

CUTTING TOOLS

DRILLS

STRAIGHT SHANK

(CARBIDE-STUB/STANDARD)

02WNSB-TH	P.002-003
03WHNSB-TH	P.004-005
03FWHNSB-TH	P.006
EHSE-TH	P.007-008
03WHNSB-SD	P.009
6146	P.010-011
6147	P.010-011
04WNSB-TH	P.012
05WHNSB-TH	P.013
05FWHNSB-TH	P.014
05WHNSB-SD	P.015
224	P.016
6156	P.017-018
6157	P.017-018
GODRILL	P.019-021

STRAIGHT SHANK

(CARBIDE-LONG)

08WHNSB-TH	P.022-023
10WHNSB-TH	P.024, 028
15WHNSB-TH	P.025, 028
20WHNSB-TH	P.026, 028
30WHNSB-TH	P.027-028
10FWHNSB-TH	P.029
15FWHNSB-TH	P.030
20FWHNSB-TH	P.031
30FWHNSB-TH	P.032
15WHNSB-SD	P.033
20WHNSB-SD	P.033
25WHNSB-SD	P.034
30WHNSB-SD	P.034
WHSR-ATH	P.035

STRAIGHT SHANK

(CARBIDE-STUB/STANDARD/LONG)

NSBH-ATH	P.036-040
WHMB-TH	P.041-042

STRAIGHT SHANK

(CARBIDE-MICRO DRILL)

EMSBS-TH	P.043-044
EMSBS-SD	P.043-044
EMSTS-TH	P.045
EMSBH-ATH	P.046-047
EPDBEH-ATH	P.047

STRAIGHT SHANK

(CARBIDE-Z PLUNGING)

ZPB-TH	P.048-049
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STRAIGHT SHANK

(CARBIDE-STEP BORER)

STBH-ATH	P.050
STB-ATH	P.050

STRAIGHT SHANK

(HSS-STANDARD)

D101	P.051-056
D102	P.051-056
D103	P.051-056
D104	P.051-056
D109	P.057-058
D158	P.059-060
D163	P.059-060
D120	P.061-062
D188	P.061-062

STRAIGHT SHANK

(HSS-LONG)

D170	P.063-064
D171	P.063-064
511	P.065
101	P.066
111	P.067
121	P.068
201	P.069
211	P.069-070
221	P.070
DRILL SETS	P.071-072

TAPER SHANK

(HSS-STANDARD)

D115	P.073-074
D141	P.075

TAPER SHANK

(HSS-LONG)

D140	P.076
222	P.077
262	P.078
282	P.079

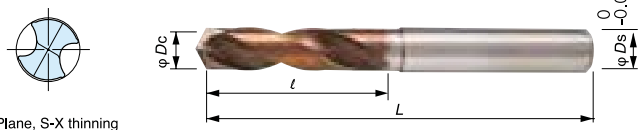
DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step

Carbide Non Step Borer 2D
02WNSB000-TH



03 : 0 ~ -0.014
03.1 ~ 06 : 0 ~ -0.018
06.1 ~ 010 : 0 ~ -0.022
010.1 ~ 013 : 0 ~ -0.027



0 ~ -0.01

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
02WNSB0300-TH	☐	3.0	15	47	3.0
02WNSB0310-TH	☐	3.1	18	52	4.0
02WNSB0320-TH	☐	3.2	18	52	4.0
02WNSB0330-TH	☐	3.3	18	52	4.0
02WNSB0340-TH	☐	3.4	18	52	4.0
02WNSB0350-TH	☐	3.5	18	52	4.0
02WNSB0360-TH	☐	3.6	20	52	4.0
02WNSB0370-TH	☐	3.7	20	52	4.0
02WNSB0380-TH	☐	3.8	20	52	4.0
02WNSB0390-TH	☐	3.9	20	52	4.0
02WNSB0400-TH	☐	4.0	20	52	4.0
02WNSB0410-TH	☐	4.1	23	59	5.0
02WNSB0420-TH	☐	4.2	23	59	5.0
02WNSB0430-TH	☐	4.3	23	59	5.0
02WNSB0440-TH	☐	4.4	23	59	5.0
02WNSB0450-TH	☐	4.5	23	59	5.0
02WNSB0460-TH	☐	4.6	25	59	5.0
02WNSB0470-TH	☐	4.7	25	59	5.0
02WNSB0480-TH	☐	4.8	25	59	5.0
02WNSB0490-TH	☐	4.9	25	59	5.0
02WNSB0500-TH	☒	5.0	25	59	5.0
02WNSB0510-TH	☒	5.1	25	64	6.0
02WNSB0520-TH	☒	5.2	25	64	6.0
02WNSB0530-TH	☐	5.3	25	64	6.0
02WNSB0540-TH	☒	5.4	25	64	6.0
02WNSB0550-TH	☒	5.5	25	64	6.0
02WNSB0560-TH	☐	5.6	25	64	6.0
02WNSB0570-TH	☐	5.7	25	64	6.0
02WNSB0580-TH	☒	5.8	25	64	6.0
02WNSB0590-TH	☐	5.9	25	64	6.0
02WNSB0600-TH	☒	6.0	25	64	6.0
02WNSB0610-TH	☐	6.1	29	71	7.0
02WNSB0620-TH	☒	6.2	29	71	7.0
02WNSB0630-TH	☐	6.3	29	71	7.0
02WNSB0640-TH	☐	6.4	29	71	7.0
02WNSB0650-TH	☒	6.5	29	71	7.0
02WNSB0660-TH	☐	6.6	31	71	7.0
02WNSB0670-TH	☐	6.7	31	71	7.0
02WNSB0680-TH	☒	6.8	31	71	7.0
02WNSB0690-TH	☒	6.9	31	71	7.0
02WNSB0700-TH	☒	7.0	31	71	7.0
02WNSB0710-TH	☐	7.1	32	76	8.0
02WNSB0720-TH	☐	7.2	32	76	8.0
02WNSB0730-TH	☒	7.3	32	76	8.0
02WNSB0740-TH	☐	7.4	32	76	8.0
02WNSB0750-TH	☒	7.5	32	76	8.0
02WNSB0760-TH	☐	7.6	34	76	8.0
02WNSB0770-TH	☐	7.7	34	76	8.0
02WNSB0780-TH	☒	7.8	34	76	8.0
02WNSB0790-TH	☒	7.9	34	76	8.0
02WNSB0800-TH	☒	8.0	34	76	8.0

● : Stocked Items.

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

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
02WNSB0810-TH	☐	8.1	36	80	9.0
02WNSB0820-TH	☐	8.2	36	80	9.0
02WNSB0830-TH	☐	8.3	36	80	9.0
02WNSB0840-TH	☒	8.4	36	80	9.0
02WNSB0850-TH	☒	8.5	36	80	9.0
02WNSB0860-TH	☒	8.6	38	80	9.0
02WNSB0870-TH	☐	8.7	38	80	9.0
02WNSB0880-TH	☒	8.8	38	80	9.0
02WNSB0890-TH	☐	8.9	38	80	9.0
02WNSB0900-TH	☒	9.0	38	80	9.0
02WNSB0910-TH	☐	9.1	40	85	10.0
02WNSB0920-TH	☐	9.2	40	85	10.0
02WNSB0930-TH	☐	9.3	40	85	10.0
02WNSB0940-TH	☒	9.4	40	85	10.0
02WNSB0950-TH	☒	9.5	40	85	10.0
02WNSB0960-TH	☐	9.6	41	85	10.0
02WNSB0970-TH	☐	9.7	41	85	10.0
02WNSB0980-TH	☒	9.8	41	85	10.0
02WNSB0990-TH	☐	9.9	41	85	10.0
02WNSB1000-TH	☒	10.0	41	85	10.0
02WNSB1010-TH	☐	10.1	42	90	11.0
02WNSB1020-TH	☒	10.2	42	90	11.0
02WNSB1030-TH	☒	10.3	42	90	11.0
02WNSB1040-TH	☐	10.4	42	90	11.0
02WNSB1050-TH	☒	10.5	42	90	11.0
02WNSB1060-TH	☒	10.6	44	90	11.0
02WNSB1070-TH	☐	10.7	44	90	11.0
02WNSB1080-TH	☒	10.8	44	90	11.0
02WNSB1090-TH	☐	10.9	44	90	11.0
02WNSB1100-TH	☒	11.0	44	90	11.0
02WNSB1110-TH	☐	11.1	46	94	12.0
02WNSB1120-TH	☐	11.2	46	94	12.0
02WNSB1130-TH	☐	11.3	46	94	12.0
02WNSB1140-TH	☒	11.4	46	94	12.0
02WNSB1150-TH	☒	11.5	46	94	12.0
02WNSB1160-TH	☒	11.6	46	94	12.0
02WNSB1170-TH	☐	11.7	46	94	12.0
02WNSB1180-TH	☒	11.8	46	94	12.0
02WNSB1190-TH	☐	11.9	46	94	12.0
02WNSB1200-TH	☒	12.0	46	94	12.0
02WNSB1210-TH	☐	12.1	49	100	13.0
02WNSB1220-TH	☒	12.2	49	100	13.0
02WNSB1230-TH	☐	12.3	49	100	13.0
02WNSB1240-TH	☐	12.4	49	100	13.0
02WNSB1250-TH	☒	12.5	49	100	13.0
02WNSB1260-TH	☒	12.6	49	100	13.0
02WNSB1270-TH	☐	12.7	49	100	13.0
02WNSB1280-TH	☐	12.8	49	100	13.0
02WNSB1290-TH	☐	12.9	49	100	13.0
02WNSB1300-TH	☒	13.0	49	100	13.0



Recommended cutting conditions

02WNSB-TH

04WNSB-TH

Work material (hardness)	Cutting speed (Vc) m/min	Cutting conditions	Tool Dia. (mm)						
			Ø1.0	Ø2.0	Ø4.0	Ø6.0	Ø8.0	Ø10.0	Ø12.0
Structural steel (~180HB) SS	Coolant 70~100~150	(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
	MQL (mist) 700~100~150	(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Carbon steel (~200HB) S○○○	Coolant 70~100~150	(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
	MQL (mist) 70~100~150	(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Alloy steel (~30HRC) SCM	Coolant 70~100~150	(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.03~0.05	0.05~0.08	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	16000	12800	6400	4300	3200	2550	2100
	MQL (mist) 50~80~130	(f)mm/rev Feed per Rev	0.03~0.05	0.05~0.08	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	16000	12800	6400	4300	3200	2550	2100
		(f)mm/rev Feed per Rev	0.03~0.05	0.05~0.08	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
SKD61 Alloy Steel (~30HRC) Prehardened steel (~40HRC)	Coolant 30~50~80	(n)min ⁻¹ Revolution speed (n)	9500	8000	4000	2650	2000	1600	1300
		(f)mm/rev Feed per Rev	0.02~0.04	0.04~0.07	0.08~0.13	0.12~0.19	0.14~0.24	0.16~0.28	0.18~0.32
		(n)min ⁻¹ Revolution speed (n)	6300	6400	3200	2100	1600	1250	1050
	MQL (mist) 20~40~60	(f)mm/rev Feed per Rev	0.02~0.04	0.04~0.07	0.08~0.13	0.12~0.19	0.14~0.24	0.16~0.28	0.18~0.32
		(n)min ⁻¹ Revolution speed (n)	6300	6400	3200	2100	1600	1250	1050
		(f)mm/rev Feed per Rev	0.02~0.04	0.04~0.07	0.08~0.13	0.12~0.19	0.14~0.24	0.16~0.28	0.18~0.32
Prehardened steel (~50HRC) SKD	Coolant 20~30~40	(n)min ⁻¹ Revolution speed (n)	6300	4800	2400	1600	1200	1000	800
		(f)mm/rev Feed per Rev	0.01~0.03	0.03~0.05	0.05~0.1	0.08~0.14	0.12~0.18	0.15~0.2	0.17~0.24
		(n)min ⁻¹ Revolution speed (n)	16000	12800	6400	4300	3200	2550	2100
	MQL (mist) 50~80~130	(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	16000	12000	6400	4300	3200	2550	2100
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Ductile iron FCD500	Coolant 50~80~130	(n)min ⁻¹ Revolution speed (n)	16000	12800	6400	4300	3200	2550	2100
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	16000	12000	6400	4300	3200	2550	2100
	MQL (mist) 50~80~130	(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	16000	12000	6400	4300	3200	2550	2100
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Casting FC250	Coolant 70~100~150	(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
	MQL (mist) 70~100~150	(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
		(n)min ⁻¹ Revolution speed (n)	22000	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.03~0.06	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4

[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 70% of the lower speed.

※ You can use borers at a revolution speed lower than the above values.

DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step มีรูนํ้ามัน

Carbide Oil Hole Non Step Borer 3D 03WHNSB-TH



02 ~ 03 : 0 ~ -0.014
03.05 ~ 06 : 0 ~ -0.018
06.05 ~ 010 : 0 ~ -0.022
010.1 ~ 013 : 0 ~ -0.027



0 ~ -0.01

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	l Flute Length	L Overall Length	Ds Shank Dia.
03WHNSB0200-TH	●	2.0	16	69	3.0
03WHNSB0203-TH	●	2.03	16	69	3.0
03WHNSB0210-TH	●	2.10	17	69	3.0
03WHNSB0213-TH	●	2.13	17	69	3.0
03WHNSB0220-TH	●	2.2	17	69	3.0
03WHNSB0223-TH	●	2.23	17	69	3.0
03WHNSB0230-TH	●	2.3	19	69	3.0
03WHNSB0233-TH	●	2.33	19	69	3.0
03WHNSB0240-TH	●	2.4	19	69	3.0
03WHNSB0243-TH	●	2.43	19	69	3.0
03WHNSB0250-TH	●	2.5	19	69	3.0
03WHNSB0253-TH	●	2.53	19	69	3.0
03WHNSB0260-TH	●	2.6	19	69	3.0
03WHNSB0263-TH	●	2.63	19	69	3.0
03WHNSB0270-TH	●	2.7	19	69	3.0
03WHNSB0273-TH	●	2.73	19	69	3.0
03WHNSB0280-TH	●	2.8	19	69	3.0
03WHNSB0283-TH	●	2.83	19	69	3.0
03WHNSB0290-TH	●	2.9	19	69	3.0
03WHNSB0293-TH	●	2.93	19	69	3.0
03WHNSB0300-TH	●	3.0	19	69	3.0
03WHNSB0305-TH	●	3.05	23	73	4.0
03WHNSB0310-TH	●	3.1	23	73	4.0
03WHNSB0320-TH	●	3.2	23	73	4.0
03WHNSB0330-TH	●	3.3	23	73	4.0
03WHNSB0340-TH	●	3.4	23	73	4.0
03WHNSB0350-TH	●	3.5	23	73	4.0
03WHNSB0360-TH	●	3.6	23	73	4.0
03WHNSB0370-TH	●	3.7	23	73	4.0
03WHNSB0380-TH	●	3.8	23	73	4.0
03WHNSB0390-TH	●	3.9	23	73	4.0
03WHNSB0400-TH	●	4.0	23	73	4.0
03WHNSB0405-TH	●	4.05	29	82	5.0
03WHNSB0410-TH	●	4.1	29	82	5.0
03WHNSB0420-TH	●	4.2	29	82	5.0
03WHNSB0430-TH	●	4.3	29	82	5.0
03WHNSB0440-TH	●	4.4	29	82	5.0
03WHNSB0450-TH	●	4.5	29	82	5.0
03WHNSB0460-TH	●	4.6	29	82	5.0
03WHNSB0470-TH	●	4.7	29	82	5.0
03WHNSB0480-TH	●	4.8	29	82	5.0
03WHNSB0490-TH	●	4.9	29	82	5.0
03WHNSB0500-TH	●	5.0	29	82	5.0
03WHNSB0505-TH	●	5.05	29	82	6.0
03WHNSB0510-TH	●	5.1	29	82	6.0
03WHNSB0520-TH	●	5.2	29	82	6.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	l Flute Length	L Overall Length	Ds Shank Dia.
03WHNSB0530-TH	●	5.3	29	82	6.0
03WHNSB0540-TH	●	5.4	29	82	6.0
03WHNSB0550-TH	●	5.5	29	82	6.0
03WHNSB0555-TH	●	5.55	29	82	6.0
03WHNSB0560-TH	●	5.6	29	82	6.0
03WHNSB0570-TH	●	5.7	29	82	6.0
03WHNSB0580-TH	●	5.8	29	82	6.0
03WHNSB0590-TH	●	5.9	29	82	6.0
03WHNSB0600-TH	●	6.0	29	82	6.0
03WHNSB0605-TH	●	6.05	34	89	7.0
03WHNSB0610-TH	●	6.1	34	89	7.0
03WHNSB0620-TH	●	6.2	34	89	7.0
03WHNSB0630-TH	●	6.3	34	89	7.0
03WHNSB0640-TH	●	6.4	34	89	7.0
03WHNSB0650-TH	●	6.5	34	89	7.0
03WHNSB0655-TH	●	6.55	34	89	7.0
03WHNSB0660-TH	●	6.6	34	89	7.0
03WHNSB0670-TH	●	6.7	34	89	7.0
03WHNSB0680-TH	●	6.8	34	89	7.0
03WHNSB0690-TH	●	6.9	34	89	7.0
03WHNSB0700-TH	●	7.0	34	89	7.0
03WHNSB0705-TH	●	7.05	39	95	8.0
03WHNSB0710-TH	●	7.1	39	95	8.0
03WHNSB0720-TH	●	7.2	39	95	8.0
03WHNSB0730-TH	●	7.3	39	95	8.0
03WHNSB0740-TH	●	7.4	39	95	8.0
03WHNSB0750-TH	●	7.5	39	95	8.0
03WHNSB0760-TH	●	7.6	39	95	8.0
03WHNSB0770-TH	●	7.7	39	95	8.0
03WHNSB0780-TH	●	7.8	39	95	8.0
03WHNSB0790-TH	●	7.9	39	95	8.0
03WHNSB0800-TH	●	8.0	39	95	8.0
03WHNSB0805-TH	●	8.05	44	101	9.0
03WHNSB0810-TH	●	8.1	44	101	9.0
03WHNSB0820-TH	●	8.2	44	101	9.0
03WHNSB0830-TH	●	8.3	44	101	9.0
03WHNSB0840-TH	●	8.4	44	101	9.0
03WHNSB0850-TH	●	8.5	44	101	9.0
03WHNSB0860-TH	●	8.6	44	101	9.0
03WHNSB0870-TH	●	8.7	44	101	9.0
03WHNSB0880-TH	●	8.8	44	101	9.0
03WHNSB0890-TH	●	8.9	44	101	9.0
03WHNSB0900-TH	●	9.0	44	101	9.0
03WHNSB0910-TH	□	9.1	49	107	10.0
03WHNSB0920-TH	□	9.2	49	107	10.0
03WHNSB0930-TH	□	9.3	49	107	10.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	l Flute Length	L Overall Length	Ds Shank Dia.
03WHNSB0940-TH	□	9.4	49	107	10.0
03WHNSB0950-TH	●	9.5	49	107	10.0
03WHNSB0960-TH	□	9.6	49	107	10.0
03WHNSB0970-TH	□	9.7	49	107	10.0
03WHNSB0980-TH	●	9.8	49	107	10.0
03WHNSB0990-TH	□	9.9	49	107	10.0
03WHNSB1000-TH	●	10.0	49	107	10.0
03WHNSB1010-TH	□	10.1	54	117	11.0
03WHNSB1020-TH	●	10.2	54	117	11.0
03WHNSB1030-TH	●	10.3	54	117	11.0
03WHNSB1040-TH	□	10.4	54	117	11.0
03WHNSB1050-TH	●	10.5	54	117	11.0
03WHNSB1060-TH	□	10.6	54	117	11.0
03WHNSB1070-TH	□	10.7	54	117	11.0
03WHNSB1080-TH	●	10.8	54	117	11.0
03WHNSB1090-TH	□	10.9	54	117	11.0
03WHNSB1100-TH	●	11.0	54	117	11.0
03WHNSB1110-TH	□	11.1	59	123	12.0
03WHNSB1120-TH	□	11.2	59	123	12.0
03WHNSB1130-TH	□	11.3	59	123	12.0
03WHNSB1140-TH	□	11.4	59	123	12.0
03WHNSB1150-TH	●	11.5	59	123	12.0
03WHNSB1160-TH	□	11.6	59	123	12.0
03WHNSB1170-TH	□	11.7	59	123	12.0
03WHNSB1180-TH	●	11.8	59	123	12.0
03WHNSB1190-TH	□	11.9	59	123	12.0
03WHNSB1200-TH	●	12.0	59	123	12.0
03WHNSB1210-TH	□	12.1	64	129	13.0
03WHNSB1220-TH	□	12.2	64	129	13.0
03WHNSB1230-TH	□	12.3	64	129	13.0
03WHNSB1240-TH	□	12.4	64	129	13.0
03WHNSB1250-TH	●	12.5	64	129	13.0
03WHNSB1260-TH	□	12.6	64	129	13.0
03WHNSB1270-TH	□	12.7	64	129	13.0
03WHNSB1280-TH	□	12.8	64	129	13.0
03WHNSB1290-TH	□	12.9	64	129	13.0
03WHNSB1300-TH	●	13.0	64	129	13.0

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



Recommended cutting conditions

03WHNSB-TH

05WHNSB-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 50~120~180	(n)min ⁻¹ Revolution speed (n)	16000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~120~180	(n)min ⁻¹ Revolution speed (n)	13000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Carbon steel (~200HB) S○○C	Internal Coolant 50~120~180	(n)min ⁻¹ Revolution speed (n)	16000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~120~180	(n)min ⁻¹ Revolution speed (n)	13000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Alloy steel (~30HRC) SCM	Internal Coolant 50~120~180	(n)min ⁻¹ Revolution speed (n)	16000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~120~180	(n)min ⁻¹ Revolution speed (n)	13000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~.24	0.18~0.3	0.2~0.35	0.22~0.4
Stainless steel SUS300, SUS400	Internal Coolant 50~100~150	(n)min ⁻¹ Revolution speed (n)	11000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.03~0.06	0.06~0.1	0.12~0.19	0.14~0.24	0.16~0.28	0.17~0.31
Titanium alloy Ti-6AL-4V	Internal Coolant 50~80~100	(n)min ⁻¹ Revolution speed (n)	9500	6400	4200	3200	2550	2100
		(f)mm/rev Feed per Rev	0.02~0.04	0.06~0.08	0.09~0.12	0.12~0.16	0.13~0.2	0.14~0.24
Prehardened steel (~40HRC)	Internal Coolant 40~60~100	(n)min ⁻¹ Revolution speed (n)	9500	4800	3200	2400	1900	1600
		(f)mm/rev Feed per Rev	0.04~0.06	0.08~0.13	0.12~0.19	0.14~0.24	0.16~0.28	0.18~0.32
	MQL (mist) 40~60~100	(n)min ⁻¹ Revolution speed (n)	8000	4800	3200	2400	1900	1600
		(f)mm/rev Feed per Rev	0.04~0.06	0.08~0.13	0.12~0.19	0.14~0.24	0.16~0.28	0.18~0.32
Prehardened steel (~50HRC) SKD	Internal Coolant 30~40~50	(n)min ⁻¹ Revolution speed (n)	6500	3200	2100	1600	1300	1050
		(f)mm/rev Feed per Rev	0.03~0.05	0.05~0.1	0.08~0.14	0.12~0.18	0.15~0.2	0.17~0.24
	MQL (mist) 20~30~40	(n)min ⁻¹ Revolution speed (n)	4500	2400	1600	1200	1000	800
		(f)mm/rev Feed per Rev	0.03~0.05	0.05~0.1	0.08~0.14	0.12~0.18	0.05~0.2	0.17~0.24
Ductile iron FCD500	Internal Coolant 50~120~150	(n)min ⁻¹ Revolution speed (n)	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~120~150	(n)min ⁻¹ Revolution speed (n)	13000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Casting FC250	Internal Coolant 50~120~180	(n)min ⁻¹ Revolution speed (n)	16000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~120~180	(n)min ⁻¹ Revolution speed (n)	13000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
INCINEL718 Heatproof steel	Internal Coolant 20~30~40	(n)min ⁻¹ Revolution speed (n)	4000	2400	1600	1200	950	800
		(f)mm/rev Feed per Rev	0.02~0.03	0.06~0.08	0.09~0.12	0.12~0.16	0.13~0.2	0.14~0.24

[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.

DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step สำหรับเหล็กหล่อ

Carbide Oil Hole Non Step Borer for Cast Iron (3D) 03FWHNSB-TH



Plane, S-X thinning



h8	Ø3	: 0 ~ -0.014
	Ø3.1 ~ Ø6	: 0 ~ -0.018
	Ø6.1 ~ Ø10	: 0 ~ -0.022
	Ø10.1 ~ Ø13	: 0 ~ -0.027

Stock Dimension Tolerance	0 ~ -0.01
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(mm)

Order Code	Stock	Size (mm)				
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.	
03FWHNSB0300-TH	☐	3.0	19	69	3.0	
03FWHNSB0310-TH	☐	3.1	23	73	4.0	
03FWHNSB0320-TH	☐	3.2	23	73	4.0	
03FWHNSB0330-TH	☐	3.3	23	73	4.0	
03FWHNSB0340-TH	☐	3.4	23	73	4.0	
03FWHNSB0350-TH	☐	3.5	23	73	4.0	
03FWHNSB0360-TH	☐	3.6	23	73	4.0	
03FWHNSB0370-TH	☐	3.7	23	73	4.0	
03FWHNSB0380-TH	☐	3.8	23	73	4.0	
03FWHNSB0390-TH	☐	3.9	23	73	4.0	
03FWHNSB0400-TH	☐	4.0	23	73	4.0	
03FWHNSB0410-TH	☐	4.1	29	82	5.0	
03FWHNSB0420-TH	☐	4.2	29	82	5.0	
03FWHNSB0430-TH	☐	4.3	29	82	5.0	
03FWHNSB0440-TH	☐	4.4	29	82	5.0	
03FWHNSB0450-TH	☐	4.5	29	82	5.0	
03FWHNSB0460-TH	☐	4.6	29	82	5.0	
03FWHNSB0470-TH	☐	4.7	29	82	5.0	
03FWHNSB0480-TH	☐	4.8	29	82	5.0	
03FWHNSB0490-TH	☐	4.9	29	82	5.0	
03FWHNSB0500-TH	☒	5.0	29	82	5.0	
03FWHNSB0510-TH	☒	5.1	29	82	6.0	
03FWHNSB0520-TH	☐	5.2	29	82	6.0	
03FWHNSB0530-TH	☐	5.3	29	82	6.0	
03FWHNSB0540-TH	☐	5.4	29	82	6.0	
03FWHNSB0550-TH	☒	5.5	29	82	6.0	
03FWHNSB0560-TH	☐	5.6	29	82	6.0	
03FWHNSB0570-TH	☐	5.7	29	82	6.0	
03FWHNSB0580-TH	☒	5.8	29	82	6.0	
03FWHNSB0590-TH	☐	5.9	29	82	6.0	
03FWHNSB0600-TH	☒	6.0	29	82	6.0	
03FWHNSB0610-TH	☐	6.1	34	89	7.0	
03FWHNSB0620-TH	☐	6.2	34	89	7.0	
03FWHNSB0630-TH	☐	6.3	34	89	7.0	
03FWHNSB0640-TH	☐	6.4	34	89	7.0	
03FWHNSB0650-TH	☒	6.5	34	89	7.0	
03FWHNSB0660-TH	☐	6.6	34	89	7.0	
03FWHNSB0670-TH	☐	6.7	34	89	7.0	
03FWHNSB0680-TH	☒	6.8	34	89	7.0	
03FWHNSB0690-TH	☒	6.9	34	89	7.0	
03FWHNSB0700-TH	☒	7.0	34	89	7.0	
03FWHNSB0710-TH	☐	7.1	39	95	8.0	
03FWHNSB0720-TH	☐	7.2	39	95	8.0	
03FWHNSB0730-TH	☐	7.3	39	95	8.0	
03FWHNSB0740-TH	☐	7.4	39	95	8.0	
03FWHNSB0750-TH	☒	7.5	39	95	8.0	

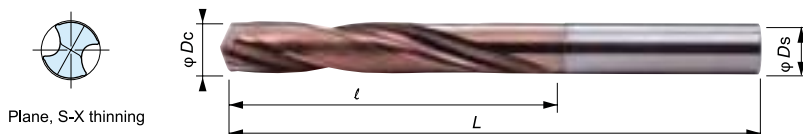
Order Code	Stock	Size (mm)				
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.	
03FWHNSB0760-TH	☐	7.6	39	95	8.0	
03FWHNSB0770-TH	☐	7.7	39	95	8.0	
03FWHNSB0780-TH	☒	7.8	39	95	8.0	
03FWHNSB0790-TH	☐	7.9	39	95	8.0	
03FWHNSB0800-TH	☒	8.0	39	95	8.0	
03FWHNSB0810-TH	☐	8.1	44	101	9.0	
03FWHNSB0820-TH	☒	8.2	44	101	9.0	
03FWHNSB0830-TH	☒	8.3	44	101	9.0	
03FWHNSB0840-TH	☐	8.4	44	101	9.0	
03FWHNSB0850-TH	☒	8.5	44	101	9.0	
03FWHNSB0860-TH	☒	8.6	44	101	9.0	
03FWHNSB0870-TH	☐	8.7	44	101	9.0	
03FWHNSB0880-TH	☒	8.8	44	101	9.0	
03FWHNSB0890-TH	☐	8.9	44	101	9.0	
03FWHNSB0900-TH	☒	9.0	44	101	9.0	
03FWHNSB0910-TH	☐	9.1	49	107	10.0	
03FWHNSB0920-TH	☐	9.2	49	107	10.0	
03FWHNSB0930-TH	☐	9.3	49	107	10.0	
03FWHNSB0940-TH	☐	9.4	49	107	10.0	
03FWHNSB0950-TH	☒	9.5	49	107	10.0	
03FWHNSB0960-TH	☐	9.6	49	107	10.0	
03FWHNSB0970-TH	☐	9.7	49	107	10.0	
03FWHNSB0980-TH	☒	9.8	49	107	10.0	
03FWHNSB0990-TH	☐	9.9	49	107	10.0	
03FWHNSB1000-TH	☒	10.0	49	107	10.0	
03FWHNSB1010-TH	☐	10.1	54	117	11.0	
03FWHNSB1020-TH	☒	10.2	54	117	11.0	
03FWHNSB1030-TH	☒	10.3	54	117	11.0	
03FWHNSB1040-TH	☐	10.4	54	117	11.0	
03FWHNSB1050-TH	☒	10.5	54	117	11.0	
03FWHNSB1060-TH	☐	10.6	54	117	11.0	
03FWHNSB1070-TH	☐	10.7	54	117	11.0	
03FWHNSB1080-TH	☒	10.8	54	117	11.0	
03FWHNSB1090-TH	☐	10.9	54	117	11.0	
03FWHNSB1100-TH	☒	11.0	54	117	11.0	
03FWHNSB1110-TH	☐	11.1	59	123	12.0	
03FWHNSB1120-TH	☐	11.2	59	123	12.0	
03FWHNSB1130-TH	☐	11.3	59	123	12.0	
03FWHNSB1140-TH	☐	11.4	59	123	12.0	
03FWHNSB1150-TH	☒	11.5	59	123	12.0	
03FWHNSB1160-TH	☐	11.6	59	123	12.0	
03FWHNSB1170-TH	☐	11.7	59	123	12.0	
03FWHNSB1180-TH	☒	11.8	59	123	12.0	
03FWHNSB1190-TH	☐	11.9	59	123	12.0	
03FWHNSB1200-TH	☒	12.0	59	123	12.0	
03FWHNSB1210-TH	☐	12.1	64	129	13.0	

Order Code	Stock	Size (mm)				
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.	
03FWHNSB1220-TH	☒	12.2	64	129	13.0	
03FWHNSB1230-TH	☐	12.3	64	129	13.0	
03FWHNSB1240-TH	☐	12.4	64	129	13.0	
03FWHNSB1250-TH	☒	12.5	64	129	13.0	
03FWHNSB1260-TH	☐	12.6	64	129	13.0	
03FWHNSB1270-TH	☐	12.7	64	129	13.0	
03FWHNSB1280-TH	☐	12.8	64	129	13.0	
03FWHNSB1290-TH	☐	12.9	64	129	13.0	
03FWHNSB1300-TH	☒	13.0	64	129	13.0	

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



ดอกสว่าน สำหรับเหล็กชุบแข็ง Epoch Hard Drills EHSE...-TH



TH-Coated



Ø2 ~ Ø3 : 0 ~ -0.014
 Ø3.1 ~ Ø6 : 0 ~ -0.018
 Ø6.5 ~ Ø10 : 0 ~ -0.022
 Ø10.3 ~ Ø16 : 0 ~ -0.027



0 ~ -0.001

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill dia.	ℓ Flute length	L Overall length	Ds Shank dia.
EHSE2.0-TH	●	2.0	15	50	3
EHSE2.1-TH	●	2.1	15	50	3
EHSE2.2-TH	●	2.2	16	50	3
EHSE2.3-TH	●	2.3	16	50	3
EHSE2.4-TH	●	2.4	17	50	3
EHSE2.5-TH	●	2.5	17	55	3
EHSE2.6-TH	●	2.6	17	55	3
EHSE2.7-TH	●	2.7	19	55	3
EHSE2.8-TH	●	2.8	19	55	3
EHSE2.9-TH	●	2.9	19	55	3
EHSE3.0-TH	●	3.0	21	60	3
EHSE3.1-TH	●	3.1	24	60	4
EHSE3.2-TH	●	3.2	24	60	4
EHSE3.3-TH	●	3.3	24	60	4
EHSE3.4-TH	●	3.4	24	60	4
EHSE3.5-TH	●	3.5	24	60	4
EHSE3.6-TH	●	3.6	27	60	4
EHSE3.7-TH	●	3.7	27	60	4
EHSE3.8-TH	●	3.8	27	60	4
EHSE3.9-TH	●	3.9	27	60	4
EHSE4.0-TH	●	4.0	27	60	4
EHSE4.1-TH	●	4.1	29	63	5
EHSE4.2-TH	●	4.2	29	63	5
EHSE4.3-TH	●	4.3	29	63	5
EHSE4.4-TH	●	4.4	29	63	5
EHSE4.5-TH	●	4.5	29	63	5
EHSE4.6-TH	●	4.6	32	68	5
EHSE4.7-TH	●	4.7	32	68	5
EHSE4.8-TH	●	4.8	32	68	5
EHSE4.9-TH	●	4.9	32	68	5
EHSE5.0-TH	●	5.0	32	68	5
EHSE5.1-TH	●	5.1	34	72	6
EHSE5.2-TH	●	5.2	34	72	6
EHSE5.3-TH	●	5.3	34	72	6
EHSE5.4-TH	●	5.4	34	72	6
EHSE5.5-TH	●	5.5	34	72	6
EHSE5.6-TH	●	5.6	36	74	6
EHSE5.7-TH	●	5.7	36	74	6
EHSE5.8-TH	●	5.8	36	74	6
EHSE6.0-TH	●	6.0	41	81	6

Order Code	Stock	Size (mm)			
		Dc Drill dia.	ℓ Flute length	L Overall length	Ds Shank dia.
EHSE6.5-TH	●	6.5	41	81	7
EHSE6.8-TH	●	6.8	43	83	7
EHSE6.9-TH	●	6.9	43	83	7
EHSE7.0-TH	●	7.0	43	83	7
EHSE7.5-TH	●	7.5	45	87	8
EHSE7.8-TH	●	7.8	48	90	8
EHSE8.0-TH	●	8.0	48	90	8
EHSE8.5-TH	●	8.5	53	96	9
EHSE8.6-TH	●	8.6	55	98	9
EHSE8.7-TH	●	8.7	55	98	9
EHSE8.8-TH	●	8.8	55	98	9
EHSE9.0-TH	●	9.0	55	98	9
EHSE9.5-TH	●	9.5	58	102	10
EHSE9.8-TH	●	9.8	60	105	10
EHSE10.0-TH	●	10.0	60	105	10
EHSE10.3-TH	●	10.3	66	112	11
EHSE10.4-TH	●	10.4	66	112	11
EHSE10.5-TH	●	10.5	66	112	11
EHSE10.8-TH	●	10.8	68	114	11
EHSE11.0-TH	●	11.0	68	114	11
EHSE11.5-TH	●	11.5	71	118	12
EHSE11.8-TH	●	11.8	73	121	12
EHSE12.0-TH	●	12.0	73	121	12
EHSE12.1-TH	●	12.1	76	135	13
EHSE12.2-TH	●	12.2	76	135	13
EHSE12.5-TH	●	12.5	76	135	13
EHSE12.6-TH	●	12.6	78	137	13
EHSE13.0-TH	●	13.0	78	137	13
EHSE13.5-TH		13.5	84	144	14
EHSE14.0-TH		14.0	86	147	14
EHSE14.1-TH	●	14.1	89	151	15
EHSE14.2-TH		14.2	89	151	15
EHSE14.5-TH		14.5	89	151	15
EHSE14.6-TH	●	14.6	91	153	15
EHSE15.0-TH		15.0	91	153	15
EHSE15.5-TH		15.5	94	157	16
EHSE15.6-TH	●	15.6	96	160	16
EHSE16.0-TH		16.0	96	160	16
EHSE16.1-TH	●	16.1	102	167	17
EHSE5.9-TH	●	5.9	36	74	6

● : Stocked Items of new products. No Mark : Manufactured upon request only.

Recommended cutting conditions

EHSE-TH

Recommended Cutting Conditions for Wet (Dilution of less than 20times)

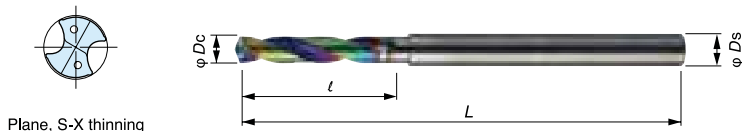
Work material (hardness)	Cutting speed m/min	Cutting condition	Tool Dia. (mm)							
			Ø2	Ø4	Ø6	Ø8	Ø10	Ø12	Ø14	Ø16
Hot working Tool Steel SKD61 SKT (50~55HRC)	15~20~30	Revolution Speed (min ⁻¹)	3,180	1,600	1,050	800	640	530	450	400
		Feed Rate (mm/min)	64	64	64	64	64	64	64	64
		Feed per Rev (mm/rev)	0.02	0.04	0.06	0.08	0.10	0.12	0.14	0.16
Cold working Tool Steel SKD11 SKT (55~60HRC)	10~15~20	Revolution Speed (min ⁻¹)	2,390	1,200	800	600	480	400	340	300
		Feed Rate (mm/min)	48	48	48	48	43	40	37	36
		Feed per Rev (mm/rev)	0.02	0.04	0.06	0.08	0.09	0.10	0.11	0.12
High Speed Steel SKH (60~65HRC)	8~10~12	Revolution Speed (min ⁻¹)	1,590	800	530	400	320	270	230	200
		Feed Rate (mm/min)	20	20	20	20	20	20	20	20
		Feed per Rev (mm/rev)	0.012	0.025	0.04	0.05	0.06	0.07	0.08	0.1

Selection of cutting condition

- Use the appropriate coolant for the work material and machining shape.
- There 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 conditions apply to hole-depth of 3 time the diameter or less.
- Cutting performance may vary according to the material being cut and its hardness.
- Mount the drill on a collet without any flaws. Adjust the drill run out to 0.02 mm or less.
- Use a machine with high rigidity.
- Supply a sufficient amount of cutting fluid (Water-soluble, dilution of 20 times or less) to machining points.
- Sufficient cutting fluid is not supplied in the case of a turning machine or other machine used in a longitudinal direction. Use values of 70% or less of those in the above chart.
- The drill can start drilling with high performance and accuracy. It is not recommended to conduct positioning using a center drill or a starting drill because it may cause chipping. When conducting positioning, set the feeding length to one third of the value above.
- Epoch Wonder Drill is recommended for machining works of a hardness less than 45 HRC.
- When using oil-based cutting agent, use conditions below the lower limit of the cutting speed range. In addition, be careful of smoke or fire due to cutting chips or heating of tool.



ดอกสว่านคาร์ไบด์ Non Step สำหรับอลูมิเนียม Carbide Oil Hole Non Step Borer for Aluminium (3D) 03WHNSB-SD



03 : 0 ~ -0.014
03.03 ~ 06 : 0 ~ -0.018
06.03 ~ 010 : 0 ~ -0.022
010.3 : 0 ~ -0.027



0 ~ -0.01

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
03WHNSB0300-SD	●	3.0	19	69	3.0
03WHNSB0303-SD	●	3.03	23	73	4.0
03WHNSB0310-SD	□	3.1	23	73	4.0
03WHNSB0320-SD	□	3.2	23	73	4.0
03WHNSB0330-SD	□	3.3	23	73	4.0
03WHNSB0340-SD	□	3.4	23	73	4.0
03WHNSB0350-SD	□	3.5	23	73	4.0
03WHNSB0353-SD	□	3.53	23	73	4.0
03WHNSB0360-SD	□	3.6	23	73	4.0
03WHNSB0370-SD	□	3.7	23	73	4.0
03WHNSB0380-SD	□	3.8	23	73	4.0
03WHNSB0390-SD	□	3.9	23	73	4.0
03WHNSB0400-SD	●	4.0	23	73	4.0
03WHNSB0403-SD	●	4.03	29	82	5.0
03WHNSB0410-SD	□	4.1	29	82	5.0
03WHNSB0420-SD	□	4.2	29	82	5.0
03WHNSB0430-SD	□	4.3	29	82	5.0
03WHNSB0440-SD	□	4.4	29	82	5.0
03WHNSB0450-SD	□	4.5	29	82	5.0
03WHNSB0453-SD	□	4.53	29	82	5.0
03WHNSB0460-SD	□	4.6	29	82	5.0
03WHNSB0470-SD	□	4.7	29	82	5.0
03WHNSB0480-SD	□	4.8	29	82	5.0
03WHNSB0490-SD	□	4.9	29	82	5.0
03WHNSB0500-SD	●	5.0	29	82	5.0
03WHNSB0503-SD	●	5.03	29	82	6.0
03WHNSB0510-SD	●	5.1	29	82	6.0
03WHNSB0520-SD	□	5.2	29	82	6.0
03WHNSB0530-SD	□	5.3	29	82	6.0
03WHNSB0540-SD	□	5.4	29	82	6.0
03WHNSB0550-SD	●	5.5	29	82	6.0
03WHNSB0553-SD	●	5.53	29	82	6.0
03WHNSB0560-SD	□	5.6	29	82	6.0
03WHNSB0570-SD	□	5.7	29	82	6.0
03WHNSB0580-SD	□	5.8	29	82	6.0
03WHNSB0590-SD	□	5.9	29	82	6.0
03WHNSB0600-SD	●	6.0	29	82	6.0
03WHNSB0603-SD	●	6.03	34	89	7.0
03WHNSB0610-SD	□	6.1	34	89	7.0
03WHNSB0620-SD	□	6.2	34	89	7.0
03WHNSB0630-SD	□	6.3	34	89	7.0
03WHNSB0640-SD	□	6.4	34	89	7.0
03WHNSB0650-SD	●	6.5	34	89	7.0
03WHNSB0653-SD	●	6.53	34	89	7.0
03WHNSB0660-SD	□	6.6	34	89	7.0
03WHNSB0670-SD	□	6.7	34	89	7.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
03WHNSB0680-SD	●	6.8	34	89	7.0
03WHNSB0690-SD	□	6.9	34	89	7.0
03WHNSB0700-SD	●	7.0	34	89	7.0
03WHNSB0703-SD	●	7.03	39	95	8.0
03WHNSB0710-SD	□	7.1	39	95	8.0
03WHNSB0720-SD	□	7.2	39	95	8.0
03WHNSB0730-SD	●	7.3	39	95	8.0
03WHNSB0740-SD	□	7.4	39	95	8.0
03WHNSB0750-SD	●	7.5	39	95	8.0
03WHNSB0753-SD	●	7.53	39	95	8.0
03WHNSB0760-SD	□	7.6	39	95	8.0
03WHNSB0770-SD	□	7.7	39	95	8.0
03WHNSB0780-SD	□	7.8	39	95	8.0
03WHNSB0790-SD	□	7.9	39	95	8.0
03WHNSB0800-SD	●	8.0	39	95	8.0
03WHNSB0803-SD	●	8.03	44	101	9.0
03WHNSB0810-SD	□	8.1	44	101	9.0
03WHNSB0820-SD	□	8.2	44	101	9.0
03WHNSB0830-SD	□	8.3	44	101	9.0
03WHNSB0840-SD	□	8.4	44	101	9.0
03WHNSB0850-SD	●	8.5	44	101	9.0
03WHNSB0853-SD	●	8.53	44	101	9.0
03WHNSB0860-SD	●	8.6	44	101	9.0
03WHNSB0870-SD	□	8.7	44	101	9.0
03WHNSB0880-SD	●	8.8	44	101	9.0
03WHNSB0890-SD	□	8.9	44	101	9.0
03WHNSB0900-SD	●	9.0	44	101	9.0
03WHNSB0903-SD	●	9.03	49	107	10.0
03WHNSB0910-SD	□	9.1	49	107	10.0
03WHNSB0920-SD	□	9.2	49	107	10.0
03WHNSB0930-SD	□	9.3	49	107	10.0
03WHNSB0940-SD	□	9.4	49	107	10.0
03WHNSB0950-SD	●	9.5	49	107	10.0
03WHNSB0953-SD	●	9.53	49	107	10.0
03WHNSB0960-SD	□	9.6	49	107	10.0
03WHNSB0970-SD	□	9.7	49	107	10.0
03WHNSB0980-SD	□	9.8	49	107	10.0
03WHNSB0990-SD	□	9.9	49	107	10.0
03WHNSB1000-SD	●	10.0	49	107	10.0
03WHNSB1003-SD	●	10.03	54	107	11.0

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

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ห้ามนำไปเผยแพร่ก่อนได้รับอนุญาตจากทางบริษัท

DRILLS

ดอกสว่าน

maykestag PERFORMANCE IN PRECISION

ดอกสว่านคาร์ไบด์

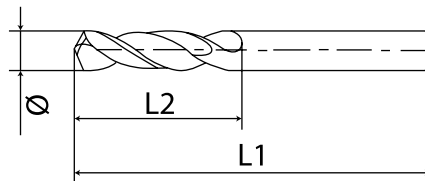
Solid carbide stub drills, Short Series (3D) - DIN 6539



Model 6146



Model 6147



Range of application:

Especially suitable for drilling heat resistant steels, Cr-Ni steels, high carbon steel castings, grey cast iron, cast steels, manganese steels, bronze, aluminium with high percentage silicon and other difficult-to-machine materials (coated design).

Order No. 6146 Art. - Nr.	Order No. 6147 Art. - Nr.	Ø _{h7} mm	L1 mm	L2 mm	Z
6146000501	6147000501	0.50	26	6	2
6146000601	6147000601	0.60	26	6	2
6146000701	6147000701	0.70	26	6	2
6146000801	6147000801	0.80	26	6	2
6146000901	6147000901	0.90	26	6	2
6146001001	6147001001	1.00	26	6	2
6146001101	6147001101	1.10	28	7	2
6146001201	6147001201	1.20	30	8	2
6146001301	6147001301	1.30	30	8	2
6146001401	6147001401	1.40	32	9	2
6146001501	6147001501	1.50	32	9	2
6146001601	6147001601	1.60	34	10	2
6146001701	6147001701	1.70	34	10	2
6146001801	6147001801	1.80	36	11	2
6146001901	6147001901	1.90	36	11	2
6146002001	6147002001	2.00	38	12	2
6146002101	6147002101	2.10	38	12	2
6146002201	6147002201	2.20	40	13	2
6146002301	6147002301	2.30	40	13	2
6146002401	6147002401	2.40	43	14	2
6146002501	6147002501	2.50	43	14	2
6146002601	6147002601	2.60	43	14	2
6146002701	6147002701	2.70	46	16	2
6146002801	6147002801	2.80	46	16	2
6146002901	6147002901	2.90	46	16	2
6146003001	6147003001	3.00	46	16	2
6146003101	6147003101	3.10	49	18	2
6146003201	6147003201	3.20	49	18	2
6146003301	6147003301	3.30	49	18	2
6146003401	6147003401	3.40	52	20	2
6146003501	6147003501	3.50	52	20	2
6146003601	6147003601	3.60	52	20	2
6146003701	6147003701	3.70	52	20	2
6146003801	6147003801	3.80	55	22	2
6146003901	6147003901	3.90	55	22	2
6146004001	6147004001	4.00	55	22	2
6146004101	6147004101	4.10	55	22	2
6146004201	6147004201	4.20	55	22	2
6146004301	6147004301	4.30	58	24	2
6146004401	6147004401	4.40	58	24	2
6146004501	6147004501	4.50	58	24	2
6146004601	6147004601	4.60	58	24	2
6146004701	6147004701	4.70	58	24	2
6146004801	6147004801	4.80	62	26	2
6146004901	6147004901	4.90	62	26	2
6146005001	6147005001	5.00	62	26	2
6146005101	6147005101	5.10	62	26	2
6146005201	6147005201	5.20	62	26	2

1) ≤ Ø 2,90 mm 4-faced point shape

≥ Ø 3,00 mm 6-faced point shape

Order No. 6146 Art. - Nr.	Order No. 6147 Art. - Nr.	Ø _{h7} mm	L1 mm	L2 mm	Z
6146005301	6147005301	5.30	62	26	2
6146005401	6147005401	5.40	66	28	2
6146005501	6147005501	5.50	66	28	2
6146005601	6147005601	5.60	66	28	2
6146005701	6147005701	5.70	66	28	2
6146005801	6147005801	5.80	66	28	2
6146005901	6147005901	5.90	66	28	2
6146006001	6147006001	6.00	66	28	2
6146006101	6147006101	6.10	70	31	2
6146006201	6147006201	6.20	70	31	2
6146006301	6147006301	6.30	70	31	2
6146006401	6147006401	6.40	70	31	2
6146006501	6147006501	6.50	70	31	2
6146006601	6147006601	6.60	70	31	2
6146006701	6147006701	6.70	70	31	2
6146006801	6147006801	6.80	74	34	2
6146006901	6147006901	6.90	74	34	2
6146007001	6147007001	7.00	74	34	2
6146007101	6147007101	7.10	74	34	2
6146007201	6147007201	7.20	74	34	2
6146007301	6147007301	7.30	74	34	2
6146007401	6147007401	7.40	74	34	2
6146007501	6147007501	7.50	74	34	2
6146007601	6147007601	7.60	79	36	2
6146007701	6147007701	7.70	79	36	2
6146007801	6147007801	7.80	79	36	2
6146007901	6147007901	7.90	79	36	2
6146008001	6147008001	8.00	79	36	2
6146008101	6147008101	8.10	79	36	2
6146008201	6147008201	8.20	79	36	2
6146008301	6147008301	8.30	79	36	2
6146008401	6147008401	8.40	79	36	2
6146008501	6147008501	8.50	79	36	2
6146008601	6147008601	8.60	84	40	2
6146008701	6147008701	8.70	84	40	2
6146008801	6147008801	8.80	84	40	2
6146008901	6147008901	8.90	84	40	2
6146009001	6147009001	9.00	84	40	2
6146009101	6147009101	9.10	84	40	2
6146009201	6147009201	9.20	84	40	2
6146009301	6147009301	9.30	84	40	2
6146009401	6147009401	9.40	84	40	2
6146009501	6147009501	9.50	84	40	2
6146009601	6147009601	9.60	89	43	2
6146009701	6147009701	9.70	89	43	2
6146009801	6147009801	9.80	89	43	2
6146009901	6147009901	9.90	89	43	2
6146010001	6147010001	10.00	89	43	2
6146010201	6147010201	10.20	89	43	2
6146010501	6147010501	10.50	89	43	2
6146010801	6147010801	10.80	95	47	2
6146011001	6147011001	11.00	95	47	2
6146011501	6147011501	11.50	95	47	2
6146012001	6147012001	12.00	102	51	2
6146012501	6147012501	12.50	102	51	2
6146013001	6147013001	13.00	102	51	2
6146013501	6147013501	13.50	107	54	2
6146014001	6147014001	14.00	107	54	2
6146014501		14.50	111	56	2
6146015001		15.00	111	56	2
6146015501		15.50	115	58	2
6146016001		16.00	115	58	2
6146016501		16.50	119	60	2
6146017001		17.00	119	60	2
6146017501		17.50	123	62	2
6146018001		18.00	123	62	2
6146018501		18.50	127	64	2
6146019001		19.00	127	64	2
6146019501		19.50	131	66	2
6146020001		20.00	131	66	2

1) ≤ Ø 2,90 mm 4-faced point shape

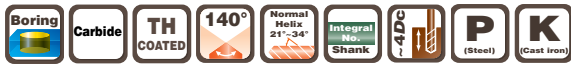
≥ Ø 3,00 mm 6-faced point shape

DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step Carbide Non Step Borer 4D 04WNSB-TH



h8	Ø1 ~ Ø3	: 0 ~ -0.014
	Ø3.1 ~ Ø6	: 0 ~ -0.018
	Ø6.1 ~ Ø10	: 0 ~ -0.022
	Ø10.1 ~ Ø13	: 0 ~ -0.027

Shank Runout Tolerance	0 ~ -0.01
-------------------------------	-----------

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
04WNSB0100-TH	●	1.0	8	50	3.0
04WNSB0110-TH	●	1.1	9	50	3.0
04WNSB0120-TH	●	1.2	9	50	3.0
04WNSB0130-TH	●	1.3	10	50	3.0
04WNSB0140-TH	●	1.4	10	50	3.0
04WNSB0150-TH	●	1.5	12	50	3.0
04WNSB0160-TH	●	1.6	12	50	3.0
04WNSB0170-TH	●	1.7	14	50	3.0
04WNSB0180-TH	●	1.8	14	50	3.0
04WNSB0190-TH	●	1.9	16	50	3.0
04WNSB0200-TH	●	2.0	16	50	3.0
04WNSB0210-TH	●	2.1	17	50	3.0
04WNSB0220-TH	●	2.2	17	50	3.0
04WNSB0230-TH	●	2.3	17	50	3.0
04WNSB0240-TH	●	2.4	17	50	3.0
04WNSB0250-TH	●	2.5	17	50	3.0
04WNSB0260-TH	●	2.6	19	50	3.0
04WNSB0270-TH	●	2.7	19	50	3.0
04WNSB0280-TH	●	2.8	19	50	3.0
04WNSB0290-TH	●	2.9	19	50	3.0
04WNSB0300-TH	●	3.0	19	50	3.0
04WNSB0310-TH	●	3.1	23	58	4.0
04WNSB0320-TH	●	3.2	23	58	4.0
04WNSB0330-TH	●	3.3	23	58	4.0
04WNSB0340-TH	●	3.4	23	58	4.0
04WNSB0350-TH	●	3.5	23	58	4.0
04WNSB0360-TH	●	3.6	26	58	4.0
04WNSB0370-TH	●	3.7	26	58	4.0
04WNSB0380-TH	●	3.8	26	58	4.0
04WNSB0390-TH	●	3.9	26	58	4.0
04WNSB0400-TH	●	4.0	26	58	4.0
04WNSB0410-TH	●	4.1	29	64	5.0
04WNSB0420-TH	●	4.2	29	64	5.0
04WNSB0430-TH	●	4.3	29	64	5.0
04WNSB0440-TH	●	4.4	29	64	5.0
04WNSB0450-TH	●	4.5	29	64	5.0
04WNSB0460-TH	●	4.6	32	64	5.0
04WNSB0470-TH	●	4.7	32	64	5.0
04WNSB0480-TH	●	4.8	32	64	5.0
04WNSB0490-TH	●	4.9	32	64	5.0
04WNSB0500-TH	●	5.0	32	64	5.0
04WNSB0510-TH	●	5.1	36	78	6.0
04WNSB0520-TH	●	5.2	36	78	6.0
04WNSB0530-TH	●	5.3	36	78	6.0
04WNSB0540-TH	●	5.4	36	78	6.0
04WNSB0550-TH	●	5.5	36	78	6.0
04WNSB0560-TH	●	5.6	39	78	6.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
04WNSB0570-TH	●	5.7	39	78	6.0
04WNSB0580-TH	●	5.8	39	78	6.0
04WNSB0590-TH	●	5.9	39	78	6.0
04WNSB0600-TH	●	6.0	39	78	6.0
04WNSB0610-TH	●	6.1	41	83	7.0
04WNSB0620-TH	●	6.2	41	83	7.0
04WNSB0630-TH	●	6.3	41	83	7.0
04WNSB0640-TH	●	6.4	41	83	7.0
04WNSB0650-TH	●	6.5	41	83	7.0
04WNSB0660-TH	●	6.6	43	83	7.0
04WNSB0670-TH	●	6.7	43	83	7.0
04WNSB0680-TH	●	6.8	43	83	7.0
04WNSB0690-TH	●	6.9	43	83	7.0
04WNSB0700-TH	●	7.0	43	83	7.0
04WNSB0710-TH	●	7.1	45	90	8.0
04WNSB0720-TH	●	7.2	45	90	8.0
04WNSB0730-TH	●	7.3	45	90	8.0
04WNSB0740-TH	●	7.4	45	90	8.0
04WNSB0750-TH	●	7.5	45	90	8.0
04WNSB0760-TH	●	7.6	48	90	8.0
04WNSB0770-TH	●	7.7	48	90	8.0
04WNSB0780-TH	●	7.8	48	90	8.0
04WNSB0790-TH	●	7.9	48	90	8.0
04WNSB0800-TH	●	8.0	48	90	8.0
04WNSB0810-TH	●	8.1	52	96	9.0
04WNSB0820-TH	●	8.2	52	96	9.0
04WNSB0830-TH	●	8.3	52	96	9.0
04WNSB0840-TH	●	8.4	52	96	9.0
04WNSB0850-TH	●	8.5	52	96	9.0
04WNSB0860-TH	●	8.6	54	96	9.0
04WNSB0870-TH	●	8.7	54	96	9.0
04WNSB0880-TH	●	8.8	54	96	9.0
04WNSB0890-TH	●	8.9	54	96	9.0
04WNSB0900-TH	●	9.0	54	96	9.0
04WNSB0910-TH	●	9.1	57	104	10.0
04WNSB0920-TH	●	9.2	57	104	10.0
04WNSB0930-TH	●	9.3	57	104	10.0
04WNSB0940-TH	●	9.4	57	104	10.0
04WNSB0950-TH	●	9.5	57	104	10.0
04WNSB0960-TH	●	9.6	60	104	10.0
04WNSB0970-TH	●	9.7	60	104	10.0
04WNSB0980-TH	●	9.8	60	104	10.0
04WNSB0990-TH	●	9.9	60	104	10.0
04WNSB1000-TH	●	10.0	60	104	10.0
04WNSB1010-TH	●	10.1	63	112	11.0
04WNSB1020-TH	●	10.2	63	112	11.0
04WNSB1030-TH	●	10.3	63	112	11.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
04WNSB1040-TH	●	10.4	63	112	11.0
04WNSB1050-TH	●	10.5	63	112	11.0
04WNSB1060-TH	●	10.6	66	112	11.0
04WNSB1070-TH	●	10.7	66	112	11.0
04WNSB1080-TH	●	10.8	66	112	11.0
04WNSB1090-TH	●	10.9	66	112	11.0
04WNSB1100-TH	●	11.0	66	112	11.0
04WNSB1110-TH	●	11.1	71	121	12.0
04WNSB1120-TH	●	11.2	71	121	12.0
04WNSB1130-TH	●	11.3	71	121	12.0
04WNSB1140-TH	●	11.4	71	121	12.0
04WNSB1150-TH	●	11.5	71	121	12.0
04WNSB1160-TH	●	11.6	73	121	12.0
04WNSB1170-TH	●	11.7	73	121	12.0
04WNSB1180-TH	●	11.8	73	121	12.0
04WNSB1190-TH	●	11.9	73	121	12.0
04WNSB1200-TH	●	12.0	73	121	12.0
04WNSB1210-TH	●	12.1	76	128	13.0
04WNSB1220-TH	●	12.2	76	128	13.0
04WNSB1230-TH	●	12.3	76	128	13.0
04WNSB1240-TH	●	12.4	76	128	13.0
04WNSB1250-TH	●	12.5	76	128	13.0
04WNSB1260-TH	●	12.6	76	128	13.0
04WNSB1270-TH	●	12.7	76	128	13.0
04WNSB1280-TH	●	12.8	76	128	13.0
04WNSB1290-TH	●	12.9	76	128	13.0
04WNSB1300-TH	●	13.0	76	128	13.0

● : Stocked Items.

Refer to page 2 for Conditions



ดอกสว่านคาร์ไบด์ Non Step มีรูน้ำมัน Carbide Oil Hole Non Step Borer 5D 05WHNSB-TH



02 ~ 03 : 0 ~ -0.014
03.1 ~ 06 : 0 ~ -0.018
06.1 ~ 10 : 0 ~ -0.022
10.1 ~ 13 : 0 ~ -0.027



0 ~ -0.01

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	Flute Length	L Overall Length	Ds Shank Dia.
05WHNSB0200-TH	●	2.0	20	66	3.0
05WHNSB0210-TH	●	2.1	24	74	3.0
05WHNSB0220-TH	●	2.2	24	74	3.0
05WHNSB0230-TH	●	2.3	24	74	3.0
05WHNSB0240-TH	●	2.4	24	74	3.0
05WHNSB0250-TH	●	2.5	24	74	3.0
05WHNSB0260-TH	●	2.6	29	79	3.0
05WHNSB0270-TH	●	2.7	29	79	3.0
05WHNSB0280-TH	●	2.8	29	79	3.0
05WHNSB0290-TH	●	2.9	29	79	3.0
05WHNSB0300-TH	●	3.0	29	79	3.0
05WHNSB0310-TH	●	3.1	37	87	4.0
05WHNSB0320-TH	●	3.2	37	87	4.0
05WHNSB0330-TH	●	3.3	37	87	4.0
05WHNSB0340-TH	●	3.4	37	87	4.0
05WHNSB0350-TH	●	3.5	37	87	4.0
05WHNSB0360-TH	●	3.6	37	87	4.0
05WHNSB0370-TH	●	3.7	37	87	4.0
05WHNSB0380-TH	●	3.8	37	87	4.0
05WHNSB0390-TH	●	3.9	37	87	4.0
05WHNSB0400-TH	●	4.0	37	87	4.0
05WHNSB0410-TH	●	4.1	47	100	5.0
05WHNSB0420-TH	●	4.2	47	100	5.0
05WHNSB0430-TH	●	4.3	47	100	5.0
05WHNSB0440-TH	●	4.4	47	100	5.0
05WHNSB0450-TH	●	4.5	47	100	5.0
05WHNSB0460-TH	●	4.6	47	100	5.0
05WHNSB0470-TH	●	4.7	47	100	5.0
05WHNSB0480-TH	●	4.8	47	100	5.0
05WHNSB0490-TH	●	4.9	47	100	5.0
05WHNSB0500-TH	●	5.0	47	100	5.0
05WHNSB0510-TH	●	5.1	47	100	6.0
05WHNSB0520-TH	●	5.2	47	100	6.0
05WHNSB0530-TH	●	5.3	47	100	6.0
05WHNSB0540-TH	●	5.4	47	100	6.0
05WHNSB0550-TH	●	5.5	47	100	6.0
05WHNSB0560-TH	●	5.6	47	100	6.0
05WHNSB0570-TH	●	5.7	47	100	6.0
05WHNSB0580-TH	●	5.8	47	100	6.0
05WHNSB0590-TH	●	5.9	47	100	6.0
05WHNSB0600-TH	●	6.0	47	100	6.0
05WHNSB0610-TH	●	6.1	55	110	7.0
05WHNSB0620-TH	●	6.2	55	110	7.0
05WHNSB0630-TH	●	6.3	55	110	7.0
05WHNSB0640-TH	●	6.4	55	110	7.0
05WHNSB0650-TH	●	6.5	55	110	7.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	Flute Length	L Overall Length	Ds Shank Dia.
05WHNSB0660-TH	●	6.6	55	110	7.0
05WHNSB0670-TH	●	6.7	55	110	7.0
05WHNSB0680-TH	●	6.8	55	110	7.0
05WHNSB0690-TH	●	6.9	55	110	7.0
05WHNSB0700-TH	●	7.0	55	110	7.0
05WHNSB0710-TH	●	7.1	63	119	7.0
05WHNSB0720-TH	●	7.2	63	119	8.0
05WHNSB0730-TH	●	7.3	63	119	8.0
05WHNSB0740-TH	●	7.4	63	119	8.0
05WHNSB0750-TH	●	7.5	63	119	8.0
05WHNSB0760-TH	●	7.6	63	119	8.0
05WHNSB0770-TH	●	7.7	63	119	8.0
05WHNSB0780-TH	●	7.8	63	119	8.0
05WHNSB0790-TH	●	7.9	63	119	8.0
05WHNSB0800-TH	●	8.0	63	119	8.0
05WHNSB0810-TH	●	8.1	71	128	9.0
05WHNSB0820-TH	●	8.2	71	128	9.0
05WHNSB0830-TH	●	8.3	71	128	9.0
05WHNSB0840-TH	●	8.4	71	128	9.0
05WHNSB0850-TH	●	8.5	71	128	9.0
05WHNSB0860-TH	●	8.6	71	128	9.0
05WHNSB0870-TH	●	8.7	71	128	9.0
05WHNSB0880-TH	●	8.8	71	128	9.0
05WHNSB0890-TH	●	8.9	71	128	9.0
05WHNSB0900-TH	●	9.0	71	128	9.0
05WHNSB0910-TH	□	9.1	79	137	10.0
05WHNSB0920-TH	□	9.2	79	137	10.0
05WHNSB0930-TH	□	9.3	79	137	10.0
05WHNSB0940-TH	□	9.4	79	137	10.0
05WHNSB0950-TH	●	9.5	79	137	10.0
05WHNSB0960-TH	□	9.6	79	137	10.0
05WHNSB0970-TH	□	9.7	79	137	10.0
05WHNSB0980-TH	●	9.8	79	137	10.0
05WHNSB0990-TH	□	9.9	79	137	10.0
05WHNSB1000-TH	●	10.0	79	137	10.0
05WHNSB1010-TH	□	10.1	87	150	11.0
05WHNSB1020-TH	●	10.2	87	150	11.0
05WHNSB1030-TH	●	10.3	87	150	11.0
05WHNSB1040-TH	□	10.4	87	150	11.0
05WHNSB1050-TH	●	10.5	87	150	11.0
05WHNSB1060-TH	□	10.6	87	150	11.0
05WHNSB1070-TH	□	10.7	87	150	11.0
05WHNSB1080-TH	●	10.8	87	150	11.0
05WHNSB1090-TH	□	10.9	87	150	11.0
05WHNSB1100-TH	●	11.0	87	150	11.0
05WHNSB1110-TH	□	11.1	93	156	12.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	Flute Length	L Overall Length	Ds Shank Dia.
05WHNSB1120-TH	□	11.2	93	156	12.0
05WHNSB1130-TH	□	11.3	93	156	12.0
05WHNSB1140-TH	□	11.4	93	156	12.0
05WHNSB1150-TH	●	11.5	93	156	12.0
05WHNSB1160-TH	□	11.6	93	156	12.0
05WHNSB1170-TH	□	11.7	93	156	12.0
05WHNSB1180-TH	●	11.8	93	156	12.0
05WHNSB1190-TH	□	11.9	93	156	12.0
05WHNSB1200-TH	●	12.0	93	156	12.0
05WHNSB1210-TH	□	12.1	104	169	13.0
05WHNSB1220-TH	□	12.2	104	169	13.0
05WHNSB1230-TH	□	12.3	104	169	13.0
05WHNSB1240-TH	□	12.4	104	169	13.0
05WHNSB1250-TH	●	12.5	104	169	13.0
05WHNSB1260-TH	□	12.6	104	169	13.0
05WHNSB1270-TH	□	12.7	104	169	13.0
05WHNSB1280-TH	□	12.8	104	169	13.0
05WHNSB1290-TH	□	12.9	104	169	13.0
05WHNSB1300-TH	●	13.0	104	169	13.0

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

Refer to page 4 for Conditions

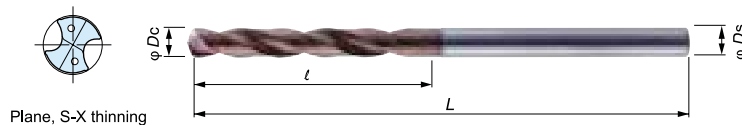
DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step สำหรับเหล็กหล่อ

Carbide Oil Hole Non Step Borer for Cast Iron (5D) 05FWHNSB-TH



h8	Ø3 : 0 ~ -0.014 Ø3.1 ~ Ø6 : 0 ~ -0.018 Ø6.1 ~ Ø10 : 0 ~ -0.022 Ø10.1 ~ Ø13 : 0 ~ -0.027	Shank Diameter Tolerance 0 ~ -0.01
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(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	Flute Length	L Overall Length	Ds Shank Dia.
05FWHNSB0300-TH	●	3.0	29	79	3.0
05FWHNSB0310-TH	●	3.1	37	87	4.0
05FWHNSB0320-TH	●	3.2	37	87	4.0
05FWHNSB0330-TH	●	3.3	37	87	4.0
05FWHNSB0340-TH	●	3.4	37	87	4.0
05FWHNSB0350-TH	●	3.5	37	87	4.0
05FWHNSB0360-TH	●	3.6	37	87	4.0
05FWHNSB0370-TH	●	3.7	37	87	4.0
05FWHNSB0380-TH	●	3.8	37	87	4.0
05FWHNSB0390-TH	●	3.9	37	87	4.0
05FWHNSB0400-TH	●	4.0	37	87	4.0
05FWHNSB0410-TH	●	4.1	47	100	5.0
05FWHNSB0420-TH	●	4.2	47	100	5.0
05FWHNSB0430-TH	●	4.3	47	100	5.0
05FWHNSB0440-TH	●	4.4	47	100	5.0
05FWHNSB0450-TH	●	4.5	47	100	5.0
05FWHNSB0460-TH	●	4.6	47	100	5.0
05FWHNSB0470-TH	●	4.7	47	100	5.0
05FWHNSB0480-TH	●	4.8	47	100	5.0
05FWHNSB0490-TH	●	4.9	47	100	5.0
05FWHNSB0500-TH	●	5.0	47	100	5.0
05FWHNSB0510-TH	●	5.1	47	100	6.0
05FWHNSB0520-TH	●	5.2	47	100	6.0
05FWHNSB0530-TH	●	5.3	47	100	6.0
05FWHNSB0540-TH	●	5.4	47	100	6.0
05FWHNSB0550-TH	●	5.5	47	100	6.0
05FWHNSB0560-TH	●	5.6	47	100	6.0
05FWHNSB0570-TH	●	5.7	47	100	6.0
05FWHNSB0580-TH	●	5.8	47	100	6.0
05FWHNSB0590-TH	●	5.9	47	100	6.0
05FWHNSB0600-TH	●	6.0	47	100	6.0
05FWHNSB0610-TH	●	6.1	55	110	7.0
05FWHNSB0620-TH	●	6.2	55	110	7.0
05FWHNSB0630-TH	●	6.3	55	110	7.0
05FWHNSB0640-TH	●	6.4	55	110	7.0
05FWHNSB0650-TH	●	6.5	55	110	7.0
05FWHNSB0660-TH	●	6.6	55	110	7.0
05FWHNSB0670-TH	●	6.7	55	110	7.0
05FWHNSB0680-TH	●	6.8	55	110	7.0
05FWHNSB0690-TH	●	6.9	55	110	7.0
05FWHNSB0700-TH	●	7.0	55	110	7.0
05FWHNSB0710-TH	●	7.1	63	119	8.0
05FWHNSB0720-TH	●	7.2	63	119	8.0
05FWHNSB0730-TH	●	7.3	63	119	8.0
05FWHNSB0740-TH	●	7.4	63	119	8.0
05FWHNSB0750-TH	●	7.5	63	119	8.0
05FWHNSB0760-TH	●	7.6	63	119	8.0
05FWHNSB0770-TH	●	7.7	63	119	8.0

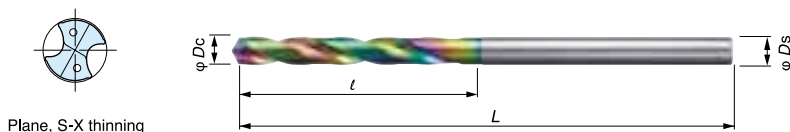
Order Code	Stock	Size (mm)			
		Dc Drill Dia.	Flute Length	L Overall Length	Ds Shank Dia.
05FWHNSB0780-TH	●	7.8	63	119	8.0
05FWHNSB0790-TH	●	7.9	63	119	8.0
05FWHNSB0800-TH	●	8.0	63	119	8.0
05FWHNSB0810-TH	●	8.1	71	128	9.0
05FWHNSB0820-TH	●	8.2	71	128	9.0
05FWHNSB0830-TH	●	8.3	71	128	9.0
05FWHNSB0840-TH	●	8.4	71	128	9.0
05FWHNSB0850-TH	●	8.5	71	128	9.0
05FWHNSB0860-TH	●	8.6	71	128	9.0
05FWHNSB0870-TH	●	8.7	71	128	9.0
05FWHNSB0880-TH	●	8.8	71	128	9.0
05FWHNSB0890-TH	●	8.9	71	128	9.0
05FWHNSB0900-TH	●	9.0	71	128	9.0
05FWHNSB0910-TH	●	9.1	79	137	10.0
05FWHNSB0920-TH	●	9.2	79	137	10.0
05FWHNSB0930-TH	●	9.3	79	137	10.0
05FWHNSB0940-TH	●	9.4	79	137	10.0
05FWHNSB0950-TH	●	9.5	79	137	10.0
05FWHNSB0960-TH	●	9.6	79	137	10.0
05FWHNSB0970-TH	●	9.7	79	137	10.0
05FWHNSB0980-TH	●	9.8	79	137	10.0
05FWHNSB0990-TH	●	9.9	79	137	10.0
05FWHNSB1000-TH	●	10.0	79	137	10.0
05FWHNSB1010-TH	□	10.1	87	150	11.0
05FWHNSB1020-TH	●	10.2	87	150	11.0
05FWHNSB1030-TH	●	10.3	87	150	11.0
05FWHNSB1040-TH	□	10.4	87	150	11.0
05FWHNSB1050-TH	●	10.5	87	150	11.0
05FWHNSB1060-TH	□	10.6	87	150	11.0
05FWHNSB1070-TH	□	10.7	87	150	11.0
05FWHNSB1080-TH	●	10.8	87	150	11.0
05FWHNSB1090-TH	□	10.9	87	150	11.0
05FWHNSB1100-TH	●	11.0	87	150	11.0
05FWHNSB1110-TH	□	11.1	93	156	12.0
05FWHNSB1120-TH	□	11.2	93	156	12.0
05FWHNSB1130-TH	□	11.3	93	156	12.0
05FWHNSB1140-TH	□	11.4	93	156	12.0
05FWHNSB1150-TH	●	11.5	93	156	12.0
05FWHNSB1160-TH	□	11.6	93	156	12.0
05FWHNSB1170-TH	□	11.7	93	156	12.0
05FWHNSB1180-TH	●	11.8	93	156	12.0
05FWHNSB1190-TH	□	11.9	93	156	12.0
05FWHNSB1200-TH	●	12.0	93	156	12.0
05FWHNSB1210-TH	□	12.1	104	169	13.0
05FWHNSB1220-TH	●	12.2	104	169	13.0
05FWHNSB1230-TH	□	12.3	104	169	13.0
05FWHNSB1240-TH	□	12.4	104	169	13.0
05FWHNSB1250-TH	●	12.5	104	169	13.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	Flute Length	L Overall Length	Ds Shank Dia.
05FWHNSB1260-TH	□	12.6	104	169	13.0
05FWHNSB1270-TH	□	12.7	104	169	13.0
05FWHNSB1280-TH	□	12.8	104	169	13.0
05FWHNSB1290-TH	□	12.9	104	169	13.0
05FWHNSB1300-TH	●	13.0	104	169	13.0

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



ดอกสว่านคาร์ไบด์ Non Step สำหรับอลูมิเนียม

Carbide Oil Hole Non Step Borer for Aluminium (5D)**05WHNSB-SD**

Plane, S-X thinning



02~03 : 0~-0.014
03.03~06 : 0~-0.018
06.03~010 : 0~-0.022
010.3 : 0~-0.027



0~-0.01

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
05WHNSB0200-SD	●	2.0	20	66	3.0
05WHNSB0203-SD	●	2.03	24	74	3.0
05WHNSB0210-SD	●	2.1	24	74	3.0
05WHNSB0220-SD	●	2.2	24	74	3.0
05WHNSB0230-SD	●	2.3	24	74	3.0
05WHNSB0240-SD	●	2.4	24	74	3.0
05WHNSB0250-SD	●	2.5	24	74	3.0
05WHNSB0253-SD	●	2.53	29	79	3.0
05WHNSB0260-SD	●	2.6	29	79	3.0
05WHNSB0270-SD	●	2.7	29	79	3.0
05WHNSB0280-SD	●	2.8	29	79	3.0
05WHNSB0290-SD	●	2.9	29	79	3.0
05WHNSB0300-SD	●	3.0	29	79	3.0
05WHNSB0303-SD	●	3.03	37	87	4.0
05WHNSB0310-SD	□	3.1	37	87	4.0
05WHNSB0320-SD	□	3.2	37	87	4.0
05WHNSB0330-SD	□	3.3	37	87	4.0
05WHNSB0340-SD	□	3.4	37	87	4.0
05WHNSB0350-SD	●	3.5	37	87	4.0
05WHNSB0353-SD	●	3.53	37	87	4.0
05WHNSB0360-SD	□	3.6	37	87	4.0
05WHNSB0370-SD	□	3.7	37	87	4.0
05WHNSB0380-SD	□	3.8	37	87	4.0
05WHNSB0390-SD	□	3.9	37	87	4.0
05WHNSB0400-SD	●	4.0	37	87	4.0
05WHNSB0403-SD	●	4.03	47	100	5.0
05WHNSB0410-SD	●	4.1	47	100	5.0
05WHNSB0420-SD	●	4.2	47	100	5.0
05WHNSB0430-SD	●	4.3	47	100	5.0
05WHNSB0440-SD	□	4.4	47	100	5.0
05WHNSB0450-SD	●	4.5	47	100	5.0
05WHNSB0453-SD	●	4.53	47	100	5.0
05WHNSB0460-SD	□	4.6	47	100	5.0
05WHNSB0470-SD	□	4.7	47	100	5.0
05WHNSB0480-SD	□	4.8	47	100	5.0
05WHNSB0490-SD	□	4.9	47	100	5.0
05WHNSB0500-SD	●	5.0	47	100	5.0
05WHNSB0503-SD	●	5.03	47	100	6.0
05WHNSB0510-SD	●	5.1	47	100	6.0
05WHNSB0520-SD	□	5.2	47	100	6.0
05WHNSB0530-SD	□	5.3	47	100	6.0
05WHNSB0540-SD	□	5.4	47	100	6.0
05WHNSB0550-SD	●	5.5	47	100	6.0
05WHNSB0553-SD	●	5.53	47	100	6.0
05WHNSB0560-SD	□	5.6	47	100	6.0
05WHNSB0570-SD	□	5.7	47	100	6.0
05WHNSB0580-SD	□	5.8	47	100	6.0
05WHNSB0590-SD	□	5.9	47	100	6.0
05WHNSB0600-SD	●	6.0	47	100	6.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
05WHNSB0603-SD	●	6.03	55	110	7.0
05WHNSB0610-SD	□	6.1	55	110	7.0
05WHNSB0620-SD	□	6.2	55	110	7.0
05WHNSB0630-SD	□	6.3	55	110	7.0
05WHNSB0640-SD	□	6.4	55	110	7.0
05WHNSB0650-SD	●	6.5	55	110	7.0
05WHNSB0653-SD	●	6.53	55	110	7.0
05WHNSB0660-SD	□	6.6	55	110	7.0
05WHNSB0670-SD	□	6.7	55	110	7.0
05WHNSB0680-SD	●	6.8	55	110	7.0
05WHNSB0690-SD	□	6.9	55	110	7.0
05WHNSB0700-SD	●	7.0	55	110	7.0
05WHNSB0703-SD	●	7.03	63	119	8.0
05WHNSB0710-SD	□	7.1	63	119	8.0
05WHNSB0720-SD	□	7.2	63	119	8.0
05WHNSB0730-SD	□	7.3	63	119	8.0
05WHNSB0740-SD	□	7.4	63	119	8.0
05WHNSB0750-SD	●	7.5	63	119	8.0
05WHNSB0753-SD	●	7.53	63	119	8.0
05WHNSB0760-SD	□	7.6	63	119	8.0
05WHNSB0770-SD	□	7.7	63	119	8.0
05WHNSB0780-SD	●	7.8	63	119	8.0
05WHNSB0790-SD	□	7.9	63	119	8.0
05WHNSB0800-SD	●	8.0	63	119	8.0
05WHNSB0803-SD	●	8.03	71	128	9.0
05WHNSB0810-SD	□	8.1	71	128	9.0
05WHNSB0820-SD	□	8.2	71	128	9.0
05WHNSB0830-SD	□	8.3	71	128	9.0
05WHNSB0840-SD	□	8.4	71	128	9.0
05WHNSB0850-SD	●	8.5	71	128	9.0
05WHNSB0853-SD	●	8.53	71	128	9.0
05WHNSB0860-SD	●	8.6	71	128	9.0
05WHNSB0870-SD	□	8.7	71	128	9.0
05WHNSB0880-SD	●	8.8	71	128	9.0
05WHNSB0890-SD	□	8.9	71	128	9.0
05WHNSB0900-SD	●	9.0	71	128	9.0
05WHNSB0903-SD	●	9.03	79	137	10.0
05WHNSB0910-SD	□	9.1	79	137	10.0
05WHNSB0920-SD	□	9.2	79	137	10.0
05WHNSB0930-SD	□	9.3	79	137	10.0
05WHNSB0940-SD	□	9.4	79	137	10.0
05WHNSB0950-SD	●	9.5	79	137	10.0
05WHNSB0953-SD	●	9.53	79	137	10.0
05WHNSB0960-SD	□	9.6	79	137	10.0
05WHNSB0970-SD	□	9.7	79	137	10.0
05WHNSB0980-SD	●	9.8	79	137	10.0
05WHNSB0990-SD	□	9.9	79	137	10.0
05WHNSB1000-SD	●	10.0	79	137	10.0
05WHNSB1003-SD	●	10.03	87	150	10.0

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

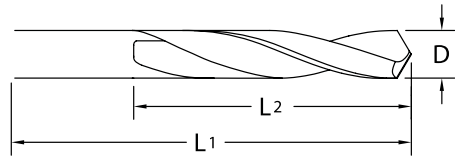
DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ รุ่น 224

Twister® **JOBBER DRILL - 5xD Series 224**



- Designed to allow high feed rates with good chip flow.
- Four facet drill point minimizes drill wander and assures accurately sized holes.

Order No.	Diameter		OAL	Flute Length
	D			
	mm	Decimal	L1	L2
22401180	0.30	.0118	26	3
22401380	0.35	.0138	26	4
22401570	0.40	.0157	26	5
22401770	0.45	.0177	26	5
22401970	0.50	.0197	26	6
22402170	0.55	.0217	26	7
22402360	0.60	.0236	26	7
22402560	0.65	.0256	26	8
22402760	0.70	.0276	28	9
22402950	0.75	.0295	28	9
22403150	0.80	.0315	30	10
22403350	0.85	.0335	30	10
22403540	0.90	.0354	32	11
22403740	0.95	.0374	32	11
22403940	1.00	.0394	34	12
22404130	1.05	.0413	34	12
22404330	1.10	.0433	36	14
22404520	1.15	.0452	36	14
22404720	1.20	.0472	38	16
22404920	1.25	.0492	38	16
22405110	1.30	.0511	38	16
22405310	1.35	.0531	40	18
22405510	1.40	.0551	40	18
22405710	1.45	.0571	40	18
22405900	1.50	.0590	40	18
22406300	1.60	.0630	43	20
22406690	1.70	.0669	43	20
22407080	1.80	.0708	46	22
22407480	1.90	.0748	46	22
22407870	2.00	.0787	49	24
22408270	2.10	.0827	49	24
22408660	2.20	.0866	53	27
22409060	2.30	.0906	53	27
22409450	2.40	.0945	57	30
22409840	2.50	.0984	57	30
22410240	2.60	.1024	57	30
22410630	2.70	.1063	61	33
22411020	2.80	.1102	61	33
22411420	2.90	.1142	61	33
22411810	3.00	.1181	61	33
22412200	3.10	.1220	65	36
22412600	3.20	.1260	65	36
22412990	3.30	.1299	65	36
22413390	3.40	.1339	70	39
22413780	3.50	.1378	70	39
22414170	3.60	.1417	70	39
22414570	3.70	.1457	70	39
22414960	3.80	.1496	75	43
22415350	3.90	.1535	75	43
22415750	4.00	.1575	75	43
22416140	4.10	.1614	75	43
22416540	4.20	.1654	75	43

Order No.	Diameter		OAL	Flute Length
	D			
	mm	Decimal	L1	L2
22416930	4.30	.1693	80	47
22417320	4.40	.1732	80	47
22417720	4.50	.1772	80	47
22418110	4.60	.1811	80	47
22418500	4.70	.1850	80	47
22418890	4.80	.1889	86	52
22419290	4.90	.1929	86	52
22419680	5.00	.1968	86	52
22420080	5.10	.2008	86	52
22420470	5.20	.2047	86	52
22420860	5.30	.2086	86	52
22421260	5.40	.2126	93	57
22421650	5.50	.2165	93	57
22422050	5.60	.2205	93	57
22422440	5.70	.2244	93	57
22422830	5.80	.2283	93	57
22423230	5.90	.2323	93	57
22423620	6.00	.2362	93	57
22424020	6.10	.2402	101	63
22424410	6.20	.2441	101	63
22424800	6.30	.2480	101	63
22425190	6.40	.2519	101	63
22425590	6.50	.2559	101	63
22425980	6.60	.2598	101	63
22426370	6.70	.2637	101	63
22426770	6.80	.2677	109	69
22427160	6.90	.2716	109	69
22427560	7.00	.2756	109	69
22427950	7.10	.2795	109	69
22428340	7.20	.2834	109	69
22428740	7.30	.2874	109	69
22429130	7.40	.2913	109	69
22429530	7.50	.2953	109	69
22429920	7.60	.2992	117	75
22430310	7.70	.3031	117	75
22430710	7.80	.3071	117	75
22431100	7.90	.3110	117	75
22431500	8.00	.3150	117	75
22431890	8.10	.3189	117	75
22432280	8.20	.3228	117	75
22432670	8.30	.3267	117	75
22433070	8.40	.3307	117	75
22433460	8.50	.3346	117	75
22433850	8.60	.3385	125	81
22434250	8.70	.3425	125	81
22434640	8.80	.3464	125	81
22435040	8.90	.3504	125	81
22435430	9.00	.3543	125	81
22435820	9.10	.3582	125	81
22436220	9.20	.3622	125	81
22436610	9.30	.3661	125	81
22437000	9.40	.3700	125	81

Order No.	Diameter		OAL	Flute Length
	D			
	mm	Decimal	L1	L2
22437400	9.50	.3740	125	81
22437790	9.60	.3779	133	87
22438190	9.70	.3819	133	87
22438580	9.80	.3858	133	87
22438970	9.90	.3897	133	87
22439370	10.00	.3937	133	87
22439760	10.10	.3976	133	87
22440150	10.20	.4015	133	87
22440550	10.30	.4055	133	87
22440940	10.40	.4094	133	87
22441340	10.50	.4134	133	87
22441730	10.60	.4173	133	87
22442120	10.70	.4212	142	94
22442520	10.80	.4252	142	94
22442910	10.90	.4291	142	94
22443310	11.00	.4331	142	94
22443700	11.10	.4370	142	94
22444090	11.20	.4409	142	94
22444490	11.30	.4449	142	94
22444880	11.40	.4488	142	94
22445270	11.50	.4527	142	94
22445670	11.60	.4567	142	94
22446060	11.70	.4606	142	94
22446450	11.80	.4645	142	94
22446850	11.90	.4685	151	101
22447240	12.00	.4724	151	101
22449210	12.50	.4921	151	101
22451180	13.00	.5118	151	101
22453150	13.50	.5315	160	108
22455120	14.00	.5512	160	108
22457080	14.50	.5708	169	114
22459050	15.00	.5905	169	114
22461020	15.50	.6102	178	120
22462990	16.00	.6299	178	120
22464960	16.50	.6496	184	125
22466930	17.00	.6693	184	125
22468900	17.50	.6890	191	130
22470870	18.00	.7087	191	130
22472830	18.50	.7283	198	135
22474800	19.00	.7480	198	135
22478740	20.00	.7874	205	140

ดอกสว่านคาร์ไบด์

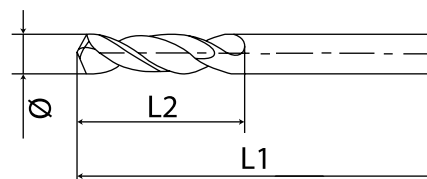
Solid carbide jobber drills, Long Series (5D) - DIN 338



Model 6156



Model 6157



Range of application:

Especially suitable for drilling heat resistant steels, Cr-Ni steels, high carbon steel castings, grey cast iron, cast steels, manganese steels, bronze, aluminium with high percentage silicon and other difficult-to-machine materials (coated design).

Order No. 6156 Art. - Nr.	Order No. 6157 Art. - Nr.	Ø _{h7} mm	L1 mm	L2 mm	Z
6156001001	6157001001	1.00	34	12	2
6156001101	6157001101	1.10	36	14	2
6156001201	6157001201	1.20	38	16	2
6156001301	6157001301	1.30	38	16	2
6156001401	6157001401	1.40	40	18	2
6156001501	6157001501	1.50	40	18	2
6156001601	6157001601	1.60	43	20	2
6156001701	6157001701	1.70	43	20	2
6156001801	6157001801	1.80	46	22	2
6156001901	6157001901	1.90	46	22	2
6156002001	6157002001	2.00	49	24	2
6156002101	6157002101	2.10	49	24	2
6156002201	6157002201	2.20	53	27	2
6156002301	6157002301	2.30	53	27	2
6156002401	6157002401	2.40	57	30	2
6156002501	6157002501	2.50	57	30	2
6156002601	6157002601	2.60	57	30	2
6156002701	6157002701	2.70	61	33	2
6156002801	6157002801	2.80	61	33	2
6156002901	6157002901	2.90	61	33	2
6156003001	6157003001	3.00	61	33	2
6156003101	6157003101	3.10	65	36	2
6156003201	6157003201	3.20	65	36	2
6156003301	6157003301	3.30	65	36	2
6156003401	6157003401	3.40	70	39	2
6156003501	6157003501	3.50	70	39	2
6156003601	6157003601	3.60	70	39	2
6156003701	6157003701	3.70	70	39	2
6156003801	6157003801	3.80	75	43	2
6156003901	6157003901	3.90	75	43	2
6156004001	6157004001	4.00	75	43	2
6156004101	6157004101	4.10	75	43	2
6156004201	6157004201	4.20	75	43	2
6156004301	6157004301	4.30	80	47	2
6156004401	6157004401	4.40	80	47	2
6156004501	6157004501	4.50	80	47	2
6156004601	6157004601	4.60	80	47	2
6156004701	6157004701	4.70	80	47	2
6156004801	6157004801	4.80	86	52	2
6156004901	6157004901	4.90	86	52	2
6156005001	6157005001	5.00	86	52	2
6156005101	6157005101	5.10	86	52	2
6156005201	6157005201	5.20	86	52	2
6156005301	6157005301	5.30	86	52	2
6156005401	6157005401	5.40	93	57	2
6156005501	6157005501	5.50	93	57	2

1) ≤ Ø 2,90 mm 4-faced point shape
≥ Ø 3,00 mm 6-faced point shape

DRILLS

ดอกสว่าน

maykestag PERFORMANCE IN PRECISION

Stright Shank

ดอกสว่านมาตรฐาน

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

ตัวสั้น / มาตรฐาน

Long

ตัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer

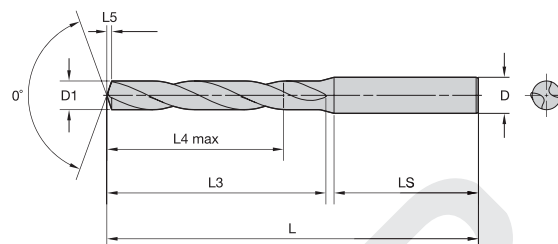
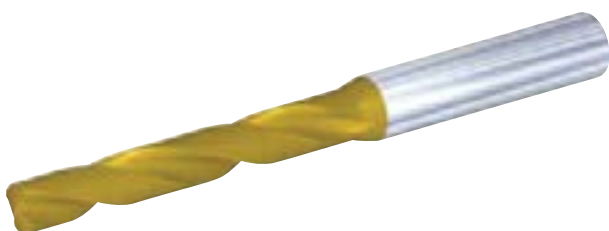
Order No. 6156 Art. - Nr.	Order No. 6157 Art. - Nr.	Ø _{h7} mm	L1 mm	L2 mm	Z
6156005601	6157005601	5.60	93	57	2
6156005701	6157005701	5.70	93	57	2
6156005801	6157005801	5.80	93	57	2
6156005901	6157005901	5.90	93	57	2
6156006001	6157006001	6.00	93	57	2
6156006101	6157006101	6.10	101	63	2
6156006201	6157006201	6.20	101	63	2
6156006301	6157006301	6.30	101	63	2
6156006401	6157006401	6.40	101	63	2
6156006501	6157006501	6.50	101	63	2
6156006601	6157006601	6.60	101	63	2
6156006701	6157006701	6.70	101	63	2
6156006801	6157006801	6.80	109	69	2
6156006901	6157006901	6.90	109	69	2
6156007001	6157007001	7.00	109	69	2
6156007101	6157007101	7.10	109	69	2
6156007201	6157007201	7.20	109	69	2
6156007301	6157007301	7.30	109	69	2
6156007401	6157007401	7.40	109	69	2
6156007501	6157007501	7.50	109	69	2
6156007601	6157007601	7.60	117	75	2
6156007701	6157007701	7.70	117	75	2
6156007801	6157007801	7.80	117	75	2
6156007901	6157007901	7.90	117	75	2
6156008001	6157008001	8.00	117	75	2
6156008101	6157008101	8.10	117	75	2
6156008201	6157008201	8.20	117	75	2
6156008301	6157008301	8.30	117	75	2
6156008401	6157008401	8.40	117	75	2
6156008501	6157008501	8.50	117	75	2
6156008601	6157008601	8.60	125	81	2
6156008701	6157008701	8.70	125	81	2
6156008801	6157008801	8.80	125	81	2
6156008901	6157008901	8.90	125	81	2
6156009001	6157009001	9.00	125	81	2
6156009101	6157009101	9.10	125	81	2
6156009201	6157009201	9.20	125	81	2
6156009301	6157009301	9.30	125	81	2
6156009401	6157009401	9.40	125	81	2
6156009501	6157009501	9.50	125	81	2
6156009601	6157009601	9.60	133	87	2
6156009701	6157009701	9.70	133	87	2
6156009801	6157009801	9.80	133	87	2
6156009901	6157009901	9.90	133	87	2
6156010001	6157010001	10.00	133	87	2
6156010201	6157010201	10.20	133	87	2
6156010501	6157010501	10.50	133	87	2
6156010801	6157010801	10.80	142	94	2
6156011001	6157011001	11.00	142	94	2
6156011501	6157011501	11.50	142	94	2
6156012001	6157012001	12.00	151	101	2
6156012501	6157012501	12.50	151	101	2
6156013001	6157013001	13.00	151	101	2
6156013501	6157013501	13.50	160	108	2
6156014001	6157014001	14.00	160	108	2
6156014501	6157014501	14.50	169	114	2
6156015001	6157015001	15.00	169	114	2
6156015501	6157015501	15.50	178	120	2
6156016001	6157016001	16.00	178	120	2

1) ≤ Ø 2,90 mm 4-faced point shape
≥ Ø 3,00 mm 6-faced point shape



ดอกสว่านคาร์ไบด์

SOLID CARBIDE DRILL - GOdrill (5D)



Features and Benefits

- GOdrill — the first microdrill from Kennametal.
- General purpose SC drill for a wide range of materials.
- Marginless design for reduced friction and heat — thus longer tool life.
- Optimized gashing design for microdrilling ensures free flow of chips in the center of the drill.
- Uninterrupted straight cutting lip allows no starting point for wear and enables even distribution of cutting forces for longer tool life in all materials and less chipping on cutting edge.
- KC7325™ grade contains a double coating for broad-band applications, and a TiN top layer serves as a wear indicator for easier monitoring of small drills, which can be difficult to see.

Order No.	D1 diameter				L5	LS	D	L	L3	L4 max
	mm	in	fraction	wire size						
B042A01000CPG	1,000	.0394	-	-	0,1	28	4			
B042A01016CPG	1,016	.0400	-	-	0,1	28	4			
B042A01041CPG	1,041	.0410	-	-	0,2	28	4			
B042A01067CPG	1,067	.0420	-	-	0,2	28	4			
B042A01092CPG	1,092	.0430	-	-	0,2	28	4			
B042A01100CPG	1,100	.0433	-	-	0,2	28	4			
B042A01181CPG	1,181	.0465	-	-	0,2	28	4	58	9	6
B042A01191CPG	1,191	.0469	-	-	0,2	28	4			
B042A01200CPG	1,200	.0472	-	-	0,2	28	4			
B042A01300CPG	1,300	.0512	-	-	0,2	28	4			
B042A01321CPG	1,321	.0520	-	-	0,2	28	4			
B042A01397CPG	1,397	.0550	-	-	0,2	28	4			
B042A01400CPG	1,400	.0551	-	-	0,2	28	4			
B042A01500CPG	1,500	.0591	-	-	0,2	28	4			
B042A01600CPG	1,600	.0630	-	-	0,2	28	4			
B042A01700CPG	1,700	.0669	-	-	0,3	28	4			
B042A01800CPG	1,800	.0709	-	-	0,3	28	4			
B042A01900CPG	1,900	.0748	-	-	0,3	28	4	58	12	9
B042A01984CPG	1,984	.0781	-	-	0,3	28	4			
B042A02000CPG	2,000	.0787	-	-	0,3	28	4			
B042A02100CPG	2,100	.0827	-	-	0,3	28	4			
B042A02200CPG	2,200	.0866	-	-	0,3	28	4			
B042A02300CPG	2,300	.0906	-	-	0,4	28	4			
B042A02383CPG	2,383	.0938	3/32	-	0,4	28	4			
B042A02400CPG	2,400	.0945	-	-	0,4	28	4			
B042A02439CPG	2,439	.0960	-	41	0,4	28	4			
B042A02489CPG	2,489	.0980	-	40	0,4	28	4			
B042A02500CPG	2,500	.0984	-	-	0,4	28	4			
B042A02578CPG	2,578	.1015	-	38	0,4	28	4			
B042A02600CPG	2,600	.1024	-	-	0,4	28	4			
B042A02642CPG	2,642	.1040	-	37	0,4	28	4	58	22	17
B042A02700CPG	2,700	.1063	-	-	0,4	28	4			
B042A02705CPG	2,705	.1065	-	36	0,4	28	4			
B042A02779CPG	2,779	.1094	7/64	-	0,4	28	4			
B042A02800CPG	2,800	.1102	-	-	0,5	28	4			
B042A02820CPG	2,820	.1110	-	34	0,5	28	4			
B042A02870CPG	2,870	.1130	-	33	0,5	28	4			
B042A02900CPG	2,900	.1142	-	-	0,5	28	4			
B042A02947CPG	2,947	.1160	-	32	0,5	28	4			
B042A03000CPG	3,000	.1181	-	-	0,5	36	6			
B042A03048CPG	3,048	.1200	-	31	0,5	36	6			
B042A03100CPG	3,100	.1220	-	-	0,5	36	6			
B042A03175CPG	3,175	.1250	1/8	-	0,5	36	6			
B042A03200CPG	3,200	.1260	-	-	0,5	36	6			
B042A03264CPG	3,264	.1285	-	30	0,5	36	6	66	28	23
B042A03300CPG	3,300	.1299	-	-	0,5	36	6			
B042A03400CPG	3,400	.1339	-	-	0,6	36	6			
B042A03455CPG	3,455	.1360	-	29	0,6	36	6			
B042A03500CPG	3,500	.1378	-	-	0,6	36	6			

DRILLS

ดอกสว่าน



Order No.	D1 diameter				L5	LS	D	L	L3	L4 max
	mm	in	fraction	wire size						
B042A03571CPG	3,571	.1406	9/64	-	0,6	36	6	66	28	23
B042A03600CPG	3,600	.1417	-	-	0,6	36	6			
B042A03658CPG	3,658	.1440	-	27	0,6	36	6			
B042A03700CPG	3,700	.1457	-	-	0,6	36	6			
B042A03734CPG	3,734	.1470	-	26	0,6	36	6	74	36	29
B042A03800CPG	3,800	.1496	-	-	0,6	36	6			
B042A03900CPG	3,900	.1535	-	-	0,6	36	6			
B042A03970CPG	3,970	.1563	5/32	-	0,7	36	6			
B042A04000CPG	4,000	.1575	-	-	0,7	36	6			
B042A04039CPG	4,039	.1590	-	21	0,7	36	6			
B042A04090CPG	4,090	.1610	-	20	0,7	36	6			
B042A04100CPG	4,100	.1614	-	-	0,7	36	6			
B042A04200CPG	4,200	.1654	-	-	0,7	36	6			
B042A04217CPG	4,217	.1660	-	19	0,7	36	6			
B042A04300CPG	4,300	.1693	-	-	0,7	36	6			
B042A04366CPG	4,366	.1719	11/64	-	0,7	36	6			
B042A04400CPG	4,400	.1732	-	-	0,7	36	6			
B042A04500CPG	4,500	.1772	-	-	0,7	36	6			
B042A04600CPG	4,600	.1811	-	-	0,8	36	6			
B042A04623CPG	4,623	.1820	-	14	0,8	36	6			
B042A04700CPG	4,700	.1850	-	13	0,8	36	6			
B042A04763CPG	4,763	.1875	3/16	-	0,8	36	6			
B042A04800CPG	4,800	.1890	-	12	0,8	36	6			
B042A04852CPG	4,852	.1910	-	11	0,8	36	6			
B042A04900CPG	4,900	.1929	-	-	0,8	36	6			
B042A05000CPG	5,000	.1969	-	-	0,8	36	6			
B042A05100CPG	5,100	.2008	-	-	0,8	36	6			
B042A05106CPG	5,106	.2010	-	7	0,8	36	6			
B042A05159CPG	5,159	.2031	13/64	-	0,9	36	6			
B042A05200CPG	5,200	.2047	-	-	0,9	36	6			
B042A05300CPG	5,300	.2087	-	-	0,9	36	6	82	44	35
B042A05400CPG	5,400	.2126	-	-	0,9	36	6			
B042A05410CPG	5,410	.2130	-	3	0,9	36	6			
B042A05500CPG	5,500	.2165	-	-	0,9	36	6			
B042A05558CPG	5,558	.2188	7/32	-	0,9	36	6	91	53	43
B042A05600CPG	5,600	.2205	-	-	0,9	36	6			
B042A05616CPG	5,616	.2211	-	2	0,9	36	6			
B042A05700CPG	5,700	.2244	-	-	1,0	36	6			
B042A05800CPG	5,800	.2283	-	-	1,0	36	6			
B042A05900CPG	5,900	.2323	-	-	1,0	36	6			
B042A05954CPG	5,954	.2344	15/64	-	1,0	36	6			
B042A06000CPG	6,000	.2362	-	-	1,0	36	6			
B042A06100CPG	6,100	.2402	-	-	1,0	36	8			
B042A06200CPG	6,200	.2441	-	-	1,0	36	8			
B042A06300CPG	6,300	.2480	-	-	1,1	36	8			
B042A06350CPG	6,350	.2500	1/4	E	1,1	36	8			
B042A06400CPG	6,400	.2520	-	-	1,1	36	8			
B042A06500CPG	6,500	.2559	-	-	1,1	36	8			
B042A06528CPG	6,528	.2570	-	F	1,1	36	8			
B042A06600CPG	6,600	.2598	-	-	1,1	36	8			
B042A06630CPG	6,630	.2610	-	G	1,1	36	8			
B042A06700CPG	6,700	.2638	-	-	1,1	36	8			
B042A06746CPG	6,746	.2656	17/64	-	1,1	36	8			
B042A06800CPG	6,800	.2677	-	-	1,1	36	8			
B042A06900CPG	6,900	.2717	-	-	1,2	36	8			
B042A07000CPG	7,000	.2756	-	-	1,2	36	8			
B042A07100CPG	7,100	.2795	-	-	1,2	36	8			
B042A07145CPG	7,145	.2813	9/32	-	1,2	36	8			
B042A07200CPG	7,200	.2835	-	-	1,2	36	8			
B042A07300CPG	7,300	.2874	-	-	1,2	36	8			
B042A07400CPG	7,400	.2913	-	-	1,3	36	8			
B042A07500CPG	7,500	.2953	-	-	1,3	36	8			
B042A07541CPG	7,541	.2969	19/64	-	1,3	36	8			
B042A07600CPG	7,600	.2992	-	-	1,3	36	8			
B042A07700CPG	7,700	.3031	-	-	1,3	36	8			
B042A07800CPG	7,800	.3071	-	-	1,3	36	8			
B042A07900CPG	7,900	.3110	-	-	1,3	36	8			
B042A07938CPG	7,938	.3125	5/16	-	1,3	36	8			
B042A08000CPG	8,000	.3150	-	-	1,4	36	8	103	61	49
B042A08100CPG	8,100	.3189	-	-	1,4	40	10			
B042A08200CPG	8,200	.3228	-	-	1,4	40	10			
B042A08300CPG	8,300	.3268	-	-	1,4	40	10			
B042A08334CPG	8,334	.3281	21/64	-	1,4	40	10			
B042A08400CPG	8,400	.3307	-	-	1,4	40	10			
B042A08433CPG	8,433	.3320	-	Q	1,4	40	10			

Stright Shank

ดอกสว่านมาตรฐาน

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

หัวสั้น / มาตรฐาน

Long

หัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer



Stright Shank
ดอกสว่านก้านตรง

Order No.	D1 diameter				L5	LS	D	L	L3	L4 max
	mm	in	fraction	wire size						
B042A08500CPG	8,500	.3346	-	-	1,4	40	10			
B042A08600CPG	8,600	.3386	-	-	1,5	40	10			
B042A08700CPG	8,700	.3425	-	-	1,5	40	10			
B042A08733CPG	8,733	.3438	11/32	-	1,5	40	10			
B042A08800CPG	8,800	.3465	-	-	1,5	40	10			
B042A08900CPG	8,900	.3504	-	-	1,5	40	10			
B042A09000CPG	9,000	.3543	-	-	1,5	40	10			
B042A09100CPG	9,100	.3583	-	-	1,5	40	10			
B042A09129CPG	9,129	.3594	23/64	-	1,6	40	10			
B042A09200CPG	9,200	.3622	-	-	1,6	40	10			
B042A09300CPG	9,300	.3661	-	-	1,6	40	10	103	61	49
B042A09347CPG	9,347	.3680	-	U	1,6	40	10			
B042A09400CPG	9,400	.3701	-	-	1,6	40	10			
B042A09500CPG	9,500	.3740	-	-	1,6	40	10			
B042A09525CPG	9,525	.3750	3/8	-	1,6	40	10			
B042A09600CPG	9,600	.3780	-	-	1,6	40	10			
B042A09700CPG	9,700	.3819	-	-	1,7	40	10			
B042A09800CPG	9,800	.3858	-	-	1,7	40	10			
B042A09900CPG	9,900	.3898	-	-	1,7	40	10			
B042A09921CPG	9,921	.3906	25/64	-	1,7	40	10			
B042A10000CPG	10,000	.3937	-	-	1,7	40	10			
B042A10100CPG	10,100	.3976	-	-	1,7	45	12			
B042A10200CPG	10,200	.4016	-	-	1,7	45	12			
B042A10300CPG	10,300	.4055	-	-	1,8	45	12			
B042A10320CPG	10,320	.4063	13/32	-	1,8	45	12			
B042A10400CPG	10,400	.4094	-	-	1,8	45	12			
B042A10500CPG	10,500	.4134	-	-	1,8	45	12			
B042A10600CPG	10,600	.4173	-	-	1,8	45	12			
B042A10700CPG	10,700	.4213	-	-	1,8	45	12			
B042A10716CPG	10,716	.4219	27/64	-	1,8	45	12			
B042A10800CPG	10,800	.4252	-	-	1,9	45	12			
B042A10900CPG	10,900	.4291	-	-	1,9	45	12			
B042A11000CPG	11,000	.4331	-	-	1,9	45	12			
B042A11100CPG	11,100	.4370	-	-	1,9	45	12	118	71	56
B042A11113CPG	11,113	.4375	7/16	-	1,9	45	12			
B042A11200CPG	11,200	.4409	-	-	1,9	45	12			
B042A11300CPG	11,300	.4449	-	-	1,9	45	12			
B042A11400CPG	11,400	.4488	-	-	2,0	45	12			
B042A11500CPG	11,500	.4528	-	-	2,0	45	12			
B042A11509CPG	11,509	.4531	29/64	-	2,0	45	12			
B042A11600CPG	11,600	.4567	-	-	2,0	45	12			
B042A11700CPG	11,700	.4606	-	-	2,0	45	12			
B042A11800CPG	11,800	.4646	-	-	2,0	45	12			
B042A11900CPG	11,900	.4685	-	-	2,0	45	12			
B042A11908CPG	11,908	.4688	15/32	-	2,0	45	12			
B042A12000CPG	12,000	.4724	-	-	2,1	45	12			
B042A12100CPG	12,100	.4764	-	-	2,1	45	14			
B042A12200CPG	12,200	.4803	-	-	2,1	45	14			
B042A12300CPG	12,300	.4843	-	-	2,1	45	14			
B042A12304CPG	12,304	.4844	31/64	-	2,1	45	14	124	77	60
B042A12400CPG	12,400	.4882	-	-	2,1	45	14			
B042A12500CPG	12,500	.4921	-	-	2,1	45	14			
B042A12600CPG	12,600	.4961	-	-	2,2	45	14			
B042A12700CPG	12,700	.5000	1/2	-	2,2	45	14			

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

หัวสั้น / มาตรฐาน

Long

หัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer

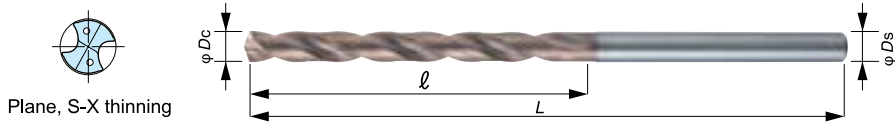
DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step มีรูน้ำมัน

Carbide Oil Hole Non Step Borer 8D 08WHNSB-TH



02 ~ 03 : 0 ~ -0.014
03.05 ~ 06 : 0 ~ -0.018
06.05 ~ 010 : 0 ~ -0.022
010.1 ~ 013 : 0 ~ -0.027



0 ~ -0.01

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
08WHNSB0200-TH	●	2.0	25	75	3.0
08WHNSB0210-TH	●	2.1	25	75	3.0
08WHNSB0220-TH	●	2.2	25	75	3.0
08WHNSB0230-TH	●	2.3	28	75	3.0
08WHNSB0240-TH	●	2.4	28	75	3.0
08WHNSB0250-TH	●	2.5	28	75	3.0
08WHNSB0260-TH	●	2.6	33	80	3.0
08WHNSB0270-TH	●	2.7	33	80	3.0
08WHNSB0280-TH	●	2.8	35	83	3.0
08WHNSB0290-TH	●	2.9	35	83	3.0
08WHNSB0300-TH	●	3.0	35	83	3.0
08WHNSB0310-TH	●	3.1	42	94	4.0
08WHNSB0320-TH	●	3.2	42	94	4.0
08WHNSB0330-TH	●	3.3	42	94	4.0
08WHNSB0340-TH	●	3.4	42	94	4.0
08WHNSB0350-TH	●	3.5	42	94	4.0
08WHNSB0360-TH	●	3.6	46	94	4.0
08WHNSB0370-TH	●	3.7	46	94	4.0
08WHNSB0380-TH	●	3.8	46	94	4.0
08WHNSB0390-TH	●	3.9	46	94	4.0
08WHNSB0400-TH	●	4.0	46	94	4.0
08WHNSB0410-TH	●	4.1	55	110	5.0
08WHNSB0420-TH	●	4.2	55	110	5.0
08WHNSB0430-TH	●	4.3	55	110	5.0
08WHNSB0440-TH	●	4.4	55	110	5.0
08WHNSB0450-TH	●	4.5	55	110	5.0
08WHNSB0460-TH	●	4.6	59	110	5.0
08WHNSB0470-TH	●	4.7	59	110	5.0
08WHNSB0480-TH	●	4.8	59	110	5.0
08WHNSB0490-TH	●	4.9	59	110	5.0
08WHNSB0500-TH	●	5.0	59	110	5.0
08WHNSB0510-TH	●	5.1	62	118	6.0
08WHNSB0520-TH	●	5.2	62	118	6.0
08WHNSB0530-TH	●	5.3	62	118	6.0
08WHNSB0540-TH	●	5.4	62	118	6.0
08WHNSB0550-TH	●	5.5	62	118	6.0
08WHNSB0560-TH	●	5.6	67	118	6.0
08WHNSB0570-TH	●	5.7	67	118	6.0
08WHNSB0580-TH	●	5.8	67	118	6.0
08WHNSB0590-TH	●	5.9	67	118	6.0
08WHNSB0600-TH	●	6.0	67	118	6.0
08WHNSB0610-TH	●	6.1	73	132	7.0
08WHNSB0620-TH	●	6.2	73	132	7.0
08WHNSB0630-TH	●	6.3	73	132	7.0
08WHNSB0640-TH	●	6.4	73	132	7.0
08WHNSB0650-TH	●	6.5	73	132	7.0
08WHNSB0660-TH	●	6.6	77	132	7.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
08WHNSB0670-TH	●	6.7	77	132	7.0
08WHNSB0680-TH	●	6.8	77	132	7.0
08WHNSB0690-TH	●	6.9	77	132	7.0
08WHNSB0700-TH	●	7.0	77	132	7.0
08WHNSB0710-TH	●	7.1	84	144	8.0
08WHNSB0720-TH	●	7.2	84	144	8.0
08WHNSB0730-TH	●	7.3	84	144	8.0
08WHNSB0740-TH	●	7.4	84	144	8.0
08WHNSB0750-TH	●	7.5	84	144	8.0
08WHNSB0760-TH	●	7.6	88	144	8.0
08WHNSB0770-TH	●	7.7	88	144	8.0
08WHNSB0780-TH	●	7.8	88	144	8.0
08WHNSB0790-TH	●	7.9	88	144	8.0
08WHNSB0800-TH	●	8.0	88	144	8.0
08WHNSB0810-TH	□	8.1	94	156	9.0
08WHNSB0820-TH	□	8.2	94	156	9.0
08WHNSB0830-TH	□	8.3	94	156	9.0
08WHNSB0840-TH	□	8.4	94	156	9.0
08WHNSB0850-TH	●	8.5	94	156	9.0
08WHNSB0860-TH	□	8.6	99	156	9.0
08WHNSB0870-TH	□	8.7	99	156	9.0
08WHNSB0880-TH	□	8.8	99	156	9.0
08WHNSB0890-TH	□	8.9	99	156	9.0
08WHNSB0900-TH	●	9.0	99	156	9.0
08WHNSB0910-TH	□	9.1	105	168	10.0
08WHNSB0920-TH	□	9.2	105	168	10.0
08WHNSB0930-TH	□	9.3	105	168	10.0
08WHNSB0940-TH	□	9.4	105	168	10.0
08WHNSB0950-TH	●	9.5	105	168	10.0
08WHNSB0960-TH	□	9.6	110	168	10.0
08WHNSB0970-TH	□	9.7	110	168	10.0
08WHNSB0980-TH	●	9.8	110	168	10.0
08WHNSB0990-TH	□	9.9	110	168	10.0
08WHNSB1000-TH	●	10.0	110	168	10.0
08WHNSB1010-TH	□	10.1	116	184	11.0
08WHNSB1020-TH	●	10.2	116	184	11.0
08WHNSB1030-TH	●	10.3	116	184	11.0
08WHNSB1040-TH	□	10.4	116	184	11.0
08WHNSB1050-TH	●	10.5	116	184	11.0
08WHNSB1060-TH	□	10.6	121	184	11.0
08WHNSB1070-TH	●	10.7	121	184	11.0
08WHNSB1080-TH	●	10.8	121	184	11.0
08WHNSB1090-TH	□	10.9	121	184	11.0
08WHNSB1100-TH	●	11.0	121	184	11.0
08WHNSB1110-TH	□	11.1	127	195	12.0
08WHNSB1120-TH	□	11.2	127	195	12.0
08WHNSB1130-TH	□	11.3	127	195	12.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
08WHNSB1140-TH	□	11.4	127	195	12.0
08WHNSB1150-TH	●	11.5	127	195	12.0
08WHNSB1160-TH	●	11.6	132	195	12.0
08WHNSB1170-TH	□	11.7	132	195	12.0
08WHNSB1180-TH	□	11.8	132	195	12.0
08WHNSB1190-TH	□	11.9	132	195	12.0
08WHNSB1200-TH	●	12.0	132	195	12.0
08WHNSB1210-TH	□	12.1	138	208	13.0
08WHNSB1220-TH	□	12.2	138	208	13.0
08WHNSB1230-TH	□	12.3	138	208	13.0
08WHNSB1240-TH	□	12.4	138	208	13.0
08WHNSB1250-TH	●	12.5	138	208	13.0
08WHNSB1260-TH	□	12.6	143	208	13.0
08WHNSB1270-TH	□	12.7	143	208	13.0
08WHNSB1280-TH	□	12.8	143	208	13.0
08WHNSB1290-TH	□	12.9	143	208	13.0
08WHNSB1300-TH	●	13.0	143	208	13.0

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



Recommended cutting conditions

08WHNSB-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 70~120~150	(n)min ⁻¹ Revolution speed (n)	16000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~90~120	(n)min ⁻¹ Revolution speed (n)	13000	7200	4800	3600	2900	2400
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Carbon steel (~200HB) S○○C	Internal Coolant 70~120~150	(n)min ⁻¹ Revolution speed (n)	16000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~90~120	(n)min ⁻¹ Revolution speed (n)	13000	7200	4800	3600	2900	2400
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Alloy steel (~30HRC)	Internal Coolant 70~120~150	(n)min ⁻¹ Revolution speed (n)	16000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~90~120	(n)min ⁻¹ Revolution speed (n)	13000	7200	4800	3600	2900	2400
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Stainless steel SUS300, SUS400	Internal Coolant 50~90~120	(n)min ⁻¹ Revolution speed (n)	11000	7200	4800	3600	2900	2400
		(f)mm/rev Feed per Rev	0.03~0.06	0.06~0.13	0.12~0.19	0.14~0.24	0.16~0.28	0.17~0.31
Titanium alloy Ti-6AL-4V	Internal Coolant 40~60~80	(n)min ⁻¹ Revolution speed (n)	9500	4800	3200	2400	1900	1600
		(f)mm/rev Feed per Rev	0.02~0.04	0.06~0.08	0.09~0.12	0.12~0.16	0.13~0.2	0.14~0.24
Prehardened steel (~40HRC)	Internal Coolant 40~60~80	(n)min ⁻¹ Revolution speed (n)	9500	4800	3200	2400	1900	1600
		(f)mm/rev Feed per Rev	0.04~0.06	0.08~0.13	0.12~0.19	0.14~0.24	0.16~0.28	0.18~0.32
	MQL (mist) 30~50~70	(n)min ⁻¹ Revolution speed (n)	8000	4000	2650	2000	1600	1350
		(f)mm/rev Feed per Rev	0.04~0.06	0.08~0.13	0.12~0.19	0.14~0.24	0.16~0.28	0.18~0.32
Prehardened steel (~50HRC) SKD	Internal Coolant 30~40~50	(n)min ⁻¹ Revolution speed (n)	6500	3200	2100	1600	1300	1050
		(f)mm/rev Feed per Rev	0.03~0.05	0.05~0.1	0.08~0.14	0.12~0.18	0.15~0.2	0.17~0.22
	MQL (mist) 10~20~30	(n)min ⁻¹ Revolution speed (n)	4500	1600	1050	800	650	550
		(f)mm/rev Feed per Rev	0.03~0.05	0.05~0.1	0.08~0.14	0.12~0.18	0.05~0.2	0.17~0.22
Ductile iron FCD500	Internal Coolant 70~100~120	(n)min ⁻¹ Revolution speed (n)	16000	8000	5300	4000	3200	2650
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~90~120	(n)min ⁻¹ Revolution speed (n)	13000	7200	4800	3600	2900	2400
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
Casting FC250	Internal Coolant 70~120~150	(n)min ⁻¹ Revolution speed (n)	16000	9500	6300	4800	3800	3200
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
	MQL (mist) 50~90~120	(n)min ⁻¹ Revolution speed (n)	13000	7200	4800	3600	2900	2400
		(f)mm/rev Feed per Rev	0.05~0.1	0.1~0.16	0.15~0.24	0.18~0.3	0.2~0.35	0.22~0.4
INCINEL718 Heatproof steel	Internal Coolant 20~30~40	(n)min ⁻¹ Revolution speed (n)	4000	2400	1600	1200	950	800
		(f)mm/rev Feed per Rev	0.02~0.03	0.04~0.08	0.06~0.12	0.08~0.16	0.1~0.2	0.12~0.2

[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.

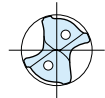
DRILLS

ดอกสว่าน

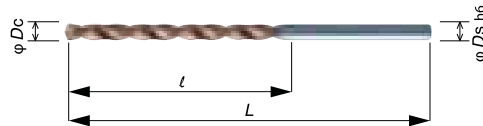


ดอกสว่านคาร์ไบด์ Non Step มีรูน้ำมัน

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.

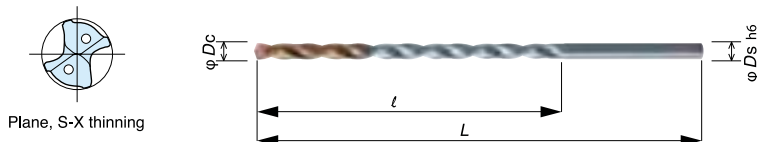
(mm)

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.



ดอกสว่านคาร์ไบด์ Non Step มีรูน้ำมัน
Carbide Oil Hole Non Step Borer 15D
15WHNSB-TH



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.
15WHNSB0200-TH	●	2.0	40	83	3.0
15WHNSB0210-TH	●	2.1	44	87	3.0
15WHNSB0220-TH	●	2.2	44	87	3.0
15WHNSB0230-TH	●	2.3	50	93	3.0
15WHNSB0240-TH	●	2.4	50	93	3.0
15WHNSB0250-TH	●	2.5	50	93	3.0
15WHNSB0260-TH	●	2.6	54	102	3.0
15WHNSB0270-TH	●	2.7	54	102	3.0
15WHNSB0280-TH	●	2.8	54	102	3.0
15WHNSB0290-TH	●	2.9	54	102	3.0
15WHNSB0300-TH	●	3.0	54	102	3.0
15WHNSB0310-TH	●	3.1	63	111	4.0
15WHNSB0320-TH	●	3.2	63	111	4.0
15WHNSB0330-TH	●	3.3	63	111	4.0
15WHNSB0340-TH	●	3.4	63	111	4.0
15WHNSB0350-TH	●	3.5	63	111	4.0
15WHNSB0360-TH	●	3.6	72	121	4.0
15WHNSB0370-TH	●	3.7	72	121	4.0
15WHNSB0380-TH	●	3.8	72	121	4.0
15WHNSB0390-TH	●	3.9	72	121	4.0
15WHNSB0400-TH	●	4.0	72	121	4.0
15WHNSB0410-TH	●	4.1	81	132	5.0
15WHNSB0420-TH	●	4.2	81	132	5.0
15WHNSB0430-TH	●	4.3	81	132	5.0
15WHNSB0440-TH	●	4.4	81	132	5.0
15WHNSB0450-TH	●	4.5	81	132	5.0
15WHNSB0460-TH	●	4.6	91	142	5.0
15WHNSB0470-TH	●	4.7	91	142	5.0
15WHNSB0480-TH	●	4.8	91	142	5.0
15WHNSB0490-TH	●	4.9	91	142	5.0
15WHNSB0500-TH	●	5.0	91	142	5.0
15WHNSB0510-TH	●	5.1	100	151	6.0
15WHNSB0520-TH	●	5.2	100	151	6.0
15WHNSB0530-TH	●	5.3	100	151	6.0
15WHNSB0540-TH	●	5.4	100	151	6.0
15WHNSB0550-TH	●	5.5	100	151	6.0
15WHNSB0560-TH	●	5.6	109	160	6.0
15WHNSB0570-TH	●	5.7	109	160	6.0
15WHNSB0580-TH	●	5.8	109	160	6.0
15WHNSB0590-TH	●	5.9	109	160	6.0
15WHNSB0600-TH	●	6.0	109	160	6.0
15WHNSB0610-TH	●	6.1	118	171	7.0
15WHNSB0620-TH	●	6.2	118	171	7.0
15WHNSB0630-TH	●	6.3	118	171	7.0
15WHNSB0640-TH	●	6.4	118	171	7.0
15WHNSB0650-TH	●	6.5	118	171	7.0
15WHNSB0660-TH	●	6.6	127	180	7.0

Order Code	Stock	Size(mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
15WHNSB0670-TH	●	6.7	127	180	7.0
15WHNSB0680-TH	●	6.8	127	180	7.0
15WHNSB0690-TH	●	6.9	127	180	7.0
15WHNSB0700-TH	●	7.0	127	180	7.0
15WHNSB0710-TH	●	7.1	136	191	8.0
15WHNSB0720-TH	●	7.2	136	191	8.0
15WHNSB0730-TH	●	7.3	136	191	8.0
15WHNSB0740-TH	●	7.4	136	191	8.0
15WHNSB0750-TH	●	7.5	136	191	8.0
15WHNSB0760-TH	●	7.6	145	200	8.0
15WHNSB0770-TH	●	7.7	145	200	8.0
15WHNSB0780-TH	●	7.8	145	200	8.0
15WHNSB0790-TH	●	7.9	145	200	8.0
15WHNSB0800-TH	●	8.0	145	200	8.0
15WHNSB0810-TH	□	8.1	154	209	9.0
15WHNSB0820-TH	□	8.2	154	209	9.0
15WHNSB0830-TH	□	8.3	154	209	9.0
15WHNSB0840-TH	□	8.4	154	209	9.0
15WHNSB0850-TH	●	8.5	154	209	9.0
15WHNSB0860-TH	□	8.6	163	218	9.0
15WHNSB0870-TH	□	8.7	163	218	9.0
15WHNSB0880-TH	□	8.8	163	218	9.0
15WHNSB0890-TH	□	8.9	163	218	9.0
15WHNSB0900-TH	●	9.0	163	218	9.0
15WHNSB0910-TH	□	9.1	172	227	10.0
15WHNSB0920-TH	□	9.2	172	227	10.0
15WHNSB0930-TH	□	9.3	172	227	10.0
15WHNSB0940-TH	□	9.4	172	227	10.0
15WHNSB0950-TH	□	9.5	172	227	10.0
15WHNSB0960-TH	□	9.6	181	236	10.0
15WHNSB0970-TH	□	9.7	181	236	10.0
15WHNSB0980-TH	□	9.8	181	236	10.0
15WHNSB0990-TH	□	9.9	181	236	10.0
15WHNSB1000-TH	●	10.0	181	236	10.0
15WHNSB1010-TH	□	10.1	190	245	11.0
15WHNSB1020-TH	□	10.2	190	245	11.0
15WHNSB1030-TH	□	10.3	190	245	11.0
15WHNSB1040-TH	□	10.4	190	245	11.0
15WHNSB1050-TH	□	10.5	190	245	11.0
15WHNSB1060-TH	□	10.6	199	260	11.0
15WHNSB1070-TH	□	10.7	199	260	11.0
15WHNSB1080-TH	□	10.8	199	260	11.0
15WHNSB1090-TH	□	10.9	199	260	11.0
15WHNSB1100-TH	□	11.0	199	260	11.0
15WHNSB1110-TH	□	11.1	208	269	12.0
15WHNSB1120-TH	□	11.2	208	269	12.0
15WHNSB1130-TH	□	11.3	208	269	12.0

Order Code	Stock	Size(mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
15WHNSB1140-TH	□	11.4	208	269	12.0
15WHNSB1150-TH	□	11.5	208	269	12.0
15WHNSB1160-TH	□	11.6	217	278	12.0
15WHNSB1170-TH	□	11.7	217	278	12.0
15WHNSB1180-TH	□	11.8	217	278	12.0
15WHNSB1190-TH	□	11.9	217	278	12.0
15WHNSB1200-TH	□	12.0	217	278	12.0
15WHNSB1210-TH	□	12.1	226	287	13.0
15WHNSB1220-TH	□	12.2	226	287	13.0
15WHNSB1230-TH	□	12.3	226	287	13.0
15WHNSB1240-TH	□	12.4	226	287	13.0
15WHNSB1250-TH	□	12.5	226	287	13.0
15WHNSB1260-TH	□	12.6	235	301	13.0
15WHNSB1270-TH	□	12.7	235	301	13.0
15WHNSB1280-TH	□	12.8	235	301	13.0
15WHNSB1290-TH	□	12.9	235	301	13.0
15WHNSB1300-TH	□	13.0	235	301	13.0

15WHNSB
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, 9.0 and 10.0.
For other items, the diameter tolerance will be as in the table below.

15WHNSB			
	3.0<Dc<6.0	6.0<Dc<10.0	10.0<Dc≤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.

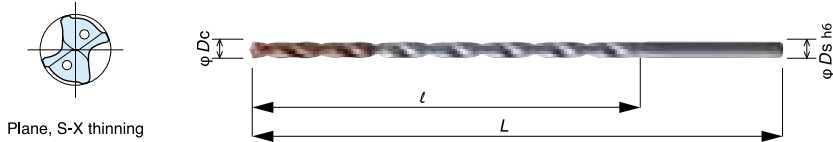
DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step มีรูนํ้ามัน

Carbide Oil Hole Non Step Borer 20D 20WHNSB-TH



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.
20WHNSB0200-TH	●	2.0	50	93	3.0
20WHNSB0210-TH	●	2.1	55	98	3.0
20WHNSB0220-TH	●	2.2	55	98	3.0
20WHNSB0230-TH	●	2.3	62	105	3.0
20WHNSB0240-TH	●	2.4	62	105	3.0
20WHNSB0250-TH	●	2.5	62	105	3.0
20WHNSB0260-TH	●	2.6	67	110	3.0
20WHNSB0270-TH	●	2.7	67	110	3.0
20WHNSB0280-TH	●	2.8	69	115	3.0
20WHNSB0290-TH	●	2.9	69	115	3.0
20WHNSB0300-TH	●	3.0	69	117	3.0
20WHNSB0310-TH	●	3.1	81	129	4.0
20WHNSB0320-TH	●	3.2	81	129	4.0
20WHNSB0330-TH	●	3.3	81	129	4.0
20WHNSB0340-TH	●	3.4	81	129	4.0
20WHNSB0350-TH	●	3.5	81	129	4.0
20WHNSB0360-TH	●	3.6	92	141	4.0
20WHNSB0370-TH	●	3.7	92	141	4.0
20WHNSB0380-TH	●	3.8	92	141	4.0
20WHNSB0390-TH	●	3.9	92	141	4.0
20WHNSB0400-TH	●	4.0	92	141	4.0
20WHNSB0410-TH	●	4.1	104	155	5.0
20WHNSB0420-TH	●	4.2	104	155	5.0
20WHNSB0430-TH	●	4.3	104	155	5.0
20WHNSB0440-TH	●	4.4	104	155	5.0
20WHNSB0450-TH	●	4.5	104	155	5.0
20WHNSB0460-TH	●	4.6	116	167	5.0
20WHNSB0470-TH	●	4.7	116	167	5.0
20WHNSB0480-TH	●	4.8	116	167	5.0
20WHNSB0490-TH	●	4.9	116	167	5.0
20WHNSB0500-TH	●	5.0	116	167	5.0
20WHNSB0510-TH	●	5.1	127	178	6.0
20WHNSB0520-TH	●	5.2	127	178	6.0
20WHNSB0530-TH	●	5.3	127	178	6.0
20WHNSB0540-TH	●	5.4	127	178	6.0
20WHNSB0550-TH	●	5.5	127	178	6.0
20WHNSB0560-TH	●	5.6	139	190	6.0
20WHNSB0570-TH	●	5.7	139	190	6.0
20WHNSB0580-TH	●	5.8	139	190	6.0
20WHNSB0590-TH	●	5.9	139	190	6.0
20WHNSB0600-TH	●	6.0	139	190	6.0
20WHNSB0610-TH	●	6.1	150	203	7.0
20WHNSB0620-TH	●	6.2	150	203	7.0
20WHNSB0630-TH	●	6.3	150	203	7.0
20WHNSB0640-TH	●	6.4	150	203	7.0
20WHNSB0650-TH	●	6.5	150	203	7.0
20WHNSB0660-TH	●	6.6	162	215	7.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
20WHNSB0670-TH	●	6.7	162	215	7.0
20WHNSB0680-TH	●	6.8	162	215	7.0
20WHNSB0690-TH	●	6.9	162	215	7.0
20WHNSB0700-TH	●	7.0	162	215	7.0
20WHNSB0710-TH	●	7.1	173	228	8.0
20WHNSB0720-TH	●	7.2	173	228	8.0
20WHNSB0730-TH	●	7.3	173	228	8.0
20WHNSB0740-TH	●	7.4	173	228	8.0
20WHNSB0750-TH	●	7.5	173	228	8.0
20WHNSB0760-TH	●	7.6	185	240	8.0
20WHNSB0770-TH	●	7.7	185	240	8.0
20WHNSB0780-TH	●	7.8	185	240	8.0
20WHNSB0790-TH	●	7.9	185	240	8.0
20WHNSB0800-TH	●	8.0	185	240	8.0
20WHNSB0810-TH	□	8.1	196	251	9.0
20WHNSB0820-TH	□	8.2	196	251	9.0
20WHNSB0830-TH	□	8.3	196	251	9.0
20WHNSB0840-TH	□	8.4	196	251	9.0
20WHNSB0850-TH	●	8.5	196	251	9.0
20WHNSB0860-TH	□	8.6	208	263	9.0
20WHNSB0870-TH	□	8.7	208	263	9.0
20WHNSB0880-TH	□	8.8	208	263	9.0
20WHNSB0890-TH	□	8.9	208	263	9.0
20WHNSB0900-TH	●	9.0	208	263	9.0
20WHNSB0910-TH	□	9.1	219	274	10.0
20WHNSB0920-TH	□	9.2	219	274	10.0
20WHNSB0930-TH	□	9.3	219	274	10.0
20WHNSB0940-TH	□	9.4	219	274	10.0
20WHNSB0950-TH	□	9.5	219	274	10.0
20WHNSB0960-TH	□	9.6	231	286	10.0
20WHNSB0970-TH	□	9.7	231	286	10.0
20WHNSB0980-TH	□	9.8	231	286	10.0
20WHNSB0990-TH	□	9.9	231	286	10.0
20WHNSB1000-TH	□	10.0	231	286	10.0
20WHNSB1010-TH	□	10.1	243	298	11.0
20WHNSB1020-TH	□	10.2	243	298	11.0
20WHNSB1030-TH	□	10.3	243	298	11.0
20WHNSB1040-TH	□	10.4	243	298	11.0
20WHNSB1050-TH	□	10.5	243	298	11.0
20WHNSB1060-TH	□	10.6	254	315	11.0
20WHNSB1070-TH	□	10.7	254	315	11.0
20WHNSB1080-TH	□	10.8	254	315	11.0
20WHNSB1090-TH	□	10.9	254	315	11.0
20WHNSB1100-TH	□	11.0	254	315	11.0
20WHNSB1110-TH	□	11.1	266	327	12.0
20WHNSB1120-TH	□	11.2	266	327	12.0
20WHNSB1130-TH	□	11.3	266	327	12.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
20WHNSB1140-TH	□	11.4	266	327	12.0
20WHNSB1150-TH	□	11.5	266	327	12.0
20WHNSB1160-TH	□	11.6	277	338	12.0
20WHNSB1170-TH	□	11.7	277	338	12.0
20WHNSB1180-TH	□	11.8	277	338	12.0
20WHNSB1190-TH	□	11.9	277	338	12.0
20WHNSB1200-TH	□	12.0	277	338	12.0

20WHNSB

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.

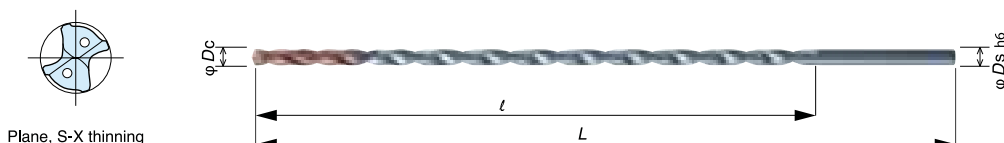
(mm)

20WHNSB			
	3.0<Dc≤6.0	6.0<Dc≤10.0	10.0<Dc≤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.



ดอกสว่านคาร์ไบด์ Non Step มีรูน้ำมัน Carbide Oil Hole Non Step Borer 30D 30WHNSB000-TH



Plane, S-X thinning



Refer to this page



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

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
30WHNSB0200-TH	●	2.0	70	113	3.0
30WHNSB0210-TH	●	2.1	77	120	3.0
30WHNSB0220-TH	●	2.2	77	120	3.0
30WHNSB0230-TH	●	2.3	87	130	3.0
30WHNSB0240-TH	●	2.4	87	130	3.0
30WHNSB0250-TH	●	2.5	87	130	3.0
30WHNSB0260-TH	●	2.6	94	137	3.0
30WHNSB0270-TH	●	2.7	94	137	3.0
30WHNSB0280-TH	●	2.8	99	144	3.0
30WHNSB0290-TH	●	2.9	99	144	3.0
30WHNSB0300-TH	●	3.0	99	147	3.0
30WHNSB0310-TH	●	3.1	116	164	4.0
30WHNSB0320-TH	●	3.2	116	164	4.0
30WHNSB0330-TH	●	3.3	116	164	4.0
30WHNSB0340-TH	●	3.4	116	164	4.0
30WHNSB0350-TH	●	3.5	116	164	4.0
30WHNSB0360-TH	●	3.6	132	181	4.0
30WHNSB0370-TH	●	3.7	132	181	4.0
30WHNSB0380-TH	●	3.8	132	181	4.0
30WHNSB0390-TH	●	3.9	132	181	4.0
30WHNSB0400-TH	●	4.0	132	181	4.0
30WHNSB0410-TH	●	4.1	149	200	5.0
30WHNSB0420-TH	●	4.2	149	200	5.0
30WHNSB0430-TH	●	4.3	149	200	5.0
30WHNSB0440-TH	●	4.4	149	200	5.0
30WHNSB0450-TH	●	4.5	149	200	5.0
30WHNSB0460-TH	●	4.6	166	217	5.0
30WHNSB0470-TH	●	4.7	166	217	5.0
30WHNSB0480-TH	●	4.8	166	217	5.0
30WHNSB0490-TH	●	4.9	166	217	5.0
30WHNSB0500-TH	●	5.0	166	217	5.0
30WHNSB0510-TH	●	5.1	182	233	6.0
30WHNSB0520-TH	●	5.2	182	233	6.0
30WHNSB0530-TH	●	5.3	182	233	6.0
30WHNSB0540-TH	●	5.4	182	233	6.0
30WHNSB0550-TH	●	5.5	182	233	6.0
30WHNSB0560-TH	●	5.6	199	250	6.0
30WHNSB0570-TH	●	5.7	199	250	6.0
30WHNSB0580-TH	●	5.8	199	250	6.0
30WHNSB0590-TH	●	5.9	199	250	6.0
30WHNSB0600-TH	●	6.0	199	250	6.0
30WHNSB0610-TH	●	6.1	215	268	7.0
30WHNSB0620-TH	●	6.2	215	268	7.0
30WHNSB0630-TH	●	6.3	215	268	7.0
30WHNSB0640-TH	●	6.4	215	268	7.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
30WHNSB0650-TH	●	6.5	215	268	7.0
30WHNSB0660-TH	●	6.6	232	285	7.0
30WHNSB0670-TH	●	6.7	232	285	7.0
30WHNSB0680-TH	●	6.8	232	285	7.0
30WHNSB0690-TH	●	6.9	232	285	7.0
30WHNSB0700-TH	●	7.0	232	285	7.0
30WHNSB0710-TH	●	7.1	248	303	8.0
30WHNSB0720-TH	●	7.2	248	303	8.0
30WHNSB0730-TH	●	7.3	248	303	8.0
30WHNSB0740-TH	●	7.4	248	303	8.0
30WHNSB0750-TH	●	7.5	248	303	8.0
30WHNSB0760-TH	●	7.6	265	320	8.0
30WHNSB0770-TH	●	7.7	265	320	8.0
30WHNSB0780-TH	●	7.8	265	320	8.0
30WHNSB0790-TH	●	7.9	265	320	8.0
30WHNSB0800-TH	●	8.0	265	320	8.0
30WHNSB0810-TH	□	8.1	281	336	9.0
30WHNSB0820-TH	□	8.2	281	336	9.0
30WHNSB0830-TH	□	8.3	281	336	9.0
30WHNSB0840-TH	□	8.4	281	336	9.0
30WHNSB0850-TH	□	8.5	281	336	9.0
30WHNSB0860-TH	□	8.6	298	353	9.0
30WHNSB0870-TH	□	8.7	298	353	9.0
30WHNSB0880-TH	□	8.8	298	353	9.0
30WHNSB0890-TH	□	8.9	298	353	9.0
30WHNSB0900-TH	□	9.0	298	353	9.0

30 WHNSB

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 and 6.0.
For other items, the diameter tolerance will be as in the table below.

(mm)

30WHNSB		
	3.0<Dc≤6.0	6.0<Dc≤9.0
Max	-0.020	-0.024
Min	-0.036	-0.045

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



Recommended cutting conditions

10WHNSB-TH

15WHNSB-TH

20WHNSB-TH

30WHNSB-TH

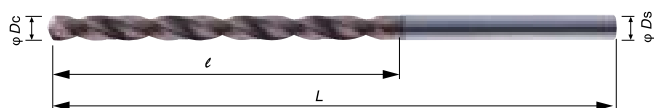
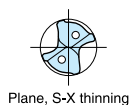
Work material (hardness)	Cutting speed (Vc) m/min	Cutting conditions	Tool Dia. (mm)					
			Ø2.0	Ø4.0	Ø6.0	Ø8.0	Ø10.0	Ø12.0
Structural steel (~180HB) SS	Internal Coolant 40~120	(n)min ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	8000	7000	4800	3600	2900	2400
	MQL (mist) 40~110	(n)min ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	8000	5500	4300	3200	2600	2200
Carbon steel (~200HB) S45C	Internal Coolant 40~120	(n)min ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	8000	7000	4800	3600	2900	2400
	MQL (mist) 40~110	(n)min ⁻¹ 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 ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	8000	6300	4500	3400	2700	2400
	MQL (mist) 40~90	(n)min ⁻¹ 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 ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	6000	4800	3700	2700	2200	1800
	Prehardened steel 20~50	(n)min ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	4500	2400	1600	1200	950	800
Ductile iron FCD500	Internal Coolant 40~120	(n)min ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	8000	7000	4800	3600	2900	2400
	MQL (mist) 40~100	(n)min ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	8000	6300	4500	3400	2700	2400
Casting FC250	Internal Coolant 40~150	(n)min ⁻¹ Revolution speed (n) (f)mm/rev Feed per Rev	8000	8000	5300	4000	3200	2650
	MQL (mist) 40~120	(n)min ⁻¹ 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.



ดอกสว่านคาร์ไบด์ Non Step สำหรับเหล็กหล่อ Carbide Oil Hole Non Step Borer for Cast Iron (10D) 10FWHNSB000-TH



※1 Completely coated



Refer to this page



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

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
※1 10FWHNSB0300-TH	●	3.0	39	87	3.0
※1 10FWHNSB0310-TH	□	3.1	46	94	4.0
※1 10FWHNSB0320-TH	□	3.2	46	94	4.0
※1 10FWHNSB0330-TH	□	3.3	46	94	4.0
※1 10FWHNSB0340-TH	□	3.4	46	94	4.0
※1 10FWHNSB0350-TH	□	3.5	46	94	4.0
※1 10FWHNSB0360-TH	□	3.6	52	101	4.0
※1 10FWHNSB0370-TH	□	3.7	52	101	4.0
※1 10FWHNSB0380-TH	□	3.8	52	101	4.0
※1 10FWHNSB0390-TH	□	3.9	52	101	4.0
※1 10FWHNSB0400-TH	●	4.0	52	101	4.0
※1 10FWHNSB0410-TH	□	4.1	59	110	5.0
※1 10FWHNSB0420-TH	□	4.2	59	110	5.0
※1 10FWHNSB0430-TH	□	4.3	59	110	5.0
※1 10FWHNSB0440-TH	□	4.4	59	110	5.0
※1 10FWHNSB0450-TH	□	4.5	59	110	5.0
※1 10FWHNSB0460-TH	□	4.6	66	117	5.0
※1 10FWHNSB0470-TH	□	4.7	66	117	5.0
※1 10FWHNSB0480-TH	□	4.8	66	117	5.0
※1 10FWHNSB0490-TH	□	4.9	66	117	5.0
※1 10FWHNSB0500-TH	●	5.0	66	117	5.0
※1 10FWHNSB0510-TH	□	5.1	72	123	6.0
※1 10FWHNSB0520-TH	□	5.2	72	123	6.0
※1 10FWHNSB0530-TH	□	5.3	72	123	6.0
※1 10FWHNSB0540-TH	□	5.4	72	123	6.0
※1 10FWHNSB0550-TH	●	5.5	72	123	6.0
※1 10FWHNSB0560-TH	□	5.6	79	130	6.0
※1 10FWHNSB0570-TH	□	5.7	79	130	6.0
※1 10FWHNSB0580-TH	□	5.8	79	130	6.0
※1 10FWHNSB0590-TH	□	5.9	79	130	6.0
※1 10FWHNSB0600-TH	●	6.0	79	130	6.0
※1 10FWHNSB0610-TH	□	6.1	85	138	7.0
※1 10FWHNSB0620-TH	□	6.2	85	138	7.0
※1 10FWHNSB0630-TH	□	6.3	85	138	7.0
※1 10FWHNSB0640-TH	□	6.4	85	138	7.0
※1 10FWHNSB0650-TH	●	6.5	85	138	7.0
※1 10FWHNSB0660-TH	□	6.6	92	145	7.0
※1 10FWHNSB0670-TH	□	6.7	92	145	7.0
※1 10FWHNSB0680-TH	□	6.8	92	145	7.0
※1 10FWHNSB0690-TH	□	6.9	92	145	7.0
※1 10FWHNSB0700-TH	●	7.0	92	145	7.0
※1 10FWHNSB0710-TH	□	7.1	98	153	8.0
※1 10FWHNSB0720-TH	□	7.2	98	153	8.0
※1 10FWHNSB0730-TH	□	7.3	98	153	8.0
※1 10FWHNSB0740-TH	□	7.4	98	153	8.0
※1 10FWHNSB0750-TH	□	7.5	98	153	8.0
※1 10FWHNSB0760-TH	□	7.6	105	160	8.0
※1 10FWHNSB0770-TH	□	7.7	105	160	8.0
※1 10FWHNSB0780-TH	□	7.8	105	160	8.0
※1 10FWHNSB0790-TH	□	7.9	105	160	8.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
※1 10FWHNSB0800-TH	●	8.0	105	160	8.0
※1 10FWHNSB0810-TH	□	8.1	111	166	9.0
※1 10FWHNSB0820-TH	□	8.2	111	166	9.0
※1 10FWHNSB0830-TH	□	8.3	111	166	9.0
※1 10FWHNSB0840-TH	□	8.4	111	166	9.0
※1 10FWHNSB0850-TH	□	8.5	111	166	9.0
10FWHNSB0860-TH	□	8.6	118	173	9.0
10FWHNSB0870-TH	□	8.7	118	173	9.0
10FWHNSB0880-TH	□	8.8	118	173	9.0
10FWHNSB0890-TH	□	8.9	118	173	9.0
10FWHNSB0900-TH	●	9.0	118	173	9.0
10FWHNSB0910-TH	□	9.1	124	179	10.0
10FWHNSB0920-TH	□	9.2	124	179	10.0
10FWHNSB0930-TH	□	9.3	124	179	10.0
10FWHNSB0940-TH	□	9.4	124	179	10.0
10FWHNSB0950-TH	□	9.5	124	179	10.0
10FWHNSB0960-TH	□	9.6	131	186	10.0
10FWHNSB0970-TH	□	9.7	131	186	10.0
10FWHNSB0980-TH	□	9.8	131	186	10.0
10FWHNSB0990-TH	□	9.9	131	186	10.0
10FWHNSB1000-TH	●	10.0	131	186	10.0
10FWHNSB1010-TH	□	10.1	138	193	11.0
10FWHNSB1020-TH	□	10.2	138	193	11.0
10FWHNSB1030-TH	□	10.3	138	193	11.0
10FWHNSB1040-TH	□	10.4	138	193	11.0
10FWHNSB1050-TH	□	10.5	138	193	11.0
10FWHNSB1060-TH	□	10.6	144	205	11.0
10FWHNSB1070-TH	□	10.7	144	205	11.0
10FWHNSB1080-TH	□	10.8	144	205	11.0
10FWHNSB1090-TH	□	10.9	144	205	11.0
10FWHNSB1100-TH	●	11.0	144	205	11.0
10FWHNSB1110-TH	□	11.1	151	212	12.0
10FWHNSB1120-TH	□	11.2	151	212	12.0
10FWHNSB1130-TH	□	11.3	151	212	12.0
10FWHNSB1140-TH	□	11.4	151	212	12.0
10FWHNSB1150-TH	□	11.5	151	212	12.0
10FWHNSB1160-TH	□	11.6	157	218	12.0
10FWHNSB1170-TH	□	11.7	157	218	12.0
10FWHNSB1180-TH	□	11.8	157	218	12.0
10FWHNSB1190-TH	□	11.9	157	218	12.0
10FWHNSB1200-TH	●	12.0	157	218	12.0
10FWHNSB1210-TH	□	12.1	164	225	13.0
10FWHNSB1220-TH	□	12.2	164	225	13.0
10FWHNSB1230-TH	□	12.3	164	225	13.0
10FWHNSB1240-TH	□	12.4	164	225	13.0
10FWHNSB1250-TH	□	12.5	164	225	13.0
10FWHNSB1260-TH	□	12.6	170	236	13.0
10FWHNSB1270-TH	□	12.7	170	236	13.0
10FWHNSB1280-TH	□	12.8	170	236	13.0
10FWHNSB1290-TH	□	12.9	170	236	13.0

※1 Completely coated

10 ~ 30FWHNSB
Table of Tolerance on tool dia.

□ : Tool diameter tolerance of 10 to 30FWHNSB for stock of specified distributors.

(mm)

10 ~ 30FWHNSB				
	ODc≤3.0	3.0<ODc≤6.0	6.0<ODc≤10.0	10.0<ODc≤14.0
Max	-0.015	-0.020	-0.024	-0.030
Min	-0.028	-0.036	-0.045	-0.053

● : Tool dia. tolerance of stocked items 10 to 30FWHNSB is h8

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

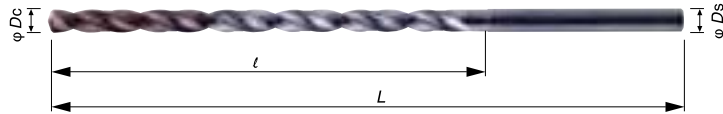
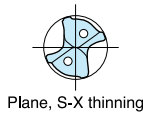
DRILLS

ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step สำหรับเหล็กหล่อ

Carbide Oil Hole Non Step Borer for Cast Iron (15D) 15FWHNSB-TH



Refer to this page



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

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
15FWHNSB0300-TH	●	3.0	54	102	3.0
15FWHNSB0310-TH	□	3.1	63	111	4.0
15FWHNSB0320-TH	□	3.2	63	111	4.0
15FWHNSB0330-TH	□	3.3	63	111	4.0
15FWHNSB0340-TH	□	3.4	63	111	4.0
15FWHNSB0350-TH	□	3.5	63	111	4.0
15FWHNSB0360-TH	□	3.6	72	121	4.0
15FWHNSB0370-TH	□	3.7	72	121	4.0
15FWHNSB0380-TH	□	3.8	72	121	4.0
15FWHNSB0390-TH	□	3.9	72	121	4.0
15FWHNSB0400-TH	●	4.0	72	121	4.0
15FWHNSB0410-TH	□	4.1	81	132	5.0
15FWHNSB0420-TH	□	4.2	81	132	5.0
15FWHNSB0430-TH	□	4.3	81	132	5.0
15FWHNSB0440-TH	□	4.4	81	132	5.0
15FWHNSB0450-TH	□	4.5	81	132	5.0
15FWHNSB0460-TH	□	4.6	91	142	5.0
15FWHNSB0470-TH	□	4.7	91	142	5.0
15FWHNSB0480-TH	□	4.8	91	142	5.0
15FWHNSB0490-TH	□	4.9	91	142	5.0
15FWHNSB0500-TH	●	5.0	91	142	5.0
15FWHNSB0510-TH	□	5.1	100	151	6.0
15FWHNSB0520-TH	□	5.2	100	151	6.0
15FWHNSB0530-TH	□	5.3	100	151	6.0
15FWHNSB0540-TH	□	5.4	100	151	6.0
15FWHNSB0550-TH	●	5.5	100	151	6.0
15FWHNSB0560-TH	□	5.6	109	160	6.0
15FWHNSB0570-TH	□	5.7	109	160	6.0
15FWHNSB0580-TH	□	5.8	109	160	6.0
15FWHNSB0590-TH	□	5.9	109	160	6.0
15FWHNSB0600-TH	●	6.0	109	160	6.0
15FWHNSB0610-TH	□	6.1	118	171	7.0
15FWHNSB0620-TH	□	6.2	118	171	7.0
15FWHNSB0630-TH	□	6.3	118	171	7.0
15FWHNSB0640-TH	□	6.4	118	171	7.0
15FWHNSB0650-TH	●	6.5	118	171	7.0
15FWHNSB0660-TH	□	6.6	127	180	7.0
15FWHNSB0670-TH	□	6.7	127	180	7.0
15FWHNSB0680-TH	□	6.8	127	180	7.0
15FWHNSB0690-TH	□	6.9	127	180	7.0
15FWHNSB0700-TH	●	7.0	127	180	7.0
15FWHNSB0710-TH	□	7.1	136	191	8.0
15FWHNSB0720-TH	□	7.2	136	191	8.0
15FWHNSB0730-TH	□	7.3	136	191	8.0
15FWHNSB0740-TH	□	7.4	136	191	8.0
15FWHNSB0750-TH	□	7.5	136	191	8.0
15FWHNSB0760-TH	□	7.6	145	200	8.0
15FWHNSB0770-TH	□	7.7	145	200	8.0
15FWHNSB0780-TH	□	7.8	145	200	8.0
15FWHNSB0790-TH	□	7.9	145	200	8.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
15FWHNSB0800-TH	●	8.0	145	200	8.0
15FWHNSB0810-TH	□	8.1	154	209	9.0
15FWHNSB0820-TH	□	8.2	154	209	9.0
15FWHNSB0830-TH	□	8.3	154	209	9.0
15FWHNSB0840-TH	□	8.4	154	209	9.0
15FWHNSB0850-TH	□	8.5	154	209	9.0
15FWHNSB0860-TH	□	8.6	163	218	9.0
15FWHNSB0870-TH	□	8.7	163	218	9.0
15FWHNSB0880-TH	□	8.8	163	218	9.0
15FWHNSB0890-TH	□	8.9	163	218	9.0
15FWHNSB0900-TH	●	9.0	163	218	9.0
15FWHNSB0910-TH	□	9.1	172	227	10.0
15FWHNSB0920-TH	□	9.2	172	227	10.0
15FWHNSB0930-TH	□	9.3	172	227	10.0
15FWHNSB0940-TH	□	9.4	172	227	10.0
15FWHNSB0950-TH	□	9.5	172	227	10.0
15FWHNSB0960-TH	□	9.6	181	236	10.0
15FWHNSB0970-TH	□	9.7	181	236	10.0
15FWHNSB0980-TH	□	9.8	181	236	10.0
15FWHNSB0990-TH	□	9.9	181	236	10.0
15FWHNSB1000-TH	●	10.0	181	236	10.0
15FWHNSB1010-TH	□	10.1	190	245	11.0
15FWHNSB1020-TH	□	10.2	190	245	11.0
15FWHNSB1030-TH	□	10.3	190	245	11.0
15FWHNSB1040-TH	□	10.4	190	245	11.0
15FWHNSB1050-TH	□	10.5	190	245	11.0
15FWHNSB1060-TH	□	10.6	199	260	11.0
15FWHNSB1070-TH	□	10.7	199	260	11.0
15FWHNSB1080-TH	□	10.8	199	260	11.0
15FWHNSB1090-TH	□	10.9	199	260	11.0
15FWHNSB1100-TH	●	11.0	199	260	11.0
15FWHNSB1110-TH	□	11.1	208	269	12.0
15FWHNSB1120-TH	□	11.2	208	269	12.0
15FWHNSB1130-TH	□	11.3	208	269	12.0
15FWHNSB1140-TH	□	11.4	208	269	12.0
15FWHNSB1150-TH	□	11.5	208	269	12.0
15FWHNSB1160-TH	□	11.6	217	278	12.0
15FWHNSB1170-TH	□	11.7	217	278	12.0
15FWHNSB1180-TH	□	11.8	217	278	12.0
15FWHNSB1190-TH	□	11.9	217	278	12.0
15FWHNSB1200-TH	●	12.0	217	278	12.0
15FWHNSB1210-TH	□	12.1	226	287	13.0
15FWHNSB1220-TH	□	12.2	226	287	13.0
15FWHNSB1230-TH	□	12.3	226	287	13.0
15FWHNSB1240-TH	□	12.4	226	287	13.0
15FWHNSB1250-TH	□	12.5	226	287	13.0
15FWHNSB1260-TH	□	12.6	235	301	13.0
15FWHNSB1270-TH	□	12.7	235	301	13.0
15FWHNSB1280-TH	□	12.8	235	301	13.0
15FWHNSB1290-TH	□	12.9	235	301	13.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
15FWHNSB1300-TH	□	13.0	235	301	13.0

10 ~ 30FWHNSB
Table of Tolerance on tool dia.

□ : Tool diameter tolerance of 10 to 30FWHNSB for stock of specified distributors.

(mm)

10 ~ 30FWHNSB				
	ODc≤3.0	3.0<ODc≤6.0	6.0<ODc≤10.0	10.0<ODc≤14.0
Max	-0.015	-0.020	-0.024	-0.030
Min	-0.028	-0.036	-0.045	-0.053

● : Tool dia. tolerance of stocked items 10 to 30FWHNSB is h8

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



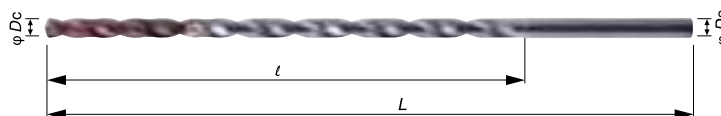
ดอกสว่านคาร์ไบด์ Non Step สำหรับเหล็กหล่อ

Carbide Oil Hole Non Step Borer for Cast Iron (20D)

20FWHNSB000-TH



Plane, S-X thinning



Refer to this page



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

(mm)

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

ตัวสั้น / มาตรฐาน

Long

ตัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
20FWHNSB0300-TH	●	3.0	69	117	3.0
20FWHNSB0310-TH	□	3.1	81	129	4.0
20FWHNSB0320-TH	□	3.2	81	129	4.0
20FWHNSB0330-TH	□	3.3	81	129	4.0
20FWHNSB0340-TH	□	3.4	81	129	4.0
20FWHNSB0350-TH	□	3.5	81	129	4.0
20FWHNSB0360-TH	□	3.6	92	141	4.0
20FWHNSB0370-TH	□	3.7	92	141	4.0
20FWHNSB0380-TH	□	3.8	92	141	4.0
20FWHNSB0390-TH	□	3.9	92	141	4.0
20FWHNSB0400-TH	●	4.0	92	141	4.0
20FWHNSB0410-TH	□	4.1	104	155	5.0
20FWHNSB0420-TH	□	4.2	104	155	5.0
20FWHNSB0430-TH	□	4.3	104	155	5.0
20FWHNSB0440-TH	□	4.4	104	155	5.0
20FWHNSB0450-TH	□	4.5	104	155	5.0
20FWHNSB0460-TH	□	4.6	116	167	5.0
20FWHNSB0470-TH	□	4.7	116	167	5.0
20FWHNSB0480-TH	□	4.8	116	167	5.0
20FWHNSB0490-TH	□	4.9	116	167	5.0
20FWHNSB0500-TH	●	5.0	116	167	5.0
20FWHNSB0510-TH	□	5.1	127	178	6.0
20FWHNSB0520-TH	□	5.2	127	178	6.0
20FWHNSB0530-TH	□	5.3	127	178	6.0
20FWHNSB0540-TH	□	5.4	127	178	6.0
20FWHNSB0550-TH	●	5.5	127	178	6.0
20FWHNSB0560-TH	□	5.6	139	190	6.0
20FWHNSB0570-TH	□	5.7	139	190	6.0
20FWHNSB0580-TH	□	5.8	139	190	6.0
20FWHNSB0590-TH	□	5.9	139	190	6.0
20FWHNSB0600-TH	●	6.0	139	190	6.0
20FWHNSB0610-TH	□	6.1	150	203	7.0
20FWHNSB0620-TH	□	6.2	150	203	7.0
20FWHNSB0630-TH	□	6.3	150	203	7.0
20FWHNSB0640-TH	□	6.4	150	203	7.0
20FWHNSB0650-TH	●	6.5	150	203	7.0
20FWHNSB0660-TH	□	6.6	162	215	7.0
20FWHNSB0670-TH	□	6.7	162	215	7.0
20FWHNSB0680-TH	□	6.8	162	215	7.0
20FWHNSB0690-TH	□	6.9	162	215	7.0
20FWHNSB0700-TH	●	7.0	162	215	7.0
20FWHNSB0710-TH	□	7.1	173	228	8.0
20FWHNSB0720-TH	□	7.2	173	228	8.0
20FWHNSB0730-TH	□	7.3	173	228	8.0
20FWHNSB0740-TH	□	7.4	173	228	8.0
20FWHNSB0750-TH	□	7.5	173	228	8.0
20FWHNSB0760-TH	□	7.6	185	240	8.0
20FWHNSB0770-TH	□	7.7	185	240	8.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
20FWHNSB0780-TH	□	7.8	185	240	8.0
20FWHNSB0790-TH	□	7.9	185	240	8.0
20FWHNSB0800-TH	●	8.0	185	240	8.0
20FWHNSB0810-TH	□	8.1	196	251	9.0
20FWHNSB0820-TH	□	8.2	196	251	9.0
20FWHNSB0830-TH	□	8.3	196	251	9.0
20FWHNSB0840-TH	□	8.4	196	251	9.0
20FWHNSB0850-TH	□	8.5	196	251	9.0
20FWHNSB0860-TH	□	8.6	208	263	9.0
20FWHNSB0870-TH	□	8.7	208	263	9.0
20FWHNSB0880-TH	□	8.8	208	263	9.0
20FWHNSB0890-TH	□	8.9	208	263	9.0
20FWHNSB0900-TH	●	9.0	208	263	9.0
20FWHNSB0910-TH	□	9.1	219	274	10.0
20FWHNSB0920-TH	□	9.2	219	274	10.0
20FWHNSB0930-TH	□	9.3	219	274	10.0
20FWHNSB0940-TH	□	9.4	219	274	10.0
20FWHNSB0950-TH	□	9.5	219	274	10.0
20FWHNSB0960-TH	□	9.6	231	286	10.0
20FWHNSB0970-TH	□	9.7	231	286	10.0
20FWHNSB0980-TH	□	9.8	231	286	10.0
20FWHNSB0990-TH	□	9.9	231	286	10.0
20FWHNSB1000-TH	●	10.0	231	286	10.0
20FWHNSB1010-TH	□	10.1	243	298	11.0
20FWHNSB1020-TH	□	10.2	243	298	11.0
20FWHNSB1030-TH	□	10.3	243	298	11.0
20FWHNSB1040-TH	□	10.4	243	298	11.0
20FWHNSB1050-TH	□	10.5	243	298	11.0
20FWHNSB1060-TH	□	10.6	254	315	11.0
20FWHNSB1070-TH	□	10.7	254	315	11.0
20FWHNSB1080-TH	□	10.8	254	315	11.0
20FWHNSB1090-TH	□	10.9	254	315	11.0
20FWHNSB1100-TH	●	11.0	254	315	11.0
20FWHNSB1110-TH	□	11.1	266	327	12.0
20FWHNSB1120-TH	□	11.2	266	327	12.0
20FWHNSB1130-TH	□	11.3	266	327	12.0
20FWHNSB1140-TH	□	11.4	266	327	12.0
20FWHNSB1150-TH	□	11.5	266	327	12.0
20FWHNSB1160-TH	□	11.6	277	338	12.0
20FWHNSB1170-TH	□	11.7	277	338	12.0
20FWHNSB1180-TH	□	11.8	277	338	12.0
20FWHNSB1190-TH	□	11.9	277	338	12.0
20FWHNSB1200-TH	●	12.0	277	338	12.0

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

DRILLS

ดอกสว่าน



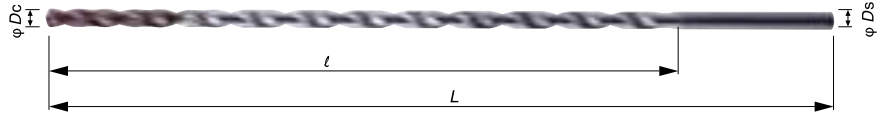
ดอกสว่านคาร์ไบด์ Non Step สำหรับเหล็กหล่อ

Carbide Oil Hole Non Step Borer for Cast Iron (30D)

30FWHNSB...-TH



Plane, S-X thinning



Refer to this page



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

(mm)

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
30FWHNSB0300-TH	●	3.0	99	147	3.0
30FWHNSB0310-TH	□	3.1	116	164	4.0
30FWHNSB0320-TH	□	3.2	116	164	4.0
30FWHNSB0330-TH	□	3.3	116	164	4.0
30FWHNSB0340-TH	□	3.4	116	164	4.0
30FWHNSB0350-TH	□	3.5	116	164	4.0
30FWHNSB0360-TH	□	3.6	132	181	4.0
30FWHNSB0370-TH	□	3.7	132	181	4.0
30FWHNSB0380-TH	□	3.8	132	181	4.0
30FWHNSB0390-TH	□	3.9	132	181	4.0
30FWHNSB0400-TH	●	4.0	132	181	4.0
30FWHNSB0410-TH	□	4.1	149	200	5.0
30FWHNSB0420-TH	□	4.2	149	200	5.0
30FWHNSB0430-TH	□	4.3	149	200	5.0
30FWHNSB0440-TH	□	4.4	149	200	5.0
30FWHNSB0450-TH	□	4.5	149	200	5.0
30FWHNSB0460-TH	□	4.6	166	217	5.0
30FWHNSB0470-TH	□	4.7	166	217	5.0
30FWHNSB0480-TH	□	4.8	166	217	5.0
30FWHNSB0490-TH	□	4.9	166	217	5.0
30FWHNSB0500-TH	●	5.0	166	217	5.0
30FWHNSB0510-TH	□	5.1	182	233	6.0
30FWHNSB0520-TH	□	5.2	182	233	6.0
30FWHNSB0530-TH	□	5.3	182	233	6.0
30FWHNSB0540-TH	□	5.4	182	233	6.0
30FWHNSB0550-TH	●	5.5	182	233	6.0
30FWHNSB0560-TH	□	5.6	199	250	6.0
30FWHNSB0570-TH	□	5.7	199	250	6.0
30FWHNSB0580-TH	□	5.8	199	250	6.0
30FWHNSB0590-TH	□	5.9	199	250	6.0
30FWHNSB0600-TH	●	6.0	199	250	6.0
30FWHNSB0610-TH	□	6.1	215	268	7.0
30FWHNSB0620-TH	□	6.2	215	268	7.0
30FWHNSB0630-TH	□	6.3	215	268	7.0
30FWHNSB0640-TH	□	6.4	215	268	7.0
30FWHNSB0650-TH	●	6.5	215	268	7.0
30FWHNSB0660-TH	□	6.6	232	285	7.0
30FWHNSB0670-TH	□	6.7	232	285	7.0
30FWHNSB0680-TH	□	6.8	232	285	7.0
30FWHNSB0690-TH	□	6.9	232	285	7.0
30FWHNSB0700-TH	●	7.0	232	285	7.0
30FWHNSB0710-TH	□	7.1	248	303	8.0
30FWHNSB0720-TH	□	7.2	248	303	8.0
30FWHNSB0730-TH	□	7.3	248	303	8.0
30FWHNSB0740-TH	□	7.4	248	303	8.0
30FWHNSB0750-TH	□	7.5	248	303	8.0
30FWHNSB0760-TH	□	7.6	265	320	8.0
30FWHNSB0770-TH	□	7.7	265	320	8.0
30FWHNSB0780-TH	□	7.8	265	320	8.0
30FWHNSB0790-TH	□	7.9	265	320	8.0

Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
30FWHNSB0800-TH	●	8.0	265	320	8.0
30FWHNSB0810-TH	□	8.1	281	336	9.0
30FWHNSB0820-TH	□	8.2	281	336	9.0
30FWHNSB0830-TH	□	8.3	281	336	9.0
30FWHNSB0840-TH	□	8.4	281	336	9.0
30FWHNSB0850-TH	□	8.5	281	336	9.0
30FWHNSB0860-TH	□	8.6	298	353	9.0
30FWHNSB0870-TH	□	8.7	298	353	9.0
30FWHNSB0880-TH	□	8.8	298	353	9.0
30FWHNSB0890-TH	□	8.9	298	353	9.0
30FWHNSB0900-TH	●	9.0	298	353	9.0
30FWHNSB0910-TH	□	9.1	314	369	10.0
30FWHNSB0920-TH	□	9.2	314	369	10.0
30FWHNSB0930-TH	□	9.3	314	369	10.0
30FWHNSB0940-TH	□	9.4	314	369	10.0
30FWHNSB0950-TH	□	9.5	314	369	10.0
30FWHNSB0960-TH	□	9.6	331	386	10.0
30FWHNSB0970-TH	□	9.7	331	386	10.0
30FWHNSB0980-TH	□	9.8	331	386	10.0
30FWHNSB0990-TH	□	9.9	331	386	10.0
30FWHNSB1000-TH	●	10.0	331	386	10.0

10 ~ 30FWHNSB
Table of Tolerance on tool dia.

□ : Tool diameter tolerance of 10 to 30FWHNSB for stock of specified distributors.

(mm)

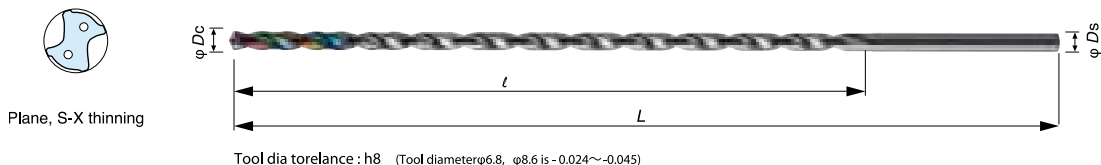
10 ~ 30FWHNSB				
	∅Dc≤3.0	3.0<∅Dc≤6.0	6.0<∅Dc≤10.0	10.0<∅Dc≤14.0
Max	-0.015	-0.020	-0.024	-0.030
Min	-0.028	-0.036	-0.045	-0.053

● : Tool dia. tolerance of stocked items 10 to 30FWHNSB is h8

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



ดอกสว่านคาร์ไบด์ Non Step สำหรับอลูมิเนียม Carbide Oil Hole Non Step Borer for Aluminium (15~30D)



Ø3	:	0 ~ -0.014
Ø3.5 ~ Ø6	:	0 ~ -0.018
Ø6.5	:	0 ~ -0.022
Ø6.8	:	-0.024 ~ -0.045
Ø7 ~ Ø8.5	:	0 ~ -0.022
Ø8.6	:	-0.024 ~ -0.045
Ø9 ~ Ø10	:	0 ~ -0.022



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

(mm)

15WHNSB-SD



Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
15WHNSB0300-SD	●	3.0	54	102	3.0
15WHNSB0350-SD	□	3.5	63	111	4.0
15WHNSB0400-SD	●	4.0	72	121	4.0
15WHNSB0450-SD	□	4.5	81	132	5.0
15WHNSB0500-SD	●	5.0	91	142	5.0
15WHNSB0550-SD	●	5.5	100	151	6.0
15WHNSB0600-SD	●	6.0	109	160	6.0
15WHNSB0650-SD	□	6.5	118	171	7.0
15WHNSB0680-SD	□	6.8	127	180	7.0
15WHNSB0700-SD	●	7.0	127	180	7.0
15WHNSB0750-SD	□	7.5	136	191	8.0
15WHNSB0800-SD	●	8.0	145	200	8.0
15WHNSB0850-SD	□	8.5	154	209	9.0
15WHNSB0860-SD	□	8.6	163	218	9.0
15WHNSB0900-SD	●	9.0	163	218	9.0
15WHNSB0950-SD	□	9.5	172	227	10.0
15WHNSB1000-SD	●	10.0	181	236	10.0

20WHNSB-SD



Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
20WHNSB0300-SD	●	3.0	69	117	3.0
20WHNSB0350-SD	□	3.5	81	129	4.0
20WHNSB0400-SD	●	4.0	92	141	4.0
20WHNSB0450-SD	□	4.5	104	155	5.0
20WHNSB0500-SD	●	5.0	116	167	5.0
20WHNSB0550-SD	●	5.5	127	178	6.0
20WHNSB0600-SD	●	6.0	139	190	6.0
20WHNSB0650-SD	□	6.5	150	203	7.0
20WHNSB0680-SD	□	6.8	162	215	7.0
20WHNSB0700-SD	●	7.0	162	215	7.0
20WHNSB0750-SD	□	7.5	173	228	8.0
20WHNSB0800-SD	●	8.0	185	240	8.0

DRILLS

ดอกสว่าน



25WHNSB-SD



Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
25WHNSB0300-SD	●	3.0	84	132	3.0
25WHNSB0350-SD	□	3.5	98	146	4.0
25WHNSB0400-SD	●	4.0	113	162	4.0
25WHNSB0450-SD	□	4.5	127	178	5.0
25WHNSB0500-SD	●	5.0	141	192	5.0
25WHNSB0550-SD	●	5.5	155	206	6.0
25WHNSB0600-SD	●	6.0	169	220	6.0
25WHNSB0650-SD	□	6.5	183	236	7.0
25WHNSB0680-SD	□	6.8	191	244	7.0
25WHNSB0700-SD	●	7.0	197	250	7.0
25WHNSB0750-SD	□	7.5	211	266	8.0
25WHNSB0800-SD	●	8.0	225	280	8.0

30WHNSB-SD



Order Code	Stock	Size (mm)			
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	Ds Shank Dia.
30WHNSB0300-SD	●	3.0	99	147	3.0
30WHNSB0350-SD	□	3.5	116	164	4.0
30WHNSB0400-SD	●	4.0	132	181	4.0
30WHNSB0450-SD	□	4.5	149	200	5.0
30WHNSB0500-SD	●	5.0	166	217	5.0
30WHNSB0550-SD	●	5.5	182	233	6.0
30WHNSB0600-SD	●	6.0	199	250	6.0

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

Stright Shank

ดอกสว่านแกนตรง

Carbide Drills
ดอกสว่านคาร์ไบด์

HSS Drills
ดอกสว่านไฮสปีด

Stub / Standard
ตัวสั้น / มาตรฐาน

Long
ตัวยาว

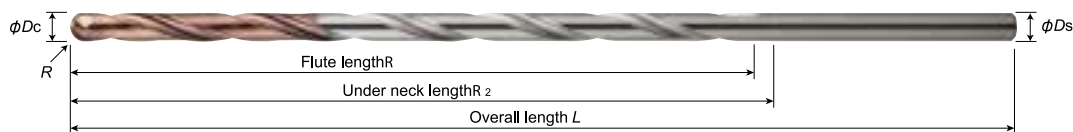
Micro Drill
ดอกสว่านไมโคร

Z Plunging

Step Borer



ดอกสว่านคาร์ไบด์ สำหรับ SR Machining Carbide Drill for SR Machining (8Dc ~ 20Dc ~ 30Dc)



03	:	0 ~ -0.014
04 ~ 06	:	0 ~ -0.018
07 ~ 010	:	0 ~ -0.022
010.5 ~ 012	:	0 ~ -0.027



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

(mm)

08WHSR-ATH

L/D=8

Order Code	Stock	Size (mm)					
		R Radius	Dc Tool Dia.	ℓ Flute Length	ℓ ₂ Under neck length	L Overall Length	Ds Shank Dia.
08WHSR0300-ATH	●	1.5	3	37	40	85	4
08WHSR0400-ATH	●	2	4	48	51	97	4
08WHSR0500-ATH	●	2.5	5	62	65	114	6
08WHSR0600-ATH	●	3	6	70	73	123	6
08WHSR0700-ATH	●	3.5	7	81	84	133	8
08WHSR0800-ATH	●	4	8	92	95	145	8
08WHSR0850-ATH	●	4.25	8.5	99	102	154	10
08WHSR0900-ATH	●	4.5	9	104	107	158	10
08WHSR0950-ATH	●	4.75	9.5	110	113	165	10
08WHSR1000-ATH	●	5	10	115	118	170	10
08WHSR1050-ATH	●	5.25	10.5	122	125	181	12
08WHSR1100-ATH	●	5.5	11	127	130	185	12
08WHSR1150-ATH	●	5.75	11.5	133	136	192	12
08WHSR1200-ATH	●	6	12	138	141	197	12

20WHSR-ATH

L/D=20

Order Code	Stock	Size (mm)					
		R Radius	Dc Tool Dia.	ℓ Flute Length	ℓ ₂ Under neck length	L Overall Length	Ds Shank Dia.
20WHSR0300-ATH	●	1.5	3	71	74	119	4
20WHSR0400-ATH	●	2	4	94	97	143	4
20WHSR0500-ATH	●	2.5	5	119	122	171	6
20WHSR0600-ATH	●	3	6	142	145	195	6
20WHSR0700-ATH	●	3.5	7	166	169	218	8
20WHSR0800-ATH	●	4	8	189	192	242	8
20WHSR0850-ATH	●	4.25	8.5	201	204	256	10
20WHSR0900-ATH	●	4.5	9	213	216	267	10
20WHSR0950-ATH	●	4.75	9.5	224	227	279	10
20WHSR1000-ATH	●	5	10	236	239	291	10
20WHSR1050-ATH	●	5.25	10.5	249	252	308	12
20WHSR1100-ATH	●	5.5	11	260	263	318	12
20WHSR1150-ATH	●	5.75	11.5	272	275	331	12
20WHSR1200-ATH	●	6	12	283	286	342	12

30WHSR-ATH

L/D=30

Order Code	Stock	Size (mm)					
		R Radius	Dc Tool Dia.	ℓ Flute Length	ℓ ₂ Under neck length	L Overall Length	Ds Shank Dia.
30WHSR0300-ATH	●	1.5	3	101	104	149	4
30WHSR0400-ATH	●	2	4	134	137	183	4
30WHSR0500-ATH	●	2.5	5	169	172	221	6
30WHSR0600-ATH	●	3	6	202	205	255	6
30WHSR0700-ATH	●	3.5	7	236	239	288	8
30WHSR0800-ATH	●	4	8	269	272	322	8
30WHSR0850-ATH	●	4.25	8.5	286	289	341	10
30WHSR0900-ATH	●	4.5	9	303	306	357	10
30WHSR0950-ATH	●	4.75	9.5	320	323	374	10
30WHSR1000-ATH	●	5	10	336	339	391	10
30WHSR1050-ATH	●	5.25	10.5	353	356	412	12
30WHSR1100-ATH	●	5.5	11	370	373	429	12
30WHSR1150-ATH	●	5.75	11.5	387	390	445	12
30WHSR1200-ATH	●	6	12	404	407	460	12

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

DRILLS

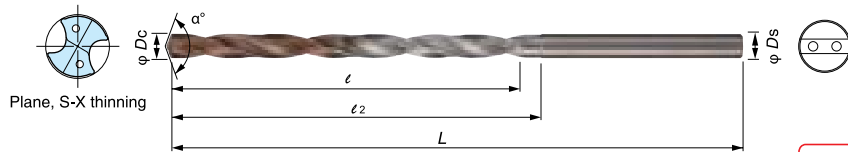
ดอกสว่าน



ดอกสว่านคาร์ไบด์ Non Step

Carbide Oil Hole Non Step Borer H

NSBH000-000-ATH



■ Tool dia. tolerance -NSBH-ATH

Tool dia.	2.0≤Dc≤6.0	6.0<Dc≤10.0	10.0<Dc≤12.0
Tolerance	+0.012 0	+0.015 0	+0.015 -0.003

Cutting depth should be set to "under flute length-2xDc" as a general rule.



Refer to this page



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

(mm)

Order Code	Stock	Size (mm)					α Point angle
		Dc Drill Dia.	l Flute Length	L Overall Length	l2 Under neck length	Ds Shank Dia.	
NSBH0200-10-ATH	●	2.0	10	60	14	4	140
NSBH0200-20-ATH	●		20	70	24		
NSBH0200-40-ATH	●		40	90	44		
NSBH0200-60-ATH	●		60	110	64		
NSBH0210-10-ATH	●	2.1	10	60	14	4	140
NSBH0210-20-ATH	□		20	70	24		
NSBH0210-40-ATH	□		40	90	44		
NSBH0210-60-ATH	□		60	110	64		
NSBH0220-10-ATH	●	2.2	10	60	14	4	135
NSBH0220-20-ATH	□		20	70	24		
NSBH0220-40-ATH	□		40	90	44		
NSBH0220-60-ATH	□		60	110	64		
NSBH0230-10-ATH	●	2.3	10	60	14	4	135
NSBH0230-20-ATH	□		20	70	24		
NSBH0230-40-ATH	□		40	90	44		
NSBH0230-60-ATH	□		60	110	64		
NSBH0240-10-ATH	●	2.4	10	60	14	4	140
NSBH0240-20-ATH	□		20	70	24		
NSBH0240-40-ATH	□		40	90	44		
NSBH0240-60-ATH	□		60	110	64		
NSBH0250-10-ATH	●	2.5	10	60	14	4	135
NSBH0250-20-ATH	●		20	70	24		
NSBH0250-40-ATH	□		40	90	44		
NSBH0250-60-ATH	□		60	110	64		
NSBH0260-10-ATH	●	2.6	10	60	14	4	140
NSBH0260-20-ATH	●		20	70	24		
NSBH0260-40-ATH	□		40	90	44		
NSBH0260-60-ATH	□		60	110	64		
NSBH0270-10-ATH	●	2.7	10	60	14	4	140
NSBH0270-20-ATH	□		20	70	24		
NSBH0270-40-ATH	□		40	90	44		
NSBH0270-60-ATH	□		60	110	64		
NSBH0280-10-ATH	●	2.8	10	60	14	4	135
NSBH0280-20-ATH	□		20	70	24		
NSBH0280-40-ATH	□		40	90	44		
NSBH0280-60-ATH	□		60	110	64		
NSBH0290-10-ATH	●	2.9	10	60	14	4	140
NSBH0290-20-ATH	□		20	70	24		
NSBH0290-40-ATH	□		40	90	44		
NSBH0290-60-ATH	□		60	110	64		
NSBH0300-20-ATH	●	3.0	20	70	23	4	135
NSBH0300-40-ATH	●		40	90	43		
NSBH0300-60-ATH	●		60	110	63		
NSBH0300-90-ATH	●		90	140	93		
NSBH0310-20-ATH	□	3.1	20	70	23	4	140
NSBH0310-40-ATH	□		40	90	43		
NSBH0310-60-ATH	□		60	110	63		
NSBH0310-90-ATH	□		90	140	93		

Order Code	Stock	Size (mm)					α Point angle
		Dc Drill Dia.	l Flute Length	L Overall Length	l2 Under neck length	Ds Shank Dia.	
NSBH0320-20-ATH	●	3.2	20	70	23	4	140
NSBH0320-40-ATH	●		40	90	43		
NSBH0320-60-ATH	□		60	110	63		
NSBH0320-90-ATH	□		90	140	93		
NSBH0330-20-ATH	●	3.3	20	70	23	4	140
NSBH0330-40-ATH	●		40	90	43		
NSBH0330-60-ATH	□		60	110	63		
NSBH0330-90-ATH	□		90	140	93		
NSBH0340-20-ATH	●	3.4	20	70	23	4	140
NSBH0340-40-ATH	●		40	90	43		
NSBH0340-60-ATH	□		60	110	63		
NSBH0340-90-ATH	□		90	140	93		
NSBH0350-20-ATH	□	3.5	20	70	23	4	140
NSBH0350-40-ATH	□		40	90	43		
NSBH0350-60-ATH	□		60	110	63		
NSBH0350-90-ATH	□		90	140	93		
NSBH0360-20-ATH	□	3.6	20	70	23	4	140
NSBH0360-40-ATH	□		40	90	43		
NSBH0360-60-ATH	□		60	110	63		
NSBH0360-90-ATH	□		90	140	93		
NSBH0360-120-ATH	□	3.7	120	170	123	4	135
NSBH0370-20-ATH	□		20	70	23		
NSBH0370-40-ATH	□		40	90	43		
NSBH0370-60-ATH	□		60	110	63		
NSBH0370-90-ATH	□	3.8	90	140	93	4	140
NSBH0370-120-ATH	□		120	170	123		
NSBH0380-20-ATH	□		20	70	23		
NSBH0380-40-ATH	□		40	90	43		
NSBH0380-60-ATH	□	3.9	60	110	63	4	135
NSBH0380-90-ATH	□		90	140	93		
NSBH0380-120-ATH	□		120	170	123		
NSBH0390-20-ATH	□		20	70	23		
NSBH0390-40-ATH	□	4.0	40	90	43	6	140
NSBH0390-60-ATH	□		60	110	63		
NSBH0390-90-ATH	□		90	140	93		
NSBH0390-120-ATH	□		120	170	123		
NSBH0400-20-ATH	●	4.1	20	70	23	6	135
NSBH0400-40-ATH	●		40	90	43		
NSBH0400-60-ATH	●		60	110	63		
NSBH0400-90-ATH	●		90	140	93		
NSBH0400-120-ATH	●	4.2	120	170	123	6	140
NSBH0410-20-ATH	●		20	70	23		
NSBH0410-40-ATH	□		40	90	43		
NSBH0410-60-ATH	□		60	110	63		
NSBH0410-90-ATH	□	4.3	90	140	93	6	135
NSBH0410-120-ATH	□		120	170	123		
NSBH0420-20-ATH	●		20	70	23		
NSBH0420-40-ATH	●		40	90	43		

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



Order Code	Stock	Size (mm)					α Point angle	Order Code	Stock	Size (mm)					α Point angle
		Dc Drill Dia.	Flute Length	L Overall Length	ℓ ₂ Under neck length	Ds Shank Dia.				Dc Drill Dia.	Flute Length	L Overall Length	ℓ ₂ Under neck length	Ds Shank Dia.	
NSBH0420-60-ATH	☐		60	110	63			NSBH0550-30-ATH	☐		30	85	33		140
NSBH0420-90-ATH	☐	4.2	90	140	93	6	135	NSBH0550-60-ATH	☐		60	115	63		
NSBH0420-120-ATH	☐		120	170	123			NSBH0550-90-ATH	☐	5.5	90	145	93	6	135
NSBH0430-20-ATH	☒		20	70	23		140	NSBH0550-120-ATH	☐		120	175	123		
NSBH0430-40-ATH	☒		40	90	43			NSBH0550-150-ATH	☐		150	205	153		
NSBH0430-60-ATH	☐	4.3	60	110	63	6	135	NSBH0560-30-ATH	☐		30	85	33		140
NSBH0430-90-ATH	☐		90	140	93			NSBH0560-60-ATH	☐		60	115	63		
NSBH0430-120-ATH	☐		120	170	123			NSBH0560-90-ATH	☐	5.6	90	145	93	6	135
NSBH0440-20-ATH	☐		20	70	23		140	NSBH0560-120-ATH	☐		120	175	123		
NSBH0440-40-ATH	☐		40	90	43			NSBH0560-150-ATH	☐		150	205	153		
NSBH0440-60-ATH	☐	4.4	60	110	63	6	135	NSBH0570-30-ATH	☐		30	85	33		140
NSBH0440-90-ATH	☐		90	140	93			NSBH0570-60-ATH	☐		60	115	63		
NSBH0440-120-ATH	☐		120	170	123			NSBH0570-90-ATH	☐	5.7	90	145	93	6	135
NSBH0450-20-ATH	☐		20	70	23		140	NSBH0570-120-ATH	☐		120	175	123		
NSBH0450-40-ATH	☐		40	90	43			NSBH0570-150-ATH	☐		150	205	153		
NSBH0450-60-ATH	☐	4.5	60	110	63	6	135	NSBH0580-30-ATH	☐		30	85	33		140
NSBH0450-90-ATH	☐		90	140	93			NSBH0580-60-ATH	☐		60	115	63		
NSBH0450-120-ATH	☐		120	170	123			NSBH0580-90-ATH	☐	5.8	90	145	93	6	135
NSBH0460-20-ATH	☐		20	70	23		140	NSBH0580-120-ATH	☐		120	175	123		
NSBH0460-40-ATH	☐		40	90	43			NSBH0580-150-ATH	☐		150	205	153		
NSBH0460-60-ATH	☐	4.6	60	110	63	6	135	NSBH0590-30-ATH	☐		30	85	33		140
NSBH0460-90-ATH	☐		90	140	93			NSBH0590-60-ATH	☐		60	115	63		
NSBH0460-120-ATH	☐		120	170	123			NSBH0590-90-ATH	☐	5.9	90	145	93	6	135
NSBH0460-150-ATH	☐		150	205	153			NSBH0590-120-ATH	☐		120	175	123		
NSBH0470-20-ATH	☐		20	70	23		140	NSBH0590-150-ATH	☐		150	205	153		
NSBH0470-40-ATH	☐		40	90	43			NSBH0600-30-ATH	☒		30	85	33		140
NSBH0470-60-ATH	☐	4.7	60	110	63	6	135	NSBH0600-60-ATH	☒		60	115	63		
NSBH0470-90-ATH	☐		90	140	93			NSBH0600-90-ATH	☒	6.0	90	145	93	8	135
NSBH0470-120-ATH	☐		120	170	123			NSBH0600-120-ATH	☒		120	175	123		
NSBH0470-150-ATH	☐		150	205	153			NSBH0600-150-ATH	☒		150	205	153		
NSBH0480-20-ATH	☐		20	70	23		140	NSBH0610-30-ATH	☐		30	85	33		140
NSBH0480-40-ATH	☐		40	90	43			NSBH0610-60-ATH	☐		60	115	63		
NSBH0480-60-ATH	☐	4.8	60	110	63	6	135	NSBH0610-90-ATH	☐	6.1	90	145	93	8	135
NSBH0480-90-ATH	☐		90	140	93			NSBH0610-120-ATH	☐		120	175	123		
NSBH0480-120-ATH	☐		120	170	123			NSBH0610-150-ATH	☐		150	205	153		
NSBH0480-150-ATH	☐		150	205	153			NSBH0620-30-ATH	☐		30	85	33		140
NSBH0490-20-ATH	☐		20	70	23		140	NSBH0620-60-ATH	☐		60	115	63		
NSBH0490-40-ATH	☐		40	90	43			NSBH0620-90-ATH	☐	6.2	90	145	93	8	135
NSBH0490-60-ATH	☐	4.9	60	110	63	6	135	NSBH0620-120-ATH	☐		120	175	123		
NSBH0490-90-ATH	☐		90	140	93			NSBH0620-150-ATH	☐		150	205	153		
NSBH0490-120-ATH	☐		120	170	123			NSBH0630-30-ATH	☐		30	85	33		140
NSBH0490-150-ATH	☐		150	205	153			NSBH0630-60-ATH	☐		60	115	63		
NSBH0500-25-ATH	☒		25	80	28		140	NSBH0630-90-ATH	☐	6.3	90	145	93	8	135
NSBH0500-40-ATH	☒		40	95	43			NSBH0630-120-ATH	☐		120	175	123		
NSBH0500-60-ATH	☒	5.0	60	115	63	6	135	NSBH0630-150-ATH	☐		150	205	153		
NSBH0500-90-ATH	☒		90	145	93			NSBH0640-30-ATH	☐		30	85	33		140
NSBH0500-120-ATH	☒		120	175	123			NSBH0640-60-ATH	☐		60	115	63		
NSBH0500-150-ATH	☒		150	205	153			NSBH0640-90-ATH	☐	6.4	90	145	93	8	135
NSBH0510-30-ATH	☒		30	85	33		140	NSBH0640-120-ATH	☐		120	175	123		
NSBH0510-60-ATH	☒		60	115	63			NSBH0640-150-ATH	☐		150	205	153		
NSBH0510-90-ATH	☐	5.1	90	145	93	6	135	NSBH0650-30-ATH	☐		30	85	33		140
NSBH0510-120-ATH	☐		120	175	123			NSBH0650-60-ATH	☐		60	115	63		
NSBH0510-150-ATH	☐		150	205	153			NSBH0650-90-ATH	☐	6.5	90	145	93	8	135
NSBH0520-30-ATH	☐		30	85	33		140	NSBH0650-120-ATH	☐		120	175	123		
NSBH0520-60-ATH	☐		60	115	63			NSBH0650-150-ATH	☐		150	205	153		
NSBH0520-90-ATH	☐	5.2	90	145	93	6	135	NSBH0660-30-ATH	☐		30	85	33		140
NSBH0520-120-ATH	☐		120	175	123			NSBH0660-60-ATH	☐		60	115	63		
NSBH0520-150-ATH	☐		150	205	153			NSBH0660-90-ATH	☐	6.6	90	145	93	8	135
NSBH0530-30-ATH	☐		30	85	33		140	NSBH0660-120-ATH	☐		120	175	123		
NSBH0530-60-ATH	☐		60	115	63			NSBH0660-150-ATH	☐		150	205	153		
NSBH0530-90-ATH	☐	5.3	90	145	93	6	135	NSBH0660-200-ATH	☐		200	255	203		
NSBH0530-120-ATH	☐		120	175	123			NSBH0670-30-ATH	☐		30	85	33		140
NSBH0530-150-ATH	☐		150	205	153			NSBH0670-60-ATH	☐		60	115	63		
NSBH0540-30-ATH	☐		30	85	33		140	NSBH0670-90-ATH	☐	6.7	90	145	93	8	135
NSBH0540-60-ATH	☐		60	115	63			NSBH0670-120-ATH	☐		120	175	123		
NSBH0540-90-ATH	☐	5.4	90	145	93	6	135	NSBH0670-150-ATH	☐		150	205	153		
NSBH0540-120-ATH	☐		120	175	123			NSBH0670-200-ATH	☐		200	255	203		
NSBH0540-150-ATH	☐		150	205	153										

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

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Order Code	Stock	Size (mm)					α Point angle
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	ℓ ₂ Under neck length	Ds Shank Dia.	
NSBH0680-30-ATH	●		30	85	33		140
NSBH0680-60-ATH	●		60	115	63		
NSBH0680-90-ATH	□	6.8	90	145	93	8	135
NSBH0680-120-ATH	□		120	175	123		
NSBH0680-150-ATH	□		150	205	153		
NSBH0680-200-ATH	□		200	255	203		
NSBH0690-30-ATH	●		30	85	33		140
NSBH0690-60-ATH	●		60	115	63		
NSBH0690-90-ATH	□	6.9	90	145	93	8	135
NSBH0690-120-ATH	□		120	175	123		
NSBH0690-150-ATH	□		150	205	153		
NSBH0690-200-ATH	□		200	255	203		
NSBH0700-35-ATH	●		35	90	38		140
NSBH0700-60-ATH	●		60	115	63		
NSBH0700-90-ATH	●	7.0	90	145	93	8	135
NSBH0700-120-ATH	●		120	175	123		
NSBH0700-150-ATH	●		150	205	153		
NSBH0700-200-ATH	●		200	255	203		
NSBH0710-35-ATH	□		35	90	38		140
NSBH0710-60-ATH	□		60	115	63		
NSBH0710-90-ATH	□	7.1	90	145	93	8	135
NSBH0710-120-ATH	□		120	175	123		
NSBH0710-150-ATH	□		150	205	153		
NSBH0710-200-ATH	□		200	255	203		
NSBH0720-35-ATH	□		35	90	38		140
NSBH0720-60-ATH	□		60	115	63		
NSBH0720-90-ATH	□	7.2	90	145	93	8	135
NSBH0720-120-ATH	□		120	175	123		
NSBH0720-150-ATH	□		150	205	153		
NSBH0720-200-ATH	□		200	255	203		
NSBH0730-35-ATH	□		35	90	38		140
NSBH0730-60-ATH	□		60	115	63		
NSBH0730-90-ATH	□	7.3	90	145	93	8	135
NSBH0730-120-ATH	□		120	175	123		
NSBH0730-150-ATH	□		150	205	153		
NSBH0730-200-ATH	□		200	255	203		
NSBH0740-35-ATH	□		35	90	38		140
NSBH0740-60-ATH	□		60	115	63		
NSBH0740-90-ATH	□	7.4	90	145	93	8	135
NSBH0740-120-ATH	□		120	175	123		
NSBH0740-150-ATH	□		150	205	153		
NSBH0740-200-ATH	□		200	255	203		
NSBH0750-35-ATH	□		35	90	38		140
NSBH0750-60-ATH	□		60	115	63		
NSBH0750-90-ATH	□	7.5	90	145	93	8	135
NSBH0750-120-ATH	□		120	175	123		
NSBH0750-150-ATH	□		150	205	153		
NSBH0750-200-ATH	□		200	255	203		
NSBH0760-35-ATH	□		35	90	38		140
NSBH0760-60-ATH	□		60	115	63		
NSBH0760-90-ATH	□	7.6	90	145	93	8	135
NSBH0760-120-ATH	□		120	175	123		
NSBH0760-150-ATH	□		150	205	153		
NSBH0760-200-ATH	□		200	255	203		
NSBH0760-250-ATH	□		250	305	253		
NSBH0770-35-ATH	□		35	90	38		140
NSBH0770-60-ATH	□		60	115	63		
NSBH0770-90-ATH	□	7.7	90	145	93	8	135
NSBH0770-120-ATH	□		120	175	123		
NSBH0770-150-ATH	□		150	205	153		
NSBH0770-200-ATH	□		200	255	203		
NSBH0770-250-ATH	□		250	305	253		
NSBH0780-35-ATH	□		35	90	38		140
NSBH0780-60-ATH	□		60	115	63		
NSBH0780-90-ATH	□	7.8	90	145	93	8	135
NSBH0780-120-ATH	□		120	175	123		
NSBH0780-150-ATH	□		150	205	153		

Order Code	Stock	Size (mm)					α Point angle
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	ℓ ₂ Under neck length	Ds Shank Dia.	
NSBH0780-200-ATH	□	7.8	200	255	203	8	135
NSBH0780-250-ATH	□		250	305	253		
NSBH0790-35-ATH	□		35	90	38		140
NSBH0790-60-ATH	□		60	115	63		
NSBH0790-90-ATH	□	7.9	90	145	93	8	135
NSBH0790-120-ATH	□		120	175	123		
NSBH0790-150-ATH	□		150	205	153		
NSBH0790-200-ATH	□		200	255	203		
NSBH0790-250-ATH	□		250	305	253		
NSBH0800-40-ATH	●		40	95	43		140
NSBH0800-60-ATH	●		60	115	63		
NSBH0800-90-ATH	●	8.0	90	145	93	10	135
NSBH0800-120-ATH	●		120	175	123		
NSBH0800-150-ATH	●		150	205	153		
NSBH0800-200-ATH	●		200	255	203		
NSBH0800-250-ATH	●		250	305	253		
NSBH0810-45-ATH	□		45	105	48		140
NSBH0810-90-ATH	□	8.1	90	150	93	10	135
NSBH0810-120-ATH	□		120	180	123		
NSBH0810-150-ATH	□		150	210	153		
NSBH0810-200-ATH	□		200	260	203		
NSBH0810-250-ATH	□		250	310	253		
NSBH0820-45-ATH	□		45	105	48		140
NSBH0820-90-ATH	□	8.2	90	150	93	10	135
NSBH0820-120-ATH	□		120	180	123		
NSBH0820-150-ATH	□		150	210	153		
NSBH0820-200-ATH	□		200	260	203		
NSBH0820-250-ATH	□		250	310	253		
NSBH0830-45-ATH	□		45	105	48		140
NSBH0830-90-ATH	□	8.3	90	150	93	10	135
NSBH0830-120-ATH	□		120	180	123		
NSBH0830-150-ATH	□		150	210	153		
NSBH0830-200-ATH	□		200	260	203		
NSBH0830-250-ATH	□		250	310	253		
NSBH0840-45-ATH	□		45	105	48		140
NSBH0840-90-ATH	□	8.4	90	150	93	10	135
NSBH0840-120-ATH	□		120	180	123		
NSBH0840-150-ATH	□		150	210	153		
NSBH0840-200-ATH	□		200	260	203		
NSBH0840-250-ATH	□		250	310	253		
NSBH0850-45-ATH	●	8.5	45	105	48	10	135
NSBH0850-90-ATH	●		90	150	93		
NSBH0850-120-ATH	●		120	180	123		
NSBH0850-150-ATH	●		150	210	153		
NSBH0850-200-ATH	●		200	260	203		
NSBH0850-250-ATH	●		250	310	253		
NSBH0860-45-ATH	□		45	105	48		140
NSBH0860-90-ATH	□	8.6	90	150	93	10	135
NSBH0860-120-ATH	□		120	180	123		
NSBH0860-150-ATH	□		150	210	153		
NSBH0860-200-ATH	□		200	260	203		
NSBH0860-250-ATH	□		250	310	253		
NSBH0870-45-ATH	●	8.7	45	105	48	10	135
NSBH0870-90-ATH	□		90	150	93		
NSBH0870-120-ATH	□		120	180	123		
NSBH0870-150-ATH	□		150	210	153		
NSBH0870-200-ATH	□		200	260	203		
NSBH0870-250-ATH	□		250	310	253		
NSBH0880-45-ATH	●	8.8	45	105	48	10	135
NSBH0880-90-ATH	□		90	150	93		
NSBH0880-120-ATH	□		120	180	123		
NSBH0880-150-ATH	□		150	210	153		
NSBH0880-200-ATH	□		200	260	203		
NSBH0880-250-ATH	□		250	310	253		
NSBH0890-45-ATH	●	8.9	45	105	48	10	135
NSBH0890-90-ATH	□		90	150	93		
NSBH0890-120-ATH	□		120	180	123		
NSBH0890-150-ATH	□		150	210	153		

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

DRILLS

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Straight Shank

ดอกสว่านแกนตรง

Carbide Drills
ดอกสว่านคาร์ไบด์

HSS Drills
ดอกสว่านไฮสปีด

Stub / Standard
ตัวสั้น / มาตรฐาน

Long
ตัวยาว

Micro Drill
ดอกสว่านไมโคร

Z Plunging

Step Borer

Order Code	Stock	Size (mm)					α Point angle
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	ℓ ₂ Under neck length	Ds Shank Dia.	
NSBH1090-120-ATH	☐		120	180	123		
NSBH1090-150-ATH	☐		150	210	153		
NSBH1090-200-ATH	☐	10.9	200	260	203	12	135
NSBH1090-250-ATH	☐		250	310	253		
NSBH1090-300-ATH	☐		300	360	303		
NSBH1100-55-ATH	●		55	120	58		140
NSBH1100-90-ATH	●		90	155	93		
NSBH1100-120-ATH	●		120	185	123		
NSBH1100-150-ATH	●	11.0	150	215	153	12	135
NSBH1100-200-ATH	●		200	265	203		
NSBH1100-250-ATH	●		250	315	253		
NSBH1100-300-ATH	●		300	365	303		
NSBH1110-55-ATH	☐		55	120	58		140
NSBH1110-90-ATH	☐		90	155	93		
NSBH1110-120-ATH	☐		120	185	123		
NSBH1110-150-ATH	☐	11.1	150	215	153	12	135
NSBH1110-200-ATH	☐		200	265	203		
NSBH1110-250-ATH	☐		250	315	253		
NSBH1110-300-ATH	☐		300	365	303		
NSBH1120-55-ATH	☐		55	120	58		140
NSBH1120-90-ATH	☐		90	155	93		
NSBH1120-120-ATH	☐		120	185	123		
NSBH1120-150-ATH	☐	11.2	150	215	153	12	135
NSBH1120-200-ATH	☐		200	265	203		
NSBH1120-250-ATH	☐		250	315	253		
NSBH1120-300-ATH	☐		300	365	303		
NSBH1130-55-ATH	☐		55	120	58		140
NSBH1130-90-ATH	☐		90	155	93		
NSBH1130-120-ATH	☐		120	185	123		
NSBH1130-150-ATH	☐	11.3	150	215	153	12	135
NSBH1130-200-ATH	☐		200	265	203		
NSBH1130-250-ATH	☐		250	315	253		
NSBH1130-300-ATH	☐		300	365	303		
NSBH1140-55-ATH	☐		55	120	58		140
NSBH1140-90-ATH	☐		90	155	93		
NSBH1140-120-ATH	☐		120	185	123		
NSBH1140-150-ATH	☐	11.4	150	215	153	12	135
NSBH1140-200-ATH	☐		200	265	203		
NSBH1140-250-ATH	☐		250	315	253		
NSBH1140-300-ATH	☐		300	365	303		

Order Code	Stock	Size (mm)					α Point angle
		Dc Drill Dia.	ℓ Flute Length	L Overall Length	ℓ ₂ Under neck length	Ds Shank Dia.	
NSBH1150-60-ATH	●		60	125	63		140
NSBH1150-90-ATH	●		90	155	93		
NSBH1150-120-ATH	●		120	185	123		
NSBH1150-150-ATH	●	11.5	150	215	153	12	135
NSBH1150-200-ATH	●		200	265	203		
NSBH1150-250-ATH	●		250	315	253		
NSBH1150-300-ATH	●		300	365	303		
NSBH1160-60-ATH	☐		60	125	63		140
NSBH1160-90-ATH	☐		90	155	93		
NSBH1160-120-ATH	☐		120	185	123		
NSBH1160-150-ATH	☐	11.6	150	215	153	12	135
NSBH1160-200-ATH	☐		200	265	203		
NSBH1160-250-ATH	☐		250	315	253		
NSBH1160-300-ATH	☐		300	365	303		
NSBH1170-60-ATH	☐		60	125	63		140
NSBH1170-90-ATH	☐		90	155	93		
NSBH1170-120-ATH	☐		120	185	123		
NSBH1170-150-ATH	☐	11.7	150	215	153	12	135
NSBH1170-200-ATH	☐		200	265	203		
NSBH1170-250-ATH	☐		250	315	253		
NSBH1170-300-ATH	☐		300	365	303		
NSBH1180-60-ATH	☐		60	125	63		140
NSBH1180-90-ATH	☐		90	155	93		
NSBH1180-120-ATH	☐		120	185	123		
NSBH1180-150-ATH	☐	11.8	150	215	153	12	135
NSBH1180-200-ATH	☐		200	265	203		
NSBH1180-250-ATH	☐		250	315	253		
NSBH1180-300-ATH	☐		300	365	303		
NSBH1190-60-ATH	☐		60	125	63		140
NSBH1190-90-ATH	☐		90	155	93		
NSBH1190-120-ATH	☐		120	185	123		
NSBH1190-150-ATH	☐	11.9	150	215	153	12	135
NSBH1190-200-ATH	☐		200	265	203		
NSBH1190-250-ATH	☐		250	315	253		
NSBH1190-300-ATH	☐		300	365	303		
NSBH1200-60-ATH	●		60	125	63		140
NSBH1200-90-ATH	●		90	155	93		
NSBH1200-120-ATH	●		120	185	123		
NSBH1200-150-ATH	●	12.0	150	215	153	12	135
NSBH1200-200-ATH	●		200	265	203		
NSBH1200-250-ATH	●		250	315	253		
NSBH1200-300-ATH	●		300	365	303		

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

Recommended cutting conditions

NSBH-ATH

Work material	Hardness (HRC)	Vc Cutting Speed (m/min)	Feed rate (mm/rev)					
			φ2	φ4	φ6	φ8	φ10	φ12
Pre-hardened steel	40~45	20~60~80	0.01~0.05	0.02~0.08	0.08~0.15	0.1~0.2	0.12~0.25	0.13~0.25
Hardened steel	45~55	20~40~60	0.01~0.03	0.01~0.06	0.05~0.09	0.06~0.12	0.08~0.15	0.1~0.15
	55~60	10~20	0.01~0.02	0.01~0.04	0.03~0.06	0.04~0.08	0.06~0.1	0.06~0.1

Selection of cutting condition

Be sure to refer to the drilling process as follows when selecting a tool.

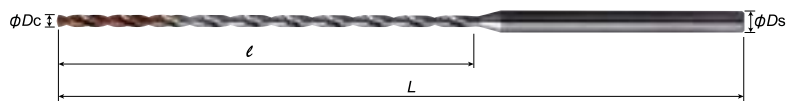
- These standard cutting conditions are intended as approximate values for cutting conditions. For actual drilling, cutting conditions should be adjusted according to the drilling shape, purpose, machine used, etc.
- NSBH-ATH series have positive tolerance on the diameter. Please select guide and long-hole drills out of NSBH-ATH series. Mixed use of conventional WHNSB-TH series harms drilling stability due to negative tolerance of WHNSB-TH series.
- 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.
- Works should be gripped firmly to prevent deformation, deflection and vibration.
- Upon drilling hole, dwell time at the final depth helps chip removal.
- If cutting chips are not smoothly removed, perform step drilling at depth around the tool diameter.
- Upon matters in chip removal during drilling, please refer to following countermeasures;
 1. Keep vc and lower feed. (The thinner chip for better removal)
 2. Keep f and higher vc. (Higher rotation for better removal)
- At the time of through-hole reduce feed rate f to one-half or less.
- Internal supply of water based coolant is recommended.
- The above cutting conditions are based on the use of a water base 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 φ5.0 or less, the coolant pressure should be 2.0 MPa or higher, and when the diameter is over φ5.0, the pressure should be 1.5 MPa or higher.
- When performing MQL (mist) machining, depending on the amount or conditions of spray from the tool, it may be necessary to reduce the cutting speed in order to drilling.
- When oil base coolant is used, reduce the cutting speed to a speed lower than the lowest speed in the specified range. Take the greatest care to avoid smoke or ignition due to heating of chips and the tool.
- Perform sufficient maintenance of coolant system to prevent clogging of the oil hole.



ดอกสว่าน

MINIATURE DRILL WHMB

WHMB-TH



0 ~ -0.01



0 ~ -0.006

(mm)

Order Code	Stock	3Size (mm)			
		Dc Tool Dia.	l Flute Length	L Overall length	Ds Shank Dia.
03WHMB0100-TH	★		6	55	3
05WHMB0100-TH	★		10	55	3
10WHMB0100-TH	★		15	55	3
15WHMB0100-TH	★	1	20	60	3
20WHMB0100-TH	★		24	65	3
25WHMB0100-TH	★		28	65	3
30WHMB0100-TH	★		33	70	3
03WHMB0105-TH	★		6	55	3
05WHMB0105-TH	★		10	55	3
10WHMB0105-TH	★		16	55	3
15WHMB0105-TH	★	1.05	20	60	3
20WHMB0105-TH	★		25	65	3
25WHMB0105-TH	★		30	70	3
30WHMB0105-TH	★		35	75	3
03WHMB0110-TH	★		6	55	3
05WHMB0110-TH	★		11	55	3
10WHMB0110-TH	★		17	55	3
15WHMB0110-TH	★	1.1	22	60	3
20WHMB0110-TH	★		26	65	3
25WHMB0110-TH	★		32	70	3
30WHMB0110-TH	★		37	75	3
03WHMB0115-TH	★		6	55	3
05WHMB0115-TH	★		11	55	3
10WHMB0115-TH	★		18	60	3
15WHMB0115-TH	★	1.15	23	60	3
20WHMB0115-TH	★		28	70	3
25WHMB0115-TH	★		33	70	3
30WHMB0115-TH	★		38	75	3
03WHMB0120-TH	★		6	55	3
05WHMB0120-TH	★		12	55	3
10WHMB0120-TH	★		18	60	3
15WHMB0120-TH	★	1.2	23	60	3
20WHMB0120-TH	★		29	70	3
25WHMB0120-TH	★		35	75	3
30WHMB0120-TH	★		40	80	3
03WHMB0125-TH	★		7	55	3
05WHMB0125-TH	★		13	55	3
10WHMB0125-TH	★		20	60	3
15WHMB0125-TH	★	1.25	24	60	3
20WHMB0125-TH	★		31	70	3
25WHMB0125-TH	★		36	75	3
30WHMB0125-TH	★		42	80	3
03WHMB0130-TH	★		7	55	3
05WHMB0130-TH	★		14	55	3
10WHMB0130-TH	★		21	60	3
15WHMB0130-TH	★	1.3	25	70	3
20WHMB0130-TH	★		32	70	3
25WHMB0130-TH	★		37	75	3
30WHMB0130-TH	★		43	80	3

Order Code	Stock	3Size (mm)			
		Dc Tool Dia.	l Flute Length	L Overall length	Ds Shank Dia.
03WHMB0135-TH	★		7	55	3
05WHMB0135-TH	★		14	55	3
10WHMB0135-TH	★		21	60	3
15WHMB0135-TH	★	1.35	26	70	3
20WHMB0135-TH	★		33	70	3
25WHMB0135-TH	★		37	75	3
30WHMB0135-TH	★		45	85	3
03WHMB0140-TH	★		7	55	3
05WHMB0140-TH	★		15	55	3
10WHMB0140-TH	★		22	60	3
15WHMB0140-TH	★	1.4	27	70	3
20WHMB0140-TH	★		33	70	3
25WHMB0140-TH	★		38	75	3
30WHMB0140-TH	★		47	85	3
03WHMB0145-TH	★		7	55	3
05WHMB0145-TH	★		15	55	3
10WHMB0145-TH	★		23	60	3
15WHMB0145-TH	★	1.45	30	70	3
20WHMB0145-TH	★		35	75	3
25WHMB0145-TH	★		42	80	3
30WHMB0145-TH	★		49	85	3
03WHMB0150-TH	★		8	55	3
05WHMB0150-TH	★		16	55	3
10WHMB0150-TH	★		24	60	3
15WHMB0150-TH	★	1.5	30	70	3
20WHMB0150-TH	★		37	75	3
25WHMB0150-TH	★		42	80	3
30WHMB0150-TH	★		50	90	3
03WHMB0155-TH	★		8	55	3
05WHMB0155-TH	★		16	55	3
10WHMB0155-TH	★		22	60	3
15WHMB0155-TH	★	1.55	32	70	3
20WHMB0155-TH	★		37	75	3
25WHMB0155-TH	★		44	85	3
30WHMB0155-TH	★		52	90	3
03WHMB0160-TH	★		8	55	3
05WHMB0160-TH	★		17	55	3
10WHMB0160-TH	★		26	65	3
15WHMB0160-TH	★	1.6	33	70	3
20WHMB0160-TH	★		37	75	3
25WHMB0160-TH	★		45	85	3
30WHMB0160-TH	★		53	90	3
03WHMB0165-TH	★		8	55	3
05WHMB0165-TH	★		17	55	3
10WHMB0165-TH	★		26	65	3
15WHMB0165-TH	★	1.65	33	70	3
20WHMB0165-TH	★		38	75	3
25WHMB0165-TH	★		46	90	3
30WHMB0165-TH	★		55	95	3

★ : Stocked Items of New Products

Manufacture regrinding / recoating is not possible.

DRILLS

ดอกสว่าน



MOLDINO
The Edge To Innovation

Stright Shank

ดอกสว่านแกนตรง

Carbide Drills
ดอกสว่านคาร์ไบด์

HSS Drills
ดอกสว่านไฮสปีด

Stub / Standard
ตัวสั้น / มาตรฐาน

Long
ตัวยาว

Micro Drill
ดอกสว่านไมโคร

Z Plunging

Step Borer

Order Code	Stock	3Size (mm)			
		Dc Tool Dia.	ℓ Flute Length	L Overall length	Ds Shank Dia.
03WHMB0170-TH	★		8	55	3
05WHMB0170-TH	★		18	55	3
10WHMB0170-TH	★		27	65	3
15WHMB0170-TH	★	1.7	34	70	3
20WHMB0170-TH	★		40	80	3
25WHMB0170-TH	★		48	85	3
30WHMB0170-TH	★		57	95	3
03WHMB0175-TH	★		8	55	3
05WHMB0175-TH	★		19	60	3
10WHMB0175-TH	★		27	65	3
15WHMB0175-TH	★	1.75	34	75	3
20WHMB0175-TH	★		41	80	3
25WHMB0175-TH	★		50	90	3
30WHMB0175-TH	★		58	95	3
03WHMB0180-TH	★		10	55	3
05WHMB0180-TH	★		19	60	3
10WHMB0180-TH	★		28	65	3
15WHMB0180-TH	★	1.8	36	75	3
20WHMB0180-TH	★		43	80	3
25WHMB0180-TH	★		51	90	3
30WHMB0180-TH	★		60	100	3
03WHMB0185-TH	★		10	55	3
05WHMB0185-TH	★		20	60	3
10WHMB0185-TH	★		29	70	3
15WHMB0185-TH	★	1.85	38	75	3
20WHMB0185-TH	★		45	85	3
25WHMB0185-TH	★		53	90	3
30WHMB0185-TH	★		61	100	3

★ : Stocked Items of New Products

Manufacture regrinding / recoating is not possible.

Order Code	Stock	3Size (mm)			
		Dc Tool Dia.	ℓ Flute Length	L Overall length	Ds Shank Dia.
03WHMB0190-TH	★		10	55	3
05WHMB0190-TH	★		20	60	3
10WHMB0190-TH	★		29	70	3
15WHMB0190-TH	★	1.9	39	75	3
20WHMB0190-TH	★		45	85	3
25WHMB0190-TH	★		55	95	3
30WHMB0190-TH	★		63	100	3
03WHMB0195-TH	★		10	55	3
05WHMB0195-TH	★		20	60	3
10WHMB0195-TH	★		30	70	3
15WHMB0195-TH	★	1.95	41	80	3
20WHMB0195-TH	★		47	85	3
25WHMB0195-TH	★		56	95	3
30WHMB0195-TH	★		65	105	3
03WHMB0200-TH	★		10	55	3
05WHMB0200-TH	★		20	60	3
10WHMB0200-TH	★		30	70	3
15WHMB0200-TH	★	2	41	80	3
20WHMB0200-TH	★		47	85	3
25WHMB0200-TH	★		57	95	3
30WHMB0200-TH	★		67	105	3



ดอกสว่าน

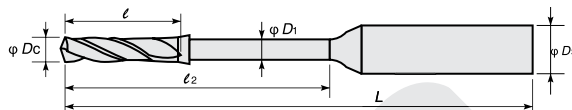
Epoch Micro Step Borer S EMSBS-TH/SD



Micro-TH Coated
for Steels



SD Coated for
non-ferrous



Indicate the desired coating type by adding "-SD" for SD coating or "-TH" for TH coating at the end of the item code.



0 ~ -0.005



Ds=3 : 0 ~ -0.003
3<Ds : 0 ~ -0.004

(mm)

Order Code	TH-Coated	SD-Coated	Size (mm)						
	Stock	Stock	Dc Drill Dia.	l Flute Length	l2 Under neck length	L/D	D1 Neck dia.	L Overall length	Ds Shank Dia.
EMSBS0004-0.4-TH	●	□	0.04	0.2	0.4	10	0.033	40	3
EMSBS0004-0.8-TH	□	□	0.04	0.2	0.8	20	0.033	40	3
EMSBS0004-1.2-TH	●	□	0.04	0.2	1.2	30	0.033	40	3
EMSBS0005-0.5-TH	●	□	0.05	0.25	0.5	10	0.04	40	3
EMSBS0005-1-TH	●	□	0.05	0.25	1	20	0.04	40	3
EMSBS0005-1.5-TH	●	□	0.05	0.25	1.5	30	0.04	40	3
EMSBS0005-2-TH	□	□	0.05	0.25	2	40	0.04	40	3
EMSBS0005-2.5-TH	□	□	0.05	0.25	2.5	50	0.04	40	3
EMSBS0006-0.6-TH	●	□	0.06	0.3	0.6	10	0.05	40	3
EMSBS0006-1.2-TH	□	□	0.06	0.3	1.2	20	0.05	40	3
EMSBS0006-1.8-TH	●	□	0.06	0.3	1.8	30	0.05	40	3
EMSBS0006-2.4-TH	□	□	0.06	0.3	2.4	40	0.05	40	3
EMSBS0006-3-TH	□	□	0.06	0.3	3	50	0.05	40	3
EMSBS0007-0.7-TH	●	□	0.07	0.35	0.7	10	0.06	40	3
EMSBS0007-1.4-TH	□	□	0.07	0.35	1.4	20	0.06	40	3
EMSBS0007-2.1-TH	●	□	0.07	0.35	2.1	30	0.06	40	3
EMSBS0007-2.8-TH	□	□	0.07	0.35	2.8	40	0.06	40	3
EMSBS0007-3.5-TH	□	□	0.07	0.35	3.5	50	0.06	40	3
EMSBS0008-0.8-TH	●	□	0.08	0.4	0.8	10	0.07	40	3
EMSBS0008-1.6-TH	□	□	0.08	0.4	1.6	20	0.07	40	3
EMSBS0008-2.4-TH	●	□	0.08	0.4	2.4	30	0.07	40	3
EMSBS0008-3.2-TH	□	□	0.08	0.4	3.2	40	0.07	40	3
EMSBS0008-4-TH	□	□	0.08	0.4	4	50	0.07	40	3
EMSBS0009-0.9-TH	●	□	0.09	0.45	0.9	10	0.08	40	3
EMSBS0009-1.8-TH	□	□	0.09	0.45	1.8	20	0.08	40	3
EMSBS0009-2.7-TH	●	□	0.09	0.45	2.7	30	0.08	40	3
EMSBS0009-3.6-TH	□	□	0.09	0.45	3.6	40	0.08	40	3
EMSBS0009-4.5-TH	□	□	0.09	0.45	4.5	50	0.08	40	3
EMSBS0010-1-TH	●	□	0.1	0.5	1	10	0.09	45	3
EMSBS0010-2-TH	□	□	0.1	0.5	2	20	0.09	45	3
EMSBS0010-3-TH	●	□	0.1	0.5	3	30	0.09	45	3
EMSBS0010-5-TH	●	□	0.1	0.5	5	50	0.09	45	3
EMSBS0010-7.5-TH	□	□	0.1	0.5	7.5	75	0.09	45	3
EMSBS0010-10-TH	□	□	0.1	0.5	10	100	0.09	45	3
EMSBS0015-1.5-TH	●	□	0.15	0.75	1.5	10	0.14	50	3
EMSBS0015-3-TH	□	□	0.15	0.75	3	20	0.14	50	3
EMSBS0015-4.5-TH	●	□	0.15	0.75	4.5	30	0.14	50	3
EMSBS0015-7.5-TH	●	□	0.15	0.75	7.5	50	0.14	50	3
EMSBS0015-11.25-TH	□	□	0.15	0.75	11.25	75	0.14	50	3
EMSBS0015-15-TH	□	□	0.15	0.75	15	100	0.14	50	3

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

Under-neck length (l2) conforms to through-hole drilling depth

DRILLS

ดอกสว่าน



Stright Shank

ดอกสว่านมาตรฐาน

Carbide Drills
ดอกสว่านคาร์ไบด์

HSS Drills
ดอกสว่านไฮสปีด

Stub / Standard
ตัวสั้น / มาตรฐาน

Long
ตัวยาว

Micro Drill
ดอกสว่านไมโคร

Z Plunging

Step Borer

Order Code	TH-Coated	SD-Coated	Size (mm)						
	Stock	Stock	Dc Drill Dia.	ℓ Flute Length	ℓ ₂ Under neck length	L/D	D1 Neck dia.	L Overall length	Ds Shank Dia.
EMSBS0020-2	●	□	0.2	1	2	10	0.19	45	3
EMSBS0020-4	□	□	0.2	1	4	20	0.19	45	3
EMSBS0020-6	●	□	0.2	1	6	30	0.19	45	3
EMSBS0020-10	●	□	0.2	1	10	50	0.19	45	3
EMSBS0020-15	□	□	0.2	1	15	75	0.19	55	3
EMSBS0020-20	□	□	0.2	1	20	100	0.19	55	3
EMSBS0030-3	●	□	0.3	1.5	3	10	0.28	45	3
EMSBS0030-6	□	□	0.3	1.5	6	20	0.28	45	3
EMSBS0030-9	●	□	0.3	1.5	9	30	0.28	45	3
EMSBS0030-15	●	□	0.3	1.5	15	50	0.28	55	3
EMSBS0030-22.5	□	□	0.3	1.5	22.5	75	0.28	65	3
EMSBS0030-30	□	□	0.3	1.5	30	100	0.28	65	3
EMSBS0040-4	●	□	0.4	2	4	10	0.38	50	3
EMSBS0040-8	□	□	0.4	2	8	20	0.38	50	3
EMSBS0040-12	●	□	0.4	2	12	30	0.38	50	3
EMSBS0040-20	●	□	0.4	2	20	50	0.38	60	3
EMSBS0040-30	□	□	0.4	2	30	75	0.38	75	3
EMSBS0040-40	□	□	0.4	2	40	100	0.38	75	3
EMSBS0050-5	●	□	0.5	2.5	5	10	0.48	50	3
EMSBS0050-10	□	□	0.5	2.5	10	20	0.48	50	3
EMSBS0050-15	●	□	0.5	2.5	15	30	0.48	50	3
EMSBS0050-25	●	□	0.5	2.5	25	50	0.48	65	3
EMSBS0050-37.5	□	□	0.5	2.5	37.5	75	0.48	85	3
EMSBS0050-50	□	□	0.5	2.5	50	100	0.48	85	3
EMSBS0060-6	●	□	0.6	3	6	10	0.57	55	3
EMSBS0060-12	□	□	0.6	3	12	20	0.57	55	3
EMSBS0060-18	●	□	0.6	3	18	30	0.57	55	3
EMSBS0060-30	●	□	0.6	3	30	50	0.57	75	3
EMSBS0060-45	□	□	0.6	3	45	75	0.57	95	3
EMSBS0060-60	□	□	0.6	3	60	100	0.57	95	3
EMSBS0070-7	●	□	0.7	3.5	7	10	0.67	60	4
EMSBS0070-14	□	□	0.7	3.5	14	20	0.67	60	4
EMSBS0070-21	●	□	0.7	3.5	21	30	0.67	60	4
EMSBS0070-35	●	□	0.7	3.5	35	50	0.67	80	4
EMSBS0070-52.5	□	□	0.7	3.5	52.5	75	0.67	105	4
EMSBS0070-70	□	□	0.7	3.5	70	100	0.67	105	4
EMSBS0080-8	●	□	0.8	4	8	10	0.76	60	4
EMSBS0080-16	□	□	0.8	4	16	20	0.76	60	4
EMSBS0080-24	●	□	0.8	4	24	30	0.76	60	4
EMSBS0080-40	●	□	0.8	4	40	50	0.76	85	4
EMSBS0080-60	□	□	0.8	4	60	75	0.76	115	4
EMSBS0080-80	□	□	0.8	4	80	100	0.76	115	4
EMSBS0090-9	●	□	0.9	4.5	9	10	0.85	65	4
EMSBS0090-18	□	□	0.9	4.5	18	20	0.85	65	4
EMSBS0090-27	●	□	0.9	4.5	27	30	0.85	65	4
EMSBS0090-45	●	□	0.9	4.5	45	50	0.85	90	4
EMSBS0090-67.5	□	□	0.9	4.5	67.5	75	0.85	125	4
EMSBS0090-90	□	□	0.9	4.5	90	100	0.85	125	4
EMSBS0100-10	●	□	1	5	10	10	0.95	70	4
EMSBS0100-20	□	□	1	5	20	20	0.95	70	4
EMSBS0100-30	●	□	1	5	30	30	0.95	70	4
EMSBS0100-50	●	□	1	5	50	50	0.95	100	4
EMSBS0100-75	□	□	1	5	75	75	0.95	135	4
EMSBS0100-100	□	□	1	5	100	100	0.95	135	4

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

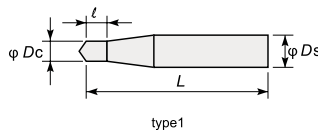
Under-neck length (ℓ₂) conforms to through-hole drilling depth



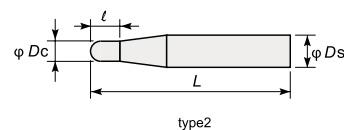
ดอกสว่าน Epoch Micro Starter EMST-TH



Tolerance on dia. : $D_c < 0.2$: $-0.005 \sim -0.01 \text{ mm}$,
 $D_c \geq 0.2$: $-0.005 \sim -0.015 \text{ mm}$



type1



type2



Order Code	Stock	Size (mm)				Type
		Dc Drill dia.	l Flute length	L Overall length	Ds Shank dia.	
EMST0004-TH	●	0.04	0.04	45	3	Type 1
EMST0005-TH	●	0.05	0.05	45	3	
EMST0006-TH	●	0.06	0.06	45	3	
EMST0007-TH	●	0.07	0.07	45	3	
EMST0008-TH	●	0.08	0.08	45	3	
EMST0009-TH	●	0.09	0.09	45	3	
EMST0010-TH	●	0.1	0.1	45	3	
EMST0011-TH	●	0.11	0.11	45	3	
EMST0012-TH	●	0.12	0.12	45	3	
EMST0013-TH	●	0.13	0.13	45	3	
EMST0014-TH	●	0.14	0.14	45	3	Type2
EMST0015-TH	●	0.15	0.15	45	3	
EMST0016-TH	●	0.16	0.16	45	3	
EMST0017-TH	●	0.17	0.17	45	3	
EMST0018-TH	●	0.18	0.18	45	3	
EMST0019-TH	●	0.19	0.19	45	3	
EMST0020-TH	●	0.2	0.2	45	3	
EMST0021-TH	□	0.21	0.21	45	3	
EMST0029-TH	□	0.29	0.29	45	3	
EMST0030-TH	●	0.3	0.3	45	3	Type2
EMST0031-TH	□	0.31	0.31	45	3	
EMST0039-TH	□	0.39	0.39	45	3	
EMST0040-TH	●	0.4	0.4	45	3	
EMST0041-TH	□	0.41	0.41	45	3	
EMST0049-TH	□	0.49	0.49	45	3	
EMST0050-TH	●	0.5	0.5	45	3	
EMST0051-TH	□	0.51	0.51	45	3	
EMST0059-TH	□	0.59	0.59	45	3	
EMST0060-TH	●	0.6	0.6	45	3	Type2
EMST0061-TH	□	0.61	0.61	45	3	
EMST0069-TH	□	0.69	0.69	45	4	
EMST0070-TH	●	0.7	0.7	45	4	
EMST0071-TH	□	0.71	0.71	45	4	
EMST0079-TH	□	0.79	0.79	45	4	
EMST0080-TH	●	0.8	0.8	45	4	
EMST0081-TH	□	0.81	0.81	45	4	
EMST0089-TH	□	0.89	0.89	45	4	
EMST0090-TH	●	0.9	0.9	45	4	
EMST0091-TH	□	0.91	0.91	45	4	
EMST0099-TH	□	0.99	0.99	45	4	
EMST0100-TH	●	1	1	45	4	
EMST0101-TH	□	1.01	1.01	45	4	

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

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

ตัวสั้น / มาตรฐาน

Long

ตัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer

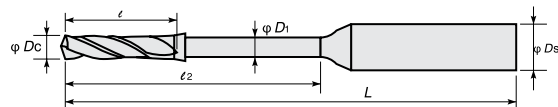
DRILLS

ดอกสว่าน



ดอกสว่าน

Epoch Micro Step Borer H EMSBH0000-0000



h7 +0.006 ~ +0.001

h4 Ds=3 : 0 ~ -0.003
3<Ds≤4 : 0 ~ -0.004

(mm)

Order Code	Stock	Size (mm)					
		Dc Tool Dia.	Flute Length	Under neck length	D1 Neck dia.	L Overall length	Ds Shank Dia.
EMSBH0010-1-ATH	●			1.0			
EMSBH0010-2-ATH	●	0.1	0.50	2.0	0.09	45	3.0
EMSBH0010-3-ATH	●			3.0			
EMSBH0011-1-ATH	□			1.0			
EMSBH0011-2-ATH	□	0.11	0.55	2.0	0.1	45	3.0
EMSBH0011-3-ATH	□			3.0			
EMSBH0012-1-ATH	□			1.0			
EMSBH0012-2-ATH	□	0.12	0.60	2.0	0.11	45	3.0
EMSBH0012-3-ATH	□			3.0			
EMSBH0015-1.5-ATH	□			1.5			
EMSBH0015-3-ATH	□	0.15	0.75	3.0	0.14	45	3.0
EMSBH0015-4.5-ATH	□			4.5			
EMSBH0020-2-ATH	●			2.0			
EMSBH0020-4-ATH	●	0.2	1.00	4.0	0.19	45	3.0
EMSBH0020-6-ATH	●			6.0			
EMSBH0021-2-ATH	□			2.0			
EMSBH0021-4-ATH	□	0.21	1.05	4.0	0.19	45	3.0
EMSBH0021-6-ATH	□			6.0			
EMSBH0022-2-ATH	□			2.0			
EMSBH0022-4-ATH	□	0.22	1.10	4.0	0.2	45	3.0
EMSBH0022-6-ATH	□			6.0			
EMSBH0030-3-ATH	●			3.0			
EMSBH0030-6-ATH	●	0.3	1.5	6.0	0.28	45	3.0
EMSBH0030-9-ATH	●			9.0			
EMSBH0031-3-ATH	□			3.0			
EMSBH0031-6-ATH	□	0.31	1.5	6.0	0.29	45	3.0
EMSBH0031-9-ATH	□			9.0			
EMSBH0032-3-ATH	□			3.0			
EMSBH0032-6-ATH	□	0.32	1.5	6.0	0.3	45	3.0
EMSBH0032-9-ATH	□			9.0			
EMSBH0040-4-ATH	●			4.0			
EMSBH0040-8-ATH	●	0.4	2.0	8.0	0.38	50	3.0
EMSBH0040-12-ATH	●			12.0			
EMSBH0041-4-ATH	□			4.0			
EMSBH0041-8-ATH	□	0.41	2.0	8.0	0.39	50	3.0
EMSBH0041-12-ATH	□			12.0			
EMSBH0042-4-ATH	□			4.0			
EMSBH0042-8-ATH	□	0.42	2.0	8.0	0.4	50	3.0
EMSBH0042-12-ATH	□			12.0			
EMSBH0050-5-ATH	●			5.0			
EMSBH0050-10-ATH	●	0.5	2.5	10.0	0.48	50	3.0
EMSBH0050-15-ATH	●			15.0			
EMSBH0051-5-ATH	□			5.0			
EMSBH0051-10-ATH	□	0.51	2.5	10.0	0.48	50	3.0
EMSBH0051-15-ATH	□			15.0			
EMSBH0052-5-ATH	□			5.0			
EMSBH0052-10-ATH	□	0.52	2.5	10.0	0.49	50	3.0
EMSBH0052-15-ATH	□			15.0			
EMSBH0060-6-ATH	●			6.0			
EMSBH0060-12-ATH	●	0.6	3.0	12.0	0.57	55	3.0

Order Code	Stock	Size (mm)					
		Dc Tool Dia.	Flute Length	Under neck length	D1 Neck dia.	L Overall length	Ds Shank Dia.
EMSBH0060-18-ATH	●	0.6	3.0	18.0	0.57	55	3.0
EMSBH0061-6-ATH	□			6.0			
EMSBH0061-12-ATH	□	0.61	3.0	12.0	0.58	55	3.0
EMSBH0061-18-ATH	□			18.0			
EMSBH0062-6-ATH	□			6.0			
EMSBH0062-12-ATH	□	0.62	3.0	12.0	0.59	55	3.0
EMSBH0062-18-ATH	□			18.0			
EMSBH0070-7-ATH	●			7.0			
EMSBH0070-14-ATH	●	0.7	3.5	14.0	0.67	60	4.0
EMSBH0070-21-ATH	●			21.0			
EMSBH0071-7-ATH	□			7.0			
EMSBH0071-14-ATH	□	0.71	3.5	14.0	0.67	60	4.0
EMSBH0071-21-ATH	□			21.0			
EMSBH0072-7-ATH	□			7.0			
EMSBH0072-14-ATH	□	0.72	3.5	14.0	0.68	60	4.0
EMSBH0072-21-ATH	□			21.0			
EMSBH0080-8-ATH	●			8.0			
EMSBH0080-16-ATH	●	0.8	4.0	16.0	0.76	60	4.0
EMSBH0080-24-ATH	●			24.0			
EMSBH0081-8-ATH	□			8.0			
EMSBH0081-16-ATH	□	0.81	4.0	16.0	0.76	60	4.0
EMSBH0081-24-ATH	□			24.0			
EMSBH0082-8-ATH	□			8.0			
EMSBH0082-16-ATH	□	0.82	4.0	16.0	0.77	60	4.0
EMSBH0082-24-ATH	□			24.0			
EMSBH0090-9-ATH	●			9.0			
EMSBH0090-18-ATH	●	0.9	4.5	18.0	0.85	65	4.0
EMSBH0090-27-ATH	●			27.0			
EMSBH0091-9-ATH	□			9.0			
EMSBH0091-18-ATH	□	0.91	4.5	18.0	0.86	65	4.0
EMSBH0091-27-ATH	□			27.0			
EMSBH0092-9-ATH	□			9.0			
EMSBH0092-18-ATH	□	0.92	4.5	18.0	0.87	65	4.0
EMSBH0092-27-ATH	□			27.0			
EMSBH0100-10-ATH	●			10.0			
EMSBH0100-20-ATH	●	1.0	5.0	20.0	0.95	70	4.0
EMSBH0100-30-ATH	●			30.0			
EMSBH0101-10-ATH	□			10.0			
EMSBH0101-20-ATH	□	1.01	5.0	20.0	0.97	70	4.0
EMSBH0101-30-ATH	□			30.0			
EMSBH0102-10-ATH	□			10.0			
EMSBH0102-20-ATH	□	10.2	5.0	20.0	0.98	70	4.0
EMSBH0102-30-ATH	□			30.0			
EMSBH0150-15-ATH	●			15.0	-	70	
EMSBH0150-30-ATH	●	1.5	15.0	30.0	1.44	70	4.0
EMSBH0150-45-ATH	●			45.0		100	
EMSBH0151-15-ATH	□			15.0	-	70	
EMSBH0151-30-ATH	□	1.51	15.0	30.0	1.45	70	4.0
EMSBH0151-45-ATH	□			45.0		100	
EMSBH0152-15-ATH	□	1.52	15.0	15.0	-	70	4.0

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

(NOTE) For products with tool dimensions other than those listed above, separate consultation is needed. Please contact to sales office.



Order Code	Stock	Size (mm)					
		Dc Tool Dia.	ℓ Flute Length	ℓ ₂ Under neck length	D1 Neck dia.	L Overall length	Ds Shank Dia.
EMSBH0152-30-ATH	☐	1.52	15.0	30.0	1.46	70	4.0
EMSBH0152-45-ATH	☐			45.0		100	
EMSBH0200-20-ATH	☒	2.0	20.0	20.0	1.92	70	4.0
EMSBH0200-40-ATH	☒			40.0		100	
EMSBH0200-60-ATH	☒			60.0		100	

Order Code	Stock	Size (mm)					
		Dc Tool Dia.	ℓ Flute Length	ℓ ₂ Under neck length	D1 Neck dia.	L Overall length	Ds Shank Dia.
EMSBH0201-20-ATH	☐	2.01	20.0	20.0	1.93	70	4.0
EMSBH0201-40-ATH	☐			40.0		100	
EMSBH0201-60-ATH	☐	2.02	20.0	60.0	1.94	100	4.0
EMSBH0202-20-ATH	☐			20.0		70	
EMSBH0202-40-ATH	☐			40.0		100	
EMSBH0202-60-ATH	☐	2.02	20.0	60.0	1.94	100	4.0

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

(NOTE) For products with tool dimensions other than those listed above, separate consultation is needed. Please contact to sales office.

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านคาร์ไบด์

Stub / Standard

ตัวสั้น / มาตรฐาน

Long

ตัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer

ดอกสว่าน

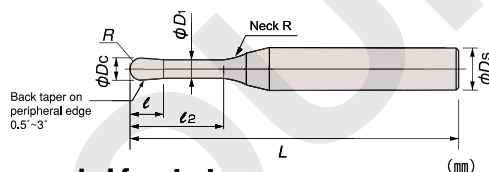
Special Starter

EPDBEH20000-0.000-ATH

2 Flutes



Tolerance on shank : h5



Use of Epoch Deep Ball Evolution Hard (EPDBEH-ATH) is recommended for starter.



R ≤ 0.25 : ±0.003
0.25 < R : ±0.005



0 ~ -0.005

(mm)

Order Code	Stock	Size (mm)							
		R Ball radius	Dc Tool Dia.	ℓ ₂ Under neck length	ℓ Flute length	D1 Neck dia.	L Overall length	Ds Shank Dia.	Neck R
EPDBEH2001-0.2-ATH	●	0.05	0.1	0.2	0.08	0.08	45	4	1
EPDBEH20011-0.2-ATH	□	0.055	0.11	0.2	0.09	0.09	45	4	1
EPDBEH20012-0.2-ATH	□	0.06	0.12	0.2	0.1	0.1	45	4	1
EPDBEH20015-0.2-ATH	□	0.075	0.15	0.2	0.13	0.13	45	4	1
EPDBEH2002-0.5-ATH	●	0.1	0.2	0.5	0.15	0.17	50	4	1
EPDBEH20021-0.5-ATH	□	0.105	0.21	0.5	0.16	0.18	50	4	1
EPDBEH20022-0.5-ATH	□	0.11	0.22	0.5	0.17	0.19	50	4	1
EPDBEH2003-0.5-ATH	●	0.15	0.3	0.5	0.25	0.27	50	4	2
EPDBEH20031-0.5-ATH	□	0.155	0.31	0.5	0.26	0.28	50	4	2
EPDBEH20032-0.5-ATH	□	0.16	0.32	0.5	0.27	0.29	50	4	2
EPDBEH2004-0.75-ATH	●	0.2	0.4	0.75	0.3	0.37	50	4	2
EPDBEH20041-0.75-ATH	□	0.205	0.41	0.75	0.31	0.38	50	4	2
EPDBEH20042-0.75-ATH	□	0.21	0.42	0.75	0.32	0.39	50	4	2
EPDBEH2005-1-ATH	●	0.25	0.5	1	0.35	0.47	50	4	2
EPDBEH20051-1-ATH	□	0.255	0.51	1	0.36	0.48	50	4	2
EPDBEH20052-1-ATH	□	0.26	0.52	1	0.37	0.49	50	4	2
EPDBEH2006-1-ATH	●	0.3	0.6	1	0.4	0.57	50	4	4
EPDBEH20061-1-ATH	□	0.305	0.61	1	0.41	0.58	50	4	4
EPDBEH20062-1-ATH	□	0.31	0.62	1	0.42	0.59	50	4	4
EPDBEH2007-2-ATH	●	0.35	0.7	2	0.45	0.67	50	4	4
EPDBEH20071-2-ATH	□	0.355	0.71	2	0.46	0.68	50	4	4
EPDBEH20072-2-ATH	□	0.36	0.72	2	0.47	0.69	50	4	4
EPDBEH2008-2-ATH	●	0.4	0.8	2	0.5	0.77	50	4	4
EPDBEH20081-2-ATH	□	0.405	0.81	2	0.51	0.78	50	4	4
EPDBEH20082-2-ATH	□	0.41	0.82	2	0.52	0.79	50	4	4
EPDBEH2009-2-ATH	●	0.45	0.9	2	0.6	0.87	50	4	4
EPDBEH20091-2-ATH	□	0.455	0.91	2	0.61	0.88	50	4	4
EPDBEH20092-2-ATH	□	0.46	0.82	2	0.62	0.89	50	4	4
EPDBEH2010-2-ATH	●	0.5	1	2	0.8	0.96	50	4	4
EPDBEH20101-2-ATH	□	0.505	1.01	2	0.81	0.97	50	4	4
EPDBEH20102-2-ATH	□	0.51	1.02	2	0.82	0.98	50	4	4
EPDBEH2015-2-ATH	●	0.75	1.5	2	1.35	1.44	50	4	4
EPDBEH20151-2-ATH	□	0.755	1.51	2	1.36	1.45	50	4	4
EPDBEH20152-2-ATH	□	0.76	1.52	2	1.37	1.46	50	4	4
EPDBEH2020-3-ATH	●	1	2	3	1.7	1.92	50	4	4
EPDBEH20201-3-ATH	□	1.005	2.01	3	1.71	1.93	50	4	4
EPDBEH20202-3-ATH	□	1.01	2.02	3	1.72	1.94	50	4	4

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

Designed by JSR GROUP

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ห้ามนำไปเผยแพร่ก่อนได้รับอนุญาตจากทางบริษัท

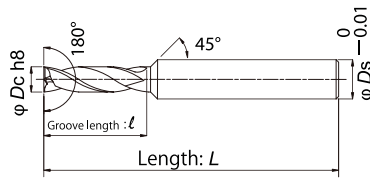
DRILLS

ดอกสว่าน

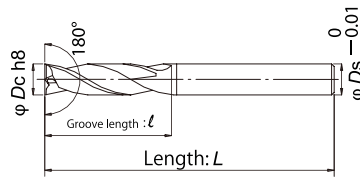


ดอกสว่าน

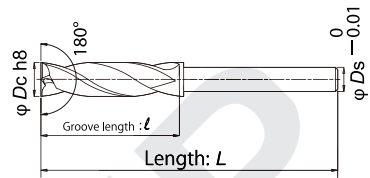
Z Plunging Borer ZPB000-TH



Type A

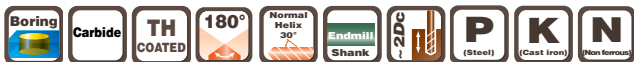


Type B



Type C

Regular



h8	Ø2 ~ Ø3	: 0 ~ -0.014
	Ø3.1 ~ Ø6	: 0 ~ -0.018
	Ø6.1 ~ Ø10	: 0 ~ -0.022
	Ø10.1 ~ Ø16	: 0 ~ -0.027

Shank Diameter Tolerance	0 ~ -0.001
---------------------------------	------------

(mm)

Order Code	Stock	Size (mm)				Type
		Dc Drill dia.	ℓ Flute length	L Overall length	Ds Shank dia.	
ZPB0200-TH	☐	2.0	8	50	4	A
ZPB0210-TH	☐	2.1	8	50	4	A
ZPB0220-TH	☐	2.2	8	50	4	A
ZPB0230-TH	☐	2.3	8	50	4	A
ZPB0240-TH	☐	2.4	8	50	4	A
ZPB0250-TH	☐	2.5	10	50	4	A
ZPB0260-TH	☐	2.6	10	50	4	A
ZPB0270-TH	☐	2.7	10	50	4	A
ZPB0280-TH	☐	2.8	10	50	4	A
ZPB0290-TH	☐	2.9	10	50	4	A
ZPB0300-TH	☒	3.0	12	50	4	A
ZPB0310-TH	☐	3.1	12	50	4	A
ZPB0320-TH	☐	3.2	12	50	4	A
ZPB0330-TH	☐	3.3	14	50	4	A
ZPB0340-TH	☐	3.4	14	50	4	A
ZPB0350-TH	☐	3.5	14	50	4	A
ZPB0360-TH	☐	3.6	14	50	4	A
ZPB0370-TH	☐	3.7	14	50	4	A
ZPB0380-TH	☐	3.8	16	50	4	A
ZPB0390-TH	☐	3.9	16	50	4	A
ZPB0400-TH	☒	4.0	16	50	4	B
ZPB0410-TH	☐	4.1	16	50	6	A
ZPB0420-TH	☐	4.2	16	50	6	A
ZPB0430-TH	☐	4.3	18	50	6	A
ZPB0440-TH	☐	4.4	18	50	6	A
ZPB0450-TH	☒	4.5	18	50	6	A
ZPB0460-TH	☐	4.6	18	50	6	A
ZPB0470-TH	☐	4.7	18	50	6	A
ZPB0480-TH	☐	4.8	20	60	6	A
ZPB0490-TH	☐	4.9	20	60	6	A
ZPB0500-TH	☒	5.0	20	60	6	A
ZPB0510-TH	☐	5.1	20	60	6	A
ZPB0520-TH	☐	5.2	20	60	6	A
ZPB0530-TH	☐	5.3	20	60	6	A
ZPB0540-TH	☐	5.4	20	60	6	A
ZPB0550-TH	☒	5.5	22	60	6	A

Order Code	Stock	Size (mm)				Type
		Dc Drill dia.	ℓ Flute length	L Overall length	Ds Shank dia.	
ZPB0560-TH	☐	5.6	22	60	6	A
ZPB0570-TH	☐	5.7	22	60	6	A
ZPB0580-TH	☐	5.8	22	60	6	A
ZPB0590-TH	☐	5.9	22	60	6	A
ZPB0600-TH	☒	6.0	22	60	6	B
ZPB0610-TH	☐	6.1	24	70	8	A
ZPB0620-TH	☐	6.2	24	70	8	A
ZPB0630-TH	☐	6.3	24	70	8	A
ZPB0640-TH	☐	6.4	24	70	8	A
ZPB0650-TH	☐	6.5	26	70	8	A
ZPB0660-TH	☐	6.6	26	70	8	A
ZPB0670-TH	☐	6.7	26	70	8	A
ZPB0680-TH	☐	6.8	26	70	8	A
ZPB0690-TH	☐	6.9	26	70	8	A
ZPB0700-TH	☒	7.0	26	70	8	A
ZPB0710-TH	☐	7.1	26	70	8	A
ZPB0720-TH	☐	7.2	26	70	8	A
ZPB0730-TH	☐	7.3	26	70	8	A
ZPB0740-TH	☐	7.4	26	70	8	A
ZPB0750-TH	☐	7.5	26	70	8	A
ZPB0760-TH	☐	7.6	28	70	8	A
ZPB0770-TH	☐	7.7	28	70	8	A
ZPB0780-TH	☐	7.8	28	70	8	A
ZPB0790-TH	☐	7.9	28	70	8	A
ZPB0800-TH	☒	8.0	28	70	8	B
ZPB0810-TH	☐	8.1	28	80	10	A
ZPB0820-TH	☐	8.2	28	80	10	A
ZPB0830-TH	☐	8.3	28	80	10	A
ZPB0840-TH	☐	8.4	28	80	10	A
ZPB0850-TH	☐	8.5	28	80	10	A
ZPB0860-TH	☐	8.6	28	80	10	A
ZPB0870-TH	☐	8.7	28	80	10	A
ZPB0880-TH	☐	8.8	28	80	10	A
ZPB0890-TH	☐	8.9	28	80	10	A
ZPB0900-TH	☒	9.0	28	80	10	A
ZPB0910-TH	☐	9.1	30	80	10	A

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



Order Code	Stock	Size (mm)				Type
		Dc Drill dia.	ℓ Flute length	L Overall length	Ds Shank dia.	
ZPB0920-TH	☐	9.2	30	80	10	A
ZPB0930-TH	☐	9.3	30	80	10	A
ZPB0940-TH	☐	9.4	30	80	10	A
ZPB0950-TH	●	9.5	30	80	10	A
ZPB0960-TH	☐	9.6	32	80	10	A
ZPB0970-TH	☐	9.7	32	80	10	A
ZPB0980-TH	☐	9.8	32	80	10	A
ZPB0990-TH	☐	9.9	32	80	10	A
ZPB1000-TH	●	10.0	32	80	10	B
ZPB1010-TH	☐	10.1	33	90	12	A
ZPB1020-TH	☐	10.2	33	90	12	A
ZPB1030-TH	☐	10.3	33	90	12	A
ZPB1040-TH	☐	10.4	33	90	12	A
ZPB1050-TH	☐	10.5	33	90	12	A
ZPB1060-TH	☐	10.6	33	90	12	A
ZPB1070-TH	☐	10.7	33	90	12	A
ZPB1080-TH	☐	10.8	33	90	12	A
ZPB1090-TH	☐	10.9	33	90	12	A
ZPB1100-TH	●	11.0	33	90	12	A

Order Code	Stock	Size (mm)				Type
		Dc Drill dia.	ℓ Flute length	L Overall length	Ds Shank dia.	
ZPB1110-TH	☐	11.1	34	90	12	A
ZPB1120-TH	☐	11.2	34	90	12	A
ZPB1130-TH	☐	11.3	34	90	12	A
ZPB1140-TH	☐	11.4	34	90	12	A
ZPB1150-TH	☐	11.5	34	90	12	A
ZPB1160-TH	☐	11.6	38	90	12	A
ZPB1170-TH	☐	11.7	38	90	12	A
ZPB1180-TH	☐	11.8	38	90	12	A
ZPB1190-TH	☐	11.9	38	90	12	A
ZPB1200-TH	●	12.0	38	90	12	B
ZPB1250-TH	☐	12.5	40	100	12	C
ZPB1300-TH	☐	13.0	40	100	12	C
ZPB1350-TH	☐	13.5	40	100	12	C
ZPB1400-TH	☐	14.0	40	100	12	C
ZPB1450-TH	☐	14.5	40	105	12	C
ZPB1500-TH	☐	15.0	40	105	12	C
ZPB1550-TH	☐	15.5	42	110	12	C
ZPB1600-TH	☐	16.0	42	110	16	B

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

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

ตัวสั้น / มาตรฐาน

Long

ตัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer

DRILLS

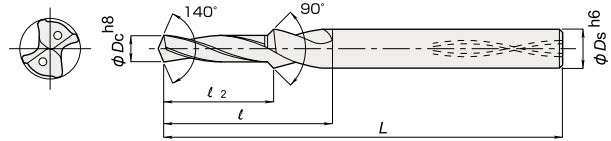
ดอกสว่าน



ดอกสว่าน

Step Borer

STBH-ATH



Internal coolant type (with oil holes)



Ø3.4 ~ Ø5.1 : 0 ~ -0.018
Ø6.8 ~ Ø8.5 : 0 ~ -0.022
Ø10.3 : 0 ~ -0.027



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

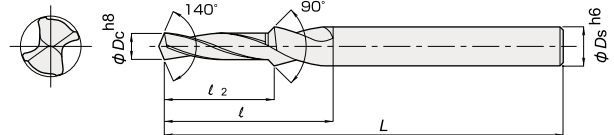
(mm)

Order Code	Stock	Size (mm)						Corresponding tap size
		D/L	Dc Small Dia.	ℓ ₂ Step length	ℓ Flute length	L Overall Length	Ds Shank dia.(large dia.)	
STBH034S-ATH	●	2	3.4	8	25	80	6.0	M4
STBH034M-ATH	●	3		12	30	80	6.0	
STBH043S-ATH	●	2	4.3	10	30	85	7.0	M5
STBH043M-ATH	●	3		15	35	85	7.0	
STBH051S-ATH	●	2	5.1	12	35	90	8.0	M6
STBH051M-ATH	●	3		18	40	90	8.0	
STBH068S-ATH	●	2	6.8	16	45	100	10.0	M8
STBH068M-ATH	●	3		24	50	105	10.0	
STBH085S-ATH	●	2	8.5	20	50	115	12.0	M10
STBH085M-ATH	●	3		30	60	125	12.0	
STBH103S-ATH	●	2	10.3	24	60	125	14.0	M12
STBH103M-ATH	●	3		36	70	135	14.0	

ดอกสว่าน

Step Borer

STB-ATH



Internal coolant type (with oil holes)



Ø3.4 ~ Ø5.1 : 0 ~ -0.018
Ø6.8 ~ Ø8.5 : 0 ~ -0.022
Ø10.3 : 0 ~ -0.027



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

(mm)

Order Code	Stock	Size (mm)						Corresponding tap size
		L/D	Dc Small Dia.	ℓ ₂ Step length	ℓ Flute length	L Overall Length	Ds Shank dia.(large dia.)	
STB034S-ATH	●	2	3.4	8	25	80	6.0	M4
STB034M-ATH	●	3		12	30	80	6.0	
STB043S-ATH	●	2	4.3	10	30	85	7.0	M5
STB043M-ATH	●	3		15	35	85	7.0	
STB051S-ATH	●	2	5.1	12	35	90	8.0	M6
STB051M-ATH	●	3		18	40	90	8.0	
STB068S-ATH	●	2	6.8	16	45	100	10.0	M8
STB068M-ATH	●	3		24	50	105	10.0	
STB085S-ATH	●	2	8.5	20	50	115	12.0	M10
STB085M-ATH	●	3		30	60	125	12.0	
STB103S-ATH	●	2	10.3	24	60	125	14.0	M12
STB103M-ATH	●	3		36	70	135	14.0	

● : Stoked Items.

• Chamfer width: for corresponding screw sizes of M4 to M6, processing to C1.0 is possible; for M8 to M12, processing to C1.5 is possible.
• Corresponding screw sizes are for metric coarse threads.

Special sizes can also be served. For details, please contact our sales office.

ดอกสว่านไฮสปีดเจาะเหล็กกล้ากลม Drills Jobber



D101



D103



D102

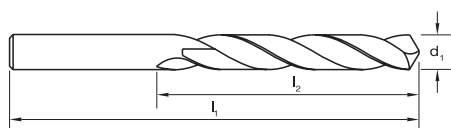


D179



- General purpose drill
- Split point for easier penetration

- Web thinned point for easier penetration
- Designed for machine and hand held drilling



Catalogue Code	D101	D102	D103	D179
Discount Group	A0402	A0402	A0420	A0420
Material	HSS	HSS	HSS	HSS
Surface Finish	Brt	Blu	TiN	TiAIN Tip
Sutton Designation	N	N	N	N
Geometry	R30	R30	R30	R30
Point Type	118° Standard	118° Standard	118° Form A	118° Form C
Order Quantity	Bulk (10)	Bulk (10)	1	Bulk (10)

Size Ref.	d ₁ (h8)		L ₁	L ₂	Order No.	Order No.	Order No.	Order No.
	mm	Gauge						
0034	0.34	80	19	3	D101 0034	•	•	•
0035	0.35		19	4	D101 0035	•	•	•
0037	0.37	79	19	3	D101 0037	•	•	•
0038	0.38		19	4	D101 0038	•	•	•
0039	0.40	1/64	19	5	D101 0039	•	•	•
0040	0.40		20	5	D101 0040	•	•	•
0041	0.41	78	22	5	D101 0041	•	•	•
0042	0.42		20	5	D101 0042	•	•	•
0045	0.45		20	5	D101 0045	•	•	•
0046	0.46	77	22	5	D101 0046	•	•	•
0048	0.48		20	5	D101 0048	•	•	•
0050	0.50		22	6	D101 0050	•	•	•
0051	0.51	76	22	5	D101 0051	•	•	•
0052	0.52		22	6	D101 0052	•	•	•
0053	0.53	75	25	6	D101 0053	•	•	•
0055	0.55		24	7	D101 0055	•	•	•
0057	0.57	74	25	6	D101 0057	•	•	•
0060	0.60		24	7	D101 0060	•	•	•
0061	0.61	73	29	8	D101 0061	•	•	•
0063	0.63	72	29	8	D101 0063	•	•	•
0065	0.65		26	8	D101 0065	•	•	•
0066	0.66	71	32	10	D101 0066	•	•	•
0070	0.70		28	9	D101 0070	•	•	•
0071	0.71	70	32	10	D101 0071	•	•	•
0074	0.74	69	35	13	D101 0074	•	•	•
0075	0.75		28	9	D101 0075	•	•	•
0078	0.79	68	35	13	D101 0078	•	•	•
0079	0.79	1/32	35	13	D101 0079	•	•	•
0080	0.80		30	10	D101 0080	•	•	•
0081	0.81	67	35	13	D101 0081	•	•	•
0084	0.84	66	35	13	D101 0084	•	•	•
0085	0.85		30	10	D101 0085	•	•	•
0089	0.89	65	38	16	D101 0089	•	•	•
0090	0.90		32	11	D101 0090	•	•	•
0091	0.91	64	38	16	D101 0091	•	•	•
0094	0.94	63	38	16	D101 0094	•	•	•
0095	0.95		32	11	D101 0095	•	•	•
0096	0.96	62	38	16	D101 0096	•	•	•

ISO	P													M			K					N										S										H					
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41						
D101	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
D102	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D103	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D179	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

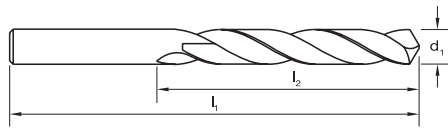
• Optimal • Effective

• Available on request as special manufacture. Subject to lead time.

DRILLS

ดอกสว่าน

suttontools



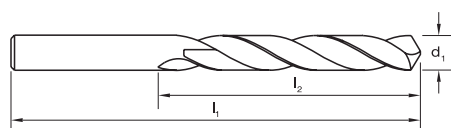
Catalogue Code
Discount Group
Material
Surface Finish
Sutton Designation
Geometry
Point Type
Order Quantity

D101	D102	D103	D179
A0402	A0402	A0420	A0420
HSS	HSS	HSS	HSS
Brt	Blu	TiN	TiAlN Tip
N	N	N	N
R30	R30	R30	R30
118° Standard	118° Standard	118° Form A	118° Form C
Bulk (10)	Bulk (10)	1	Bulk (10)

Size Ref.	d ₁ (h8)		l ₁	l ₂		Order No.	Order No.	Order No.	Order No.
	mm	Gauge							
0099	0.99	61	41	17		D101 0099	•	•	•
0100	1.00		34	12		D101 0100	D102 0100	D103 0100	D179 0100
0102	1.02	60	41	17		D101 0102	•	•	
0104	1.04	59	41	17		D101 0104	•	•	
0105	1.05		34	12		D101 0105	D102 0105	D103 0105	
0107	1.07	58	41	17		D101 0107	•	•	
0109	1.09	57	44	19		D101 0109	•	•	
0110	1.10		36	14		D101 0110	D102 0110	D103 0110	D179 0110
0115	1.15		36	14		D101 0115	D102 0115	D103 0115	
0118	1.18	56	44	19		D101 0118	•	•	
0119	1.19	3/64	44	19		D101 0119	D102 0119		D101 0120
0120	1.20		38	16		D101 0120	D102 0120	D103 0120	D179 0130
0125	1.25		38	16		D101 0125	D102 0125	D103 0125	
0130	1.30		38	16		D101 0130	D102 0130	D103 0130	D179 0130
0132	1.32	55	48	22		D101 0132	•	•	
0135	1.35		38	16		D101 0135	D102 0135	D103 0135	
0139	1.40	54	48	22		D101 0139	•	•	
0140	1.40		40	18		D101 0140	D102 0140	D103 0140	D179 0140
0145	1.45		40	18		D101 0145	D102 0145	D103 0145	
0150	1.50		40	18		D101 0150	D102 0150	D103 0150	D179 0150
0151	1.51	53	48	22		D101 0151	•	•	
0155	1.55		40	18		D101 0155	D102 0155	D103 0155	
0159	1.59	1/16	48	22		D101 0159	D102 0159		D179 0159
0160	1.60		43	20		D101 0160	D102 0160	D103 0160	D179 0160
0161	1.61	52	48	22		D101 0161	•	•	
0165	1.65		43	20		D101 0165	D102 0165	D103 0165	
0170	1.70		43	20		D101 0170	D102 0170	D103 0170	D179 0170
0171	1.70	51	51	25		D101 0171	•	•	
0175	1.75		43	20		D101 0175	D102 0175	D103 0175	
0178	1.78	50	51	25		D101 0178	•	•	
0180	1.80		46	22		D101 0180	D102 0180	D103 0180	D179 0180
0185	1.85		46	22		D101 0185	D102 0185	D103 0185	
0184	1.85	49	51	25		D101 0184	•	•	
0190	1.90		46	22		D101 0190	D102 0190	D103 0190	D179 0190
0193	1.93	48	51	25		D101 0193	•	•	
0195	1.95		46	22		D101 0195	D102 0195	D103 0195	
0198	1.98	5/64	51	25		D101 0198	D102 0198		D179 0198
0199	1.99	47	51	25		D101 0199	•	•	
0200	2.00		49	24		D101 0200	D102 0200	D103 0200	D179 0200
0205	2.05		49	24		D101 0205	D102 0215	D103 0215	
0206	2.06	46	54	29		D101 0206	•	•	
0208	2.08	45	54	29		D101 0208	•	•	
0210	2.10		49	24		D101 0210	D102 0210	D103 0210	D179 0210
0215	2.15		49	24		D101 0215	D102 0215	D103 0215	
0218	2.18	44	54	29		D101 0218	•	•	
0220	2.20		43	27		D101 0220	D102 0220	D103 0220	D179 0220
0225	2.25		53	27		D101 0225	D102 0225	D103 0225	
0226	2.26	43	57	32		D101 0226	•	•	
0230	2.30		53	27		D101 0230	D102 0230	D103 0230	D179 0230
0235	2.35		53	27		D101 0235	D102 0235	D103 0235	
0237	2.37	42	57	32		D101 0237	•	•	
0238	2.38	3/32	57	32		D101 0238	D102 0238		D179 0238
0240	2.40		57	30		D101 0240	D102 0240	D103 0240	D179 0240
0244	2.44	41	60	35		D101 0244	•	•	
0245	2.45		57	30		D101 0245	D102 0245	D103 0245	
0249	2.49	40	60	35		D101 0249	•	•	

ISO	P													M			K					N										S										H							
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
D101	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
D102	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
D103	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
D179	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

P Steel
 M Stainless Steel
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials
 • Optimal
 • Effective
 • Available on request as special manufacture. Subject to lead time.



Catalogue Code	D101	D102	D103	D179
Discount Group	A0402	A0402	A0420	A0420
Material	HSS	HSS	HSS	HSS
Surface Finish	Brt	Blu	TIN	TiAlN Tip
Sutton Designation	N	N	N	N
Geometry	R30	R30	R30	R30
Point Type	118° Standard	118° Standard	118° Form A	118° Form C
Order Quantity	Bulk (10)	Bulk (10)	1	Bulk (10)

Size Ref.	d ₁ (h8)		l ₁	l ₂		Order No.	Order No.	Order No.	Order No.
	mm	Gauge							
0250	2.50		57	30		D101 0250	D102 0250	D103 0250	D179 0250
0253	2.53	39	60	35		D101 0253	.	.	
0255	2.55		57	30		D101 0255	D102 0255	D103 0255	
0258	2.58	38	64	37		D101 0258	.	.	
0260	2.60		57	30		D101 0260	D102 0260	D103 0260	D179 0260
0264	2.64	37	64	37		D101 0264	.	.	
0265	2.65		57	30		D101 0265	D102 0265	D103 0265	
0270	2.70		61	33		D101 0270	D102 0270	D103 0270	D179 0270
0271	2.70	36	64	37		D101 0271	.	.	
0275	2.75		61	33		D101 0275	D102 0275	D103 0275	
0278	2.78	7/64	67	38		D101 0278	D102 0278		D179 0278
0279	2.79	35	67	38		D101 0279	.	.	
0280	2.80		61	33		D101 0280	D102 0280	D103 0280	D179 0280
0282	2.82	34	67	38		D101 0282	.	.	
0285	2.85		61	33		D101 0285	D102 0285	D103 0285	
0287	2.87	33	67	38		D101 0287	.	.	
0290	2.90		61	33		D101 0290	D102 0290	D103 0290	D179 0290
0294	2.95	32	70	41		D101 0294	.	.	
0295	2.95		61	33		D101 0295	D102 0295	D103 0295	
0300	3.00		61	33		D101 0300	D102 0300	D103 0300	D179 0300
0305	3.05	31	70	41		D101 0305	.	.	
0310	3.10		65	36		D101 0310	D102 0310	D103 0310	D179 0310
0318	3.18	1/8	70	41		D101 0318	D102 0318		D179 0318
0320	3.20		65	36		D101 0320	D102 0320	D103 0320	D179 0320
0325	3.25		65	36		.	.	.	
0326	3.26	30	70	41		D101 0326	.	.	
0330	3.30		65	36		D101 0330	D102 0330	D103 0330	D179 0330
0340	3.40		70	39		D101 0340	D102 0340	D103 0340	D179 0340
0345	3.45	29	73	44		D101 0345	.	.	
0350	3.50		70	39		D101 0350	D102 0350	D103 0350	D179 0350
0356	3.57	28	73	44		D101 0356	.	.	
0357	3.57	9/64	73	44		D101 0357	D102 0357		D179 0357
0360	3.60		70	39		D101 0360	D102 0360	D103 0360	D179 0360
0366	3.66	27	76	48		D101 0366	.	.	
0370	3.70		70	39		D101 0370	D102 0370	D103 0370	D179 0370
0373	3.73	26	76	48		D101 0373	.	.	
0375	3.75		75	43		.	D102 0375	.	
0379	3.80	25	76	48		D101 0379	.	.	
0380	3.80		75	43		D101 0380	D102 0380	D103 0380	D179 0380
0386	3.86	24	79	51		D101 0386	.	.	
0390	3.90		75	43		D101 0390	D102 0390	D103 0390	D179 0390
0391	3.91	23	79	51		D101 0391	.	.	
0397	3.97	5/32	79	51		D101 0397	D102 0397		D179 0397
0399	3.99	22	79	51		D101 0399	.	.	
0400	4.00		75	43		D101 0400	D102 0400	D103 0400	D179 0400
0404	4.04	21	83	54		D101 0404	.	.	
0409	4.09	20	83	54		D101 0409	.	.	
0410	4.10		75	43		D101 0410	D102 0410	D103 0410	D179 0410
0420	4.20		75	43		D101 0420	D102 0420	D103 0420	D179 0420
0422	4.22	19	83	54		D101 0422	.	.	
0425	4.25		75	43		.	D102 0425	.	
0430	4.30		80	47		D101 0430	D102 0430	D103 0430	D179 0430
0431	4.30	18	83	54		D101 0431	.	.	
0437	4.37	11/64	83	54		D101 0437	D102 0437		D179 0437
0439	4.39	17	86	56		D101 0439	.	.	
0440	4.40		80	47		D101 0440	D102 0440	D103 0440	D179 0440

ISO	P										M			K					N										S										H							
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41					
D101	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
D102	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D103	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D179	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

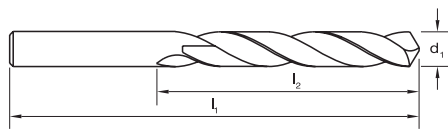
P Steel
 M Stainless Steel
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials
 ● Optimal ○ Effective

* Available on request as special manufacture. Subject to lead time.

DRILLS

ดอกสว่าน

suttontools



Catalogue Code
Discount Group
Material
Surface Finish
Sutton Designation
Geometry
Point Type
Order Quantity

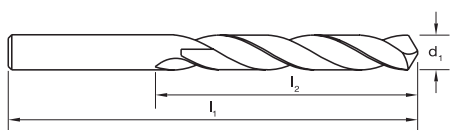
D101	D102	D103	D179
A0402	A0402	A0420	A0420
HSS	HSS	HSS	HSS
Brt	Blu	TiN	TiAlN Tip
N	N	N	N
R30	R30	R30	R30
118° Standard	118° Standard	118° Form A	118° Form C
Bulk (10)	Bulk (10)	1	Bulk (10)

Size Ref.	d ₁ (h8)		l ₁	l ₂	Order No.	Order No.	Order No.	Order No.
	mm	Gauge						
0449	4.50	16	86	56	D101 0449	.	.	
0450	4.50		80	47	D101 0450	D102 0450	D103 0450	D179 0450
0457	4.57	15	86	56	D101 0457	.	.	
0460	4.60		80	47	D101 0460	D102 0460	D103 0460	D179 0460
0462	4.62	14	86	56	D101 0462	.	.	
0469	4.70	13	89	59	D101 0469	.	.	
0470	4.70		80	47	D101 0470	D102 0470	D103 0470	D179 0470
0475	4.75		80	47	.	D102 0475	.	
0476	4.76	3/16	89	59	D101 0476	D102 0476		D179 0476
0480	4.80		86	52	D101 0480	D102 0480	D103 0480	D179 0480
0481	4.80	12	89	59	D101 0481	.	.	
0485	4.85	11	89	59	D101 0485	.	.	
0490	4.90		86	52	D101 0490	D102 0490	D103 0490	D179 0490
0491	4.91	1	92	62	D101 0491	.	.	
0498	4.98	9	92	62	D101 0498	.	.	
0500	5.00		86	52	D101 0500	D102 0500	D103 0500	D179 0500
0506	5.05	8	92	62	D101 0506	.	.	
0510	5.10		86	52	D101 0510	D102 0510	D103 0510	D179 0510
0511	5.10	7	92	62	D101 0511	.	.	
0516	5.16	13/64	92	62	D101 0516	D102 0516		D179 0516
0518	5.18	6	95	64	D101 0518	.	.	
0520	5.20		86	52	D101 0520	D102 0520	D103 0520	D179 0520
0522	5.22	5	95	64	D101 0522	.	.	
0525	5.25		86	52	.	D102 0525	.	
0530	5.30		86	52	D101 0530	D102 0530	D103 0530	D179 0530
0531	5.31	4	95	64	D101 0531	.	.	
0540	5.40		93	57	D101 0540	D102 0540	D103 0540	D179 0540
0541	5.41	3	95	64	D101 0541	.	.	
0550	5.50		93	57	D101 0550	D102 0550	D103 0550	D179 0550
0556	5.56	7/32	95	64	D101 0556	D102 0556		D179 0556
0560	5.60		93	57	D101 0560	D102 0560	D103 0560	D179 0560
0561	5.61	2	98	67	D101 0561	.	.	
0570	5.70		93	57	D101 0570	D102 0570	D103 0570	D179 0570
0575	5.75		93	57	.	D102 0575	.	
0579	5.79	1	98	67	D101 0579	.	.	
0580	5.80		93	57	D101 0580	D102 0580	D103 0580	D179 0580
0590	5.90		93	57	D101 0590	D102 0590	D103 0590	D179 0590
0595	5.95	15/64	98	67	D101 0595	D102 0595		D179 0595
0600	6.00		93	57	D101 0600	D102 0600	D103 0600	D179 0600
0610	6.10		101	63	D101 0610	D102 0610	D103 0610	D179 0610
0620	6.20		101	63	D101 0620	D102 0620	D103 0620	D179 0620
0625	6.25		101	63	.	D102 0625	.	
0630	6.30		101	63	D101 0630	D102 0630	D103 0630	D179 0630
0635	6.35	1/4	102	70	D101 0635	D102 0635		D179 0635
0640	6.40		101	63	D101 0640	D102 0640	D103 0640	D179 0640
0650	6.50		101	63	D101 0650	D102 0650	D103 0650	D179 0650
0660	6.60		101	63	D101 0660	D102 0660	D103 0660	D179 0660
0670	6.70		101	63	D101 0670	D102 0670	D103 0670	D179 0670
0675	6.75		109	69		D102 0675		
0676	6.75	17/64	105	73	D101 0676	D102 0676		D179 0676
0680	6.80		109	69	D101 0680	D102 0680	D103 0680	D179 0680
0690	6.90		109	69	D101 0690	D102 0690	D103 0690	D179 0690
0700	7.00		109	69	D101 0700	D102 0700	D103 0700	D179 0700
0710	7.10		109	69	D101 0710	D102 0710	D103 0710	D179 0710
0714	7.14	9/32	108	75	D101 0714	D102 0714		D179 0714
0720	7.20		109	69	D101 0720	D102 0720	D103 0720	D179 0720

ISO	P										M			K						N										S										H									
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
D101	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D102	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D103	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D179	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

P Steel
 M Stainless Steel
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Catalogue Code	D101	D102	D103	D179
Discount Group	A0402	A0402	A0420	A0420
Material	HSS	HSS	HSS	HSS
Surface Finish	Brt	Blu	TiN	TAiN Tip
Sutton Designation	N	N	N	N
Geometry	R30	R30	R30	R30
Point Type	118° Standard	118° Standard	118° Form A	118° Form C
Order Quantity	Bulk (10)	Bulk (10)	1	Bulk (10)

Size Ref.	d ₁ (h8)		l ₁	l ₂		Order No.	Order No.	Order No.	Order No.
	mm	Gauge							
0725	7.25		109	69		•	D102 0725	•	
0730	7.30		109	69		D101 0730	D102 0730	D103 0730	D179 0730
0740	7.40		109	69		D101 0740	D102 0740	D103 0740	D179 0740
0750	7.50		109	69		D101 0750	D102 0750	D103 0750	D179 0750
0754	7.54	19/64	111	78		D101 0754	D102 0754		D179 0754
0760	7.60		117	75		D101 0760	D102 0760	D103 0760	D179 0760
0770	7.70		117	75		D101 0770	D102 0770	D103 0770	D179 0770
0775	7.75		117	75		•	D102 0775	•	
0780	7.80		117	75		D101 0780	D102 0780	D103 0780	D179 0780
0790	7.90		117	75		D101 0790	D102 0790	D103 0790	D179 0790
0794	7.94	5/16	114	81		D101 0794	D102 0794		D179 0794
0800	8.00		117	75		D101 0800	D102 0800	D103 0800	D179 0800
0810	8.10		117	75		D101 0810	D102 0810	D103 0810	D179 0810
0820	8.20		117	75		D101 0820	D102 0820	D103 0820	D179 0820
0825	8.25		117	75		•	D102 0825	•	
0830	8.30		117	75		D101 0830	D102 0830	D103 0830	D179 0830
0833	8.33	21/64	117	84		D101 0833	D102 0833		D179 0833
0840	8.40		117	75		D101 0840	D102 0840	D103 0840	D179 0840
0850	8.50		117	75		D101 0850	D102 0850	D103 0850	D179 0850
0860	8.60		125	84		D101 0860	D102 0860	D103 0860	D179 0860
0870	8.70		125	81		D101 0870	D102 0870	D103 0870	D179 0870
0873	8.73	11/32	121	87		D101 0873	D102 0873		D179 0873
0875	8.75		125	81		•	D102 0875	•	
0880	8.80		125	81		D101 0880	D102 0880	D103 0880	D179 0880
0890	8.90		125	81		D101 0890	D102 0890	D103 0890	D179 0890
0900	9.00		125	81		D101 0900	D102 0900	D103 0900	D179 0900
0910	9.10		125	81		D101 0910	D102 0910	D103 0910	D179 0910
0913	9.13	23/64	124	89		D101 0913	D102 0913		D179 0913
0920	9.20		125	81		D101 0920	D102 0920	D103 0920	D179 0920
0925	9.25		125	81		•	D102 0925	•	
0930	9.30		125	81		D101 0930	D102 0930	D103 0930	D179 0930
0940	9.40		125	81		D101 0940	D102 0940	D103 0940	D179 0940
0950	9.50		125	81		D101 0950	D102 0950	D103 0950	D179 0950
0953	9.52	3/8	127	92		D101 0953	D102 0953		D179 0953
0960	9.60		133	87		D101 0960	D102 0960	D103 0960	D179 0960
0970	9.70		133	87		D101 0970	D102 0970	D103 0970	D179 0970
0975	9.75		133	87		•	D102 0975	•	
0980	9.80		133	87		D101 0980	D102 0980	D103 0980	D179 0980
0990	9.90		133	87		D101 0990	D102 0990	D103 0990	D179 0990
0992	9.92	25/64	130	95		D101 0992	D102 0992		D179 0992
1000	10.00		133	87		D101 1000	D102 1000	D103 1000	D179 1000
1010	10.10		133	87		D101 1010	D102 1010	D103 1010	D179 1010
1020	10.20		133	87		D101 1020	D102 1020	D103 1020	D179 1020
1025	10.25		133	87		•	D102 1025	•	
1030	10.30		133	87		D101 1030	D102 1030	D103 1030	D179 1030
1032	10.32	13/32	133	98		D101 1032	D102 1032		D179 1032
1040	10.40		133	87		D101 1040	D102 1040	D103 1040	D179 1040
1050	10.50		133	87		D101 1050	D102 1050	D103 1050	D179 1050
1060	10.60		133	87		D101 1060	D102 1060	D103 1060	D179 1060
1070	10.70		142	94		D101 1070	D102 1070	D103 1070	D179 1070
1072	10.72	27/64	137	100		D101 1072	D102 1072		D179 1072
1075	10.75		142	94		•	D102 1075	•	
1080	10.80		142	94		D101 1080	D102 1080	D103 1080	D179 1080
1090	10.90		142	94		D101 1090	D102 1090	D103 1090	D179 1090
1100	11.00		142	94		D101 1100	D102 1100	D103 1100	D179 1100
1110	11.10		142	94		D101 1110	D102 1110	D103 1110	D179 1110

ISO	P													M			K					N										S										H				
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41					
D101	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
D102	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
D103	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
D179	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

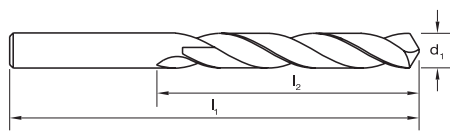
P Steel
 M Stainless Steel
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials
 • Optimal • Effective

• Available on request as special manufacture. Subject to lead time.

DRILLS

ดอกสว่าน

suttontools



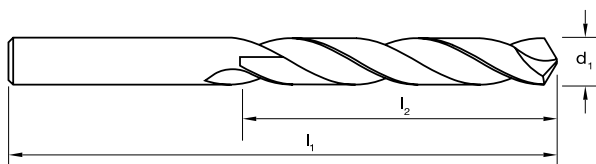
Catalogue Code	D101	D102	D103	D179
Discount Group	A0402	A0402	A0420	A0420
Material	HSS	HSS	HSS	HSS
Surface Finish	Brt	Blu	TiN	TiAIN Tip
Sutton Designation	N	N	N	N
Geometry	R30	R30	R30	R30
Point Type	118° Standard	118° Standard	118° Form A	118° Form C
Order Quantity	Bulk (10)	Bulk (10)	1	Bulk (10)

Size Ref.	d ₁ (h8)		l ₁	l ₂		Order No.	Order No.	Order No.	Order No.
	mm	Gauge							
1111	11.11	7/16	140	103		D101 1111	D102 1111		D179 1111
1120	11.20		142	94		D101 1120	D102 1120	D103 1120	D179 1120
1125	11.25		142	94		•	D102 1125	•	
1130	11.30		142	94		D101 1130	D102 1130	D103 1130	D179 1130
1140	11.40		142	94		D101 1140	D102 1140	D103 1140	D179 1140
1150	11.50		142	94		D101 1150	D102 1150	D103 1150	D179 1150
1151	11.51	29/64	143	106		D101 1151	D102 1151		D179 1151
1160	11.60		142	94		D101 1160	D102 1160	D103 1160	D179 1160
1170	11.70		142	94		D101 1170	D102 1170	D103 1170	D179 1170
1175	11.75		142	94		•	D102 1175	•	
1180	11.80		142	94		D101 1180	D102 1180	D103 1180	D179 1180
1190	11.90		142	94		D101 1190	D102 1190	D103 1190	D179 1190
1191	11.91	15/32	146	110		D101 1191	D102 1191		D179 1191
1200	12.00		151	101		D101 1200	D102 1200	D103 1200	D179 1200
1210	12.10		151	101		D101 1210	D102 1210	D103 1210	D179 1210
1220	12.20		151	101		D101 1220	D102 1220	D103 1220	D179 1220
1225	12.25		151	101		•	D102 1225	•	
1230	12.30		151	101		D101 1230	D102 1230	D103 1230	D179 1230
1231	12.30	31/64	149	111		D101 1231	D102 1231		D179 1231
1240	12.40		151	101		D101 1240	D102 1240	D103 1240	D179 1240
1250	12.50		151	101		D101 1250	D102 1250	D103 1250	D179 1250
1260	12.60		151	101		D101 1260	D102 1260	D103 1260	D179 1260
1269	12.70	1/2	152	114		D101 1269	D102 1269		D179 1269
1270	12.70		151	101		D101 1270	D102 1270	•	D179 1270
1275	12.75		151	101		•	D102 1275	•	
1280	12.80		151	101		D101 1280	D102 1280	D103 1280	D179 1280
1290	12.90		151	101		D101 1290	D102 1290	D103 1290	D179 1290
1300	13.00		151	101		D101 1300	D102 1300	D103 1300	D179 1300
1310	13.10	33/64	151	101		•	D102 1310		D179 1310
1320	13.20		151	101		•	D102 1320	•	
1349	13.49	17/32	160	108		•	D102 1349		D179 1349
1350	13.50		160	108			•	D102 1350	D179 1350
1380	13.80		160	108		•	D102 1380		
1389	13.89	35/64	160	108		•	D102 1389		
1400	14.00		160	108		•	D102 1400		D179 1400
1425	14.25		169	114		•	D102 1425		
1429	14.29	9/16	169	114		•	D102 1429		D179 1429
1450	14.50		169	114		•	D102 1450		D179 1450
1468	14.68	37/64	169	114		•	D102 1468		
1475	14.75		169	114		•	D102 1475		
1500	15.00		169	114		•	D102 1500		D179 1500
1508	15.08	19/32	178	120		•	D102 1508		
1525	15.25		178	120		•	D102 1525		
1548	15.48	39/64	178	120		•	D102 1548		
1550	15.50		178	120		•	D102 1550		D179 1550
1575	15.75		178	120		•	D102 1575		
1588	15.88	5/8	178	120		•	D102 1588		D179 1588
1600	16.00		178	120		•	D102 1600		D179 1600
1627	16.27	41/64	184	125		•	D102 1627		
1667	16.67	21/32	184	125		•	D102 1667		
1707	17.07	43/64	191	130		•	D102 1707		
1746	17.46	11/16	191	130		•	D102 1746		

ISO	P													M		K					N										S										H	
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
D101	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D102	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D103	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
D179	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

P Steel
 M Stainless Steel
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials
 • Optimal
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ดอกสว่านไฮสปีดโคบอลต์สำหรับงานหนัก (เหมาะสำหรับเหล็กสแตนเลส)
Drills Jobber, Cobalt Heavy Duty



- Heavy Duty design
- Cobalt content ensures high abrasion resistance
- Suitable for tough materials up to 850N/mm²
- Self centring 135° split point

Catalogue Code	D109
Discount Group	A0404
Material	HSS Co
Surface Finish	Colour Temp
Colour Ring & Application	Hard Material
Geometry	R25
Point Type	135° Form C >3/32"
Order Quantity	10

Size Ref.	d _i (h8)		l ₁	l ₂	Order No.
0100	1.00*		34	12	D109 0100
0110	1.10*		36	14	D109 0110
0120	1.20*		38	16	D109 0120
0130	1.30*		38	16	D109 0130
0140	1.40*		40	18	D109 0140
0150	1.50*		40	18	D109 0150
0159	1.59*	1/16	48	22	D109 0159
0160	1.60*		43	20	D109 0160
0170	1.70*		43	20	D109 0170
0180	1.80*		46	22	D109 0180
0190	1.90*		46	22	D109 0190
0198	1.98*	5/64	51	25	D109 0198
0200	2.00*		49	24	D109 0200
0210	2.10*		49	24	D109 0210
0220	2.20*		53	27	D109 0220
0230	2.30*		53	27	D109 0230
0238	2.38*	3/32	57	32	D109 0238
0240	2.40*		57	30	D109 0240
0250	2.50		57	30	D109 0250
0260	2.60		57	30	D109 0260
0270	2.70		61	33	D109 0270
0278	2.78	7/64	67	38	D109 0278
0280	2.80		61	33	D109 0280
0290	2.90		61	33	D109 0290
0300	3.00		61	33	D109 0300
0310	3.10	1/8	65	36	D109 0310
0318	3.18		70	41	D109 0318
0320	3.20		65	36	D109 0320
0330	3.30		65	36	D109 0330
0340	3.40		70	39	D109 0340
0350	3.50		70	39	D109 0350
0357	3.57	9/64	73	44	D109 0357
0360	3.60		70	39	D109 0360
0370	3.70		70	39	D109 0370
0380	3.80		75	43	D109 0380
0390	3.90		75	43	D109 0390

Catalogue Code	D109
Discount Group	A0404
Material	HSS Co
Surface Finish	Colour Temp
Colour Ring & Application	Hard Material
Geometry	R25
Point Type	135° Form C >3/32"
Order Quantity	10

Size Ref.	d _i (h8)		l _i	l _i	Order No.
0410	4.10		75	43	D109 0410
0420	4.20		75	43	D109 0420
0430	4.30		80	47	D109 0430
0437	4.37	11/64	83	54	D109 0437
0440	4.40		80	47	D109 0440
0450	4.50		80	47	D109 0450
0460	4.60		80	47	D109 0460
0470	4.70		80	47	D109 0470
0476	4.76	3/16	89	59	D109 0476
0480	4.80		86	52	D109 0480
0490	4.90		86	52	D109 0490
0500	5.00		86	52	D109 0500
0510	5.10		86	52	D109 0510
0516	5.16	13/64	92	62	D109 0516
0520	5.20		86	52	D109 0520
0530	5.30		86	52	D109 0530
0540	5.40		93	57	D109 0540
0550	5.50		93	57	D109 0550
0556	5.56	7/32	95	64	D109 0556
0560	5.60		93	57	D109 0560
0570	5.70		93	57	D109 0570
0580	5.80		93	57	D109 0580
0590	5.90		93	57	D109 0590
0595	5.95	15/64	98	67	D109 0595
0600	6.00		93	57	D109 0600
0610	6.10		101	63	D109 0610
0620	6.20		101	63	D109 0620
0630	6.30		101	63	D109 0630
0635	6.35	1/4	102	70	D109 0635
0640	6.40		101	63	D109 0640
0650	6.50		101	63	D109 0650
0660	6.60		101	63	D109 0660
0670	6.70		101	63	D109 0670
0676	6.75	17/64	105	73	D109 0675
0680	6.80		109	69	D109 0680
0690	6.90		109	69	D109 0690

* Standard 135^o point below 3/32"

[illegible]

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

Designed by JSR GROUP

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ห้ามนำไปเผยแพร่ก่อนได้รับอนุญาตจากทางบริษัท

DRILLS

ดอกสว่าน

suttontools

Stright Shank

ดอกสว่านถาตรง

Catalogue Code	D109
Discount Group	A0404
Material	HSS Co
Surface Finish	Colour Temp
Colour Ring & Application	Hard Material
Geometry	R25
Point Type	135° Form C >3/32"
Order Quantity	10

Size Ref.	d ₁ (h8)		I ₁	I ₂	Order No.
0397	3.97	5/32	79	51	D109 0397
0400	4.00		75	43	D109 0400
0714	7.14	9/32	108	75	D109 0714
0720	7.20		109	69	D109 0720
0730	7.30		109	69	D109 0730
0740	7.40		109	69	D109 0740
0750	7.50		109	69	D109 0750
0754	7.54	19/64	111	78	D109 0754
0760	7.60		117	75	D109 0760
0770	7.70		117	75	D109 0770
0780	7.80		117	75	D109 0780
0790	7.90		117	75	D109 0790
0794	7.94	5/16	114	81	D109 0794
0800	8.00		117	75	D109 0800
0810	8.10		117	75	D109 0810
0820	8.20		117	75	D109 0820
0830	8.30		117	75	D109 0830
0833	8.33	21/64	117	84	D109 0833
0840	8.40		117	75	D109 0840
0850	8.50		117	75	D109 0850
0860	8.60		125	81	D109 0860
0870	8.70		125	81	D109 0870
0873	8.73	11/32	121	87	D109 0873
0880	8.80		125	81	D109 0880
0890	8.90		125	81	D109 0890
0900	9.00		125	81	D109 0900
0910	9.10		125	81	D109 0910
0913	9.13	23/64	124	89	D109 0913
0920	9.20		125	81	D109 0920
0930	9.30		125	81	D109 0930
0940	9.40		125	81	D109 0940
0950	9.50		125	81	D109 0950
0953	9.53	3/8	127	92	D109 0953
0960	9.60		133	87	D109 0960
0970	9.70		133	87	D109 0970
0980	9.80		133	87	D109 0980
0990	9.90		133	87	D109 0990
0992	9.92	25/64	130	95	D109 0992
1000	1.00		133	87	D109 1000

Catalogue Code	D109
Discount Group	A0404
Material	HSS Co
Surface Finish	Colour Temp
Colour Ring & Application	Hard Material
Geometry	R25
Point Type	135° Form C >3/32"
Order Quantity	10

Size Ref.	d ₁ (h8)		I ₁	I ₂	Order No.
0700	7.00		109	69	D109 0700
0710	7.10		109	69	D109 0710
1010	10.10		133	87	D109 1010
1020	10.20		133	87	D109 1020
1030	10.30		133	87	D109 1030
1032	10.32	13/32	133	98	D109 1032
1040	10.40		133	87	D109 1040
1050	10.50		133	87	D109 1050
1060	10.60		133	87	D109 1060
1070	10.70		142	94	D109 1070
1072	10.72	27/64	137	100	D109 1072
1080	10.80		142	94	D109 1080
1090	10.90		142	94	D109 1090
1100	11.00		142	94	D109 1100
1111	11.11	7/16	140	103	D109 1111
1110	11.10		142	94	D109 1110
1120	11.20		142	94	D109 1120
1130	11.30		142	94	D109 1130
1140	11.40		142	94	D109 1140
1150	11.50		142	94	D109 1150
1151	11.51	29/64	143	106	D109 1151
1160	11.60		142	94	D109 1160
1170	11.70		142	94	D109 1170
1180	11.80		142	94	D109 1180
1190	11.90		142	94	D109 1190
1191	11.91	15/32	146	110	D109 1191
1200	12.00		151	101	D109 1200
1210	12.10		151	101	D109 1210
1220	12.20		151	101	D109 1220
1230	12.30		151	101	D109 1230
1231	12.30	31/64	149	111	D109 1231
1240	12.40		151	101	D109 1240
1250	12.50		151	101	D109 1250
1260	12.60		151	101	D109 1260
1269	12.70	1/2	152	104	D109 1269
1270	12.70		151	101	D109 1270
1280	12.80		151	101	D109 1280
1290	12.90		151	101	D109 1290
1300	13.00		151	101	D109 1300

ISO	P													M			K					N										S										H				
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41					
D109			●		●		●	●	○	○				○	○		○	○	○	○								●											○				○			
P	Steel			M			Stainless Steel			K			Cast Iron			N			Non-Ferrous Metals			S							Titanium & Super Alloys							H		Hard Materials		●	Optimal		○	Effective		

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials ● Optimal ○ Effective

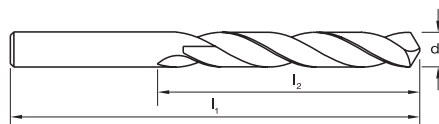
ดอกสว่านไฮสปีดโคบอลต์เจาะเหล็กพาราโบลิค Drills Jobber, DHJ



D158



D163



- High performance drill
- Suitable for materials up to 1200N/mm²
- Point geometry ensures high strength
- Parabolic flute design for optimal chip transportation
- TiAIN for longer tool life

Catalogue Code	D158	D163
Discount Group	A0404	A0418
Material	HSS Co	HSS Co
Surface Finish	Brt	TiAIN
Colour Ring & Application	NH	NH
Geometry	R40	R40
Point Type	130°	130°
Shank Tolerance	h9	h9

Catalogue Code	D158	D163
Discount Group	A0404	A0418
Material	HSS Co	HSS Co
Surface Finish	Brt	TiAIN
Colour Ring & Application	NH	NH
Geometry	R40	R40
Point Type	130°	130°
Shank Tolerance	h9	h9

Size Ref.	d _i (h8)		I ₁	I ₂	Point	Order No.	Order No.
0100 ^t	1.0		34	13	A	D158 0100	D163 0100
0110 ^t	1.1		36	15	A	D158 0110	D163 0110
0120 ^t	1.2		38	17	A	D158 0120	D163 0120
0130 ^t	1.3		38	17	A	D158 0130	D163 0130
0140 ^t	1.4		40	19	A	D158 0140	D163 0140
0150 ^t	1.5		40	19	A	D158 0150	D163 0150
0159 ^t	1.59	1/16	43	21	A	•	•
0160 ^t	1.6		43	21	A	D158 0160	D163 0160
0170 ^t	1.7		43	21	A	D158 0170	D163 0170
0180 ^t	1.8		46	23	A	D158 0180	D163 0180
0190 ^t	1.9		46	23	A	D158 0190	D163 0190
0198 ^t	1.98	5/64	49	24	B	•	•
0200 ^t	2.0		49	24	B	D158 0200	D163 0200
0210 ^t	2.1		49	24	B	D158 0210	D163 0210
0220 ^t	2.2		53	28	B	D158 0220	D163 0220
0230 ^t	2.3		53	28	B	D158 0230	D163 0230
0238 ^t	2.38	3/32	57	31	B	•	•
0240 ^t	2.4		57	31	B	D158 0240	D163 0240
0250 ^t	2.5		57	31	B	D158 0250	D163 0250
0260 ^t	2.6		57	31	B	D158 0260	D163 0260
0270 ^t	2.7		61	34	B	D158 0270	D163 0270
0278 ^t	2.78	7/64	61	34	B	•	•
0280 ^t	2.8		61	34	B	D158 0280	D163 0280
0290 ^t	2.9		61	34	B	D158 0290	D166 0290
0300	3.0		61	33	B	D158 0300	D163 0300
0310	3.1		65	36	B	D158 0310	D163 0310
0318	3.18	1/8	65	36	B	D158 0318	D163 0318
0320	3.2		65	36	B	D158 0320	D163 0320
0330	3.3		65	36	B	D158 0330	D163 0330
0340	3.4		70	39	B	D158 0340	D163 0340
0350	3.5		70	39	B	D158 0350	D163 0350
0357	3.57	9/64	70	39	B	D158 0357	D163 0360

Size Ref.	d ₁ (h8)		I ₁	I ₂	Point	Order No.	Order No.
0390	3.9		75	43	B	D158 0390	D163 0390
0397	3.97	5/32	75	43	B	D158 0397	D163 0397
0400	4.0		75	43	B	D158 0400	D163 0400
0410	4.1		75	43	B	D158 0410	D163 0410
0420	4.2		75	43	B	D158 0420	D163 0420
0430	4.3		80	47	B	D158 0430	D163 0430
0437	4.37	11/64	80	47	B	D158 0437	D163 0437
0440	4.4		80	47	B	D158 0440	D163 0440
0450	4.5		80	47	B	D158 0450	D163 0450
0460	4.6		80	47		D158 0460	D163 0460
0470	4.7		80	47		D158 0470	D163 0470
0476	4.76	3/16	80	47		D158 0476	D163 0476
0480	4.8		86	52		D158 0480	D163 0480
0490	4.9		86	52		D158 0490	D163 0490
0500	5.0		86	52		D158 0500	D163 0500
0510	5.1		86	52		D158 0510	D163 0510
0516	5.16	13/64	86	52		D158 0516	D163 0516
0520	5.2		86	52		D158 0520	D163 0520
0530	5.3		86	52		D158 0530	D163 0530
0540	5.4		93	57		D158 0540	D163 0540
0550	5.5		93	57		D158 0550	D163 0550
0556	5.56	7/32	93	57		D158 0556	D163 0556
0560	5.6		93	57		D158 0560	D163 0560
0570	5.7		93	57		D158 0570	D163 0570
0580	5.8		93	57		D158 0580	D163 0580
0590	5.9		93	57		D158 0590	D163 0590
0595	5.95	15/64	93	57		D158 0595	D163 0595
0600	6.0		93	57		D158 0600	D163 0600
0610	6.1		101	63		D158 0610	D163 0610
0620	6.2		101	63		D158 0620	D163 0620
0630	6.3		101	63		D158 0630	D163 0630
0635	6.35	1/4	101	63		D158 0635	D163 0635

ISO	P													M			K						N										S										H			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41					
D158	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			
D163	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		

P Steel
 M Stainless Steel
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials
 • Optimal • Effective

• Available on request as special manufacture. Subject to lead time.

ดอกสว่านไฮสปีดเจาะเหล็กก้านกลม Drills Reduced Shank



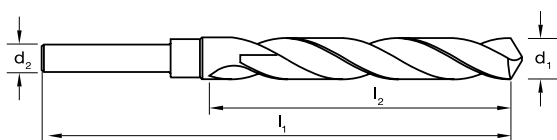
D120



D188



- General purpose drill with reduced shank
- Standard point geometry
- Designed for machine and hand held drilling
- Overall and flute lengths do not include drill point



Catalogue Code	D120	D188
Discount Group	A0906	A0906
Material	HSS	HSS
Surface Finish	Blu	Blu
Sutton Designation	N	N
Geometry	R30	R30
Point Type	118° Standard	118° Standard
Shank Tolerance	10mm	12.5mm

Size Ref.	d ₁ (h8)		l ₁	l ₂	Order No.	Order No.
1310	13.10	33/64	152	86		D188 1310
1349	13.49	17/32	152	86		D188 1349
1350	13.5		152	86		D188 1350
1389	13.89	35/64	152	86		D188 1389
1400	14.0		152	86		D188 1400
1429	14.29	9/16	152	86	D120 1429	D188 1429
1450	14.5		152	86		D188 1450
1468	14.68	37/64	152	86		D188 1468
1500	15.0		152	86		D188 1500
1508	15.08	19/32	152	86		D188 1508
1548	15.48	39/64	152	86		D188 1548
1550	15.5		152	86		D188 1550
1588	15.87	5/8	152	86	D120 1588	D188 1588
1600	16.0		152	86		D188 1600
1627	16.27	41/64	152	86		D188 1627
1650	16.5		152	86		D188 1650
1667	16.67	21/32	152	86		D188 1667
1700	17.0		152	86		D188 1700
1707	17.06	43/64	152	86		D188 1707
1746	17.46	11/16	152	86		D188 1746
1786	17.86	45/64	152	86		D188 1786
1750	17.5		152	86		D188 1750
1826	18.26	23/32	152	86		D188 1826
1865	18.65	47/64	152	86		D188 1865
1800	18.0		152	86		D188 1800
1850	18.5		152	86		D188 1850
1900	19.0		152	86		D188 1900
1905	19.05	3/4	152	86	D120 1905	D188 1905
1945	19.45	49/64	152	86		D188 1945
1950	19.5		152	86		D188 1950
1984	19.84	25/32	152	86		D188 1984
2000	20.0		152	86		D188 2000
2024	20.24	51/64	152	86		D188 2024
2050	20.5		152	86		D188 2050
2064	20.64	13/16	152	86		D188 2064
2100	21.0		152	86		D188 2100
2143	21.43	27/32	152	86		D188 2143
2150	21.5		152	86		D188 2150
2200	22.0		152	86		D188 2200

ISO	P													M			K							N										S										H			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41						
D120	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

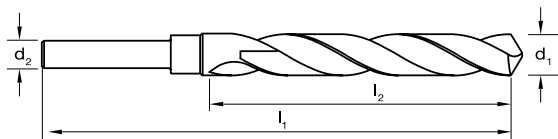
● Optimal ○ Effective

• Available on request as special manufacture. Subject to lead time.

DRILLS

ดอกสว่าน

suttontools



Catalogue Code	D120	D188
Discount Group	A0906	A0906
Material	HSS	HSS
Surface Finish	Blu	Blu
Sutton Designation	N	N
Geometry	R30	R30
Point Type	118° Standard	118° Standard
Shank Tolerance	10mm	12.5mm

Size Ref.	d ₁ (h8)		L ₁	L ₂	Order No.	Order No.
2223	22.22	7/8	152	86		D188 2223
2250	22.5		152	86		D188 2250
2262	22.62	57/64	152	86		D188 2262
2300	23.0		152	86		D188 2300
2302	23.02	29/32	152	86		D188 2302
2342*	23.41	59/64	152	86		D188 2342
2350	23.5		152	86		D188 2350
2381	23.81	15/16	152	86		D188 2381
2400	24.0		152	86		D188 2400
2421*	24.21	61/64	152	86		D188 2421
2450	24.5		152	86		D188 2450
2461	24.61	31/32	152	86		D188 2461
2500	25.0		152	86		D188 2500
2540	25.40	1	152	86		D188 2540
2600	26.0		152	86		D188 2600
2699	26.99	1-1/16	152	86		D188 2699
2800	28.0		152	86		D188 2800
2858	28.57	1-1/8	152	86		D188 2858
3000	30.0		152	86		D188 3000
3016	30.16	1-3/16	152	86		D188 3016
3175	31.75	1-1/4	152	86		D188 3175

* Not available once current stock is depleted

	P													M			K								N										S										H				
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41
D120	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

P Steel
 M Stainless Steel
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials
 ● Optimal
 ○ Effective

* Available on request as special manufacture. Subject to lead time.

ดอกสว่านไฮสปีดโคบอลต์เจาะเหล็กยาว Drills Long Series, DHL



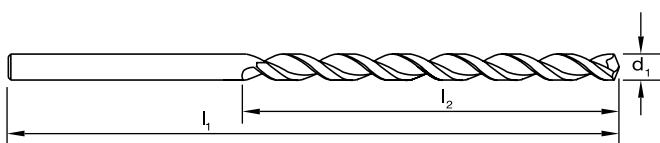
D170



D171



- High performance drill
- Suitable for materials up to 120N/mm²
- Point geometry ensures high strength
- Parabolic flute design for optimal chip transportation
- Less pecking required over standard drills
- TiAlN for longer tool life



Catalogue Code	D170	D171
Discount Group	A0504	A0508
Material	HSS Co	HSS Co
Surface Finish	Brt	TiAlN
Sutton Designation	NH	NH
Geometry	R40	R40
Point Type	130° From B	130° From B
Shank Tolerance	-	-

Size Ref.	d ₁ (h8)	L ₁	L ₂	Point	Order No.	Order No.
0100 ^t	1.0	56	33	A	D170 0100	D171 0100
0110 ^t	1.1	60	37	A	D170 0110	D171 0110
0120 ^t	1.2	65	41	A	D170 0120	D171 0120
0130 ^t	1.3	65	41	A	D170 0130	D171 0130
0140 ^t	1.4	70	45	A	D170 0140	D171 0140
0150 ^t	1.5	70	45	A	D170 0150	D171 0150
0160 ^t	1.6	76	50	A	D170 0160	D171 0160
0170 ^t	1.7	76	50	A	D170 0170	D171 0170
0180 ^t	1.8	80	53	A	D170 0180	D171 0180
0190 ^t	1.9	80	53	A	D170 0190	D171 0190
0200 ^t	2.0	85	56	B	D170 0200	D171 0200
0210 ^t	2.1	85	56	B	D170 0210	D171 0210
0220 ^t	2.2	90	59	B	D170 0220	D171 0220
0230 ^t	2.3	90	59	B	D170 0230	D171 0230
0240 ^t	2.4	95	62	B	D170 0240	D171 0240
0250 ^t	2.5	95	62	B	D170 0250	D171 0250
0260 ^t	2.6	95	62	B	D170 0260	D171 0260
0270 ^t	2.7	100	66	B	D170 0270	D171 0270
0280 ^t	2.8	100	66	B	D170 0280	D171 0280
0290 ^t	2.9	100	66	B	D170 0290	D171 0290
0300	3.0	100	66	B	D170 0300	D171 0300
0310	3.1	106	69	B	D170 0310	D171 0310
0320	3.2	106	69	B	D170 0320	D171 0320
0330	3.3	106	69	B	D170 0330	D171 0330
0340	3.4	112	73	B	D170 0340	D171 0340
0350	3.5	112	73	B	D170 0350	D171 0350
0360	3.6	112	73	B	D170 0360	D171 0360
0370	3.7	112	73	B	D170 0370	D171 0370
0380	3.8	119	78	B	D170 0380	D171 0380
0390	3.9	119	78	B	D170 0390	D171 0390
0400	4.0	119	78	B	D170 0400	D171 0400
0410	4.1	119	78	B	D170 0410	D171 0410
0420	4.2	119	78	B	D170 0420	D171 0420
0430	4.3	126	82	B	D170 0430	D171 0430
0440	4.4	126	82	B	D170 0440	D171 0440
0450	4.5	126	82	B	D170 0450	D171 0450
0460	4.6	126	82	B	D170 0460	D171 0460
0470	4.7	126	82	B	D170 0470	D171 0470

t Size < 3.0 point type : 130° 4Facet

ISO	P													M			K						N										S										H			
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41					
D170	●	●	●	●	●	●	●	●	●	○					○		●	●	●	●	○	●		○	●	●	○	○														○	●			
D171	●	●	●	●	●	●	●	●	●	○					○		●	●	●	●	○	●		○	●	●	○	○															○	●		

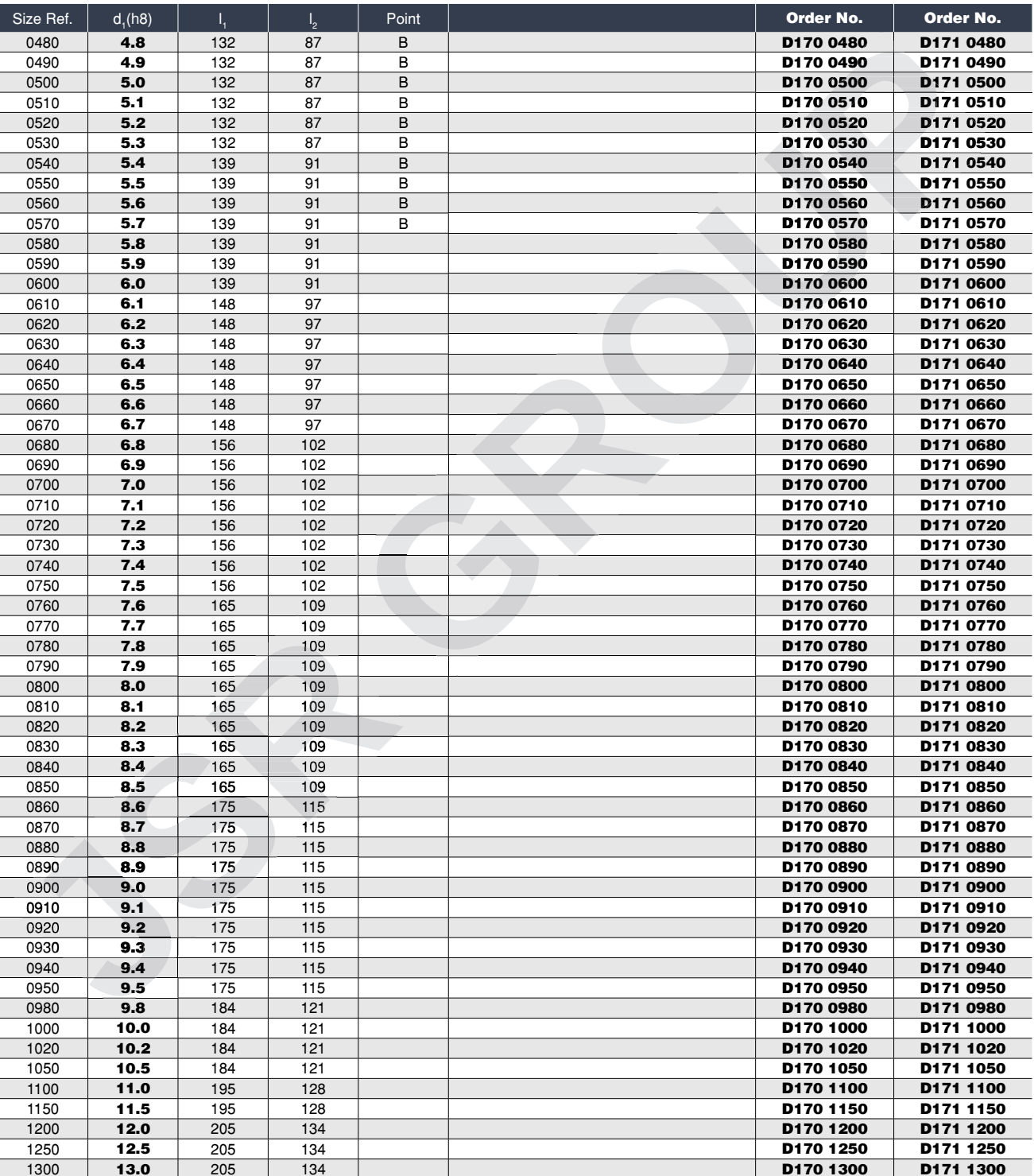
P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

● Optimal ○ Effective

• Available on request as special manufacture. Subject to lead time.

suttontools

ดอกสวยงามกันตรง

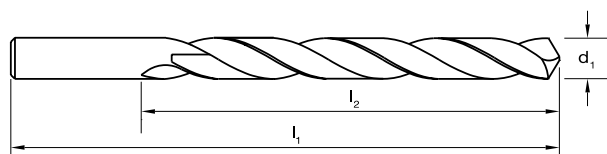


• Available on request as special manufacture. Subject to lead time.

ดอกสว่านไฮสปีดเจาะเหล็กยาว Drills Long Series



- General purpose drill
- Ideal for long reach type applications
- For deep hole applications, pecking is recommended
- Recommended for controlled machine drilling only



Catalogue Code **D113**
Discount Group A0502
Material **HSS**
Surface Finish **Blu**
Sutton Designation **Long Reach**
Geometry R30
Point Type 118° Standard

Size Ref.	d ₁ (h8)		l ₁	l ₂	Order No.
0100	1.00		57	29	D113 0100
0110	1.10		57	29	D113 0110
0120	1.20		76	44	D113 0120
0130	1.30		76	44	D113 0130
0140	1.40		76	44	D113 0140
0150	1.50		76	44	D113 0150
0159	1.59	1/16	76	44	D113 0159
0160	1.60		95	51	D113 0160
0170	1.70		95	51	D113 0170
0180	1.80		95	51	D113 0180
0190	1.90		95	51	D113 0190
0198	1.98	5/64	95	51	D113 0198
0200	2.00		108	57	D113 0200
0210	2.10		108	57	D113 0210
0220	2.20		108	57	D113 0220
0230	2.30		108	57	D113 0230
0238	2.38	3/32	108	57	D113 0238
0240	2.40		108	57	D113 0240
0250	2.50		117	64	D113 0250
0260	2.60		117	64	D113 0260
0270	2.70		117	64	D113 0270
0278	2.78	7/64	117	64	D113 0278
0280	2.80		117	64	D113 0280
0290	2.90		117	64	D113 0290
0300	3.00		130	70	D113 0300
0310	3.10		130	70	D113 0310
0318	3.18	1/8	130	70	D113 0318
0320	3.20		130	70	D113 0320
0330	3.30		137	76	D113 0330
0340	3.40		137	76	D113 0340
0350	3.50		137	76	D113 0350
0357	3.57	9/64	137	76	D113 0357
0360	3.60		137	76	D113 0360
0370	3.70		137	76	D113 0370
0380	3.80		137	76	D113 0380
0390	3.90		137	76	D113 0390
0397	3.97	5/32	137	76	D113 0397
0400	4.00		146	86	D113 0400
0410	4.10		146	86	D113 0410
0420	4.20		146	86	D113 0420
0430	4.30		146	86	D113 0430
0437	4.37	11/64	146	86	D113 0437

ISO	P													M			K							N										S										H			
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41						
D113	●	●	●	●	●	●	○																																								

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

• Available on request as special manufacture. Subject to lead time.

suttontools

Catalogue Code	D113
Discount Group	A0502
Material	HSS
Surface Finish	<i>Blu</i>
Button Designation	Long Reach
Geometry	R30
Point Type	118° Standard

Size Ref.	d _i (h8)		l ₁	l ₂		Order No.
0440	4.40		146	86		D113 0440
0450	4.50		146	86		D113 0450
0460	4.60		146	86		D113 0460
0470	4.70		146	86		D113 0470
0476	4.76	3/16	146	86		D113 0476
0480	4.80		146	86		D113 0480
0490	4.90		146	86		D113 0490
0500	5.00		152	92		D1130500
0510	5.10		152	92		D113 0510
0516	5.16	13/64	152	92		D113 0516
0520	5.20		152	92		D113 0520
0530	5.30		152	92		D113 0530
0540*	5.40		152	92		D113 0540
0550	5.50		152	92		D113 0550
0556	5.56	7/32	152	92		D113 0556
0560	5.60		152	92		D113 0560
0570	5.70		152	92		D113 0570
0580	5.80		152	92		D113 0580
0590	5.90		152	92		D113 0590
0595	5.95	15/64	156	95		D113 0595
0600	6.00		156	95		D113 0600
0610	6.10		156	95		D113 0610
0620	6.20		156	95		D113 0620
0630	6.30		156	95		D113 0630
0635	6.35	1/4	156	95		D113 0635
0640	6.40		156	95		D113 0640
0650	6.50		159	98		D113 0650
0660	6.60		159	98		D113 0660
0670	6.70		159	98		D113 0670
0676	6.75	17/64	159	98		D113 0676
0680	6.80		159	98		D113 0680
0690	6.90		159	98		D113 0690
0700	7.00		159	98		D113 0700
0710	7.10		159	98		D113 0710
0714	7.14	9/32	159	98		D113 0714
0720	7.20		159	98		D113 0720
0730	7.30		159	98		D113 0730
0740	7.40		159	98		D113 0740
0750	7.50		162	102		D113 0750
0754	7.54	19/64	162	102		D113 0754
0760	7.60		162	102		D113 0760
0770*	7.70		162	102		D113 0770
0780	7.80		162	102		D113 0780
0790	7.90		162	102		D113 0790
0794	7.94	5/16	162	102		D113 0794
0800	8.00		165	105		D113 0800
0810	8.10		165	105		D113 0810
0820	8.20		165	105		D113 0820
0830	8.30		165	105		D113 0830
0833	8.33	21/64	165	105		D113 0833
0840	8.40		165	105		D113 0840
0850	8.50		165	105		D113 0850
0860	8.60		165	105		D113 0860
0870	8.70		165	105		D113 0870
0873	8.73	11/32	165	105		D113 0873
0880*	8.80		171	108		D113 0880
0890	8.90		171	108		D113 0890
0900	9.00		171	108		D113 0900
0910	9.10		171	108		D113 0910

[illegible]

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

● Optimal ○ Effective

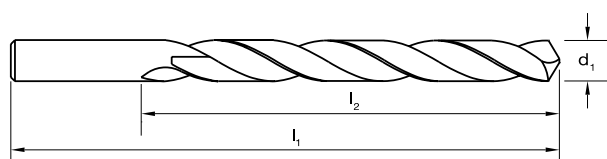
• Available on request as special manufacture. Subject to lead time.

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ห้ามนำไปเผยแพร่ก่อนได้รับอนุญาตจากทางบริษัท

ดอกส่วาน

Stright Shank
ดอกสว่านทรงตรง



Catalogue Code	D113
Discount Group	A0502
Material	HSS
Surface Finish	<i>Blu</i>
Button Designation	Long Reach
Geometry	R30
Point Type	118° Standard

Size Ref.	d ₁ (h8)		l ₁	l ₂		Order No.
0913	9.13	23/64	171	108		D113 0913
0920	9.20		171	108		D113 0920
0930*	9.30		171	108		D113 0930
0940	9.40		171	108		D113 0940
0950	9.50		171	108		D113 0950
0953	9.52	3/8	171	108		D113 0953
0960	9.60		171	108		D113 0960
0970	9.70		171	108		D113 0970
0980	9.80		171	108		D113 0980
0990	9.90		171	108		D113 0990
0992	9.92	25/64	178	111		D113 0992
1000	10.00		178	111		D113 1000
1010	10.10		178	111		D113 1010
1020	10.20		178	111		D113 1020
1030	10.30		178	111		D113 1030
1032	10.32	13/32	178	111		D113 1032
1040	10.40		178	111		D113 1040
1050	10.50		184	117		D113 1050
1060	10.60		184	117		D113 1060
1070	10.70		184	117		D113 1070
1072	10.72	27/64	184	117		D113 1072
1080	10.80		184	117		D113 1080
1090	10.90		184	117		D113 1090
1100	11.00		184	117		D113 1100
1110	11.10		184	117		D113 1110
1111	11.11	7/16	184	117		D113 1120
1120	11.20		184	117		D113 1120
1130	11.30		184	117		D113 1130
1140	11.40		184	117		D113 1140
1150	11.50		184	117		D113 1150
1151	11.51	29/64	191	121		D113 1151
1160	11.60		184	117		D113 1160
1170	11.70		184	117		D113 1170
1180	11.80		184	117		D113 1180
1190	11.90		184	117		D113 1190
1191	11.91	15/32	191	121		D113 1191
1200	12.00		197	121		D113 1200
1210	12.10		197	121		D113 1210
1220	12.20		197	121		D113 1220
1230	12.30		197	121		D113 1230
1231	12.30	31/64	197	121		D113 1231
1240	12.40		197	121		D113 1240
1250	12.50		197	121		D113 1250
1260	12.60		197	121		D113 1260
1269	12.70		1/2	197	121	
1270	12.70	197		121		D113 1270
1280	12.80	203		121		D113 1280
1290	12.90	203		121		D113 1290
1300	13.00			203	121	

[illegible]

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

• Available on request as special manufacture. Subject to lead time.

Designed by JSR GROUP

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ห้ามนำไปเผยแพร่ก่อนได้รับอนุญาตจากทางบริษัท

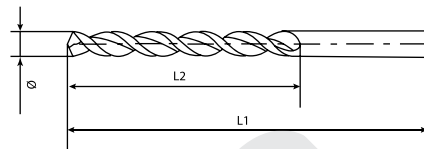
DRILLS

ดอกสว่าน

maykestag PERFORMANCE IN PRECISION

ดอกสว่านไฮสปีด (พาราโบลิค)

Jobber drills long series, DIN 340 Forte (Parabolic)



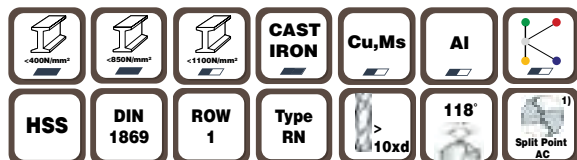
Range of application:
5% cobalt-alloyed high efficiency drills with reinforced web with special designed flute profile for better chip removal and deeper holes, suitable for steels up to 1100 N/mm².

Order No. 511 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm
511001001	1.00	56	33
511001101	1.10	60	37
511001201	1.20	65	41
511001301	1.30	65	41
511001401	1.40	70	45
511001501	1.50	70	45
511001601	1.60	76	50
511001701	1.70	76	50
511001801	1.80	80	53
511001901	1.90	80	53
511002001	2.00	85	56
511002101	2.10	85	56
511002201	2.20	90	59
511002301	2.30	90	59
511002401	2.40	95	62
511002501	2.50	95	62
511002601	2.60	95	62
511002701	2.70	100	66
511002801	2.80	100	66
511002901	2.90	100	66
511003001	3.00	100	66
511003101	3.10	106	69
511003201	3.20	106	69
511003301	3.30	106	69
511003401	3.40	112	73
511003501	3.50	112	73
511003601	3.60	112	73
511003701	3.70	112	73
511003801	3.80	119	78
511003901	3.90	119	78
511004001	4.00	119	78
511004201	4.20	119	78

Order No. 511 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm
511004501	4.50	126	82
511004801	4.80	132	87
511005001	5.00	132	87
511005201	5.20	132	87
511005501	5.50	139	91
511005801	5.80	139	91
511006001	6.00	139	91
511006201	6.20	148	97
511006501	6.50	148	97
511006801	6.80	156	102
511007001	7.00	156	102
511007201	7.20	156	102
511007501	7.50	156	102
511007801	7.80	165	109
511008001	8.00	165	109
511008201	8.20	165	109
511008501	8.50	165	109
511009001	9.00	175	115
511009501	9.50	175	115
511009801	9.80	184	121
511010001	10.00	184	121
511010201	10.20	184	121
511010501	10.50	184	121
511011001	11.00	195	128
511011501	11.50	195	128
511012001	12.00	205	134
511012501	12.50	205	134
511013001	13.00	205	134
511014001	14.00	214	140

ดอกสว่านไฮสปีดเจาะเหล็กยาวพิเศษ 1

Jobber drills extra long series, DIN 1869 R1 RN



Range of application:
High efficiency drills for extremely deep holes where working conditions such as cutting speed, feed, coolant and frequent chip removal have to be observed.

Order No.	$\varnothing_{118}$ mm	L1 mm	L2 mm
101002001	2.00	125	85
101002501	2.50	140	95
101003001	3.00	150	100
101003501	3.50	165	115
101004001	4.00	175	120
101004201	4.20	175	120
101004501	4.50	185	125
101004801	4.80	195	135
101004901	4.90	195	135
101005001	5.00	195	135
101005501	5.50	205	140
101005801	5.80	205	140
101006001	6.00	205	140
101006201	6.20	215	150
101006501	6.50	215	150
101007001	7.00	225	155
101007501	7.50	225	155
101008001	8.00	240	165
101008501	8.50	240	165
101009001	9.00	250	175
101009501	9.50	250	175
101010001	10.00	265	185
101010501	10.50	265	185
101011001	11.00	280	195
101011501	11.50	280	195
101012001	12.00	295	205
101012501	12.50	295	205
101013001	13.00	295	205

Carbide Drills
ดอกสว่านคาร์ไบด์

HSS Drills
ดอกสว่านไฮสปีด

Stub / Standard
ตัวสั้น / มาตรฐาน

Long
ตัวยาว

Micro Drill
ดอกสว่านไมโคร

Z Plunging

Step Borer

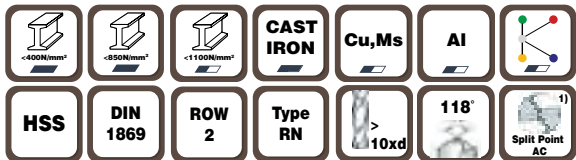
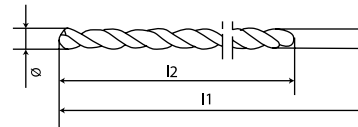
DRILLS

ดอกสว่าน

maykestag PERFORMANCE IN PRECISION

ดอกสว่านไฮสปีดเจาะเหล็กยาวพิเศษ 2

Jobber drills extra long series, DIN 1869 R2 RN

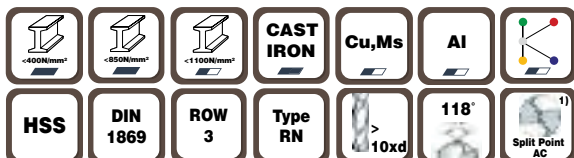
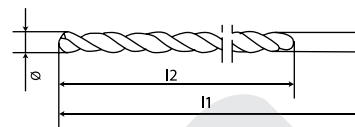


Range of application:
High efficiency drills for extremely deep holes where working conditions such as cutting speed, feed, coolant and frequent chip removal have to be observed.

Order No.	Ø _{h8} mm	L1 mm	L2 mm
111003001	3.00	190	130
111003501	3.50	210	145
111004001	4.00	220	150
111004201	4.20	220	150
111004501	4.50	235	160
111005001	5.00	245	170
111005501	5.50	260	180
111006001	6.00	260	180
111006501	6.50	275	190
111007001	7.00	290	200
111007501	7.50	290	200
111008001	8.00	305	210
111008501	8.50	305	210
111009001	9.00	320	220
111009501	9.50	320	220
111010001	10.00	340	235
111010501	10.50	340	235
111011001	11.00	365	250
111011501	11.50	365	250
111012001	12.00	375	260
111012501	12.50	375	260
111013001	13.00	375	260

ดอกสว่านไฮสปีดเจาะเหล็กยาวพิเศษ 3

Jobber drills extra long series, DIN 1869 R3 RN



Range of application:
High efficiency drills for extremely deep holes where working conditions such as cutting speed, feed, coolant and frequent chip removal have to be observed.

Order No.	Ø _{h8} mm	L1 mm	L2 mm
121003501	3.50	265	180
121004001	4.00	280	190
121004201	4.20	280	190
121004501	4.50	295	200
121005001	5.00	315	210
121005501	5.50	330	225
121006001	6.00	330	225
121006201	6.20	350	235
121006501	6.50	350	235
121007001	7.00	370	250
121007501	7.50	370	250
121008001	8.00	390	265
121008501	8.50	390	265
121009001	9.00	410	280
121009501	9.50	410	280
121010001	10.00	430	295
121010501	10.50	430	295
121011001	11.00	455	310
121011501	11.50	455	310
121012001	12.00	480	330
121012501	12.50	480	330
121013001	13.00	480	330

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

ตัวสั้น / มาตรฐาน

Long

ตัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer

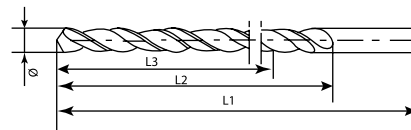
DRILLS

ดอกสว่าน

maykestag PERFORMANCE IN PRECISION

ดอกสว่านไฮสปีดโคบอลต์เจาะเหล็กยาวพิเศษ 1

Jobber drills extra long series, DIN 1869 R1 Forte



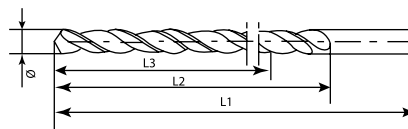
Range of application:

5% cobalt-alloyed high efficiency drills with reinforced web with special designed flute profile for better chip removal and deeper holes, suitable for steels up to 1100 N/mm².

Order No. 201 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	L3 mm
201003001	3.00	150	100	
201003501	3.50	165	115	
201004001	4.00	175	120	
201004501	4.50	185	125	
201005001	5.00	195	135	90
201005501	5.50	205	140	93
201006001	6.00	205	140	93
201006501	6.50	215	150	100
201007001	7.00	225	155	103
201007501	7.50	225	155	103
201008001	8.00	240	165	110
201008501	8.50	240	165	110
201009001	9.00	250	175	117
201009501	9.50	250	175	117
201010001	10.00	265	185	123
201011001	11.00	280	195	130
201012001	12.00	295	205	137
201013001	13.00	295	205	137

ดอกสว่านไฮสปีดโคบอลต์เจาะเหล็กยาวพิเศษ 2

Jobber drills extra long series, DIN 1869 R2 Forte



Range of application:

5% cobalt-alloyed high efficiency drills with reinforced web with special designed flute profile for better chip removal and deeper holes, suitable for steels up to 1100 N/mm².

Order No. 211 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	L3 mm
211003001	3.00	190	130	
211003501	3.50	210	145	
211004001	4.00	220	150	
211004501	4.50	235	160	
211005001	5.00	245	170	113
211005501	5.50	260	180	120
211006001	6.00	260	180	120
211006501	6.50	275	190	127
211007001	7.00	290	200	133
211007501	7.50	290	200	133
211008001	8.00	305	210	140
211008501	8.50	305	210	140

Order No. 211 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	L3 mm
211009001	9.00	320	220	147
211009501	9.50	320	220	147
211010001	10.00	340	235	157
211011001	11.00	365	250	167
211012001	12.00	375	260	173
211013001	13.00	375	260	173

Carbide Drills
ดอกสว่านคาร์ไบด์

HSS Drills
ดอกสว่านไฮสปีด

Stub / Standard
ตัวสั้น / มาตรฐาน

Long
ตัวยาว

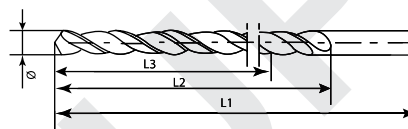
Micro Drill
ดอกสว่านไมโคร

Z Plunging

Step Borer

ดอกสว่านไฮสปีดโคบอลต์เจาะเหล็กยาวพิเศษ 3

Jobber drills extra long series, DIN 1869 R3 Forte



Range of application:

5% cobalt-alloyed high efficiency drills with reinforced web with special designed flute profile for better chip removal and deeper holes, suitable for steels up to 1100 N/mm².

Order No. 221 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	L3 mm
221003501	3.50	265	180	
221004001	4.00	280	190	
221005001	5.00	315	210	140
221006001	6.00	330	225	150
221007001	7.00	370	250	167
221008001	8.00	390	265	177
221009001	9.00	410	280	187
221010001	10.00	430	295	197
221011001	11.00	455	310	207
221012001	12.00	480	330	220
221013001	13.00	480	330	220

DRILLS

ดอกสว่าน

suttontools

ดอกสว่านชุด
Drills Set

Stright Shank

ดอกสว่านแกนตรง

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

ตัวสั้น / มาตรฐาน

Long

ตัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer



D101SM1



D101SM2



D101SM3



D101SM30



D101SM41



D102SM1



D102SM2



D102SM3



D102SM30



D102SM41



D103SM2



D103SM3



D109SM2



D109SM3



D102SM99



D101 SRKM2



D101 SRK3



D101SM7



D101SM8



D102SM8



D101S1



D101S2



D101S3



D101S30



D101S31



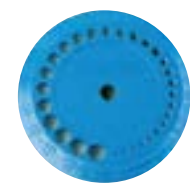
D102S1



D102S2



D102S3



D101S7



D102S8



D103S2



D103S3



D109S2



D109S3



D101 SRK1



D101 SRK2



D101 SRK3

ดอกสว่านชุด Drills Set



D101



D102



D103



D109



- Various combinations available
- Metric and Imperial

Catalogue Code	D101	D102	D103	D109
Discount Group	A1202	A1202	A1216	A0404
Material	HSS	HSS	HSS	HSS Co
Surface Finish	Brt	Blu	TiN	Colour Temp
Sutton Designation	N	N	N	Tough Materials
Geometry	R30	R30	R30	R25
Point Type	118° Standard	118° Standard	118° Form A	118° Form C
Shank Tolerance	-	-	-	-

Size Ref.	d _i (h8)	Case	Pieces	Order No.	Order No.	Order No.	Order No.
	Metric (DIN 338)						
SM1	1.0 - 6.5mm x 0.5	ABS	12	D101 SM1	D102 SM1	D103 SM1	D109 SM1
SM2	1.0 - 10.0mm x 0.5	ABS	19	D101 SM2	D102 SM2	D103 SM2	D109 SM2
SM3	1.0 - 13.0mm x 0.5	ABS	25	D101 SM3	D102 SM3	D103 SM3	D109 SM3
SM8	1.0 - 3.0mm x 0.25, 3.5 - 13.0mm x 0.5	Plastic	29	D101 SM8	D102 SM8		
SM30	1.0mm - 5.9mm x 0.1	Metal	50	D101 SM30	D102 SM30		
SM41	6.0mm - 10.0mm x 0.1	Metal	41	D101 SM41	D102 SM41		
SM99	1.0 - 10.0mm x 0.1 (+10.5, 10.9, 11.0, 11.5, 11.9, 12.0, 12.5, 12.9, 13.0mm)	Plastic	100		D102 SM99		
	Refill Kits						
SRKM2	1.5mm - 3.5mm x 0.5mm	Tray	5	D101 SRKM2			
SRKM3	1.5, 2.0, 3.0, 4.0, 5.0mm	Tray	5	D101 SRKM3			
	Drill Stands Discount Group Z0204						
SM7	1.0 - 3.0mm x 0.25, 3.5 - 13.0mm x 0.5	Metal	1	D101 SM7			
	Imperial (ANSI B94-11)						
S1	1/16 - 1/4 x 1/64	ABS	13	D101 S1	D102 S1	D103 S1	D109 S1
S2	1/16 - 3/8 x 1/64	ABS	21	D101 S2	D102 S2	D103 S2	D109 S2
S3	1/16 - 1/2 x 1/64	ABS	29	D101 S3	D102 S3	D103 S3	D109 S3
S8	1/16 - 1/2 x 64ths	Plastic	29		D102 S8		
S30	#1 - #60 Wire Gauge	Metal	60	D101 S30			
S31	#61 - #80 Wire Gauge	Metal	20	D101 S31			
	Refill Kits						
SRK1	1/16, 3/32, 1/8	Tray	3	D101 SRK1			
SRK2	1/16 - 1/8 x 1/64	Tray	5	D101 SRK2			
SRK3	1/16 - 3/16 x 1/32	Tray	5	D101 SRK3			
	Drill Stands Discount Group Z0204						
S7	1/16 - 1/2 x 64ths	Metal	1	D101 S7			

[illegible]

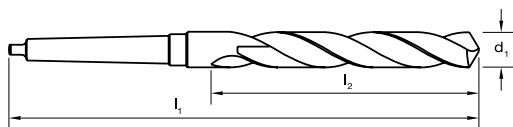
DRILLS

ดอกสว่าน

Taper Shank
ดอกสว่านทAPER

suttontools

ดอกสว่านเจาะเหล็กกล้าคาร์ไบด์
Drill Morse Taper Shank



- General purpose drill
- Suitable for materials up to 900N/mm²

Catalogue Code **D115**
Discount Group A0702
Material **HSS**
Surface Finish Blu
Sutton Designation **N**
Geometry R30
Point Type 118° Form A
Shank Tolerance -

Size Ref.	d ₁ (h8)		L ₁	L ₂	MT#	Order No.
0318	3.18	1/8	117	37	1	D115 0318
0357	3.57	9/64	121	39	1	D115 0357
0397	3.97	5/32	123	43	1	D115 0397
0437	4.37	11/64	128	47	1	D115 0437
0476	4.76	3/16	133	52	1	D115 0476
0516	5.16	13/64	133	52	1	D115 0516
0550	5.50		138	57	1	D115 0550
0556	5.56	7/32	138	57	1	D115 0556
0595	5.95	15/64	138	57	1	D115 0595
0600	6.00		138	57	1	D115 0600
0635	6.35	1/4	144	63	1	D115 0635
0650	6.50		144	63	1	D115 0650
0676	6.75	17/64	144	63	1	D115 0676
0700	7.00		150	69	1	D115 0700
0714	7.14	9/32	150	69	1	D115 0714
0750	7.50		150	69	1	D115 0750
0754	7.54	19/64	156	75	1	D115 0754
0794	7.94	5/16	156	75	1	D115 0794
0800	8.00		156	75	1	D115 0800
0833	8.33	21/64	156	75	1	D115 0833
0850	8.50		156	75	1	D115 0850
0873	8.73	11/32	162	81	1	D115 0873
0900	9.00		162	81	1	D115 0900
0913	9.13	23/64	162	81	1	D115 0913
0950	9.50		162	81	1	D115 0950
0953	9.52	3/8	168	87	1	D115 0953
0992	9.92	25/64	168	87	1	D115 0992
1000	10.00		168	87	1	D115 1000
1032	10.32	13/32	168	87	1	D115 1032
1050	10.50		168	87	1	D115 1050
1072	10.72	27/64	175	94	1	D115 1072
1100	11.00		175	94	1	D115 1100
1111	11.11	7/16	175	94	1	D115 1111
1150	11.50		175	94	1	D115 1150
1151	11.51	29/64	175	94	1	D115 1151
1191	11.91	15/32	182	101	1	D115 1191
1200	12.00		182	101	1	D115 1200
1231	12.30	31/64	182	101	1	D115 1231
1250	12.50		182	101	1	D115 1250
1269	12.70	1/2	182	101	1	D115 1269
1300	13.00		182	101	1	D115 1300
1310	13.10	33/64	182	101	1	D115 1310
1349	13.49	17/32	189	108	1	D115 1349

Size Ref.	d ₁ (h8)		L ₁	L ₁	MT#	Order No.
1350	13.50		189	108	1	D115 1350
1389	13.89	35/64	189	108	1	D115 1389
1400	14.00		189	108	1	D115 1400
1429	14.29	9/16	212	114	2	D115 1429
1450	14.50		212	114	2	D115 1450
1468	14.68	37/64	212	114	2	D115 1468
1500	15.00		212	114	2	D115 1500
1508	15.08	19/32	218	120	2	D115 1508
1548	15.48	39/64	218	120	2	D115 1548
1550	15.50		218	120	2	D115 1550
1588	15.87	5/8	218	120	2	D115 1588
1600	16.00		218	120	2	D115 1600
1627	16.27	41/64	223	125	2	D115 1627
1650	16.50		223	125	2	D115 1650
1667	16.67	21/32	223	125	2	D115 1667
1700	17.00		223	125	2	D115 1700
1707	17.06	43/64	228	130	2	D115 1707
1746	17.46	11/16	228	130	2	D115 1746
1750	17.50		228	130	2	D115 1750
1789	17.86	45/64	228	130	2	D115 1789
1800	18.00		228	130	2	D115 1800
1826	18.26	23/32	233	135	2	D115 1826
1850	18.50		233	135	2	D115 1850
1865	18.65	47/64	233	135	2	D115 1865
1900	19.00		233	135	2	D115 1900
1905	19.05	3/4	238	140	2	D115 1905
1945	19.45	49/64	238	140	2	D115 1945
1950	19.50		238	140	2	D115 1950
1984	19.84	25/32	238	140	2	D115 1984
2000	20.00		238	140	2	D115 2000
2024	20.24	51/64	243	145	2	D115 2024
2050	20.50		243	145	2	D115 2050
2064	20.64	13/16	243	145	2	D115 2064
2100	21.00		243	145	2	D115 2100
2103	21.03	53/64	243	145	2	D115 2103
2143	21.43	27/32	248	150	2	D115 2143
2150	21.50		248	150	2	D115 2150
2183	21.83	55/64	248	150	2	D115 2183
2200	22.00		248	150	2	D115 2200
2223	22.22	7/8	248	150	2	D115 2223
2250	22.50		253	155	2	D115 2250
2262	22.50		253	155	2	D115 2262
2300	23.00		253	155	3	D115 2300

ISO	P													M			K							N										S							H			
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
D115	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials ● Optimal ○ Effective

Shank Tolerance

*Not available once current stock is depleted.

P Steel **M** Stainless Steel **K** Cast Iron **N** Non-Ferrous Metals **S** Titanium & Super Alloys **H** Hard Materials

ห้ามนำไปเผยแพร่ก่อนได้รับอนุญาตจากทางบริษัท

HSS Drills
ดอกสว่านไฮสปีด

Stub / Standard
ตัวสั้น / มาตรฐาน

Long
ตัวยาว

Micro Drill
ดอกสว่านไมโคร

Z Plunging

Step Borer

DRILLS

ดอกสว่าน

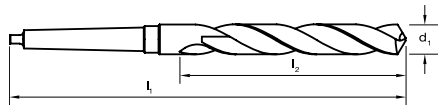
suttontools

ดอกสว่านเจาะเหล็กกล้าหนัก

Drill Morse Taper Shank, Cobalt Heavy Duty



- General purpose cobalt drill
- Suitable for materials up to 1400N/mm2
- Cobalt content, ensures high abrasion resistance



Catalogue Code **D141**
Discount Group **A0702**
Material **HSS Co**
Surface Finish Colour Temp
Colour Ring & Application **Tough Material**
Geometry **R30**
Point Type **118° From A**
Shank Tolerance **-**

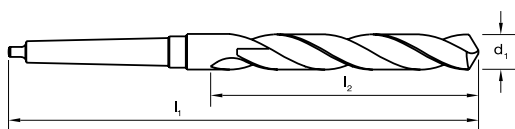
Size Ref.	d ₁	l ₁	l ₂	MT #	Order No.
1000	10.00	168	87	1	D141 1000
1050	10.50	168	87	1	D141 1050
1100	11.00	175	94	1	D141 1100
1150	11.50	175	94	1	D141 1150
1200	12.00	182	101	1	D141 1200
1250	12.50	182	101	1	D141 1250
1300	13.00	182	101	1	D141 1300
1350	13.50	189	108	1	D141 1350
1400	14.00	189	108	1	D141 1400
1450	14.50	212	114	2	D141 1450
1500	15.00	212	114	2	D141 1500
1550	15.50	218	120	2	D141 1550
1600	16.00	218	120	2	D141 1600
1650	16.50	223	125	2	D141 1650
1700	17.00	223	125	2	D141 1700
1750	17.50	228	130	2	D141 1750
1800	18.00	228	130	2	D141 1800
1850	18.50	233	135	2	D141 1850
1900	19.00	233	135	2	D141 1900
1950	19.50	238	140	2	D141 1950
2000	20.00	238	140	2	D141 2000
2050	20.50	243	145	2	D141 2050
2100	21.00	243	145	2	D141 2100
2150	21.50	248	150	2	D141 2150
2200	22.00	248	150	2	D141 2200
2250	22.50	253	155	2	D141 2250
2300	23.00	253	155	2	D141 2300
2350	23.50	276	155	2	D141 2350
2400	24.00	281	160	3	D141 2400
2450	24.50	281	160	3	D141 2450
2500	25.00	281	160	3	D141 2500
2550	25.50	286	165	3	D141 2550
2600	26.00	286	165	3	D141 2600
2650	26.50	286	165	3	D141 2650
2700	27.00	291	170	3	D141 2700
2750	27.50	291	170	3	D141 2750
2800	28.00	291	170	3	D141 2800
2850	28.50	296	175	3	D141 2850
2900	29.00	296	175	3	D141 2900
2950	29.50	296	175	3	D141 2950
3000	30.00	296	175	3	D141 3000
3050	30.50	301	180	3	D141 3050
3100	31.00	301	180	3	D141 3100
3150	31.50	301	180	3	D141 3150
3200	32.00	334	185	4	D141 3200

ISO	P													M			K							N							S							H						
VDI3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41			
D170	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

P Steel M Stainless Steel K Cast Iron N Non-Ferrous Metals S Titanium & Super Alloys H Hard Materials

● Optimal ○ Effective

ดอกสว่านเจาะเหล็กก้านเตเปอร์ยาว Drill Morse Taper Shank, Long Series



- General purpose drill
- For long reach applications
- Suitable for materials up to 900N/mm²

Catalogue Code **D140**
Discount Group A0704
Material **HSS**
Surface Finish Blu
Sutton Designation **N**
Geometry R30
Point Type 118° Standard
Shank Tolerance -

Size Ref.	d ₁ (h8)	L ₁	L ₂	MT #	Order No.
1000	10.00	197	116	1	D140 1000
1050	10.50	197	116	1	D140 1050
1100	11.00	206	125	1	D140 1100
1150	11.50	206	125	1	D140 1150
1200	12.00	215	134	1	D140 1200
1250	12.50	215	134	1	D140 1250
1300	13.00	215	134	1	D140 1300
1350	13.50	223	142	1	D140 1350
1400	14.00	223	142	1	D140 1400
1450	14.50	245	147	2	D140 1450
1500	15.00	245	147	2	D140 1500
1550	15.50	251	153	2	D140 1550
1600	16.00	251	153	2	D140 1600
1650	16.50	257	159	2	D140 1650
1700	17.00	257	159	2	D140 1700
1750	17.50	263	165	2	D140 1750
1800	18.00	263	165	2	D140 1800
1850	18.50	269	171	2	d140 1850
1900	19.00	269	171	2	D140 1900
1950	19.50	275	177	2	D140 1950
2000	20.00	275	177	2	D140 2000
2050	20.50	282	184	2	D140 2050
2100	21.00	282	184	2	D140 2100
2150	21.50	289	191	2	D140 2150
2200	22.00	289	191	2	D140 2200
2250	22.50	296	198	2	D140 2250
2300	23.00	296	198	2	D140 2300
2350	23.50	319	198	3	D140 2350
2400	24.00	327	206	3	D140 2400
2450	24.50	327	206	3	D140 2450
2500	25.00	327	206	3	D140 2500
2550	25.50	335	214	3	D140 2550
2600	26.00	335	214	3	D140 2600
2650	26.50	335	214	3	D140 2650
2700	27.00	343	222	3	D140 2700
2750	27.50	343	222	3	D140 2750
2800	28.00	343	222	3	D140 2800
2850	28.50	351	230	3	D140 2850
2900	29.00	351	230	3	D140 2900
2950	29.50	351	230	3	D140 2950
3000	30.00	351	230	3	D140 3000
3050	30.50	360	289	3	D140 3050
3100	31.00	360	239	3	D140 3100
3150	31.50	360	239	3	D140 3150
3200	32.00	397	248	4	D140 3200

ISO	P													M			K							N										S										H			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40							
D140	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			

P Steel
 M Stainless Steel
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials
 ● Optimal ○ Effective

DRILLS

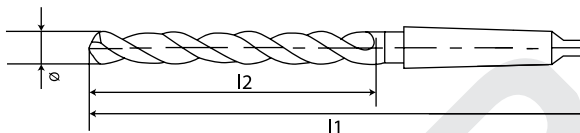
ดอกสว่าน

Taper Shank
ดอกสว่านก้านเตเปอร์

maykestag PERFORMANCE
IN PRECISION

ดอกสว่านก้านเตเปอร์ยาว

Morse taper shank drills, long series, DIN 341 RN



Range of application:

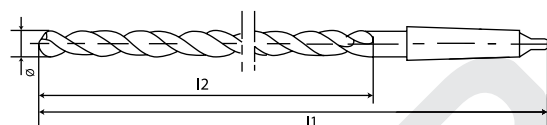
High efficiency drills for drilling steel and steel castings, alloy and plain carbon, grey iron castings, copper-alloys, nickel-silver, graphite and similar materials.

Order No. 222 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	1
222010001	10.00	197	116	1
222010501	10.50	197	116	1
222011001	11.00	206	125	1
222011501	11.50	206	125	1
222012001	12.00	215	134	1
222012501	12.50	215	134	1
222013001	13.00	215	134	1
222013501	13.50	223	142	1
222014001	14.00	223	142	1
222014251	14.25	245	147	2
222014501	14.50	245	147	2
222015001	15.00	245	147	2
222015501	15.50	251	153	2
222016001	16.00	251	153	2
222016501	16.50	257	159	2
222017001	17.00	257	159	2
222017501	17.50	263	165	2
222018001	18.00	263	165	2
222018501	18.50	269	171	2
222019001	19.00	269	171	2
222019501	19.50	275	177	2
222020001	20.00	275	177	2
222020501	20.50	282	184	2

Order No. 222 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	1
222021001	21.00	282	184	2
222021501	21.50	289	191	2
222022001	22.00	289	191	2
222022501	22.50	296	198	2
222023001	23.00	296	198	2
222024001	24.00	327	206	3
222025001	25.00	327	206	3
222026001	26.00	335	214	3
222027001	27.00	343	222	3
222028001	28.00	343	222	3
222029001	29.00	351	230	3
222030001	30.00	351	230	3
222031001	31.00	360	239	3
222032001	32.00	397	248	4
222033001	33.00	397	248	4
222035001	35.00	406	257	4
222038001	38.00	426	277	4
222039001	39.00	426	277	4
222040001	40.00	426	277	4
222042001	42.00	436	287	4
222045001	45.00	447	298	4
222048001	48.00	470	321	4
222050001	50.00	470	321	4

ดอกสว่านแกนตaperยาวพิเศษ

Morse taper shank drills, Extra long series, DIN 1870 R2 RN



Range of application:

High efficiency drills for drilling steel and steel castings, alloy and plain carbon, grey iron castings, copper-alloys, nickel-silver, graphite and similar materials.

Order No. 262 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	
262008001	8.00	265	165	1
262009001	9.00	275	175	1
262010001	10.00	285	185	1
262011001	11.00	300	195	1
262012001	12.00	310	205	1
262013001	13.00	310	205	1
262014001	14.00	325	220	1
262014501	14.50	340	220	2
262015001	15.00	340	220	2
262015501	15.50	355	230	2
262016001	16.00	355	230	2
262016501	16.50	355	230	2
262017001	17.00	355	230	2
262017501	17.50	370	245	2

Order No. 262 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	
262018001	18.00	370	245	2
262018501	18.50	370	245	2
262019001	19.00	370	245	2
262019501	19.50	385	260	2
262020001	20.00	385	260	2
262021001	21.00	385	260	2
262022001	22.00	405	270	2
262023001	23.00	405	270	2
262024001	24.00	440	290	3
262025001	25.00	440	290	3
262026001	26.00	440	290	3
262027001	27.00	460	305	3
262028001	28.00	460	305	3
262029001	29.00	460	305	3
262030001	30.00	460	305	3

Carbide Drills

ดอกสว่านคาร์ไบด์

HSS Drills

ดอกสว่านไฮสปีด

Stub / Standard

ตัวสั้น / มาตรฐาน

Long

ตัวยาว

Micro Drill

ดอกสว่านไมโคร

Z Plunging

Step Borer

DRILLS

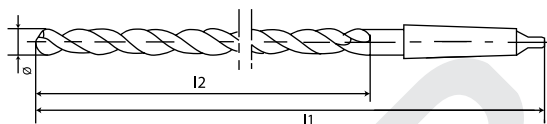
ดอกสว่าน

Taper Shank
ดอกสว่านก้านเตปเปอร์

maykestag PERFORMANCE
IN PRECISION

ดอกสว่านก้านเตปเปอร์ยาวพิเศษ

Morse taper shank drills, Extra long series, DIN 1870 R2 RN



Range of application:

High efficiency drills for drilling steel and steel castings, alloy and plain carbon, grey iron castings, copper-alloys, nickel-silver, graphite and similar materials.

Order No. 282 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	
282009001	9.00	345	220	1
282010001	10.00	360	235	1
282010501	10.50	360	235	1
282011001	11.00	375	250	1
282011501	11.50	375	250	1
282012001	12.00	395	260	1
282012501	12.50	395	260	1
282013001	13.00	395	260	1
282013501	13.50	410	275	1
282014001	14.00	410	275	1
282014501	14.50	425	275	2
282015001	15.00	425	275	2
282015501	15.50	445	295	2
282016001	16.00	445	295	2

Order No. 282 Art. - Nr.	Ø _{h8} mm	L1 mm	L2 mm	
282016501	16.50	445	295	2
282017001	17.00	445	295	2
282017501	17.50	465	310	2
282018001	18.00	465	310	2
282019001	19.00	465	310	2
282020001	20.00	490	325	2
282021001	21.00	490	325	2
282022001	22.00	515	345	2
282023001	23.00	515	345	2
282024001	24.00	555	365	3
282025001	25.00	555	365	3
282026001	26.00	555	365	3
282028001	28.00	580	385	3
282030001	30.00	580	385	3

DRILL SIZE DECIMAL EQUIVALENT

Drill Size	MM	Decimal Equivalent
-	0.10	.0039
-	0.20	.0079
-	0.25	.0098
-	0.30	.0118
80	0.34	.0135
79	0.37	.0145
1/64	0.40	.0156
78	0.41	.0160
77	0.46	.0180
-	0.50	.0197
76	0.51	.0200
75	0.53	.0210
74	0.57	.0225
-	0.60	.0236
73	0.61	.0240
72	0.64	.0250
71	0.66	.0260
-	0.70	.0276
70	0.71	.0280
69	0.74	.0292
-	0.75	.0295
68	0.79	.0310
1/32	0.79	.0313
-	0.80	.0315
67	0.81	.0320
66	0.84	.0330
65	0.89	.0350
-	0.90	.0354
64	0.91	.0360
63	0.94	.0370
62	0.97	.0380
61	0.99	.0390
-	1.00	.0394
60	1.02	.0400
59	1.04	.0410
58	1.07	.0420
57	1.09	.0430
56	1.18	.0465
3/64	1.19	.0469
55	1.32	.0520
54	1.40	.0550
53	1.51	.0595
1/16	1.59	.0625
52	1.61	.0635
51	1.70	.0670
50	1.78	.0700
49	1.85	.0730
48	1.93	.0760
5/64	1.98	.0781
47	1.99	.0785
-	2.00	.0787
46	2.06	.0810

Drill Size	MM	Decimal Equivalent
45	2.08	.0820
44	2.18	.0860
43	2.26	.0890
42	2.37	.0935
3/32	2.38	.0938
41	2.44	.0960
40	2.50	.0980
39	2.53	.0995
38	2.58	.1015
37	2.64	.1040
36	2.71	.1065
7/64	2.78	.1094
35	2.79	.1100
34	2.82	.1110
33	2.87	.1130
32	2.95	.1160
-	3.00	.1181
31	3.05	.1200
1/8	3.18	.1250
30	3.26	.1285
29	3.45	.1360
28	3.57	.1405
9/64	3.57	.1406
27	3.66	.1440
26	3.73	.1470
25	3.80	.1495
24	3.86	.1520
23	3.91	.1540
5/32	3.97	.1562
22	3.99	.1570
-	4.00	.1575
21	4.04	.1590
20	4.09	.1610
19	4.22	.1660
18	4.31	.1695
11/64	4.37	.1719
17	4.39	.1730
16	4.50	.1770
15	4.57	.1800
14	4.62	.1820
13	4.70	.1850
3/16	4.76	.1875
12	4.80	.1890
11	4.85	.1910
10	4.91	.1935
9	4.98	.1960
-	5.00	.1968
8	5.05	.1990
7	5.11	.2010
13/64	5.16	.2031
6	5.18	.2040
5	5.22	.2055

Drill Size	MM	Decimal Equivalent
4	5.31	.2090
3	5.41	.2130
7/32	5.56	.2188
2	5.61	.2210
1	5.79	.2280
A	5.94	.2340
15/64	5.95	.2344
-	6.00	.2362
B	6.05	.2380
C	6.15	.2420
D	6.25	.2460
1/4	6.35	.2500
E	6.35	.2500
F	6.35	.2570
G	6.63	.2610
17/64	6.75	.2656
H	6.76	.2660
I	6.91	.2720
-	7.00	.2756
J	7.04	.2770
K	7.14	.2810
9/32	7.14	.2812
L	7.37	.2900
M	7.49	.2950
19/64	7.54	.2969
N	7.67	.3020
5/16	7.94	.3125
-	8.00	.3150
O	8.03	.3160
P	8.20	.3230
21/64	8.33	.3281
Q	8.43	.3320
R	8.61	.3390
11/32	8.73	.3438
S	8.84	.3480
-	9.00	.3543
T	9.09	.3580
23/64	9.13	.3594
U	9.35	.3680
3/8	9.53	.3750
V	9.56	.3770
W	9.80	.3860
25/64	9.92	.3906
-	10.00	.3937
X	10.08	.3970
Y	10.26	.4040
13/32	10.32	.4062
Z	10.49	.4130
27/64	10.72	.4219
-	11.00	.4331
7/16	11.11	.4375
29/64	11.51	.4531

Drill Size	MM	Decimal Equivalent
15/32	11.91	.4688
-	12.00	.4724
31/64	12.30	.4844
1/2	12.70	.5000
-	13.00	.5118
33/64	13.10	.5156
17/32	13.49	.5312
35/64	13.89	.5469
-	14.00	.5512
9/16	14.29	.5625
37/64	14.68	.5781
-	15.00	.5906
19/32	15.08	.5938
39-64	15.48	.6094
5/8	15.88	.6250
-	16.00	.6299
41/64	16.27	.6406
21/32	16.67	.6562
-	17.00	.6693
43/64	17.07	.6719
11/16	17.46	.6875
45/64	17.86	.7031
-	18.00	.7087
23/32	18.26	.7188
47/64	18.65	.7344
-	19.00	.7480
3/4	19.05	.7500
49/64	19.45	.7656
25/32	19.84	.7812
-	20.0	.7874
51/64	20.24	.7969
13/16	20.64	.8125
-	21.00	.8268
53/64	21.03	.8281
27/32	21.43	.8438
55/64	21.84	.8594
-	22.00	.8661
7/8	22.23	.8750
57/64	22.62	.8906
-	23.00	.9055
29/32	23.02	.9062
59/64	23.42	.9219
15/16	23.81	.9375
-	24.00	.9449
61/64	24.21	.9531
31/32	24.61	.9688
-	25.00	.9842
63/64	25.00	.9844
1"	25.40	1.0000