

# DRILLS

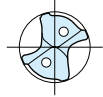
ดอกสว่าน

Straight Shank

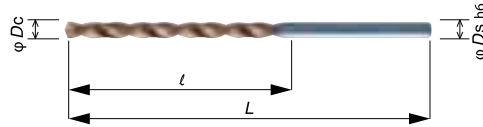
ดอกสว่านแกนตรง



## ดอกสว่านคาร์ไบด์ Non Step มีรูน้ำมัน Carbide Oil Hole Non Step Borer 10D 10WHNSB...-TH



Plane, S-X thinning



**Carbide Drills**  
ดอกสว่านคาร์ไบด์

**HSS Drills**  
ดอกสว่านไฮสปีด

Stub / Standard  
ตัวสั้น / มาตรฐาน

Long  
ตัวยาว

Micro Drill  
ดอกสว่านไมโคร

Z Plunging

Step Borer



Refer to this page



Ds=3 : 0 ~ -0.006  
3<Ds≤6 : 0 ~ -0.008  
6<Ds≤10 : 0 ~ -0.009  
10<Ds : 0 ~ -0.011

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
※1 10WHNSB0200-TH	●	2.0	30	80	3.0
※1 10WHNSB0210-TH	●	2.1	30	80	3.0
※1 10WHNSB0220-TH	●	2.2	30	80	3.0
※1 10WHNSB0230-TH	●	2.3	33	80	3.0
※1 10WHNSB0240-TH	●	2.4	33	80	3.0
※1 10WHNSB0250-TH	●	2.5	33	80	3.0
※1 10WHNSB0260-TH	●	2.6	35	85	3.0
※1 10WHNSB0270-TH	●	2.7	35	85	3.0
※1 10WHNSB0280-TH	●	2.8	39	85	3.0
※1 10WHNSB0290-TH	●	2.9	39	87	3.0
※1 10WHNSB0300-TH	●	3.0	39	87	3.0
※1 10WHNSB0310-TH	●	3.1	46	94	4.0
※1 10WHNSB0320-TH	●	3.2	46	94	4.0
※1 10WHNSB0330-TH	●	3.3	46	94	4.0
※1 10WHNSB0340-TH	●	3.4	46	94	4.0
※1 10WHNSB0350-TH	●	3.5	46	94	4.0
※1 10WHNSB0360-TH	●	3.6	52	101	4.0
※1 10WHNSB0370-TH	●	3.7	52	101	4.0
※1 10WHNSB0380-TH	●	3.8	52	101	4.0
※1 10WHNSB0390-TH	●	3.9	52	101	4.0
※1 10WHNSB0400-TH	●	4.0	52	101	4.0
※1 10WHNSB0410-TH	●	4.1	59	110	5.0
※1 10WHNSB0420-TH	●	4.2	59	110	5.0
※1 10WHNSB0430-TH	●	4.3	59	110	5.0
※1 10WHNSB0440-TH	●	4.4	59	110	5.0
※1 10WHNSB0450-TH	●	4.5	59	110	5.0
※1 10WHNSB0460-TH	●	4.6	66	117	5.0
※1 10WHNSB0470-TH	●	4.7	66	117	5.0
※1 10WHNSB0480-TH	●	4.8	66	117	5.0
※1 10WHNSB0490-TH	●	4.9	66	117	5.0
※1 10WHNSB0500-TH	●	5.0	66	117	5.0
※1 10WHNSB0510-TH	●	5.1	72	123	6.0
※1 10WHNSB0520-TH	●	5.2	72	123	6.0
※1 10WHNSB0530-TH	●	5.3	72	123	6.0
※1 10WHNSB0540-TH	●	5.4	72	123	6.0
※1 10WHNSB0550-TH	●	5.5	72	123	6.0
※1 10WHNSB0560-TH	●	5.6	79	130	6.0
※1 10WHNSB0570-TH	●	5.7	79	130	6.0
※1 10WHNSB0580-TH	●	5.8	79	130	6.0
※1 10WHNSB0590-TH	●	5.9	79	130	6.0
※1 10WHNSB0600-TH	●	6.0	79	130	6.0
※1 10WHNSB0610-TH	●	6.1	85	138	7.0
※1 10WHNSB0620-TH	●	6.2	85	138	7.0
※1 10WHNSB0630-TH	●	6.3	85	138	7.0
※1 10WHNSB0640-TH	●	6.4	85	138	7.0
※1 10WHNSB0650-TH	●	6.5	85	138	7.0
※1 10WHNSB0660-TH	●	6.6	92	145	7.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
※1 10WHNSB0670-TH	●	6.7	92	145	7.0
※1 10WHNSB0680-TH	●	6.8	92	145	7.0
※1 10WHNSB0690-TH	●	6.9	92	145	7.0
※1 10WHNSB0700-TH	●	7.0	92	145	7.0
※1 10WHNSB0710-TH	●	7.1	98	153	8.0
※1 10WHNSB0720-TH	●	7.2	98	153	8.0
※1 10WHNSB0730-TH	●	7.3	98	153	8.0
※1 10WHNSB0740-TH	●	7.4	98	153	8.0
※1 10WHNSB0750-TH	●	7.5	98	153	8.0
※1 10WHNSB0760-TH	●	7.6	105	160	8.0
※1 10WHNSB0770-TH	●	7.7	105	160	8.0
※1 10WHNSB0780-TH	●	7.8	105	160	8.0
※1 10WHNSB0790-TH	●	7.9	105	160	8.0
※1 10WHNSB0800-TH	●	8.0	105	160	8.0
※1 10WHNSB0810-TH	□	8.1	111	166	9.0
※1 10WHNSB0820-TH	□	8.2	111	166	9.0
※1 10WHNSB0830-TH	□	8.3	111	166	9.0
※1 10WHNSB0840-TH	□	8.4	111	166	9.0
※1 10WHNSB0850-TH	●	8.5	111	166	9.0
10WHNSB0860-TH	□	8.6	118	173	9.0
10WHNSB0870-TH	□	8.7	118	173	9.0
10WHNSB0880-TH	□	8.8	118	173	9.0
10WHNSB0890-TH	□	8.9	118	173	9.0
10WHNSB0900-TH	●	9.0	118	173	9.0
10WHNSB0910-TH	□	9.1	124	179	10.0
10WHNSB0920-TH	□	9.2	124	179	10.0
10WHNSB0930-TH	□	9.3	124	179	10.0
10WHNSB0940-TH	□	9.4	124	179	10.0
10WHNSB0950-TH	□	9.5	124	179	10.0
10WHNSB0960-TH	□	9.6	131	186	10.0
10WHNSB0970-TH	□	9.7	131	186	10.0
10WHNSB0980-TH	□	9.8	131	186	10.0
10WHNSB0990-TH	□	9.9	131	186	10.0
10WHNSB1000-TH	□	10.0	131	186	10.0
10WHNSB1010-TH	□	10.1	138	193	11.0
10WHNSB1020-TH	□	10.2	138	193	11.0
10WHNSB1030-TH	□	10.3	138	193	11.0
10WHNSB1040-TH	□	10.4	138	193	11.0
10WHNSB1050-TH	□	10.5	138	193	11.0
10WHNSB1060-TH	□	10.6	144	205	11.0
10WHNSB1070-TH	□	10.7	144	205	11.0
10WHNSB1080-TH	□	10.8	144	205	11.0
10WHNSB1090-TH	□	10.9	144	205	11.0
10WHNSB1100-TH	□	11.0	144	205	11.0
10WHNSB1110-TH	□	11.1	151	212	12.0
10WHNSB1120-TH	□	11.2	151	212	12.0
10WHNSB1130-TH	□	11.3	151	212	12.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
10WHNSB1140-TH	□	11.4	151	212	12.0
10WHNSB1150-TH	□	11.5	151	212	12.0
10WHNSB1160-TH	□	11.6	157	218	12.0
10WHNSB1170-TH	□	11.7	157	218	12.0
10WHNSB1180-TH	□	11.8	157	218	12.0
10WHNSB1190-TH	□	11.9	157	218	12.0
10WHNSB1200-TH	□	12.0	157	218	12.0
10WHNSB1210-TH	□	12.1	164	225	13.0
10WHNSB1220-TH	□	12.2	164	225	13.0
10WHNSB1230-TH	□	12.3	164	225	13.0
10WHNSB1240-TH	□	12.4	164	225	13.0
10WHNSB1250-TH	□	12.5	164	225	13.0
10WHNSB1260-TH	□	12.6	170	236	13.0
10WHNSB1270-TH	□	12.7	170	236	13.0
10WHNSB1280-TH	□	12.8	170	236	13.0
10WHNSB1290-TH	□	12.9	170	236	13.0
10WHNSB1300-TH	□	13.0	170	236	13.0

※1 Completely coated

10WHNSB  
Table of Tolerance on tool dia.

h8 for diameters of 2.0 to 3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0, 8.5 and 9.0.  
For other items, the diameter tolerance will be as in the table below.

(mm)

10WHNSB			
	3.0<ØDc<6.0	6.0<ØDc≤10.0	10.0<ØDc≤13.0
Max	-0.020	-0.024	-0.030
Min	-0.036	-0.045	-0.053

● : Stocked Items. □ : Stocked by specified distributor. Contact with our sales department.

# DRILLS

ดอกสว่าน



## Recommended cutting conditions

**10WHNSB-TH**

**15WHNSB-TH**

**20WHNSB-TH**

**30WHNSB-TH**

Work material (hardness)	Cutting speed (Vc) m/min	Cutting conditions	Tool Dia. (mm)					
			Ø2.0	Ø4.0	Ø6.0	Ø8.0	Ø10.0	Ø12.0
Structural steel (~180HB) SS	Internal Coolant 40~120	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	7000	4800	3600	2900	2400
	MQL (mist) 40~110	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	5500	4300	3200	2600	2200
Carbon steel (~200HB) S00C	Internal Coolant 40~120	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	7000	4800	3600	2900	2400
	MQL (mist) 40~110	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	5500	4700	3600	2900	2400
Alloy steel (~30HRC) SCM, SKD	Internal Coolant 40~100	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	6300	4500	3400	2700	2400
	MQL (mist) 40~90	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	5000	3700	2900	2400	2100
Stainless steel SUS300, SUS400	Internal Coolant 30~100	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	6000	4800	3700	2700	2200	1800
	Prehardened steel	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	4500	2400	1600	1200	950	800
Ductile iron FCD500	Internal Coolant 40~120	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	7000	4800	3600	2900	2400
	MQL (mist) 40~100	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	6300	4500	3400	2700	2400
Casting FC250	Internal Coolant 40~150	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	8000	5300	4000	3200	2650
	MQL (mist) 40~120	(n)min <sup>-1</sup> Revolution speed (n) (f)mm/rev Feed per Rev	8000	7000	4800	3600	2900	2400

**[Setting of Cutting Conditions]**

- ※ Use the appropriate coolant for the work material and machining shape.
- ※ These Recommended Cutting Conditions indicate only the rule of a thumb for the cutting conditions. In actual machining, the condition should be adjusted according to the machining shape, purpose and the machine type.
- ※ The above cutting conditions are based on the use of a water-soluble coolant diluted to a maximum of 20 times. When coolant dilution exceeds 20 times, decrease the cutting speed to the lowest in the specified range. When the tool diameter is Ø5.0 or less, the coolant pressure should be 2.0 MPa or higher, and when the diameter is over Ø5.0, the pressure should be 1.5 MPa or higher.
- ※ When performing MQL (mist) machining, depending on the amount or status of spray from the tool, it may be necessary to reduce the cutting speed in order to perform machining.
- ※ When changing the tool, use collet free from flaws and stains and attach the tool firmly so that its runout is 0.02mm or less.
- ※ The above conditions apply to a hole-depth of 5 times the diameter or less.
- ※ When cutting fluid is used, reduce the cutting speed to a speed lower than the lowest speed in the specified range. Take the greatest care to avoid heating of chips and the tool. smoke or ignition due to
- ※ Works should be gripped firmly to prevent deformation, deflection and vibration.
- ※ You can use borers at a revolution speed lower than the above values.

Straight Shank  
ดอกสว่านแกนตรง

**Carbide Drills**  
ดอกสว่านคาร์ไบด์

**HSS Drills**  
ดอกสว่านไฮสปีด

Stub / Standard  
ตัวสั้น / มาตรฐาน

Long  
ตัวยาว

Micro Drill  
ดอกสว่านไมโคร

Z Plunging

Step Borer