

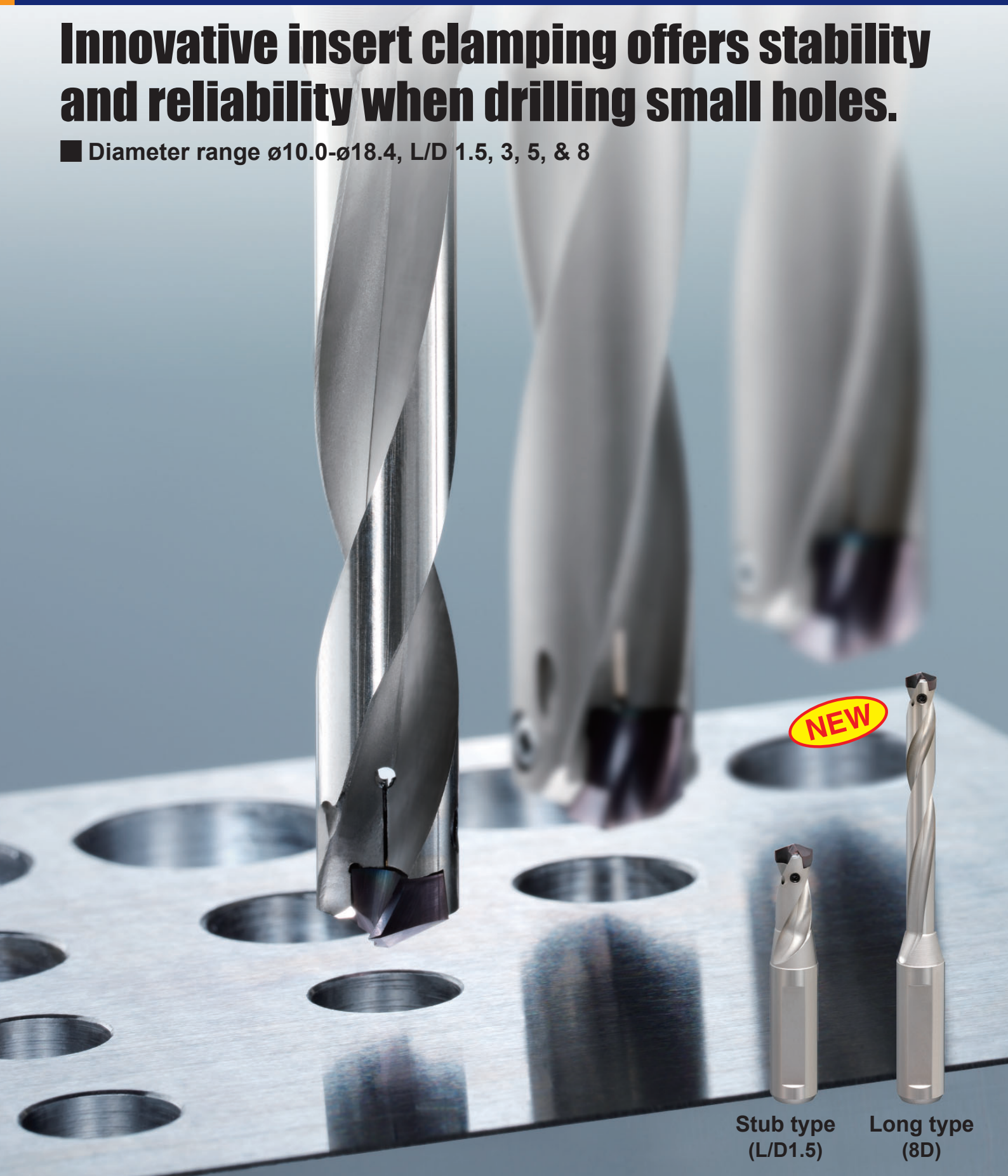
Changeable Carbide Insert Type Drill
WSTAR Drill Series

S-TAW

Size
expansion

Innovative insert clamping offers stability and reliability when drilling small holes.

■ Diameter range $\phi 10.0$ - $\phi 18.4$, L/D 1.5, 3, 5, & 8



NEW

Stub type
(L/D1.5)

Long type
(8D)

Changeable Carbide Insert Type Drill

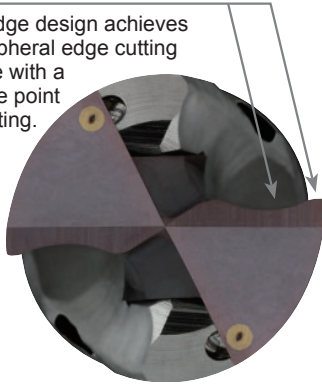
WSTAR Insert Type Drill

S-TAW

Designed for extreme sharpness, precision and rigidity

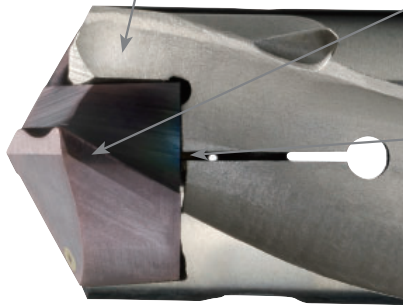
Wavy cutting edge

The wave edge design achieves a sharp peripheral edge cutting performance with a strong centre point for initial cutting.



High helix

Unique low resistance pocket design improves chip breaking for superior chip disposal.



Back metal

Sufficient back metal increases rigidity.

Centering location

Mitsubishi's unique system ensures high clamping accuracy.

Hole depth up to 8D (L/D 1.5, 3,5 and 8 long type)

Stub type (1.5D)

High precision and efficient shallow hole drilling is possible. Suitable for small parts hole drilling using lathe.

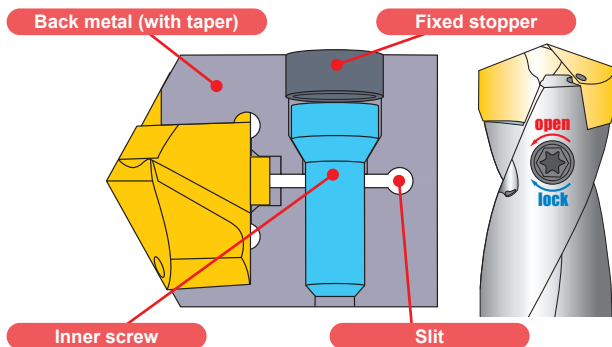


Long type (8D)

The body is optimized for deep hole drilling. Excellent chip evacuation and holder rigidity is consisted by improving the web thickness and flute width.



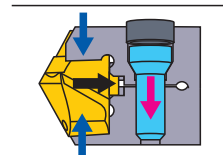
Mitsubishi's unique highly rigid clamping system (PAT.P.)



<Insert installation and detachment>

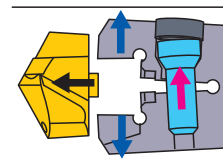
<Clamp>

Tighten the inner screw to securely clamp the insert with the back metal tapers.



<Unclamp>

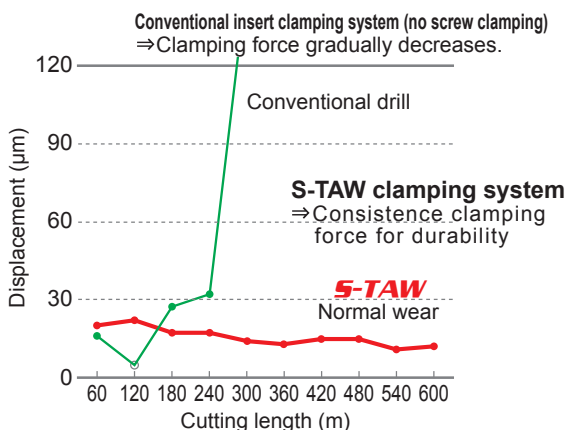
Loosening the screw causes it to push against the stopper and opens the back metal sections.



Durable body & insert

Rigid clamping system offers exceptional tool life.

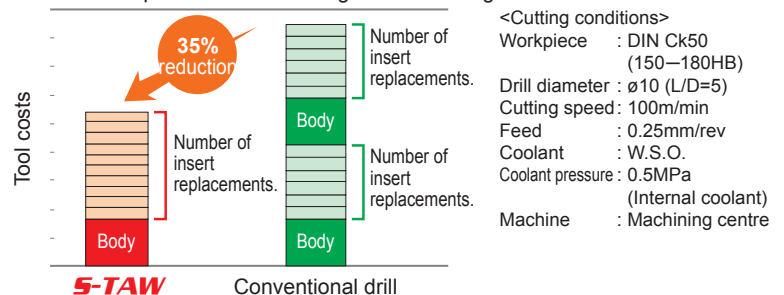
Radial runout of insert



Durable inserts and body reduces costs.

Cost reduction effect

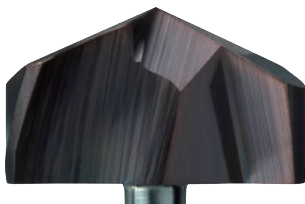
Tool cost comparison for 600m length of machining



Insert grade

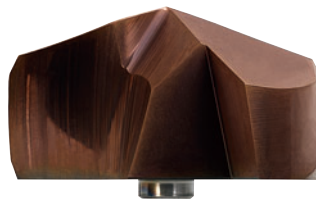
VP15TF General purpose insert grade

Suitable for machining a wide range of workpiece materials from mild and alloy steels through to stainless steels and cast iron.



DP5010 Cast iron insert grade

A new PVD coated grade. Cemented carbide substrate coated using a proprietary method of crystal control technology.



Operational Guidance

Insert Installation

1. Before inserting the insert into the holder, ensure that there are no foreign objects or dirt in the holder slot or slit. Clean using compressed air if necessary.

2. Use the wrench provided to loosen the inner screw to open the tip of the holder, then place the insert into the holder slot as shown in figure 1.

*Ensure that the wrench is firmly in contact with the base of the inner screw head when tightening.

3. After the insert has been set in the holder slot, tighten the inner screw while pushing the insert lightly into the pocket as shown in figure 2 to securely clamp and locate the insert.

*Ensure that the wrench is firmly in contact with the base of the inner screw head when tightening.

4. Check there is no gap between the bottom of the insert and holder slot.

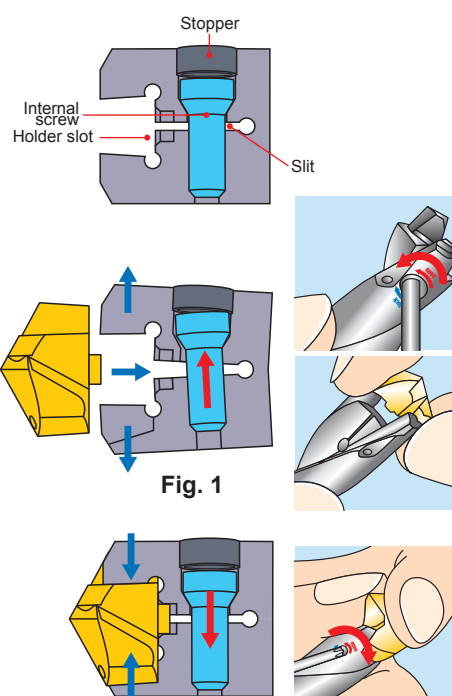
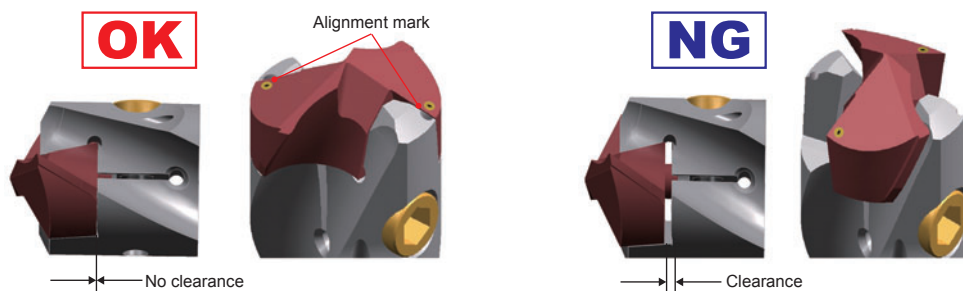


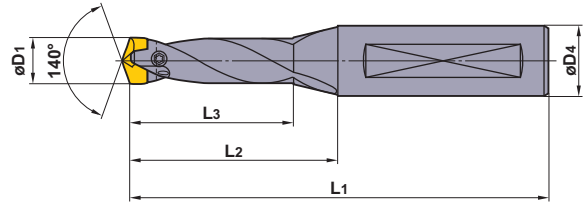
Fig. 2



(Note) Poor or incorrect clamping of inserts can cause poor drilling performance and/or drill breakage. Therefore ensure that the alignment marks on both the body and insert are aligned when setting. When machining, use safety guards and goggles.

S-TAW

Carbon Steel Alloy Steel	Hardened Steel	Stainless Steel	Cast Iron	Light Alloy	Heat Resistant Alloy
◎		○	◎	○	




HOLDERS

Drill Dia. Range D1 (mm)	Hole Depth (l/d)	Holder		Dimensions (mm)				① ② Wrench
		Order Number	Stock	Effective flute length L3	Neck Length L2	Overall Length L1	Shank Dia. D4	
10.0 10.4	1.5	STAWSS1000S16	●	22	32	80	16	①TIP06F
	3	STAWSN1000S16	●	37	47	95	16	
	5	STAWMN1000S16	●	57	67	115	16	
	8	STAWLN1000S16	●	87	97	145	16	
10.5 10.9	1.5	STAWSS1050S16	●	22	32	80	16	①TIP06F
	3	STAWSN1050S16	●	37	47	95	16	
	5	STAWMN1050S16	●	57	67	115	16	
	8	STAWLN1050S16	●	87	97	145	16	
11.0 11.4	1.5	STAWSS1100S16	●	25	36	84	16	①TIP06F
	3	STAWSN1100S16	●	41	52	100	16	
	5	STAWMN1100S16	●	66	77	125	16	
	8	STAWLN1100S16	●	96	107	155	16	
11.5 11.9	1.5	STAWSS1150S16	●	25	36	84	16	①TIP06F
	3	STAWSN1150S16	●	41	52	100	16	
	5	STAWMN1150S16	●	66	77	125	16	
	8	STAWLN1150S16	●	96	107	155	16	
12.0 12.4	1.5	STAWSS1200S16	●	27	39	87	16	①TIP06F
	3	STAWSN1200S16	●	45	57	105	16	
	5	STAWMN1200S16	●	70	82	130	16	
	8	STAWLN1200S16	●	105	117	165	16	
12.5 12.9	1.5	STAWSS1250S16	●	27	39	87	16	①TIP06F
	3	STAWSN1250S16	●	45	57	105	16	
	5	STAWMN1250S16	●	70	82	130	16	
	8	STAWLN1250S16	●	105	117	165	16	
13.0 13.4	1.5	STAWSS1300S16	●	30	43	91	16	②TIP08W
	3	STAWSN1300S16	●	49	62	110	16	
	5	STAWMN1300S16	●	74	87	135	16	
	8	STAWLN1300S16	●	114	127	175	16	
13.5 13.9	1.5	STAWSS1350S16	●	30	43	91	16	②TIP08W
	3	STAWSN1350S16	●	49	62	110	16	
	5	STAWMN1350S16	●	74	87	135	16	
	8	STAWLN1350S16	●	114	127	175	16	

(Note) Please contact us for any geometry that is not in this catalogue (e.g. different diameter and length).

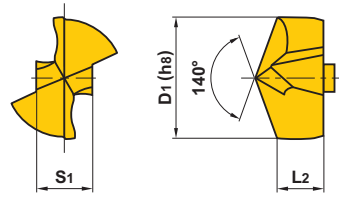
● : Inventory maintained.

Drill Dia. Range D1 (mm)	Hole Depth (l/d)	Holder		Dimensions (mm)				
		Order Number	Stock	Effective flute length	Neck Length	Overall Length	Shank Dia.	
				L3	L2	L1	D4	Wrench
NEW 14.0 14.4	1.5	STAWSS1400S16	●	31	45	93	16	TIP08W
	3	STAWSN1400S16	●	53	67	115	16	
	5	STAWMN1400S16	●	83	97	145	16	
	NEW 8	STAWLN1400S16	●	122	137	185	16	
NEW 14.5 14.9	1.5	STAWSS1450S16	●	31	45	93	16	TIP08W
	3	STAWSN1450S16	●	53	67	115	16	
	5	STAWMN1450S16	●	83	97	145	16	
	NEW 8	STAWLN1450S16	●	122	137	185	16	
NEW 15.0 15.4	1.5	STAWSS1500S20	●	33	48	98	20	TIP08W
	3	STAWSN1500S20	●	60	75	125	20	
	5	STAWMN1500S20	●	90	105	155	20	
	NEW 8	STAWLN1500S20	●	130	148	198	20	
NEW 15.5 16.4	1.5	STAWSS1600S20	●	34	50	100	20	TIP10W
	3	STAWSN1600S20	●	60	80	130	20	
	5	STAWMN1600S20	●	90	115	165	20	
	8	STAWLN1600S20	●	138	158	208	20	
NEW 16.5 17.4	1.5	STAWSS1700S20	●	36	53	103	20	TIP10W
	3	STAWSN1700S20	●	61	85	135	20	
	5	STAWMN1700S20	●	95	120	170	20	
	8	STAWLN1700S20	●	146	166	216	20	
NEW 17.5 18.4	1.5	STAWSS1800S20	●	37	55	105	20	TIP10W
	3	STAWSN1800S20	●	64	90	140	20	
	5	STAWMN1800S20	●	100	125	175	20	
	8	STAWLN1800S20	●	154	174	224	20	

(Note) Please contact us for any geometry that is not in this catalogue (e.g. different diameter and length).

S-TAW

INSERTS



Order Number	Stock		Dimensions (mm)			Applicable Holder
	VP15TF	VP10H	D1	L2	S1	
STAWN1000TH	●	□	10.0	3.8	4.6	STAWSS1000S16 STAWSN1000S16 STAWMN1000S16 STAWLN1000S16
1010TH	●	□	10.1	3.8	4.6	
1020TH	●	□	10.2	3.8	4.6	
1030TH	●	□	10.3	3.8	4.6	
1040TH	●	□	10.4	3.8	4.6	
1050TH	●	□	10.5	4.0	4.8	STAWSS1050S16 STAWSN1050S16 STAWMN1050S16 STAWLN1050S16
1060TH	●	□	10.6	4.0	4.8	
1070TH	●	□	10.7	4.0	4.8	
1080TH	●	□	10.8	4.0	4.8	
1090TH	●	□	10.9	4.0	4.8	
1100TH	●	□	11.0	4.2	5.1	STAWSS1100S16 STAWSN1100S16 STAWMN1100S16 STAWLN1100S16
1110TH	●	□	11.1	4.2	5.1	
1120TH	●	□	11.2	4.2	5.1	
1130TH	●	□	11.3	4.2	5.1	
1140TH	●	□	11.4	4.2	5.1	
1150TH	●	□	11.5	4.4	5.3	STAWSS1150S16 STAWSN1150S16 STAWMN1150S16 STAWLN1150S16
1160TH	●	□	11.6	4.4	5.3	
1170TH	●	□	11.7	4.4	5.3	
1180TH	●	□	11.8	4.4	5.3	
1190TH	●	□	11.9	4.4	5.3	
1200TH	●	□	12.0	4.6	5.5	STAWSS1200S16 STAWSN1200S16 STAWMN1200S16 STAWLN1200S16
1210TH	●	□	12.1	4.6	5.5	
1220TH	●	□	12.2	4.6	5.5	
1230TH	●	□	12.3	4.6	5.5	
1240TH	●	□	12.4	4.6	5.5	
1250TH	●	□	12.5	4.8	5.8	STAWSS1250S16 STAWSN1250S16 STAWMN1250S16 STAWLN1250S16
1260TH	●	□	12.6	4.8	5.8	
1270TH	●	□	12.7	4.8	5.8	
1280TH	●	□	12.8	4.8	5.8	
1290TH	●	□	12.9	4.8	5.8	
1300TH	●	□	13.0	4.9	6.0	STAWSS1300S16 STAWSN1300S16 STAWMN1300S16 STAWLN1300S16
1310TH	●	□	13.1	4.9	6.0	
1320TH	●	□	13.2	4.9	6.0	
1330TH	●	□	13.3	4.9	6.0	
1340TH	●	□	13.4	4.9	6.0	
1350TH	●	□	13.5	5.1	6.2	STAWSS1350S16 STAWSN1350S16 STAWMN1350S16 STAWLN1350S16
1360TH	●	□	13.6	5.1	6.2	
1370TH	●	□	13.7	5.1	6.2	
1380TH	●	□	13.8	5.1	6.2	
1390TH	●	□	13.9	5.1	6.2	

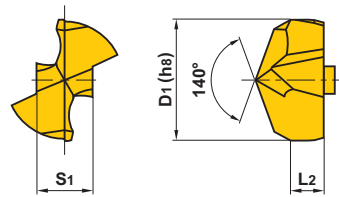
● : Inventory maintained. □ : Non stock, produced to order only.
 (1 insert in one case)

Order Number	Stock		Dimensions (mm)			Applicable Holder
	VP15TF	VP10H	D1	L2	S1	
STAWN1400TH	●		14.0	5.3	6.4	STAWSS1400S16 STAWSN1400S16 STAWMN1400S16 STAWLN1400S16
1410TH	●		14.1	5.3	6.4	
1420TH	●		14.2	5.3	6.4	
1430TH	●		14.3	5.3	6.4	
1440TH	●		14.4	5.3	6.4	
1450TH	●		14.5	5.5	6.7	STAWSS1450S16 STAWSN1450S16 STAWMN1450S16 STAWLN1450S16
1460TH	●		14.6	5.5	6.7	
1470TH	●		14.7	5.5	6.7	
1480TH	●		14.8	5.5	6.7	
1490TH	●		14.9	5.5	6.7	
1500TH	●		15.0	5.7	6.9	STAWSS1500S20 STAWSN1500S20 STAWMN1500S20 STAWLN1500S20
1510TH	●		15.1	5.7	6.9	
1520TH	●		15.2	5.7	6.9	
1530TH	●		15.3	5.7	6.9	
1540TH	●		15.4	5.7	6.9	
NEW 1550T	●		15.5	5.9	7.1	STAWSS1600S20 STAWSN1600S20 STAWMN1600S20 STAWLN1600S20
NEW 1560T	●		15.6	5.9	7.1	
NEW 1570T	●		15.7	5.9	7.1	
NEW 1580T	●		15.8	5.9	7.1	
NEW 1590T	●		15.9	5.9	7.1	
NEW 1600T	●		16.0	5.9	7.1	
NEW 1610T	●		16.1	5.9	7.1	
NEW 1620T	●		16.2	5.9	7.1	
NEW 1630T	●		16.3	5.9	7.1	
NEW 1640T	●		16.4	5.9	7.1	
NEW 1650T	●		16.5	6.3	7.6	STAWSS1700S20 STAWSN1700S20 STAWMN1700S20 STAWLN1700S20
NEW 1660T	●		16.6	6.3	7.6	
NEW 1670T	●		16.7	6.3	7.6	
NEW 1680T	●		16.8	6.3	7.6	
NEW 1690T	●		16.9	6.3	7.6	
NEW 1700T	●		17.0	6.3	7.6	
NEW 1710T	●		17.1	6.3	7.6	
NEW 1720T	●		17.2	6.3	7.6	
NEW 1730T	●		17.3	6.3	7.6	
NEW 1740T	●		17.4	6.3	7.6	
NEW 1750T	●		17.5	6.7	8.1	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
NEW 1760T	●		17.6	6.7	8.1	
NEW 1770T	●		17.7	6.7	8.1	
NEW 1780T	●		17.8	6.7	8.1	
NEW 1790T	●		17.9	6.7	8.1	
NEW 1800T	●		18.0	6.7	8.1	
NEW 1810T	●		18.1	6.7	8.1	
NEW 1820T	●		18.2	6.7	8.1	
NEW 1830T	●		18.3	6.7	8.1	
NEW 1840T	●		18.4	6.7	8.1	

S-TAW

INSERTS

(For Cast Iron)



Order Number	Stock		Dimensions (mm)			Applicable Holder
	DP5010		D1	L2	S1	
NEW STAWK1000TG	●		10.0	3.3	4.6	STAWSS1000S16 STAWSN1000S16 STAWMN1000S16 STAWLN1000S16
NEW 1010TG	●		10.1	3.3	4.6	
NEW 1020TG	●		10.2	3.3	4.6	
NEW 1030TG	●		10.3	3.3	4.6	
NEW 1040TG	●		10.4	3.3	4.6	
NEW 1050TG	●		10.5	3.5	4.8	STAWSS1050S16 STAWSN1050S16 STAWMN1050S16 STAWLN1050S16
NEW 1060TG	●		10.6	3.5	4.8	
NEW 1070TG	●		10.7	3.5	4.8	
NEW 1080TG	●		10.8	3.5	4.8	
NEW 1090TG	●		10.9	3.5	4.8	
NEW 1100TG	●		11.0	3.7	5.1	STAWSS1100S16 STAWSN1100S16 STAWMN1100S16 STAWLN1100S16
NEW 1110TG	●		11.1	3.7	5.1	
NEW 1120TG	●		11.2	3.7	5.1	
NEW 1130TG	●		11.3	3.7	5.1	
NEW 1140TG	●		11.4	3.7	5.1	
NEW 1150TG	●		11.5	3.9	5.3	STAWSS1150S16 STAWSN1150S16 STAWMN1150S16 STAWLN1150S16
NEW 1160TG	●		11.6	3.9	5.3	
NEW 1170TG	●		11.7	3.9	5.3	
NEW 1180TG	●		11.8	3.9	5.3	
NEW 1190TG	●		11.9	3.9	5.3	
NEW 1200TG	●		12.0	4.1	5.5	STAWSS1200S16 STAWSN1200S16 STAWMN1200S16 STAWLN1200S16
NEW 1210TG	●		12.1	4.1	5.5	
NEW 1220TG	●		12.2	4.1	5.5	
NEW 1230TG	●		12.3	4.1	5.5	
NEW 1240TG	●		12.4	4.1	5.5	
NEW 1250TG	●		12.5	4.2	5.8	STAWSS1250S16 STAWSN1250S16 STAWMN1250S16 STAWLN1250S16
NEW 1260TG	●		12.6	4.2	5.8	
NEW 1270TG	●		12.7	4.2	5.8	
NEW 1280TG	●		12.8	4.2	5.8	
NEW 1290TG	●		12.9	4.2	5.8	
NEW 1300TG	●		13.0	4.4	6.0	STAWSS1300S16 STAWSN1300S16 STAWMN1300S16 STAWLN1300S16
NEW 1310TG	●		13.1	4.4	6.0	
NEW 1320TG	●		13.2	4.4	6.0	
NEW 1330TG	●		13.3	4.4	6.0	
NEW 1340TG	●		13.4	4.4	6.0	
NEW 1350TG	●		13.5	4.6	6.2	STAWSS1350S16 STAWSN1350S16 STAWMN1350S16 STAWLN1350S16
NEW 1360TG	●		13.6	4.6	6.2	
NEW 1370TG	●		13.7	4.6	6.2	
NEW 1380TG	●		13.8	4.6	6.2	
NEW 1390TG	●		13.9	4.6	6.2	

● : Inventory maintained. (1 insert in one case)

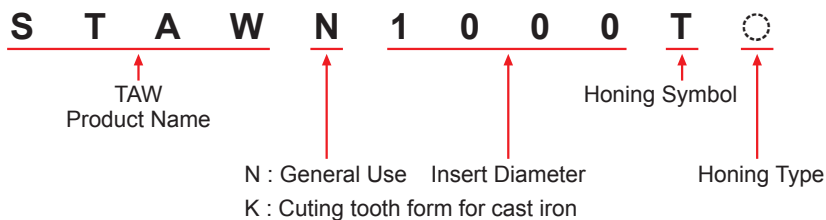
Order Number	Stock		Dimensions (mm)			Applicable Holder
	DP5010		D1	L2	S1	
NEW STAWK1400TG	●		14.0	4.8	6.4	STAWSS1400S16 STAWSN1400S16 STAWMN1400S16 STAWLN1400S16
NEW 1410TG	●		14.1	4.8	6.4	
NEW 1420TG	●		14.2	4.8	6.4	
NEW 1430TG	●		14.3	4.8	6.4	
NEW 1440TG	●		14.4	4.8	6.4	
NEW 1450TG	●		14.5	5.0	6.7	STAWSS1450S16 STAWSN1450S16 STAWMN1450S16 STAWLN1450S16
NEW 1460TG	●		14.6	5.0	6.7	
NEW 1470TG	●		14.7	5.0	6.7	
NEW 1480TG	●		14.8	5.0	6.7	
NEW 1490TG	●		14.9	5.0	6.7	
NEW 1500TG	●		15.0	5.2	6.9	STAWSS1500S20 STAWSN1500S20 STAWMN1500S20 STAWLN1500S20
NEW 1510TG	●		15.1	5.2	6.9	
NEW 1520TG	●		15.2	5.2	6.9	
NEW 1530TG	●		15.3	5.2	6.9	
NEW 1540TG	●		15.4	5.2	6.9	
NEW 1550TG	●		15.5	5.3	7.1	STAWSS1600S20 STAWSN1600S20 STAWMN1600S20 STAWLN1600S20
NEW 1560TG	●		15.6	5.3	7.1	
NEW 1570TG	●		15.7	5.3	7.1	
NEW 1580TG	●		15.8	5.3	7.1	
NEW 1590TG	●		15.9	5.3	7.1	
NEW 1600TG	●		16.0	5.3	7.1	STAWSS1700S20 STAWSN1700S20 STAWMN1700S20 STAWLN1700S20
NEW 1610TG	●		16.1	5.3	7.1	
NEW 1620TG	●		16.2	5.3	7.1	
NEW 1630TG	●		16.3	5.3	7.1	
NEW 1640TG	●		16.4	5.3	7.1	
NEW 1650TG	●		16.5	5.7	7.6	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
NEW 1660TG	●		16.6	5.7	7.6	
NEW 1670TG	●		16.7	5.7	7.6	
NEW 1680TG	●		16.8	5.7	7.6	
NEW 1690TG	●		16.9	5.7	7.6	
NEW 1700TG	●		17.0	5.7	7.6	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
NEW 1710TG	●		17.1	5.7	7.6	
NEW 1720TG	●		17.2	5.7	7.6	
NEW 1730TG	●		17.3	5.7	7.6	
NEW 1740TG	●		17.4	5.7	7.6	
NEW 1750TG	●		17.5	6.0	8.1	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
NEW 1760TG	●		17.6	6.0	8.1	
NEW 1770TG	●		17.7	6.0	8.1	
NEW 1780TG	●		17.8	6.0	8.1	
NEW 1790TG	●		17.9	6.0	8.1	
NEW 1800TG	●		18.0	6.0	8.1	STAWSS1800S20 STAWSN1800S20 STAWMN1800S20 STAWLN1800S20
NEW 1810TG	●		18.1	6.0	8.1	
NEW 1820TG	●		18.2	6.0	8.1	
NEW 1830TG	●		18.3	6.0	8.1	
NEW 1840TG	●		18.4	6.0	8.1	

S-TAW

HONE WIDTH

If an insert with honing other than standard is needed, please order using the symbols below.

(Insert Order Number)



(Honing Standard)

Honing Type	Hone Width (mm)
F	0
G	0.02—0.05
H(Standard)	0.05—0.10
-	0.10—0.15
K	0.15—0.20
S	0.20—0.25
M	0.25—0.30

RECOMMENDED CUTTING CONDITIONS

Work Material	Drill Diameter Conditions Hardness	φ10.0—φ12.9		φ13.0—φ13.9		φ14.0—φ15.4		φ15.5—φ18.4	
		Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)	Cutting Speed (m/min)	Feed (mm/rev)
P Mild Steel	≤180HB	80 (60—100)	0.20 (0.15—0.25)	90 (70—110)	0.25 (0.20—0.30)	100 (80—120)	0.30 (0.25—0.35)	100 (80—120)	0.35 (0.25—0.40)
	180—280HB	80 (60—100)	0.20 (0.15—0.25)	90 (70—110)	0.25 (0.20—0.30)	100 (80—120)	0.30 (0.25—0.35)	100 (80—120)	0.35 (0.25—0.40)
	280—350HB	70 (60—90)	0.20 (0.15—0.25)	80 (60—100)	0.25 (0.20—0.30)	90 (70—110)	0.25 (0.20—0.30)	90 (70—110)	0.30 (0.20—0.35)
M Stainless Steel	≤200HB	40 (30—50)	0.13 (0.10—0.16)	50 (40—60)	0.15 (0.12—0.18)	60 (50—70)	0.17 (0.14—0.20)	60 (50—70)	0.17 (0.14—0.20)
K Gray Cast Iron	Tensile Strength ≤350MPa	80 (60—100)	0.20 (0.15—0.25)	90 (70—110)	0.25 (0.20—0.30)	100 (80—120)	0.30 (0.25—0.35)	120 (80—140)	0.45 (0.35—0.55)
	Ductile Cast Iron	Tensile Strength ≤450MPa	70 (60—90)	0.20 (0.15—0.25)	80 (60—100)	0.25 (0.20—0.30)	90 (70—110)	0.30 (0.25—0.35)	100 (80—120)



(Note 1) When using a drill for 1.5D depth of hole, it is possible to increase the feed rate by approx. 20%.

(Note 2) When using a drill for 8D depth of hole, please decrease the cutting speed by approx. 20%.

(Note 3) When using a drill for 8D depth of hole, it is recommended to make a pilot hole of the same size.

(Note 4) For stainless steel, please use internal coolant. (Mist & MQL are not recommended).

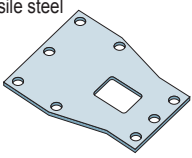
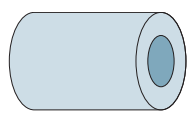
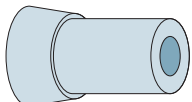
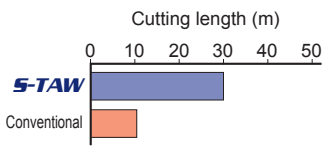
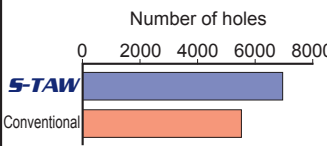
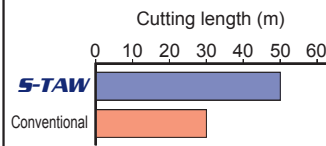
SPARE PARTS

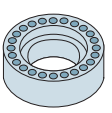
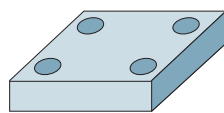
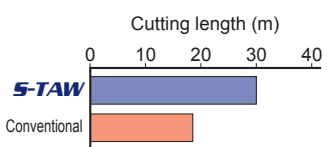
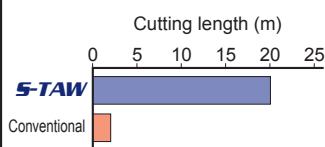
Applicable Holder	Pack Order Number (Internal screw & stopper)		
		Internal screw	Stopper
STAWSS/SN/MN/LN100S16	WS203107TPS-35LH	WS203107TPS	WS35LH
STAWSS/SN/MN/LN105S16	WS203107TPS-35LH	WS203107TPS	WS35LH
STAWSS/SN/MN/LN110S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1150S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1200S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1250S16	WS203108TPS-35LH	WS203108TPS	WS35LH
STAWSS/SN/MN/LN1300S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1350S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1400S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1450S16	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1500S20	WS253909TPS-45LH	WS253909TPS	WS45LH
STAWSS/SN/MN/LN1600S20	WS304912TPS-55LH	WS304912TPS	WS55LH
STAWSS/SN/MN/LN1700S20	WS304912TPS-55LH	WS304912TPS	WS55LH
STAWSS/SN/MN/LN1800S20	WS304912TPS-55LH	WS304912TPS	WS55LH

* Clamp Torque (N · m) : WS203107TPS=1.0, WS203108TPS=1.0, WS253909TPS=2.0, WS304912TPS=2.5

(Note) The parts included in the package are internal screw, stopper and operation manual. Please replace the parts in accordance with the operation manual.

Application Examples

Holder		STAWMN1000S16	STAWSS1150S16	STAWMN1350S16
Insert (Grade)		STAWN1000TH (VP15TF)	STAWN1150TH (VP15TF)	STAWN1350TH (VP15TF)
Workpiece		High tensile steel 	Bearing steel (SUJ2) 	Carbon steel 
Component		Arm parts	Sleeve	Shaft
Cutting Conditions	Cutting Speed (m/min)	100	62	95
	Feed (mm/rev)	0.25	0.17	0.25
	Revolution (mm/rev)	3183	1716	2240
	Table Feed (mm/min)	796	292	560
Coolant		W.S.O. (Internal coolant)	W.S.O. (Internal coolant)	W.S.O. (Internal coolant)
Machine		Machining centre	Lathe	Lathe
Result		Cutting length (m) 	Number of holes 	Cutting length (m) 

Holder		STAWMN1100S16	STAWSN1450S16
Insert (Grade)		STAWN1100TH (VP15TF)	STAWK1450TG(DP5010)
Workpiece		Alloy steel 	Cast iron (FC250) 
Component		Machine parts	Machine plate
Cutting Conditions	Cutting Speed (m/min)	70	180
	Feed (mm/rev)	0.25	0.4
	Revolution (mm/rev)	2025	3951
	Table Feed (mm/min)	506	1580
Coolant		W.S.O. (Internal coolant)	W.S.O. (Internal coolant)
Machine		Machining centre	Machining centre
Result		Cutting length (m) 	Cutting length (m) 

For Your Safety

●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or spanner. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

MITSUBISHI MATERIALS CORPORATION

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(Tools specifications subject to change without notice.)