ000023	64640	14.0	106	189	MT1
OSZ000024	64655	15.5	112	212	MT2

Order No.	EDP.No	D	FL	L	d
OS0004301	64670	17.0	115	215	MT2
OS0001740	64675	17.5	118	218	MT2
OS0001108	64680	18.0	118	218	MT2
OS0000940	64720	22.0	132	232	MT2
B20000405	64785	28.5	155	275	MT3
OS0002653	64970	47.0	195	340	MT3
OS0002654	64980	48.0	200	345	MT3

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels	Stainless Steels	Tool Steels	Cast Iron	Ductile Cast Iron	Cooper Alloy	Quenched and Tempered Steels			Aluminum	AL Alloy Casting	Titanium	Titanium Alloy	In-conel	Magnesium Alloy	Metal Matrix Composites
	C~0.25%	CO.25%~0.45%	CO.45%~	SCM	~35 HRC	35~45 HRC	SUS	SKD SKS	FC	FCD	Cu	45~50 HRC	50~60 HRC	60~70 HRC	AL	AC	TI		AZ91D	
Abbreviation																				
EX-GDR	○		○	○	○		○	○	○					○	○					
EX-MT-GDR	○		○	○	○		○	○	○					○	○					

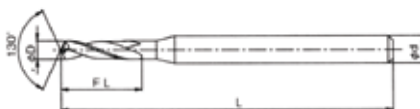




# HSS DRILL

## EX-GDN

Medium for General Application



The middle-flute length allows for high speed, non-step processing; to depths up to 4 times the drill diameter.

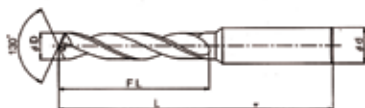


Order No.	EDP.No	D	FL	L	d
OSZ000042	61005	0.5	6	38	3
OSZ000043	61008	0.8	8	40	3
OSZ000044	8607132	1.32	12	44	3
OSZ000045	61015	1.5	14	46	3
OSZ000046	8607168	1.68	15	47	3
OSZ000047	61020	2	18	50	3
OSZ000048	8607205	2.05	18	50	3
OSZ000049	61025	2.5	22	54	3
OSZ000050	61030	3	25	57	3
OSZ000051	8607305	3.05	27	59	4

Order No.	EDP.No	D	FL	L	d
OSZ000084	61032	3.2	27	59	4
OSZ000085	61035	3.5	30	62	4
OSZ000086	8607355	3.55	30	62	4
OSZ000087	61040	4	33	65	4
OSZ000088	61043	4.3	36	80	6
OSZ000089	61045	4.5	36	80	6
OSZ000090	61050	5	39	83	6
OSZ000091	61051	5.1	39	83	6
OSZ000092	610553	5.5	43	87	6
OSZ000093	61060	6	43	87	6

## EX-GDS

Stub for General Application



Rigid flute form and stub length enhances efficiency and precision. Most suitable for tapping or lathe processing.



Order No.	EDP.No	D	FL	L	d
OSZ000052	60010	1.0	6	38	3
OSZ000053	60012	1.2	8	40	
OSZ000054	60013	1.3	8	40	
OSZ000055	60014	1.4	9	41	
OSZ000056	60015	1.5	9	41	
OSZ000057	60016	1.6	10	42	
OSZ000058	60017	1.7	10	42	
OSZ000059	60018	1.8	11	43	
OSZ000060	60019	1.9	11	43	
OSZ000061	60020	2.0	12	44	
OSZ000062	60021	2.1	12	44	
OSZ000063	60022	2.2	13	45	
OSZ000064	60023	2.3	13	45	
OSZ000065	60024	2.4	14	46	
OSZ000066	60025	2.5	14	46	
OSZ000067	60026	2.6	14	46	
OSZ000068	60027	2.7	16	48	
OSZ000069	60028	2.8	16	48	
OSZ000070	60029	2.9	16	48	
OSZ000071	60030	3.0	16	48	
OSZ000072	60031	3.1	18	50	
OSZ000073	60032	3.2	18	50	
OSZ000074	60033	3.3	18	52	
OSZ000075	60034	3.4	20	52	
OSZ000076	60035	3.5	20	52	
OSZ000077	60036	3.6	20	52	
OSZ000078	60037	3.7	20	52	
OSZ000079	60038	3.8	22	54	
OSZ000080	60039	3.9	22	54	
OSZ000081	60040	4.0	22	54	
OSZ000082	60042	4.2	22	66	
OSZ000083	60044	4.4	24	68	

Order No.	EDP.No	D	FL	L	d
OS0002356	60045	4.5	24	68	6
OS0001116	60046	4.6	24	68	
OS0000404	60050	5	26	70	
OS0002077	60054	5.4	28	72	
OS0002357	60055	5.5	28	72	
OS0000405	60056	5.6	28	72	
OS0000407	60060	6	28	72	
OS0002078	60064	6.4	31	75	8
OS0002358	60065	6.5	31	75	
OS0000408	60068	6.8	34	78	
OS0000409	60070	7	34	78	
OS0002479	60071	7.1	34	78	
OS0002597	60074	7.4	34	78	
OS0002359	60075	7.5	34	78	
OS0000410	60077	7.7	37	81	
OS0000411	60080	8	37	81	10
OS0002585	60083	8.3	37	87	
OS0000412	60085	8.5	37	87	
OS0002274	60090	9	40	90	
OS0001603	60093	9.3	40	90	
OS0001600	60097	9.7	43	93	
OS0001685	60099	9.9	43	93	
OS0000413	60100	10	43	93	
OS0000414	60103	10.3	43	100	12
OS0002360	60105	10.5	43	100	
OS0001348	60107	10.7	47	104	
OS0000415	60110	11	47	104	
OS0003790	60115	11.5	47	104	
OS0000416	60120	12	51	108	
OS0002361	60125	12.5	51	108	
OS0001686	60129	12.9	51	108	
OS0000417	60130	13	51	108	

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels		Stainless Steels	Tool Steels	Cast Iron	Ductile Cast Iron	Cooper Alloy	Quenched and Tempered Steels			Aluminium	AL Alloy Casting	Titanium	Titanium Alloy	In-conel	Magnesium Alloy	Metal Matrix Composites
	C~0.25%	CO.25%~0.45%	CO.45%~	SCM	~35 HRC	35~45 HRC	SUS	SKD SKS	FC	FCD	Cu	45~50 HRC	50~60 HRC	60~70 HRC	AL	AC	TI			AZ91D	
EX-GDN	○	○	○	○	○	○		○	○	○					○	○					○
EX-GDS	○	○	○	○	○	○		○	○	○						○					○
●	○	○	○	○	○	○		○	○	○						○					○

● EX-GDS Drilling depth : >3D

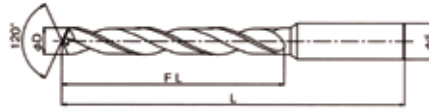




# HSS DRILL

## VP-GDR

Powder HSS Regular for High Speed Processing



The powdered metallurgy HSS and V coating allows for higher speed processing (closed to carbide drills).

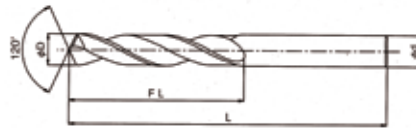


Order No.	EDP. NO	D	FL	L	d
OSZ000094	8593018	1.8	22	54	3
OSZ000095	8593020	2	24	56	
OSZ000096	8593025	2.5	30	62	
OSZ000097	8593030	3	33	65	4
OSZ000098	8593035	3.5	39	71	
OSZ000099	8593040	4	43	75	
OSZ000100	8593045	4.5	47	91	6
OSZ000101	8593049	4.9	52	96	
OSZ000102	8593050	5	52	96	
OSZ000103	8593051	5.1	52	96	8
OSZ000104	8593055	5.5	57	101	
OSZ000105	8593060	6	57	101	
OSZ000106	8593065	6.5	63	107	10
OSZ000107	8593070	7	69	113	
OSZ000108	8593075	7.5	69	113	
OSZ000109	8593080	8	75	119	10
OSZ000110	8593082	8.2	75	125	
OSZ000111	8593085	8.5	75	125	
OSZ000112	8593087	8.7	81	131	10
OSZ000113	8593090	9	81	131	
OSZ000114	8593095	9.5	81	131	
OSZ000115	8593100	10	87	137	

Order No.	EDP. NO	D	FL	L	d
OSZ000160	8593101	10.1	87	144	12
OSZ000161	8593108	10.8	94	151	
OSZ000162	8593109	10.9	94	151	
OSZ000163	8593110	11	94	151	16
OSZ000164	8593120	12	101	158	
OSZ000165	8593121	12.1	101	158	
OSZ000166	8593125	12.5	101	158	20
OSZ000167	8593126	12.6	101	158	
OSZ000168	8593130	13	101	158	
OSZ000169	8593140	14	106	166	25
OSZ000170	8593150	15	109	169	
OSZ000171	8593160	16	112	172	
OSZ000172	8593180	18	118	184	32
OSZ000173	8593200	20	125	191	
OSZ000174	8593220	22	132	208	
OSZ000175	8593240	24	140	216	32
OSZ000176	8593250	25	145	216	
OSZ000177	8593260	26	150	225	
OSZ000178	8593280	28	230	230	32
OSZ000179	8593300	30	235	235	
OSZ000180	8593320	32	245	245	

## V-SDR

Reguler



This multi-purpose drill is best used at low to medium speed.



Order No.	EDP. NO	D	FL	L	d
OSZ000116	8593018	1.8	22	54	3
OSZ000117	8593020	2	24	56	
OSZ000118	8593025	2.5	30	62	
OSZ000119	8593030	3	33	65	4
OSZ000120	8593035	3.5	39	71	
OSZ000121	8593040	4	43	75	
OSZ000122	8593045	4.5	47	91	6
OSZ000123	8593049	4.9	52	96	
OSZ000124	8593050	5	52	96	
OSZ000125	8593051	5.1	52	96	8
OSZ000126	8593055	5.5	57	101	
OSZ000127	8593060	6	57	101	
OSZ000128	8593065	6.5	63	107	10
OSZ000129	8593070	7	69	113	
OSZ000130	8593075	7.5	69	113	
OSZ000131	8593080	8	75	119	10
OSZ000132	8593082	8.2	75	125	
OSZ000133	8593085	8.5	75	125	
OSZ000134	8593087	8.7	81	131	10
OSZ000135	8593090	9	81	131	
OSZ000136	8593095	9.5	81	131	
OSZ000137	8593100	10	87	137	

Order No.	EDP. NO	D	FL	L	d
OSZ000139	8593101	10.1	87	144	12
OSZ000140	8593108	10.8	94	151	
OSZ000141	8593109	10.9	94	151	
OSZ000142	8593110	11	94	151	16
OSZ000143	8593120	12	101	158	
OSZ000144	8593121	12.1	101	158	
OSZ000145	8593125	12.5	101	158	20
OSZ000146	8593126	12.6	101	158	
OSZ000147	8593130	13	101	158	
OSZ000148	8593140	14	106	166	25
OSZ000149	8593150	15	109	169	
OSZ000150	8593160	16	112	172	
OSZ000151	8593180	18	118	184	32
OSZ000152	8593200	20	125	191	
OSZ000153	8593220	22	132	208	
OSZ000154	8593240	24	140	216	32
OSZ000155	8593250	25	145	216	
OSZ000156	8593260	26	150	225	
OSZ000157	8593280	28	230	230	32
OSZ000158	8593300	30	235	235	
OSZ000159	8593320	32	245	245	

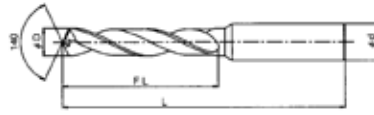
Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels	Stainless Steels	Tool Steels	Cast Iron	Ductile Cast Iron	Cooper Alloy	Quenched and Tempered Steels			Aluminum	AL Alloy Casting	Titanium	Titanium Alloy	In-conel	Magnesium Alloy	Metal Matrix Composites
	C~0.25%	CO.25%~0.45%	CO.45%~	SCM	~35 HRC	35~45 HRC	SUS	SKD SKS	FC	FCD	Cu	45-50 HRC	50-60 HRC	60-70 HRC	AL	AC	TI		AZ91D	
VP-GDR	○	○	○	○	○		○	○	○					○	○	○	○	○	○	
●	○	○	○	○	○		○	○	○					○	○	○	○	○	○	
V-SDR	○	○	○	○			○	○	○					○	○				○	

● VP-GDR Drilling depth : >5D



# CARBIDE DRILL

## FS-GDN Carbide Medium for General Application

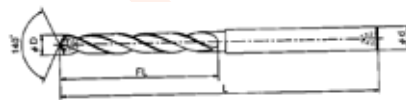


Superior wear resistance for high speed operations.

Order No.	EDP. NO	D	FL	L	d
OSZ000181	8570200	2.0	18	52	3
OSZ000182	8570300	3.0	25	52	3
OSZ000183	8570400	4.0	33	60	4
OSZ000184	8570500	5.0	39	71	5
OSZ000185	8570600	6.0	43	83	6
OSZ000186	8570800	8.0	56	96	8
OSZ000187	8570820	8.2	56	96	9
OSZ000188	8571000	10.0	65	109	10
OSZ000189	8571100	11.0	71	115	11

Order No.	EDP.NO	D	FL	L	d
OSZ000191	8571200	12.0	76	126	12
OSZ000192	8571250	12.5	76	128	13
OSZ000193	8571500	15.0	83	143	15
OSZ000194	8571600	16.0	85	145	16
OSZ000195	8571700	17.0	88	148	17
OSZ000196	8571800	18.0	90	154	18
OSZ000197	8571900	19.0	93	157	19
OSZ000198	8572000	20.0	96	162	20

## FTO-GDN Carbide Medium for High Speed Processing with Internal Coolant Supply

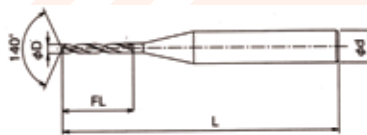


Provide high speed operation and long tool life on general steel and even with the stainless steel. This tool has an oil hole which improves coolant supply and facilitates chip ejection. Step feed is not necessary.

Order No.	EDP. NO	D	FL	L	d
OSZ000199	8566030	3	25	66	3
OSZ000200	8566035	3.5	30	74	4
OSZ000201	8566040	4	33	74	4
OSZ000202	8566045	4.5	36	81	5
OSZ000203	8566050	5	39	81	5
OSZ000204	8566055	5.5	43	88	6
OSZ000205	8566060	6	43	88	6
OSZ000206	8566070	7	52	99	7
OSZ000207	8566080	8	56	106	8
OSZ000208	8566083	8.3	56	112	9
OSZ000209	8566090	9	61	112	9
OSZ000210	8566094	9.4	61	119	10

Order No.	EDP. NO	D	FL	L	d
OSZ000212	8566100	10	65	119	10
OSZ000213	8566107	10.7	71	125	11
OSZ000214	8566110	11	71	125	11
OSZ000215	8566120	12	76	133	12
OSZ000216	8566130	13	76	137	13
OSZ000217	8566140	14	80	142	14
OSZ000218	8566150	15	83	148	15
OSZ000219	8566160	16	85	152	16
OSZ000220	8566180	18	90	157	18
OSZ000221	8566190	19	93	160	19
OSZ000222	8566200	20	96	163	20

## FH-GDN Carbide Medium for Hardened Steel



This drill is developed for small size drilling in hardened steel. It is applied to deep hole (around 7 x D)

Order No.	EDP. NO	D	FL	L	d
OSZ000223	8562030	0.3	2.5	38	3
OSZ000224	8562040	0.4	4	38	3
OSZ000225	8562050	0.5	5	38	3
OSZ000226	8562060	0.6	5.5	38	3
OSZ000227	8562070	0.7	7	38	3
OSZ000228	8562080	0.8	7.5	42	3
OSZ000229	8562090	0.9	8.5	42	3
OSZ000230	8562100	1	9	42	3

Order No.	EDP. NO	D	FL	L	d
OSZ000232	8562110	1.1	10.5	48	3
OSZ000233	8562120	1.2	12	48	3
OSZ000234	8562140	1.4	13.5	48	3
OSZ000235	8562150	1.5	13.5	48	3
OSZ000236	8562160	1.6	15	48	3
OSZ000237	8562180	1.8	16.5	48	3
OSZ000238	8562200	2	18	50	3

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels	Stainless Steels	Tool Steels	Cast Iron	Ductile Cast Iron	Cooper Alloy	Quenched and Tempered Steels			Aluminum	AL Alloy Casting	Titanium	Titanium Alloy	In-conel	Magnesium Alloy	Metal Matrix Composites	
	C~0.25%	CO.25%~0.45%	CO.45%~	SCM	~35 HRC	35~45 HRC	SUS	SKD SKS	FC	FCD	Cu	45~50 HRC	50~60 HRC	60~70 HRC	AL	AC	TI		AZ91D		
FS-GDN	○	○	○	○	○	○	○	○	○	○	○	○	○								
FTO-GDN	○	○	○	○	○	○	○	○	○	○	○	○	○				○	○	○	○	○
FH-GDN						○	○														

● EX-GDS Drilling depth : >3D



# CARBIDE DRILL

## FT-GDN

Carbide Medium for General Application



Suitable for difficult to machine materials and can be used on low rigidity machines and lathe machines.



Order No.	EDP. NO	D x α	FL	L	d
OSZ000239	8580200	2.00	18	52	3
OSZ000240	8580250	2.50	22	52	3
OSZ000241	8580300	3.00	25	52	3
OSZ000242	8580350	3.50	30	60	4
OSZ000243	8580400	4.00	33	60	4
OSZ000244	8580450	4.50	36	71	5
OSZ000245	8580500	5.00	39	71	5
OSZ000246	8580600	6.00	43	83	6
OSZ000247	8580670	6.70	47	87	7
OSZ000248	8580680	6.80	52	90	7
OSZ000249	8580800	8.00	56	96	8

Order No.	EDP. NO	D x α	FL	L	d
OSZ000251	8580820	8.20	56	96	9
OSZ000252	8580850	8.50	56	96	9
OSZ000253	8580870	8.70	61	101	9
OSZ000254	8581000	10.00	65	109	10
OSZ000255	8581200	12.00	76	126	12
OSZ000256	8581300	13.00	76	128	13
OSZ000257	8581500	15.00	83	143	15
OSZ000258	8581600	16.00	85	145	16
OSZ000259	8581800	18.00	90	154	18
OSZ000260	8582000	20.00	96	162	20

## FT-GDS

Carbide Stub for General Application



Suitable for difficult to machine materials and can be used on low rigidity machines and lathe machines.



Order No.	EDP. NO	D x α	FL	L	d
OSZ000261	8585050	0.5	3	38	3
OSZ000262	8585100	1	6	38	3
OSZ000263	8585150	1.5	9	42	3
OSZ000264	8585200	2	12	46	3
OSZ000265	8585250	2.5	14	48	3
OSZ000266	8585300	3	16	50	3
OSZ000267	8585320	3.2	18	54	4
OSZ000268	8585350	3.5	20	56	4
OSZ000269	8585370	3.7	20	56	4
OSZ000270	8585400	4	22	58	4
OSZ000271	8585410	4.1	22	60	5
OSZ000272	8585420	4.2	24	60	5
OSZ000273	8585430	4.3	24	62	5
OSZ000274	8585440	4.4	24	62	5
OSZ000275	8585450	4.5	24	62	5
OSZ000276	8585460	4.6	24	62	5
OSZ000277	8585470	4.7	24	62	5
OSZ000278	8585480	4.8	26	64	5
OSZ000279	8585490	4.9	26	64	5
OSZ000280	8585500	5	26	64	5
OSZ000281	8585510	5.1	26	68	6

Order No.	EDP. NO	D x α	FL	L	d
OSZ000283	8585520	5.2	26	68	6
OSZ000284	8585530	5.3	26	68	6
OSZ000285	8585540	5.4	28	70	6
OSZ000286	8585560	5.6	28	70	6
OSZ000287	8585570	5.7	28	70	6
OSZ000288	8585580	5.8	28	70	6
OSZ000289	8585590	5.9	28	70	6
OSZ000290	8585600	6	28	70	6
OSZ000291	8585650	6.5	31	78	7
OSZ000292	8585700	7	34	78	7
OSZ000293	8585740	7.4	34	81	8
OSZ000294	8585750	7.5	34	81	8
OSZ000295	8585800	8	37	81	8
OSZ000296	8585850	8.5	37	84	9
OSZ000297	8585900	9	40	84	9
OSZ000298	8585950	9.5	40	87	10
OSZ000299	8586000	10	43	87	10
OSZ000300	8586050	10.5	43	93	11
OSZ000301	8586100	11	47	93	11
OSZ000302	8586150	11.5	47	101	12
OSZ000303	8586200	12	51	101	12

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels		Stainless Steels	Tool Steels	Cast Iron	Ductile Cast Iron	Cooper Alloy	Quenched and Tempered Steels			Aluminum	AL Alloy Casting	Titanium	Titanium Alloy	Inconel	Magnesium Alloy	Metal Matrix Composites	
	C~0.25%	CO.25%~0.45%	CO.45%~	SCM	~35 HRC	35~45 HRC	SUS	SKD SKS	FC	FCD	Cu	45~50 HRC	50~60 HRC	60~70 HRC	AL	AC	TI			AZ91D		
FT-GDN	○	○	○	○	○	○		○	○	○		○										
●	○	○	○	○	○	○		○	○	○		○							○	○	○	○
●●	○	○	○	○	○	○	○	○	○	○		○										
FT-GDS	○	○	○	○	○	○		○	○	○										○		
●	○	○	○	○	○	○		○	○	○										○		
●●	○	○	○	○	○	○		○	○	○										○		

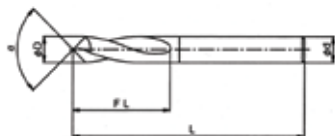
● FT-GDN Drilling depth : 3D - 4D  
 ●● FT-GDN Drilling depth : 4D - 5D

● FT-GDS Drilling depth : 2D - 3D  
 ●● FT-GDS Drilling depth : 3D - 4D



## CHAMFERING

### ► FX-LDS FX Coated Carbide

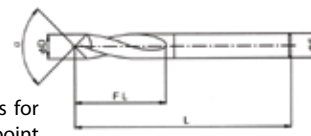
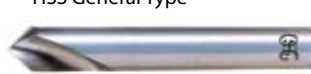


Since the point angle is 90°, this drill increases processing speed for both centering and counter sinking.



Order No.	EDP. NO	D x α	FL	L	d
OSZ000304	8561503	3 x 90°	9	48	3
OSZ000305	8561504	4 x 90°	12	54	4
OSZ000306	8561508	8 x 90°	20	81	8
OSZ000307	8561510	10 x 90°	24	93	10
OSZ000308	8561512	12 x 90°	28	108	12
OSZ000309	8561516	16 x 90°	41	118	16

### ► NC-LDS HSS General Type

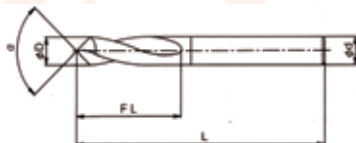


The drill with 90° with point angle, is for counter sinking, and a 120° and 130° point angle for positioning process on curved and inclined surfaces.



Order No.	EDP. NO	D x α	FL	L	d
OSZ000310	62903	3 x 90°	11	48	3
OSZ000311	62904	4 x 90°	15	54	4
OSZ000312	62906	6 x 90°	20	72	6
OSZ000313	62926	6 x 120°	20	72	6
OSZ000314	62908	8 x 90°	26	81	8
OSZ000315	62910	10 x 90°	30	93	10
OSZ000316	62912	12 x 90°	36	108	12
OSZ000317	62916	16 x 90°	41	118	16
OSZ000318	62936	16 x 120°	41	118	16

### ► TIN-NC-LDS TIN Coated HSS



Since the point angle is 90°, this drill increases processing speed for both centering and counter sinking.

Order No.	EDP. NO	D x α	FL	L	d
	63603	3 x 90°	11	48	3
OSZ000319	63704	4 x 60°	15	54	4
OSZ000320	63706	6 x 60°	20	72	6
OSZ000321	63606	6 x 90°	20	72	6
OSZ000322	63656	6 x 120°	20	72	6
OSZ000323	63708	8 x 60°	26	81	8
OSZ000324	63608	8 x 90°	26	81	8
OSZ000325	63658	8 x 120°	26	81	8

Order No.	EDP. NO	D x α	FL	L	d
OSZ000326	63610	10 x 90°	30	93	10
OSZ000327	63610	10 x 90°	30	93	10
OSZ000328	63660	10 x 120°	30	93	10
OSZ000329	63712	12 x 60°	36	108	12
OSZ000330	63612	12 x 90°	36	108	12
OSZ000331	63662	12 x 120°	36	108	12
OSZ000332	63616	16 x 90°	41	118	16
OSZ000333	63618	20 x 90°	53	132	20

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels		Stainless Steels	Tool Steels	Cast Iron	Ductile Cast Iron	Cooper Alloy	Quenched and Tempered Steels			Aluminum	AL Alloy Casting	Titanium	Titanium Alloy	Inconel	Magnesium Alloy	Metal Matrix Composites	
	C~0.25%	CO.25%~0.45%	CO.45%~	SCM	~35 HRC	35~45 HRC	SUS	SKD SKS	FC	FCD	Cu	45~50 HRC	50~60 HRC	60~70 HRC	AL	AC	TI			AZ91D		
FX-LDS	○	○	○	○	○	○		○	○	○	○	○	○	○		○	○	○	○			
NC-LDS	○	○	○	○	○			○	○	○	○				○	○						
TIN-NC-LDS	○	○	○	○	○		○	○	○	○	○					○	○	○				

# HY-PRO

Countersinc

■ [FX-MG-CS] 60°-90°  
FX-COATED [TiAlN]

■ [V-UCS] 60°-90°-120°  
V-COATED [TiCN]



1 Box contains **7** pcs

### V-UCS-90°

6.3 x 90°
8.3 x 90°
10.4 x 90°
12.4 x 90°
16.5 x 90°
20.5 x 90°
25.0 x 90°

# HSS END MILL SERIES

## Guide of (Tool Specification) Icons

1 Tool Materials	
DIA	Polycrystalline Diamond
CBN	Polycrystalline Cubic Boron Nitride
CERMET	Cermet
CARBIDE	Tungsten Carbide
XPM	High grade Powder Metallurgy HSS (XPM)
CPM	Powder Metallurgy HSS (CPM)
HSS-Co	Cobalt HSS
HSSE	High Vanadium HSS
HSS	HSS
2 Surface Treatment	
WXL	WXL coating
WXS	WX Super coating
WX	WX (TiAlN) coating
FX	FX (TiAlN) coating
GX	GX coating
V	V (composite multi-layered) coating
TIN	TiN coated
DIA	Diamond coated
DLC	DLC coated
CrN	CrN coated
H	Steam Oxide

3	Tolerance for milling diameter	7	Helix Angle
4	Shank	8	Cutting Conditions
5	Tolerance of Ball-end Radius	9	Corner Form
6	Tolerance for Cutting Edge Incline	10	Cutter of Cutting Angle

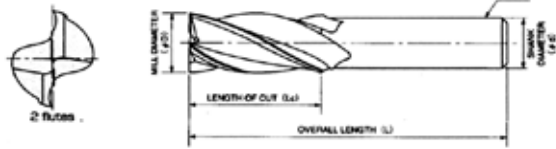


JQA-2856  
OSG was certified by ISO9001 for the management system at the following factories : Yana Factory in December, 1998 and Toyohashi Factory in December, 1999.

JQA-EM1088  
OSG acquired ISO14001 in November, 2000 at the following factories and offices : Toyokawa Head Office, Yana Factory, Shinshiro Factory, Toyohashi Factory, Oike Factory, Toyokawa Factory, R&D Center, TC Center, and Hongu Center.

# HSS END MILL SERIES

## EDS 2 Flute Short Center Cutting



Order No.	Edp.no	D	L	Lc	D
OSZ000334	80003	1.50	45	4	6
OSZ000335	80004	2.00	50	5	6
OSZ000336	80005	2.50	50	6	6
OSZ000337	80006	3.00	50	8	6
OSZ000338	80007	3.50	60	8	8
OSZ000339	80008	4.00	60	8	8
OSZ000340	80009	4.50	60	10	8
OSZ000341	80010	5.00	60	10	8
OSZ000342	80011	5.50	60	12	8
OSZ000343	80012	6.00	60	12	8
OSZ000344	80013	6.50	60	14	10
OSZ000345	80014	7.00	60	14	10
OSZ000346	80015	7.50	60	14	10
OSZ000347	80016	8.00	60	14	10
OSZ000348	80017	8.50	70	18	10
OSZ000349	80018	9.00	70	18	10
OSZ000350	80019	9.50	70	18	10
OSZ000351	80020	10.00	70	18	10
OSZ000352	80021	11.00	80	22	12
OSZ000353	80022	12.00	80	22	12

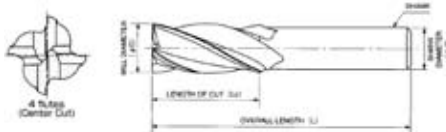
Order No.	Edp.no	D	L	Lc	D
OSZ000355	80023	13.00	85	26	16
OSZ000356	80024	14.00	90	26	16
OSZ000357	80025	15.00	95	30	16
OSZ000358	80026	16.00	95	30	16
OSZ000359	80027	17.00	95	34	16
OSZ000360	80028	18.00	95	34	16
OSZ000361	80029	19.00	110	38	20
OSZ000362	80030	20.00	110	38	20
OSZ000363	80032	22.00	110	45	20
OSZ000364	80035	25.00	120	50	25
OSZ000365	80036	26.00	120	50	25
OSZ000366	80038	28.00	125	55	25
OSZ000367	80040	30.00	125	55	25
OSZ000368	80042	32.00	145	60	32
OSZ000369	80046	36.00	150	65	32
OSZ000370	80054	44.00	160	70	42
OSZ000371	80055	45.00	160	70	42
OSZ000372	80060	50.00	165	75	42

Work Material	Carbon Steels	Alloy Steels	Prehardened Steels	Stainless Steels	Cast Iron	Cooper Alloys	Aluminium Alloys	Titanium Alloys	Heat Resistant Alloys	Plastic	
	Prehardened Steels	Tool Steels	Hardened Steels		Ductile Cast Iron						
Abbreviation	~40HRC		~45HRC		~35HRC		~350HB				
EDS	○		○		○		○				

## HSS END MILL SERIES

### ▶ CC-EMS

4 Flute Short Center Cutting



Order No.	EDP. No	D	L	Lc	d
OSZ000373	80705	2.50	50	10	6
OSZ000374	80706	3.00	50	10	6
OSZ000375	80707	3.50	60	12	8
OSZ000376	80708	4.00	60	12	8
OSZ000377	80709	3.50	60	15	8
OSZ000378	80710	4.00	60	15	8
OSZ000379	80711	5.50	60	15	8
OSZ000380	80712	6.00	60	15	8
OSZ000381	80713	6.50	60	20	10
OSZ000382	80714	7.00	60	20	10
OSZ000383	80715	7.50	60	20	10
OSZ000384	80716	8.00	60	20	10
OSZ000385	80717	8.50	70	25	10
OSZ000386	80718	9.00	70	25	10
OSZ000387	80719	9.50	70	25	10
OSZ000388	80720	10.00	70	25	10
OSZ000389	80721	11.00	80	30	12
OSZ000390	80722	12.00	80	30	12
OSZ000391	80723	13.00	85	35	12
OSZ000392	80724	14.00	90	35	16
OSZ000393	80745	14.50	95	40	16

Order No.	EDP. No	D	L	Lc	d
OSZ000412	80725	15	95	40	16
OSZ000413	80726	16	9	40	16
OSZ000414	80727	17	95	40	16
OSZ000415	80728	18	95	40	16
OSZ000416	87749	18.5	110	45	20
OSZ000417	80729	19	110	45	20
OSZ000418	80730	20	110	45	20
OSZ000419	80731	21	110	45	20
OSZ000420	80732	22	110	45	20
OSZ000421	80733	23	120	50	25
OSZ000422	80734	24	120	50	25
OSZ000423	80735	25	120	50	25
OSZ000424	87756	25.5	120	50	25
OSZ000425	80736	26	120	50	25
OSZ000426	80737	27	125	55	25
OSZ000427	80738	28	125	55	25
OSZ000428	80740	30	125	55	25
OSZ000429	80742	32	145	60	32
OSZ000430	80746	36	150	65	32
OSZ000431	80748	38	150	65	32
OSZ000432	80750	40	150	65	32

### ▶ EBD

2 Flute Short Ball End Center Cutting



Order No.	EDP. No	D	L	Lc	d
OSZ000433	80802	R1 x Ø2	50	5	6
OSZ000434	80803	R1.5 x Ø3	60	8	6
OSZ000435	80804	R2 x Ø4	70	8	6
OSZ000436	80805	R2.5 x Ø5	80	10	6
OSZ000437	80806	R3 x Ø6	90	12	6
OSZ000438	80807	R3.5 x Ø7	90	14	6
OSZ000439	80808	R4 x Ø8	100	14	8
OSZ000440	80809	R4.5 x Ø9	100	18	8
OSZ000441	80810	R5 x Ø10	100	18	10
OSZ000442	80812	R6 x Ø12	110	22	12
OSZ000443	80814	R7 x Ø14	110	26	12
OSZ000444	80815	R7.5 x Ø15	110	30	12
OSZ000445	80816	R8 x Ø16	140	30	16
OSZ000446	80817	R8.5 x Ø25	140	34	16
OSZ000447	80818	R9 x Ø18	140	34	16
OSZ000448	80820	R10 x Ø20	160	38	20
OSZ000449	80825	R12.5 x Ø25	180	50	25

### ▶ CC-EML

4 Flutes / Long / Center Cutting



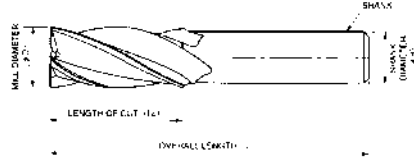
Order No.	EDP. No	D	L	Lc	d
OSZ000450	81006	3.00	60	15	6
OSZ000451	81008	4.00	60	20	8
OSZ000452	81010	5.00	60	25	8
OSZ000453	81012	6.00	60	25	8
OSZ000454	81014	7.00	75	35	10
OSZ000455	81016	8.00	75	35	10
OSZ000456	81018	9.00	90	45	10
OSZ000457	81020	10.00	90	45	10
OSZ000458	81021	11.00	105	55	12
OSZ000459	81022	12.00	105	55	12
OSZ000460	81024	14.00	110	55	16
OSZ000461	81025	15.00	120	65	16
OSZ000462	81026	16.00	120	65	16
OSZ000463	81030	20.00	140	75	20
OSZ000464	81032	22.00	140	75	20
OSZ000465	81035	25.00	160	90	25
OSZ000466	81050	40.00	195	110	32

Work Material	Carbon Steels	Alloy Steels	Prehardened Steels	Stainless Steels	Cast Iron	Cooper Alloys	Aluminium Alloys	Titanium Alloys	Heat Resistant Alloys	Plastic
	Prehardened Steels	Tool Steels	Hardened Steels		Ductile Cast Iron					
Abbreviation	~40HRC		~45HRC	~35HRC	~350HB					
CC-EMS	○			○	○		○	○		
EBD	○			○	○	○	○	○		
CC-EML	○			○	○	○	○			



## HSS END MILL SERIES

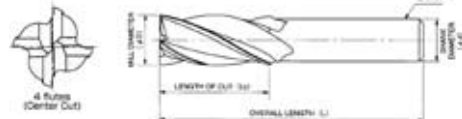
### ▶ EX-TIN-EDS 4 Flute Short Center Cutting



Order No.	EDP.No	D	L	Lc	d
OSZ000467	88006	3.00	50	6	6
OSZ000468	88008	4.00	60	8	8
OSZ000469	88010	5.00	60	10	8
OSZ000470	88012	6.00	60	12	8
OSZ000471	88014	7.00	60	14	10
OSZ000472	88016	8.00	60	14	10
OSZ000473	88018	9.00	70	18	10
OSZ000474	88020	10.00	70	18	10
OSZ000475	88021	11.00	80	22	12

Order No.	EDP.No	D	L	Lc	d
OSZ000476	88022	12.00	80	22	12
OSZ000477	88023	13.00	85	26	12
OSZ000478	88024	14.00	90	26	16
OSZ000479	88025	15.00	95	30	16
OSZ000480	88026	16.00	95	30	16
OSZ000481	88027	17.00	95	34	16
OSZ000482	88028	18.00	95	34	16
OSZ000483	88029	19.00	110	38	20
OSZ000484	88030	20.00	110	38	20
OSZ000485	88032	22.00	110	45	20

### ▶ EX-TIN-EMS Tin Coated/Multiple Flutes/Short



Order No.	EDP. No	D	L	Lc	d
OSZ000486	88206	3.00	50	9	6
OSZ000487	88207	3.50	60	12	8
OSZ000488	88208	4.00	60	12	8
OSZ000489	88210	5.00	60	15	8
OSZ000490	88212	6.00	60	15	8
OSZ000491	88214	7.00	60	20	10
OSZ000492	88216	8.00	60	20	10
OSZ000493	88218	9.00	70	25	10
OSZ000494	88220	10.00	70	25	10
OSZ000495	88221	11.00	80	30	12
OSZ000496	88222	12.00	80	30	12
OSZ000497	88223	13.00	85	35	12

Order No.	EDP. No	D	L	Lc	d
OSZ000498	88225	15.00	95	40	16
OSZ000499	88226	16.00	95	40	16
OSZ000500	88227	17.00	95	40	16
OSZ000501	88228	18.00	95	40	16
OSZ000502	88229	19.00	110	45	20
OSZ000503	88230	20.00	110	45	20
OSZ000504	88232	22.00	110	45	20
OSZ000505	88233	23.00	120	50	25
OSZ000506	88234	24.00	120	50	25
OSZ000507	88235	25.00	120	50	25
OSZ000508	88237	27.00	125	55	25
OSZ000509	88240	30.00	125	55	25

### ▶ EX-REES Roughing Short



**Roughing end mill with short flute for heavy milling**



Order No.	E	D	L	Lc	d
OSZ000510	81506	6.00	57	13	6
OSZ000511	81507	7.00	66	16	10
OSZ000512	81508	8.00	69	19	10
OSZ000513	81510	10.00	72	22	10
OSZ000514	81512	12.00	83	26	12
OSZ000515	81515	15.00	83	26	12

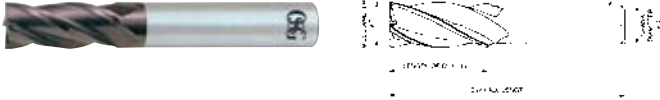
Order No.	E	D	L	Lc	d
OSZ000516	81516	16.00	92	32	16
OSZ000517	81518	18.00	92	32	16
OSZ000518	81520	20.00	104	38	20
OSZ000519	81525	25.00	121	45	25
OSZ000520	81530	30.00	121	45	25

Work Material	Carbon Steels	Alloy Steels	Prehardened Steels	Stainless Steels	Cast Iron	Cooper Alloys	Aluminium Alloys	Titanium Alloys	Heat Resistant Alloys	Plastic
	Prehardened Steels	Tool Steels	Hardened Steels	~35HRC	Ductile Cast Iron					
Abbreviation	~40HRC		~45HRC	~35HRC	~350HB					
EX-TIN-EDS	○			○	○	○	○	○		
EX-TIN-EMS	○			○	○	○	○	○		
EX-REES	○			○	○	○	○			



# CARBIDE END MILL SERIES

**WX-EMS**  
WX Coated / 4 Flute / Short



Order No.	EDP. No	D	L	Lc	d
OSZ000521	3013020	2.00	40	6	4
OSZ000522	3013025	2.50	40	8	4
OSZ000523	3013030	3.00	45	8	6
OSZ000524	3013040	4.00	45	11	6
OSZ000525	3013050	5.00	50	13	6
OSZ000526	3013060	6.00	50	13	6
OSZ000527	3013070	7.00	60	16	8
OSZ000528	3013080	8.00	60	19	8
OSZ000529	3013090	9.00	70	19	10
OSZ000530	3013100	10.00	70	22	10
OSZ000531	3013120	12.00	75	26	12

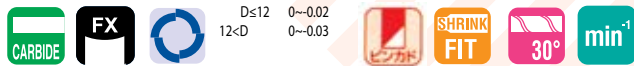
**WX-EDS**  
WX Coated / 2 Flute / Short



Order No.	EDP. No	D	L	Lc	d
OSZ000532	3010505	0.50	40	1	4
OSZ000533	3010515	1.50	40	4	4
OSZ000534	3010510	1.00	40	2.5	4
OSZ000535	3010520	2.00	40	6	4
OSZ000536	3010530	3.00	45	8	6
OSZ000537	3010540	4.00	45	11	6
OSZ000538	3010550	5.00	50	13	6
OSZ000539	3010560	6.00	50	13	6
OSZ000540	3010570	7.00	60	16	8
OSZ000541	3010580	8.00	60	19	8
OSZ000542	3010590	9.00	70	19	10
OSZ000543	3010600	10.00	70	22	10
OSZ000544	3010620	12.00	75	26	12

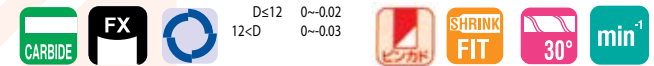
Work Material	Carbon Steels	Alloy Steels	Prehardened Steels	Stainless Steels	Cast Iron	Cooper Alloys	Aluminium Alloys	Titanium Alloys	Heat Resistant Alloys	Plastic
	Prehardened Steels	Tool Steels	Hardened Steels		Ductile Cast Iron					
Abbreviation	~40HRC		~45HRC	~35HRC	~350HB					
WX-EMS	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙	
WX-EDS	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙	

**FX-MG-EDS**  
FX Coated / 2 Flute / Short



Order No.	EDP.No	D	L	Lc	d
OSZ000545	8519006	0.6	40	1.2	3
OSZ000546	8519018	1.8	40	5	4
OSZ000547	8519020	2	40	6	4
OSZ000548	8519040	4	45	11	6
OSZ000549	8519050	5	50	13	6
OSZ000550	8519055	5.5	50	13	6
OSZ000551	8519060	6	50	13	6
OSZ000552	8519062	6.2	60	16	8
OSZ000553	8519070	7	60	16	8
OSZ000554	8519072	7.2	60	16	8
OSZ000555	8519080	8	60	19	8
OSZ000556	8519100	10	70	22	10
OSZ000557	8519120	12	75	26	12
OSZ000558	8519140	14	85	26	12
OSZ000559	8519160	16	100	32	16
OSZ000560	8519200	20	105	38	20


**FX-MG-EMS**  
FX Coated / 4 Flute / Short



Order No.	EDP.No	D	L	Lc	d
OSZ000561	8520040	4	45	11	6
OSZ000562	8520060	6	50	13	6
OSZ000563	8520070	7	60	16	8
OSZ000564	8520080	8	60	19	8
OSZ000565	8520095	9.5	70	19	10
OSZ000566	8520100	10	70	22	10
OSZ000567	8520120	12	75	16	12
OSZ000568	8520730	13	85	26	12
OSZ000569	8520150	15	90	26	16
OSZ000570	8408160	16	100	32	16
OSZ000571	8520180	18	100	32	16
OSZ000572	8520200	20	105	38	20
OSZ000573	8520220	22	105	38	20
OSZ000574	8520250	25	120	45	25

4-flute end mill for general application. Employs FX coating and is application for high speed and high feed operations.

Work Material	Carbon Steels	Alloy Steels	Prehardened Steels				Stainless Steels	Cast Iron	Cooper Alloys	Aluminium Alloys	Graphite	Titanium Alloys	Heat Resistant Alloys	Plastic
	Prehardened Steels	Tool Steels	Hardened Steels					Ductile Cast Iron						
Abbreviation	~40HRC		~45HRC	~55HRC	~60HRC	~65HRC	~35HRC	~350HB						
FX-MG-EDS	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙		⊙	⊙	
FX-MG-EMS	⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙		⊙	⊙	



To brighten the future of milling technology, which lays the foundation for the world's manufacturing industry; we have reinforced our carbide end mill series

# WXL

**New coating WXL End Mill Series**

Handles a wide range of materials and applications

The new WXL coating excels in lubricity and wear resistance to accommodate a wide range of milling applications

Together with the WXS series, the WXL series handles every possible type of material

A single tool handles from cooper to materials up to 50HRC

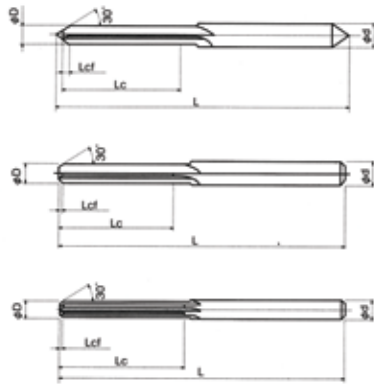
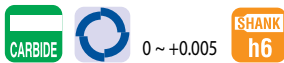
## END MILLS MADE SPECIALLY UPON REQUEST



- TAPER BALL NOSE ROUGHING END MILLS
- MULTI DIAMETER END MILLS
- DOVETAIL CUTTER END MILLS
- SPECIAL SLOT CUTTER END MILLS
- SUBLAND END MILLS
- HIGH-HELIX END MILLS WITH NICKS AND CORNER RADIUS
- PROFILE CUTTER END MILLS
- DOUBLE-END END MILLS
- 1 FLUTE END MILLS

## CARBIDE REAMER

**CRM**  
Carbide Straight Reamer



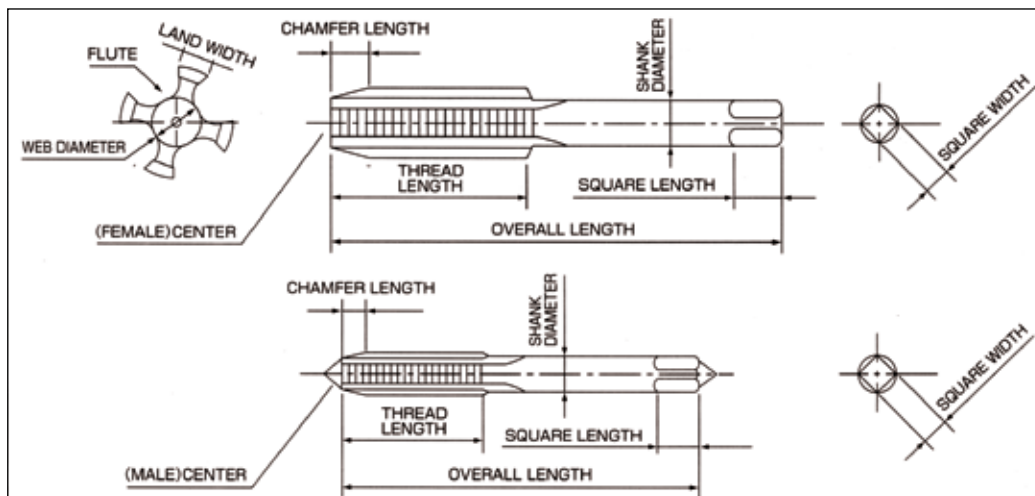
Order No.	EDP No	D	L	Lc	Lcf	d
OSZ000575	8900300	3.00	60	25	0.6	3
OSZ000576	8900400	4.00	70	28	0.8	4
OSZ000577	8900500	5.00	80	32	0.8	5
OSZ000578	8900550	5.50	80	32	0.8	5.5
OSZ000579	8900600	6.00	80	32	0.8	6
OSZ000580	8900700	7.00	80	35	0.8	7
OSZ000581	8900800	8.00	90	40	0.8	8
OSZ000582	8900900	9.00	90	40	1	9
OSZ000583	8901000	10.00	100	45	1	10
OSZ000584	8901100	11.00	100	45	1	11
OSZ000585	8901200	12.00	110	50	1	12
OSZ000586	8901300	13.00	110	50	1	14

## Reamer Made Specially Upon Request







1. Carbide Helical Reamer (Taper Shank Type)

2. Carbide Helical Reamer (Straight Shank Type)

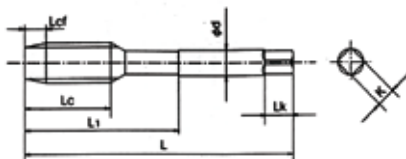


### TYPE OF TAPS & FEATURES

Type	Features	Application
 <p>Spiral Flute Taps</p>	<ul style="list-style-type: none"> <li>Spiral flute</li> <li>Chips flow out against tapping direction (ejected from holes)</li> <li>Lower tapping torque and applicable for tapping to the bottom of holes</li> <li>Good cutting action</li> </ul>	<ul style="list-style-type: none"> <li>For blind holes</li> <li>Materials where chips come out continuously in coil shape</li> </ul>
 <p>Spiral Pointed Taps</p>	<ul style="list-style-type: none"> <li>Spiral point (Chip Drive)</li> <li>Pushes chips forward with low cutting torque</li> <li>Shallow and unique flute form provides strong structure</li> <li>Good cutting action</li> </ul>	<ul style="list-style-type: none"> <li>For through holes</li> <li>Materials where chips come out continuously in coil shape</li> <li>High speed tapping</li> </ul>
 <p>Fluteless Taps (Forming Taps)</p>	<ul style="list-style-type: none"> <li>Fluteless</li> <li>Taps do not produce chips</li> <li>Precise uniformity of tapped thread limit</li> <li>Excellent rigidity</li> </ul>	<ul style="list-style-type: none"> <li>For both through &amp; blind holes</li> <li>Materials with Formability</li> </ul>
 <p>Straight Flute Taps (Hand Taps)</p>	<ul style="list-style-type: none"> <li>Straight flute</li> <li>Strong cutting edges</li> <li>Applicable for various cutting conditions</li> <li>Easy to re-grind</li> </ul>	<ul style="list-style-type: none"> <li>For both through &amp; blind holes (short thread depth only)</li> <li>Materials where chips come out in power form</li> <li>Hard material</li> </ul>

## SPIRAL POINTED TAP SERIES

► **TIN-POT**  
Tin Coated



This tap is capable of tapping a wide range of materials, but is especially suited for high speed tapping of stainless steel and quenched and tempered steels.

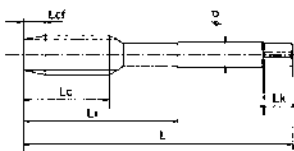


Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000587	10803	M2 x 0.4	OH1	5P	40	12	3	2
OSZ000588	10807	M2.5 x 0.45	OH2	5P	44	14	3	2
OSZ000589	10811	M3 x 0.5	OH2	5P	46	11	4	3
OSZ000590	10814	M4 x 0.7	OH2	5P	52	13	5	3
OSZ000591	10817	M5 x 0.8	OH2	5P	60	16	5.5	3
OSZ000592	10823	M8 x 1.25	OH3	5P	70	22	6.2	3
OSZ000593	10829	M10 x 1.25	OH3	5P	75	24	7	3
OSZ000594	10865	M20 x 1.5	OH4	5P	105	37	15	3

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels			Stainless Steels	Tool Steels	Cast Steels	Cast Iron	Ductile Cast Iron	Cooper	Brass	Brass Cast	Bronze	All Rolled	Aluminium Alloy	Magnesium Alloy Casting	Zinc Alloy Cast	Titanium Alloy	Nickel Alloy Plastic	Thermo Setting	Thermo Plastic
	C~0.25%	CO.25%~0.45%	CO.45%~0.6%	SCM	25-45 HRC	45-55 HRC	50-60 HRC	SUS	SKD	SC	FC	FCD	Cu	BS	BsC	PB	AL	AC,ADC	MC	ZDC				
TIN-POT	○	○	○	○				◎	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

## SPIRAL POINTED TAP SERIES

### EX-POT General Application

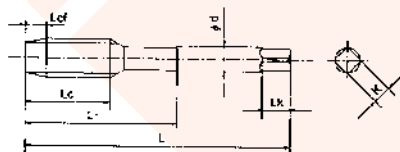


Suitable for through hole tapping of carbon steel, alloy steels and nonferrous metals whose chips are produced in continuous coil form. These taps discharge chips through the hole.

Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000595	16011	M1.4 x 0.3	OH2	5P	34	9	3	2
OSZ000596	16031	M2 x 0.4	OH1	5P	40	12	3	2
OSZ000597	16059	M2.6 x 0.45	OH2	5P	44	14	3	2
OSZ000598	15368	M3 x 0.5	OH2	5P	46	11	4	3
OSZ000599	16069	M3 x 0.5	OH3	5P	46	11	4	3
OSZ000600	17942	M3 x 0.5	OH4	5P	46	11	4	3
OSZ000601	16065	M3 x 0.6	OH2	5P	46	11	4	3
OSZ000602	16074	M3.5 x 0.6	OH2	5P	48	13	4	3
OSZ000603	16083	M4 x 0.75	OH2	5P	52	13	5	3
OSZ000604	15386	M4 x 0.7	OH2	5P	52	13	5	3
OSZ000605	17946	M4 x 0.7	OH4	5P	52	13	5	3
OSZ000606	16087	M4 x 0.7	OH3	5P	52	13	5	3
OSZ000607	16105	M5 x 0.5	OH2	5P	60	15	5.5	3
OSZ000608	16102	M5 x 0.8	OH3	5P	60	15	5.5	3
OSZ000609	15401	M5 x 0.8	OH2	5P	60	15	5.5	3
OSZ000610	16117	M6 x 0.75	OH3	5P	62	19	6	3
OSZ000611	15413	M6 x 1	OH2	5P	62	19	6	3
OSZ000612	16114	M6 x 1	OH3	5P	62	19	6	3
OSZ000613	16134	M8 x 1	OH2	5P	62	22	6	3
OSZ000614	16132	M8 x 1.25	OH4	5P	70	22	6.2	3
OSZ000615	15431	M8 x 1.25	OH3	5P	70	22	6.2	3

Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000616	16148	M9 x 1	OH2	5P	72	22	7	3
OSZ000617	16163	M10 x 1	OH3	5P	75	24	7	3
OSZ000618	16164	M10 x 1	OH4	5P	75	24	7	3
OSZ000619	15460	M10 x 1.25	OH3	5P	75	24	7	3
OSZ000620	15456	M10 x 1.5	OH3	5P	75	24	7	3
OSZ000621	16157	M10 x 1.5	OH4	5P	75	24	7	3
OSZ000622	16172	M11 x 1.25	OH3	5P	80	25	8	3
OSZ000623	15483	M12 x 1.5	OH3	5P	82	29	8.5	3
OSZ000624	15488	M12 x 1.25	OH4	5P	82	29	8.5	3
OSZ000625	15480	M12 x 1.75	OH4	5P	82	29	8.5	3
OSZ000626	15512	M14 x 1.5	OH3	5P	88	30		3
OSZ000627	16216	M14 x 1.25	OH3	5P	88	30		3
OSZ000628	15509	M14 x 2	OH4	5P	88	30		3
OSZ000629	15557	M16 x 2	OH4	5P	95	32		3
OSZ000630	15593	M18 x 2.5	OH4	5P	100	37	14	3
OSZ000631	15629	M20 x 2.5	OH4	5P	105	37	15	3
OSZ000632	16377	M24 x 2	OH4	5P	120	45	19	3
OSZ000633	16461	M30 x 1.5	OH4	5P	135	48	20	3
OSZ000634	16502	M36 x 2	OH3	5P	110	39	28	4
OSZ000635	16500	M36 x 3	OH4	5P	155	57	28	4
OSZ000636	16561	M48 x 3	OH4	5P	185	67	38	4

### V-POT Tin Coated



This tap is capable of a wide range of application, on both soft or hard materials. It is particularly suited for high speed tapping (with a highly diluted water soluble oil). This tap is also suitable for dry tapping.

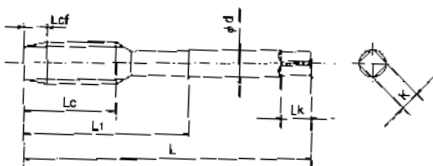
Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000637	8310083	M4x0.7	OH2	5P	52	13	5	3
OSZ000638	8310097	M6x1	OH2	5P	62	19	6	3
OSZ000639	8310107	M8 x 1.25	OH3	5P	70	22	6.2	3
OSZ000640	8310121	M10 x 1.25	OH3	5P	75	24	7	3
OSZ000641	8310130	M12 x 1.75	OH4	5P	82	29	8.5	3
OSZ000642	8310157	M16x2	OH4	5P	95	32	12.5	3
OSZ000643	8310167	M18x2.5	OH4	5P	100	37	14	3
OSZ000644	8310177	M20x2.5	OH4	5P	105	37	15	3



## SPIRAL FLUTED TAP SERIES

### EX-SFT

General Application



This tap is made for cutting materials whose chips are produced in continuous coil form, such as Carbon Steel, Alloy Steel, and nonferrous metals.



Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000645	18012	M1.4 x 0.3	OH1	2.5P	34	9	3	2
OSZ000646	18021	M2.0 x 0.4	OH2	2.5P	40	12	3	2
OSZ000647	18045	M3.0 x 0.5	OH2	2.5P	46	11	4	3
OSZ000648	11544	M3.0 x 0.5	OH2	2.5P	46	11	4	3
OSZ000649	18048	M3.5 x 0.6	OH1	2.5P	48	13	4	3
OSZ000650	18059	M4.0 x 0.5	OH3	2.5P	52	13	5	3
OSZ000651	11556	M4.0 x 0.7	OH2	2.5P	52	13	5	3
OSZ000652	18054	M4.0 x 0.75	OH1	2.5P	52	13	5	3
OSZ000653	18053	M4.0 x 0.75	OH2	2.5P	52	13	5	3
OSZ000654	18072	M5.0 x 0.8	OH2	2.5P	60	16	5.5	3
OSZ000655	11571	M5.0 x 0.8	OH3	2.5P	60	16	5.5	3
OSZ000656	18084	M6.0 x 1.0	OH2	2.5P	62	19	6	3
OSZ000657	18086	M6.0 x 0.75	OH3	2.5P	62	19	6	3
OSZ000658	11583	M6.0 x 1.0	OH2	2.5P	62	19	6	3
OSZ000659	19954	M6.0 x 1.0	OH3	2.5P	62	19	6	3
OSZ000660	18094	M7.0 x 0.75	OH2	2.5P	65	19	6.2	3
OSZ000661	18092	M7.0 x 1	OH2	2.5P	65	19	6.2	3
OSZ000662	18104	M8.0 x 1	OH4	2.5P	70	22	6.2	3
OSZ000663	19958	M8.0 x 1.25	OH2	2.5P	70	22	6.2	3
OSZ000664	18102	M8.0 x 1.25	OH2	2.5P	70	22	6.2	3
OSZ000665	11601	M8.0 x 1.25	OH2	2.5P	70	22	6.2	3
OSZ000666	18115	M9.0 x 1	OH4	2.5P	72	22	7	3
OSZ000667	18113	M9.0 x 1.25	OH3	2.5P	72	22	7	3
OSZ000668	18127	M10 x 1	OH2	2.5P	75	24	7	3
OSZ000669	18125	M10 x 1.25	OH2	2.5P	75	24	7	3
OSZ000670	11624	M10 x 1.25	OH2	2.5P	75	24	7	3
OSZ000671	18122	M10 x 1.5	OH2	2.5P	75	24	7	3
OSZ000672	11621	M10 x 1.5	OH2	2.5P	75	24	7	3

Order No.	EDP NO.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000673	19962	M10 x 1.5	OH2	2.5P	75	24	7	3
OSZ000674	18127	M10.0 x 1	OH3	2.5P	75	24	7	3
OSZ000675	18160	M12 x 1	OH2	2.5P	82	29	8.5	3
OSZ000676	11656	M12 x 1.25	OH4	2.5P	82	29	8.5	3
OSZ000677	11653	M12 x 1.5	OH2	2.5P	82	29	8.5	3
OSZ000678	19968	M12 x 1.75	OH3	2.5P	82	29	8.5	3
OSZ000679	11650	M12 x 1.75	OH2	2.5P	82	29	8.5	3
OSZ000680	18151	M12 x 1.75	OH2	2.5P	82	29	8.5	3
OSZ000681	11683	M14 x 1.5	OH4	2.5P	88	30	10.5	3
OSZ000682	11680	M14 x 2	OH2	2.5P	88	30	10.5	3
OSZ000683	18209	M16 x 1.5	OH2	2.5P	95	32	12.5	3
OSZ000684	11708	M16 x 1.5	OH2	2.5P	95	32	12.5	3
OSZ000685	11705	M16 x 2	OH2	2.5P	95	32	12.5	3
OSZ000686	11735	M18 x 1.5	OH3	2.5P	100	32	14	4
OSZ000687	11730	M18 x 2.5	OH2	2.5P	100	32	14	4
OSZ000688	11762	M20 x 1.5	OH2	2.5P	105	37	15	4
OSZ000689	18260	M20 x 2	OH2	2.5P	105	37	15	4
OSZ000690	11757	M20 x 2.5	OH3	2.5P	105	37	15	4
OSZ000691	11777	M22 x 1.5	OH2	2.5P	115	38	17	4
OSZ000692	18275	M22 x 2	OH3	2.5P	115	38	17	4
OSZ000693	11772	M22 x 2.5	OH3	2.5P	115	38	17	4
OSZ000694	18302	M24 x 2	OH2	2.5P	120	45	19	4
OSZ000695	11799	M24 x 3	OH3	2.5P	120	45	19	4
OSZ000696	18314	M25 x 2	OH3	2.5P	130	45	19	4
OSZ000697	18328	M26 x 1.5	OH3	2.5P	130	45	20	4
OSZ000698	18362	M30 x 3.5	OH3	2.5P	135	48	23	4
OSZ000699	18420	M36 x 4	OH3	2.5P	155	57	28	4
OSZ000700	18459	M42 x 4.5	OH2	2.5P	175	60	32	4
OSZ000701	18499	M48 x 5	OH3	2.5P	185	67	4	4

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels	Stainless Steels	Tool	Cast	Cast Iron	Ductile Cast Iron	Cooper	Brass	Brass Cast	All Rolled	Aluminum Alloy	Magnesium Alloy Casting	Zinc Alloy Cast	Titanium Alloy	Nickel Alloy Plastic	Thermo Setting	Thermo Plastic	
EX-SFT			CO.45%~	SCM		SUS	SKD	SC	FC	FCD	Cu	B5	B5C	PB	AL	AC,ADC	MC	ZDC				

# WXS-EBD

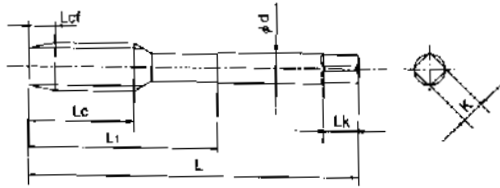
## WX Super Coating Two Flute Ball Nose

- The newly developed WX Super Coating achieves high-speed, high precision milling of hard materials
- A short flute length has been adopted to enhance tool rigidity (sizes below R3 are shaped with a neck recess)
- Seamless ball-side tangency

## SPIRAL FLUTED TAP SERIES

### TIN-SFT

Tin Coated

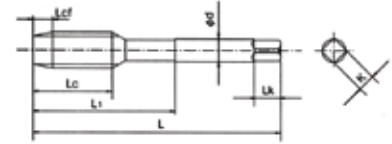


This tap is suitable for tapping depths less than 2D, in low-medium carbon steels and stainless steels. Requires water soluble lubricant.

Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000702	10914	M4 x 0.7	OH2	2.5P	52	4.9	5	3
OSZ000703	10920	M6.0 x 1.0	OH2	2.5P	62	5.6	5.5	3
OSZ000704	10923	M8 x 1.25	OH3	2.5P	70	8.5	6.2	3
OSZ000705	10929	M10 x 1.25	OH3	2.5P	75	10.5	7	3
OSZ000706	10959	M18 x 1.5	OH3	2.5P	100	17.5	14	4
OSZ000707	10963	M20 x 2.5	OH3	2.5P	105	17.5	15	4
OSZ000708	10987	M33 x 3.5	OH4	2.5P	145	24.5	25	4

### EX-SUS-SFT

For Stainless Steel



Suitable for tapping blind holes in materials such as stainless steel, copper and thermo plastic.

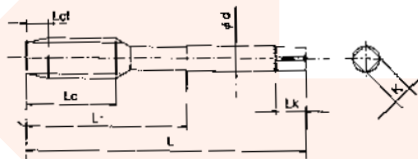
Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000709	15116	M4 x 0.7	OH2	2.5P	52	13	5	3
OSZ000710	15124	M6 x 1	OH2	2.5P	62	29	6	3
OSZ000711	24133	M8 x 1.25	OH5	2.5P	70	22	6.2	3
OSZ000712	15132	M8 x 1.25	OH3	2.5P	70	22	6.2	3
OSZ000713	15142	M10 x 1.5	OH3	2.5P	75	24	7	3
OSZ000714	15154	M12 x 1.75	OH3	2.5P	82	29	8.5	3
OSZ000715	24176	M16 x 2	OH3	2.5P	95	32	12.5	3
OSZ000716	24180	M16 x 1.5	OH5	2.5P	95	32	12.5	3
OSZ000717	24184	M18 x 2.5	OH3	2.5P	100	37	14	4
OSZ000718	24198	M22 x 2.5	OH4	2.5P	115	38	17	4
OSZ000719	24202	M24 x 3	OH4	2.5P	120	45	19	4
OSZ000720	24206	M27 x 3	OH4	2.5P	130	45	20	4
OSZ000721	24208	M30 x 3.5	OH4	2.5P	135	48	24	4

## WX Super Coating END MILL Series



### V-SFT

V Coated



This tap is capable of a wide range of application, on both soft or hard materials. It is particularly suited for high speed tapping (wide a highly diluted water soluble oil).

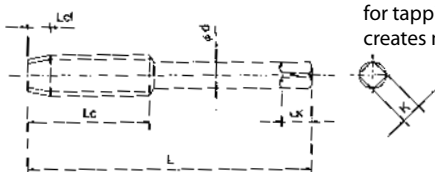
Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000722	8310283	M4x0.7	OH2	2.5P	52	5	5	3
OSZ000723	8310297	M6 x 1.00	OH2	2.5P	62	7	6	3
OSZ000724	8310298	M6 x 1.00	OH3	2.5P	62	7	6	3
OSZ000725	8310307	M8x1.25	OH3	2.5P	70	8.5	6.2	3
OSZ000726	8310317	M10x1.5	OH3	2.5P	75	10.5	7	3
OSZ000727	8310330	M12 x 1.75	OH3	2.5P	82	12	8.5	3
OSZ000728	8310357	M16x2	OH3	2.5P	95	14	12.5	3
OSZ000729	8310397	M24x3	OH4	2.5P	120	21	19	4

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels	Stainless Steels	Tool Steels	Cast Steels	Cast Iron	Ductile Cast Iron	Cooper	Brass	Brass Cast	Bronze	All Rolled	Aluminium Alloy	Magnesium Alloy Casting	Zinc Alloy Cast	Titanium Alloy	Nickel Alloy Plastic	Thermo Setting	Thermo Plastic	
Abbreviation	C~0.25%	CO.25%~0.45%	CO.45%~	SCM	25~45 HRC	45~65 HRC	50~60 HRC	SUS	SKD	SC	FC	FCD	Cu	BS	BsC	PB	AL	AC,ADC	MC	ZDC			
TIN-SFT	○	○	○	○				○	○	○	○	○	○	○	○	○	○	○	○	○			○
EX-SUS-SFT		○											○	○	○	○	○	○	○				
V-SFT	○	○	○	○				○	○	○	○	○	○	○	○	○	○	○	○	○			○

## FLUTELESS TAP SERIES

### NRT

For steel

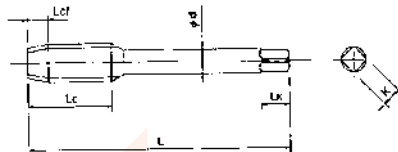


Using plastic deformation to produce internal threads, this tap is suitable for tapping low carbon steel, alloy steels and stainless steels. It is especially efficient for tapping blind holes because it creates no chips.

Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d
OSZ000730	21134	M2 x 0.4	RH5	4P	40	12	3
OSZ000731	12415	M3 x 0.5	RH5	4P	46	9	4
OSZ000732	12435	M4 x 0.7	RH6	2P	52	10	5
OSZ000733	12434	M4 x 0.7	RH6	4P	52	10	5
OSZ000734	12445	M5 x 0.8	RH6	2P	60	11	5.5
OSZ000735	12444	M5 x 0.8	RH6	4P	60	11	5.5
OSZ000736	12457	M6 x 1	RH7	2P	62	12	6
OSZ000737	12467	M7 x 1	RH6	2P	65	13	6.2
OSZ000738	12508	M10 x 1.5	RH7	4P	75	19	7
OSZ000739	12509	M10 x 1.5	RH7	2P	75	19	7
OSZ000740	12523	M10 x 1.25	RH7	2P	75	19	7
OSZ000741	12546	M12 x 1.75	RH8	4P	82	23	8.5
OSZ000742	12641	M16 x 2	RH10	2P	95	27	12.5
OSZ000743	12687	M20 x 2.5	RH11	2P	105	30	15

### VP-NRT

VP NU-Roll

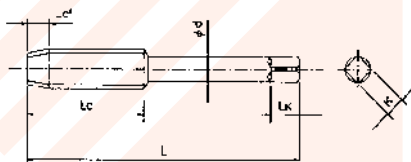


By powder metallurgy H.S.S. and special thread form, long tool life processing is possible at wide.

Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d
OSZ000744	8317442	M2 x 0.4	RH4	4P	40	12	3
OSZ000745	8317478	M2.5 x 0.45	RH4	4P	44	14	3
OSZ000746	8317490	M2.6 x 0.45	RH4	4P	44	14	3
OSZ000747	8317502	M3 x 0.5	RH5	4P	46	9	4
OSZ000748	8317515	M3.5 x 0.6	RH4	2P	48	9	4
OSZ000749	8317514	M3.5 x 0.6	RH4	4P	48	9	4
OSZ000750	8317526	M4 x 0.7	RH6	4P	52	10	5
OSZ000751	8317527	M4 x 0.7	RH6	2P	52	10	5
OSZ000752	8317538	M5.0 x 0.8	RH6	4P	60	11	5.5
OSZ000753	8317550	M6.0 x 1.0	RH7	4P	62	12	6
OSZ000754	8317551	M6.0 x 1.0	RH7	2P	62	12	6
OSZ000755	8317568	M8.0 x 1.25	RH7	4P	70	18	6.2
OSZ000756	8317569	M8.0 x 1.25	RH7	2P	70	18	6.2
OSZ000757	8317598	M10.0 x 1.0	RH7	4P	75	19	7
OSZ000758	8317599	M10.0 x 1.0	RH7	2P	75	19	7
OSZ000759	831793	M10.0 x 1.25	RH7	2P	75	19	7
OSZ000760	8317592	M10.0 x 1.25	RH7	4P	75	19	7
OSZ000761	8317623	M12.0 x 1.25	RH7	2P	82	23	8.5

### TIN-NRT

Tin Coated



Suitable for tapping steels and nonferrous metal alloys. Capable of efficient, long life, high speed tapping.

Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d
OSZ000762	21608	M1.4 x 0.3	RH4	4P	34	9	3
OSZ000763	21632	M2 x 0.4	RH4	4P	40	12	3
OSZ000764	21633	M2 x 0.4	RH4	2P	40	12	3
OSZ000765	21656	M2.3 x 0.4	RH4	4P	42	13	3
OSZ000766	21658	M2.3 x 0.4	RH5	4P	42	13	3
OSZ000767	21670	M2.5 x 0.45	RH5	4P	44	14	3
OSZ000768	21680	M2.6 x 0.45	RH4	4P	44	14	3
OSZ000769	10731	M3 x 0.5	RH5	4P	46	9	4

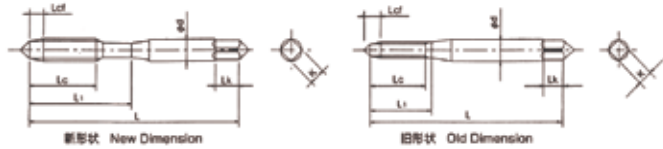
Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d
OSZ000770	10730	M3 x 0.5	RH5	4P	46	9	4
OSZ000771	10738	M4 x 0.7	RH6	4P	52	10	5
OSZ000772	10743	M5 x 0.8	RH6	4P	60	11	5.5
OSZ000773	10746	M6 x 1	RH4	4P	62	12	6
OSZ000774	10747	M6 x 1	RH7	4P	62	12	6
OSZ000775	10751	M7 x 1	RH6	2P	65	13	6.2
OSZ000776	10754	M8 x 1.25	RH7	4P	70	18	6.2
OSZ000777	10770	M10 x 1	RH7	4P	75	19	7
OSZ000778	10766	M10 x 1.25	RH7	4P	75	19	7

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels			Stainless Steels	Tool Steels	Cast Steels	Cast Iron	Ductile Cast Iron	Cooper	Brass	Brass Cast	Bronze	All Rolled	Aluminium Alloy	Magnesium Alloy Casting	Zinc Alloy Cast	Titanium Alloy	Nickel Alloy Plastic	Thermo Setting	Thermo Plastic
	C~0.25%	CO.25%~0.45%	CO.45%~0.45%	SCM	25-45 HRC	45-55 HRC	50-60 HRC	SUS	SKD	SC	FC	FCD	Cu	BS	BsC	PB	AL	AC,ADC	MC	ZDC				
NRT		○		○							○	○	○	○	○	○	○	○	○	○				○
VP-NRT	○	○	○	○				○					○	○	○		○	○		○				○
TIN-NRT	○	○	○	○				○					○	○	○		○	○		○				

# STRAIGHT FLUTED TAPS (HAND TAP)

► HT

General Application



Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000779	234	M2 x 0.4	OH1	S	40	8	3	3
OSZ000780	394	M3 x 0.5	OH1	S	46	11	4	3
OSZ000781	514	M5 x 0.8	OH2	S	60	24	5.5	3
OSZ000782	584	M6 x 1	OH2	S	62	19	6	3
OSZ000783	644	M8 x 1.25	OH2	S	70	22	6.2	3
OSZ000784	734	M10 x 1.5	OH2	S	75	24	7	4
OSZ000785	754	M10 x 1	OH2	S	75	24	7	4
OSZ000786	854	M12 x 1.75	OH2	S	82	29	8.5	4

Order No.	EDP No.	Thread Size	TAP Limit	Lcf	L	Lc	d	Flute
OSZ000787	864	M12 x 1.5	OH2	S	82	29	8.5	4
OSZ000788	984	M14 x 2	OH2	S	88	30	10.5	4
OSZ000789	1114	M16 x 2	OH2	S	95	52	12.5	4
OSZ000790	1254	M18 x 2.5	OH3	S	100	37	14	4
OSZ000791	1504	M22 x 2.5	OH3	S	115	38	17	4
OSZ000792	1604	M24 x 3	OH3	S	120	45	19	4
OSZ000793	1754	M27 x 3	OH3	S	130	45	20	4
OSZ000794	1844	M30 x 3.5	OH3	S	135	51	23	4

Work Material	Low Carbon Steels	Medium Carbon Steels	High Carbon Steels	Alloy Steels	Hardened Steels			Stainless Steels	Tool Steels	Cast Steels	Cast Iron	Ductile Cast Iron	Cooper	Brass	Brass Casting	Bronze	Aluminum Rolled	Aluminum Alloy	Magnesium Alloy Casting	Zinc Alloy Casting	Titanium Alloy	Nickel Alloy Plastic	Thermo Setting	Thermo Plastic
Abbreviation	C-0.25%	CO.25%-0.45%	CO.45%~	SCM	25-45 HRC	45-55 HRC	50-60 HRC	SUS	SKD	SC	FC	FCD	Cu	BS	BsC	PB	AL	AC,ADC	MC	ZDC				
HT		○										○		○	○	○	○	○	○	○				

## TAP

8



### Application

The bent shank tap is used with automatic tapping machines that eject nuts via the shank. This enables continuous tapping operation without reversing or stopping the machine.

BENT-SHANK TAP

### Application

This tap is capable of slightly increasing the size of already-cut, large thread, or it can be used to cut thread of different sizes in the same hole (but same pitch).

TANDEM TAP

### Application

This tap is attached to an arbor for large thread cutting operations.

SHELL TAP

### Application

These taps are designed specifically for medical purposes, usually in bones of the jaw for the insertion of an artificial root for a tooth.

MEDICAL TAPS

# TAP MADE SPECIALLY UPON REQUEST



### Application

The pilot at the head is used to achieve same-axis precision between the drill hole and the internal thread, and between the drill hole and the tap. It is especially effective for tapping trapezoidal screw thread with a coarse pitch.

TAP WITH PILOT GUIDE

### Application

This tap is for processing nuts for ball screws. The round shape of the thread profile is used for the feed screw of machine tools and power steering system for automobiles.

TAP FOR BALL SCREW

### Application

This tap can simultaneously ream and cut thread. The tool can be used either to finish a drill hole diameter or to make holes that are not for tapping.

TAP WITH REAMER



# GAUGE SERIES

## ► Limit Gauge for Screw Thread (LG)

### For Internal Thread



### For External Thread



To determine thread standard and class of screw thread limit gauges, thread are tested by the two limit method GO and NOT GO system. For the NOT GO side there is a specified JIS method and standard, but no ISO classification.

Order No.		EDP.No		Thread Size
OSZ000795	P	30220	GPIP	M2x0.4
OSZ000796		30221	GPWP	
OSZ000797	R	30227	GR	
OSZ000798		30228	IR	
OSZ000799		30229	WR	
OSZ000800	P	30360	GPIP	M3x0.5
OSZ000801		30361	GPWP	
OSZ000802	R	30367	GR	
OSZ000803		30368	IR	
OSZ000804		30369	WR	
OSZ000805	P	30420	GPIP	M4x0.7
OSZ000806		30421	GPWP	
OSZ000807	R	30427	GR	
OSZ000808		30428	IR	
OSZ000809		30429	WR	
OSZ000810	P	30470	GPIP	M5x0.8
OSZ000811		30471	GPWP	
OSZ000812	R	30477	GR	
OSZ000813		30478	IR	
OSZ000814		30479	WR	
OSZ000815	P	30540	GPIP	M6x1
OSZ000816		30541	GPWP	
OSZ000817	R	30547	GR	
OSZ000818		30548	IR	
OSZ000819		30549	WR	
OSZ000820	P	30570	GPIP	M7x1
OSZ000821		30571	GPWP	
OSZ000822	R	30577	GR	
OSZ000823		30578	IR	
OSZ000824		30579	WR	
OSZ000825	P	30610	GPIP	M8x1.25
OSZ000826		30611	GPWP	
OSZ000827	R	30617	GR	
OSZ000828		30618	IR	
OSZ000829		30619	WR	
OSZ000830	P	30700	GPIP	M10x1.5
OSZ000831		30701	GPWP	
OSZ000832	R	30707	GR	
OSZ000833		30708	IR	
OSZ000834		30709	WR	
OSZ000835	P	30800	GPIP	M12x1.75
OSZ000836		30801	GPWP	
OSZ000837	R	30807	GR	
OSZ000838		30808	IR	
OSZ000839		30809	WR	
OSZ000840	P	31290	GPIP	M20x2.5
OSZ000841		31291	GPWP	
OSZ000842	R	31297	GR	
OSZ000843		31298	IR	
OSZ000844		31299	WR	

Screw Thread to be inspected		JIS	
		Gauge type	Symbol
External Thread 	Pitch diameter	Go screw ring gauge NOT GO screw ring gauge for machine work NOT GO screw ring gauge for inspection	GR WR IR
	Major diameter	— — Limit snap gauge for machine work Limit snap gauge for inspection	— — WS IS
Internal Thread 	Pitch diameter	Go screw plug gauge NOT GO screw plug gauge for machine work NOT GO screw plug gauge for inspection	GP WP IP
	Minor diameter	Limit plug gauge for machine work Limit plug gauge for inspection	WM IM

Order No.		EDP.No		Thread Size
OSZ000845	P	34460	GPIP	¾ – 16UNF
OSZ000846		34461	GPWP	
OSZ000847	R	34467	GR	
OSZ000848		34468	IR	
OSZ000849		34469	WR	
OSZ000850	P	34420	GPIP	5/8 – 11UNC
OSZ000851		34421	GPWP	
OSZ000852	R	34427	GR	
OSZ000853		34428	IR	
OSZ000854		34429	WR	
OSZ000855	P	34480	GPIP	7/8 – 9UNC
OSZ000856		34481	GPWP	
OSZ000857	R	34487	GR	
OSZ000858		34488	IR	
OSZ000859		34489	WR	
OSZ000860	P	34510	GPIP	1 – 8UNC
OSZ000861		34511	GPWP	
OSZ000862	R	34517	GR	
OSZ000863		34518	IR	
OSZ000864		31459	WR	
OSZ000865	P	35760	GPIP	PF3/4 – 14
OSZ000866		35761	GPWP	
OSZ000867	R	35767	GR	
OSZ000868		35768	IR	
OSZ000869		35769	WR	
OSZ000870	P	35780	GPIP	PF1 – 11
OSZ000871		35781	GPWP	
OSZ000872	R	35787	GR	
OSZ000873		35788	IR	
OSZ000874		35789	WR	
OSZ000875	P	35720	GPIP	PF1/4 – 19
OSZ000876		35721	GPWP	
OSZ000877	R	35727	GR	
OSZ000878		35728	IR	
OSZ000879		35729	WR	

## GAUGE SERIES

Plain Limit Gauge (PG)



Master Ring Gauge (RG-M)

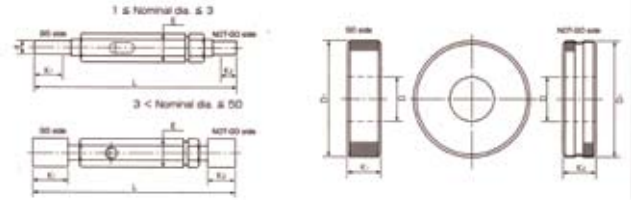


GO side NOT-GO side

Limit gauge are used for measurement test of holes and shafts. Common type include plug gauges, Ring gauges and Caliper gauges with the GO and NOT GO sides forming one set. These gauges are used for standardizing maximum and minimum tolerable measurements for holes and shafts.

\*Ring gauges : Special order item

Shapes and Dimensions of Limit Plug Gauges      Shapes and Dimensions of Limit Ring Gauges



Plain Limit Gauge CLASS 2 (PG) for Inspection

Order No.	EDP NO	Thread Size	Gauge Type
OSZ000880	39903	3	Inspection
OSZ000881	39904	4	
OSZ000882	39905	5	
OSZ000883	39906	6	
OSZ000884	39908	8	
OSZ000885	39910	10	
OSZ000886	39912	12	
OSZ000887	39914	14	
OSZ000888	39915	15	
OSZ000889	39916	16	
OSZ000890	39918	18	
OSZ000891	39920	20	
OSZ000892	39922	22	
OSZ000893	39924	24	
OSZ000894	39925	25	
OSZ000895	39926	26	
OSZ000896	39928	28	
OSZ000897	39930	30	
OSZ000898	39932	32	
OSZ000899	39937	37	
OSZ000900	39940	40	
OSZ000901	39950	50	

Plain Limit Gauge CLASS 2 (PG) for Workshop

Order No.	EDP NO	Thread Size	Gauge Type
OSZ000902	39952	2	Workshop.
OSZ000903	39954	4	
OSZ000904	39956	6	
OSZ000905	39958	8	
OSZ000906	39960	10	
OSZ000907	39962	12	
OSZ000908	39965	15	
OSZ000909	39966	16	
OSZ000910	39968	18	
OSZ000911	39970	20	
OSZ000912	39975	25	
OSZ000913	39990	40	
OSZ000914	40000	50	

Master Ring Gauge CLASS 2 (RG-M)

Order No.	EDP NO.	Thread Size
OSZ000925	9339008	4
OSZ000926	9339010	5
OSZ000927	9339012	6
OSZ000928	9339016	8
OSZ000929	9339020	10
OSZ000930	9339024	12
OSZ000931	9339030	15
OSZ000932	9339040	20
OSZ000933	9339050	25
OSZ000934	9339052	26
OSZ000935	9339074	37
OSZ000936	9339090	45
OSZ000937	9339100	50

## ROUND DIES



Solid Type (TPD)



Adjustable Type (A-TPD)

OSG Round Dies are accurate and durable because of our advanced production facilities and many years of technical experience.

We offer dies with slot (Adjustable) and without (solid). Adjustable dies are more popular, while solid dies are especially suited for heavy cutting conditions without any measurement changes

Order No.	EDP No	Dim Outer	Thread Size
			RH
OSZ000915	46011	20	M2x0.4
OSZ000916	46029	20	M4x0.7
OSZ000917	46035	20	M5x0.5
OSZ000918	46040	20	M6x0.5
OSZ000919	46080	25	M6x0.75
OSZ000920	46038	20	M6x1
OSZ000921	46127	38	M6x1
OSZ000922	46133	38	M8x1.25
OSZ000923	46144	38	M10x1
OSZ000924	46093	25	M10x1.5

Order No.	EDP No	Dim Outer	Thread Size
			RH
OSZ000938	46142	38	M10x1.5
OSZ000939	46152	38	M12x1.75
OSZ000940	46175	38	M16x1.5
OSZ000941	46174	38	M16x2
OSZ000942	46241	50	M18x1.5
OSZ000943	46253	50	M20x1.5
OSZ000944	46276	50	M24x3.00
OSZ000945	46278	50	M24x2
OSZ000946	46390	63	M30x2
OSZ000947	46494	75	M42x4.5
OSZ000948	46510	75	M48x5

## ROLLING DIES SERIES

### ▶ Thread Rolling Cylindrical Dies (TR)



There are two types of cylindrical dies-those used with thread rolling machines and those (with small diameters) used with automatic lathes. For small diameter dies.

### ▶ Cylindrical Dies for Worms (TR)



Worm forming involves larger pitches and lead angles, and often requires higher pressure than many thread rolling operations. These cylinders must therefore be extremely tough and accurate.

### ▶ Cylindrical Dies for Serrations (SR)



OSG also manufactures cylindrical dies for serrations finished by grinding operations. In operations for involute spline for automotive parts, these dies provide unprecedented accuracy and finished surface that cannot be achieved with conventional cylindrical dies.

### ▶ Thread Rolling Flat Dies (DP)



We offer a wide variety of flat dies with different specifications. OSG prepares many semi-finished, standard form flat dies for stock in order to ensure faster delivery.

### ▶ Cylindrical Dies for Serrations (T-DP)



These are flat dies for shelf tapping screws. Because there are many types of tapping screws, the flat rolling dies differ accordingly.

### ▶ Thread Rolling Planetary Dies (RCD-RSD)



During planetary thread rolling, threads are imprinted when the work piece travels between a fixed die and a moving rotary die. Unlike rolling with flat dies that must continually stop and start again-planetary rolling can accomplish high speed operations because the dies do not stop moving.

### ▶ Rack Type Rolling Dies (RF)



Mainly used for automotive parts production, RACK TYPE rolling dies are for fast, large volume production of parts with involute splines and involute serrations. Compared with other rolling systems, the RACK TYPE is a simple, user-friendly process. Roto-Flow systems are becoming increasingly popular.

### ▶ Trimming Dies (TMD)



Trimming dies are used for high speed punching to form polygonal-shaped bolt heads. OSG trimming dies are made of high quality Molybdenum high speed steel, which has been cold-press fitted and heat-treated. OSG uses type I as our standard. We also manufacture trimming for high tension bolts.

For More Information,  
please contact **CUTTING TOOLS DIVISION**

Telp : (62-21)582-8282  
e-mail : pscuttools@kawanlama.com



## THREAD RESTORING

### ▶ RTD48



- Functions :
- To make thread
  - Easy to use
  - Provides personal comfort

- Feature :
- A large easy to handle insulated frame

**Commercial Applications:**  
Oil, Gas & Mining, Automotive Industry, Aviation, Industrial Heavy Equipment, Heavy industry, Power Plan.

Order No.	Type	Description
SO0002059	RTD48	US Metric Master Rethreading Kit (48pcs)

### ▶ TDTDM500A



- Feature :
- Black industrial finish

- Benefits :**
- Easy to use
  - Provides good strength

**Commercial Applications:**  
Oil, gas & mining, automotive industry, aviation, industrial heavy equipment, heavy industry, power plan.

Order No.	Type	Description
SO0000826	TDTDM500A	Tap and die set (76pcs)

### ▶ TD2425



- Features :**
- Graduated 180 deg in both directions
  - Black industrial finish
- Benefits :**
- Easy to use
  - Provides good strength

**Commercial Applications:**  
Oil, gas & mining, automotive industry, aviation, industrial heavy equipment, heavy industry, and power plan.

Order No.	Type	Description
SO0000498	TD2425	Tap and die set (41pcs)

### ▶ TD9902B



- Features :
- Graduated 180 deg in both directions
  - Black industrial finish
- Benefits:
- Easy to use
  - Provides good strength

**Commercial Applications:**  
Oil, Gas & Mining, Automotive Industry, Aviation, Industrial Heavy Equipment, Heavy industry, Power Plan.

Order No.	Type	Description
SO0002366	TD9902B	Tap and die set (25pcs)

## HIGH SPEED STEEL DRILL BIT

### ▶ TDTDM117



- Feature :
- Black industrial finish
- Benefits :
- Easy to use
  - Provides good strength

**Commercial Applications:**  
Oil, gas & mining, automotive industry, aviation, industrial heavy equipment, heavy industry, and power plan.

Order No.	Type	Description
SO0003389	TDTDM117	Tap and die set (117pcs)

### ▶ DBC260A



- Features :**
- 118° point for DBC260A
  - 135° split points (DBTBC129)
  - Made of industrial grade steel

- Benefits :**
- Easy to drill starting without the need for center punching
  - Can drill in high speed in tougher drilling conditions

**Commercial Applications:**  
Oil, gas & mining, automotive industry, aviation, Industrial heavy equipment, heavy industry, and power plan.

Order No.	Type	Description
SO0000595	DBC260A	Cobalt Drill Bit Set (60pcs)
SO0001489	DBTBC129	Thunderbit Cobalt Drill Bit Set (29pcs)



## Shaping, Sharpening, and Smoothing.

# File



# Section

# 1

**DRILL BIT**

▶ **DBTBC121**



**DBTBC121 THUNDERBIT Cobalt Drill Bit Set**  
 • DBTBC1/16 thru DBTBC3/8 (21 bits) in B121B metal drill index

▶ **DBTBC129**



**DBTBC129 THUNDERBIT Cobalt Drill Bit Set**  
 • DBTBC1/16 thru DBTBC1/2 (29 bits) in B129B metal drill index

Order No.	Type	Description
SOZ000009	DBTBC121	Coba Drill Bit Set ( 21bits)
SOZ000010	DBTBC129	Coba Drill Bit Set ( 29bits)

**THUNDERBIT® / Cobalt - Jobber Length 135° Split Point**

- For drilling at higher speeds in tougher drilling conditions
- They feature 135° split points for easier drill starting without the need for center punching
- Heavy duty web construction for higher strength and less breakage
- Improved chip ejection through a specially engineered flute design

Stock No.	Size, inches	Stock No.	Size, inches
DBTBC1/16	1/16	DBTBC19/64	19/64
DBTBC5/64	5/64	DBTBC5/16	5/16
DBTBC3/32	3/32	DBTBC21/64	21/64
DBTBC7/64	7/64	DBTBC11/32	11/32
DBTBC1/8	1/8	DBTBC23/64	23/64
DBTBC9/64	9/64	DBTBC3/8	3/8
DBTBC5/32	5/32	DBTBC25/64	25/64
DBTBC11/64	11/64	DBTBC13/32	13/32
DBTBC3/16	3/16	DBTBC27/64	27/64
DBTBC13/64	13/64	DBTBC7/16	7/16
DBTBC7/32	7/32	DBTBC29/64	29/64
DBTBC15/64	15/64	DBTBC15/32	15/32
DBTBC1/4	1/4	DBTBC31/64	31/64
DBTBC17/64	17/64	DBTBC1/2	1/2
DBTBC9/32	9/32	—	—

▶ **DBTB121**



**DBTB121 THUNDERBIT High Speed Drill Bit Set**  
 • DBTB1/16 thru DBTB3/8 (21 bits) in B121B metal drill index

▶ **DBTB129**



**DBTB129 Drill Bit Set**  
 • DBTB1/16 thru DBTB1/2 (29 bits) in B129B metal drill index

Order No.	Type	Description
SOZ000011	DBTB121	High Speed Drill Bit Set ( 21bits)
SOZ000012	DBTB129	Drill Bit Set ( 29bits)

**THUNDERBIT/High Speed Steel Jobber Length - 135° Split Point**

- Industrial grade steel with bronze oxide surface treatment
- Bits will drill at higher speeds in tougher drilling conditions
- 135° split points for easier drill starting without the need for center punching
- Heavy duty web construction for higher strength and less breakage
- Improves chip ejection thru a specially engineered flute design

Stock No.	Size, inches	Stock No.	Size, inches
DBTB1/16	1/16	DBTB19/64	19/64
DBTB5/64	5/64	DBTB5/16	5/16
DBTB3/32	3/32	DBTB21/64	21/64
DBTB7/64	7/64	DBTB11/32	11/32
DBTB1/8	1/8	DBTB23/64	23/64
DBTB9/64	9/64	DBTB3/8	3/8
DBTB5/32	5/32	DBTB25/64	25/64
DBTB11/64	11/64	DBTB13/32	13/32
DBTB3/16	3/16	DBTB27/64	27/64
DBTB13/64	13/64	DBTB7/16	7/16
DBTB7/32	7/32	DBTB29/64	29/64
DBTB15/64	15/64	DBTB15/32	15/32
DBTB1/4	1/4	DBTB31/64	31/64
DBTB17/64	17/64	DBTB1/2	1/2
DBTB9/32	9/32	—	—

DRILL

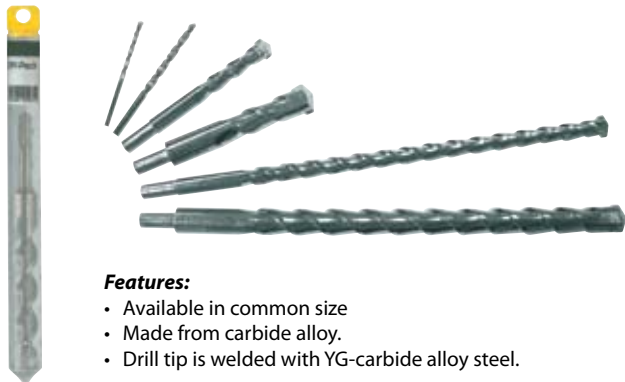


Your Source for All

**Power Tool**

➔ Section

**18**



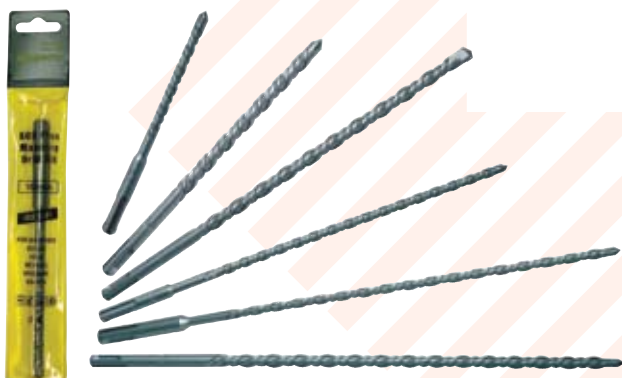
**Features:**

- Available in common size
- Made from carbide alloy.
- Drill tip is welded with YG-carbide alloy steel.

Order No.	Type	Description	Size (mm)
KW0200565	KW02-565	Masonry Drill	4.0 x 75
KW0200566	KW02-566	Masonry Drill	5.0 x 85
KW0200567	KW02-567	Masonry Drill	6.0 x 100
KW0200568	KW02-568	Masonry Drill	8.0 x 120
KW0200569	KW02-569	Masonry Drill	10.0 x 120
KW0200570	KW02-570	Masonry Drill	12.0 x 150
KW0200571	KW02-571	Masonry Drill	13.0 x 150
KW0200908	KW02-908	Masonry Drill	-----

Order No.	Type	Description	Size (mm)
KW0200572	KW02-572	Masonry Drill	14.0 x 150
KW0200573	KW02-573	Masonry Drill	16.0 x 150
KW0200574	KW02-574	Masonry Drill	18.0 x 150
KW0200575	KW02-575	Masonry Drill	20.0 x 160
KW0200576	KW02-576	Masonry Drill	24.0 x 160
KW0200577	KW02-577	Masonry Drill	26.0 x 160
KW0200578	KW02-578	Masonry Drill LS	6.0 x 400
KW0200579	KW02-579	Masonry Drill LS	8.0 x 400
KW0200580	KW02-580	Masonry Drill LS	10.0 x 400
KW0200581	KW02-581	Masonry Drill LS	12.0 x 400
KW0200582	KW02-582	Masonry Drill LS	14.0 x 400
KW0200583	KW02-583	Masonry Drill LS	16.0 x 400
KW0200584	KW02-584	Masonry Drill LS	18.0 x 400
KW0200585	KW02-585	Masonry Drill LS	20.0 x 400
KW0200586	KW02-586	Masonry Drill LS	22.0 x 400
KW0200587	KW02-587	Masonry Drill LS	24.0 x 400
KW0200588	KW02-588	Masonry Drill LS	26.0 x 400

▶ **SDS Masonry Drill**



**Features:**

- Available in common size
- Made from carbide alloy.
- Drill tip is welded with YG-carbide alloy steel.



Order No.	Description	Size (mm)
KW0200498	SDS Masonry Drill	6 x 160
KW0200499	SDS Masonry Drill	6 x 210
KW0200500	SDS Masonry Drill	6 x 310
KW0200501	SDS Masonry Drill	8 x 160
KW0200502	SDS Masonry Drill	8 x 210
KW0200503	SDS Masonry Drill	8 x 310
KW0200504	SDS Masonry Drill	8 x 400
KW0200505	SDS Masonry Drill	10 x 210
KW0200506	SDS Masonry Drill	10 x 310
KW0200507	SDS Masonry Drill	10 x 400
KW0200508	SDS Masonry Drill	12 x 210
KW0200509	SDS Masonry Drill	12 x 310
KW0200510	SDS Masonry Drill	12 x 400
KW0200511	SDS Masonry Drill	14 x 210
KW0200512	SDS Masonry Drill	14 x 310
KW0200513	SDS Masonry Drill	14 x 400
KW0200514	SDS Masonry Drill	16 x 310
KW0200515	SDS Masonry Drill	16 x 460
KW0200516	SDS Masonry Drill	18 x 310
KW0200517	SDS Masonry Drill	18 x 460
KW0200518	SDS Masonry Drill	20 x 460
KW0200519	SDS Masonry Drill	25 x 600

**DRILL SET**

► **SDS Plus Drill Set**

**5pcs**



**Features :**

Size:  
Length 110mm : M5, M6  
Length 160mm : M8, M10, M12

**6pcs**



**Features :**

Size:  
Length 110mm : M6, M8, M10  
Length 160mm : M6, M8, M10

Order No.	Type	Description	Std. Pack.
KW0200539	KW02-539	SDS-Plus Drill Set 5 - 12, 5pcs	50
KW0200540	KW02-540	SDS-Plus Drill Set 6-10m, 6pcs	50

**SDS PLUS SHANK CHISEL**

► **SDS Plus Shank Chisel Flat**

**250mm  
Length**



Order No.	Type	Description
KW0200558	KW02-558	SDS Plus Shank Chisel Flat - 250mm

► **SDS Plus Shank Point Head**

**280mm  
Length**



Order No.	Type	Description
KW0200559	KW02-559	SDS Plus Shank Chisel Point Head - 250mm

**DIAMOND HOLE SAW**

► **Diamond Hole Saw**



KW02-1079

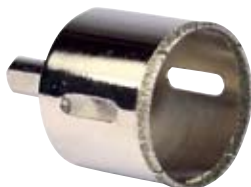


KW02-1080



KW02-1081

Order No.	Description
KW0201079	Diamond Hole Saw Set 38~83mm (6pcs)
KW0201080	Diamond Hole Saw Set 6~35mm (6pcs)
KW0201081	Diamond Hole Saw Set 6~51mm (Include Position Locker) (11pcs) + 1 Position Locker



KW02-1078



Order No.	Description
KW0201078	Position Locker 5-76mm

Order No.	Description
KW0201066	Diamond Hole Saw 1/4" (6mm)
KW0201067	Diamond Hole Saw 5/16" (8mm)
KW0201068	Diamond Hole Saw 3/8" (10mm)
KW0201069	Diamond Hole Saw 15/32" (12mm)
KW0201070	Diamond Hole Saw 5/8" (16mm)
KW0201071	Diamond Hole Saw 1" (25mm)
KW0201072	Diamond Hole Saw 1-3/8" (35mm)
KW0201073	Diamond Hole Saw 1-5/8" (41mm)
KW0201074	Diamond Hole Saw 1-3/4" (44mm)
KW0201075	Diamond Hole Saw 2-1/2" (64mm)
KW0201076	Diamond Hole Saw 3" (76mm)
KW0201077	Diamond Hole Saw 4" (102mm)

**HSS END MILLS & TWIST DRILL**

END MILL DRILL

► **End Mill Straight**

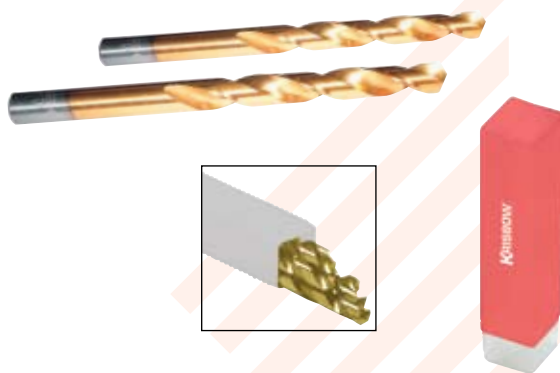


**Feature :**

JIS standard HSS endmills, 4 flutes, center cutting, straight shank. Used for surfaces finishing, side milling where precision finishing is needed.

Order No.	Type	Description	Mill Diameter (mm)	Overall Length (mm)	Length of Cut (mm)	Shank Dia. (mm)
KW0200414	KW02-414	Endmill Straight Shank	2	55	6	6
KW0200415	KW02-415	Endmill Straight Shank	3	55	10	6
KW0200416	KW02-416	Endmill Straight Shank	4	60	12	8
KW0200417	KW02-417	Endmill Straight Shank	5	65	15	8
KW0200418	KW02-418	Endmill Straight Shank	6	65	15	8
KW0200419	KW02-419	Endmill Straight Shank	8	75	21	10
KW0200420	KW02-420	Endmill Straight Shank	10	80	26	10
KW0200421	KW02-421	Endmill Straight Shank	12	90	31	12

► **HSS Twist Drill Tin Coated**



► **HSS Twist Drill Cobalt**



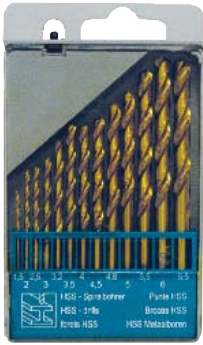
8

Order No.	Type	Description (mm)	Overall Length (mm)
KW0200439	KW02-439	HSS Twist Drill Tin Coated - 1.00	35
KW0200440	KW02-440	HSS Twist Drill Tin Coated - 1.50	40
KW0200441	KW02-441	HSS Twist Drill Tin Coated - 2.00	49
KW0200442	KW02-442	HSS Twist Drill Tin Coated - 2.50	57
KW0200443	KW02-443	HSS Twist Drill Tin Coated - 3.00	60
KW0200444	KW02-444	HSS Twist Drill Tin Coated - 3.50	70
KW0200445	KW02-445	HSS Twist Drill Tin Coated - 4.00	73
KW0200446	KW02-446	HSS Twist Drill Tin Coated - 4.50	80
KW0200447	KW02-447	HSS Twist Drill Tin Coated - 5.00	85
KW0200448	KW02-448	HSS Twist Drill Tin Coated - 5.50	92
KW0200449	KW02-449	HSS Twist Drill Tin Coated - 6.00	93
KW0200450	KW02-450	HSS Twist Drill Tin Coated - 6.50	101
KW0200451	KW02-451	HSS Twist Drill Tin Coated - 7.00	108
KW0200452	KW02-452	HSS Twist Drill Tin Coated - 7.50	109
KW0200453	KW02-453	HSS Twist Drill Tin Coated - 8.00	115
KW0200454	KW02-454	HSS Twist Drill Tin Coated - 8.50	115
KW0200455	KW02-455	HSS Twist Drill Tin Coated - 9.00	123
KW0200456	KW02-456	HSS Twist Drill Tin Coated - 9.50	125
KW0200457	KW02-457	HSS Twist Drill Tin Coated - 10.00	133
KW0200458	KW02-458	HSS Twist Drill Tin Coated - 10.50	133
KW0200459	KW02-459	HSS Twist Drill Tin Coated - 11.00	140
KW0200460	KW02-460	HSS Twist Drill Tin Coated - 11.50	140
KW0200461	KW02-461	HSS Twist Drill Tin Coated - 12.00	147
KW0200462	KW02-462	HSS Twist Drill Tin Coated - 12.50	150
KW0200463	KW02-463	HSS Twist Drill Tin Coated - 13.00	150

Order No.	Type	Description (mm)	Flute Length (mm)	Overall Length (mm)
KW0200880	KW02-880	HSS Twist Drill 1.00, Cobalt	12	34
KW0200881	KW02-881	HSS Twist Drill 1.50, Cobalt	20	43
KW0200882	KW02-882	HSS Twist Drill 2.00, Cobalt	24	49
KW0200883	KW02-883	HSS Twist Drill 2.50, Cobalt	30	57
KW0200884	KW02-884	HSS Twist Drill 3.00, Cobalt	33	61
KW0200885	KW02-885	HSS Twist Drill 3.50, Cobalt	39	70
KW0200886	KW02-886	HSS Twist Drill 4.00, Cobalt	43	75
KW0200887	KW02-887	HSS Twist Drill 4.50, Cobalt	47	80
KW0200888	KW02-888	HSS Twist Drill 5.00, Cobalt	52	86
KW0200889	KW02-889	HSS Twist Drill 5.50, Cobalt	57	93
KW0200890	KW02-890	HSS Twist Drill 6.00, Cobalt	57	93
KW0200891	KW02-891	HSS Twist Drill 6.50, Cobalt	63	101
KW0200892	KW02-892	HSS Twist Drill 7.00, Cobalt	69	109
KW0200893	KW02-893	HSS Twist Drill 7.50, Cobalt	69	109
KW0200894	KW02-894	HSS Twist Drill 8.00, Cobalt	75	117
KW0200895	KW02-895	HSS Twist Drill 8.50, Cobalt	75	117
KW0200896	KW02-896	HSS Twist Drill 9.00, Cobalt	81	125
KW0200897	KW02-897	HSS Twist Drill 9.50, Cobalt	81	125
KW0200898	KW02-898	HSS Twist Drill 10.00, Cobalt	87	133
KW0200899	KW02-899	HSS Twist Drill 10.50, Cobalt	87	133
KW0200900	KW02-900	HSS Twist Drill 11.00, Cobalt	94	142
KW0200901	KW02-901	HSS Twist Drill 11.50, Cobalt	94	142
KW0200902	KW02-902	HSS Twist Drill 12.00, Cobalt	101	151
KW0200903	KW02-903	HSS Twist Drill 12.50, Cobalt	101	151
KW0200904	KW02-904	HSS Twist Drill 13.00, Cobalt	101	151



► **Twist Drill Set**



**13pcs**

**Contents KW02-529 :**  
**13 pcs Twist Drill Tin Coated, Sizes ( mm ) :**  
 1.5, 2.0, 2.5, 3.0, 3.2, 3.5, 4.0, 4.5, 4.8,  
 5.0, 5.5, 6.0, 6.5

**KW02-529**



**13pcs**

**Contents KW02-530 :**  
**13 pcs Twist Drill Tin Coated, Sizes ( inch ) :**  
 $1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32,$   
 $11/64, 3/16, 13/64, 7/32, 15/64, 1/4$

**KW02-530**

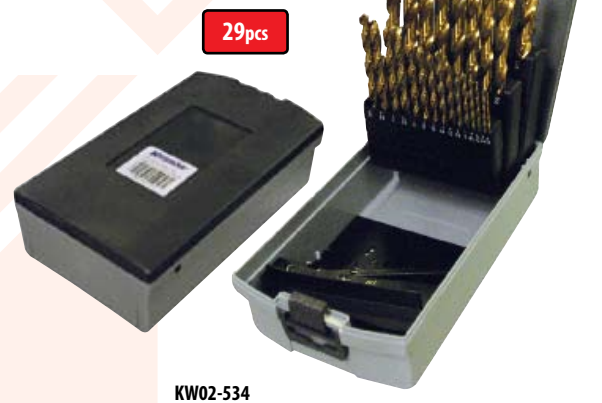


**19pcs**

**KW02-531**

**Contents KW02-531 ( 19 pcs ) :**  
**HSS Twist Drill TiN Coated, Sizes ( mm )**  
 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.5, 7.0, 7.5, 8.0, 8.5, 9.0, 9.5, 10

**Contents KW02-532 ( 21 pcs ) :**  
**HSS Twist Drill TiN Coated, Sizes ( inch )**  
 $1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64, 3/16, 13/64, 7/32, 15/64, 1/4, 17/64, 9/32, 19/64,$   
 $5/16, 21/64, 11/32, 23/64, 3/8$



**29pcs**

**KW02-534**

**Contents KW02-533 ( 25 pcs ) :**  
**HSS Twist Drill TiN Coated, Sizes ( mm )**  
 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0, 8.5,  
 9.0, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13

**Contents KW02-534 ( 29 pcs ) :**  
**HSS Twist Drill TiN Coated, Sizes ( inch )**  
 $1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 11/64, 3/16, 13/64, 7/32, 15/64, 1/4, 17/64, 9/32,$   
 $19/64, 5/16, 21/64, 11/32, 23/64, 3/8, 25/64, 13/32, 27/64, 7/16, 29/64, 15/32, 31/64, 1/2$

Order No.	Type	Description	Std. Pack
<b>Fully Ground Tin Coated</b>			
<b>KW0200529</b>	<b>KW02-529</b>	HSS Twist Drill TiN Coated 1.5 ~ 6.5mm, 13pcs	50 set
<b>KW0200530</b>	<b>KW02-530</b>	HSS Twist Drill TiN Coated 1/16 ~ 1/4", 13pcs	50 set
<b>KW0200531</b>	<b>KW02-531</b>	HSS Twist Drill TiN Coated 1 ~ 10mm, 19pcs	20 set
<b>KW0200532</b>	<b>KW02-532</b>	HSS Twist Drill TiN Coated 1/16 ~ 3/8", 21pcs	20 set
<b>KW0200533</b>	<b>KW02-533</b>	HSS Twist Drill TiN Coated 1 ~ 13mm, 25pcs	20 set
<b>KW0200534</b>	<b>KW02-534</b>	HSS Twist Drill TiN Coated 1/16 ~ 1/2", 29pcs	20 set

**DRILL SET**

► **Combination Drill Set**



Content	
5 pcs	25mm CRV6150 Screwdriver Bits : S1/S2/S3, PZ0/PZ1
10 pcs	25 CRV6150 Screwdriver Bits: PH1/PH2/PH3, SB3/SB4/SB5, T20/T30; H3/H4
1 pc	25mm Screwdriver Adaptor
1 pc	Magnetic Bit Holder
5 pcs	4241 HSS Roll Forged Drill 2*2/3/4/5mm
5 pcs	Masonry Drill: 5/5. 5/6/7/8mm
5 pcs	Wood Working drill:4/5/6/7/8mm
3 pcs	Carbon Steel 1/4" socket: 7mm, 8mm, 10mm
1 pcs	Countersink

Order No.	Type	Description
<b>KW0201682</b>	<b>KW02-1682</b>	36pcs Combination Drill Set
<b>KW0201091</b>	<b>KW02-1091</b>	36pcs Combination Drill Set

8

► **Hss & Masonry Drill Set 3-10mm ( 16pcs )**

► **Wood Working Drill Set 1.5-10mm ( 14 Pcs )**



**KW0201092**



**KW0202882**



Order No.	Type	Description
<b>KW0202882</b>	<b>KW02-2882</b>	HSS & Masonry Drill Set 3-10 MM ( 16pcs )
<b>KW0201092</b>	<b>KW02-1092</b>	Wood Working Drill Set 1.5-10 MM ( 14 pcs )

▶ **Door Lock Hole Cutter**



**KW02-551**



**KW02-553**



Order No.	Description
<b>KW0200551</b>	TCT Lock Hole Cutter 2 1/8" (54mm), include Auger Bit Allen Key
<b>KW0200553</b>	Hole Saw 2 1/8" (54mm), include 2 Drills 1 1/4" (32mm) and 7/8" (22mm) + Arbor

**HOLE SAW**

▶ **Set of Hole Saw Kit**



**KW02-668**



**KW02-669**

**Content :**

- Holesaw : 3/4"(19mm), 7/8"(22mm), 1"(25mm), 1 1/4"(32mm), 1 3/8"(35mm), 1 1/2"(38mm), 1 3/4"(44mm), 2"(51mm), 2 1/4"(57mm), 2 1/2"(64mm), 3"(76mm), 2 pcs arbors, spring, 12" extension

**Content :**

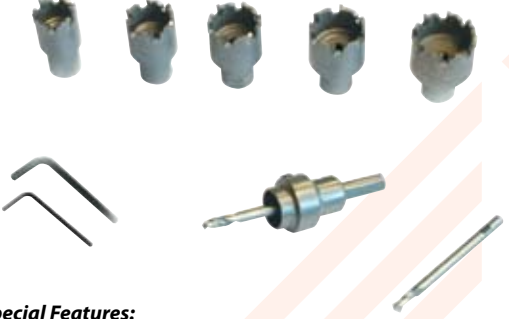
- Holesaw : 3/4"(19mm), 7/8"(22mm), 1"(25mm), 1-4"(32mm), 1 3/8"(35mm), 1 1/2"(38mm), 1 3/4"(44mm), 2"(51mm), 2 1/4"(57mm), 2 1/2"(64mm), 3"(76mm), arbors, adapter

Order No.	Type	Description
<b>KW0200664</b>	<b>KW02-664</b>	Hole Saw Kit 19-57mm, 9pcs w/case
<b>KW0200668</b>	<b>KW02-668</b>	Hole Saw Kit 19-76mm, 15pcs w/case
<b>KW0200669</b>	<b>KW02-669</b>	Hole Saw Kit 19-76mm, 14pcs w/case

**HOLE SAW SET**

► **Hole Saw Kit**

Available in 2 choices:  
19-35mm & 30-51mm



**KW02-688**

**Features:**

- Outer Dia. (19mm,22mm,25mm,28mm,30mm,32mm,35mm)
- Arbor and spring each one piece.
- Two pieces H.S.S center pilot Drill.
- Hex key: 2.5mm and 4.0mm each one piece.
- Case

**KW02-689**

**Features :**

- Outer Dia. (30mm,32mm,35mm,38mm,40mm,45mm,51mm)
- Arbor and spring each one piece.
- Two pieces H.S.S center pilot Drill.
- Hex key: 2.5mm and 4.0mm each one piece.
- Case

**Special Features:**

1. Use the same head arbor for different-size saw heads.
2. Change saw heads with a simple push and a turn to the fixed screw.
3. H.S.S center drill is replaceable.
4. Arbor's shank size 3/8".
5. Spring can help slug removal.

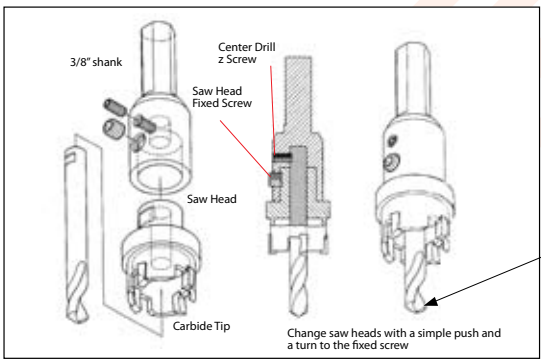
**Main Applications:**

- Stainless steel sheet, square wares and pipes.
- Aluminium doors & windows.
- Electrical boxes, or opening in machines.
- Iron plate or Cast iron.
- Formed products.
- As yacht building, ship-building
- Wooden doors or household appliances.

8

Order No.	Type	Description
KW0200688	KW02-688	Hole Saw Kit outer dia. 19-35mm
KW0200689	KW02-689	Hole Saw Kit outer dia. 30-51mm

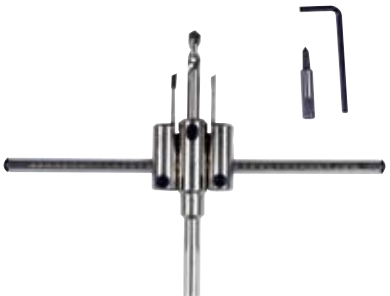
► **Drill for Hole Saw Kit**



Order No.	Type	Description	Size
KW0200690	KW02-690	Drill for Hole Saw Kit	1/4"

**HOLE CUTTER**

► **Hole Cutter**

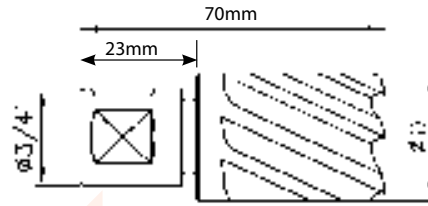


► **Core Drill**

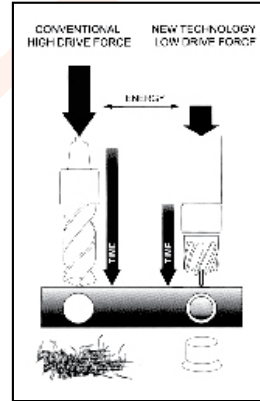
Available size  
16 ~ 50mm



Use for magnetic core drill machine  
KW15-587, KW15-380, KW15-381 and KW15-382



• Cutting Depth = 50mm



• The unit picture is shown at category 7

Order No.	Type	Description
KW0200606	KW02-606	Core Drill 16 x 70mm
KW0200607	KW02-607	Core Drill 17 x 70mm
KW0200608	KW02-608	Core Drill 18 x 70mm
KW0200609	KW02-609	Core Drill 19 x 70mm
KW0200610	KW02-610	Core Drill 20 x 70mm
KW0200611	KW02-611	Core Drill 21 x 70mm
KW0200612	KW02-612	Core Drill 22 x 70mm
KW0200614	KW02-614	Core Drill 24 x 70mm
KW0200615	KW02-615	Core Drill 25 x 70mm
KW0200616	KW02-616	Core Drill 26 x 70mm
KW0200617	KW02-617	Core Drill 27 x 70mm
KW0200618	KW02-618	Core Drill 28 x 70mm
KW0201010	KW02-1010	Core Drill 29 x 70mm
KW0200619	KW02-619	Core Drill 30 x 70mm
KW0200620	KW02-620	Core Drill 33 x 70mm
KW0201011	KW02-1011	Core Drill 32 x 70mm
KW0200621	KW02-621	Core Drill 35 x 70mm
KW0201012	KW02-1012	Core Drill 36 x 70mm

Order No.	Type	Description
KW0201013	KW02-1013	Core Drill 37 x 70mm
KW0200622	KW02-622	Core Drill 38 x 70mm
KW0201014	KW02-1014	Core Drill 39 x 70mm
KW0200623	KW02-623	Core Drill 40 x 70mm
KW0201015	KW02-1015	Core Drill 41 x 70mm
KW0201016	KW02-1016	Core Drill 42 x 70mm
KW0201017	KW02-1017	Core Drill 43 x 70mm
KW0201018	KW02-1018	Core Drill 44 x 70mm
KW0201019	KW02-1019	Core Drill 45 x 70mm
KW0201020	KW02-1020	Core Drill 46 x 70mm
KW0201021	KW02-1021	Core Drill 47 x 70mm
KW0201022	KW02-1022	Core Drill 48 x 70mm
KW0200624	KW02-624	Core Drill 50 x 70mm
KW0201023	KW02-1023	Core Drill 52 x 70mm
KW0201024	KW02-1024	Core Drill 54 x 70mm
KW0201025	KW02-1025	Core Drill 56 x 70mm
KW0201026	KW02-1026	Core Drill 58 x 70mm
KW0201027	KW02-1027	Core Drill 60 x 70mm

► **CENTER PIN**



Order No.	Type	Description
KW0200686	KW02-686	Center Pin 14 ~ 16mm
KW0200687	KW02-687	Center Pin 17 ~ 35mm

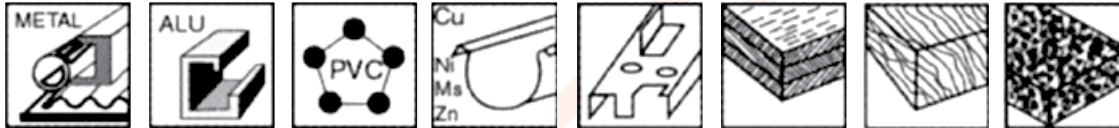
**HOLE SAW for METAL WORKING**

► **Bimetal Hole Saw**



**Features:**

- High speed steel M-3 Bi-metal edge welded to Chromium Vanadium Steel back for heavy duty cutting
- Regular 6 TPI Teeth & variable 4/6" TPI Teeth.
- Cutting safety and efficiently, the best way to cut large hole, cleaning the chips in touch materials.
- Diameters from 9/16"-6" (14 - 152mm)
- Cutting depth to 1 - 3/8" (35mm) and 1-7/8" (47mm)
- Can be used in portable electric or pneumatic tools, vertical drill machines, lathe, boring machines, lathe, boring machines, milling machines and other machines tools
- Cuts through stainless steel and other materials pipe, nail embedded wood hard wood floors, plywood and plastic



Order No.	Type	Description	Diameter	
			Size (mm)	Size (inch)
KW0200644	KW02-644	Bimetal Hole Saw	19	3/4"
KW0200645	KW02-645	Bimetal Hole Saw	22	7/8"
KW0200646	KW02-646	Bimetal Hole Saw	25	1"
KW0200647	KW02-647	Bimetal Hole Saw	29	1-1/8"
KW0200648	KW02-648	Bimetal Hole Saw	32	1,1/4"
KW0200649	KW02-649	Bimetal Hole Saw	35	1,3/8"
KW0200650	KW02-650	Bimetal Hole Saw	38	1,1/2"
KW0200651	KW02-651	Bimetal Hole Saw	41	1,5/8"
KW0200652	KW02-652	Bimetal Hole Saw	44	1,3/4"
KW0200653	KW02-653	Bimetal Hole Saw	51	2"
KW0200654	KW02-654	Bimetal Hole Saw	64	2,1/2"
KW0200655	KW02-655	Bimetal Hole Saw	76	3"
KW0200656	KW02-656	Bimetal Hole Saw	89	3,1/2"
KW0200657	KW02-657	Bimetal Hole Saw	102	4"
KW0200658	KW02-658	Bimetal Hole Saw	127	5"

**ARBOR**

► **Arbor**



Order No.	Type	Description	FittingHole Saw
KW0200659	KW02-659	Arbor 6.4mm	14 - 30mm
KW0200660	KW02-660	Arbor 9.5mm	14 - 30mm
KW0200661	KW02-661	Arbor 11mm	32 - 152mm
KW0200662	KW02-662	Arbor 1/4" x 75mm	-
KW0200663	KW02-663	Arbor 1/4" x 104mm	-



Order No.	Type	Description
KW0200388	KW02-388	Glass And Tile Drill Bit 3.0mm
KW0200389	KW02-389	Glass And Tile Drill Bit 4.0mm
KW0200390	KW02-390	Glass And Tile Drill Bit 5.0mm
KW0200391	KW02-391	Glass And Tile Drill Bit 6.0mm
KW0200392	KW02-392	Glass And Tile Drill Bit 8.0mm
KW0200393	KW02-393	Glass And Tile Drill Bit 10.0mm
KW0200394	KW02-394	Glass And Tile Drill Bit 12.0mm

Order No.	Type	Description
KW0200395	KW02-395	Glass and Tile Drill Bit 1/8"
KW0200396	KW02-396	Glass and Tile Drill Bit 3/16"
KW0200397	KW02-397	Glass and Tile Drill Bit 1/4"
KW0200398	KW02-398	Glass and Tile Drill Bit 5/16"
KW0200399	KW02-399	Glass and Tile Drill Bit 3/8"
KW0200400	KW02-400	Glass and Tile Drill Bit 1/2"
KW0200401	KW02-401	Glass and Tile Drill Bit 5/8"
KW0200402	KW02-402	Glass and Tile Drill Bit 3/4"

CIRCULAR SAW BLADE FOR STEEL



Made in Germany

Feature :

According to the cutting section the tooth pitch has to be increased by 2-4mm for aluminium, whereas for cutting stainless steels we propose to reduce the tooth pitch by approx. 2-3mm. For saw blades working non-ferrous steel or plastics we should know r.p.m. of the machine.

Reference value for toothing

Teeth t mm			
3	10-15	15	40
4	15-20	20	50
5	20-25	25	60
6	25-30	30	70
8	30-50	40	140
9	50-60	60	150
10	60-80	50-70	160
12	80-90	60-100	-
14	100	90-140	-

Order No.	Type	Description	Size	No. of	Pin Holes
KW0200048	KW02-48	Circular Saw Blade for steel	250 x 1.5 x 32 -3T	240	2/8/45 + 4/9/50
KW0200049	KW02-49	Circular Saw Blade for steel	250 x 2.0 x 32 -4T	200	2/8/45 + 2/11/63
KW0200050	KW02-50	Circular Saw Blade for steel	250 x 2.0 x 32 -6T	128	2/8/45 + 2/11/63
KW0200051	KW02-51	Circular Saw Blade for steel	250 x 2.0 x 32 -8T	100	2/8/45 + 2/11/63
KW0200057	KW02-57	Circular Saw Blade for steel	275 x 2.0 x 32 -4T		
KW0200052	KW02-52	Circular Saw Blade for steel	275 x 2.5 x 32 -4T	220	2/8/45 + 2/9/50 + 2/12/64
KW0200053	KW02-53	Circular Saw Blade for steel	275 x 2.5 x 32 -6T	140	2/8/45 + 2/9/50 + 2/12/64
KW0200054	KW02-54	Circular Saw Blade for steel	275 x 2.5 x 32 -8T	110	2/8/45 + 2/9/50 + 2/12/64
KW0200056	KW02-56	Circular Saw Blade for steel	275 x 2.5 x 40 -4T		
KW0200055	KW02-55	Circular Saw Blade for steel	275 x 2.5 x 40 -6T		
KW0200058	KW02-58	Circular Saw Blade for steel	315 x 2.5 x 32 -4T		
KW0200059	KW02-59	Circular Saw Blade for steel	315 x 2.5 x 32 -6T		
KW0200060	KW02-60	Circular Saw Blade for steel	315 x 2.5 x 40 -4T	250	2/8/55 + 4/12/64
KW0200061	KW02-61	Circular Saw Blade for steel	315 x 2.5 x 40 -6T	160	2/8/55 + 4/12/64
KW0200062	KW02-62	Circular Saw Blade for steel	315 x 2.5 x 40 -8T	120	2/8/55 + 4/12/64
KW0200063	KW02-63	Circular Saw Blade for steel	315 x 2.5 x 40 -10T	100	2/8/55 + 4/12/64

**CARBIDE TIP SAW**

► Carbide Circular Saw Blade

**For WOOD**



Order No.	Type	Description	Size (mm)	Teeth	Bore (mm)
KW0200263	KW02-263	Carbide Circular Saw Blade for Wood	105	40	40/16
KW0200777	KW02-777	Carbide Circular Saw Blade for Wood	110	30	20/16
KW0200778	KW02-778	Carbide Circular Saw Blade for Wood	140	24	25.4/16
KW0200779	KW02-779	Carbide Circular Saw Blade for Wood	140	40	25.4/16
KW0200780	KW02-780	Carbide Circular Saw Blade for Wood	160	24	25.4/16
KW0200781	KW02-781	Carbide Circular Saw Blade for Wood	160	40	25.4/16
KW0200782	KW02-782	Carbide Circular Saw Blade for Wood	180	24	25.4/16
KW0200783	KW02-783	Carbide Circular Saw Blade for Wood	180	40	25.4/16
KW0200784	KW02-784	Carbide Circular Saw Blade for Wood	200	30	25.4/16
KW0200785	KW02-785	Carbide Circular Saw Blade for Wood	200	60	25.4/16
KW0200786	KW02-786	Carbide Circular Saw Blade for Wood	250	40	30/25.4/16
KW0200787	KW02-787	Carbide Circular Saw Blade for Wood	250	80	30/25.4/16
KW0200788	KW02-788	Carbide Circular Saw Blade for Wood	300	60	30/25.4/16
KW0200789	KW02-789	Carbide Circular Saw Blade for Wood	300	100	30/25.4/16

KW0200777 - 789 for Wood	Soft Wood	Hard Wood	Shaw Wood	Laminated Panel	Poly Wood	Bamboo	Wooden Floor Board	Intensify Wood Floor Board	Dense Poly Wood	MDF
	●	●	●	●	●	●	●	●	○	○

● Good Performance    ○ General Performance

**For Aluminium**



Order No.	Type	Description	Size (mm)	Teeth	Bore (mm)
KW0200790	KW02-790	Carbide Circular Saw Blade for Aluminium	200	80	30/25.4/16
KW0200791	KW02-791	Carbide Circular Saw Blade for Aluminium	200	80	30/25.4/16
KW0200792	KW02-792	Carbide Circular Saw Blade for Aluminium	200	80	30/25.4/16

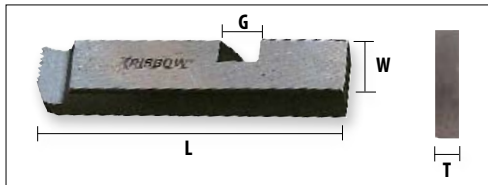
KW0200790 - 792 for Aluminium	Thin Aluminium	Profiled Aluminium	Thick Aluminium	High and Hard Aluminium
	●	●	●	○

● Good Performance    ○ General Performance  
Applicable Saw



**UNIVERSAL PIPE MACHINE DIES**

► HSS Pipe Machine Dies



**KW02-993 HSS Material**

It can be used for threading machine KW15-369, KW15-370 and KW15-371

Order No.	Type	Description	Size	Length L (mm)	Wide W (mm)	Thickness T (mm)	Groove G (mm)
KW0200990	KW02-990	BSPT HSS DIES F/KW15-368 (4pcs / set)	1/2" ~ 3/4"	82	27	10	10
KW0200991	KW02-991	BSPT HSS DIES F/KW15-368 (4pcs / set)	1" ~ 2"	77	27	10	10
KW0200992	KW02-992	BSPT HSS DIES F/KW15-369, KW15-371 (4pcs / set)	1/2" ~ 3/4"	95	20	14	10
KW0200993	KW02-993	BSPT HSS DIES F/KW15-369, KW15-371 (4pcs / set)	1" ~ 2"	85	20	14	10
KW0200994	KW02-994	BSPT HSS DIES F/KW15-371 (4pcs / set)	2 1/2" ~ 4"	95	20	14	10



**HAND TAP IN SET**

▶ **Tap and Die Set**



**10pcs**

**Features:**

- 4 metric coarse dies size: 3.4.5 and 6mm- 1" O/D
- 4 metric taper taps sizes as dies
- Die handle 1" O/D
- T type tap wrench

**12pcs**



**Features:**

- 5 UNC dies size: 6x1.0, 7x1.0, 8x1.25, 10x1.5, 12x1.75
- 5 UNC taps size: 6x1.0, 7x1.0, 8x1.25, 10x1.5, 12x1.75
- Tap wrench
- Die handle 1" O/D
- Supplied in composite carry cash

Order No.	Type	Description
<b>KW0200636</b>	<b>KW02-636</b>	Tap and Die Set Metric M3-M6 (10pcs)

Order No.	Type	Description
<b>KW0200637</b>	<b>KW02-637</b>	Tap and Die Set Metric M6-M12 (12pcs)

**40pcs**



**Contents:**

- 16mm dies sizes: 3x0.5, 3x0.6, 4x0.7, 4x0.75, 5x0.8, 5x0.9, 6x1.0, 6x0.75, 7x1.0, 7x0.75, 8x1.25, 8x1.0, 10x1.25, 10x1.5, 12x1.75, 12x1.5
- NPT die size 1/8-27
- 16mm taps: sizes as dies
- NPT tap size as die
- Tap wrench-American patten 1/2" capacity
- T type wrench 1/4" capacity
- Die handle
- Screwdriver
- Screwpitch gauge

Order No.	Type	Description
<b>KW0200638</b>	<b>KW02-638</b>	Tap and Die Set Metric M3-M12 (40pcs)

**40pcs**



**Contents:**

- 10 UNC dies size: 4-40, 6-32, 8-32, 10-24, 12-24, 1/4, 5/16, 3/8, 7/16, 1/2
- 6 UNF die size: 10-32, 1/4, 5/16, 3/8, 7/16, 1/2
- NPT die size 1/8-27
- 10 UNC taps: sizes as dies
- 6 UNF taps: sizes as dies
- NPT tap size as die
- Tap wrench-American patten 1/2" capacity
- T type wrench 1/4" capacity
- Die handle 1" O/D
- Screwdriver
- Screwpitch gauge

Order No.	Type	Description
<b>KW0200639</b>	<b>KW02-639</b>	Tap and Die Set UNC&UNF 4-40, 1/4-1/2 (40pcs)

**HAND TAP IN SET**

▶ Tap And Die Set

45pcs



**Contents:**

- 20mm dies size: 6x1.0, 6x0.75, 8x1.25, 8x1.0, 10x1.5, 10x1.25, 12x1.75, 12x1.5, 14x2.0, 14x1.5, 16x2.0, 16x1.5, 18x2.5, 18x1.5, 20x2.5, 20x1.5, 22x2.5, 22x1.5, 24x3.0, 24x1.5
- 20mm taps sizes as dies
- Tap wrench
- T type wrench
- Die handle 2" O/D with adapter
- Screwdriver
- Screwpitch gauge

Order No.	Type	Description
<b>KW0200640</b>	<b>KW02-640</b>	Tap and Die Set Metric M6-M24 (45pcs)

45pcs



**Contents:**

- 10 UNF dies size: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, 1
- 10 UNC dies size: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8, 1
- 10 UNF taps sizes as dies
- 10 UNC taps sizes as dies
- Tap wrench-American patten 1" capacity
- T type wrench 1/4" capacity
- Die handle 2" O/D with adapter
- Screwdriver

Order No.	Type	Description
<b>KW0200641</b>	<b>KW02-641</b>	Tap and Die Set UNC and UNF ¼ - 1" (45pcs)

8

58pcs



**Contents:**

- 9mm coarse die size: 3x0.6, 3.5x0.6, 4x0.75, 5x0.8, 6x1.0, 7x1.0, 8x1.25, 10x1.5, 12x1.75
- 8mm fine dies size: 2x0.4, 3x0.5, 4x0.7, 6x0.75, 7x0.75, 8x1.0, 10x1.25, 12x1.25
- NPT die size: 1/8-27
- 17mm taper taps: sizes as dies
- 17mm plug taps(bottoming): sizes as dies
- NPT tap size: 1/8-27
- Tap wrench-American patten 1/2" capacity
- T type tap wrench 1/4" capacity
- Die handle 1" O/D
- Screwpitch gauge
- Screwdriver

Order No.	Type	Description
<b>KW0200642</b>	<b>KW02-642</b>	Tap and Die Set Metric M3-M12 (58pcs)

110pcs



**Contents:**

- 35mm dies size: 2x0.4, 3x0.5, 4x0.7, 5x0.8, 6x0.75, 6x1.0, 7x0.75, 7x1.0, 8x0.75, 8x1.0, 8x1.25, 9x0.75, 9x1.0, 9x1.25, 10x0.75, 10x1.0, 10x1.25, 10x1.5, 11x0.75, 11x1.0, 11x1.25, 11x1.5, 12x0.75, 12x1.0, 12x1.25, 12x1.5, 12x1.75, 14x1.0, 14x1.25, 14x1.5, 14x2, 16x1.0, 16x1.5, 16x2, 18x1.5
- 35mmtaps sizes as dies
- 35mm plug taps (bottoming) sizes as dies
- Die handle 1" O/D
- Die handle 1 1/2" O/D
- 2 Taps wrench
- T type tap wrench

Order No.	Type	Description
<b>KW0200643</b>	<b>KW02-643</b>	Tap and Die Set Metric M2-M18 (110pcs)

**VALVE SEAT AND FACE CUTTER SET**

► *Hss Valve Seat Reamer*



**KW02-1050**



**KW02-387**

Order No.	Description
<b>KW02-1050</b>	HSS Valve Seat Reamer 45° Ø 32-42.5mm (5pcs)
<b>KW02-387</b>	HSS Valve Seat Reamer 45° Ø 30-60mm (13pcs)

► *Deburring Tool*



Order No.	Description
<b>KW02-1063</b>	Universal Deburring Set Handy Type

► *Damage Bolt Remover*



Order No.	Description
<b>KW02-1060</b>	Damaged Bolt Remover Set 9-19mm (10pcs)

► *Screw Extractor*



Order No.	Description
<b>KW02-1059</b>	Screw Extractor 1/8"~13/32" (10pcs)

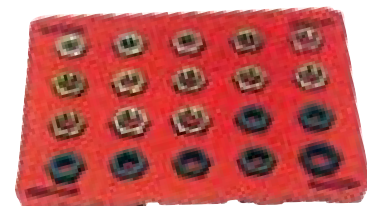
► *Thread Repairing*



**KW02-1058**



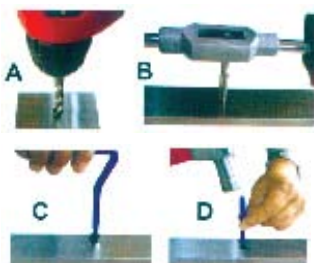
**KW02-1062**



**KW02-1061**



**KW02-1051**



Order No.	Description
<b>KW02-1058</b>	Thread Repairing Set for Drive Shafts M20~M24 (8pcs)
<b>KW02-1061</b>	Thread Repairing Dies Set M16~M27 (20pcs)
<b>KW02-1062</b>	Rethreading Tap/Dies Kit M6~M12 and 1/4"~5/8"
<b>KW02-1057</b>	Thread Repair Kit M8x1.25mm 1.5D Length
<b>KW02-1051</b>	Thread Repair Kit M10x1.0mm 1.5D Length
<b>KW02-1052</b>	Thread Repair Kit M10x1.5mm 1.5D Length
<b>KW02-1053</b>	Thread Repair Kit M12x1.25mm 1.5D Length
<b>KW02-1054</b>	Thread Repair Kit M12x1.75mm 1.5D Length
<b>KW02-1055</b>	Thread Repair Kit M14x1.25mm 1.5D Length
<b>KW02-1056</b>	Thread Repair Kit M18x1.5mm 1.5D Length

# BI-METAL PRODUCT SELECTION

## PRODUCTION SAWING

ALUMINUM NON-FERROUS	CARBON STEELS	STRUCTURAL STEELS	ALLOY STEELS	BEARING STEELS	MOLD STEELS	TOOL STEELS	STAINLESS STEELS	TITANIUM ALLOYS	NICKEL-BASED ALLOYS (INCONEL®)
EASY ←				MACHINABILITY				→ DIFFICULT	
					<b>QGT™</b> Longest Life, Straight Cuts				
<b>QXP™</b>		<b>QXP™</b> Long Life, Fast Cutting							
					<b>CONTESTOR GT®</b> Long Life, Straight Cuts				
<b>LXP®</b>		<b>LXP®</b> Fast Cutting							
		<b>Rx®+</b> Structurals/Bundles							
		<b>ARMOR® Rx®+</b> Long Life, Structurals/Bundles							

## GENERAL PURPOSE

<b>Q88™</b> Multi-Purpose Bi-metal Blade	<b>Q88™</b>
<b>CLASSIC®</b> 3/4" and Wider Blades	<b>CLASSIC®</b>
<b>DIEMASTER 2®</b> 1/2" and Narrower Blades	<b>DIEMASTER 2®</b>

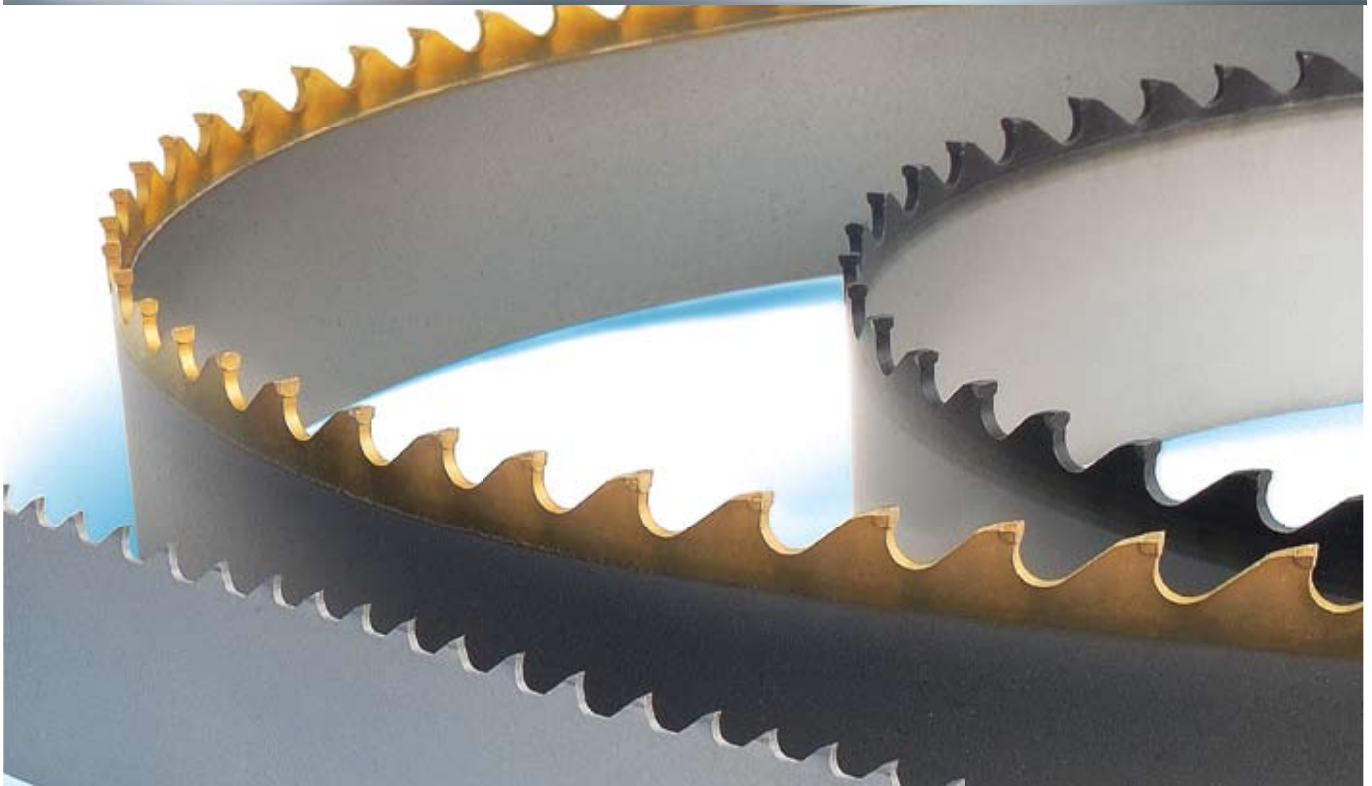
## BI-METAL TOOTH SELECTION

1. Determine size and shape of material to be cut
2. Identify chart to be used (square solids, round solids, or tubing/structurals)
3. Read teeth per inch next to material size.

8

# BAND SAW BLADE

Carbide Blades | Bi-Metal Blades



**BI METAL BEND SAW BLADE**

► Carbide Product Selection

**HIGH PERFORMANCE**

ALUMINUM/ NON-FERROUS	CARBON STEELS	STRUCTURAL STEELS	ALLOY STEELS	BEARING STEELS	MOLD STEELS	STAINLESS STEELS	TOOL STEELS	TITANIUM ALLOYS	NICKEL-BASED ALLOYS (INCONEL®)
EASY ← MACHINABILITY → DIFFICULT									
<b>ARMOR® CT BLACK</b> for Extreme Cutting Rates									
<b>ARMOR® CT GOLD</b>					<b>ARMOR® CT GOLD</b> For Superior Life				
<b>TNT CT®</b>					<b>TNT CT®</b> Extreme Performance on Super Alloys				
<b>TRI-TECH CT™</b>					<b>TRI-TECH CT™</b> Set Style Blade for Difficult to Cut Metals				
<b>TRI-MASTER®</b>					<b>TRI-MASTER®</b> Versatile Carbide Tipped Blade				

**SPECIAL APPLICATION**

WOOD	COMPOSITES	ALUMINUM (Including Alum. Castings)	CASE HARDENED MATERIALS (Including IHCP Cylinder Shafts)	OTHER (Composites, Tires, etc.)
EASY ← MACHINABILITY → DIFFICULT				
<b>ALUMINUM MASTER™ CT</b> Triple Chip Tooth Design			<b>HRC®</b> Carbide Tipped Blade for Case and Through-Hardened Materials	
<b>SST CARBIDE™</b> Set Style Tooth Design				
<b>TRI-MASTER®</b>				
<b>MASTER-GRIT®</b>			<b>MASTER-GRIT®</b> Carbide Grit Edge Blade for Cutting Abrasive and Hardened Materials	

► Carbide Tooth Selection

**ARMOR® CT BLACK**

		WIDTH OR DIAMETER OF CUT													
INCHES	MM	1	2.5	3	4	5	6	7	8	10	12	13	15	17	20+
		25	60	70	100	120	150	170	200	250	300	330	380	430	500+
											0.6/0.8 TPI				
											0.9/1.1 TPI				
											1.4/1.6 TPI				
											1.8/2.0 TPI				
											2.5/3.4 TPI				

**ARMOR® CT GOLD**

		WIDTH OR DIAMETER OF CUT													
INCHES	MM	1	2.5	3	4	5	6	7	8	10	12	13	15	17	20
		25	60	70	100	120	150	170	200	250	300	330	380	430	500
											0.9/1.1 TPI				
											1.8/2.0 TPI				

**TNT CT®**

		WIDTH OR DIAMETER OF CUT													
INCHES	MM	1	2.5	3	4	5	6	7	8	10	12	13	15	17	20
		25	60	70	100	120	150	170	200	250	300	330	380	430	500
											0.6/0.8 TPI				
											0.9/1.1 TPI				
											1.4/1.8 TPI				
											1.8/2.0 TPI				
											2.5/3.4 TPI				

**TRI-TECH CT™**

		WIDTH OR DIAMETER OF CUT													
INCHES	MM	1	2.5	3	4	5	6	7	8	10	12	13	15	17	20+
		25	60	70	100	120	150	170	200	250	300	330	380	430	500+
											0.6/0.8 TPI				
											0.9/1.1 TPI				
											1.4/1.8 TPI				
											1.8/2.0 TPI				
											2.5/3.4 TPI				

**TRI-MASTER® • HRC® • ALUMINUM MASTER™ CT • SST CARBIDE™**

		WIDTH OR DIAMETER OF CUT													
INCHES	MM	1	2.5	3	4	5	6	7	8	10	12	13	15	17	20
		25	60	70	100	120	150	170	200	250	300	330	380	430	500
											1.2/1.8 TPI				
											1.5/2.3 TPI				
											2/3 TPI				
											3 TPI				
											3/4 TPI				

## CARBIDE BAND SAW BLADE

### ▶ Amor® CT Black

For Extreme Cutting Rates



#### Benefits :

- High quality, micro-grained carbide: Tailored to cut a wide range of materials.
- New high performance backing steel: Exceptionally long fatigue life.
- AlTiN ARMOR for productivity and blade life: Aluminium, Titanium, and Nitrogen combine to form a coating that is hard and tough, protecting each tooth from heat and wear with an armor-like barrier. Armor allows for low thermal conductivity that forces heat into the chips rather than the blade or workpiece.



#### Applications :

- Carbon steels
- Alloy steels
- Aluminium
- Bearing steels
- Mold steels
- Tool steels
- Titanium steels
- Bundle, mild steel tubing

WIDTH x THICKNESS		TPI				
IN	MM	0.6/0.8	0.9/1.1	1.4/1.6	1.8/2.0	2.5/3.4
1-1/4 x .042	34 x 1.07				•	•
1-1/2 x .050	41 x 1.27			•	•	•
2 x .063	54 x 1.60		•	•	•	•
2-5/8 x .063	67 x 1.60	•	•	•	•	
3 x .063	80 x 1.60	•	•			

• New Specs

### ▶ Amor® CT Gold

For Superior Life



#### HIGH QUALITY, MICRO-GRAINED CARBIDE

Tailored to offer superior toughness in difficult applications

#### HIGH PERFORMANCE BACKING STEEL

Excellent fatigue life

#### TiN ARMOR® FOR PRODUCTIVITY AND BLADE LIFE

This gold colored, Titanium Nitride coating has excellent high hardness and wear characteristics

WIDTH x THICKNESS		TPI	
IN	MM	0.9/1.1	1.8/2.0
1-1/2 x .050	41 x 1.27		•
2 x .063	54 x 1.60	•	•



### ▶ TNT CT®

Extreme Performance on Super Alloys



#### HIGH PERFORMANCE CARBIDE AND SPECIAL GROUND TOOTH FORM

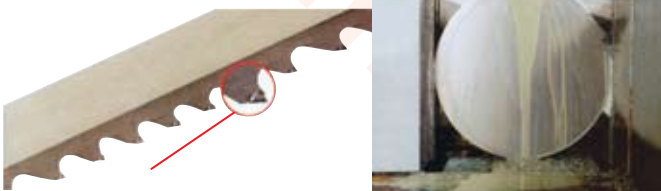
Superior wear resistance when sawing difficult to cut materials

#### HIGH PERFORMANCE BACKING STEEL

Excellent fatigue life

WIDTH x THICKNESS		TPI				
IN	MM	0.6/0.8	0.9/1.1	1.4/1.8	1.8/2.0	2.5/3.4
1-1/4 x .042	34 x 1.07				•	•
1-1/2 x .050	41 x 1.27			•	•	•
2 x .063	54 x 1.60		•	•	•	•
2-5/8 x .063	67 x 1.60	•	•	•	•	
3 x .063	80 x 1.60	•	•			

• New Specs



High quality, micro-grained carbide (Tailored to cut a wide range of materials)

#### EXTREME CUTTING RATES!

Ground Tooth Bi-metal Blade

25 Minutes

**ARMOR CT BLACK**

← 47 SECONDS!

0 5 10 15 20 25

Material: 6-1/2 (152mm) Round 17-4PH Stainless steel, based on internal test results"

Order No.	Description
LXZ000007	Bandsaw Armor CT Black 34X1.07X2.5/3.4T
LXZ000008	Bandsaw Armor CT Black 41X1.27X1.4/1.6T
LXZ000009	Bandsaw Armor CT Black 41X1.27X1.8/2.0T
LXZ000010	Bandsaw Armor CT Black 41X1.27X2.5/3.4T
LXZ000011	Bandsaw Armor CT Black 54X1.60X1.4/1.6T
LXZ000012	Bandsaw Armor CT Black 54X1.60X1.8/2.0T
LXZ000013	Bandsaw Armor CT Black 54X1.60X2.5/3.4T
LXZ000014	Bandsaw Armor CT Black 67X1.60X0.9/1.1T
LXZ000015	Bandsaw Armor CT Black 67X1.60X1.4/1.6T
LXZ000016	Bandsaw Armor CT Black 80X1.60X0.9/1.1T

► **Tri Master®**

Versatile Carbide Tipped Blade

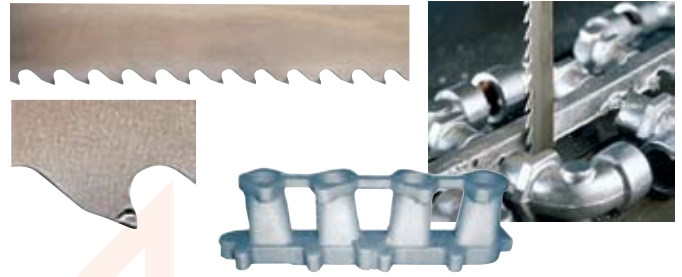
**Applications :**

- Abrasive, non ferrous materials
- Wood cutting
- Alloy steels
- Tool steels
- Bearing steels
- Carbon steels
- Stainless steels
- Mold steels

**Benefits :**

- Precision triple chip grind: Smooth cuts, excellent finish.
- New high performance backing steel: Exceptionally long fatigue life.

TOOTH FORM WIDTH x THICKNESS		VARI-TOOTH® TPI				STANDARD TPI
IN	MM	1.2/1.8	1.5/2.3	2/3	3/4	3
3/8 x .032	9.5 x 0.80				•	•
1/2 x .025	12.7 x 0.64					•
3/4 x .035	19 x 0.90					•
1 x .035	27 x 0.90			•	•	•
1-1/4 x .042	34 x 1.07	•	•	•		•
1-1/2 x .050	41 x 1.27	•	•	•		•
2 x .063	54 x 1.60	•	•			
2-5/8 x .063	67 x 1.60	•				
3 x .063	80 x 1.60	•				



Order No.	Description
LXZ000017	Bandsaw Tri-master 9.5x0.80x3/4T (Vari-tooth)
LXZ000018	Bandsaw Tri-master 9.5x0.80x3T (Standard Positive)
LXZ000019	Bandsaw Tri-master 12.7x0.64x3T (Standard Positive)
LXZ000020	Bandsaw Tri-master 19x0.90x3T (Standard Positive)
LXZ000021	Bandsaw Tri-master 27x0.90x2/3T ((Vari-tooth)
LXZ000022	Bandsaw Tri-master 27x0.90x3/4T ((Vari-tooth)
LXZ000023	Bandsaw Tri-master 27x0.90x3T (Standard Positive)
LXZ000024	Bandsaw Tri-master 34x1.07x1.5/2.3T ((Vari-tooth)
LXZ000025	Bandsaw Tri-master 34x1.07x2/3T ((Vari-tooth)
LXZ000026	Bandsaw Tri-master 34x1.07x3/4T ((Vari-tooth)
LXZ000027	Bandsaw Tri-master 34x1.07x3T (Standard Positive)
LXZ000028	Bandsaw Tri-master 41x1.27x1.2/1.8T ((Vari-tooth)
LXZ000029	Bandsaw Tri-master 41x1.27x2/3T ((Vari-tooth)
LXZ000030	Bandsaw Tri-master 41x1.27x3/4T ((Vari-tooth)
LXZ000031	Bandsaw Tri-master 41x1.27x3T (Standard Positive)
LXZ000032	Bandsaw Tri-master 54x1.60x1.2/1.8T ((Vari-tooth)
LXZ000033	Bandsaw Tri-master 54x1.60x2/3T ((Vari-tooth)
LXZ000034	Bandsaw Tri-master 67x1.60x1.2/1.8T ((Vari-tooth)
LXZ000035	Bandsaw Tri-master 80x1.60x1.2/1.8T ((Vari-tooth)

► **HRC®**

Carbide Tipped Blade for Case and Through-Hardened Material

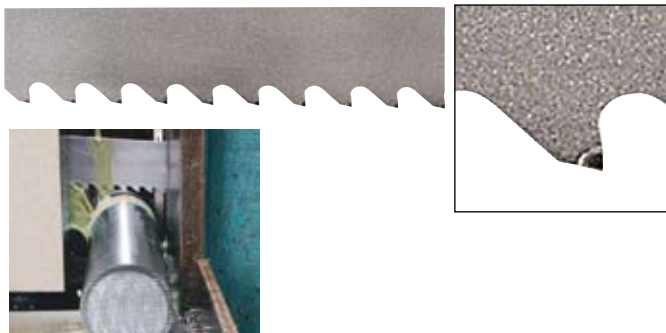


**Benefits :**

- High quality micro-grained carbide: Outstanding durability.
- Strong tooth design: 0° rake angle, Superior strip resistance.
- New high performance backing steel: Exceptionally long fatigue life.

Order No.	Description
LXZ000036	Bandsaw Lenox HRC 27x1.07x3T (Standard)
LXZ000037	Bandsaw Lenox HRC 34x1.07x3T (Standard)
LXZ000038	Bandsaw Lenox HRC 41x1.27x3/4T (Vari-tooth)
LXZ000039	Bandsaw Lenox HRC 54x1.60x2/3T (Vari-tooth)

TOOTH FORM WIDTH x THICKNESS		VARI-TOOTH® TPI		STANDARD TPI
IN	MM	2/3	3/4	3
1 x .035	27 x 0.90			•
1-1/4 x .042	34 x 1.07		•	•
1-1/2 x .050	41 x 1.27		•	
2 x .063	54 x 1.60	•		



# BI - METAL BAND SAW BLADES

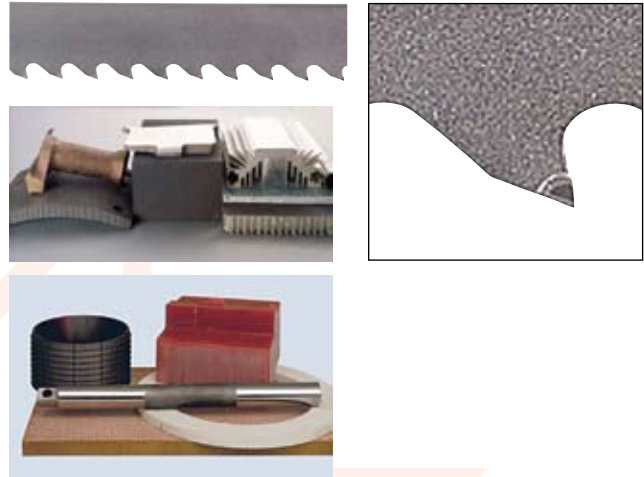


## ▶ Aluminium Master™ CT

### Triple Chip Tooth Design

**Benefits:**

- High quality sub micro-grained carbide: Extreme wear resistance.
- Triple chip tooth geometry: Fast cutting, easy of feed, great finish.
- New high performance backing steel: Exceptionally long fatigue life.



TOOTH FORM WIDTH x THICKNESS		VARI-TOOTH® TPI	STANDARD TPI
IN	MM	2/3	3
3/4 x .035	19 x 0.90		•
1 x .035	27 x 0.90		•
1-1/4 x .042	34 x 1.07		•
1-1/2 x .050	41 x 1.27	•	

Order No.	Description
LXZ000001	Bandsaw Aluminium Master CT 19X0.90X3T (Standard)
LXZ000002	Bandsaw Aluminium Master CT 27X0.90X3T (Standard)
LXZ000003	Bandsaw Aluminium Master CT 34X1.07X3T (Standard)
LXZ000004	Bandsaw Aluminium Master CT 41X1.27X2/3T (Vari-tooth)

## ▶ Tri Tech CT®

Set Style Carbide Blade for Difficult Cut Metals

### STRAIGHT CUTS. NO PINCHING

Set s tyle tooth pattern eliminates pinching in high stress metals  
Wide kerf clearance enables plunge cutting

### PROLONGED BLADE LIFE

High grade carbide tips are precision ground for efficient cutting  
High per formance backing steel minimizes body breakage

### EXTREME VERSATILITY

Cuts a range of materials from high strength steels to Nickel-based alloys

WIDTH x THICKNESS		TPI				
IN	MM	0.6/0.8	0.9/1.1	1.4/1.8	1.8/2.0	2.5/3.4
1-1/4 x .042	34 x 1.07				•	•
1-1/2 x .050	41 x 1.27			•	•	•
2 x .063	54 x 1.60		•	•	•	•
2-5/8 x .063	67 x 1.60	•	•	•		
3 x .063	80 x 1.60	•	•			



## ▶ Master Great®

Carbide Grit Edge Blade for Cutting Abrasive and Hardened Materials



### TUNGSTEN CARBIDE PARTICLE GRIT

Metallurgically bonded edge

### GULLETED

For applications greater than 1/4"(6.4mm) in cross -section

### CONTINUOUS

For applications les s than 1/4"(6.4mm) in cross -section

GRIT EDGE PREPARATION WIDTH x THICKNESS		GULLETED			CONTINUOUS	
IN	MM	Med	Med-Coarse	Coarse	Med	Coarse
1/4 x .020	6.4 x 0.50				•	
3/8 x .025	9.5 x 0.64	•	•			
1/2 x .025	12.7 x 0.64	•	•		•	
3/4 x .032	19 x 0.80		•	•		
1 x .035	27 x 0.90		•	•	•	•
1-1/4 x .042	34 x 1.07			•		



► **QGT™**

Long Blade Life When Cutting Tough Materials

**LONG LIFE, STRAIGHT CUTTING**

machinability Proprietary backing steel preparation provides increased fatigue life

**OPTIMUM CHIP FORMATION IN WORK HARDENING MATERIALS**

Special set and tooth profile

**MAXIMUM BEAM STRENGTH FOR STRAIGHTER CUTTING**

Modified gullet design

WIDTH x THICKNESS		TPI			
IN	MM	1.0/1.3	2/3	3/4	4/6
1-1/4 x .042	34 x 1.07		◆	◆	◆
1-1/2 x .050	41 x 1.27		◆	◆	
2 x .063	54 x 1.60	◆	◆	◆	
2-5/8 x .063	67 x 1.60	◆			
3 x .063	80 x 1.60	◆			



► **QXP™**

Long Blade Life at High Cutting Rates

**LONG LIFE, FAST CUTTING**

Solids of mild to moderate machinability  
Proprietary backing steel preparation provides increased fatigue life

**PENETRATES WITH LESS FEED FORCE**

Extreme positive rake tooth form

**INCREASED CUTTING**

Deep gullet design

WIDTH x THICKNESS		TPI					
IN	MM	1.0/1.3	1.5/2.0	2/3	3/4	4/6	5/8
1 x .035	27 x 0.90			◆	◆	◆	◆
1-1/4 x .042	34 x 1.07		◆	◆	◆	◆	◆
1-1/2 x .050	41 x 1.27		◆	◆	◆		
2 x .063	54 x 1.60	◆	◆	◆	◆	◆	
2-5/8 x .063	67 x 1.60	◆	◆	◆	◆		
3 x .063	80 x 1.60	◆					



► **Q88™**

Multi - Purpose BI- Metal Blade

• New Specs



**EXTREME DURABILITY**

Proprietary "Q" process increases fatigue life and eliminates band breaks  
Robust M42 High speed steel edge provides superior wear resistance  
improves tooth penetration on saws with limited feed force.

**MAXIMUM BEAM STRENGTH FOR STRAIGHTER CUTTING**

Modified gullet design

**MAXIMUM BEAM STRENGTH FOR STRAIGHTER CUTTING**

Smooth, straight cuts when cutting multiple pieces or wide cross sections  
advanced tooth geometry minimizes noise and vibration from the very first cut.

**EXCRPTIONAL BLADE LIFE**

Designed to perform in adverse sawing conditions Cuts a wide range of metals from low carbon steels to stainless steels

WIDTH x THICKNESS		TPI		
IN	MM	2/3	3/4	4/6
1 x .035	27 x 0.90	◆	◆	◆
1-1/4 x .042	34 x 1.07	◆	◆	◆
1 x 1/2 x .050	41 x 1.27	◆	◆	

Order No.	Description
LX0001756	Bandsaw Contestor 41x2/3T
LX0001757	Bandsaw Contestor 41x3/4T
LX0001758	Bandsaw Contestor 34x2/3T
LX0001759	Bandsaw Contestor 34x4/6T
LX0001765	Bandsaw Contestor 34x3/4T
LX0001783	Bandsaw Contestor 27x2/3T
LX0001784	Bandsaw Contestor 27x2/3T
LX0001785	Bandsaw Contestor 27x4/6T

► **Contestor GT®**

High Performance Sawing

**Benefits :**

- GT (Ground Tooth): Cuts with less feed pressure .
- High speed steel edge: M-42 standart, M 51 available as listed below.
- Unique gullet design: Increased beam strength.
- Use when tool life and cutting accuracy is most important.



Order No.	Description
LXZ000040	Bandsaw Contestor 27x0.90x2/3T
LX0000370	Bandsaw Contestor 27x0.90x3/4T
LX0001127	Bandsaw Contestor 27x0.90x4/6T
LXZ000041	Bandsaw Contestor GT 34x1.07x1.4/2.0T
LX0000550	Bandsaw Contestor GT 34x1.07x2/3T
LX0001186	Bandsaw Contestor GT 34x1.07x3/4T
LX0001130	Bandsaw Contestor GT 34x1.07x4/6T
LXZ000042	Bandsaw Contestor GT 41x1.27x1.0/1.3T
LX0001085	Bandsaw Contestor GT 41x1.27x1.4/2.0T
LX0000373	Bandsaw Contestor GT 41x1.27x2/3T
LXZ000043	Bandsaw Contestor GT 41x1.27x3/4T
LXZ000044	Bandsaw Contestor GT 41x1.27x4/6T
LXZ000045	Bandsaw Contestor GT 54x1.27x1.0/1.3T
LXZ000046	Bandsaw Contestor GT 54x1.27x1.4/2.0T
LXZ000047	Bandsaw Contestor GT 54x1.27x2/3T
LXZ000048	Bandsaw Contestor GT 54x1.27x3/4T
LXZ000049	Bandsaw Contestor GT 54x1.60x0.7/1.0T
LXZ000050	Bandsaw Contestor GT 54x1.60x1.0/1.3T
LXZ000051	Bandsaw Contestor GT 54x1.60x1.4/2.0T
LXZ000052	Bandsaw Contestor GT 54x1.60x2/3T
LXZ000053	Bandsaw Contestor GT 54x1.60x3/4T
LXZ000054	Bandsaw Contestor GT 54x1.60x4/6T
LXZ000055	Bandsaw Contestor GT 67x1.60x0.7/1.0T
LXZ000056	Bandsaw Contestor GT 67x1.60x1.0/1.3T
LXZ000057	Bandsaw Contestor GT 67x1.60x1.4/2.0T
LXZ000058	Bandsaw Contestor GT 67x1.60x2/3T
LXZ000059	Bandsaw Contestor GT 67x1.60x3/4T
LXZ000060	Bandsaw Contestor GT 67x1.60x4/6T
LXZ000061	Bandsaw Contestor GT 80x1.60x0.7/1.0T
LXZ000062	Bandsaw Contestor GT 80x1.60x1.0/1.3T
LXZ000063	Bandsaw Contestor GT 80x1.60x1.4/2.0T

**STRAIGHTER CUTS ON LARGER,  
DIFFICULT TO CUT MATERIALS**

Unique gullet design for increased beam strength

**OPTIMUM CHIP FORMATION IN WORK  
HARDENING ALLOYS**

Precision ground teeth—smoother tooth face and gullet surfaces

**IMPROVED LIFE WITH OPTIONAL M-51 EDGE MATERIAL**

Increased heat and wear resistance  
Available as listed below

WIDTH x THICKNESS		TPI					
IN	MM	0.7/1.0	1.0/1.3	1.4/2.0	2/3	3/4	4/6
1 x .035	27 x 0.90				•	•	•
1-1/4 x .042	34 x 1.07		◆	◆	◆	◆	◆
1-1/2 x .050	41 x 1.27		◆	◆	◆■	◆■	◆
2 x .050	54 x 1.27		◆	◆	◆	◆	
2 x .063	54 x 1.60	◆	◆	◆	◆■	◆	◆
2-5/8 x .063	67 x 1.60	◆	◆■	◆■	◆	◆	◆
3 x .063	80 x 1.60	◆	◆	◆			

• Milled Tooth ◆ Ground Tooth ■ Available with M-51 edge

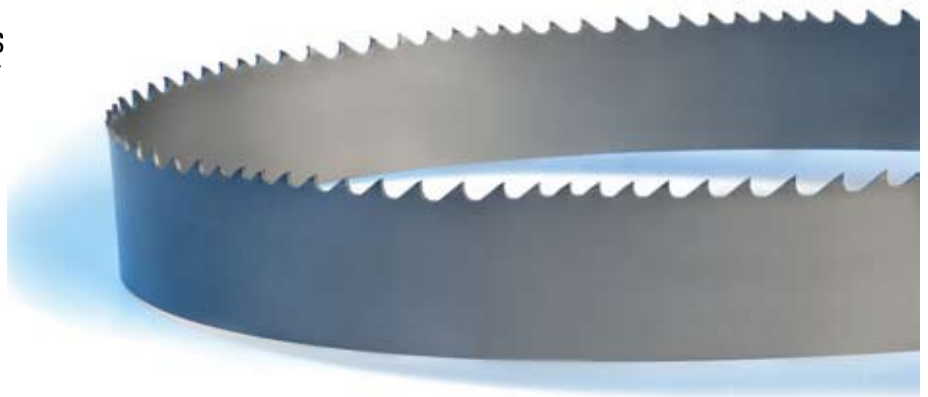


LXP®

Extreme Production Rates

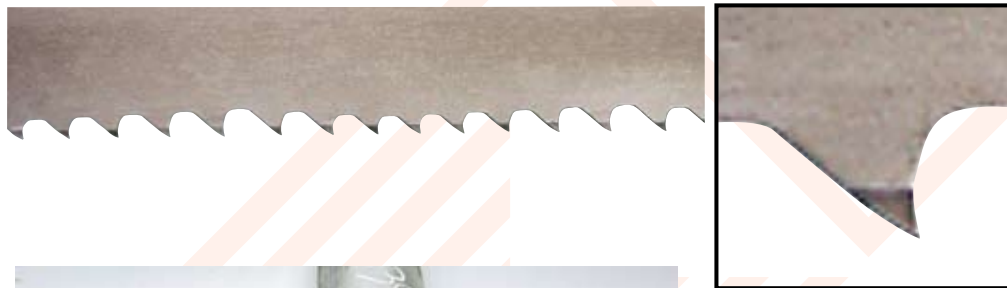
**FASTER CUTTING OF SOLID MATERIALS**

Extreme positive rake tooth form for easier penetration  
 Deep gullets for improved chip carrying capacity with less feed force



**Benefits:**

- Extreme positive rake tooth profile: Easy penetration with reduced feed force.
- Ground tooth profile: Cuts with less feed pressure.
- Large capacity gullet: Improved chip carrying capacity, For production cutting of alloy and carbon steels.



WIDTH x THICKNESS		TPI						
IN	MM	1.0/1.3	1.5/2.0	2/3	3/4	4/6	5/8	
3/4 x .035	19 x 0.90					◆		
1 x .035	27 x 0.90			◆	◆	◆	◆	
1-1/4 x .042	34 x 1.07		◆	◆	◆	◆	◆	
1-1/2 x .050	41 x 1.27		◆	◆	◆	◆		
2 x .063	54 x 1.60	◆	◆	◆	◆	◆		
2-5/8 x .063	67 x 1.60	◆	◆	◆	◆			
3 x .063	80 x 1.60	◆						



Order No.	Description
LX0000070	Bandsaw LXP 19x0.90x4/6T
LX0000763	Bandsaw LXP 27x0.90x2/3T
LX0000601	Bandsaw LXP 27x0.90x3/4T
LX0000735	Bandsaw LXP 27x0.90x4/6T
LXZ000064	Bandsaw LXP 27x0.90x5/8T
LXZ000065	Bandsaw LXP 34x1.07x1.5/2.0T
LX0000600	Bandsaw LXP 34X1.07x2/3T
LX0000764	Bandsaw LXP 34x1.07x3/4T
LX0000765	Bandsaw LXP 34x1.07x4/6T
LXZ000066	Bandsaw LXP 34x1.07x5/8T
LXZ000067	Bandsaw LXP 41x1.27x1.5/2.0T
LX0000766	Bandsaw LXP 41x1.27x2/3T
LX0000767	Bandsaw LXP 41x1.27x3/4T
LX0000602	Bandsaw LXP 41x1.27x4/6T
LXZ000068	Bandsaw LXP 54x1.60x1.0/1.3T
LXZ000069	Bandsaw LXP 54x1.60x1.5/2.0T
LXZ000070	Bandsaw LXP 54x1.60x2/3T
LXZ000071	Bandsaw LXP 54x1.60x3/4T
LXZ000072	Bandsaw LXP 54x1.60x4/6T
LXZ000073	Bandsaw LXP 67x1.60x1.0/1.3T
LXZ000074	Bandsaw LXP 67x1.60x1.5/2.0T
LXZ000075	Bandsaw LXP 67x1.60x2/3T
LXZ000076	Bandsaw LXP 67x1.60x3/4T
LXZ000077	Bandsaw LXP 80x1.60x1.0/1.3T

# BI - METAL BAND SAW BLADE



► **RX®+**

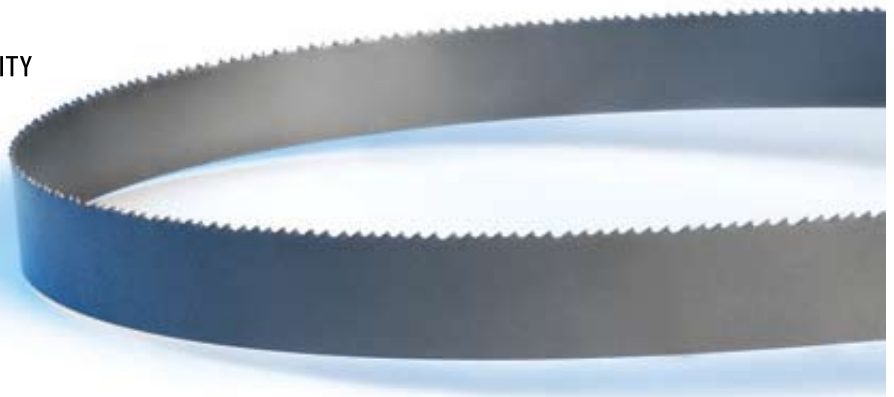
Engineered to Cut Structurals, Tubing and Bundles

### LONG BLADE LIFE AND EXTREME DURABILITY

Patented tooth profile resists tooth strippage, even at higher feed rates

### QUIET CUTTING, REDUCED VIBRATION

Optimized tooth pitch/set sequence



**Benefits:**

- Reinforced tooth design: For long life and extreme durability.
- Unique, patented tooth profile: Power through interrupted cuts, Eliminates tooth strippage, Minimize harmonics for reduced noise levels.
- M-42 high speed steel tooth profile: For durability.

**Engineered to cut structures, tubing and bundles**

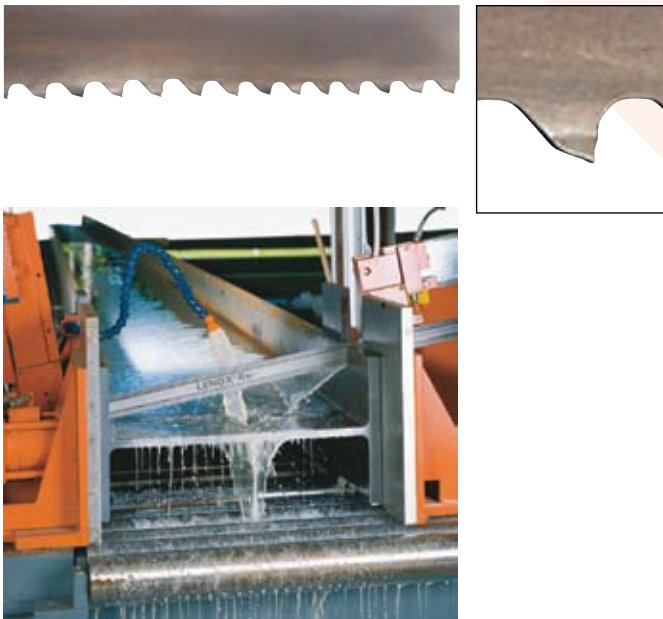
WIDTH x THICKNESS		TPI				
IN	MM	2/3	3/4	4/6	5/8	10/14
5/8 x .032	16 x 0.80					*
3/4 x .035	19 x 0.90			◆	◆	
1 x .035	27 x 0.90	◆	◆	◆	◆	
1-1/4 x .042	34 x 1.07	◆†	◆†	◆†	◆	
1-1/2 x .050	41 x 1.27	◆†	◆†	◆†	◆	
2 x .050	54 x 1.27	◆†	◆†	◆†	◆	
2 x .063	54 x 1.60	◆†	◆†	◆		
2-5/8 x .063	67 x 1.60	◆†	◆†	◆		

\* = Matrix edge

† = Extra heavy set available to prevent blade pinching

Order No.	Description
LXZ000078	Bandsaw Lenox RX+ 16X0.80x10/14T
LXZ000079	Bandsaw Lenox Rx+ 19X0.90X4/6T
LXZ000080	Bandsaw Lenox Rx+19X0.90X5/8T
LXZ000081	Bandsaw Lenox Rx+ 27X0.90X2/3T
LX0001125	Bandsaw Lenox Rx+ 27X0.90X3/4T
LX0001096	Bandsaw Lenox Rx+ 27X0.90X4/6T
LX0001097	Bandsaw Lenox Rx+ 27X0.90X5/8T
LXZ000082	Bandsaw Lenox Rx+ 34X1.07X2/3T
LX0001098	Bandsaw Lenox Rx+ 34X1.07X3/4T
LX0001099	Bandsaw Lenox Rx+ 34X1.07X4/6T
LXZ000083	Bandsaw Lenox Rx+ 34X1.07X5/8T
LXZ000084	Bandsaw Lenox Rx+ 41X1.27X2/3T
LX0001100	Bandsaw Lenox Rx+ 41X1.27X3/4T
LX0001126	Bandsaw Lenox Rx+ 41X1.27X4/6T
LXZ000085	Bandsaw Lenox Rx+ 41X1.27X5/8T
LXZ000086	Bandsaw Lenox Rx+ 54X1.27X2/3T
LXZ000087	Bandsaw Lenox Rx+ 54X1.27X3/4T
LXZ000088	Bandsaw Lenox Rx+ 54X1.27X4/6T
LXZ000089	Bandsaw Lenox Rx+ 54X1.27X5/8T
LXZ000090	Bandsaw Lenox Rx+ 54X1.60X2/3T
LXZ000091	Bandsaw Lenox Rx+ 54X1.60X3/4T
LXZ000092	Bandsaw Lenox Rx+ 54X1.60X4/6T
LXZ000093	Bandsaw Lenox Rx+ 67X1.60X2/3T
LXZ000094	Bandsaw Lenox Rx+ 67X1.60X3/4T
LXZ000095	Bandsaw Lenox Rx+ 67X1.60X4/6T

8



**▶ CLASSIC®**

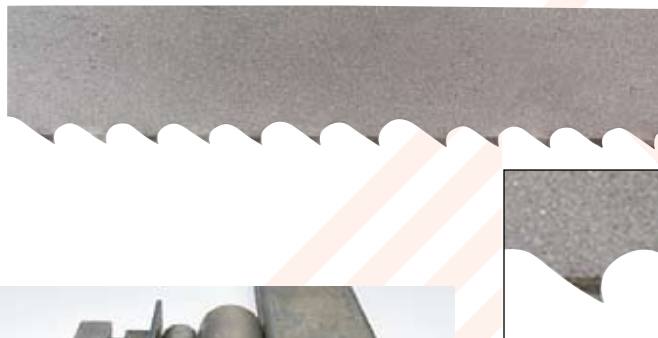
The Ultimate Multi-Purpose Blade

**DESIGNED FOR LONG LIFE IN GENERAL PURPOSE CUTTING APPLICATIONS**  
 Patented TUFF TOOTH™ design reduces tooth strippage  
 M-42 high speed steel edge for excellent heat and wear resistance



**Benefits:**

- Shallow gullets: For increase beam strength.
- Patented Tuff Tooth design: For strip resistance.
- M-42 high speed steel tooth edge: For durability.



Order No.	Description
LXZ000096	Bandsaw Classic 19x0.90x4/6T (Tuff-tooth)
LXZ000097	Bandsaw Classic 19x0.90x6/8T (Tuff-tooth)
LX0000734	Bandsaw Classic 19x0.90x5/8T (Vari-tooth)
LX0001191	Bandsaw Classic 19x0.90x6/10T (Vari-tooth)
LX0000661	Bandsaw Classic 19x0.90x8/12T (Vari-tooth)
LX0000556	Bandsaw Classic 19x0.90x10/14T (Vari-tooth)
LXZ000098	Bandsaw Classic 19x0.90x14T (Wavy)
LXZ000099	Bandsaw Classic 19x0.90x18T (Wavy)
LXZ000100	Bandsaw Classic 19x0.90x3T (Hook)
LXZ000101	Bandsaw Classic 27x0.90x2/3T (Tuff-tooth)
LXZ000102	Bandsaw Classic 27x0.90x3/4T (Tuff-tooth)
LXZ000103	Bandsaw Classic 27x0.90x4/6T (Tuff-tooth)
LXZ000104	Bandsaw Classic 27x0.90x6/8T (Tuff-tooth)
LX0000363	Bandsaw Classic 27x0.90x5/8T (Vari-tooth)
LX0000082	Bandsaw Classic 27x0.90x6/10T (Vari-tooth)
LX0000549	Bandsaw Classic 27X0.90x8/12T (Vari-tooth)
LXZ000105	Bandsaw Classic 27x0.90x10/14T (Vari-tooth)
LXZ000106	Bandsaw Classic 27x0.90x3T (Hook)
LXZ000107	Bandsaw Classic 34x1.07x2/3T (Tuff-tooth)
LXZ000108	Bandsaw Classic 34x1.07x3/4T (Tuff-tooth)
LXZ000109	Bandsaw Classic 34x1.07x4/6T (Tuff-tooth)
LXZ000110	Bandsaw Classic 34x1.07x6/8T (Tuff-tooth)
LX0000046	Bandsaw Classic 34x1.07x5/8T (Vari-tooth)
LX0001150	Bandsaw Classic 34x1.07x6/10T (Vari-tooth)
LXZ000111	Bandsaw Classic 34x1.07x8/12T (Vari-tooth)
LXZ000112	Bandsaw Classic 41x1.27x2/3T (Tuff-tooth)
LXZ000113	Bandsaw Classic 41X1.27X3/4T (Tuff-tooth)
LXZ000114	Bandsaw Classic 41x1.27x4/6T (Tuff-tooth)
LXZ000115	Bandsaw Classic 41x1.27x5/8T (Vari-tooth)
LXZ000116	Bandsaw Classic 54x1.27x2/3T (Tuff-tooth)
LXZ000117	Bandsaw Classic 54x1.27x3/4T (Tuff-tooth)
LXZ000118	Bandsaw Classic 54x1.27x4/6T (Tuff-tooth)
LXZ000119	Bandsaw Classic 54x1.60x2/3T (Tuff-tooth)
LXZ000120	Bandsaw Classic 54x1.60x3/4T (Tuff-tooth)
LXZ000121	Bandsaw Classic 54x1.60x4/6T (Tuff-tooth)

TOOTH FORM WIDTH x THICKNESS IN MM	TUFF TOOTH™ TPI				VARI-TOOTH* TPI				WAVY TPI		HOOK TPI
	2/3	3/4	4/6	6/8	5/8	6/10	8/12	10/14	14	18	3
3/4 x .035 19 x 0.90			◆	◆	◆	◆	◆	◆	◆	◆	◆
1 x .035 27 x 0.90	◆	◆	◆	◆	◆	◆	◆	◆			◆
1-1/4 x .042 34 x 1.07	◆	◆	◆	◆	◆	◆	◆				
1-1/2 x .050 41 x 1.27	◆	†	◆		◆						
2 x .050 54 x 1.27	◆	◆	◆								
2 x .063 54 x 1.60	†	†	◆								

† = Extra heavy set available to prevent blade pinching

# BI - METAL BAND SAW BLADE



## ▶ ARMOR® RX™

High Performance Sawing

**AlTiN COATING FOR PRODUCTIVITY AND LONG BLADE LIFE**

**UNIQUE, PATENTED TOOTH PROFILE**

Special, reinforced tooth design for reduced tooth s trippage at higher feed rates

WIDTH x THICKNESS		TPI		
IN	MM	2/3	3/4	4/6
1-1/4 x .042	34 x 1.07	◆ ◆†	◆†	◆†
1-1/2 x .050	41 x 1.27	◆ ◆†	◆†	◆†
2 x .063	54 x 1.60	◆ ◆†		

†= Extra heavy set available to prevent blade pinching



## ▶ DIEMASTER 2®

Engineered for Countour Cutting

**FASTER CUTTING WITH M-42 HIGH SPEED STEEL TOOTH EDGE**

Runs at twice the speed of carbon blades for faster, easier cutting

**LONGER BLADE LIFE**

Lasts 10 times longer than carbon blades

**FOR GENERAL PURPOSE HAND-FED APPLICATIONS**

Tool and die shops, machine shops, maintenance facilities



8



### Benefits :

- M-42 high speed steel tooth edge: For durability.
- Designed to run at high speed: Run at twice the speed of carbon.
- Increased blade life: Lasts 10 times longer than carbon blades.
- General purpose hand-fed applications: Tool and die shops, Machine shops, Maintenance facilities.

### Applications :

- Carbon steels
- Light alloy steels
- Mold steels
- Tool steels
- Stainless steels
- Sheet metal

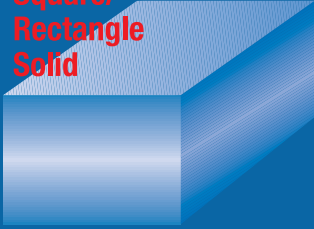
TOOTH FORM		VARI-TOOTH*				STANDARD				HOOK		
WIDTH x THICKNESS		TPI				TPI				TPI		
IN	MM	6/10	8/12	10/14	14/18	10	14	18	24	3	4	6
1/4 x .025	6.4 x 0.64		◆	◆							◆	
1/4 x .035	6.4 x 0.90		◆								◆	
3/8 x .025	9.5 x 0.64		◆	◆								
3/8 x .035	9.5 x 0.90					◆				◆	◆	
1/2 x .020	12.7 x 0.50			*	*		*	*	*			
1/2 x .025	12.7 x 0.64	◆	◆	◆	◆		◆	◆		◆	◆	
1/2 x .035	12.7 x 0.90					◆	◆			◆	◆	◆

\* = Matrix edge

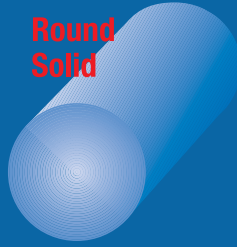
Order No.	Description
LXZ000122	Bandsaw Diemaster 2 6.4X0.64X10/14T (Vari-tooth)
LXZ000123	Bandsaw Diemaster 2 6.4X0.64X14/18T (Vari-tooth)
LXZ000124	Bandsaw Diemaster 2 6.4X0.64X6T (Hook)
LXZ000125	Bandsaw Diemaster 2 6.4X0.90X10/14T (Vari-tooth)
LXZ000126	Bandsaw Diemaster 2 6.4X0.90X6T (Hook)
LXZ000127	Bandsaw Diemaster 2 9.5X0.64X10/14T (Vari-tooth)
LXZ000128	Bandsaw Diemaster 2 9.5X0.64X14/18T (Vari-tooth)
LXZ000129	Bandsaw Diemaster 2 9.5X0.64X10T (Standard)
LXZ000130	Bandsaw Diemaster 2 9.5X0.90X4T (Hook)
LXZ000131	Bandsaw Diemaster 2 9.5X0.90X6T (Hook)
LXZ000132	Bandsaw Diemaster 2 12.7X0.50X10/14T (Vari-tooth)
LXZ000133	Bandsaw Diemaster 2 12.7X0.50X14/18T (Vari-tooth)
LXZ000134	Bandsaw Diemaster 2 12.7X0.50X14T (Standard)
LXZ000135	Bandsaw Diemaster 2 12.7X0.50X18T (Standard)
LXZ000136	Bandsaw Diemaster 2 12.7X0.50X24T (Standard)
LXZ000137	Bandsaw Diemaster 2 12.7X0.64X6/10T (Vari-tooth)
LXZ000138	Bandsaw Diemaster 2 12.7X0.64X8/12T (Vari-tooth)
LXZ000139	Bandsaw Diemaster 2 12.7X0.64X10/14T (Vari-tooth)
LXZ000140	Bandsaw Diemaster 2 12.7X0.64X14/18T (Vari-tooth)
LXZ000141	Bandsaw Diemaster 2 12.7X0.64X14T (Standard)
LXZ000142	Bandsaw Diemaster 2 12.7X0.64X18T (Standard)
LXZ000143	Bandsaw Diemaster 2 12.7X0.64X6T (Hook)
LXZ000144	Bandsaw Diemaster 2 12.7X0.90X10T (Standard)
LXZ000145	Bandsaw Diemaster 2 12.7X0.90X14T (Standard)
LXZ000146	Bandsaw Diemaster 2 12.7X0.90X3T (Hook)
LXZ000147	Bandsaw Diemaster 2 12.7X0.90X4T (Hook)
LXZ000148	Bandsaw Diemaster 2 12.7X0.90X6T (Hook)

# BI-METAL TOOTH SELECTION CHART

Square/  
Rectangle  
Solid



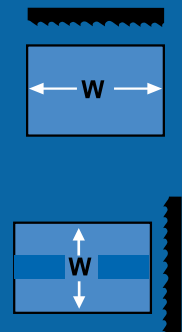
Round  
Solid



1. Determine size and shape of material to be cut.
2. Identify chart to be used (square solid, round solid, or tubing/structurals).
3. Read teeth per inch next to material size.

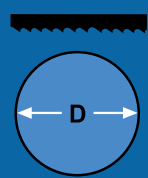
INCHES	Teeth Per Inch/25mm	MM
.1	14/18	5
.2	10/14	
.3	8/12	
.4	6/10	
.5	6/10	
.6	6/10	10
.7	6/8	
.8	5/8	
.9	5/8	
1	5/8	
1	4/6	15
2	4/6	
3	4/6	
4	4/6	
5	4/6	
5	3/4	20
10	3/4	
15	3/4	
20	3/4	
25	3/4	
5	2/3	25
10	2/3	
15	2/3	
20	2/3	
25	2/3	
10	1.5/2.0	50
15	1.5/2.0	
20	1.5/2.0	
25	1.5/2.0	
30	1.5/2.0	
15	1.4/2.0	75
20	1.4/2.0	
25	1.4/2.0	
30	1.4/2.0	
35	1.4/2.0	
20	1.0/1.3	100
25	1.0/1.3	
30	1.0/1.3	
35	1.0/1.3	
40	1.0/1.3	
30	.7/1.0	150
35	.7/1.0	
40	.7/1.0	
45	.7/1.0	
50	.7/1.0	
35	.7/1.0	200
40	.7/1.0	
45	.7/1.0	
50	.7/1.0	
50	.7/1.0	

Width of cut (W)



INCHES	Teeth Per Inch/25mm	MM
.1	14/18	5
.2	10/14	
.3	8/12	
.4	6/10	
.5	6/10	
.6	8/12	10
.7	6/10	
.8	6/8	
.9	5/8	
1	5/8	
1	4/6	15
2	4/6	
3	4/6	
4	4/6	
5	4/6	
5	3/4	20
10	3/4	
15	3/4	
20	3/4	
25	3/4	
5	2/3	25
10	2/3	
15	2/3	
20	2/3	
25	2/3	
10	1.5/2.0	50
15	1.5/2.0	
20	1.5/2.0	
25	1.5/2.0	
30	1.5/2.0	
15	1.4/2.0	75
20	1.4/2.0	
25	1.4/2.0	
30	1.4/2.0	
35	1.4/2.0	
20	1.0/1.3	100
25	1.0/1.3	
30	1.0/1.3	
35	1.0/1.3	
40	1.0/1.3	
30	.7/1.0	150
35	.7/1.0	
40	.7/1.0	
45	.7/1.0	
50	.7/1.0	
35	.7/1.0	200
40	.7/1.0	
45	.7/1.0	
50	.7/1.0	
50	.7/1.0	

Diameter (D)

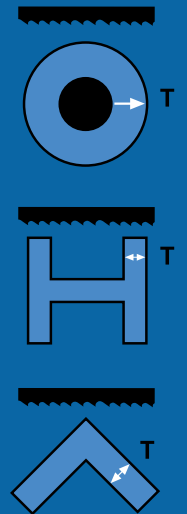


Tubing/Pipe/  
Structural



INCHES	Teeth Per Inch/25mm	MM
.05	14/18	1
.10	10/14	2
.15	8/12	3
.20	6/10	4
.25	6/8 5/8	5
.30	6/8 5/8	6
.35	6/8 5/8	7
.40	4/6	8
.45	4/6	9
.50	4/6	10
.55	4/6	15
.60	4/6	15
.65	4/6	15
.70	4/6	15
.75	4/6	15
.80	3/4	20
.85	3/4	20
.90	3/4	20
.95	3/4	20
1.0	3/4	20
1.5	2/3	25
2	2/3	30
2	2/3	40
2	2/3	50

Wall thickness (T)



# Conversion Table

## • Area

are	acre	square cm	square inch	square m	square	hectare
1	0.024	1000000	155000	100	11	0.01
40	1	40000000	6200012	4000	430	0.4
0.000001	2.47	1	0.155	0.0001	0.00001	10 <sup>-8</sup>
0.000006	1.48	6	1	0.0006	0.00006	6
0.01	0.00024	10000	1550	1	0.107	0.0001
0.092	0.002	92000	14260	9.2	1	0.00092
100	2.47	100000000	15500031	10000	1,076	1

## • Length

cm	cm/in	inches	metres	m/ft	feet
2.54	1	0.40	0.30	1	3.28
5.08	2	0.80	0.61	2	6.56
7.62	3	1.20	0.91	3	9.84
10.16	4	1.60	1.22	4	13.12
12.70	5	2.00	1.52	5	16.40
15.24	6	2.40	0.83	6	19.68
17.78	7	2.80	2.13	7	22.97
20.32	8	3.20	2.44	8	26.25
22.86	9	3.50	2.74	9	29.53
25.40	10	3.90	3.05	10	32.81

## • Capacity

litres	litres/gal	gallons	litres	litres/US gal	US gal
4.55	1	0.22	3.79	1	0.26
9.09	2	0.44	7.57	2	0.53
13.64	3	0.66	11.35	3	0.79
18.18	4	0.88	15.14	4	1.06
22.73	5	1.10	18.93	5	1.32
27.28	6	1.32	22.71	6	1.58
31.28	7	1.54	26.50	7	1.85
36.37	8	1.76	30.28	8	2.11
40.91	9	1.98	34.06	9	2.38
45.46	10	2.20	37.85	10	2.64

## • Area/volume

sq cm	sq cm/sq in	sq in	cu metres	cu m/cu ft	cubic feet
6.45	1	0.16	0.03	1	35.32
12.90	2	0.31	0.06	2	70.63
19.35	3	0.47	0.08	3	105.90
25.81	4	0.62	0.11	4	141.30
32.26	5	0.78	0.14	5	176.60
38.71	6	0.93	0.17	6	212.00
45.16	7	1.09	0.20	7	247.20
51.61	8	1.24	0.23	8	282.50
58.06	9	1.40	0.25	9	317.80
64.52	10	1.55	0.28	10	353.20

## • Pressure

bar	pascal	torr	pieze	barad
1	100000	750.061	100	1000000
0.00001	1	0.007	0.001	10
0.001333	133.3	1	0.001333	1333
0.01	1000	7.5	1	10000
0.000001	0.1	0.000750	0.0001	1

## • Imperial

Linear Measure	Square Measure
12 inches = 1 foot 3 feet = 1 yard 1,760 yards = 1 (statue) mile	144 sq.in.= 1 square foot 9 sq.ft.=1 square yard 4,840 sq.yd= 1 acre 640 acres= 1 square mile
Cubic Measure	Avoirdupois Weight
1,728 cu.in = 1 cubic foot 27 cu.ft = 1 cubic yard	16 ounces = 1 pound 28lb = 1 quarter 4 qr = 1cwt 2,000lb = 1 short ton 2,240 = 1long ton

## • Weight

gr	g/oz	ounces	kg	kg/lb	pounds
28.35	1	0.04	0.45	1	2.21
56.70	2	0.07	0.91	2	4.41
85.05	3	0.11	1.36	3	6.61
113.40	4	0.14	1.81	4	8.82
141.80	5	0.18	2.27	5	11.02
170.10	6	0.21	2.72	6	13.23
198.50	7	0.25	3.18	7	15.43
226.80	8	0.28	3.63	8	17.64
255.15	9	0.32	4.09	9	19.84
283.50	10	0.35	4.54	10	22.05





**Kawan Lama**®  
#1 Commercial & Industrial Supply Company



[www.kawanlama.com](http://www.kawanlama.com)  
[www.kawanlamaonline.com](http://www.kawanlamaonline.com)