

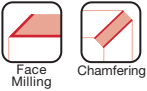


Diameter
ø50 ~ 160 mm


45°
~ 5 mm



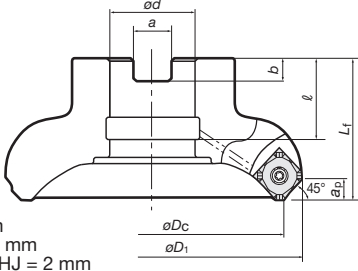
P **M** **K** **N**
Steel Stainless Cast Iron Non-ferrous



For general purpose milling of general steels, stainless steels, cast irons, and non-ferrous metals



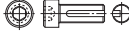
TAW13



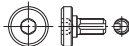
Max. ap:
Flat top = 5 mm
MJ, MS, AJ = 4 mm
ML = 2.5 mm HJ = 2 mm

Rake angle: A.R. +17° ~ +20° R.R. -16° ~ -11°

CM10×30H
CM12×30H



TMBA-M16H
TMBA-M20H



Centre bolt
Right hand (R) shown.

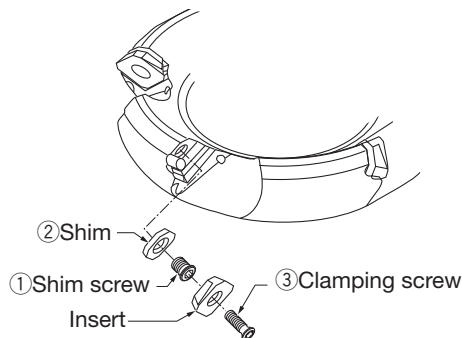
TAW13 (Bore type)

Pitch	Cat. No.	Stock	No. of inserts	Dimensions (mm)							Weight (kg)	Air hole	Cutter mounting bolts	Mounting details
				øD _c	øD ₁	ød	ℓ	L _f	b	a				
Coarse	TAW13R050M22.0E04	●	4	50	63	22	20	40	6.3	10.4	0.4	With	CM10X30H	9-138(A)
	TAW13R063M22.0E05	●	5	63	76									
	TAW13R080M27.0E06	●	6	80	94	27	22	50	7	12.4	1	With	CM12X30H	
	TAW13R100M32.0E07	●	7	100	114									
	TAW13R125M40.0E08	●	8	125	139	40	32	63	9	16.4	2.7	With	TMBA-M20H	
	TAW13R160M40.0E10	●	10	160	174									
Close	TAW13R050M22.0E05	●	5	50	63	22	20	40	6.3	10.4	0.4	With	CM10X30H	9-138(A)
	TAW13R063M22.0E06	●	6	63	76									
	TAW13R080M27.0E08	●	8	80	94	27	22	50	7	12.4	1	With	CM12X30H	
	TAW13R100M32.0E10	●	10	100	114									
	TAW13R125M40.0E12	●	12	125	139	40	32	63	9	16.4	3	With	TMBA-M20H	
	TAW13R160M40.0E16	●	16	160	174									

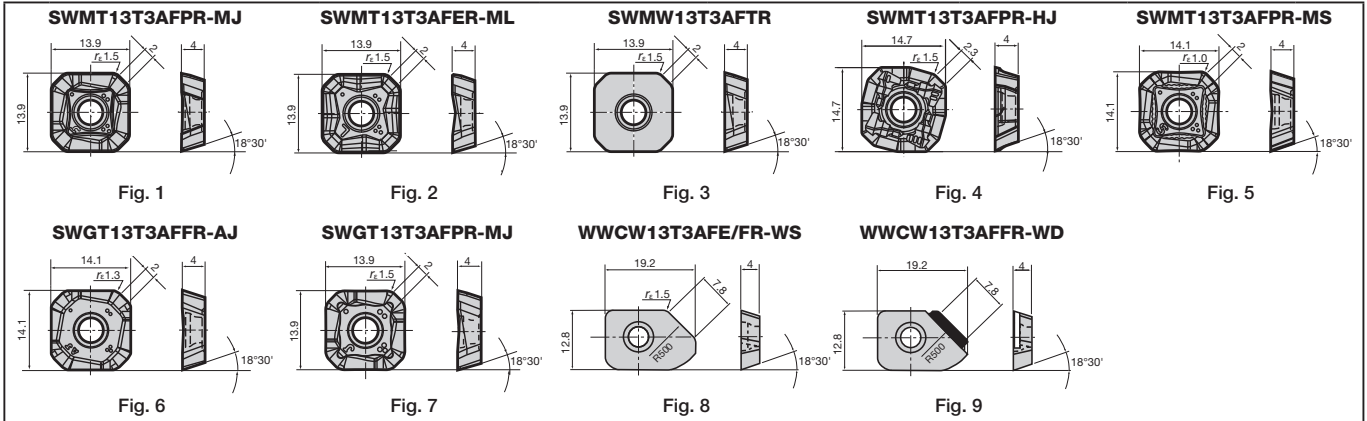
● : Stocked items.

Replacement parts

No	Descriptions	Cat. No.
①	Shim screw	DTS5-3.5SS
②	Shim	FSSA1102
③	Clamping screw	CSPB-3.5
-	Wrench	P-3.5
-	Wrench	IP-15D



Inserts



Type	Cat. No.	Accuracy	Honing	Grades										Figure	
				Coated					DLC coated	Cermet	Carbide	T-DIA			
				T3130	T1115	AH120	AH130	AH140	GH110	DS1100	NS740	KS05F	DX140		
General	SWMT13T3AFPR-MJ	M	With	●	●	●	●	●				●			Fig. 1
	SWMT13T3AFER-ML					●									Fig. 2
	SWMW13T3AFTR			●	●	●						●			Fig. 3
	SWMT13T3AFPR-HJ			●	●	●	●	●							Fig. 4
	SWMT13T3AFPR-MS						●	●							Fig. 5
Wiper	SWGT13T3AFFR-AJ	G	Without							●		●		Fig. 6	
	SWGT13T3AFPR-MJ		With			●					●		Fig. 7		
	WWCW13T3AFER-WS	C	Without						●		●		Fig. 8		
	WWCW13T3AFFR-WS								●		●		Fig. 9		

“DX140” : Packing Quantity = 1 pcs.
 ● : Stocked items.

Notes for use of HJ-type inserts

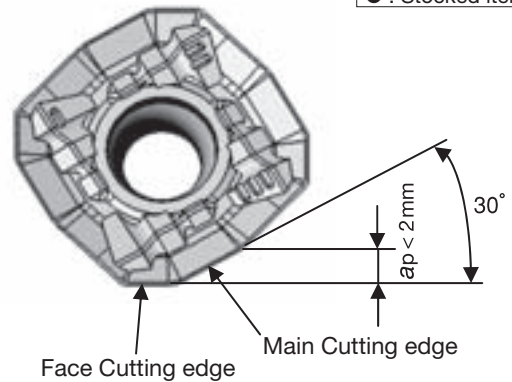
HJ-type inserts can be used for high feed machining.

When using the insert, care should be taken with the following:

- The maximum depth of cut is $a_p = 2$ mm. Select feeds within the above value.
- Do not use the HJ-type inserts with other types (such as MJ- and MS-types) in the same body.
- The outer shape of the HJ-type insert is different from those of other types (such as MJ- and MS-types), but the insert can be held in the same insert pocket.

Notes on use of wiper insert

- When requiring good surface finishes, use of a wiper insert (WWCW13T3AF_ R-W_) is recommended. In general, installing one wiper insert delivers superior surface finishes.
- When using the wiper insert, install the insert as shown in Fig. 1. If the insert is installed as shown in Fig. 2, breakage of the insert is inevitable and normal surface finish can not be obtained.
- The wiper insert must not be used together with HJ-type inserts



- The wiper insert has one wiping corner.
- The peripheral cutting edge of the wiper insert is retracted from the edge of the normal inserts. Therefore, the feed per tooth (f_z mm/t) of the normal insert following the wiper insert is double that of other inserts.
- When using the wiper insert, depth of cut (a_p) less than 1 mm is recommended.

Fig. A

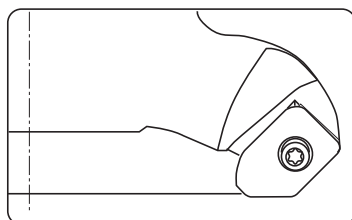
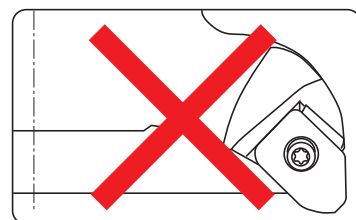


Fig. B



Standard cutting conditions

Work materials	Priority	Grades	Cutting speed v_c (m/min)	Roughing (Depth of cut: > 1.0 mm)					
				Feed per tooth: f_z (mm/t)					
				MJ	ML	HJ	MS	Flat	AJ
Mild and low carbon steels (St37, etc.) < 180 HB	First choice	AH120	100 - 270	0.05 - 0.3	0.05 - 0.25	0.2 - 0.6	-	0.05 - 0.3	-
	Priority on wear resistance	T3130	150 - 300	0.05 - 0.3	-	0.2 - 0.6	-	0.05 - 0.3	-
	Priority on impact resistance	AH130 AH140	80 - 180	0.05 - 0.3	-	-	0.1 - 0.25	-	-
	Priority on surface quality	NS740	100 - 300	0.05 - 0.23	-	-	-	0.05 - 0.23	-
Carbon and alloy steels (Ck45, 42CrMo4, etc.) < 300 HB	First choice	AH120	100 - 230	0.05 - 0.25	0.05 - 0.2	0.2 - 0.5	-	0.05 - 0.25	-
	Priority on wear resistance	T3130	150 - 280	0.05 - 0.25	-	0.2 - 0.5	-	0.05 - 0.25	-
	Priority on impact resistance	AH130 AH140	80 - 150	0.05 - 0.25	-	0.2 - 0.5	-	-	-
	Priority on surface quality	NS740	100 - 230	0.05 - 0.2	-	-	-	0.05 - 0.2	-
Die steels (X96CrMoV12, etc.) < 30 HRC	First choice	AH120	100 - 180	0.05 - 0.2	0.05 - 0.2	0.2 - 0.4	-	0.05 - 0.2	-
	Priority on wear resistance	T3130	100 - 180	0.05 - 0.2	-	0.2 - 0.4	-	0.05 - 0.2	-
Stainless steels (X5CrNi18-9, X5CrNiMo17-12-2 etc.) < 250 HB	First choice	AH130 AH140	80 - 200	0.1 - 0.25	-	0.2 - 0.5	0.1 - 0.2	-	-
	Priority on wear resistance	AH120	150 - 250	0.1 - 0.25	0.1 - 0.2	0.2 - 0.5	-	0.1 - 0.25	-
Grey cast irons (FC250, FC300 etc.)	First choice	T1115	180 - 300	0.05 - 0.25	-	0.2 - 0.6	-	0.05 - 0.25	-
	Priority on impact resistance	AH120	150 - 250	0.05 - 0.25	0.05 - 0.2	0.2 - 0.6	-	0.05 - 0.25	-
Ductile cast irons (FCD400, FCD600 etc.)	First choice	T1115	120 - 200	0.05 - 0.25	-	0.2 - 0.6	-	0.05 - 0.25	-
	Priority on impact resistance	AH120	100 - 180	0.05 - 0.25	0.05 - 0.2	0.2 - 0.6	-	0.05 - 0.25	-
Aluminium alloys (Si < 13 %)	-	DS1100 KS05F	300 - 1000	-	-	-	-	-	0.05 - 0.2
Aluminium alloys (Si ≥ 13%)	-	DS1100 KS05F	80 - 300	-	-	-	-	-	0.05 - 0.2
Copper alloys	-	DS1100 KS05F	200 - 500	-	-	-	-	-	0.05 - 0.2

Standard cutting conditions

Work materials	Priority	Grades	Cutting speed v_c (m/min)	Light cutting to finishing (Depth of cut: < 1.0 mm)					
				Feed per tooth: f_z (mm/t)					
				MJ	ML	HJ	MS	Flat	AJ
Mild and low carbon steels (St37, etc.) < 180 HB	First choice	AH120	100 - 270	0.05 - 0.25	0.05 - 0.2	0.2 - 0.6	-	0.05 - 0.25	-
	Priority on wear resistance	T3130	150 - 300	0.05 - 0.25	-	0.2 - 0.6	-	0.05 - 0.25	-
	Priority on impact resistance	AH130 AH140	80 - 180	0.05 - 0.25	-	-	0.1 - 0.2	-	-
	Priority on surface quality	NS740	100 - 300	0.05 - 0.2	-	-	-	0.05 - 0.2	-
Carbon and alloy steels (Ck45, 42CrMo4, etc.) < 300 HB	First choice	AH120	100 - 230	0.05 - 0.2	0.05 - 0.15	0.2 - 0.5	-	0.05 - 0.2	-
	Priority on wear resistance	T3130	150 - 280	0.05 - 0.2	-	0.2 - 0.5	-	0.05 - 0.2	-
	Priority on impact resistance	AH130 AH140	80 - 150	0.05 - 0.2	-	0.2 - 0.5	-	-	-
	Priority on surface quality	NS740	100 - 230	0.05 - 0.18	-	-	-	0.05 - 0.18	-
Die steels (X96CrMoV12, etc.) < 30 HRC	First choice	AH120	100 - 180	0.05 - 0.18	0.05 - 0.12	0.2 - 0.4	-	0.05 - 0.18	-
	Priority on wear resistance	T3130	100 - 180	0.05 - 0.18	-	0.2 - 0.4	-	0.05 - 0.18	-
Stainless steels (X5CrNi18-9, X5CrNiMo17-12-2 etc.) < 250 HB	First choice	AH130 AH140	80 - 200	0.1 - 0.2	-	0.2 - 0.5	0.1 - 0.18	-	-
	Priority on wear resistance	AH120	150 - 250	0.1 - 0.2	0.1 - 0.18	0.2 - 0.5	-	0.1 - 0.2	-
Grey cast irons (FC250, FC300 etc.)	First choice	T1115	180 - 300	0.1 - 0.2	-	0.2 - 0.6	-	0.1 - 0.2	-
	Priority on impact resistance	AH120	150 - 250	0.1 - 0.2	0.05 - 0.18	0.2 - 0.6	-	0.1 - 0.2	-
Ductile cast irons (FCD400, FCD600 etc.)	First choice	T1115	120 - 200	0.1 - 0.2	-	0.2 - 0.6	-	0.1 - 0.2	-
	Priority on impact resistance	AH120	100 - 180	0.1 - 0.2	0.05 - 0.18	0.2 - 0.6	-	0.1 - 0.2	-
Aluminium alloys (Si < 13 %)	-	DS1100 KS05F	300 - 1000	-	-	-	-	-	0.05 - 0.2
Aluminium alloys (Si ≥ 13%)	-	DS1100 KS05F	80 - 300	-	-	-	-	-	0.05 - 0.2
Copper alloys	-	DS1100 KS05F	200 - 500	-	-	-	-	-	0.05 - 0.2

Notes:

- When cutting at a large depth of cut or a large cutting width, the cutting speed (v_c) and feed (f_z) should be set to the lower side of the values shown in the above table.
- Dry cutting (or air-blowing) is generally recommended. However, when chips tend to excessively adhere to the cutting edges when machining

stainless steel, use a water soluble cutting fluid. In this case, use the AH140 grade at speeds lower than $v_c = 100$ m/min.

- When wet machining mild steels, carbon steels and alloy steels, use T3130 at lower cutting conditions.
- TAW13 type TAC mills cannot be used for axial-feed cutting such as ramping, plunging and drilling.