

MITSUBISHI

MITSUBISHI CARBIDE

Stable drilling with indexable drill

TAW Drill

Indexable insert drill, yet always stable drilling



Grade for high rigidity and longer tool life

MIRACLE[®] Coated VP15TF

MIRACLE coating displays high welding resistance therefore it can be used for machining a wide range of workpiece materials such as Plain steels, Mild steels, Carbon steels, Stainless steels and Cast iron.

Indexable Insert Drill

TAW Drill

Features

Unique design ensures extreme sharpness and accuracy

Exclusive design cutting edge enables superior chip control

Original serrated geometry maintains accuracy

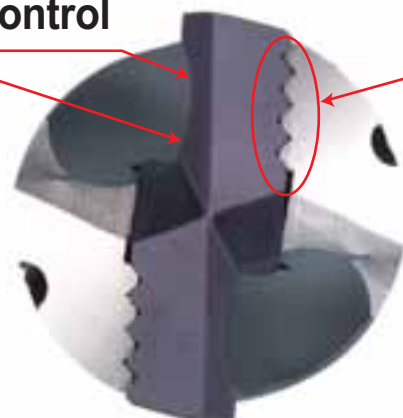
Undulating Cutting Edge

Concave part of insert engineered into cutting edge achieves sharp cutting performance. Convex part of insert allows for strong cutting edge.



Mitsubishi's Unique Serration Geometry

Mitsubishi's unique serration structure allows excellent clamping accuracy to be maintained.



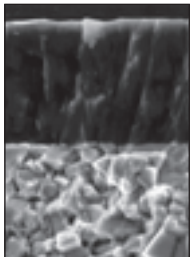
Cutting edge shape

Insert with extraordinary tool life

High durability body

- Use of **MIRACLE**® coated **VP15TF** delivers exceptional tool life.

- Special surface treatment applied to high heat resistant special alloy steel body increases resistance to corrosion and abrasion.



MIRACLE®
coating
(Al,Ti)N

Features of VP15TF

Micro-grain
cemented
carbide
TF15

Welding-resistant **MIRACLE**® coated **VP15TF** can be used in a wide range of materials from general steel to carbon steel, alloy steel, stainless steel, cast iron etc.

VP15TF



Economy

Easy handling

No Regrinding

- Eliminates burdensome regrinding and recoating of brazed drills.
- Eliminates quality trouble that may occur in regrinding of brazed drills. (Decreased tool life resulting from dimensional changes after regrinding)

Reduced Stock

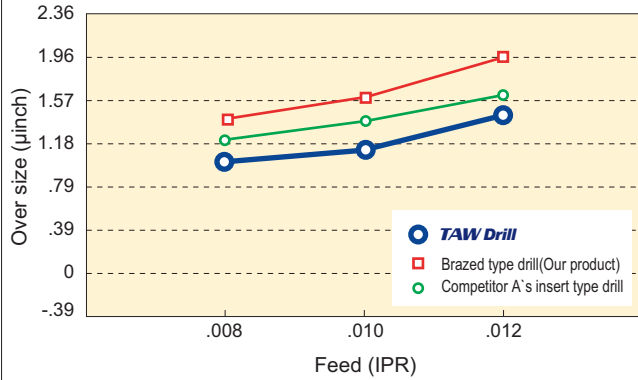
- Reduces stock of holders for each diameter inserts as inserts with different diameters can be installed on the same body which is more economical.

- Can replace an insert easily just by loosening a clamp screw.



Cutting Performance

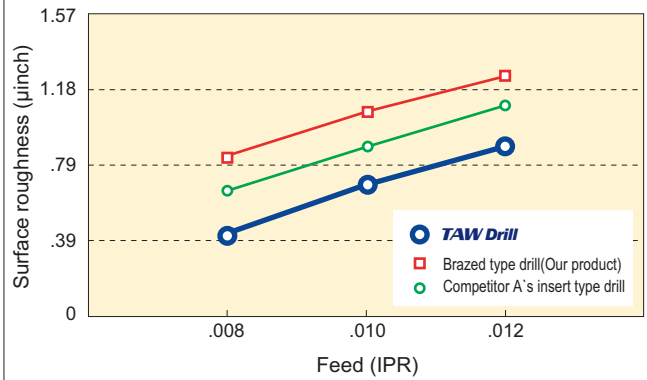
OVER SIZE



<Cutting conditions>

Workpiece : ANSI 1045(150 - 180HB)
 Drill Diameter : ø20mm(L/D=5)
 Cutting Speed : 260SFM
 Coolant : Emulsion 10%
 Pressure : 0.5MPa(Internal Coolant)

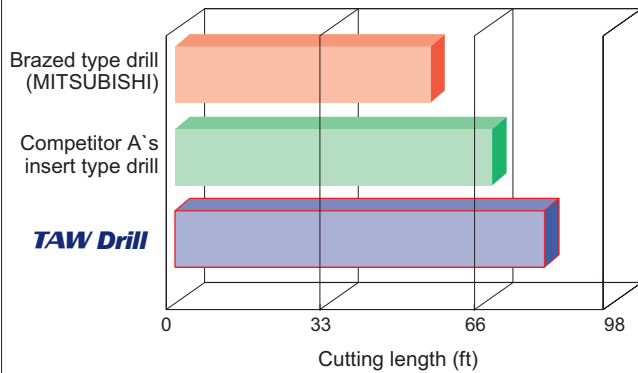
SURFACE ROUGHNESS



<Cutting conditions>

Workpiece : ANSI 1045(150 - 180HB)
 Drill Diameter : ø20mm(L/D=5)
 Cutting Speed : 260SFM
 Coolant : Emulsion 10%
 Pressure : 0.5MPa(Internal Coolant)

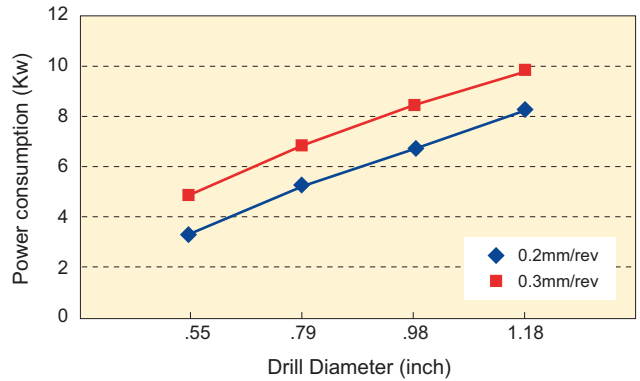
LIFE OF INSERT



<Cutting conditions>

Workpiece : ANSI 1045(150 - 180HB) Coolant : Emulsion 10%
 Drill Diameter : ø20mm(L/D=5) Pressure : 0.5MPa(Internal Coolant)
 Cutting speed : 330SFM
 Feed : .010IPR

POWER CONSUMPTION



<Cutting conditions>

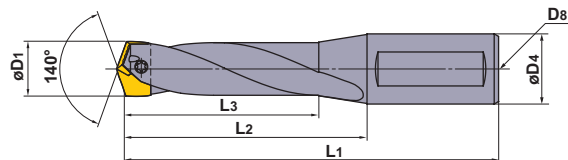
Workpiece : ANSI 1045(150 - 180HB)
 Cutting speed : 260SFM
 Coolant : Emulsion 10%
 Pressure : 0.5MPa(Internal Coolant)

TAWDrill

INCH STANDARD

L/D=3

Internal Coolant

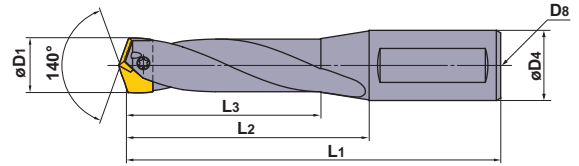


Holder		Insert		Drill Dia. D1 (inch)	Dimensions (inch)								
Order Number	Stock	Order Number	Stock		L3	L2	L1	D4	D8				
TAWSN0036	●	TAWN0036T	●	.5625	2.01	2.64	4.52	.63	1/8-27	WS254012T	①TKY08D	WPT4405	MK1KS
0037	●	0037T	●	.5781	2.13	2.95	4.83	.63	1/8-27	WS254013T	①TKY08D	WPT4405	MK1KS
0039	●	0038T	●	.5938	2.13	2.95	4.95	.75	1/8-27	WS254013T	①TKY08D	WPT4405	MK1KS
		0039T	●	.6094									
0041	●	0040T	●	.6250	2.28	3.15	5.15	.75	1/8-27	WS254014T	①TKY08D	WPT4405	MK1KS
		0041T	●	.6406									
0044	●	0042T	●	.6563	2.40	3.35	5.35	.75	1/8-27	WS254015T	①TKY08D	WPT4405	MK1KS
		0043T	●	.6719									
		0044T	●	.6875									
0045	●	0045T	●	.7031	2.56	3.54	5.54	.75	1/8-27	WS254016T	①TKY08D	WPT4405	MK1KS
0046	●	0046T	●	.7188	2.56	3.54	5.79	1.00	1/8-27	WS254016T	①TKY08D	WPT4405	MK1KS
0049	●	0047T	●	.7344	2.68	3.90	6.15	1.00	1/8-27	WS304517T	②TKY10T	WPT4405	MK1KS
		0048T	●	.7500									
		0049T	●	.7656									
0051	●	0050T	●	.7813	2.83	3.90	6.15	1.00	1/8-27	WS304518T	②TKY10T	WPT4405	MK1KS
		0051T	●	.7969									
0054	●	0052T	●	.8125	2.95	3.90	6.15	1.00	1/8-27	WS304518T	②TKY10T	WPT4405	MK1KS
		0053T	●	.8281									
		0054T	●	.8438									
0056	●	0055T	●	.8594	3.11	4.09	6.34	1.00	1/8-27	WS355520T	②TKY15T	WPT4405	MK1KS
		0056T	●	.8750									
0059	●	0057T	●	.8906	3.23	4.09	6.34	1.00	1/8-27	WS355521T	②TKY15T	WPT4405	MK1KS
		0058T	●	.9063									
		0059T	●	.9219									
0061	●	0060T	●	.9375	3.39	4.33	6.71	1.25	1/4-18	WS355521T	②TKY15T	WPT4405	MK1KS
		0061T	●	.9531									
0100	●	0062T	●	.9688	3.46	4.33	6.71	1.25	1/4-18	WS406023T	②TKY25T	WPT4405	MK1KS
		0063T	●	.9844									
		0100T	●	1.0000									
0102	●	0101T	●	1.0156	3.62	4.53	6.91	1.25	1/4-18	WS406024T	②TKY25T	WPT4405	MK1KS
		0102T	●	1.0313									
0105	●	0103T	●	1.0469	3.70	4.53	6.91	1.25	1/4-18	WS406024T	②TKY25T	WPT4405	MK1KS
		0104T	●	1.0625									
		0105T	●	1.0781									
0107	●	0106T	●	1.0938	3.82	4.72	7.10	1.25	1/4-18	WS508026T	②TKY27T	WPT4405	MK1KS
		0107T	●	1.1094									
0110	●	0108T	●	1.1250	3.94	4.92	7.30	1.25	1/4-18	WS508027T	②TKY27T	WPT4405	MK1KS
		0109T	●	1.1406									
		0110T	●	1.1563									
0112	●	0111T	●	1.1719	4.09	4.92	7.30	1.25	1/4-18	WS508027T	②TKY27T	WPT4405	MK1KS
		0112T	●	1.1875									

INCH STANDARD

L/D=5


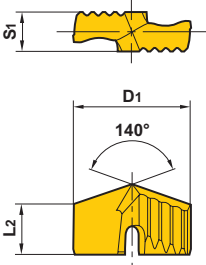
Internal Coolant



Holder		Insert		Drill Dia. D1 (inch)	Dimensions (inch)								
Order Number	Stock	Order Number	Stock		L3	L2	L1	D4	D8				
TAWMN0036	●	TAWN0036T	●	.5625	3.150	3.819	5.694	.625	1/8-27	WS254012T	①TKY08D	WPT4405	MK1KS
0037	●	0037T	●	.5781	3.346	4.134	6.009	.625	1/8-27	WS254013T	①TKY08D	WPT4405	MK1KS
0039	●	0038T	●	.5938	3.346	4.134	6.134	.750	1/8-27	WS254013T	①TKY08D	WPT4405	MK1KS
		0039T	●	.6094									
0041	●	0040T	●	.6250	3.583	4.528	6.528	.750	1/8-27	WS254014T	①TKY08D	WPT4405	MK1KS
		0041T	●	.6406									
0044	●	0042T	●	.6563	3.780	4.724	6.724	.750	1/8-27	WS254015T	①TKY08D	WPT4405	MK1KS
		0043T	●	.6719									
		0044T	●	.6875									
0045	●	0045T	●	.7031	4.016	4.921	6.921	.750	1/8-27	WS254016T	①TKY08D	WPT4405	MK1KS
0046	●	0046T	●	.7188	4.016	4.921	7.171	1.000	1/8-27	WS254016T	①TKY08D	WPT4405	MK1KS
0049	●	0047T	●	.7344	4.213	5.276	7.526	1.000	1/8-27	WS304517T	②TKY10T	WPT4405	MK1KS
		0048T	●	.7500									
		0049T	●	.7656									
0051	●	0050T	●	.7813	4.449	5.472	7.722	1.000	1/8-27	WS304518T	②TKY10T	WPT4405	MK1KS
		0051T	●	.7969									
0054	●	0052T	●	.8125	4.646	5.472	7.722	1.000	1/8-27	WS304518T	②TKY10T	WPT4405	MK1KS
		0053T	●	.8281									
		0054T	●	.8438									
0056	●	0055T	●	.8594	4.882	5.669	7.919	1.000	1/8-27	WS355520T	②TKY15T	WPT4405	MK1KS
		0056T	●	.8750									
0059	●	0057T	●	.8906	5.079	6.063	8.313	1.000	1/8-27	WS355521T	②TKY15T	WPT4405	MK1KS
		0058T	●	.9063									
		0059T	●	.9219									
0061	●	0060T	●	.9375	5.315	6.299	8.674	1.250	1/4-18	WS355521T	②TKY15T	WPT4405	MK1KS
		0061T	●	.9531									
0100	●	0062T	●	.9688	5.512	6.496	8.871	1.250	1/4-18	WS406023T	②TKY25T	WPT4405	MK1KS
		0063T	●	.9844									
		0100T	●	1.0000									
0102	●	0101T	●	1.0156	5.748	6.693	9.068	1.250	1/4-18	WS406024T	②TKY25T	WPT4405	MK1KS
		0102T	●	1.0313									
0105	●	0103T	●	1.0469	5.945	6.890	9.265	1.250	1/4-18	WS406024T	②TKY25T	WPT4405	MK1KS
		0104T	●	1.0625									
		0105T	●	1.0781									
0107	●	0106T	●	1.0938	6.181	7.087	9.462	1.250	1/4-18	WS508026T	②TKY27T	WPT4405	MK1KS
		0107T	●	1.1094									
0110	●	0108T	●	1.1250	6.378	7.283	9.658	1.250	1/4-18	WS508027T	②TKY27T	WPT4405	MK1KS
		0109T	●	1.1406									
		0110T	●	1.1563									
0112	●	0111T	●	1.1719	6.575	7.677	10.052	1.250	1/4-18	WS508027T	②TKY27T	WPT4405	MK1KS
		0112T	●	1.1875									

INSERTS

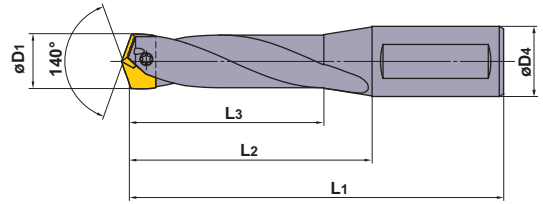
INCH STANDARD

Geometry	Order Number	Stock	Dimensions (inch)			Applicable Holder	
		VP15TF	D1	L2	S1	Inch	Metric
 	TAWN0036T	●	.5625	.276	.197	TAWS/MN0036	TAWS/MN1400S16
	0037T	●	.5781	.272	.197	TAWS/MN0037	TAWS/MN1500S20
	0038T	●	.5938	.268	.197	TAWS/MN0039	
	0039T	●	.6094	.268	.197	TAWS/MN0041	TAWS/MN1600S20
	0040T	●	.6250	.311	.236	TAWS/MN0044	TAWS/MN1700S20
	0041T	●	.6406	.307	.236	TAWS/MN0045	TAWS/MN1800S20
	0042T	●	.6563	.303	.236	TAWS/MN0046	
	0043T	●	.6719	.299	.236	TAWS/MN0049	TAWS/MN1900S25
	0044T	●	.6875	.299	.236	TAWS/MN0051	TAWS/MN2000S25
	0045T	●	.7031	.295	.236	TAWS/MN0054	TAWS/MN2100S25
	0046T	●	.7188	.291	.236	TAWS/MN0056	TAWS/MN2200S25
	0047T	●	.7344	.366	.276	TAWS/MN0059	TAWS/MN2300S25
	0048T	●	.7500	.362	.276	TAWS/MN0061	TAWS/MN2400S32
	0049T	●	.7656	.362	.276	TAWS/MN0100	TAWS/MN2500S32
	0050T	●	.7813	.358	.276	TAWS/MN0102	TAWS/MN2600S32
	0051T	●	.7969	.354	.276	TAWS/MN0105	TAWS/MN2700S32
	0052T	●	.8125	.350	.276	TAWS/MN0107	TAWS/MN2800S32
	0053T	●	.8281	.346	.276	TAWS/MN0110	TAWS/MN2900S32
	0054T	●	.8438	.346	.276	TAWS/MN0112	TAWS/MN3000S32
	0055T	●	.8594	.406	.315		
	0056T	●	.8750	.402	.315		
	0057T	●	.8906	.398	.315		
	0058T	●	.9063	.394	.315		
	0059T	●	.9219	.394	.315		
	0060T	●	.9375	.390	.315		
	0061T	●	.9531	.386	.315		
	0062T	●	.9688	.437	.354		
	0063T	●	.9844	.433	.354		
	0100T	●	1.0000	.433	.354		
	0101T	●	1.0156	.429	.354		
	0102T	●	1.0313	.425	.354		
	0103T	●	1.0469	.421	.354		
0104T	●	1.0625	.421	.354			
0105T	●	1.0781	.417	.354			
0106T	●	1.0938	.476	.394			
0107T	●	1.1094	.472	.394			
0108T	●	1.1250	.469	.394			
0109T	●	1.1406	.469	.394			
0110T	●	1.1563	.465	.394			
0111T	●	1.1719	.461	.394			
0112T	●	1.1875	.457	.394			

TAW Drill

METRIC STANDARD

Internal Coolant

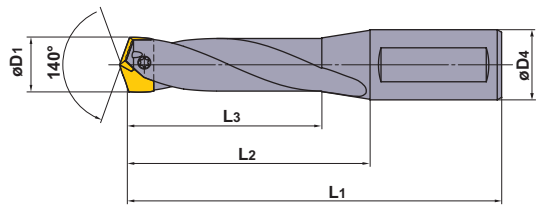


Hole Depth (l/d)	Holder		Insert		Drill Dia. D1 (mm)	Dimensions (mm)				 Clamp Screw	 Wrench	 Plate	 Anti-seize Lubricant
	Order Number	Stock	Order Number	Stock VP15TF		L3	L2	L1	D4				
3	TAWSN1400S16	★	TAWN1400T	●	14.0	51	67	115	16	WS254012T	TKY08D	WPT4405	MK1KS
			1410T	●	14.1								
			1420T	●	14.2								
5	MN1400S16	★	1430T	●	14.3	80	97	145	16	WS254012T	TKY08D	WPT4405	MK1KS
			1440T	●	14.4								
			1450T	●	14.5								
3	TAWSN1500S20	★	1460T	●	14.6	54	75	125	20	WS254013T	TKY08D	WPT4405	MK1KS
			1470T	●	14.7								
			1480T	●	14.8								
			1490T	●	14.9								
			1500T	●	15.0								
5	MN1500S20	★	1510T	●	15.1	85	105	155	20	WS254013T	TKY08D	WPT4405	MK1KS
			1520T	●	15.2								
			1530T	●	15.3								
			1540T	●	15.4								
			1550T	●	15.5								
3	TAWSN1600S20	★	1560T	●	15.6	58	80	130	20	WS254014T	TKY08D	WPT4405	MK1KS
			1570T	●	15.7								
			1580T	●	15.8								
			1590T	●	15.9								
			1600T	●	16.0								
5	MN1600S20	★	1610T	●	16.1	91	115	165	20	WS254014T	TKY08D	WPT4405	MK1KS
			1620T	●	16.2								
			1630T	●	16.3								
			1640T	●	16.4								
			1650T	●	16.5								
3	TAWSN1700S20	★	1660T	●	16.6	61	85	135	20	WS254015T	TKY08D	WPT4405	MK1KS
			1670T	●	16.7								
			1680T	●	16.8								
			1690T	●	16.9								
			1700T	●	17.0								
5	MN1700S20	★	1710T	●	17.1	96	120	170	20	WS254015T	TKY08D	WPT4405	MK1KS
			1720T	●	17.2								
			1730T	●	17.3								
			1740T	●	17.4								
			1750T	●	17.5								
3	TAWSN1800S20	★	1760T	●	17.6	65	90	140	20	WS254016T	TKY08D	WPT4405	MK1KS
			1770T	●	17.7								
			1780T	●	17.8								
			1790T	●	17.9								
			1800T	●	18.0								
5	MN1800S20	★	1810T	●	18.1	102	125	175	20	WS254016T	TKY08D	WPT4405	MK1KS
			1820T	●	18.2								
			1830T	●	18.3								
			1840T	●	18.4								

● : Inventory maintained. ★ : Inventory maintained in Japan.

INDEXABLE INSERT DRILL

TAW Drill

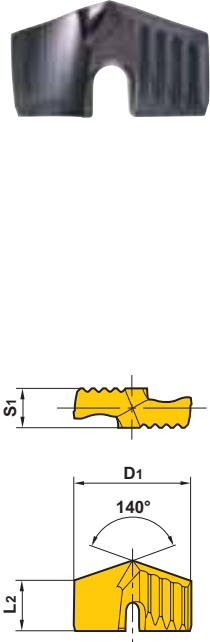




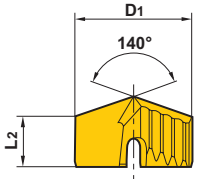
Hole Depth (l/d)	Holder		Insert		Drill Dia. D1 (mm)	Dimensions (mm)				 Clamp Screw	 Wrench	 Plate	 Anti-seize Lubricant
	Order Number	Stock	Order Number	Stock		L3	L2	L1	D4				
3	TAWSN1900S25	★	TAWN1850T	●	18.5	68	99	155	25	WS304517T	TKY10T	WPT4405	MK1KS
			1860T	●	18.6								
			1870T	●	18.7								
			1880T	●	18.8								
			1890T	●	18.9								
5	MN1900S25	★	1900T	●	19.0	107	134	190	25	WS304517T	TKY10T	WPT4405	MK1KS
			1910T	●	19.1								
			1920T	●	19.2								
			1930T	●	19.3								
			1940T	●	19.4								
3	TAWSN2000S25	★	1950T	●	19.5	72	99	155	25	WS304518T	TKY10T	WPT4405	MK1KS
			1960T	●	19.6								
			1970T	●	19.7								
			1980T	●	19.8								
			1990T	●	19.9								
5	MN2000S25	★	2000T	●	20.0	113	139	195	25	WS304518T	TKY10T	WPT4405	MK1KS
			2050T	●	20.5								
3	TAWSN2100S25	★	2100T	●	21.0	75	99	155	25	WS304518T	TKY10T	WPT4405	MK1KS
5	MN2100S25	★	2100T	●	21.0	118	139	195	25	WS304518T	TKY10T	WPT4405	MK1KS
3	TAWSN2200S25	★	2150T	●	21.5	79	104	160	25	WS355520T	TKY15T	WPT4405	MK1KS
5	MN2200S25	★	2200T	●	22.0	124	144	200	25	WS355520T	TKY15T	WPT4405	MK1KS
3	TAWSN2300S25	★	2250T	●	22.5	82	104	160	25	WS355521T	TKY15T	WPT4405	MK1KS
5	MN2300S25	★	2300T	●	23.0	129	154	210	25	WS355521T	TKY15T	WPT4405	MK1KS
3	TAWSN2400S32	★	2350T	●	23.5	86	110	170	32	WS355521T	TKY15T	WPT4405	MK1KS
5	MN2400S32	★	2400T	●	24.0	135	160	220	32	WS355521T	TKY15T	WPT4405	MK1KS
3	TAWSN2500S32	★	2450T	●	24.5	88	110	170	32	WS406023T	TKY25T	WPT4405	MK1KS
5	MN2500S32	★	2500T	●	25.0	140	165	225	32	WS406023T	TKY25T	WPT4405	MK1KS
3	TAWSN2600S32	★	2550T	●	25.5	92	115	175	32	WS406024T	TKY25T	WPT4405	MK1KS
5	MN2600S32	★	2600T	●	26.0	146	170	230	32	WS406024T	TKY25T	WPT4405	MK1KS
3	TAWSN2700S32	★	2650T	●	26.5	94	115	175	32	WS406024T	TKY25T	WPT4405	MK1KS
5	MN2700S32	★	2700T	●	27.0	151	175	235	32	WS406024T	TKY25T	WPT4405	MK1KS
3	TAWSN2800S32	★	2750T	●	27.5	97	120	180	32	WS508026T	TKY27T	WPT4405	MK1KS
5	MN2800S32	★	2800T	●	28.0	157	180	240	32	WS508026T	TKY27T	WPT4405	MK1KS
3	TAWSN2900S32	★	2850T	●	28.5	100	125	185	32	WS508027T	TKY27T	WPT4405	MK1KS
5	MN2900S32	★	2900T	●	29.0	162	185	245	32	WS508027T	TKY27T	WPT4405	MK1KS
3	TAWSN3000S32	★	2950T	●	29.5	104	125	185	32	WS508027T	TKY27T	WPT4405	MK1KS
5	MN3000S32	★	3000T	●	30.0	167	195	255	32	WS508027T	TKY27T	WPT4405	MK1KS

● : Inventory maintained. ★ : Inventory maintained in Japan.

INSERTS

METRIC STANDARD

Geometry	Order Number	Stock	Dimensions (mm)			Applicable Holder	
		VP15TF	D1	L2	S1	Inch	Metric
	TAWN1400T	●	14.0	7.0	5.0	TAWSN0036 TAWMN0036	TAWSN1400S16 TAWMN1400S16
	1410T	●	14.1	7.0	5.0		
	1420T	●	14.2	7.0	5.0		
	1430T	●	14.3	7.0	5.0		
	1440T	●	14.4	7.0	5.0		
	1450T	●	14.5	6.9	5.0		
	1460T	●	14.6	6.9	5.0	TAWSN0037 TAWMN0037 TAWSN0039 TAWMN0039	TAWSN1500S20 TAWMN1500S20
	1470T	●	14.7	6.9	5.0		
	1480T	●	14.8	6.9	5.0		
	1490T	●	14.9	6.9	5.0		
	1500T	●	15.0	6.8	5.0		
	1510T	●	15.1	6.8	5.0		
	1520T	●	15.2	6.8	5.0	TAWSN0041 TAWMN0041	TAWSN1600S20 TAWMN1600S20
	1530T	●	15.3	6.8	5.0		
	1540T	●	15.4	6.8	5.0		
	1550T	●	15.5	7.9	6.0		
	1560T	●	15.6	7.9	6.0		
	1570T	●	15.7	7.9	6.0		
	1580T	●	15.8	7.9	6.0	TAWSN0044 TAWMN0044	TAWSN1700S20 TAWMN1700S20
	1590T	●	15.9	7.9	6.0		
	1600T	●	16.0	7.8	6.0		
	1610T	●	16.1	7.8	6.0		
	1620T	●	16.2	7.8	6.0		
	1630T	●	16.3	7.8	6.0		
	1640T	●	16.4	7.8	6.0	TAWSN0045 TAWMN0045 TAWSN0046 TAWMN0046	TAWSN1800S20 TAWMN1800S20
	1650T	●	16.5	7.7	6.0		
	1660T	●	16.6	7.7	6.0		
	1670T	●	16.7	7.7	6.0		
	1680T	●	16.8	7.7	6.0		
	1690T	●	16.9	7.7	6.0		
	1700T	●	17.0	7.6	6.0	TAWSN0045 TAWMN0045 TAWSN0046 TAWMN0046	TAWSN1800S20 TAWMN1800S20
	1710T	●	17.1	7.6	6.0		
	1720T	●	17.2	7.6	6.0		
	1730T	●	17.3	7.6	6.0		
1740T	●	17.4	7.6	6.0			
1750T	●	17.5	7.5	6.0			
1760T	●	17.6	7.5	6.0	TAWSN0045 TAWMN0045 TAWSN0046 TAWMN0046	TAWSN1800S20 TAWMN1800S20	
1770T	●	17.7	7.5	6.0			
1780T	●	17.8	7.5	6.0			
1790T	●	17.9	7.5	6.0			
1800T	●	18.0	7.4	6.0			
1810T	●	18.1	7.4	6.0			
1820T	●	18.2	7.4	6.0	TAWSN0045 TAWMN0045 TAWSN0046 TAWMN0046	TAWSN1800S20 TAWMN1800S20	
1830T	●	18.3	7.4	6.0			
1840T	●	18.4	7.4	6.0			

Geometry	Order Number	Stock	Dimensions (mm)			Applicable Holder			
		VP15TF	D1	L2	S1	Inch	Metric		
  	TAWN1850T	●	18.5	9.3	7.0	TAWSN0049 TAWMN0049	TAWSN1900S25 TAWMN1900S25		
	1860T	●	18.6	9.3	7.0				
	1870T	●	18.7	9.3	7.0				
	1880T	●	18.8	9.3	7.0				
	1890T	●	18.9	9.3	7.0				
	1900T	●	19.0	9.2	7.0				
	1910T	●	19.1	9.2	7.0				
	1920T	●	19.2	9.2	7.0				
	1930T	●	19.3	9.2	7.0				
	1940T	●	19.4	9.2	7.0				
	1950T	●	19.5	9.1	7.0	TAWSN0051 TAWMN0051	TAWSN2000S25 TAWMN2000S25		
	1960T	●	19.6	9.1	7.0				
	1970T	●	19.7	9.1	7.0				
	1980T	●	19.8	9.1	7.0				
	1990T	●	19.9	9.1	7.0				
	2000T	●	20.0	9.0	7.0				
	2050T	●	20.5	8.9	7.0			TAWSN0054 TAWMN0054	TAWSN2100S25 TAWMN2100S25
	2100T	●	21.0	8.8	7.0				
	2150T	●	21.5	10.3	8.0			TAWSN0056 TAWMN0056	TAWSN2200S25 TAWMN2200S25
	2200T	●	22.0	10.2	8.0				
	2250T	●	22.5	10.1	8.0	TAWSN0059 TAWMN0059	TAWSN2300S25 TAWMN2300S25		
	2300T	●	23.0	10.0	8.0				
	2350T	●	23.5	9.9	8.0	TAWSN0061 TAWMN0061	TAWSN2400S32 TAWMN2400S32		
	2400T	●	24.0	9.8	9.0				
	2450T	●	24.5	11.1	9.0	TAWSN0100 TAWMN0100	TAWSN2500S32 TAWMN2500S32		
	2500T	●	25.0	11.0	9.0				
	2550T	●	25.5	10.9	9.0	TAWSN0102 TAWMN0102	TAWSN2600S32 TAWMN2600S32		
	2600T	●	26.0	10.8	9.0				
	2650T	●	26.5	10.7	9.0	TAWSN0105 TAWMN0105	TAWSN2700S32 TAWMN2700S32		
	2700T	●	27.0	10.6	9.0				
2750T	●	27.5	12.1	10.0	TAWSN0107 TAWMN0107	TAWSN2800S32 TAWMN2800S32			
2800T	●	28.0	12.0	10.0					
2850T	●	28.5	11.9	10.0	TAWSN0110 TAWMN0110	TAWSN2900S32 TAWMN2900S32			
2900T	●	29.0	11.8	10.0					
2950T	●	29.5	11.7	10.0	TAWSN0112 TAWMN0112	TAWSN3000S32 TAWMN3000S32			
3000T	●	30.0	11.6	10.0					

RECOMMENDED CUTTING CONDITIONS

Workpiece	Drill Diameter	ø.5625 – ø.6094		ø.6250 – ø.7188		ø.7344 – ø.8438	
		Conditions Hardness	Cutting Speed (SFM)	Feed (inch/rev)	Cutting Speed (SFM)	Feed (inch/rev)	Cutting Speed (SFM)
P Mild Steel	≤ 180HB	230 (195 – 295)	.008 (.006 – .010)	260 (195 – 330)	.010 (.008 – .012)	295 (230 – 360)	.010 (.008 – .012)
	180 – 280HB	230 (195 – 295)	.008 (.006 – .010)	260 (195 – 330)	.010 (.008 – .012)	260 (195 – 330)	.010 (.008 – .012)
		280 – 350HB	195 (165 – 260)	.006 (.005 – .007)	230 (165 – 295)	.008 (.006 – .010)	230 (165 – 295)
M Carbon Steel Alloy Steel	≤ 200HB	165 (130 – 195)	.006 (.005 – .007)	165 (130 – 195)	.006 (.005 – .007)	195 (165 – 230)	.008 (.006 – .009)
K Cast Iron	Tensile Strength ≤ 350MPa	230 (165 – 295)	.008 (.006 – .010)	260 (195 – 295)	.010 (.008 – .012)	295 (230 – 360)	.010 (.008 – .012)
	Tensile Strength ≤ 450MPa	230 (165 – 295)	.008 (.006 – .010)	260 (195 – 295)	.010 (.008 – .012)	260 (195 – 295)	.010 (.008 – .012)

Workpiece	Drill Diameter	ø.8594 – ø.9531		ø.9688 – ø1.0781		ø1.0938 – ø1.1875	
		Conditions Hardness	Cutting Speed (SFM)	Feed (inch/rev)	Cutting Speed (SFM)	Feed (inch/rev)	Cutting Speed (SFM)
P Mild Steel	≤ 180HB	330 (260 – 390)	.012 (.010 – .014)	360 (260 – 390)	.012 (.010 – .014)	360 (260 – 390)	.012 (.010 – .014)
	180 – 280HB	295 (230 – 360)	.012 (.010 – .014)	330 (260 – 390)	.012 (.010 – .014)	330 (260 – 390)	.012 (.010 – .014)
		280 – 350HB	260 (195 – 330)	.010 (.008 – .012)	295 (230 – 360)	.010 (.008 – .012)	295 (230 – 360)
M Carbon Steel Alloy Steel	≤ 200HB	195 (165 – 230)	.008 (.006 – .009)	230 (195 – 260)	.010 (.008 – .011)	230 (195 – 260)	.010 (.008 – .011)
K Cast Iron	Tensile Strength ≤ 350MPa	330 (260 – 360)	.014 (.010 – .016)	360 (295 – 390)	.014 (.010 – .016)	360 (295 – 390)	.016 (.012 – .018)
	Tensile Strength ≤ 450MPa	295 (195 – 330)	.012 (.010 – .014)	330 (260 – 360)	.012 (.010 – .014)	330 (260 – 360)	.012 (.010 – .014)

Notes on Use

INSERT INSTALLATION

- Loosen clamp screw of holder to install insert.
- Mesh the insert serration to holder grooves.
- Fasten the clamp screw using the provided torque wrench while holding rake face of the insert lightly with your thumb. (Figure 1)
- Check that there is no clearance between the insert bottom and holder flute end. (Figure 2)

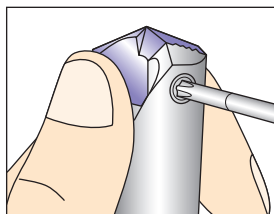


Figure 1

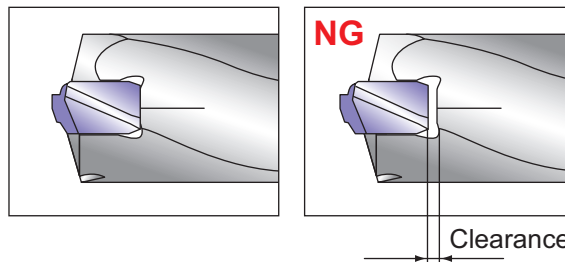


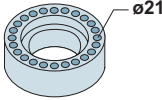
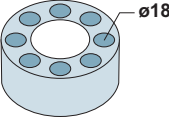
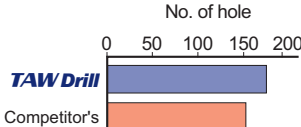
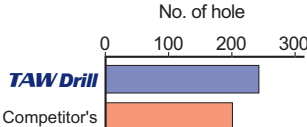
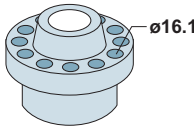
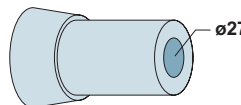
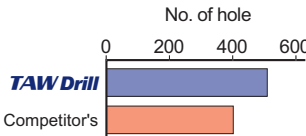
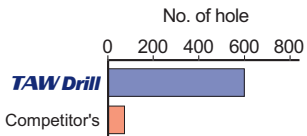
Figure 2

NOTE ON INSERT REPLACEMENT

- Clean insert guide grooves of a used holder by blowing air before installing a new insert.
- Remove heavy dirt in the holder serration and holder slits using the provided plate.

TAW Drill

APPLICATION EXAMPLES

Holder		TAWMN2100S25	TAWMN1800S20
Insert (Grade)		TAWN2100T (VP15TF)	TAWN1800T (VP15TF)
Workpiece		ANSI 4140 (34HS) 	ANSI 1045 (200HB) 
Component		Ring	Ring gear
Cutting Conditions	Cutting Speed (SFM)	180	230
	Feed (IPR)	.008	.012
	Revolution (min ⁻¹)	833	1238
	Feed Rate (inch/min)	6.57	14.61
Coolant		W.S.O (Internal coolant)	W.S.O (Internal coolant)
Machine Shank Type		Machining center	Machining center
Result			
Holder		TAWSN1600S20	TAWSN2700S32
Insert (Grade)		TAWN1610T (VP15TF)	TAWN2700T (VP15TF)
Workpiece		Alloy Steel 	ANSI 4130 
Component		Machine parts	Bit
Cutting Conditions	Cutting Speed (SFM)	260	260
	Feed (IPR)	.012	.012
	Revolution (min ⁻¹)	1582	943
	Feed Rate (inch/min)	18.70	11.14
Coolant		W.S.O (Internal coolant)	W.S.O (Internal coolant)
Machine Shank Type		Machining center	NC lathe
Result			

For your safety

●Do not touch cutting or chips without wearing gloves. ●Use tools under recommended cutting conditions, and exchange tools before excessive wear occurs. ●Chips become extremely hot, scattered over and may be stretched. Ensure safety guards and goggles are used. ●In case of using non-water soluble oil, make sure to have a fire prevention countermeasure. ●Use the provided wrench spanner, and ensure the inserts and spare parts are damped securely.

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 (Tools specifications subject to change without notice.)