



SPADE DRILL

Spade drill is a modular insert drills. Spade drill can be used in traditional and CNC machine with directly insert replacement, no need to regrind. Higher drilling speed and other characteristics can greatly improve the efficiency of drilling. It has much higher efficiency compared to the twist drill & has become the best choice for traditional CNC machines to improve the quality and efficiency of hole making. Spade drill consists of tool holder and insert, and with a set of oil ring to Provide the cooling system of the traditional machine tool from external cooling to internal cooling. The tool holder is made of high strength heat-resistant alloy steel after heat treatment and precision machining. The insert is made of powder metallurgy HSS / cemented carbide(on request). Insert diameter range :0 9.5 mm to 114 mm, can drill respectively in steel, stainless steel, alloy steel, cast iron, steel, aluminum alloy materials etc.

XSD-H-* -MMT

XSD-H HELICAL FLUTE HOLDER WITH TAPER SHANK

XSD-S-* -MMT

XSD-S STRAIGHT FLUTE HOLDER WITH TAPER SHANK

XSD-H-* -MW

XSD-H HELICAL FLUTE HOLDER WITH WELDON SHANK

XSD-S-* -MW

XSD-S STRAIGHT FLUTE HOLDER WITH WELDON SHANK

XSD-I-* -10XH

XSD-I HSS INSERT OF SPADE DRILL

METRIC

INCH

XSD-I-* -15XH

XSD-I HSS INSERT OF SPADE DRILL

METRIC

INCH

XSD-I-* -25XH

XSD-I HSS INSERT OF SPADE DRILL

METRIC

INCH

TECHNICAL DETAILS

FEATURES

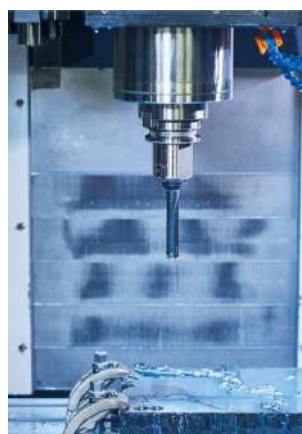
1. High wear resistant material, top-level coating and precision grinding technology, 50% ~ 200% more efficient than traditional twist drill;
2. The simple and convenient interchangeable insert structure can make inserts replacement on the machine tool directly;
3. With powder high speed steel and cemented carbide two materials, have wide application range;
4. With Morse taper and Weldon type shank, it can be used for both traditional machine tools and CNC machine tools;
5. Only 16 holders can cover inserts 9.5 - 114mm;
6. The holder internal cooling design has excellent chip removal performance and cooling effect.

SPADE DRILL SELECTION

The spade drill is composed of a tool holder and insert. The center of the tool holder is designed with internal cooling. One kind of holder can be adapted to several inserts of different specifications to reduce the purchase cost of it. The inserts have two series of powder high-speed steel and carbide. Please choose the right type according to your working condition.

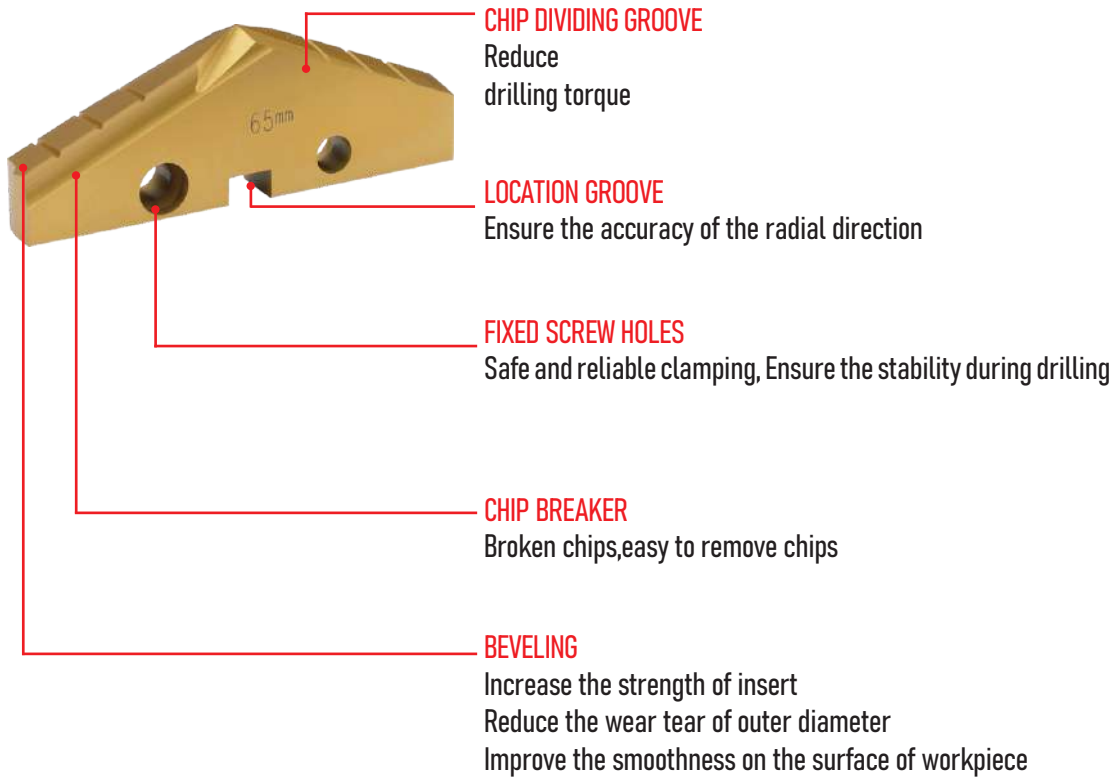


For traditional machine tools, please choose powder high speed steel series.

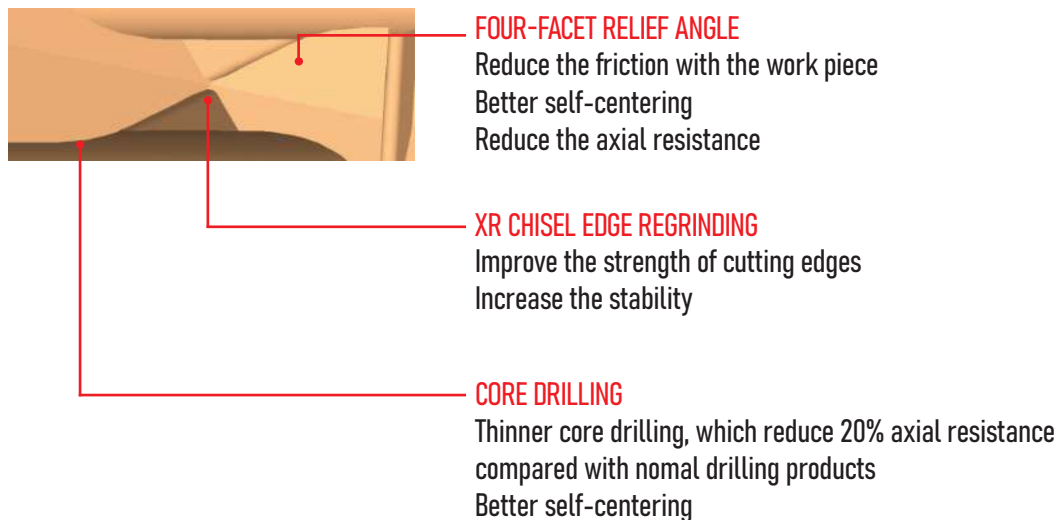


For CNC machines, please select 15% or 25% Co HSS Inserts

10% / 15% & 25% CO HSS INSERTS



DRILLING



SPADE DRILL HOLDER MODEL INSTRUCTIONS

XSD-H-0-MW-020-40N

XSD	H	00 -			M	W	020-	40N
Xcut Spade Drill	FLUTE TYPE	CONNECTOR CODE			METRIC AND INCH	SHANK TYPE	SHANK DIAMETER	LENGTH
		CONNECTOR	METRIC	INCH				
	H - Helical Flute S - Straight Flute	Y0	9.5 -11.49	0.374"-0.452"	M-Metric I-Inch	W -one fat shank MT - morse taper shank	016 - 16mm 020 - 20mm 032 - 32mm 040 - 40mm MT2 - #2 MT3 - #3 MT4 - #4 MT5 - #5	10N- ultrashort 20N- short series 30N- intermediate 40N- standard 50N- extend length series 60N- lengthening series 70N- extra length series 90N- ocerlength series
Z0			11.5-12.97	0.453"-0.511"				
00			12.98-15.49	0.511"-0.61"				
1			15.5 -17.85	0.61"-0.703"				
1			17.86-21.99	0.703"-0.866"				
2			22.0- 24.6	0.866"-0.969"				
2			24.61-29.99	0.969"-1.181"				
3			30.0-35.5	1.181"-1.398"				
3			35.51-41.99	1.398"-1.653"				
4			42.0-47.99	1.654"-1.889"				
4			48-55.99	1.89"-2.204"				
5			56-63.49	2.205"-2.5"				
5			63.5 -76.99	2.5"-3.031"				
6			77.0 -89.09	3.031"-3.507"				
7			89.1-101.6	3.508"-4"				
8			101.61-114.3	4"-4.5"				

SPADE DRILL INSERT MODEL INSTRUCTIONS

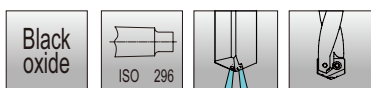
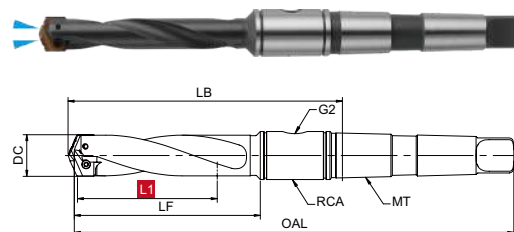
XSD-I-0-M0130-15-XH

XSD	I-	0 -			M	0130	15	XH	
Xcut Spade Drill	FLUTE TYPE	CONNECTOR CODE			METRIC AND INCH	INSERT DIAMETER	MATERIAL	GEOMETRY	
		CONNECTOR	METRIC	INCH				X	H
	I - Insert	Y Z 0 1 2 3 4 5 6 7 8	9.50 ~11.49 11.50~12.97 12.98~17.85 17.86~24.6 24.61~35.5 35.51~47.99 48.00~65.00 63.5 ~76.99 77.00~89.09 89.1~101.6 101.61~114.3	0.374"-0.452" 0.453"-0.511" 0.511"-0.703" 0.703"-0.969" 0.969"-1.398" 1.398"-1.889" 1.89"-2.559" 2.5"-3.031" 3.031"-3.507" 3.508"-4" 4"-4.5"	M-Metric I-Inch	M0130-13mm I0750-0.75"	10- HSS with 10% Co 15- HSS with 15% Co 25- HSS with 25% Co 50-Carbide	wX - Standard Drill Point C - Cast Iron Drill Point	T-TiN Coating A - TiAlN Coating H - Special A/CrN Coating

SPADE DRILL HOLDER MODEL INSTRUCTIONS

XSD-H-* -MMT

- The inner cooling structure of holder has excellent cooling effect and chip removal performance
- Interchangeable insert structure can make inserts replacement on the machine tool directly.

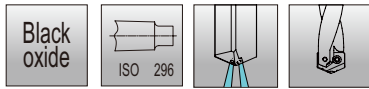
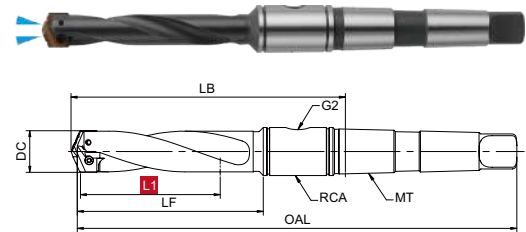


TYPE	CONNECTOR	DC	SIZE						ACCESSORIES		
			L1	LF	LB	OAL	MT	G2 Inch	RCA		
XSD-H-Y-MMT-MT2-20N	Y	9.5-11.49 0.374"-0.452"	32	52	88	160	2	Rc1/16	SH-1905R	2102047	SH-1905R
XSD-H-Y-MMT-MT2-40N			60	80	117	189	2	Rc1/16	SH-1905R	2102047	SH-1905R
XSD-H-Y-MMT-MT2-50N			111	131	167	240	2	Rc1/16	SH-1905R	2102047	SH-1905R
XSD-H-Z-MMT-MT2-20N	Z	11.50 - 12.97 0.453"-0.511"	32	52	88	160	2	Rc1/16	SH-1905R	2102048	SH-1905R
XSD-H-Z-MMT-MT2-40N			60	80	117	189	2	Rc1/16	SH-1905R	2102048	SH-1905R
XSD-H-Z-MMT-MT2-50N			111	131	167	240	2	Rc1/16	SH-1905R	2102048	SH-1905R
XSD-H-O-MMT-MT2-20N	O	12.98 - 15.49 0.511"-0.61"	35	56	92	164	2	Rc1/16	SH-1905R	2102230	2502017
XSD-H-O-MMT-MT2-40N			64	84	121	193	2	Rc1/16	SH-1905R	2102230	2502017
XSD-H-O-MMT-MT2-50N			114	135	172	244	2	Rc1/16	SH-1905R	2102230	2502017
XSD-H-O-MMT-MT2-60N			178	199	235	307	2	Rc1/16	SH-1905R	2102230	2502017
XSD-H-O-MMT-MT2-20N	O	15.50 - 17.85 0.61"-0.703"	35	56	92	164	2	Rc1/16	SH-1905R	2102046	2502017
XSD-H-O-MMT-MT2-40N			64	84	121	193	2	Rc1/16	SH-1905R	2102046	2502017
XSD-H-O-MMT-MT2-50N			114	135	172	244	2	Rc1/16	SH-1905R	2102046	2502017
XSD-H-O-MMT-MT2-60N			178	199	235	307	2	Rc1/16	SH-1905R	2102046	2502017
XSD-H-1-MMT-MT3-20N	1	17.86 - 21.99 0.703"-0.866"	70	98	143	233	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-30N			121	149	193	283	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-40N			172	200	244	334	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-50N			273	302	346	436	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-60N			363	395	439	529	3	Rc1/8	SH-2540R	2102049	2502016

SPADE DRILL HOLDER MODEL INSTRUCTIONS

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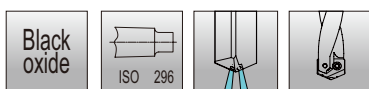
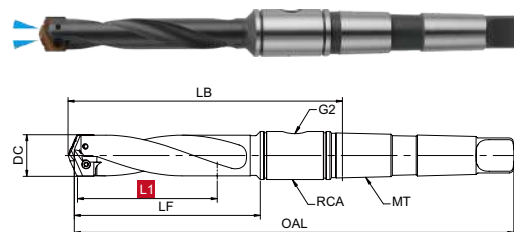


TYPE	CONNECTOR	DC	SIZE						ACCESSORIES		
			L1	LF	LB	OAL	MT	G2 Inch	RCA		
XSD-H-1-MMT-MT3-20N	1	22.00 ~ 24.60 0.866"~0.969"	70	98	142	232	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-30N			121	149	193	283	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-40N			172	200	244	334	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-50N			273	302	346	436	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-60N			363	395	439	529	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-2-MMT-MT4-20N	2	24.61 ~ 29.99 0.969"~1.181"	86	114	160	274	4	Rc1/8	SH-2540R	2102045	2502020
XSD-H-2-MMT-MT4-30N			137	165	211	325	4	Rc1/8	SH-2540R	2102045	2502020
XSD-H-2-MMT-MT4-40N			187	216	262	375	4	Rc1/8	SH-2540R	2102045	2502020
XSD-H-2-MMT-MT4-40N			289	318	364	477	4	Rc1/8	SH-2540R	2102045	2502020
XSD-H-2-MMT-MT4-60N			400	429	475	588	4	Rc1/8	SH-2540R	2102045	2502020
XSD-H-2-MMT-MT4-20N	2	30.00 ~ 35.50 1.181"~1.398"	86	114	168	281	4	Rc1/4	SH-3175R	2102045	2502020
XSD-H-2-MMT-MT4-30N			137	165	218	332	4	Rc1/4	SH-3175R	2102045	2502020
XSD-H-2-MMT-MT4-40N			187	216	269	383	4	Rc1/4	SH-3175R	2102045	2502020
XSD-H-2-MMT-MT4-50N			289	318	371	484	4	Rc1/4	SH-3175R	2102045	2502020
XSD-H-2-MMT-MT4-60N			400	429	482	595	4	Rc1/4	SH-3175R	2102045	2502020
XSD-H-3-MMT-MT4-20N	3	35.51 ~ 41.99 1.398"~1.653"	121	152	206	319	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-30N			165	197	251	364	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-40N			210	241	295	408	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-50N			349	381	435	548	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-20N	3	42.00 ~ 47.991 1.654"~1.899"	121	152	206	319	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-30N			165	197	251	364	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-40N			210	241	295	408	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-50N			349	381	435	548	4	Rc1/4	SH-3175R	2102044	2502015

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XSD-H-* -MMT

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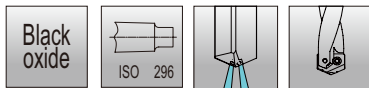
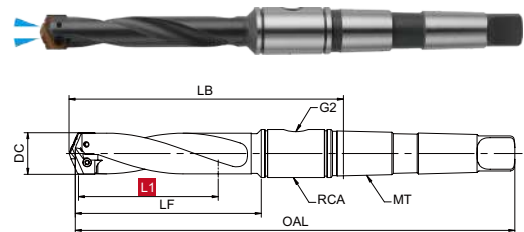


TYPE	CONNECTOR	DC	SIZE						ACCESSORIES		
			L1	LF	LB	OAL	MT	G2 Inch	RCA		
XSD-H-4-MMT-MT5-20N	4	48.00 ~ 55.99 1.89" ~ 2.204"	130	165	219	364	5	Rc1/4	SH-4445R	2102044	2502015
XSD-H-4-MMT-MT5-40N			232	267	321	465	5	Rc1/4	SH-4445R	2102044	2502015
XSD-H-4-MMT-MT5-50N			422	457	511	656	5	Rc1/4	SH-4445R	2102044	2502015
XSD-H-4-MMT-MT5-20N	4	56.00 ~ 65.09 2.205" ~ 2.563"	130	165	219	364	5	Rc1/4	SH-4445R	2102044	2502015
XSD-H-4-MMT-MT5-40N			232	267	321	465	5	Rc1/4	SH-4445R	2102044	2502015
XSD-H-4-MMT-MT5-50N			422	457	511	656	5	Rc1/4	SH-4445R	2102044	2502015
XSD-H-5-MMT-MT5-20N	5	63.50 ~ 76.9 2.5" ~ 3.031"	172	216	287	430	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-5-MMT-MTLQ 5-40N			273	318	389	532	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-5-MMT-MT55-50N			464	508	579	722	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-6-MMT-MT5-20N	6	77.00 ~ 89.09 3.031" ~ 3.507"	172	216	287	430	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-6-MMT-MT5-40N			273	318	389	532	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-6-MMT-MT5-40N			464	508	579	722	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-7-MMT-MT5 LQ-20N	7	89.10 ~ 101.60 3.508" ~ 4"	172	225	297	440	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-7-MMT-MT5-40N			273	327	399	541	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-7-MMT-MT5-50N			556	610	681	824	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-8-MMT-MT5-20N	8	101.61 ~ 114.30 4" ~ 4.5"	172	225	297	440	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-8-MMT-MT5-40N			273	327	399	541	5	Rc1/2	SH-5715R	2102043	2502019
XSD-H-8-MMT-MT5-50N			556	610	681	824	5	Rc1/2	SH-5715R	2102043	2502019

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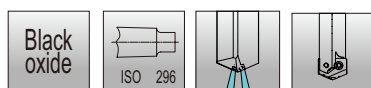
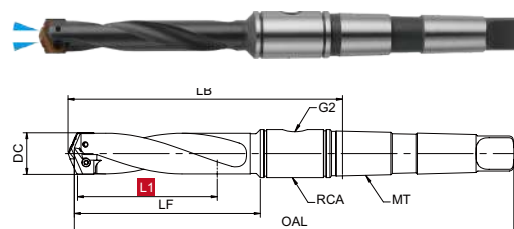


TYPE	CONNECTOR	DC	SIZE						ACCESSORIES		
			L1	LF	LB	OAL	MT	G2 Inch	RCA		
XSD-H-Y-MMT-MT2-20N	Y	9.50 ~ 11.49 0.374"~0.452"	32	52	88	160	2	Rc1/16	SH-1905R	2102047	2502018
XSD-H-Z-MMT-MT2-20N	z	11.50 ~ 12.97 0.453"~0.511"	32	52	88	160	2	Rc1/16	SH-1905R	2102048	2502018
XSD-H-0-MMT-MT2-20N	0	12.98 ~ 15.49 0.511"~0.61"	35	56	92	164	2	Rc1/16	SH-1905R	2102230	2502017
XSD-H-0-MMT-MT2-60N			178	199	235	307	2	Rc1/16	SH-1905R	2102230	2502017
XSD-H-0-MMT-MT2-20N	0	15.50 ~ 17.85 0.61"~0.703"	35	56	92	164	2	Rc1/16	SH-1905R	2102046	2502017
XSD-H-0-MMT-MT2-60N			178	199	235	307	2	Rc1/16	SH-1905R	2102046	2502017
XSD-H-1-MMT-MT3-20N	1	17.86 ~ 21.99 0.703"~0.866"	70	98	143	233	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-60N			363	395	439	529	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-20N	1	22.00 ~ 24.60 0.866"~0.969"	70	98	143	233	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-1-MMT-MT3-60N			363	395	439	529	3	Rc1/8	SH-2540R	2102049	2502016
XSD-H-2-MMT-MT4-20N	2	24.61 ~ 29.99 0.969"~1.181"	86	114	160	274	4	Rc1/8	SH-2540R	2102045	2502020
XSD-H-2-MMT-MT4-60N			400	429	475	588	4	Rc1/8	SH-2540R	2102045	2502020
XSD-H-2-MMT-MT4-20N	2	30.00 ~ 35.50 1.181"~1.398"	86	114	168	281	4	Rc1/4	SH-3175R	2102045	2502020
XSD-H-2-MMT-MT4-60N			400	429	482	595	4	Rc1/4	SH-3175R	2102045	2502020
XSD-H-3-MMT-MT4-20N	3	35.51 ~ 41.99 1.398"~1.653"	121	152	206	319	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-50N			349	381	435	548	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-70N			559	591	645	757	4	Rc1/4	SH-3175R	2102044	2502015
XSD-H-3-MMT-MT4-90N			787	819	873	986	4	Rc1/4	SH-3175R	2102044	2502015

STRAIGHT FLUTE HOLDER WITH TAPER SHANK

XSD-S-* -MMT

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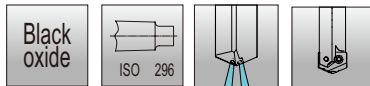
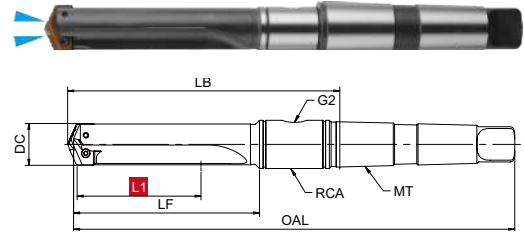


TYPE	CONNECTOR	DC	SIZE						ACCESSORIES		
			L1	LF	LB	OAL	MT	G2 Inch	RCA		
XSD-S-3-MMT-MT4-20N	3	42.00 ~ 47.99 1.654"~1.899"	121	152	206	319	4	Rc1/4	SH-3175R	2102044	2502015
XSD-S-3-MMT-MT4-50N			349	381	435	548	4	Rc1/4	SH-3175R	2102044	2502015
XSD-S-3-MMT-MT4-70N			559	591	645	757	4	Rc1/4	SH-3175R	2102044	2502015
XSD-S-3-MMT-MT4-90N			787	819	873	986	4	Rc1/4	SH-3175R	2102044	2502015
XSD-S-4-MMT-MT5-20N			130	165	219	364	5	Rc1/4	SH-4445R	2102044	2502015
XSD-S-4-MMT-MT5-50N	4	48.00 ~ 55.99 1.89" - 2.204"	422	457	511	656	5	Rc1/4	SH-4445R	2102044	2502015
XSD-S-4-MMT-MT5-70N			625	660	714	859	5	Rc1/4	SH-4445R	2102044	2502015
XSD-S-4-MMT-MT5-90N			879	914	968	1113	5	Rc1/4	SH-4445R	2102044	2502015
XSD-S-4-MMT-MT5-20N	4	56.00 ~ 65.09 2.205"~2.563"	130	165	219	364	5	Rc1/4	SH-4445R	2102044	2502015
XSD-S-4-MMT-MT5-50N			422	457	511	656	5	Rc1/4	SH-4445R	2102044	2502015
XSD-S-5-MMT-MT5-70N			625	660	714	859	5	Rc1/4	SH-4445R	2102044	2502015
XSD-S-5-MMT-MT5-90N			879	914	968	111	5	Rc1/4	SH-4445R	2102044	2502015
XSD-S-5-MMT-MT5-20N	5	63.50 ~ 76.99 2.5"-3.031"	172	216	287	430	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-5-MMT-MT5-50N			464	508	579	722	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-5-MMT-MT5-70N			660	705	776	919	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-5-MMT-MT5-90N			889	933	1005	114	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-5-MMT-MT5-20N	6	77.00 ~ 89.09 3.031"-3.507"	172	216	287	430	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-5-MMT-MT5-50N			464	508	579	722	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-5-MMT-MT5-70N			660	705	776	919	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-5-MMT-MT5-90N			889	933	1005	1148	5	Rc1/2	SH-5715R	2102043	2502019

STRAIGHT FLUTE HOLDER WITH TAPER SHANK

XSD-S-* -MMT

- The inner cooling structure of holder has excellent cooling effect and chip removal performance
- Interchangeable insert structure can make inserts replacement on the machine tool directly.

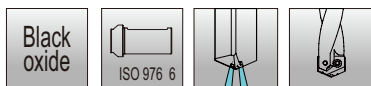
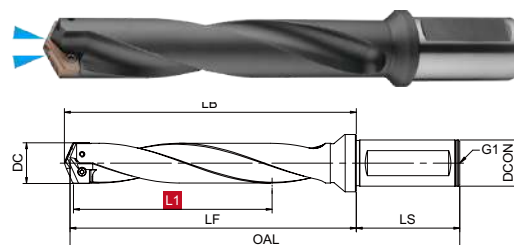


TYPE	CONNECTOR	DC	SIZE						ACCESSORIES		
			L1	LF	LB	OAL	MT	G2 Inch	RCA		
XSD-S-7-MMT-MT5-20N	7	89.10 ~ 101.60 3.508"~4"	172	225	297	440	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-7-MMT-MT5-50N			556	610	681	824	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-7-MMT-MT5-70N			685	740	811	954	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-7-MMT-MT5-90N			939	994	1065	120	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-8-MMT-MT5-20N	8	101.61 ~ 114.30 4"~4.5"	172	225	297	440	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-8-MMT-MT5-50N			556	610	681	824	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-8-MMT-MT5-70N			685	740	811	954	5	Rc1/2	SH-5715R	2102043	2502019
XSD-S-8-MMT-MT5-90N			939	994	1065	1208	5	Rc1/2	SH-5715R	2102043	2502019

HELICAL FLUTE HOLDER WITH ONE FLAT SHANK

XSD-H-* -MW

- The inner cooling structure of holder has excellent cooling effect and chip removal performance
- Interchangeable insert structure can make inserts replacement on the machine tool directly.

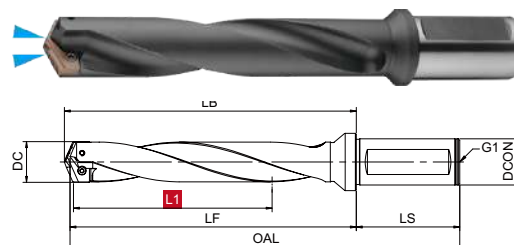


TYPE	CONNECTOR	DC	SIZE							ACCESSORIES	
			L1	LF	LB	OAL	DCON	LS	G1 inch		
XSD-H-Y-MW-20-40N	Y	9.5~11.49 0.374"-0.452"	60	90	92	140	20	50	Rc1/8	2102047	2502018
XSD-H-Y-MW-20-50N			111	141	143	191	20	50	Rc1/8	2102047	2502018
XSD-H-Z-MW-20-40N	Z	11.50 ~ 12.97 0.453"-0.511"	60	90	92	140	20	50	Rc1/8	2102048	2502018
XSD-H-Z-MW-20-50N			111	141	143	191	20	50	Rc1/8	2102048	2502018
XSD-H-O-MW-20-40N	O	12.98 ~ 15.49 0.511"-0.61"	64	92	95	142	20	50	Rc1/8	2102230	2502017
XSD-H-O-MW-20-50N			114	143	146	193	20	50	Rc1/8	2102230	2502017
XSD-H-O-MW-20-60N			178	206	209	256	20	50	Rc1/8	2102230	2502017
XSD-H-O-MW-20-40N	O	15.50 ~ 17.85 0.61"-0.703"	64	92	95	142	20	50	Rc1/8	2102046	2502017
XSD-H-O-MW-20-50N			114	143	146	193	20	50	Rc1/8	2102046	2502017
XSD-H-O-MW-20-60N			178	206	209	256	20	50	Rc1/8	2102046	2502017

HELICAL FLUTE HOLDER WITH ONE FLAT SHANK

XSD-H-* -MW

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- Interchangeable insert structure can make inserts replacement on the machine tool directly.

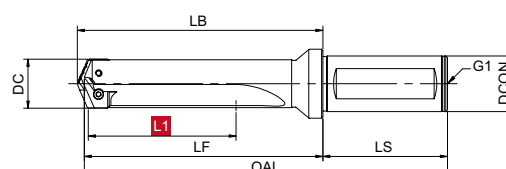


TYPE	CONNECTOR	DC	SIZE							ACCESSORIES	
			L1	LF	LB	OAL	DCON	LS	G1 inch		
XSD-H-2-MW-32-30N	2	24.61 ~ 29.99 0.969"~1.181"	137	179	183	239	32	60	Rc1/4	2102045	2502020
XSD-H-2-MW-32-40N			187	230	234	290	32	60	Rc1/4	2102045	2502020
XSD-H-2-MW-32-50N			289	332	335	392	32	60	Rc1/4	2102045	2502020
XSD-H-2-MW-32-60N			400	443	447	503	32	60	Rc1/4	2102045	2502020
XSD-H-2-MW-32-30N	2	30.00 ~ 35.50 1.181"~1.398"	137	179	183	239	32	60	Rc1/4	2102045	2502020
XSD-H-2-MW-32-40N			187	230	234	290	32	60	Rc1/4	2102045	2502020
XSD-H-2-MW-32-50N			289	332	335	392	32	60	Rc1/4	2102045	2502020
XSD-H-2-MW-32-60N			400	443	447	503	32	60	Rc1/4	2102045	2502020
XSD-H-3-MW-40-30N	3	35.51 ~ 41.99 1.398"~1.653"	165	218	222	288	40	70	Rc1/4	2102044	2502015
XSD-H-3-MW-40-40N			210	262	267	332	40	70	Rc1/4	2102044	2502015
XSD-H-3-MW-40-50N			349	364	368	434	40	70	Rc1/4	2102044	2502015
XSD-H-3-MW-40-60N			454	468	473	538	40	70	Rc1/4	2102044	2502015
XSD-H-3-MW-40-30N	3	42.00 ~ 47.99 1.654"~1.899"	165	218	222	288	40	70	Rc1/4	2102044	2502015
XSD-H-3-MW-40-40N			210	262	267	332	40	70	Rc1/4	2102044	2502015
XSD-H-3-MW-40-50N			349	364	368	434	40	70	Rc1/4	2102044	2502015
XSD-H-4-MW-40-30N			454	468	473	538	40	70	Rc1/4	2102044	2502015
XSD-H-4-MW-40-40N	4	48.00 ~ 55.99 1.89"~ 2.204"	232	281	286	351	40	707	Rc1/4	2102044	2502015
XSD-H-4-MW-40-50N			422	484	490	554	40	70	Rc1/4	2102044	2502015

STRAIGHT FLUTE HOLDER WITH ONE FLAT SHANK

XSD-H-* -MW

- The inner cooling structure of holder has excellent cooling effect and chip removal performance
- Interchangeable insert structure can make inserts replacement on the machine tool directly.

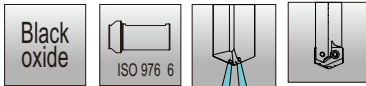
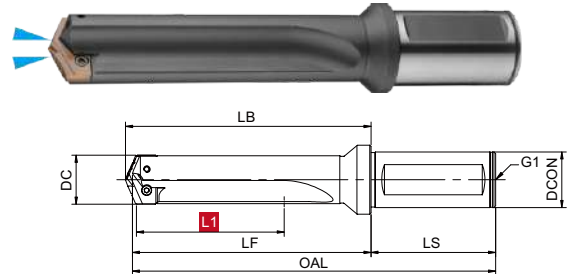


TYPE	CONNECTOR	DC	SIZE							ACCESSORIES	
			L1	LF	LB	OAL	DCON	LS	G1 inch		
XSD-H-Y-MW-20-20N	Y	9.5-11.49 0.374"-0.452"	32	61	64	111	20	50	Rc1/8	2102047	2502018
XSD-H-Y-MW-20-50N			111	141	143	191	20	50	Rc1/8	2102047	2502018
XSD-H-Y-MW-20-70N			222	252	254	302	20	50	Rc1/8	2102047	2502018
XSD-H-Y-MW-20-90N			290	320	322	370	20	50	Rc1/8	2102047	2502018
XSD-H-Z-MW-20-20N	Z	11.50 ~ 12.97 0.453"-0.511"	32	61	64	111	20	50	Rc1/8	2102048	2502018
XSD-H-Z-MW-20-50N			111	141	143	191	20	50	Rc1/8	2102048	2502018
XSD-H-Z-MW-20-70N			222	252	254	302	20	50	Rc1/8	2102048	2502018
XSD-H-Z-MW-20-90N			290	320	322	370	20	50	Rc1/8	2102048	2502018
XSD-H-0-MW-20-20N	0	12.98 ~ 15.49 0.511"-0.61"	35	64	66	114	20	50	Rc1/8	2102230	2502017
XSD-H-0-MW-20-50N			114	143	146	193	20	50	Rc1/8	2102230	2502017
XSD-H-0-MW-20-60N			178	206	209	256	20	50	Rc1/8	2102230	2502017
XSD-H-0-MW-20-70N			295	324	327	374	20	50	Rc1/8	2102230	2502017
XSD-H-0-MW-20-90N			387	416	419	466	20	50	Rc1/8	2102230	2502017
XSD-H-5-MW-20-20N	0	15.50 ~ 17.85 0.61"-0.703"	35	64	66	114	20	50	Rc1/8	2102046	2502017
XSD-H-5-MW-20-50N			114	143	146	193	20	50	Rc1/8	2102046	2502017
XSD-H-5-MW-20-60N			178	206	209	256	20	50	Rc1/8	2102046	2502017
XSD-H-5-MW-20-70N			295	324	327	374	20	50	Rc1/8	2102046	2502017
XSD-H-5-MW-20-90N			387	416	419	466	20	50	Rc1/8	2102046	2502017
XSD-H-1-MW-25-20N	1	17.86 ~ 21.99 0.703"-0.866"	67	107	111	163	25	56	Rc1/8	2102049	2502016
XSD-H-1-MW-25-50N			270	307	310	363	25	56	Rc1/8	2102049	2502016
XSD-H-1-MW-25-60N			363	401	404	457	25	56	Rc1/8	2102049	2502016
XSD-H-1-MW-25-70N			457	495	498	551	25	56	Rc1/8	2102049	2502016
XSD-H-1-MW-25-90N			569	603	606	659	25	56	Rc1/8	2102049	2502016

STRAIGHT FLUTE HOLDER WITH ONE FLAT SHANK

XSD-H-* -MW

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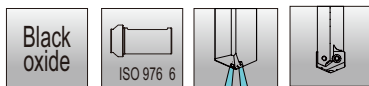
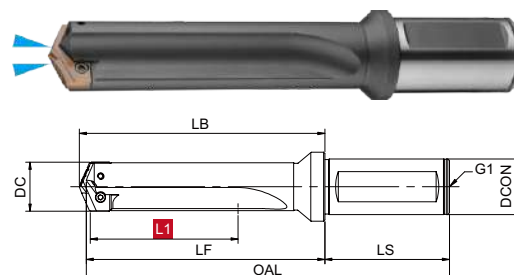


TYPE	CONNECTOR	DC	SIZE							ACCESSORIES	
			L1	LF	LB	OAL	DCON	LS	G1 inch		
XSD-H-1-MW-25-20N	1	22.00 ~ 24.60 0.866"~0.969"	67	107	111	163	25	Rc1/8	56	2102049	2502016
XSD-H-1-MW-25-50N			270	307	310	363	25	Rc1/8	56	2102049	2502016
XSD-H-1-MW-25-60N			363	401	404	457	25	Rc1/8	56	2102049	2502016
XSD-H-1-MW-25-70N			457	495	498	551	25	Rc1/8	56	2102049	2502016
XSD-H-1-MW-25-90N			569	603	606	659	25	Rc1/8	56	2102049	2502016
XSD-H-2-MW-32 22-20N	2	24.61 ~ 29.99 0.969"~1.181"	86	129	132	89	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-50N			289	332	336	392	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-60N			400	443	447	503	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-70N			511	554	558	614	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-90N			692	735	739	795	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-20N	2	30.00 ~ 35.50 1.181"~1.398"	86	129	132	189	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-50N			289	332	336	392	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-60 N			400	443	447	503	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-70N			511	554	558	614	32	Rc1/4	60	2102045	2502020
XSD-H-2-MW-32 22-90N			692	735	739	795	32	Rc1/4	60	2102045	2502020
XSD-H-3-MW-40-20N	3	35.51 ~ 41.99 1.398"~1.653"	121	173	178	243	40	Rc1/4	70	2102044	2502015
XSD-H-3-MW-40-50N			349	402	406	472	40	Rc1/4	70	2102044	2502015
XSD-H-3-MW-40-60 N			454	468	473	538	40	Rc1/4	70	2102044	2502015
XSD-H-3-MW-40-70N			559	611	616	681	40	Rc1/4	70	2102044	2502015
XSD-H-3-MW-40-90N			787	840	845	910	40	Rc1/4	70	2102044	2502015

STRAIGHT FLUTE HOLDER WITH ONE FLAT SHANK

XSD-S-* -MW

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- Interchangeable insert structure can make inserts replacement on the machine tool directly.

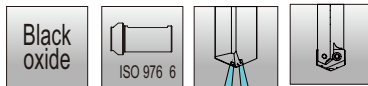
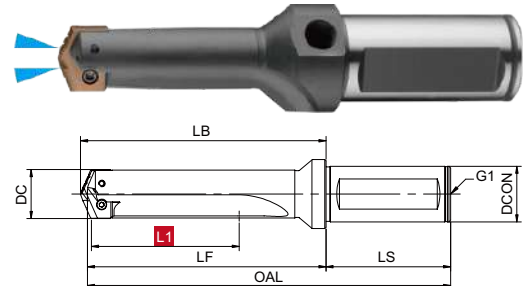


TYPE	CONNECTOR	DC	SIZE							ACCESSORIES	
			L1	LF	LB	OAL	DCON	LS	G1 inch		
XSD-S-3-MW-40-20N	3	42.00 ~ 47.99 1.654" ~ 1.899"	121	173	178	243	40	70	Rc1/4	2102044	2502015
XSD-S-3-MW-40-50N			349	402	406	472	40	70	Rc1/4	2102044	2502015
XSD-S-3-MW-40-60N			454	468	473	538	40	70	Rc1/4	2102044	2502015
XSD-S-3-MW-40-70N			559	611	616	681	40	70	Rc1/4	2102044	2502015
XSD-S-3-MW-40-90N			787	840	845	910	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-40-20N	4	48.00 ~ 55.99 1.89" ~ 2.204"	130	179	184	249	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-40-50N			422	472	476	542	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-40-60N			524	586	591	656	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-40-70N			625	675	680	745	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-40-90N			879	929	934	999	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-40-20N	4	56.00 ~ 65.09 2.205" ~ 2.563"	130	179	184	249	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-5-50N			422	472	476	542	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-5-60N			524	586	591	656	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-40-70N			625	675	680	745	40	70	Rc1/4	2102044	2502015
XSD-S-4-MW-40-90N			879	929	934	999	40	70	Rc1/4	2102044	2502015

STRAIGHT FLUTE HOLDER WITH ONE FLAT SHANK

XSD-S-* -MW

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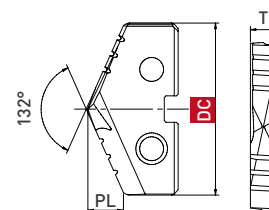


TYPE	CONNECTOR	DC	SIZE								ACCESSORIES	
			L1	LF	LB	OAL	DCON	LS	G1 inch	G2 inch		
XSD-S-Y-MW-16-10N	Y	9.5-11.49 0.374"-0.452"	19.0	48.0	50.0	96.0	16.0	48.0	Rc 1/16	Rc1/8	2102047	2502018
XSD-S-Z-MW-16-10N	Z	11.50 ~ 12.97 0.453"-0.511"	19.0	48.0	50.0	96.0	16.0	48.0	Rc 1/16	Rc1/8	2102048	2502018
XSD-S-0-MW-20-10N	0	12.98 ~ 15.49 0.511"-0.61"	22.0	48.0	50.0	98.0	20.0	50.0	Rc 1/8	Rc1/8	2102230	2502017
XSD-S-0-MW-20-10N	0	15.50 ~ 17.85 0.61"-0.703"	22.0	48.0	50.0	98.0	20.0	50.0	Rc 1/8	Rc1/8	2102046	2502017
XSD-S-1-MW-25-10N	1	17.86 ~ 21.99 0.703"-0.866"	48.0	76.0	79.0	132.0	25.0	56.0	Rc 1/8	Rc1/8	2102049	2502016
XSD-S-1-MW-25-10N	1	22.00 ~ 24.60 0.866"-0.969"	48.0	76.0	79.0	132.0	25.0	56.0	Rc 1/8	Rc1/8	2102049	2502016
XSD-S-2-MW-32-10N	2	24.61 ~ 29.99 0.969"-1.181"	57.0	89.0	92.0	149.0	32.0	60.0	Rc 1/4	Rc1/8	2102045	2502020
XSD-S-2-MW-32-10N	2	30.00 ~ 35.50 1.181"-1.398"	57.0	89.0	92.0	149.0	32.0	60.0	Rc 1/4	Rc1/8	2102045	2502020
XSD-S-3-MW-40-10N	3	35.51 ~ 41.99 1.398"-1.653"	76.0	125.0	130.0	195.0	40.0	70.0	Rc 1/4	Rc 1/4	2102044	2502015
XSD-S-3-MW-40-10N	3	42.00 ~ 47.99 1.654"-1.899"	76.0	125.0	130.0	195.0	40.0	70.0	Rc 1/4	Rc 1/4	2102044	2502015

HSS INSERT OF SPADE DRILL

XSD-I-* -10XH

- Diameter range: 13~114.3 mm.
- Drilling accuracy: IT10~IT11.
- HPM10-Powder HSS for steel with hardness below Hb275.

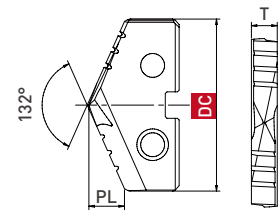


MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-0-M0130-10XH	13.00	2.9	3.18	0	○
XSD-I-0-M0135-10XH	13.50	3.0			○
XSD-I-0-M0140-10XH	14.00	3.1			○
XSD-I-0-M0145-10XH	14.50	3.2			○
XSD-I-0-M0150-10XH	15.00	3.3			○
XSD-I-0-M0155-10XH	15.50	3.5	3.18	0	○
XSD-I-0-M0160-10XH	16.00	3.6			○
XSD-I-0-M0165-10XH	16.50	3.7			○
XSD-I-0-M0170-10XH	17.00	3.8			○
XSD-I-0-M0175-10XH	17.50	3.9			○
XSD-I-1-M0180-10XH	18.00	4.0	3.97	1	○
XSD-I-1-M0185-10XH	18.50	4.1			○
XSD-I-1-M0190-10XH	19.00	4.2			○
XSD-I-1-M0195-10XH	19.50	4.3			○
XSD-I-1-M0200-10XH	20.00	4.5			○
XSD-I-1-M0205-10XH	20.50	4.6			○
XSD-I-1-M0210-10XH	21.00	4.7			○
XSD-I-1-M0215-10XH	21.50	4.8	3.97	1	○
XSD-I-1-M0220-10XH	22.00	4.9			○
XSD-I-1-M0230-10XH	23.00	5.1			○
XSD-I-1-M0240-10XH	24.00	5.3	4.76	2	○
XSD-I-2-M0250-10XH	25.00	5.6			○
XSD-I-2-M0260-10XH	26.00	5.8			○
XSD-I-2-M0270-10XH	27.00	6.0			○
XSD-I-2-M0280-10XH	28.00	6.2			○
XSD-I-2-M0290-10XH	29.00	6.5	4.76	2	○
XSD-I-2-M0300-10XH	30.00	6.7			○
XSD-I-2-M0310-10XH	31.00	6.9			○
XSD-I-2-M0320-10XH	32.00	7.1			○

● STOCKABLE ○ NON STOCKABLE

HSS INSERT OF SPADE DRILL XSD-I-* -10XH

- Diameter range: 13~114.3 mm.
- Drilling accuracy: IT10~IT11.
- HPM10-Powder HSS for steel with hardness below Hb275.



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-2-M0330-10XH	33.00	7.3	4.76	2	○
XSD-I-2-M0340-10XH	34.00	7.6			○
XSD-I-2-M0350-10XH	35.00	7.8			○
XSD-I-3-M0360-10XH	36.00	8.0	6.35	3	○
XSD-I-3-M0370-10XH	37.00	8.2			○
XSD-I-3-M0380-10XH	38.00	8.5			○
XSD-I-3-M0390-10XH	39.00	8.7			○
XSD-I-3-M0400-10XH	40.00	8.9			○
XSD-I-3-M0410-10XH	41.00	9.1			○
XSD-I-3-M0420-10XH	42.00	9.3	6.35	3	○
XSD-I-3-M0430-10XH	43.00	9.6			○
XSD-I-3-M0440-10XH	44.00	9.8			○
XSD-I-3-M0450-10XH	45.00	10.0			○
XSD-I-3-M0460-10XH	46.00	10.2			○
XSD-I-3-M0470-10XH	47.00	10.5			○

MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-4-M0480-10XH	48.00	10.7	7.94	4	○
XSD-I-4-M0490-10XH	49.00	10.9			○
XSD-I-4-M0500-10XH	50.00	11.1			○
XSD-I-4-M0510-10XH	51.00	11.4			○
XSD-I-4-M0520-10XH	52.00	11.6			○
XSD-I-4-M0530-10XH	53.00	11.8			○
XSD-I-4-M0540-10XH	54.00	12.0			○
XSD-I-4-M0550-10XH	55.00	12.2	7.94	4	○
XSD-I-4-M0560-10XH	56.00	12.5			○
XSD-I-4-M0570-10XH	57.00	12.7			○
XSD-I-4-M0580-10XH	58.00	12.9			○
XSD-I-4-M0590-10XH	59.00	13.1			○
XSD-I-4-M0600-10XH	60.00	13.4			○
XSD-I-4-M0610-10XH	61.00	13.6			○

● STOCKABLE ○ NON STOCKABLE

DRILLING

APPLICABLE TABLE OF PROCESSED MATERIALS

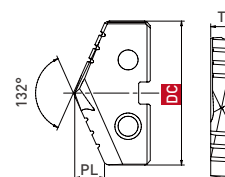
WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
10XH	●	●	○	○	○	○		○	○	○				

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL

XSD-I-* -10XH

- Diameter range: 13~114.3 mm.
- Drilling accuracy: IT10~IT11.
- HPM10-Powder HSS for steel with hardness below Hb275.



T=11.11 drill tip angle is 144°



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-4-M0620-10XH	62.00	13.8	7.94	4	○
XSD-I-4-M0630-10XH	63.00	14.0			○
XSD-I-4-M0640-10XH	64.00	14.2			○
XSD-I-4-M0650-10XH	65.00	14.5			○
XSD-I-5-M0640-10XH	64.00	10.4	11.11	5	○
XSD-I-5-M0650-10XH	65.00	10.6			○
XSD-I-5-M0660-10XH	66.00	10.7			○
XSD-I-5-M0680-10XH	68.00	11.0			○
XSD-I-5-M0700-10XH	70.00	11.4			○
XSD-I-5-M0720-10XH	72.00	11.7			○
XSD-I-5-M0740-10XH	74.00	12.0			○
XSD-I-5-M0760-10XH	76.00	12.3			○
XSD-I-6-M0770-10XH	77.00	12.5	11.11	6	○
XSD-I-6-M0780-10XH	78.00	12.7			○
XSD-I-6-M0800-10XH	80.00	13.0			○
XSD-I-6-M0820-10XH	82.00	13.3			○
XSD-I-6-M0840-10XH	84.00	13.6			○
XSD-I-6-M0860-10XH	86.00	14.0			○
XSD-I-6-M0880-10XH	88.00	14.3			○
XSD-I-6-M0890-10XH	89.00	14.5			○
XSD-I-7-M0900-10XH	90.00	14.6	11.11	7	○
XSD-I-7-M0920-10XH	92.00	14.9			○
XSD-I-7-M0940-10XH	94.00	15.3			○
XSD-I-7-M0960-10XH	96.00	15.6			○
XSD-I-7-M0980-10XH	98.00	15.9			○
XSD-I-7-M1000-10XH	100.00	16.2			○
XSD-I-8-M1020-10XH	102.00	16.6	11.11	8	○
XSD-I-8-M1040-10XH	104.00	16.9			○
XSD-I-8-M1060-10XH	106.00	17.2			○

MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-8-M1080-10XH	108.00	17.5	11.11	8	○
XSD-I-8-M1100-10XH	110.00	17.9			○
XSD-I-8-M1120-10XH	112.00	18.2			○
XSD-I-8-M1140-10XH	114.00	18.5			○

● STOCKABLE ○ NON STOCKABLE

APPLICABLE TABLE OF PROCESSED MATERIALS

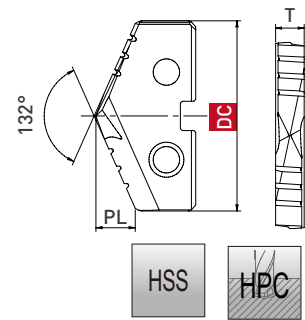
ISO	P	P	P	P	M	K	K	N	N	N	S	S	H	H
WORK PIECE MATERIAL	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAIN-LESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALU-MINUM ALLOY	COP- PER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si<12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	○	○	○	○		○	○	○				

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL

XSD-I-* -15XH

- Diameter range: 13~114 mm.
- Drilling accuracy : IT10~IT11.
- HPM10-Powder HSS for steel with hardness below HB400.



MODEL	SIZE			CONNECTOR	INVENTORY	MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T				DC	PL	T		
XSD-I-Y-M0095-25XH	9.5	2.9	3.18	Y	○	XSD-I-1-M0230-25XH	23.0	7.3	3.97	1	○
XSD-I-Y-M0098-25XH	9.8	3.0			○	XSD-I-1-M0240-25XH	24.0	7.6			○
XSD-I-Y-M0100-25XH	10.0	3.1			○	XSD-I-2-M0250-25XH	25.0	7.8	4.76	2	○
XSD-I-Y-M0102-25XH	10.2	3.2			○	XSD-I-2-M0260-25XH	26.0	8.0			○
XSD-I-Y-M0105-25XH	10.5	3.3			○	XSD-I-2-M0270-25XH	27.0	8.2			○
XSD-I-Y-M0108-25XH	10.8	3.5			○	XSD-I-2-M0280-25XH	28.0	8.5			○
XSD-I-Y-M0110-25XH	11.0	3.6			○	XSD-I-2-M0290-25XH	29.0	8.7			○
XSD-I-Z-M0115-25XH	11.5	3.7	3.18	Z	○	XSD-I-2-M0300-25XH	30.0	8.9	4.76	2	○
XSD-I-Z-M0120-25XH	12.0	3.8			○	XSD-I-2-M0310-25XH	31.0	9.1			○
XSD-I-Z-M0125-25XH	12.5	4.0			○	XSD-I-2-M0320-25XH	32.0	9.3			○
XSD-I-O-M0130-25XH	13.0	4.1	3.97	O	○	XSD-I-2-M0330-25XH	33.0	9.6			○
XSD-I-O-M0135-25XH	13.5	4.2			○	XSD-I-2-M0340-25XH	34.0	9.8			○
XSD-I-O-M0140-25XH	14.0	4.3			○	XSD-I-2-M0350-25XH	35.0	10.0			○
XSD-I-O-M0145-25XH	14.5	4.5			○	XSD-I-3-M0360-25XH	36.0	10.2	6.35	3	○
XSD-I-O-M0150-25XH	15.0	4.6			○	XSD-I-3-M0370-25XH	37.0	10.5			○
XSD-I-1-M0155-25XH	15.5	4.7	3.97	1	○	XSD-I-3-M0380-25XH	38.0	10.7			○
XSD-I-1-M0160-25XH	16.0	4.8			○	XSD-I-3-M0390-25XH	39.0	10.9			○
XSD-I-1-M0165-25XH	16.5	4.9			○	XSD-I-3-M0400-25XH	40.0	11.1			○
XSD-I-1-M0170-25XH	17.0	5.1			○	XSD-I-3-M0410-25XH	41.0	11.4			○
XSD-I-1-M0175-25XH	17.5	5.3			○	XSD-I-3-M0420-25XH	42.0	11.6			○
XSD-I-1-M0180-25XH	18.0	5.6	4.76	1	○	XSD-I-3-M0430-25XH	43.0	11.8			○
XSD-I-1-M0185-25XH	18.5	5.8			○	XSD-I-3-M0440-25XH	44.0	12.0			○
XSD-I-1-M0190-25XH	19.0	6.0			○	XSD-I-3-M0450-25XH	45.0	12.2			○
XSD-I-1-M0195-25XH	19.5	6.2			○	XSD-I-3-M0460-25XH	46.0	12.5			○
XSD-I-1-M0200-25XH	20.0	6.5			○	XSD-I-3-M0470-25XH	47.0	12.7			○
XSD-I-1-M0205-25XH	20.5	6.7			○	XSD-I-4-M0480-25XH	48.0	12.9	7.94	4	○
XSD-I-1-M0210-25XH	21.0	6.9			○	XSD-I-4-M0490-10XH	49.00	10.9			○
XSD-I-1-M0215-25XH	21.5	7.1			○	XSD-I-4-M0500-10XH	50.00	11.1			○
XSD-I-1-M0220-25XH	22.0	7.1			○	XSD-I-4-M0510-10XH	51.00	11.4			○

APPLICABLE TABLE OF PROCESSED MATERIALS

● STOCKABLE ○ NON STOCKABLE

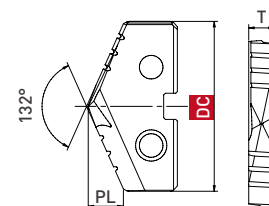
WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si>12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	●	●	●	○	○	○	○	○	○			

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL

XSD-I-* -15XH

- Diameter range: 13~114 mm.
- Drilling accuracy : IT10~IT11.
- HPM10-Powder HSS for steel with hardness below HB400.



T=11.11 drill tip angle is 144 °

HSS



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-4-M0520-10XH	52.00	11.6	7.94	4	○
XSD-I-4-M0530-10XH	53.00	11.8			○
XSD-I-4-M0540-10XH	54.00	12.0			○
XSD-I-4-M0550-10XH	55.00	12.2			○
XSD-I-4-M0560-10XH	56.00	12.5	7.94	4	○
XSD-I-4-M0570-10XH	57.00	12.7			○
XSD-I-4-M0580-10XH	58.00	12.9			○
XSD-I-4-M0590-10XH	59.00	13.1			○
XSD-I-4-M0600-10XH	60.00	13.4			○
XSD-I-4-M0610-10XH	61.00	13.6			○
XSD-I-4-M0620-15XH	62.00	13.8			○
XSD-I-4-M0630-15XH	63.00	14.0			○
XSD-I-4-M0640-15XH	64.00	14.2			○
XSD-I-4-M0650-15XH	65.00	14.5			○
XSD-I-5-M0660-15XH	66.00	10.7	11.11	5	○
XSD-I-5-M0670-15XH	67.00	10.7			○
XSD-I-5-M0680-15XH	68.00	11.0			○
XSD-I-5-M0690-15XH	69.00	11.0			○
XSD-I-5-M0700-15XH	70.00	11.4			○
XSD-I-5-M0710-15XH	71.00	11.4			○
XSD-I-5-M0720-15XH	72.00	11.7			○
XSD-I-5-M0730-15XH	73.00	11.7			○
XSD-I-5-M0740-15XH	74.00	12.0			○
XSD-I-5-M0750-15XH	75.00	12.0			○
XSD-I-5-M0760-15XH	76.00	12.3			○
XSD-I-6-M0770-15XH	77.00	12.5	11.11	6	○
XSD-I-6-M0780-15XH	78.00	12.7			○
XSD-I-6-M0790-15XH	79.00	12.7			○
XSD-I-6-M0800-15XH	80.00	13.0			○

MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-6-M0810-15XH	81.00	13.0	11.11	6	○
XSD-I-6-M0820-15XH	82.00	13.3			○
XSD-I-6-M0830-15XH	83.00	13.3			○
XSD-I-6-M0840-15XH	84.00	13.6			○
XSD-I-6-M0850-15XH	85.00	13.6			○
XSD-I-6-M0860-15XH	86.00	14.0			○
XSD-I-6-M0870-15XH	87.00	14.0			○
XSD-I-6-M0880-15XH	88.00	14.3			○
XSD-I-6-M0890-15XH	89.00	14.5			○
XSD-I-7-M0900-15XH	90.00	14.6	11.11	7	○
XSD-I-7-M0910-15XH	91.00	14.6			○
XSD-I-7-M0920-15XH	92.00	14.9			○
XSD-I-7-M0930-15XH	93.00	14.9			○
XSD-I-7-M0940-15XH	94.00	15.3			○
XSD-I-7-M0950-15XH	95.00	15.3			○
XSD-I-7-M0960-15XH	96.00	15.6			○
XSD-I-7-M0970-15XH	97.00	15.6			○
XSD-I-7-M0980-15XH	98.00	15.9			○
XSD-I-7-M1000-15XH	100.00	16.2			○
XSD-I-7-M1010-15XH	101.00	16.2	11.11	8	○
XSD-I-8-M1020-15XH	102.00	16.6			○
XSD-I-8-M1030-15XH	103.00	16.6			○
XSD-I-8-M1040-15XH	104.00	16.9			○
XSD-I-8-M1050-15XH	105.00	16.9			○
XSD-I-8-M1060-15XH	106.00	17.2			○
XSD-I-8-M1080-15XH	108.00	17.5			○
XSD-I-8-M1100-15XH	110.00	17.9			○
XSD-I-8-M1120-15XH	112.00	18.2			○
XSD-I-8-M1140-15XH	114.00	18.5			○

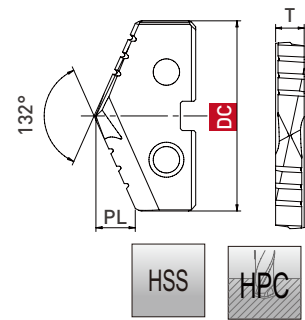
APPLICABLE TABLE OF PROCESSED MATERIALS

WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	●	●	●	○	○	○	○	○	○			

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL XSD-I-* -25XH

- Diameter range: 9.5~65 mm.
- Drilling accuracy : IT10~IT11.
- HPM10-Powder HSS for steel with hardness below HB400.



MODEL	SIZE			CONNECTOR	INVENTORY	MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T				DC	PL	T		
XSD-I-Y-M0095-25XH	9.50	2.1	2.38	Y	○	XSD-I-1-M0230-25XH	23.00	5.1	3.97	1	○
XSD-I-Y-M0098-25XH	9.80	2.2			○	XSD-I-1-M0240-25XH	24.00	5.3			○
XSD-I-Y-M0100-25XH	10.00	2.2			○	XSD-I-2-M0250-25XH	25.00	5.6	4.76	2	○
XSD-I-Y-M0102-25XH	10.20	2.3			○	XSD-I-2-M0260-25XH	26.00	5.8			○
XSD-I-Y-M0105-25XH	10.50	2.3			○	XSD-I-2-M0270-25XH	27.00	6.0			○
XSD-I-Y-M0108-25XH	10.80	2.4			○	XSD-I-2-M0280-25XH	28.00	6.2			○
XSD-I-Y-M0110-25XH	11.00	2.4			○	XSD-I-2-M0290-25XH	29.00	6.5			○
XSD-I-Z-M0115-25XH	11.50	2.6	2.38	Z	○	XSD-I-2-M0300-25XH	30.00	6.7	4.76	2	○
XSD-I-Z-M0120-25XH	12.00	2.7			○	XSD-I-2-M0310-25XH	31.00	6.9			○
XSD-I-Z-M0125-25XH	12.50	2.8			○	XSD-I-2-M0320-25XH	32.00	7.1			○
XSD-I-O-M0130-25XH	13.00	2.9	3.18	O	○	XSD-I-2-M0330-25XH	33.00	7.3			○
XSD-I-O-M0135-25XH	13.50	3.0			○	XSD-I-2-M0340-25XH	34.00	7.6			○
XSD-I-O-M0140-25XH	14.00	3.1			○	XSD-I-2-M0350-25XH	35.00	7.8			○
XSD-I-O-M0145-25XH	14.50	3.2			○	XSD-I-3-M0360-25XH	36.00	8.0	6.35	3	○
XSD-I-O-M0150-25XH	15.00	3.3	3.18	O	○	XSD-I-3-M0370-25XH	37.00	8.2			○
XSD-I-O-M0155-25XH	15.50	3.5			○	XSD-I-3-M0380-25XH	38.00	8.5			○
XSD-I-O-M0160-25XH	16.00	3.6			○	XSD-I-3-M0390-25XH	39.00	8.7			○
XSD-I-O-M0165-25XH	16.50	3.7			○	XSD-I-3-M0400-25XH	40.00	8.9			○
XSD-I-O-M0170-25XH	17.00	3.8			○	XSD-I-3-M0410-25XH	41.00	9.1			○
XSD-I-O-M0175-25XH	17.50	3.9			○	XSD-I-3-M0420-25XH	42.00	9.3	6.35	3	○
XSD-I-1-M0180-25XH	18.00	4.0	3.97	1	○	XSD-I-3-M0430-25XH	43.00	9.6			○
XSD-I-1-M0185-25XH	18.50	4.1			○	XSD-I-3-M0440-25XH	44.00	9.8			○
XSD-I-1-M0190-25XH	19.00	4.2			○	XSD-I-3-M0450-25XH	45.00	10.0			○
XSD-I-1-M0195-25XH	19.50	4.3			○	XSD-I-3-M0460-25XH	46.00	10.2			○
XSD-I-1-M0200-25XH	20.00	4.5			○	XSD-I-3-M0470-25XH	47.00	10.5			○
XSD-I-1-M0205-25XH	20.50	4.6			○	XSD-I-4-M0480-25XH	48.00	10.7	7.94	4	○
XSD-I-1-M0210-25XH	21.00	4.7			○	XSD-I-4-M0500-25XH	50.00	11.1			○
XSD-I-1-M0215-25XH	21.50	4.8			○	XSD-I-4-M0510-25XH	51.00	11.4			○
XSD-I-1-M0220-25XH	22.00	4.9	3.97	1	○	XSD-I-4-M0520-25XH	52.00	11.6			○

APPLICABLE TABLE OF PROCESSED MATERIALS

● STOCKABLE ○ NON STOCKABLE

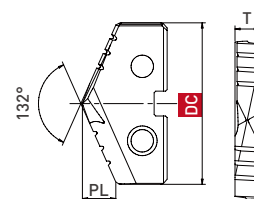
WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	●	●	●	●	●	○	○	○	○	○	●	

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL

XSD-I-* -25XH

- Diameter range: 9.5~65 mm.
- Drilling accuracy : IT10~IT11.
- HPM10-Powder HSS for steel with hardness below HB400.



T=11.11 drill tip angle is 144 °



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-4-M0530-25XH	53.00	11.8	7.94	4	○
XSD-I-4-M0540-25XH	54.00	12.0			○
XSD-I-4-M0550-25XH	55.00	12.2			○
XSD-I-4-M0560-25XH	56.00	12.5	7.94	4	○
XSD-I-4-M0570-25XH	57.00	12.7			○
XSD-I-4-M0580-25XH	58.00	12.9			○
XSD-I-4-M0590-25XH	59.00	13.1			○
XSD-I-4-M0600-25XH	60.00	13.4			○
XSD-I-4-M0610-25XH	61.00	13.6			○
XSD-I-4-M0620-25XH	62.00	13.8			○
XSD-I-4-M0630-25XH	63.00	14.0			○
XSD-I-4-M0640-25XH	64.00	14.2			○
XSD-I-4-M0650-25XH	65.00	14.5			○

● STOCKABLE ○ NON STOCKABLE

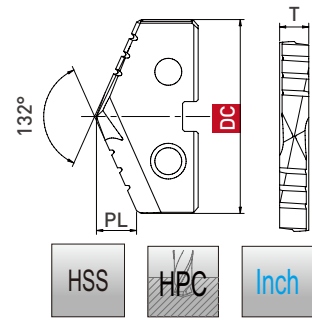
APPLICABLE TABLE OF PROCESSED MATERIALS

WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	●	●	●	●	●	○	○	○	○	○	●	

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL XSD-I-* -10XH

- Diameter range: 14~114 mm.
- Drilling accuracy : IT10-IT11.
- HPM25-Powder HSS for steel with hardness below HB400.



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-0-10562-10XH	9/16"	14.29	0.126	1/8" (3.18)	0
XSD-I-5-10625-10XH	5/8"	15.88	0.138	1/8" (3.18)	0
XSD-I-10-10687-10XH	11/16"	17.46	0.154	1/8" (3.18)	0
XSD-I-10-10750-10XH	3/4"	19.05	0.165	5/32" (3.97)	1
XSD-I-15-10812-10XH	13/16"	20.64	0.181	5/32" (3.97)	1
XSD-I-15-10875-10XH	7/8"	22.23	0.193	5/32" (3.97)	1
XSD-I-20-10937-10XH	15/16"	23.81	0.209	5/32" (3.97)	1
XSD-I-20-11000-10XH	1"	25.40	0.224	3/16" (4.76)	2
XSD-I-20-11062-10XH	1-1/16"	26.99	0.236	3/16" (4.76)	2
XSD-I-25-11125-10XH	1-1/8"	28.58	0.252	3/16" (4.76)	2
XSD-I-25-11187-10XH	1-3/16"	30.16	0.264	1/4" (6.35)	2
XSD-I-25-11250-10XH	1-1/4"	31.75	0.28	1/4" (6.35)	2
XSD-I-30-11312-10XH	1-5/16"	33.34	0.291	1/4" (6.35)	2
XSD-I-30-11343-10XH	1-11/32"	34.13	0.299	1/4" (6.35)	2
XSD-I-30-11375-10XH	1-3/8"	34.93	0.307	1/4" (6.35)	2
XSD-I-30-11437-10XH	1-7/16"	36.51	0.319	1/4" (6.35)	3
XSD-I-30-11500-10XH	1-1/2"	38.10	0.335	1/4" (6.35)	3
XSD-I-35-11562-10XH	1-9/16"	39.69	0.346	1/4" (6.35)	3
XSD-I-35-11625-10XH	1-5/8"	41.28	0.362	1/4" (6.35)	3
XSD-I-35-11687-10XH	1-1/16"	42.68	0.374	1/4" (6.35)	3
XSD-I-35-11750-10XH	1-3/4"	44.45	0.390	1/4" (6.35)	3
XSD-I-40-11812-10XH	1-13/16"	46.04	0.402	1/4" (6.35)	3
XSD-I-40-11875-10XH	1-7/8"	47.63	0.417	1/4" (6.35)	3
XSD-I-40-11937-10XH	1-15/16"	49.21	0.433	5/16" (7.94)	4
XSD-I-40-12000-10XH	2"	50.80	0.445	5/16" (7.94)	4
XSD-I-45-12062-10XH	2-1/16"	52.39	0.461	5/16" (7.94)	4
XSD-I-45-12125-10XH	2-1/8"	53.98	0.472	5/16" (7.94)	4
XSD-I-45-12187-10XH	2-3/16"	55.56	0.488	5/16" (7.94)	4
XSD-I-45-12250-10XH	2-1/4"	57.15	0.5	5/16" (7.94)	4

● STOCKABLE ○ NON STOCKABLE

APPLICABLE TABLE OF PROCESSED MATERIALS

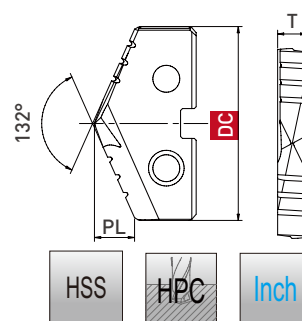
WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<50N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	○	○	○	○		○	○	○				

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL

XSD-I-* -10XH

- Diameter range: 14~114 mm.
- Drilling accuracy : IT10-IT11.
- HPM25-Powder HSS for steel with hardness below HB400.



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-45-I2312-10XH	2-5/16"	58.74	0.516	4	○
XSD-I-45-I2375-10XH	2-3/8"	60.33	0.528		○
XSD-I-45-I2437-10XH	2-7/16"	61.91	0.543		○
XSD-I-45-I2500-10XH	2-1/2"	63.50	0.555		○
XSD-I-45-I2562-10XH	2-9/16"	65.09	0.571		○
XSD-I-50-I2500-10XH	2-1/2"	63.50	0.406		○
XSD-I-50-I2562-10XH	2-9/16"	65.09	0.417	5	○
XSD-I-50-I2625-10XH	2-5/8"	66.68	0.425		○
XSD-I-50-I2812-10XH	2-13/16"	71.44	0.457		○
XSD-I-50-I2875-10XH	2-7/8"	73.03	0.469		○
XSD-I-50-I2937-10XH	2-15/16"	74.61	0.476		○
XSD-I-50-I3000-10XH	3"	76.20	0.488		○
XSD-I-50-I3031-10XH	3-1/32"	76.99	0.492	6	○
XSD-I-55-I3062-10XH	3-1/16"	77.79	0.496		○
XSD-I-55-I3125-10XH	3-1/8"	79.38	0.508		○
XSD-I-55-I3187-10XH	3-3/16"	80.96	0.52		○
XSD-I-55-I3250-10XH	3-1/4"	82.55	0.528		○
XSD-I-55-I3312-10XH	3-5/16"	84.14	0.539		○
XSD-I-55-I3375-10XH	3-3/8"	85.73	0.547		○
XSD-I-55-I3437-10XH	3-7/16"	87.31	0.559		○
XSD-I-55-I3500-10XH	3-1/2"	88.90	0.567		○

● STOCKABLE ○ NON STOCKABLE

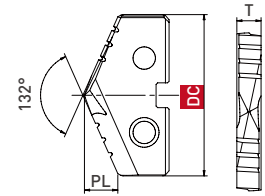
APPLICABLE TABLE OF PROCESSED MATERIALS

WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	○	○	○	○		○	○	○				

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL XSD-I-* -10XH

- Diameter range: 14~114 mm.
- Drilling accuracy : IT10~IT11.
- HPM25-Powder HSS for steel with hardness below HB400.



T=11.11 drill tip angle is 144°



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-70-I3531-10XH	3-17/32"	89.96	0.575	7	○
XSD-I-70-I3562-10XH	3-9/16"	90.49	0.579		○
XSD-I-70-I3625-10XH	3-5/8"	92.08	0.591		○
XSD-I-70-I3687-10XH	3-11/16"	93.66	0.598		○
XSD-I-70-I3750-10XH	3-3/4"	95.25	0.61		○
XSD-I-70-I3812-10XH	3-13/16"	96.84	0.618		○
XSD-I-70-I3875-10XH	3-7/8"	98.43	0.63		○
XSD-I-70-I3937-10XH	3-15/16"	100.01	0.638		○
XSD-I-70-I4000-10XH	4"	101.60	0.65		○
XSD-I-80-I4125-10XH	4-1/8"	104.78	0.669	8	○
XSD-I-80-I4250-10XH	4-1/4"	107.95	0.689		○
XSD-I-80-I4500-10XH	4-1/2"	114.30	0.732		○

● STOCKABLE ○ NON STOCKABLE

DRILLING

APPLICABLE TABLE OF PROCESSED MATERIALS

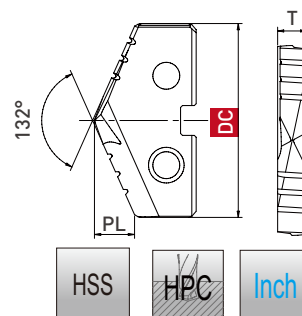
WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	○	○	○	○		○	○	○				

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL

XSD-I-* -15XH

- Diameter range: 14~114 mm.
- Drilling accuracy : IT10-IT11.
- HPM25-Powder HSS for steel with hardness below HB400.



MODEL	SIZE			CONNECTOR	INVENTORY	
	DC		PL			T
XSD-I-0-10562-15XH	9/16"	14.29	0.126	1/8" (3.18)	0	○
XSD-I-5-10625-15XH	5/8"	15.88	0.138	1/8" (3.18)	0	○
XSD-I-10-10687-15XH	11/16"	17.46	0.154			○
XSD-I-10-10750-15XH	3/4"	19.05	0.165	5/32" (3.97)	1	○
XSD-I-15-10812-15XH	13/16"	20.64	0.181			○
XSD-I-15-10875-15XH	7/8"	22.23	0.193	5/32" (3.97)	1	○
XSD-I-20-10937-15XH	15/16"	23.81	0.209			○
XSD-I-20-11000-15XH	1"	25.40	0.224	3/16" (4.76)	2	○
XSD-I-20-11062-15XH	1-1/16"	26.99	0.236			○
XSD-I-25-11125-15XH	1-1/8"	28.58	0.252			○
XSD-I-25-11187-15XH	1-3/16"	30.16	0.264	1/4" (6.35)	2	○
XSD-I-25-11250-15XH	1-1/4"	31.75	0.28			○
XSD-I-30-11312-15XH	1-5/16"	33.34	0.291			○
XSD-I-30-11343-15XH	1-11/32"	34.13	0.299			○
XSD-I-30-11375-15XH	1-3/8"	34.93	0.307			○
XSD-I-30-11437-15XH	1-7/16"	36.51	0.319	1/4" (6.35)	3	○
XSD-I-30-11500-15XH	1-1/2"	38.10	0.335			○
XSD-I-35-11562-15XH	1-9/16"	39.69	0.346			○
XSD-I-35-11625-15XH	1-5/8"	41.28	0.362			○
XSD-I-35-11687-15XH	1-1/6"	42.68	0.374	1/4" (6.35)	3	○
XSD-I-35-11750-15XH	1-3/4"	44.45	0.390			○
XSD-I-40-11812-15XH	1-13/16"	46.04	0.402			○
XSD-I-40-11875-15XH	1-7/8"	47.63	0.417			○
XSD-I-40-11937-15XH	1-15/16"	49.21	0.433	5/16" (7.94)	4	○
XSD-I-40-12000-15XH	2"	50.80	0.445			○
XSD-I-45-12062-15XH	2-1/16"	52.39	0.461			○
XSD-I-45-12125-15XH	2-1/8"	53.98	0.472			○
XSD-I-45-12187-15XH	2-3/16"	55.56	0.488			○
XSD-I-45-12250-15XH	2-1/4"	57.15	0.5	5/16" (7.94)	4	○

● STOCKABLE ○ NON STOCKABLE

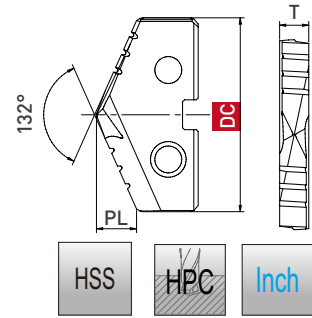
APPLICABLE TABLE OF PROCESSED MATERIALS

WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARD-ENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	●	●	●	○	○	○	○	○	○			

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL XSD-I-* -15XH

- Diameter range: 14~114 mm.
- Drilling accuracy : IT10~IT11.
- HPM25-Powder HSS for steel with hardness below HB400.



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-I-45-I2312-10XH	2-5/16"	58.74	0.516	4	○
XSD-I-45-I2375-10XH	2-3/8"	60.33	0.528		○
XSD-I-45-I2437-10XH	2-7/16"	61.91	0.543		○
XSD-I-45-I2500-10XH	2-1/2"	63.50	0.555		○
XSD-I-45-I2562-10XH	2-9/16"	65.09	0.571		○
XSD-I-50-I2500-10XH	2-1/2"	63.50	0.406	5	○
XSD-I-50-I2562-10XH	2-9/16"	65.09	0.417		○
XSD-I-50-I2625-10XH	2-5/8"	66.68	0.425		○
XSD-I-50-I2812-10XH	2-13/16"	71.44	0.457		○
XSD-I-50-I2875-10XH	2-7/8"	73.03	0.469		○
XSD-I-50-I2937-10XH	2-15/16"	74.61	0.476		○
XSD-I-50-I3000-10XH	3"	76.20	0.488		○
XSD-I-50-I3031-10XH	3-1/32"	76.99	0.492		○
XSD-I-55-I3062-10XH	3-1/16"	77.79	0.496	6	○
XSD-I-55-I3125-10XH	3-1/8"	79.38	0.508		○
XSD-I-55-I3187-10XH	3-3/16"	80.96	0.52		○
XSD-I-55-I3250-10XH	3-1/4"	82.55	0.528		○
XSD-I-55-I3312-10XH	3-5/16"	84.14	0.539		○
XSD-I-55-I3375-10XH	3-3/8"	85.73	0.547		○
XSD-I-55-I3437-10XH	3-7/16"	87.31	0.559		○
XSD-I-55-I3500-10XH	3-1/2"	88.90	0.567		○
XSD-I-70-I3531-10XH	3-17/32"	89.96	0.575	7	○
XSD-I-70-I3562-10XH	3-9/16"	90.49	0.579		○
XSD-I-70-I3625-10XH	3-5/8"	92.08	0.591		○
XSD-I-70-I3687-10XH	3-11/16"	93.66	0.598		○
XSD-I-70-I3750-10XH	3-3/4"	95.25	0.61		○
XSD-I-70-I3812-10XH	3-13/16"	96.84	0.618		○
XSD-I-70-I3875-10XH	3-7/8"	98.43	0.63		○
XSD-I-70-I3937-10XH	3-15/16"	100.01	0.638		○

● STOCKABLE ○ NON STOCKABLE

APPLICABLE TABLE OF PROCESSED MATERIALS

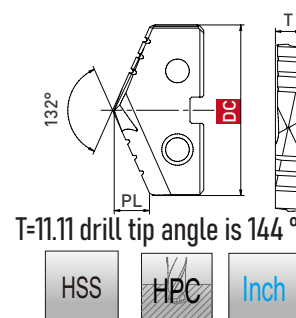
WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si<12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	●	●	●	○	○	○	○	○	○			

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL

XSD-I-* -15XH

- Diameter range: 14~114 mm.
- Drilling accuracy : IT10~IT11.
- HPM25-Powder HSS for steel with hardness below HB400.



MODEL	SIZE				CONNECTOR	INVENTORY
	DC	PL	T			
XSD-I-70-1101.6-15XH	4"	101.60	0.65	7/16" (11.11)	7	○
XSD-I-80-1104.78-15XH	4-1/8"	104.78	0.669	7/16" (11.11)	8	○
XSD-I-80-1107.95-15XH	4-1/4"	107.95	0.689			○
XSD-I-80-1114.3-15XH	4-1/2"	114.30	0.732			○

● STOCKABLE ○ NON STOCKABLE

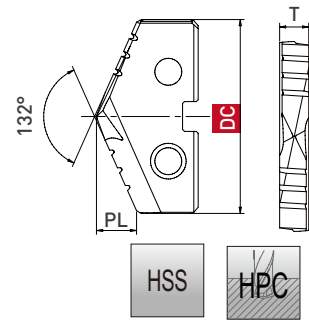
APPLICABLE TABLE OF PROCESSED MATERIALS

WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	●	●	●	○	○	○	○	○	○			

● VERY SUITABLE ○ SUITABLE

HSS INSERT OF SPADE DRILL XSD-I-* -25XH

- Diameter range: 9.5~65 mm.
- Drilling accuracy : IT10-IT11.
- HPM25-Powder HSS for steel with hardness below HB400.



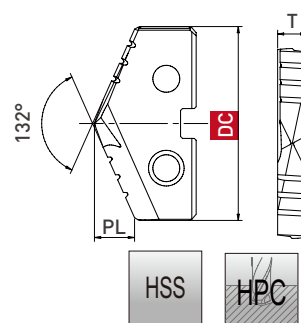
MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-Y0-10375-25XH	3/8"	9.53	0.083	Y	○
XSD-Y0-10421-25XH	27/64"	10.72	0.094		○
XSD-Z0-10437-25XH	7/16"	11.11	0.098		○
XSD-Z0-10453-25XH	29/64"	11.51	0.102	Z	○
XSD-Z0-10484-25XH	31/64"	12.30	0.106		○
XSD-00-10500-25XH	1/2"	12.70	0.11		○
XSD-00-10562-25XH	9/16"	14.29	0.126	0	○
XSD-5-10625-25XH	5/8"	15.88	0.138	0	○
XSD-5-10687-25XH	11/16"	17.46	0.154		○
XSD-10-10750-25XH	3/4"	19.05	0.165	1	○
XSD-10-10812-25XH	13/16"	20.64	0.181		○
XSD-15-10875-25XH	7/8"	22.23	0.193	1	○
XSD-15-10937-25XH	15/16"	23.81	0.209		○
XSD-20-11000-25XH	1"	25.40	0.224	2	○
XSD-20-11062-25XH	1-1/16"	26.99	0.236		○
XSD-25-11125-25XH	1-1/8"	28.58	0.252		○
XSD-25-11187-25XH	1-3/16"	30.16	0.264	2	○
XSD-25-11250-25XH	1-1/4"	31.75	0.28		○
XSD-25-11312-25XH	1-5/16"	33.34	0.291		○
XSD-30-11343-25XH	1-11/32"	34.13	0.299		○
XSD-30-11375-25XH	1-3/8"	34.93	0.307		○
XSD-30-11437-25XH	1-7/16"	36.51	0.319	3	○
XSD-30-11500-25XH	1-1/2"	38.10	0.335		○
XSD-35-11562-25XH	1-9/16"	39.69	0.346		○
XSD-35-11625-25XH	1-5/8"	41.28	0.362		○
XSD-35-11687-25XH	1-1/16"	42.68	0.374	3	○
XSD-35-11750-25XH	1-3/4"	44.45	0.39		○
XSD-35-11812-25XH	1-13/16"	46.04	0.402		○
XSD-35-11875-25XH	1-7/8"	47.63	0.417		○

● STOCKABLE ○ NON STOCKABLE

HSS INSERT OF SPADE DRILL

XSD-I-* -25XH

- Diameter range: 9.5~65 mm.
- Drilling accuracy : IT10~IT11.
- HPM25-Powder HSS for steel with hardness below HB400.



MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-40-I1937-25XH	1-15/16"	49.21	0.433	4	○
XSD-40-I2000-25XH	2"	50.80	0.445		○
XSD-40-I2062-25XH	2-1/16"	52.39	0.461		○
XSD-40-I2125-25XH	2-1/8"	53.98	0.472		○
XSD-40-I2187-25XH	2-3/16"	55.56	0.488		○
XSD-45-I2250-25XH	2-1/4"	57.15	0.5	4	○
XSD-45-I2312-25XH	2-5/16"	58.74	0.516		○
XSD-45-I2375-25XH	2-3/8"	60.33	0.528		○
XSD-45-I2437-25XH	2-7/16"	61.91	0.543		○
XSD-45-I2500-25XH	2-1/2"	63.50	0.555		○
XSD-45-I2562-25XH	2-9/16"	65.09	0.571		○

MODEL	SIZE			CONNECTOR	INVENTORY
	DC	PL	T		
XSD-20-I1000-25XH	1"	25.40	0.366	2	○
XSD-25-I1187-25XH	1-3/16"	30.16	0.433	2	○
XSD-25-I1344-25XH	1-11/32"	34.13	0.528	2	○
XSD-30-I1562-25XH	1-9/16"	39.69	0.555	3	○
XSD-35-I1750-25XH	1-3/4"	44.45	0.642	3	○
XSD-45-I2344-25XH	2-11/32"	59.53	0.858	4	○

● STOCKABLE ○ NON STOCKABLE

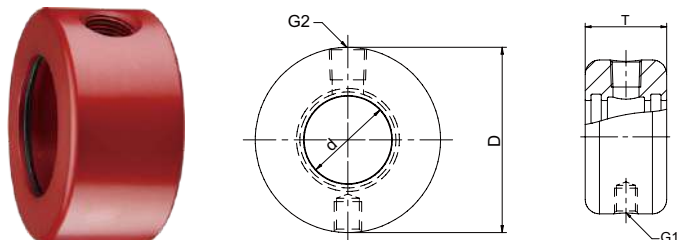
APPLICABLE TABLE OF PROCESSED MATERIALS

WORK PIECE MATERIAL	P	P	P	P	M	K	K	N	N	N	S	S	H	H
	MILD STEEL	STRUCTURAL STEEL	ALLOY STEEL	TOOL STEEL	STAINLESS STEEL	CASTIRON	MALLEABLE CAST IRON	ALUMINUM ALLOY	CAST ALUMINUM ALLOY	COPPER ALLOY	SUPER ALLOY	TITANIUM ALLOY	HARDENED STEEL	HARDENED STEEL
	<500N	<750N	<1400N	<1100N	<900N	<750N	<1100N	Si<12%	Si>12%	<750N	<1100N	<1100N	<1400N	<1600N
10XH	●	●	○											

● VERY SUITABLE ○ SUITABLE

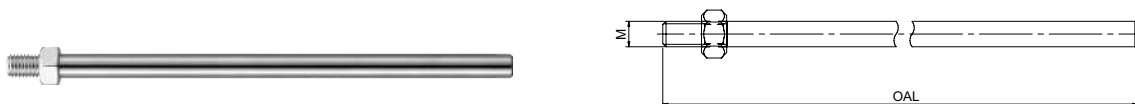
ACCESSORIES

OIL RING



INSERT DIAMETER RANGE	d	D	T	G1	G2	O-RING
	INSIDE DIAMETER	OUTSIDE DIAMETER	THICKNESS	DRIVING ROD THREAD	CODING NOZZLE THREAD	
SH-1905R	19.05	44.45	22.23	M8×1.25	Rc1/8	2104028
SH-2540R	25.40	53.97	28.57	M8×1.25	Rc1/8	2104030
SH-3175R	31.75	63.50	34.92	M10×1.5	Rc1/4	2104026

DRIVE ROD



TYPE	M	OAL	MATCHING OIL RING
	THREAD	TOTAL LENGTH	
SG-M8-250	M8×1.25	250	SH-1905R
SG-M8-250	M8×1.25	250	SH-2540R
SG-M10-250	M10×1.5	250	SH-3175R
SG-M10-250	M10×1.5	250	SH-4445R
SG-M12-250	M12×1.75	250	SH-5715R

TECHNICAL DETAILS

INSERT INSTALLATION



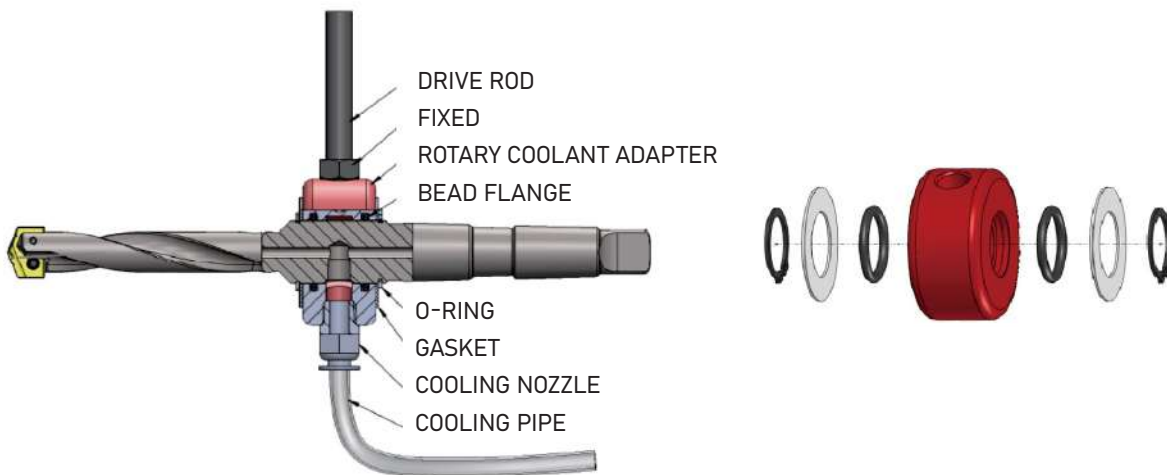
RECOMMENDED VALUE OF SREW LOCK FORCE

RANGE OF DIAMETER Φ	TIGHTENING TORQUE (NM)
9.5--12.5	0.5
13.0--17.5	1.0
18.0--24.5	1.8
25.0--35.5	3.5
36.0--65.0	5.0
66.0--114.0	7.0

INSTALLATION PROCEDURE

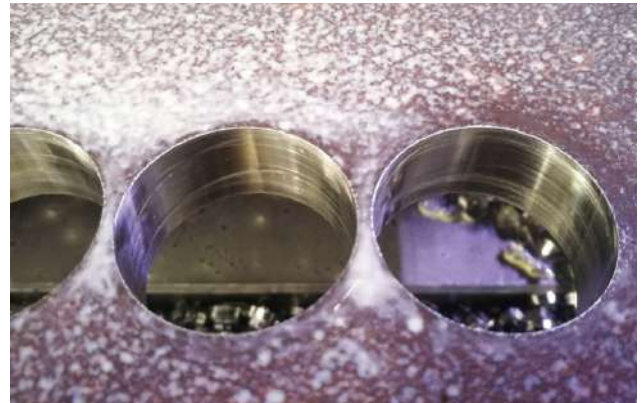
1. First, clean the mounting position with an air gun.
2. Properly load the insert into the mounting groove in the holder and slightly push the insert.
3. Fix the insert with the fastening bolt.

SCHEMATIC DIAGRAM OF OIL RING ASSEMBLY



PROCESSING CASE 2

DRILLING



HRC32

Work material: PD3 (HRC32)

Equipment: VMC

Coolant: Emulsified liquid (5bar)

Bore diameter: 31.0mm

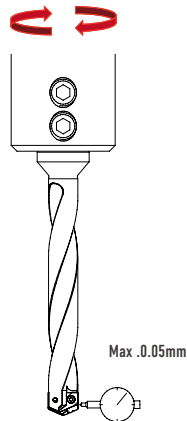
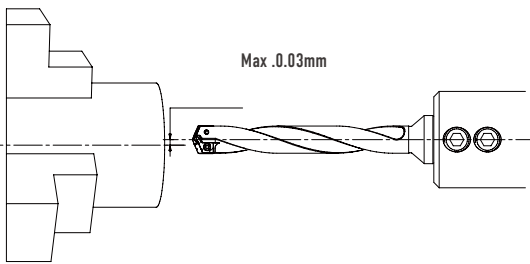
Hole depth: 17mm (through hole)

Parameter: V_c -40m/min f_n -0.20mm/r

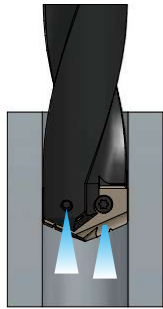
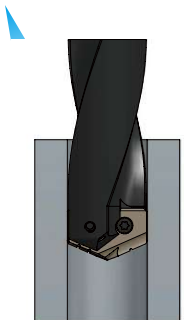
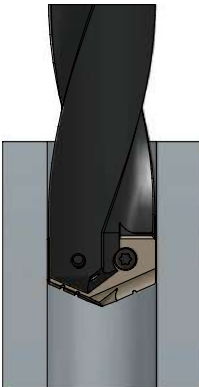
APPLICATION POINTS AND PRECAUTIONS INSTALLATION

Good working condition & reliable claiming are requirement for service life and accuracy of drills.

MAX. RUNOUT AND MISALIGNMENT

RUNOUT	MISALIGNMENT
 Max .005mm	 Max .003mm

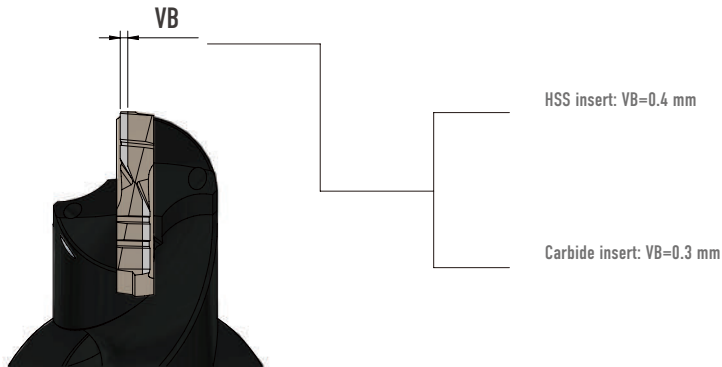
COOLING PRESSURE

INTERNAL COOLING	EXTERNAL COOLING	QUASI-DRY
 < 30 : 5bar ✓ 40 : 10bar ✓ 50 : 15bar ✓ > 60 : 20bar ✓	 < 20 : 5bar ✓ 40 : 10bar ✗ 50 : 15bar ✗ > 60 : 20bar ✗	 < 20 : MQL ✓

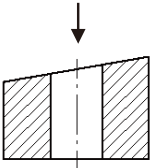
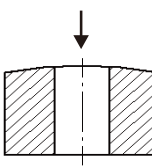
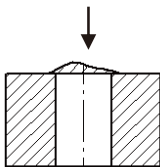
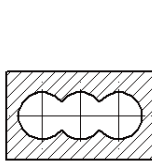
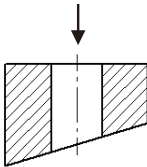
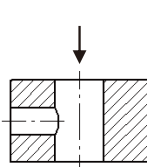
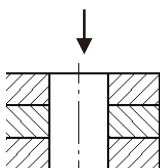
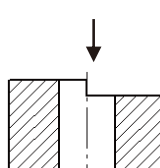
TECHNICAL DETAILS

STANDARD OF DRILL BIT REPLACEMENT

WEAR LIMIT



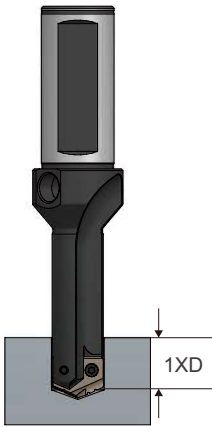
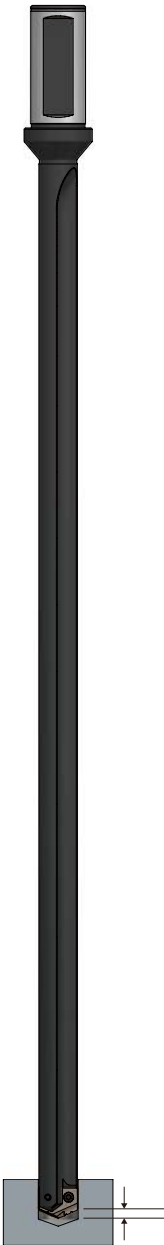
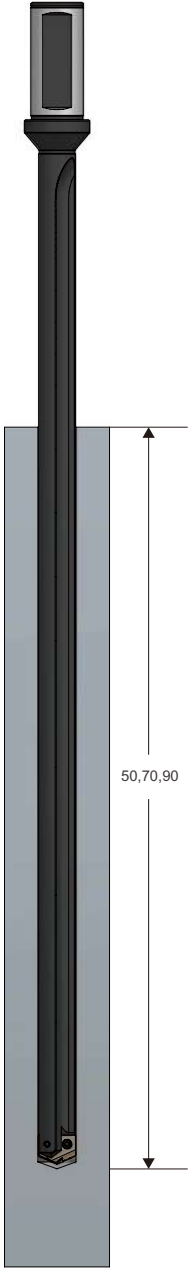
COOLING PRESSURE

OPERATING CONDITION	INSTRUCTIONS	OPERATING CONDITION	OPERATING CONDITION
	THE ENTRY SURFACE IS WELDED		THE ENTRY SURFACE IS WELDED Level it through spot facing before machining.
	THE OUTLET IS SLANTED SLOPE FEED RATE <3° 50%		THE OUTLET IS SLANTED SLOPE FEED RATE <3° 50%
	THE ENTRY SURFACE IS ARC Drilling at the center at reduced feed rate is allowed. Spot facing is required if the entry point is not at the center of the arc.		THE ENTRY SURFACE IS ARC Drilling at the center at reduced feed rate is allowed. Spot facing is required if the entry point is not at the center of the arc.
	THROUGH HOLE NOT ALLOWED		THROUGH HOLE NOT ALLOWED

APPLICATION

PRECAUTIONS

Drilling process for holder with long drilling depth (50/70/90)

1	2	3	
	 2-5mm from the bottom		 50,70,90
Drill a pilot hole to 1D to 1.5D with a short drill bit	Enter the pilot hole at a low speed and low feed rate	Keep the coolant for 2 to 3 s	Carry out continuous Speed drilling according to the recommended parameters. Reduce the speed and feed.

CUTTING PARAMETERS

ISO	WORKPIECE MATERIAL		BRINELL HARDNESS HB	TENSILE STRENGTH N/mm ²
P	NON-ALLOY STEEL Y13, 1215 1.0736 Y15, 1213 1.0715 LOW CARBON STEEL 45, 1045, 1.0503 Q345B, 1140, 1.7026	<0.25% C	100-150	1000
		>0.25% C	175-225	600-775
		<0.55% C	225-275	775-940
			275-325	940-1090
			300	1090-1265
	HIGH ALLOY STEEL, TOOL STEEL, CAST STEEL CR12, D3, 1.2080; 4CR5MOVSI, H13, 1.2344		175-275	600-1020
			225-275	1020-1180
	STAINLESS STEEL FERRITIC/MARTENSITIC OCR13, 403, 1.400, 2CR13, 410, 1.4021		275-325	640-940
			325-375	940-1180
M	STAINLESS STEEL AUSTENITIC OCR18N19, 304, 1.4301 OCR17NI11M02, 316, 1.4401		225-300	480-640
			300-350	640-940
	SUPER DUPLEX STAINLESS STEEL	N<0.1%	185-275	480-640
			135-185	640-940
		N≥0.1%	185-275	430-500
K	GREY CAST IRON HT 200, NO.30, GG20 HT250, NO.35 GG25		120-150	500 - 700
			150-200	700-750
	CAST IRON NODULAR QT400-18, 60-40-18,GGG40 QT 600-3, 80-60-03, GGG60		200-220	755 - 890
			220-260	430 - 500
	MALLEABLE CAST IRON		120-150	890 - 1020
			260-320	

CUTTING SPEED Vc(m/min)			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm		
38	54	70	0.09	0.12	0.17	0.13	0.17	0.23	0.17	0.22	0.31	0.21	0.28	0.39	0.26	0.34	0.47	0.29	0.39	0.54	0.36	0.48	0.66
35	50	64	0.07	0.09	0.12	0.1	0.14	0.19	0.13	0.17	0.23	0.19	0.25	0.34	0.23	0.31	0.43	0.27	0.36	0.5	0.31	0.42	0.57
32	45	59	0.07	0.09	0.12	0.1	0.14	0.19	0.13	0.17	0.23	0.19	0.25	0.34	0.23	0.31	0.43	0.27	0.36	0.5	0.31	0.42	0.57
25	36	47	0.05	0.07	0.10	0.09	0.12	0.17	0.12	0.16	0.22	0.16	0.21	0.29	0.21	0.28	0.39	0.25	0.33	0.45	0.29	0.38	0.53
22	32	41	0.04	0.06	0.08	0.08	0.10	0.14	0.12	0.16	0.22	0.16	0.21	0.29	0.19	0.26	0.35	0.22	0.30	0.41	0.26	0.34	0.47
33	47	62	0.07	0.09	0.12	0.1	0.14	0.18	0.13	0.17	0.23	0.19	0.25	0.34	0.22	0.3	0.14	0.25	0.33	0.45	0.29	0.38	0.53
32	45	59	0.07	0.09	0.12	0.09	0.12	0.17	0.13	0.17	0.23	0.19	0.25	0.34	0.22	0.3	0.14	0.25	0.33	0.45	0.29	0.38	0.53
28	41	53	0.05	0.07	0.1	0.08	0.1	0.14	0.12	0.16	0.22	0.16	0.21	0.29	0.19	0.26	0.35	0.22	0.3	0.41	0.26	0.34	0.47
24	34	44	0.04	0.06	0.08	0.08	0.1	0.14	0.12	0.16	0.22	0.16	0.21	0.29	0.19	0.26	0.35	0.22	0.3	0.41	0.26	0.34	0.47
22	32	41	0.07	0.09	0.12	0.09	0.12	0.17	0.12	0.16	0.22	0.13	0.17	0.23	0.19	0.25	0.34	0.22	0.30	0.14	0.26	0.34	0.47
19	27	35	0.05	0.07	0.1	0.09	0.12	0.17	0.12	0.16	0.22	0.13	0.17	0.23	0.19	0.25	0.34	0.22	0.30	0.41	0.26	0.34	0.47
16	23	29	0.08	0.1	0.14	0.10	0.14	0.19	0.12	0.16	0.22	0.13	0.17	0.23	0.19	0.25	0.34	0.21	0.28	0.39	0.26	0.34	0.47
19	27	35	0.07	0.09	0.12	0.09	0.12	0.17	0.10	0.14	0.19	0.10	0.14	0.19	0.16	0.21	0.29	0.19	0.25	0.34	0.23	0.31	0.43
18	25	32	0.04	0.06	0.08	0.09	0.12	0.17	0.10	0.14	0.19	0.13	0.17	0.23	0.19	0.25	0.34	0.21	0.28	0.39	0.26	0.34	0.47
18	25	32	0.04	0.06	0.08	0.08	0.10	0.14	0.09	0.12	0.17	0.10	0.14	0.19	0.16	0.21	0.29	0.19	0.25	0.34	0.23	0.31	0.43
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	54	70	0.09	0.12	0.17	0.16	0.21	0.29	0.21	0.28	0.39	0.26	0.34	0.47	0.31	0.42	0.57	0.35	0.47	0.65	0.39	0.52	0.72
35	50	64	0.08	0.10	0.14	0.14	0.19	0.26	0.19	0.25	0.34	0.23	0.31	0.43	0.29	0.38	0.53	0.32	0.43	0.59	0.36	0.48	0.66
32	45	59	0.08	0.10	0.14	0.12	0.06	0.22	0.16	0.21	0.29	0.21	0.28	0.39	0.23	0.31	0.43	0.27	0.36	0.50	0.31	0.42	0.57
32	45	59	0.07	0.09	0.12	0.09	0.12	0.17	0.12	0.16	0.22	0.16	0.21	0.29	0.19	0.25	0.34	0.22	0.30	0.41	0.26	0.34	0.47
32	45	59	0.09	0.012	0.17	0.16	0.21	0.29	0.21	0.28	0.39	0.36	0.34	0.47	0.31	0.42	0.57	0.35	0.47	0.65	0.39	0.52	0.72
32	45	59	0.05	0.07	0.10	0.08	0.10	0.14	0.09	0.12	0.17	0.12	0.16	0.22	0.16	0.21	0.29	0.19	0.25	0.34	0.21	0.28	0.39

CUTTING PARAMETERS

ISO	WORKPIECE MATERIAL		BRINELL HARDNESS HB	TENSILE STRENGTH N/mm²
N	WROUGHT ALUMINIUM		30	100
			180	600
	CAST ALUMINIUM	<0.55% C	30	100
			180	600
			-	-
	ALUMINIUM BRONZE		100-200	370-670
	NON METALLIC		200-250	670-855
			100	370
			60	200
S	HIGH TEMP. ALLOY HASTELLOY B, INCONEL 600,	FE BASE	140-220	480-750
			223-310	755-990
		NI OR CO BASE	250	-
			350	-
			320	-
	TITANIUM ALLOY		320	RM 400
			-	RM 1050
	H	WEAR PLATE HARDOX, AR400, T-1		400
			500	1600
HARDENED STEEL			300-400	1020- 1365
			400-500	1365+

DRILLING

CUTTING SPEED Vc(m/min)			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm			Ø 9.5-12.5mm		
47	68	88	0.05	0.07	0.10	0.08	0.10	0.4	0.3	0.17	0.23	0.16	0.21	0.29	0.29	0.38	0.53	0.32	0.49	0.59	0.32	0.43	0.59
41	59	76	0.10	0.14	0.19	0.17	0.22	0.31	0.21	0.28	0.39	0.23	0.31	0.43	0.29	0.38	0.53	0.38	0.43	0.59	0.32	0.43	0.59
47	68	88	0.10	0.14	0.19	0.17	0.22	0.31	0.21	0.28	0.39	0.26	0.34	0.47	0.29	0.38	0.53	0.32	0.43	0.59	0.32	0.43	0.59
41	59	76	0.10	0.14	0.19	0.17	0.22	0.31	0.21	0.28	0.39	0.23	0.31	0.43	0.29	0.38	0.53	0.32	0.43	0.59	0.32	0.43	0.59
41	59	76	0.01	0.14	0.19	0.17	0.22	0.31	0.21	0.28	0.39	0.23	0.31	0.43	0.29	0.38	0.53	0.32	0.43	0.59	0.32	0.43	0.59
47	38	88	0.08	0.10	0.14	0.14	0.19	0.26	0.19	0.25	0.34	0.23	0.31	0.43	0.29	0.38	0.53	0.34	0.45	0.62	0.36	0.48	0.66
47	68	88	0.07	0.09	0.12	0.09	0.12	0.17	0.12	0.16	0.22	0.16	0.21	0.29	0.19	0.25	0.34	0.22	0.30	0.41	0.26	0.34	0.47
47	68	88	0.09	0.12	0.17	0.16	0.21	0.29	0.21	0.28	0.39	0.26	0.34	0.47	0.31	0.42	0.57	0.36	0.48	0.66	0.39	0.52	0.72
47	68	88	0.10	0.14	0.19	0.17	0.22	0.31	0.21	0.28	0.39	0.23	0.31	0.43	0.29	0.38	0.53	0.32	0.43	0.59	0.32	0.43	0.59
47	68	88	0.10	0.14	0.19	0.17	0.22	0.31	0.21	0.28	0.39	0.23	0.31	0.43	0.29	0.38	0.53	0.32	0.43	0.59	0.32	0.43	0.59
14	20	27	0.04	0.06	0.08	0.09	0.12	0.17	0.10	0.14	0.09	0.13	0.17	0.23	0.16	0.21	0.29	0.19	0.26	0.35	-	-	-
11	16	21	0.04	0.06	0.08	0.08	0.10	0.14	0.09	0.12	0.17	0.10	0.14	0.19	0.13	0.17	0.23	0.16	0.21	0.29	-	-	-
11	16	21	0.04	0.06	0.08	0.09	0.12	0.17	0.10	0.14	0.09	0.13	0.17	0.23	0.16	0.21	0.29	0.19	0.26	0.35	-	-	-
11	16	21	0.04	0.06	0.08	0.08	0.10	0.14	0.09	0.12	0.17	0.10	0.14	0.19	0.13	0.17	0.23	0.16	0.21	0.29	-	-	-
11	16	21	0.04	0.06	0.08	0.08	0.10	0.14	0.09	0.12	0.17	0.10	0.14	0.19	0.13	0.17	0.23	0.16	0.21	0.29	-	-	-
11	16	21	0.04	0.06	0.08	0.09	0.12	0.17	0.10	0.14	0.19	0.13	0.17	0.23	0.16	0.21	0.29	0.19	0.26	0.35	-	-	-
11	16	21	0.04	0.06	0.08	0.08	0.10	0.14	0.09	0.12	0.17	0.10	0.14	0.19	0.13	0.17	0.23	0.16	0.21	0.29	-	-	-
7	10	13	0.04	0.06	0.08	0.08	0.10	0.14	0.10	0.14	0.19	0.12	0.16	0.22	0.16	0.21	0.29	0.21	0.28	0.39	0.23	0.31	0.43
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	13	16	0.04	0.06	0.08	0.08	0.10	0.14	0.10	0.14	0.19	0.12	0.16	0.22	0.16	0.21	0.29	0.21	0.28	0.39	0.23	0.31	0.43
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note:

1. In the case of intermittent processing, the feed rate should be reduced by 30 to 50%.

2. The above recommended cutting parameters are based on the 20 series. When using series 30, 40, 50, 60, 70, 90 etc, the parameters should be appropriately reduced according to the working condition.

Parameter: 20 series=100% 30

40 series=below 80%=50 series=below 70%.