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Vol. 2.0

WIDIN DRILL SERIES

Power Max Drill Drill for High Speed Cutting~HRC50

NEW **New Dynamic Power Drill** Drills for General Speed Cutting
(N-Dolphin Drill)

Solid Spiral Drill Drills for Multi-purpose

Centering Tools Centering Tools



SELECTION GUIDE

EDP. NO	APPEARANCE	FLUTE	FEATURE		LENGTH					INTERNAL COOLANT	STANDARD RANGE (Ø)		PAGE
			RELIEF	FACET	3xD	5xD	8xD	10xD	20xD		MIN	MAX	

Power Max Drill Series (~HRC50) ··· Drill for High Speed Cutting (Alloy steel, Cast Iron, Stainless Steel, Pre-Hardened Steel)

PF503	◆◆		2		○	○						2	20	4
PF505	◆◆		2		○		○					3	20	4
HP503	◇		2		○	○						3	16	16
HPI 503	◆◆		2		○	○				○		3	20	22
HPI 505	◆◆		2		○		○			○		3	20	22
HPI 508N	◆◆		2		○		○			○		3	20	22
SF503	◆◆		2		○	○				○		3	20	38
SF505	◆◆		2		○		○			○		3	20	38
SF508	◆◆		2		○		○			○		3	20	38
SF510	◇		2		○			○		○		3	11.5	38
SF520	◇		2		○				○	○		3.97	10	38

New Dynamic Power Drill (N-Dolphin Drill) ··· Drills for General Speed Cutting (Carbon Steel, Alloy Steel, Cast Iron)

NDPR	◇		2		○	○						1	20	61
NDPL	◇		2		○		○					3	20	61

Solid Spiral Drill Series ··· Drills for Multi-Purpose & Aluminum (Non-ferrous & Aluminum)

SSD	◇		2		○		○					1	13	72
SSDL	◇		2		○		○					3	10	74
SSTD	◇		2		○	○						0.5	13	75
APF505	◆◆		3		○		○					3	16	78

Centering Tools

LDA	◆		2									3/32	1/2	82
LDS	◇		2									3	20	84

APPLICABLE WORKING MATERIAL

CARBON STEELS LOW (1010, 1018)	CARBON STEELS MED (1025, 1045)	CARBON STEELS HIGH (1065)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
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○ : GOOD ◎ : BEST

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PF503, PF505 SERIES

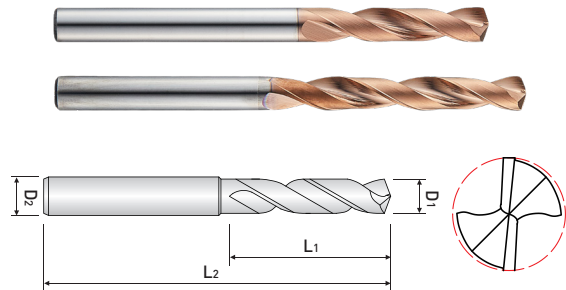
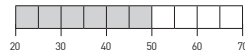
3xD & 5xD

DRILLS / 2 FLUTES / 3xD & 5xD / SOLID CARBIDE / SINGLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 = 10.1 to 18)
D1 = +0 / -0.033 (D1 > 18)
D2 = h6

HARDNESS (HRc)



>>Continue

EDP NO.		Cutting Diameter			Cutting Length	Overall Length	Shank Diameter
2 Flute							
TiAlN-HH							
Helix 30°							
3xD	5xD	D1			L1	L2	D2
PF503	PF505	Decimal	Fraction	Metric			
PF503020	-	0.0787"	-	2.000	14.00	50.00	3.00
PF503021	-	0.0827"	-	2.100	14.00	50.00	3.00
PF503022	-	0.0866"	-	2.200	14.00	50.00	3.00
PF503023	-	0.0906"	-	2.300	14.00	50.00	3.00
PF503024	-	0.0945"	-	2.400	14.00	50.00	3.00
PF503025	-	0.0984"	-	2.500	14.00	50.00	3.00
PF503026	-	0.1024"	-	2.600	14.00	50.00	3.00
PF503027	-	0.1063"	-	2.700	14.00	50.00	3.00
PF503028	-	0.1102"	-	2.800	14.00	50.00	3.00
PF503029	-	0.1142"	-	2.900	14.00	50.00	3.00
PF503030	-	0.1181"	-	3.000	18.00	60.00	3.00
-	PF505030	0.1181"	-	3.000	25.00	60.00	3.00
PF503031	-	0.1220"	-	3.100	20.00	60.00	4.00
-	PF505031	0.1220"	-	3.100	27.00	60.00	4.00
PF50303175	-	0.1250"	1/8"	3.175	20.00	60.00	4.00
-	PF50503175	0.1250"	1/8"	3.175	27.00	60.00	4.00
PF503032	-	0.1260"	-	3.200	20.00	60.00	4.00
-	PF505032	0.1260"	-	3.200	27.00	60.00	4.00
PF50303264	-	0.1285"	#30	3.264	20.00	60.00	4.00
-	PF50503264	0.1285"	#30	3.264	27.00	60.00	4.00
PF503033	-	0.1299"	-	3.300	20.00	60.00	4.00
-	PF505033	0.1299"	-	3.300	27.00	60.00	4.00
PF503034	-	0.1339"	-	3.400	22.00	60.00	4.00
-	PF505034	0.1339"	-	3.400	30.00	65.00	4.00
PF503035	-	0.1378"	-	3.500	22.00	60.00	4.00
-	PF505035	0.1378"	-	3.500	30.00	65.00	4.00
PF50303572	-	0.1406"	9/64"	3.572	22.00	60.00	4.00
-	PF50503572	0.1406"	9/64"	3.572	30.00	65.00	4.00
PF503036	-	0.1417"	-	3.600	22.00	60.00	4.00
-	PF505036	0.1417"	-	3.600	30.00	65.00	4.00
PF503037	-	0.1457"	-	3.700	22.00	60.00	4.00
-	PF505037	0.1457"	-	3.700	30.00	65.00	4.00
PF503038	-	0.1496"	-	3.800	24.00	60.00	4.00
-	PF505038	0.1496"	-	3.800	33.00	71.00	4.00

Applicable Working Material

SERIES	CARBON STEELS LOW (100-170)	CARBON STEELS MED (170-200)	CARBON STEELS HIGH (200)	ALLOY STEELS (40-60)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

PF503, PF505 SERIES

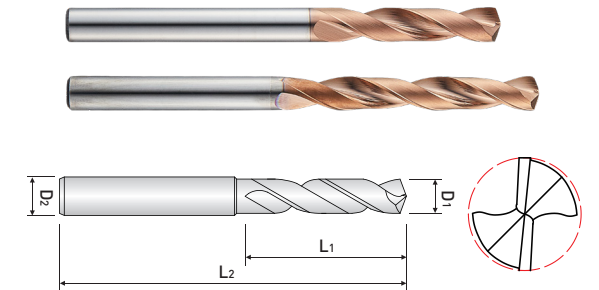
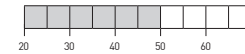
3xD & 5xD

DRILLS / 2 FLUTES / 3xD & 5xD / SOLID CARBIDE / SINGLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 = 10.1 to 18)
D1 = +0 / -0.033 (D1 > 18)
D2 = h6

HARDNESS (HRc)



>>Continue

EDP NO.		Cutting Diameter			Cutting Length	Overall Length	Shank Diameter
2 Flute							
TiAlN-HH							
Helix 30°							
3xD	5xD	D1			L1	L2	D2
PF503	PF505	Decimal	Fraction	Metric			
PF503039	-	0.1535"	-	3.900	24.00	60.00	4.00
-	PF505039	0.1535"	-	3.900	33.00	71.00	4.00
PF503040	-	0.1575"	-	4.000	24.00	60.00	4.00
-	PF505040	0.1575"	-	4.000	33.00	71.00	4.00
PF50304039	-	0.1590"	#21	4.039	24.00	60.00	4.00
-	PF50504039	0.1590"	#21	4.039	33.00	71.00	5.00
PF503041	-	0.1614"	-	4.100	24.00	60.00	4.00
-	PF505041	0.1614"	-	4.100	33.00	71.00	5.00
PF503042	-	0.1654"	-	4.200	26.00	62.00	5.00
-	PF505042	0.1654"	-	4.200	33.00	71.00	5.00
PF503043	-	0.1693"	-	4.300	26.00	62.00	5.00
-	PF505043	0.1693"	-	4.300	36.00	71.00	5.00
PF503044	-	0.1732"	-	4.400	26.00	62.00	5.00
-	PF505044	0.1732"	-	4.400	36.00	71.00	5.00
PF503045	-	0.1772"	-	4.500	26.00	62.00	5.00
-	PF505045	0.1772"	-	4.500	36.00	71.00	5.00
PF503046	-	0.1811"	-	4.600	26.00	62.00	5.00
-	PF505046	0.1811"	-	4.600	36.00	71.00	5.00
PF503047	-	0.1850"	-	4.700	26.00	62.00	5.00
-	PF505047	0.1850"	-	4.700	36.00	71.00	5.00
PF50304763	-	0.1875"	3/16"	4.763	26.00	62.00	5.00
-	PF50504763	0.1875"	3/16"	4.763	39.00	71.00	5.00
PF503048	-	0.1890"	-	4.800	26.00	62.00	5.00
-	PF505048	0.1890"	-	4.800	39.00	71.00	5.00
PF503049	-	0.1929"	-	4.900	26.00	62.00	5.00
-	PF505049	0.1929"	-	4.900	39.00	71.00	5.00
PF503050	-	0.1969"	-	5.000	26.00	62.00	5.00
-	PF505050	0.1969"	-	5.000	39.00	71.00	5.00
PF503051	-	0.2008"	-	5.100	26.00	62.00	5.00
-	PF505051	0.2008"	-	5.100	39.00	83.00	6.00
PF50305159	-	0.2031"	13/64"	5.159	28.00	66.00	6.00
-	PF50505159	0.2031"	13/64"	5.159	39.00	83.00	6.00
PF503052	-	0.2047"	-	5.200	28.00	66.00	6.00
-	PF505052	0.2047"	-	5.200	39.00	83.00	6.00

Applicable Working Material

SERIES	CARBON STEELS LOW (100-170)	CARBON STEELS MED (170-200)	CARBON STEELS HIGH (200)	ALLOY STEELS (40-60)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



PF503, PF505 SERIES

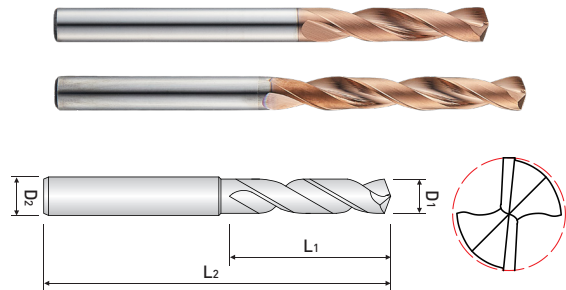
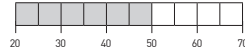
3xD & 5xD

DRILLS / 2 FLUTES / 3xD & 5xD / SOLID CARBIDE / SINGLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 = 10.1 to 18)
D1 = +0 / -0.033 (D1 > 18)
D2 = h6

HARDNESS (HRc)



>>Continue

EDP NO.		Cutting Diameter			Cutting Length	Overall Length	Shank Diameter
2 Flute		D1					
TiAlN-HH					L1	L2	D2
Helix 30°							
3xD	5xD	Decimal	Fraction	Metric			
PF503053	-	0.2087"	-	5.300	28.00	66.00	6.00
-	PF505053	0.2087"	-	5.300	39.00	83.00	6.00
PF503054	-	0.2126"	-	5.400	28.00	66.00	6.00
-	PF505054	0.2126"	-	5.400	43.00	83.00	6.00
PF503055	-	0.2165"	-	5.500	28.00	66.00	6.00
-	PF505055	0.2165"	-	5.500	43.00	83.00	6.00
PF50305558	-	0.2188"	7/32"	5.558	30.00	66.00	6.00
-	PF50505558	0.2188"	7/32"	5.558	43.00	83.00	6.00
PF503056	-	0.2205"	-	5.600	30.00	66.00	6.00
-	PF505056	0.2205"	-	5.600	43.00	83.00	6.00
PF503057	-	0.2244"	-	5.700	30.00	66.00	6.00
-	PF505057	0.2244"	-	5.700	43.00	83.00	6.00
PF503058	-	0.2283"	-	5.800	30.00	66.00	6.00
-	PF505058	0.2283"	-	5.800	43.00	83.00	6.00
PF503059	-	0.2323"	-	5.900	30.00	66.00	6.00
-	PF505059	0.2323"	-	5.900	43.00	83.00	6.00
PF50305953	-	0.2344"	15/64"	5.953	30.00	66.00	6.00
-	PF50505953	0.2344"	15/64"	5.953	43.00	83.00	6.00
PF503060	-	0.2362"	-	6.000	30.00	66.00	6.00
-	PF505060	0.2362"	-	6.000	43.00	83.00	6.00
PF503061	-	0.2402"	-	6.100	30.00	66.00	6.00
-	PF505061	0.2402"	-	6.100	47.00	87.00	7.00
PF503062	-	0.2441"	-	6.200	34.00	74.00	7.00
-	PF505062	0.2441"	-	6.200	47.00	87.00	7.00
PF503063	-	0.2480"	-	6.300	34.00	74.00	7.00
-	PF505063	0.2480"	-	6.300	47.00	87.00	7.00
PF5030635	-	0.2500"	1/4"	6.350	34.00	74.00	7.00
-	PF5050635	0.2500"	-	6.350	47.00	87.00	7.00
PF503064	-	0.2520"	-	6.400	34.00	74.00	7.00
-	PF505064	0.2520"	-	6.400	47.00	87.00	7.00
PF503065	-	0.2559"	-	6.500	34.00	74.00	7.00
-	PF505065	0.2559"	-	6.500	47.00	87.00	7.00
PF503066	-	0.2598"	-	6.600	34.00	74.00	7.00
-	PF505066	0.2598"	-	6.600	47.00	87.00	7.00

Applicable Working Material

ALL	CARBON STEELS LOW (HRC 10-18)	CARBON STEELS MED (HRC 18-22)	CARBON STEELS HIGH (HRC 22-28)	ALLOY STEELS (HRC 28-32)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



PF503, PF505 SERIES

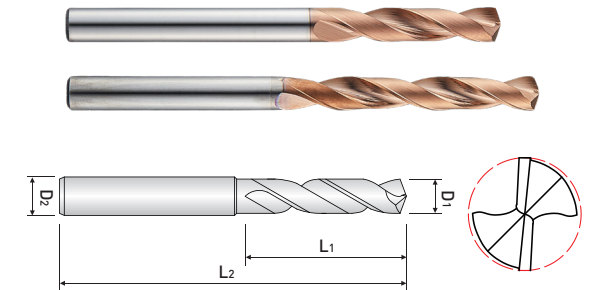
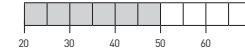
3xD & 5xD

DRILLS / 2 FLUTES / 3xD & 5xD / SOLID CARBIDE / SINGLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 = 10.1 to 18)
D1 = +0 / -0.033 (D1 > 18)
D2 = h6

HARDNESS (HRc)



>>Continue

EDP NO.		Cutting Diameter			Cutting Length	Overall Length	Shank Diameter
2 Flute		D1					
TiAlN-HH					L1	L2	D2
Helix 30°							
3xD	5xD	Decimal	Fraction	Metric			
PF503067	-	0.2638"	-	6.700	37.00	74.00	7.00
-	PF505067	0.2638"	-	6.700	47.00	87.00	7.00
PF50306747	-	0.2656"	17/64"	6.747	37.00	74.00	7.00
-	PF50506747	0.2656"	17/64"	6.747	47.00	87.00	7.00
PF503068	-	0.2677"	-	6.800	37.00	74.00	7.00
-	PF505068	0.2677"	-	6.800	47.00	87.00	7.00
PF503069	-	0.2717"	-	6.900	37.00	74.00	7.00
-	PF505069	0.2717"	-	6.900	47.00	87.00	7.00
PF503070	-	0.2756"	-	7.000	37.00	74.00	7.00
-	PF505070	0.2756"	-	7.000	47.00	87.00	7.00
PF503071	-	0.2795"	-	7.100	37.00	74.00	7.00
-	PF505071	0.2795"	-	7.100	52.00	92.00	8.00
PF50307145	-	0.2813"	9/32"	7.145	40.00	79.00	8.00
-	PF50507145	0.2813"	9/32"	7.145	52.00	92.00	8.00
PF503072	-	0.2835"	-	7.200	40.00	79.00	8.00
-	PF505072	0.2835"	-	7.200	52.00	92.00	8.00
PF503073	-	0.2874"	-	7.300	40.00	79.00	8.00
-	PF505073	0.2874"	-	7.300	52.00	92.00	8.00
PF503074	-	0.2913"	-	7.400	40.00	79.00	8.00
-	PF505074	0.2913"	-	7.400	52.00	92.00	8.00
PF503075	-	0.2953"	-	7.500	40.00	79.00	8.00
-	PF505075	0.2953"	-	7.500	52.00	92.00	8.00
PF50307541	-	0.2969"	19/64"	7.541	40.00	79.00	8.00
-	PF50507541	0.2969"	19/64"	7.541	52.00	92.00	8.00
PF503076	-	0.2992"	-	7.600	40.00	79.00	8.00
-	PF505076	0.2992"	-	7.600	52.00	92.00	8.00
PF503077	-	0.3031"	-	7.700	40.00	79.00	8.00
-	PF505077	0.3031"	-	7.700	52.00	92.00	8.00
PF503078	-	0.3071"	-	7.800	40.00	79.00	8.00
-	PF505078	0.3071"	-	7.800	52.00	92.00	8.00
PF503079	-	0.3110"	-	7.900	40.00	79.00	8.00
-	PF505079	0.3110"	-	7.900	52.00	92.00	8.00
PF50307938	-	0.3125"	5/16"	7.938	40.00	79.00	8.00
-	PF50507938	0.3125"	5/16"	7.938	52.00	92.00	8.00

Applicable Working Material

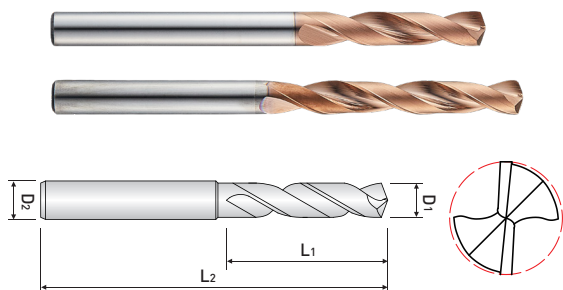
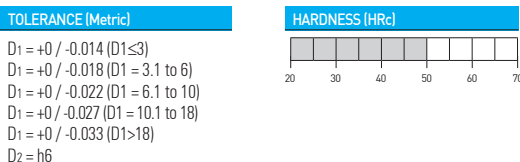
ALL	CARBON STEELS LOW (HRC 10-18)	CARBON STEELS MED (HRC 18-22)	CARBON STEELS HIGH (HRC 22-28)	ALLOY STEELS (HRC 28-32)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

PF503, PF505 SERIES

3xD & 5xD

DRILLS / 2 FLUTES / 3xD & 5xD / SOLID CARBIDE / SINGLE MARGIN / TiAlN-HH COATING



>>Continue

EDP NO.		Cutting Diameter			Cutting Length	Overall Length	Shank Diameter
2 Flute TiAlN-HH Helix 30°		D1					
3xD	5xD	Decimal	Fraction	Metric	L1	L2	D2
PF503	PF505						
-	PF505107	0.4213"	-	10.700	68.00	115.00	11.00
PF50310716	-	0.4219"	27/64"	10.716	51.00	95.00	11.00
-	PF50510716	0.4219"	27/64"	10.716	68.00	115.00	11.00
PF503108	-	0.4252"	-	10.800	51.00	95.00	11.00
-	PF505108	0.4252"	-	10.800	68.00	115.00	11.00
PF503109	-	0.4291"	-	10.900	51.00	95.00	11.00
-	PF505109	0.4291"	-	10.900	68.00	115.00	11.00
PF503110	-	0.4331"	-	11.000	51.00	95.00	11.00
-	PF505110	0.4331"	-	11.000	68.00	115.00	11.00
PF503111	-	0.4370"	-	11.100	51.00	95.00	11.00
-	PF505111	0.4370"	-	11.100	71.00	121.00	12.00
PF50311113	-	0.4375"	7/16"	11.113	54.00	102.00	12.00
-	PF50511113	0.4375"	7/16"	11.113	71.00	121.00	12.00
PF503112	-	0.4409"	-	11.200	54.00	102.00	12.00
-	PF505112	0.4409"	-	11.200	71.00	121.00	12.00
PF503113	-	0.4449"	-	11.300	54.00	102.00	12.00
-	PF505113	0.4449"	-	11.300	71.00	121.00	12.00
PF503114	-	0.4488"	-	11.400	54.00	102.00	12.00
-	PF505114	0.4488"	-	11.400	71.00	121.00	12.00
PF503115	-	0.4528"	-	11.500	54.00	102.00	12.00
-	PF505115	0.4528"	-	11.500	71.00	121.00	12.00
PF503116	-	0.4567"	-	11.600	54.00	102.00	12.00
-	PF505116	0.4567"	-	11.600	71.00	121.00	12.00
PF503117	-	0.4606"	-	11.700	54.00	102.00	12.00
-	PF505117	0.4606"	-	11.700	71.00	121.00	12.00
PF503118	-	0.4646"	-	11.800	54.00	102.00	12.00
-	PF505118	0.4646"	-	11.800	71.00	121.00	12.00
PF503119	-	0.4685"	-	11.900	54.00	102.00	12.00
-	PF505119	0.4685"	-	11.900	71.00	121.00	12.00
PF50311908	-	0.4688"	15/32"	11.908	54.00	102.00	12.00
-	PF50511908	0.4688"	15/32"	11.908	71.00	121.00	12.00
PF503120	-	0.4724"	-	12.000	54.00	102.00	12.00
-	PF505120	0.4724"	-	12.000	71.00	121.00	12.00
PF503121	-	0.4764"	-	12.100	54.00	102.00	12.00

Applicable Working Material

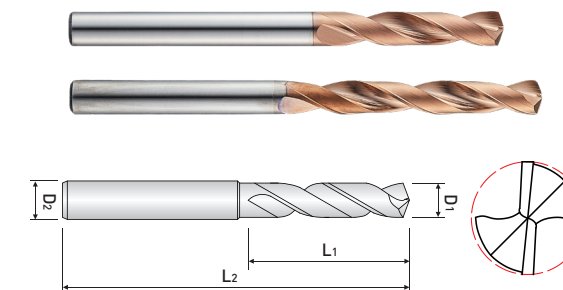
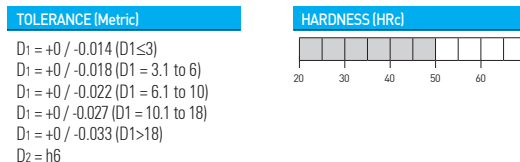
○:GOOD ●:BEST

SERIES	CARBON STEELS LOW (HRC 10-18)	CARBON STEELS MED (HRC 19-28)	CARBON STEELS HIGH (HRC 29-45)	ALLOY STEELS (HRC 40-45)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-55 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

PF503, PF505 SERIES

3xD & 5xD

DRILLS / 2 FLUTES / 3xD & 5xD / SOLID CARBIDE / SINGLE MARGIN / TiAlN-HH COATING



>>Continue

EDP NO.		Cutting Diameter			Cutting Length	Overall Length	Shank Diameter
2 Flute TiAlN-HH Helix 30°		D1					
3xD	5xD	Decimal	Fraction	Metric	L1	L2	D2
PF503	PF505						
-	PF505121	0.4764"	-	12.100	75.00	125.00	13.00
PF503122	-	0.4803"	-	12.200	57.00	102.00	13.00
-	PF505122	0.4803"	-	12.200	75.00	125.00	13.00
PF503123	-	0.4843"	-	12.300	57.00	102.00	13.00
-	PF505123	0.4843"	-	12.300	75.00	125.00	13.00
PF50312304	-	0.4844"	31/64"	12.304	57.00	102.00	13.00
-	PF50512304	0.4844"	31/64"	12.304	75.00	125.00	13.00
PF503124	-	0.4882"	-	12.400	57.00	102.00	13.00
-	PF505124	0.4882"	-	12.400	75.00	125.00	13.00
PF503125	-	0.4921"	-	12.500	57.00	102.00	13.00
-	PF505125	0.4921"	-	12.500	75.00	125.00	13.00
PF503126	-	0.4961"	-	12.600	57.00	102.00	13.00
-	PF505126	0.4961"	-	12.600	75.00	125.00	13.00
PF503127	-	0.5000"	1/2"	12.700	57.00	102.00	13.00
-	PF505127	0.5000"	1/2"	12.700	75.00	125.00	13.00
PF503128	-	0.5039"	-	12.800	57.00	102.00	13.00
-	PF505128	0.5039"	-	12.800	75.00	125.00	13.00
PF503129	-	0.5079"	-	12.900	57.00	102.00	13.00
-	PF505129	0.5079"	-	12.900	75.00	125.00	13.00
PF503130	-	0.5118"	-	13.000	57.00	102.00	13.00
-	PF505130	0.5118"	-	13.000	75.00	125.00	13.00
PF50313096	-	0.5156"	33/64"	13.096	57.00	102.00	13.00
-	PF50513096	0.5156"	33/64"	13.096	80.00	134.00	14.00
PF503131	-	0.5157"	-	13.100	57.00	102.00	13.00
-	PF505131	0.5157"	-	13.100	80.00	134.00	14.00
PF503132	-	0.5197"	-	13.200	60.00	107.00	14.00
-	PF505132	0.5197"	-	13.200	80.00	134.00	14.00
PF503133	-	0.5236"	-	13.300	60.00	107.00	14.00
-	PF505133	0.5236"	-	13.300	80.00	134.00	14.00
PF503134	-	0.5276"	-	13.400	60.00	107.00	14.00
-	PF505134	0.5276"	-	13.400	80.00	134.00	14.00
PF50313494	-	0.5313"	17/32"	13.494	60.00	107.00	14.00
-	PF50513494	0.5313"	17/32"	13.494	80.00	134.00	14.00
PF503135	-	0.5315"	-	13.500	60.00	107.00	14.00

Applicable Working Material

○:GOOD ●:BEST

SERIES	CARBON STEELS LOW (HRC 10-18)	CARBON STEELS MED (HRC 19-28)	CARBON STEELS HIGH (HRC 29-45)	ALLOY STEELS (HRC 40-45)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-55 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



HP503 SERIES

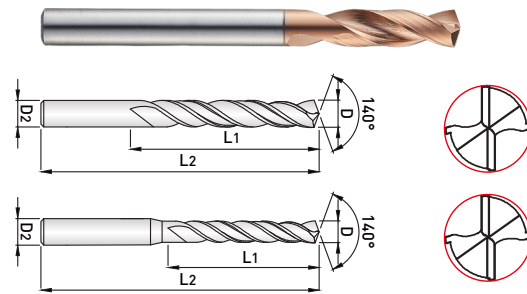
3xD

DRILLS / 2 FLUTES / 3xD / SOLID CARBIDE / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.012 / 0.002 (D1 ≤ 3)
D1 = +0.016 / 0.004 (D1 = 3.1 to 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 ≥ 10.1)
D2 = h6

HARDNESS (HRC)



>>Continue

EDP NO.	Cutting Diameter		Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
							2 Flute	
							TiAlN-HH	
							Helix 30°	
3xD	D1		L1	L2	L3	D2		
HP503	Decimal	Metric						
HP503030	0.1181"	3.00	14.00	20.00	62.00	6.00		
HP503031	0.1220"	3.10	14.00	20.00	62.00	6.00		
HP503032	0.1260"	3.20	14.00	20.00	62.00	6.00		
HP503033	0.1299"	3.30	14.00	20.00	62.00	6.00		
HP503034	0.1339"	3.40	14.00	20.00	62.00	6.00		
HP503035	0.1378"	3.50	14.00	20.00	62.00	6.00		
HP503036	0.1417"	3.60	14.00	20.00	62.00	6.00		
HP503037	0.1457"	3.70	14.00	20.00	62.00	6.00		
HP503038	0.1496"	3.80	17.00	24.00	66.00	6.00		
HP503039	0.1535"	3.90	17.00	24.00	66.00	6.00		
HP503040	0.1575"	4.00	17.00	24.00	66.00	6.00		
HP503041	0.1614"	4.10	17.00	24.00	66.00	6.00		
HP503042	0.1654"	4.20	17.00	24.00	66.00	6.00		
HP503043	0.1693"	4.30	17.00	24.00	66.00	6.00		
HP503044	0.1732"	4.40	17.00	24.00	66.00	6.00		
HP503045	0.1772"	4.50	17.00	24.00	66.00	6.00		
HP503046	0.1811"	4.60	17.00	24.00	66.00	6.00		
HP503047	0.1850"	4.70	17.00	24.00	66.00	6.00		
HP503048	0.1890"	4.80	20.00	28.00	66.00	6.00		
HP503049	0.1929"	4.90	20.00	28.00	66.00	6.00		
HP503050	0.1969"	5.00	20.00	28.00	66.00	6.00		
HP503051	0.2008"	5.10	20.00	28.00	66.00	6.00		
HP503052	0.2047"	5.20	20.00	28.00	66.00	6.00		
HP503053	0.2087"	5.30	20.00	28.00	66.00	6.00		
HP503054	0.2126"	5.40	20.00	28.00	66.00	6.00		
HP503055	0.2165"	5.50	20.00	28.00	66.00	6.00		
HP503056	0.2205"	5.60	20.00	28.00	66.00	6.00		
HP503057	0.2244"	5.70	20.00	28.00	66.00	6.00		
HP503058	0.2283"	5.80	20.00	28.00	66.00	6.00		
HP503059	0.2323"	5.90	20.00	28.00	66.00	6.00		
HP503060	0.2362"	6.00	20.00	28.00	66.00	6.00		
HP503061	0.2402"	6.10	24.00	34.00	79.00	8.00		

Applicable Working Material

SERIES	CARBON STEELS LOW (10-17.0%)	CARBON STEELS MED (18-2.0%)	CARBON STEELS HIGH (2.0-4.0%)	ALLOY STEELS (4-14.0%)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
HP503	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



HP503 SERIES

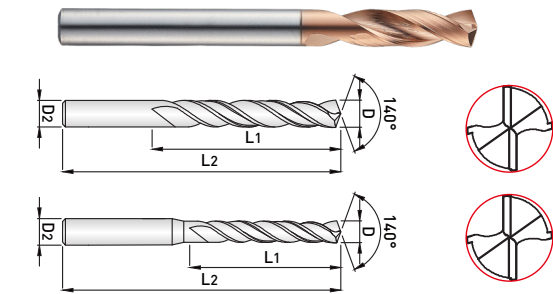
3xD

DRILLS / 2 FLUTES / 3xD / SOLID CARBIDE / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.012 / 0.002 (D1 ≤ 3)
D1 = +0.016 / 0.004 (D1 = 3.1 to 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 ≥ 10.1)
D2 = h6

HARDNESS (HRC)



>>Continue

EDP NO.	Cutting Diameter		Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
							2 Flute	
							TiAlN-HH	
							Helix 30°	
3xD	D1		L1	L2	L3	D2		
HP503	Decimal	Metric						
HP503062	0.2441"	6.20	24.00	34.00	79.00	8.00		
HP503063	0.2480"	6.30	24.00	34.00	79.00	8.00		
HP503064	0.2520"	6.40	24.00	34.00	79.00	8.00		
HP503065	0.2559"	6.50	24.00	34.00	79.00	8.00		
HP503066	0.2598"	6.60	24.00	34.00	79.00	8.00		
HP503067	0.2638"	6.70	24.00	34.00	79.00	8.00		
HP503068	0.2677"	6.80	24.00	34.00	79.00	8.00		
HP503069	0.2717"	6.90	24.00	34.00	79.00	8.00		
HP503070	0.2756"	7.00	24.00	34.00	79.00	8.00		
HP503071	0.2795"	7.10	29.00	41.00	79.00	8.00		
HP503072	0.2835"	7.20	29.00	41.00	79.00	8.00		
HP503073	0.2874"	7.30	29.00	41.00	79.00	8.00		
HP503074	0.2913"	7.40	29.00	41.00	79.00	8.00		
HP503075	0.2953"	7.50	29.00	41.00	79.00	8.00		
HP503076	0.2992"	7.60	29.00	41.00	79.00	8.00		
HP503077	0.3031"	7.70	29.00	41.00	79.00	8.00		
HP503078	0.3071"	7.80	29.00	41.00	79.00	8.00		
HP503079	0.3110"	7.90	29.00	41.00	79.00	8.00		
HP503080	0.3150"	8.00	29.00	41.00	79.00	8.00		
HP503081	0.3189"	8.10	35.00	47.00	89.00	10.00		
HP503082	0.3228"	8.20	35.00	47.00	89.00	10.00		
HP503083	0.3268"	8.30	35.00	47.00	89.00	10.00		
HP503084	0.3307"	8.40	35.00	47.00	89.00	10.00		
HP503085	0.3346"	8.50	35.00	47.00	89.00	10.00		
HP503086	0.3386"	8.60	35.00	47.00	89.00	10.00		
HP503087	0.3425"	8.70	35.00	47.00	89.00	10.00		
HP503088	0.3465"	8.80	35.00	47.00	89.00	10.00		
HP503089	0.3504"	8.90	35.00	47.00	89.00	10.00		
HP503090	0.3543"	9.00	35.00	47.00	89.00	10.00		
HP503091	0.3583"	9.10	35.00	47.00	89.00	10.00		
HP503092	0.3622"	9.20	35.00	47.00	89.00	10.00		
HP503093	0.3661"	9.30	35.00	47.00	89.00	10.00		

Applicable Working Material

SERIES	CARBON STEELS LOW (10-17.0%)	CARBON STEELS MED (18-2.0%)	CARBON STEELS HIGH (2.0-4.0%)	ALLOY STEELS (4-14.0%)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
HP503	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



HP503 SERIES

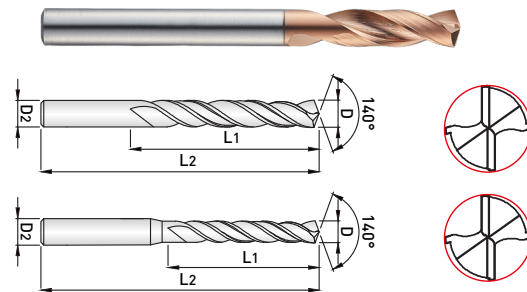
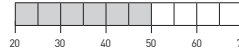
3xD

DRILLS / 2 FLUTES / 3xD / SOLID CARBIDE / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.012 / 0.002 (D1 ≤ 3)
D1 = +0.016 / 0.004 (D1 = 3.1 to 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 ≥ 10.1)
D2 = h6

HARDNESS (HRC)

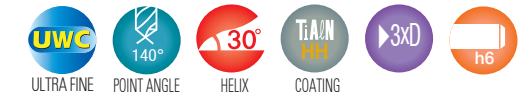


>>Continue

EDP NO.	Cutting Diameter		Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
							2 Flute	
							TiAlN-HH	
							Helix 30°	
3xD	D1		L1	L2	L3	D2		
HP503	Decimal	Metric						
HP503094	0.3701"	9.40	35.00	47.00	89.00	10.00		
HP503095	0.3740"	9.50	35.00	47.00	89.00	10.00		
HP503096	0.3780"	9.60	35.00	47.00	89.00	10.00		
HP503097	0.3819"	9.70	35.00	47.00	89.00	10.00		
HP503098	0.3858"	9.80	35.00	47.00	89.00	10.00		
HP503099	0.3898"	9.90	35.00	47.00	89.00	10.00		
HP503100	0.3937"	10.00	35.00	47.00	89.00	10.00		
HP503101	0.3976"	10.10	40.00	55.00	102.00	12.00		
HP503102	0.4016"	10.20	40.00	55.00	102.00	12.00		
HP503103	0.4055"	10.30	40.00	55.00	102.00	12.00		
HP503104	0.4094"	10.40	40.00	55.00	102.00	12.00		
HP503105	0.4134"	10.50	40.00	55.00	102.00	12.00		
HP503106	0.4173"	10.60	40.00	55.00	102.00	12.00		
HP503107	0.4213"	10.70	40.00	55.00	102.00	12.00		
HP503108	0.4252"	10.80	40.00	55.00	102.00	12.00		
HP503109	0.4291"	10.90	40.00	55.00	102.00	12.00		
HP503110	0.4331"	11.00	40.00	55.00	102.00	12.00		
HP503111	0.4370"	11.10	40.00	55.00	102.00	12.00		
HP503112	0.4409"	11.20	40.00	55.00	102.00	12.00		
HP503113	0.4449"	11.30	40.00	55.00	102.00	12.00		
HP503114	0.4488"	11.40	40.00	55.00	102.00	12.00		
HP503115	0.4528"	11.50	40.00	55.00	102.00	12.00		
HP503116	0.4567"	11.60	40.00	55.00	102.00	12.00		
HP503117	0.4606"	11.70	40.00	55.00	102.00	12.00		
HP503118	0.4646"	11.80	40.00	55.00	102.00	12.00		
HP503119	0.4685"	11.90	40.00	55.00	102.00	12.00		
HP503120	0.4724"	12.00	40.00	55.00	102.00	12.00		
HP503121	0.4764"	12.10	43.00	60.00	107.00	14.00		
HP503122	0.4803"	12.20	43.00	60.00	107.00	14.00		
HP503123	0.4843"	12.30	43.00	60.00	107.00	14.00		
HP503124	0.4882"	12.40	43.00	60.00	107.00	14.00		
HP503125	0.4921"	12.50	43.00	60.00	107.00	14.00		

Applicable Working Material

SERIES	CARBON STEELS LOW (10-170 HB)	CARBON STEELS MED (170-240 HB)	CARBON STEELS HIGH (240-300 HB)	ALLOY STEELS (40-4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
HP503	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



HP503 SERIES

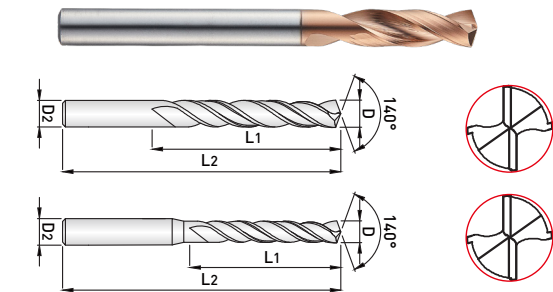
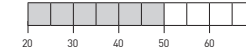
3xD

DRILLS / 2 FLUTES / 3xD / SOLID CARBIDE / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.012 / 0.002 (D1 ≤ 3)
D1 = +0.016 / 0.004 (D1 = 3.1 to 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 ≥ 10.1)
D2 = h6

HARDNESS (HRC)



EDP NO.	Cutting Diameter		Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
							2 Flute	
							TiAlN-HH	
							Helix 30°	
3xD	D1		L1	L2	L3	D2		
HP503	Decimal	Metric						
HP503126	0.4961"	12.60	43.00	60.00	107.00	14.00		
HP503127	0.5000"	12.70	43.00	60.00	107.00	14.00		
HP503128	0.5039"	12.80	43.00	60.00	107.00	14.00		
HP503129	0.5079"	12.90	43.00	60.00	107.00	14.00		
HP503130	0.5118"	13.00	43.00	60.00	107.00	14.00		
HP503131	0.5157"	13.10	43.00	60.00	107.00	14.00		
HP503132	0.5197"	13.20	43.00	60.00	107.00	14.00		
HP503133	0.5236"	13.30	43.00	60.00	107.00	14.00		
HP503135	0.5315"	13.50	43.00	60.00	107.00	14.00		
HP503137	0.5394"	13.70	43.00	60.00	107.00	14.00		
HP503140	0.5512"	14.00	43.00	60.00	107.00	14.00		
HP503142	0.5591"	14.20	45.00	65.00	115.00	16.00		
HP503143	0.5630"	14.30	45.00	65.00	115.00	16.00		
HP503145	0.5709"	14.50	45.00	65.00	115.00	16.00		
HP503146	0.5748"	14.60	45.00	65.00	115.00	16.00		
HP503148	0.5827"	14.80	45.00	65.00	115.00	16.00		
HP503150	0.5906"	15.00	45.00	65.00	115.00	16.00		
HP503155	0.6102"	15.50	45.00	65.00	115.00	16.00		
HP503157	0.6181"	15.70	45.00	65.00	115.00	16.00		
HP503160	0.6299"	16.00	45.00	65.00	115.00	16.00		

Applicable Working Material

SERIES	CARBON STEELS LOW (10-170 HB)	CARBON STEELS MED (170-240 HB)	CARBON STEELS HIGH (240-300 HB)	ALLOY STEELS (40-4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
HP503	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

HP503 SERIES

INCH
METRIC

Power Max Drill Series

New Dynamic Power Drill Series

Solid Spiral Drill Series

Centering Tools

RPM=rev./min.
FEED=min/rev.
IPR=inch/rev.

Work Material	Carbon Steels (C<0.3%) Alloy Steels < HB240, GG25			Carbon Steels (C≥0.3%) Alloy Steel < HB300, GG40			52100-AISI440			Hardened Steels 34 ~ 43 HRc		
	80~125m/min			80~125m/min			63~80m/min			40~63m/min		
Drilling Speed (V)												
Cutting Diameter (metric)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)
2	12,000	0.06-0.08	0.003	12,000	0.06-0.08	0.003	11,000	0.06-0.08	0.003	8,000	0.06-0.08	0.003
3	9,600	0.09-0.12	0.004	9,600	0.09-0.12	0.004	7,500	0.09-0.12	0.004	5,300	0.09-0.12	0.004
4	8,000	0.10-0.15	0.005	8,000	0.10-0.15	0.005	5,650	0.10-0.15	0.005	4,000	0.10-0.15	0.005
5	6,400	0.12-0.18	0.006	6,400	0.12-0.18	0.006	4,550	0.12-0.18	0.006	3,300	0.12-0.18	0.006
6	5,300	0.14-0.20	0.007	5,300	0.14-0.20	0.007	3,800	0.14-0.20	0.007	2,750	0.14-0.20	0.007
8	4,000	0.16-0.24	0.008	4,000	0.16-0.24	0.008	2,850	0.16-0.24	0.008	2,100	0.16-0.24	0.008
10	3,200	0.18-0.27	0.009	3,200	0.18-0.27	0.009	2,250	0.18-0.27	0.009	1,700	0.18-0.27	0.009
12	2,650	0.20-0.30	0.010	2,650	0.20-0.30	0.010	1,900	0.20-0.30	0.010	1,400	0.20-0.30	0.010
14	2,300	0.22-0.35	0.011	2,300	0.22-0.35	0.011	1,600	0.22-0.35	0.011	1,200	0.22-0.35	0.011
16	2,000	0.25-0.36	0.012	2,000	0.25-0.36	0.012	1,400	0.25-0.36	0.012	1,050	0.25-0.36	0.012
18	1,800	0.28-0.38	0.013	1,800	0.28-0.38	0.013	1,250	0.28-0.38	0.013	920	0.28-0.38	0.013
20	1,600	0.30-0.40	0.014	1,600	0.30-0.40	0.014	1,150	0.30-0.40	0.014	850	0.30-0.40	0.014
Work Material	Hardened Steels 43 ~ 48 HRc			Hardened Steels 48 ~ 53 HRc			Cast Iron 250 ~ 350 N/mm2			Cast Iron-Ductile 400 ~ 500 N/mm2		
Drilling Speed (V)	32~45m/min			25~36m/min			80~125m/min			63~90m/min		
Cutting Diameter (metric)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)
2	6,000	0.05-0.07	0.002	4,500	0.03-0.06	0.002	15,000	0.06-0.08	0.003	11,000	0.06-0.08	0.003
3	4,000	0.07-0.11	0.004	3,200	0.05-0.09	0.003	10,000	0.09-0.12	0.004	7,600	0.09-0.12	0.004
4	3,000	0.08-0.13	0.004	2,600	0.06-0.10	0.003	8,000	0.10-0.15	0.005	6,000	0.10-0.15	0.005
5	2,400	0.10-0.15	0.005	2,000	0.08-0.12	0.004	6,400	0.12-0.18	0.006	4,800	0.12-0.18	0.006
6	2,000	0.12-0.18	0.006	1,700	0.09-0.15	0.005	5,300	0.14-0.20	0.007	4,000	0.14-0.20	0.007
8	1,500	0.14-0.22	0.007	1,300	0.12-0.20	0.006	4,000	0.16-0.24	0.008	3,000	0.16-0.24	0.008
10	1,200	0.15-0.25	0.008	1,000	0.13-0.23	0.007	3,200	0.18-0.27	0.009	2,400	0.18-0.27	0.009
12	1,000	0.17-0.26	0.008	850	0.14-0.24	0.007	2,700	0.20-0.30	0.010	2,000	0.20-0.30	0.010
14	860	0.18-0.30	0.009	730	0.15-0.26	0.008	2,300	0.22-0.35	0.011	1,700	0.22-0.35	0.011
16	760	0.20-0.32	0.010	640	0.16-0.26	0.008	2,000	0.25-0.36	0.012	1,500	0.25-0.36	0.012
18	670	0.23-0.33	0.011	570	0.18-0.28	0.009	1,800	0.28-0.38	0.013	1,350	0.28-0.38	0.013
20	600	0.25-0.35	0.012	500	0.20-0.30	0.010	1,600	0.30-0.40	0.014	1,200	0.30-0.40	0.014

HPI, SF SERIES (HPI DRILL SHOWN)

General Features

1 Flat and narrow margins

Reduces friction and heat
Increases hole wall quality (HPI Series)
Increases number of holes (SF Series)

2 Shank

DIN 6535 HA

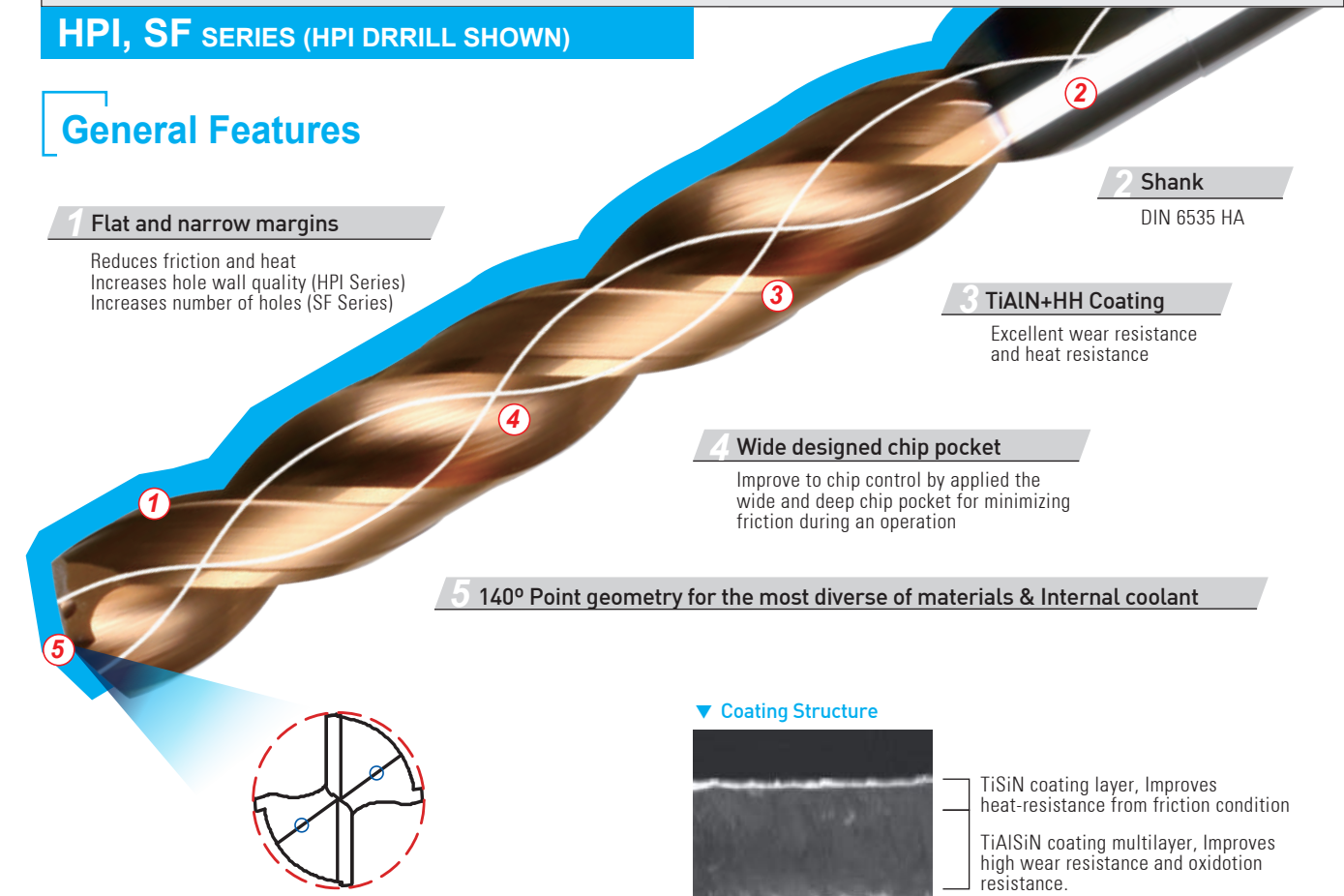
3 TiAlN+HH Coating

Excellent wear resistance
and heat resistance

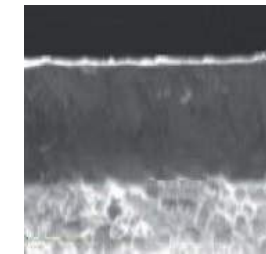
4 Wide designed chip pocket

Improve to chip control by applied the wide and deep chip pocket for minimizing friction during an operation

5 140° Point geometry for the most diverse of materials & Internal coolant



Coating Structure



TiSiN coating layer, Improves heat-resistance from friction condition
TiAlSiN coating multilayer, Improves high wear resistance and oxidation resistance.
Substrate

Advantages

- Flute design for superior chip evacuation
- Applied special thinning to minimize cutting resistance
- Wide product line from 3xD to 20xD
- Tool life improvement & Suitable for high speed application with up to date coating
- Realize precision hole tolerance
- Adoped double margin to minimize vibration and chattering
- Stable materials and latest coating provides improved heat resistance and wear resistance at increased speeds

Specification Line-up

※ Various choices as per aspect ratio



HPI Series - Internal Coolant

- HPI503 - Possible to drill to 3XD ▶ Ø3 ~ Ø20
- HPI505 - Possible to drill to 5XD ▶ Ø3 ~ Ø20
- HPI508 - Possible to drill to 8XD ▶ Ø3 ~ Ø20



SF Series - Internal Coolant

- SF503 - Possible to drill to 3XD ▶ Ø3 ~ Ø20
- SF505 - Possible to drill to 5XD ▶ Ø3 ~ Ø20
- SF508 - Possible to drill to 8XD ▶ Ø3 ~ Ø20
- SF510 - Possible to drill to 10XD ▶ Ø3 ~ Ø11.5
- SF520 - Possible to drill to 20XD ▶ Ø3.97 ~ Ø10

INCH
METRIC

Power Max Drill Series

New Dynamic Power Drill Series

Solid Spiral Drill Series

Centering Tools

HPI503, HPI505, HPI508N SERIES

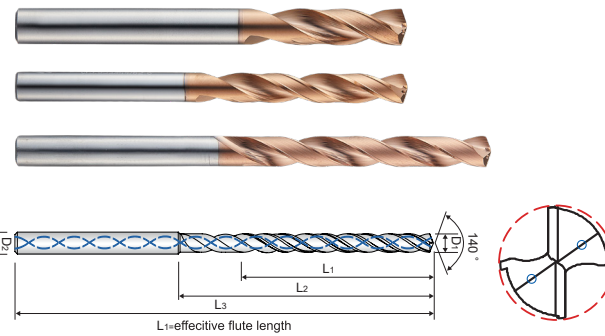
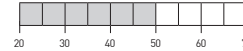
3xD, 5xD & 8xD

DRILLS / 2 FLUTES / 3xD, 5xD & 8xD / INTERNAL COOLANT / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.016 / 0.004 (D1 ≤ 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 = 10.1 to 18)
D1 = +0.029 / 0.008 (D1 > 18)
D2 = h6

HARDNESS (HRC)



>>Continue

EDP NO.			Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute									
TiAlN-HH									
Helix 30°									
3xD	5xD	8xD	D1			L1	L2	L3	D2
HPI503	HPI505	HPI508N	Decimal	Fraction	Metric				
		HPI508084N	.3307"	-	8.4	74	87	131	10
	HPI50508433	-	.3320"	0	8.433	49	61	103	10
HPI503085		-	.3346"	-	8.5	35	47	89	10
	HPI505085	-	.3346"	-	8.5	49	61	103	10
		HPI508085N	.3346"	-	8.5	74	87	131	10
HPI503086		-	.3386"	-	8.6	35	47	89	10
	HPI505086	-	.3386"	-	8.6	49	61	103	10
		HPI508086N	.3386"	-	8.6	74	87	131	10
HPI503087		-	.3425"	-	8.7	35	47	89	10
	HPI505087	-	.3425"	-	8.7	49	61	103	10
		HPI508087N	.3425"	-	8.7	74	87	131	10
HPI50308733		-	.3438"	11/32"	8.733	35	47	89	10
	HPI50508733	-	.3438"	11/32"	8.733	49	61	103	10
		HPI50808733N	.3438"	11/32"	8.733	74	87	131	10
HPI503088		-	.3465"	-	8.8	35	47	89	10
	HPI505088	-	.3465"	-	8.8	49	61	103	10
		HPI508088N	.3465"	-	8.8	74	87	131	10
HPI503089		-	.3504"	-	8.9	35	47	89	10
	HPI505089	-	.3504"	-	8.9	49	61	103	10
		HPI508089N	.3504"	-	8.9	74	87	131	10
HPI503090		-	.3543"	-	9	35	47	89	10
	HPI505090	-	.3543"	-	9	49	61	103	10
		HPI508090N	.3543"	-	9	74	87	131	10
HPI503091		-	.3583"	-	9.1	35	47	89	10
	HPI505091	-	.3583"	-	9.1	49	61	103	10
		HPI508091N	.3583"	-	9.1	81	95	139	10
HPI50309129		-	.3594"	23/64"	9.129	35	47	89	10
	HPI50509129	-	.3594"	23/64"	9.129	49	61	103	10
		HPI50809129N	.3594"	23/64"	9.129	81	95	139	10
HPI503092		-	.3622"	-	9.2	35	47	89	10
	HPI505092	-	.3622"	-	9.2	49	61	103	10
		HPI508092N	.3622"	-	9.2	81	95	139	10
HPI503093		-	.3661"	-	9.3	35	47	89	10
	HPI505093	-	.3661"	-	9.3	49	61	103	10
		HPI508093N	.3661"	-	9.3	81	95	139	10
	HPI50509347	-	.3680"	U	9.347	49	61	103	10

Applicable Working Material

SERIES	CARBON STEELS LOW (100-170)	CARBON STEELS MED (170-200)	CARBON STEELS HIGH (200)	ALLOY STEELS (40-60)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

HPI503, HPI505, HPI508N SERIES

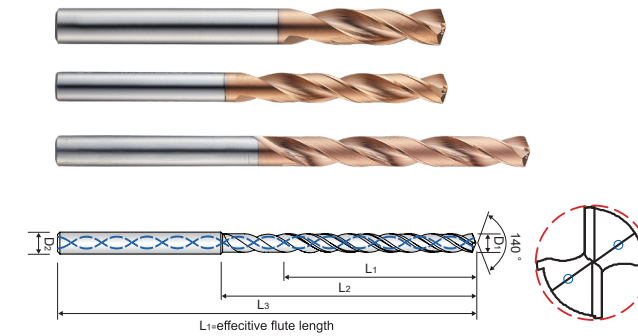
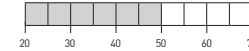
3xD, 5xD & 8xD

DRILLS / 2 FLUTES / 3xD, 5xD & 8xD / INTERNAL COOLANT / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.016 / 0.004 (D1 ≤ 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 = 10.1 to 18)
D1 = +0.029 / 0.008 (D1 > 18)
D2 = h6

HARDNESS (HRC)



>>Continue

EDP NO.			Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute									
TiAlN-HH									
Helix 30°									
3xD	5xD	8xD	D1			L1	L2	L3	D2
HPI503	HPI505	HPI508N	Decimal	Fraction	Metric				
HPI503094		-	.3701"	-	9.4	35	47	89	10
	HPI505094	-	.3701"	-	9.4	49	61	103	10
		HPI508094N	.3701"	-	9.4	81	95	139	10
HPI503095		-	.3740"	-	9.5	35	47	89	10
	HPI505095	-	.3740"	-	9.5	49	61	103	10
		HPI508095N	.3740"	-	9.5	81	95	139	10
HPI50309525		-	.3750"	3/8"	9.525	35	47	89	10
	HPI50509525	-	.3750"	3/8"	9.525	49	61	103	10
		HPI50809525N	.3750"	3/8"	9.525	81	95	139	10
HPI503096		-	.3780"	-	9.6	35	47	89	10
	HPI505096	-	.3780"	-	9.6	49	61	103	10
		HPI508096N	.3780"	-	9.6	81	95	139	10
HPI503097		-	.3819"	-	9.7	35	47	89	10
	HPI505097	-	.3819"	-	9.7	49	61	103	10
		HPI508097N	.3819"	-	9.7	81	95	139	10
	HPI50509703	-	.3820"	-	9.703	49	61	103	10
HPI503098		-	.3837"	-	9.746	49	61	103	10
	HPI50509746	-	.3858"	-	9.8	35	47	89	10
		-	.3858"	-	9.8	49	61	103	10
		HPI508098N	.3858"	-	9.8	81	95	139	10
HPI503099		-	.3898"	-	9.9	35	47	89	10
	HPI505099	-	.3898"	-	9.9	49	61	103	10
		HPI508099N	.3898"	-	9.9	81	95	139	10
HPI50309921		-	.3906"	25/64"	9.921	35	47	89	10
	HPI50509921	-	.3906"	25/64"	9.921	49	61	103	10
		HPI50809921N	.3906"	25/64"	9.921	81	95	139	10
HPI503100		-	.3937"	-	10	35	47	89	10
	HPI505100	-	.3937"	-	10	49	61	103	10
		HPI508100N	.3937"	-	10	81	95	139	10
HPI503101		-	.3976"	-	10.1	40	55	105	12
	HPI505101	-	.3976"	-	10.1	56	71	118	12
		HPI508101N	.3976"	-	10.1	90	106	155	12
HPI503102		-	.4016"	-	10.2	40	55	105	12
	HPI505102	-	.4016"	-	10.2	56	71	118	12
		HPI508102N	.4016"	-	10.2	90	106	155	12
HPI503103		-	.4055"	-	10.3	40	55	105	12

Applicable Working Material

SERIES	CARBON STEELS LOW (100-170)	CARBON STEELS MED (170-200)	CARBON STEELS HIGH (200)	ALLOY STEELS (40-60)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

HPI503, HPI505, HPI508N SERIES

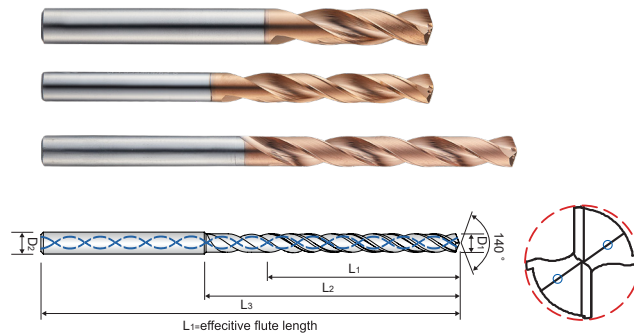
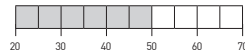
3xD, 5xD & 8xD

DRILLS / 2 FLUTES / 3xD, 5xD & 8xD / INTERNAL COOLANT / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.016 / 0.004 (D1 ≤ 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 = 10.1 to 18)
D1 = +0.029 / 0.008 (D1 > 18)
D2 = h6

HARDNESS (HRC)



>>Continue

EDP NO.			Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute									
TiAlN-HH									
Helix 30°									
3xD	5xD	8xD	D1			L1	L2	L3	D2
HPI503	HPI505	HPI508N	Decimal	Fraction	Metric				
	HPI505123	-	.4843"	-	12.3	60	77	124	14
HPI50312304		-	.4844"	31/64"	12.304	43	60	107	14
	HPI50512304	-	.4844"	31/64"	12.304	60	77	124	14
		HPI50812304N	.4844"	31/64"	12.304	113	133	182	14
	HPI505124	-	.4882"	-	12.4	60	77	124	14
HPI503125		-	.4921"	-	12.5	43	60	107	14
	HPI505125	-	.4921"	-	12.5	60	77	124	14
		HPI508125N	.4921"	-	12.5	113	133	182	14
HPI503126		-	.4961"	-	12.6	43	60	107	14
	HPI505126	-	.4961"	-	12.6	60	77	124	14
HPI503127		-	.5000"	1/2"	12.7	43	60	107	14
	HPI505127	-	.5000"	1/2"	12.7	60	77	124	14
		HPI508127N	.5000"	1/2"	12.7	113	133	182	14
HPI503128		-	.5039"	-	12.8	43	60	107	14
	HPI505128	-	.5039"	-	12.8	60	77	124	14
		HPI508128N	.5039"	-	12.8	113	133	182	14
HPI503129		-	.5079"	-	12.9	43	60	107	14
	HPI505129	-	.5079"	-	12.9	60	77	124	14
	HPI50512903	-	.5080"	-	12.903	60	77	124	14
HPI503130		-	.5118"	-	13	43	60	107	14
	HPI505130	-	.5118"	-	13	60	77	124	14
		HPI508130N	.5118"	-	13	113	133	182	14
	HPI50513096	-	.5156"	33/64"	13.096	60	77	124	14
	HPI505131	-	.5157"	-	13.1	60	77	124	14
HPI503132		-	.5197"	-	13.2	43	60	107	14
	HPI505132	-	.5197"	-	13.2	60	77	124	14
HPI503133		-	.5236"	-	13.3	43	60	107	14
	HPI505133	-	.5236"	-	13.3	60	77	124	14
	HPI505134	-	.5276"	-	13.4	60	77	124	14
HPI50313494		-	.5313"	17/32"	13.494	43	60	107	14
	HPI50513494	-	.5313"	17/32"	13.494	60	77	124	14
		HPI50813494N	.5313"	17/32"	13.494	113	133	182	14

Applicable Working Material

Series	Carbon Steels Low (100-170)	Carbon Steels Med (170-200)	Carbon Steels High (180)	Alloy Steels (40-60)	Die Steels	Stainless Steels 300	Stainless Steels 400	Stainless Steels 17-4 PH	Cast Iron	Aluminum (6061, 7075)	Aluminum Castings	Nickel Alloys (Inconel)	Titanium (6Al4V)	Hardened Steels 35 HRC	Hardened Steels 35-45 HRC	Hardened Steels 45-50 HRC	Hardened Steels 50-70 HRC	Magnesium	Brass Bronze	Graphite	Cobalt Chrome
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

HPI503, HPI505, HPI508N SERIES

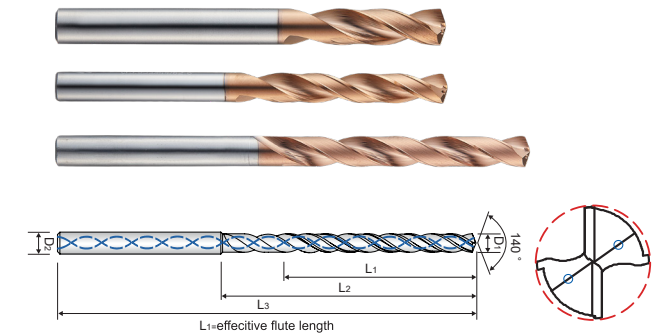
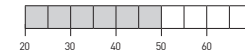
3xD, 5xD & 8xD

DRILLS / 2 FLUTES / 3xD, 5xD & 8xD / INTERNAL COOLANT / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.016 / 0.004 (D1 ≤ 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 = 10.1 to 18)
D1 = +0.029 / 0.008 (D1 > 18)
D2 = h6

HARDNESS (HRC)



>>Continue

EDP NO.			Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute									
TiAlN-HH									
Helix 30°									
3xD	5xD	8xD	D1			L1	L2	L3	D2
HPI503	HPI505	HPI508N	Decimal	Fraction	Metric				
HPI503135		-	.5315"	-	13.5	43	60	107	14
	HPI505135	-	.5315"	-	13.5	60	77	124	14
		HPI508135N	.5315"	-	13.5	113	133	182	14
HPI503137		-	.5394"	-	13.7	43	60	107	14
	HPI505137	-	.5394"	-	13.7	60	77	124	14
	HPI505138	-	.5433"	-	13.8	60	77	124	14
HPI50313891		-	.5469"	35/64"	13.891	43	60	107	14
	HPI50513891	-	.5469"	35/64"	13.891	60	77	124	14
HPI503140		-	.5512"	-	14	43	60	107	14
	HPI505140	-	.5512"	-	14	60	77	124	14
		HPI508140N	.5512"	-	14	113	133	182	14
HPI503141		-	.5551"	-	14.1	45	65	115	16
	HPI505141	-	.5551"	-	14.1	63	83	133	16
HPI503142		-	.5591"	-	14.2	45	65	115	16
	HPI505142	-	.5591"	-	14.2	63	83	133	16
HPI50314288		-	.5625"	9/16"	14.288	45	65	115	16
	HPI50514288	-	.5625"	9/16"	14.288	63	83	133	16
		HPI50814288N	.5625"	9/16"	14.288	129	152	204	16
HPI503145		-	.5709"	-	14.5	45	65	115	16
	HPI505145	-	.5709"	-	14.5	63	83	133	16
		HPI508145N	.5709"	-	14.5	129	152	204	16
HPI503146		-	.5748"	-	14.6	45	65	115	16
	HPI505146	-	.5748"	-	14.6	63	83	133	16
HPI503147		-	.5787"	-	14.7	45	65	115	16
	HPI505147	-	.5787"	-	14.7	63	83	133	16
	HPI505148	-	.5787"	-	14.7	63	83	133	16
	HPI505149	-	.5866"	-	14.9	63	83	133	16
HPI503150		-	.5906"	-	15	45	65	115	16
	HPI505150	-	.5906"	-	15	63	83	133	16
		HPI508150N	.5906"	-	15	129	152	204	16
HPI50315081		-	.5937"	19/32"	15.081	45	65	115	16
	HPI50515081	-	.5937"	19/32"	15.081	63	83	133	16

Applicable Working Material

Series	Carbon Steels Low (100-170)	Carbon Steels Med (170-200)	Carbon Steels High (180)	Alloy Steels (40-60)	Die Steels	Stainless Steels 300	Stainless Steels 400	Stainless Steels 17-4 PH	Cast Iron	Aluminum (6061, 7075)	Aluminum Castings	Nickel Alloys (Inconel)	Titanium (6Al4V)	Hardened Steels 35 HRC	Hardened Steels 35-45 HRC	Hardened Steels 45-50 HRC	Hardened Steels 50-70 HRC	Magnesium	Brass Bronze	Graphite	Cobalt Chrome
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



HPI503, HPI505, HPI508N SERIES

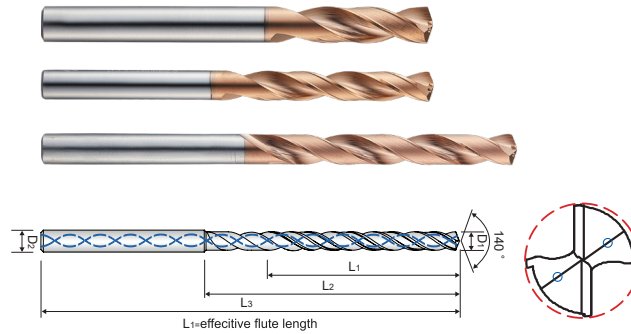
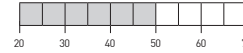
3xD, 5xD & 8xD

DRILLS / 2 FLUTES / 3xD, 5xD & 8xD / INTERNAL COOLANT / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.016 / 0.004 (D1 ≤ 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 = 10.1 to 18)
D1 = +0.029 / 0.008 (D1 > 18)
D2 = h6

HARDNESS (HRC)



>>Continue



HPI503, HPI505, HPI508N SERIES

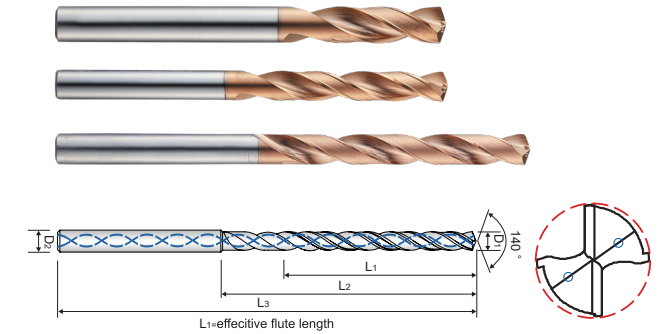
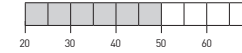
3xD, 5xD & 8xD

DRILLS / 2 FLUTES / 3xD, 5xD & 8xD / INTERNAL COOLANT / DOUBLE MARGIN / TiAlN-HH COATING

TOLERANCE (Metric)

D1 = +0.016 / 0.004 (D1 ≤ 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 = 10.1 to 18)
D1 = +0.029 / 0.008 (D1 > 18)
D2 = h6

HARDNESS (HRC)



>>Continue

EDP NO.			Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute									
TiAlN-HH									
Helix 30°									
3xD	5xD	8xD	D1			L1	L2	L3	D2
HPI503	HPI505	HPI508N	Decimal	Fraction	Metric				
	HPI505151	-	.5945"	-	15.1	63	83	133	16
		HPI508151N	.5945"	-	15.1	129	152	204	16
	HPI505152	-	.5984"	-	15.2	63	83	133	16
		HPI508152N	.5984"	-	15.2	129	152	204	16
		HPI508153N	.6024"	-	15.3	129	152	204	16
HPI503155		-	.6102"	-	15.5	45	65	115	16
	HPI505155	-	.6102"	-	15.5	63	83	133	16
		HPI508155N	.6102"	-	15.5	129	152	204	16
	HPI505156	-	.6142"	-	15.6	63	83	133	16
HPI503157		-	.6181"	-	15.7	45	65	115	16
	HPI505157	-	.6181"	-	15.7	63	83	133	16
HPI503158		-	.6220"	-	15.8	45	65	115	16
	HPI505158	-	.6220"	-	15.8	63	83	133	16
		HPI508158N	.6220"	-	15.8	129	152	204	16
HPI50315875		-	.6250"	5/8"	15.875	45	65	115	16
	HPI50515875	-	.6250"	5/8"	15.875	63	83	133	16
		HPI50815875N	.6250"	5/8"	15.875	129	152	204	16
	HPI505159	-	.6260"	-	15.9	63	83	133	16
HPI503160		-	.6299"	-	16	45	65	115	16
	HPI505160	-	.6299"	-	16	63	83	133	16
		HPI508160N	.6299"	-	16	129	152	204	16
	HPI50516078	-	.6330"	-	16.078	71	93	143	18
		HPI50816078N	.6330"	-	16.078	145.35	171	223	18
HPI503162		-	.6378"	-	16.2	51	73	123	18
	HPI505162	-	.6378"	-	16.2	71	93	143	18
		HPI508162N	.6378"	-	16.2	145	171	223	18
HPI503163		-	.6457"	-	16.4	51	73	123	18
	HPI505164	-	.6457"	-	16.4	71	93	143	18
HPI503165		-	.6496"	-	16.5	51	73	123	18
	HPI505165	-	.6496"	-	16.5	71	93	143	18
		HPI508165N	.6496"	-	16.5	145	171	223	18
	HPI505166	-	.6535"	-	16.6	71	93	143	18

Applicable Working Material

Series	Carbon Steels Low (100-170)	Carbon Steels Med (170-200)	Carbon Steels High (180)	Alloy Steels (40-60)	Die Steels	Stainless Steels 300	Stainless Steels 400	Stainless Steels 17-4 PH	Cast Iron	Aluminum (6061, 7075)	Aluminum Castings	Nickel Alloys (Inconel)	Titanium (6Al4V)	Hardened Steels 35 HRC	Hardened Steels 35-45 HRC	Hardened Steels 45-50 HRC	Hardened Steels 50-70 HRC	Magnesium	Brass Bronze	Graphite	Cobalt Chrome	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

EDP NO.			Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute									
TiAlN-HH									
Helix 30°									
3xD	5xD	8xD	D1			L1	L2	L3	D2
HPI503	HPI505	HPI508N	Decimal	Fraction	Metric				
	HPI50516667	-	.6562"	21/32"	16.667	71	93	143	18
HPI503167		-	.6575"	-	16.7	51	73	123	18
	HPI505167	-	.6575"	-	16.7	71	93	143	18
HPI503168		-	.6614"	-	16.8	51	73	123	18
HPI503170		-	.6693"	-	17	51	73	123	18
	HPI505170	-	.6693"	-	17	71	93	143	18
		HPI508170N	.6693"	-	17	145	171	223	18
HPI503171		-	.6732"	-	17.1	51	73	123	18
	HPI505171	-	.6732"	-	17.1	71	93	143	18
	HPI505172	-	.6772"	-	17.2	71	93	143	18
	HPI505173	-	.6811"	-	17.3	71	93	143	18
HPI50317463		-	.6875"	11/16"	17.463	51	73	123	18
	HPI50517463	-	.6875"	11/16"	17.463	71	93	143	18
		HPI50817463N	.6875"	11/16"	17.463	145	171	223	18
HPI503175		-	.6890"	-	17.5	51	73	123	18
	HPI505175	-	.6890"	-	17.5	71	93	143	18
		HPI508175N	.6890"	-	17.5	145	171	223	18
	HPI505176	-	.6929"	-	17.6	71	93	143	18
	HPI505177	-	.6969"	-	17.7	71	93	143	18
	HPI505178	-	.7008"	-	17.8	71	93	143	18
	HPI505179	-	.7047"	-	17.9	71	93	143	18
HPI503180		-	.7087"	-	18	51	73	123	18
	HPI505180	-	.7087"	-	18	71	93	143	18
		HPI508180N	.7087"	-	18	145	171	223	18
	HPI505184	-	.7244"	-	18.4	77	101	153	20
HPI503185		-	.7283"	-	18.5	55	79	131	20
	HPI505185	-	.7283"	-	18.5	77	101	153	20
		HPI508185N	.7283"	-	18.5	162	191	244	20
	HPI505186	-	.7323"	-	18.6	77	101	153	20
	HPI505188	-	.7402"	-	18.8	77	101	153	20
	HPI505189	-	.7441"	-	18.9	77	101	153	20
HPI503190		-	.7480"	-	19	55	79	131	20

Applicable Working Material

Series	Carbon Steels Low (100-170)	Carbon Steels Med (170-200)	Carbon Steels High (180)	Alloy Steels (40-60)	Die Steels	Stainless Steels 300	Stainless Steels 400	Stainless Steels 17-4 PH	Cast Iron	Aluminum (6061, 7075)	Aluminum Castings	Nickel Alloys (Inconel)	Titanium (6Al4V)	Hardened Steels 35 HRC	Hardened Steels 35-45 HRC	Hardened Steels 45-50 HRC	Hardened Steels 50-70 HRC	Magnesium	Brass Bronze	Graphite	Cobalt Chrome
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

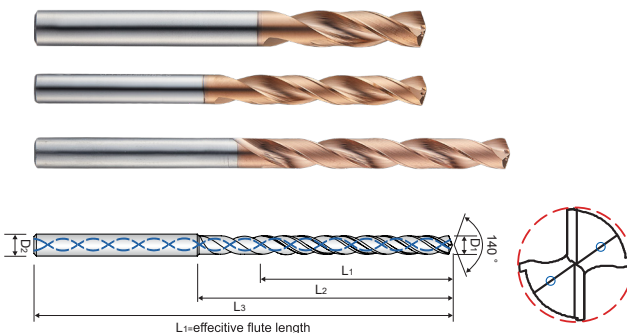
○:GOOD ◎:BEST



HPI503, HPI505, HPI508N SERIES

3xD, 5xD & 8xD

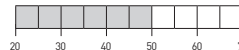
DRILLS / 2 FLUTES / 3xD, 5xD & 8xD / INTERNAL COOLANT / DOUBLE MARGIN / TiAlN-HH COATING



TOLERANCE (Metric)

D1 = +0.016 / 0.004 (D1 ≤ 6)
D1 = +0.021 / 0.006 (D1 = 6.1 to 10)
D1 = +0.025 / 0.007 (D1 = 10.1 to 18)
D1 = +0.029 / 0.008 (D1 > 18)
D2 = h6

HARDNESS (HRC)



EDP NO.			Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute									
TiAlN-HH									
Helix 30°									
3xD	5xD	8xD	D1			L1	L2	L3	D2
HPI503	HPI505	HPI508N	Decimal	Fraction	Metric				
	HPI505190	-	.7480"	-	19	77	101	153	20
		HPI508190N	.7480"	-	19	162	191	244	20
HPI5031905		-	.7500"	3/4"	19.05	55	79	131	20
	HPI5051905	-	.7500"	3/4"	19.05	77	101	153	20
		HPI5081905N	.7500"	3/4"	19.05	162	191	244	20
	HPI505192	-	.7559"	-	19.2	77	101	153	20
	HPI50519253	-	.7580"	-	19.253	77	101	153	20
		HPI50819253N	.7580"	-	19.253	162	191	244	20
	HPI50519446	-	.7656"	49/64"	19.446	77	101	153	20
	HPI505195	-	.7677"	-	19.5	77	101	153	20
	HPI505197	-	.7756"	-	19.7	77	101	153	20
		HPI508198N	.7795"	-	19.8	162	191	244	20
	HPI50519844	-	.7813"	-	19.844	77	101	153	20
HPI503200		-	.7874"	-	20	55	79	131	20
	HPI505200	-	.7874"	-	20	77	101	153	20
		HPI508200N	.7874"	-	20	162	191	244	20

HPI503, HPI505, HPI508N SERIES

RPM=rev./min.
FEED=min/rev.
IPR=inch/rev.

Work Material	Non-Alloyed Steels			Alloy Steels			Soft Cast Iron			Strong Cast Iron		
	~ HRC 20			HRC 20 ~			~ 240 BHN			300 BHN ~		
Strength	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)
3	16,000	0.16	0.006	14,500	0.16	0.006	26,000	0.16	0.006	17,000	0.16	0.006
4	12,000	0.17	0.007	11,000	0.17	0.007	20,000	0.17	0.007	13,000	0.17	0.007
5	9,550	0.18	0.007	8,600	0.18	0.007	16,000	0.18	0.007	10,000	0.18	0.007
6	8,000	0.20	0.008	7,200	0.20	0.008	13,000	0.20	0.008	8,500	0.20	0.008
7	6,800	0.22	0.009	6,100	0.22	0.009	11,500	0.22	0.009	7,300	0.22	0.009
8	6,000	0.24	0.009	5,400	0.24	0.009	9,900	0.24	0.009	6,400	0.24	0.009
9	5,300	0.27	0.011	4,800	0.27	0.011	8,800	0.27	0.011	5,700	0.27	0.011
10	4,800	0.30	0.012	4,300	0.30	0.012	8,000	0.30	0.012	5,100	0.30	0.012
12	4,000	0.33	0.013	3,600	0.33	0.013	6,600	0.33	0.013	4,250	0.33	0.013
14	3,400	0.36	0.014	3,050	0.36	0.014	5,700	0.36	0.014	3,650	0.36	0.014
16	3,000	0.39	0.015	2,700	0.39	0.015	5,000	0.39	0.015	3,200	0.39	0.015
18	2,650	0.42	0.017	2,400	0.42	0.017	4,400	0.42	0.017	2,850	0.42	0.017
20	2,400	0.45	0.018	2,150	0.45	0.018	4,000	0.45	0.018	2,550	0.45	0.018

- HPI503(3xD) : FEED 100%
- HPI505(5xD) : FEED 90%
- HPI508N(8xD) : FEED 70~80%

Applicable Working Material

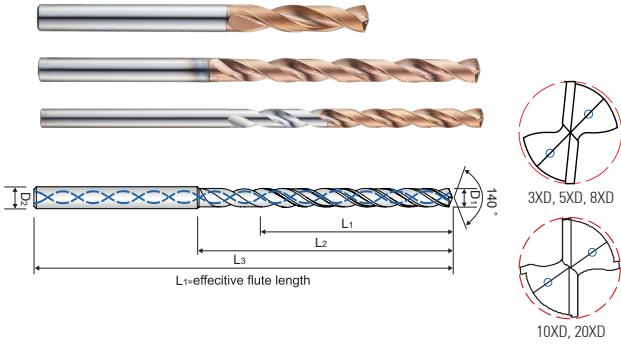
○:GOOD ◎:BEST

SERIES	CARBON STEELS (LOW CARBON)	CARBON STEELS (MED CARBON)	CARBON STEELS (HIGH CARBON)	ALLOY STEELS (AISI 4140, 4340)	DIE STEELS	STAINLESS STEELS (300)	STAINLESS STEELS (400)	STAINLESS STEELS (17-4 PH)	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6AL4V)	HARDENED STEELS (35-45 HRC)	HARDENED STEELS (45-50 HRC)	HARDENED STEELS (50-70 HRC)	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

SF503, SF505, SF508, SF510 & SF520 SERIES

3xD, 5xD, 8xD, 10xD & 20xD

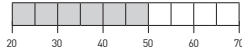
DRILLS / 2 FLUTES / 3xD, 5xD, 8xD, 10xD & 20xD / INTERNAL COOLANT / SINGLE & DOUBLE MARGIN / TiAlN-HH COATING AlCrN COATING (8XD ONLY)



TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 = 10.1 to 18)
D1 = +0 / -0.033 (D1 > 18)
D2 = h6

HARDNESS (HRC)

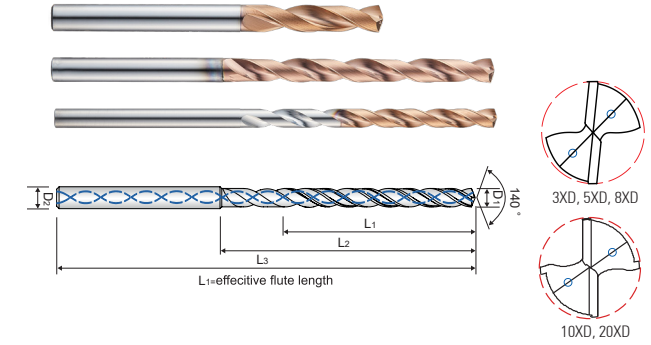


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SF503, SF505, SF508, SF510 & SF520 SERIES

3xD, 5xD, 8xD, 10xD & 20xD

DRILLS / 2 FLUTES / 3xD, 5xD, 8xD, 10xD & 20xD / INTERNAL COOLANT / SINGLE & DOUBLE MARGIN / TiAlN-HH COATING AlCrN COATING (8XD ONLY)



TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 = 10.1 to 18)
D1 = +0 / -0.033 (D1 > 18)
D2 = h6

HARDNESS (HRC)



>>Continue

EDP NO.					Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute											
TiAlN-HH COAT / AlCrN COAT (8XD ONLY)											
Helix 30°											
3xD	5xD	8xD	10xD	20xD	D1			L1	L2	L3	D2
SF503	SF505	SF508	SF510	SF520	Decimal	Fraction	Metric				
-	-	SF508098	-	-	0.3858"	-	9.800	-	95.00	139.00	10.00
-	-	-	SF510098	-	0.3858"	-	9.800	62.000	131.00	186.00	10.00
-	-	-	-	SF520098	0.3858"	-	9.800	62.000	231.00	286.00	10.00
SF503099	-	-	-	-	0.3898"	-	9.900	-	47.00	89.00	10.00
-	SF505099	-	-	-	0.3898"	-	9.900	-	62.00	108.00	10.00
-	-	SF508099	-	-	0.3898"	-	9.900	-	95.00	139.00	10.00
-	-	-	SF510099	-	0.3898"	-	9.900	62.000	131.00	186.00	10.00
-	-	-	-	SF520099	0.3898"	-	9.900	62.000	231.00	286.00	10.00
SF50309921	-	-	-	-	0.3906"	25/64"	9.921	-	47.00	89.00	10.00
-	SF50509921	-	-	-	0.3906"	25/64"	9.921	-	62.00	108.00	10.00
-	-	SF50809921	-	-	0.3906"	25/64"	9.921	-	95.00	139.00	10.00
SF503100	-	-	-	-	0.3937"	-	10.000	-	47.00	89.00	10.00
-	SF505100	-	-	-	0.3937"	-	10.000	-	62.00	108.00	10.00
-	-	SF508100	-	-	0.3937"	-	10.000	-	95.00	139.00	10.00
-	-	-	SF510100	-	0.3937"	-	10.000	62.000	131.00	186.00	10.00
-	-	-	-	SF520100	0.3937"	-	10.000	62.000	231.00	286.00	10.00
SF503101	-	-	-	-	0.3976"	-	10.100	-	51.00	95.00	11.00
-	SF505101	-	-	-	0.3976"	-	10.100	-	68.00	125.00	11.00
-	-	SF508101	-	-	0.3976"	-	10.100	-	106.00	155.00	11.00
-	-	-	SF510101	-	0.3976"	-	10.100	68.000	138.00	193.00	11.00
SF503102	-	-	-	-	0.4016"	-	10.200	-	51.00	95.00	11.00
-	SF505102	-	-	-	0.4016"	-	10.200	-	68.00	125.00	11.00
-	-	SF508102	-	-	0.4016"	-	10.200	-	106.00	155.00	11.00
-	-	-	SF510102	-	0.4016"	-	10.200	68.000	138.00	193.00	11.00
SF503103	-	-	-	-	0.4055"	-	10.300	-	51.00	95.00	11.00
-	SF505103	-	-	-	0.4055"	-	10.300	-	68.00	125.00	11.00
-	-	SF508103	-	-	0.4055"	-	10.300	-	106.00	155.00	11.00
-	-	-	SF510103	-	0.4055"	-	10.300	68.000	138.00	193.00	11.00
SF5031032	-	-	-	-	0.4063"	13/32"	10.320	-	51.00	95.00	11.00
-	SF5051032	-	-	-	0.4063"	13/32"	10.320	-	68.00	125.00	11.00
-	-	SF5081032	-	-	0.4063"	13/32"	10.320	-	106.00	155.00	11.00
SF503104	-	-	-	-	0.4094"	-	10.400	-	51.00	95.00	11.00

Applicable Working Material

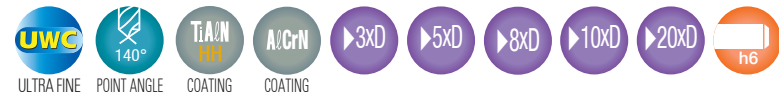
SERIES	CARBON STEELS LOW (1001-1009)	CARBON STEELS MED (1020-1040)	CARBON STEELS HIGH (1045-1055)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

Applicable Working Material

SERIES	CARBON STEELS LOW (1001-1009)	CARBON STEELS MED (1020-1040)	CARBON STEELS HIGH (1045-1055)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

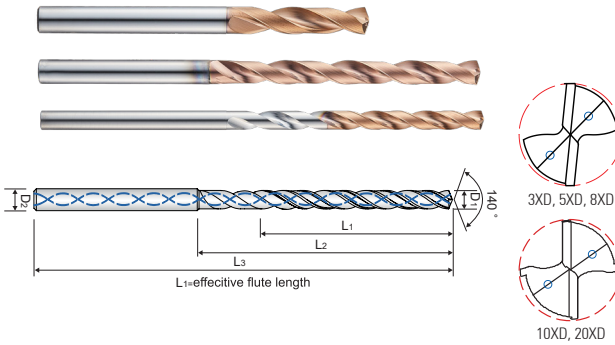
○:GOOD ◎:BEST



SF503, SF505, SF508, SF510 & SF520 SERIES

3xD, 5xD, 8xD, 10xD & 20xD

DRILLS / 2 FLUTES / 3xD, 5xD, 8xD, 10xD & 20xD / INTERNAL COOLANT / SINGLE & DOUBLE MARGIN / TiAlN-HH COATING AlCrN COATING (8XD ONLY)



TOLERANCE (Metric)	HARDNESS (HRc)
D1 = +0 / -0.014 (D1 ≤ 3)	
D1 = +0 / -0.018 (D1 = 3.1 to 6)	
D1 = +0 / -0.022 (D1 = 6.1 to 10)	
D1 = +0 / -0.027 (D1 = 10.1 to 18)	
D1 = +0 / -0.033 (D1 > 18)	
D2 = h6	

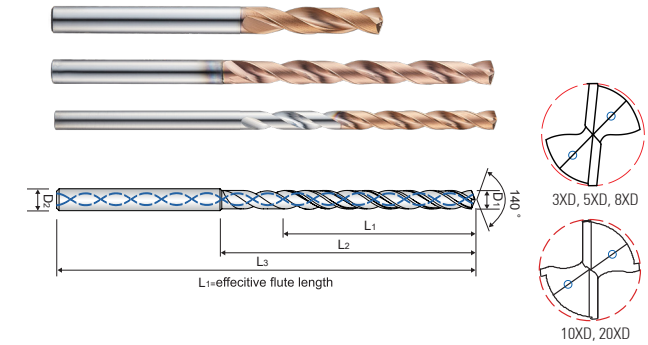
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SF503, SF505, SF508, SF510 & SF520 SERIES

3xD, 5xD, 8xD, 10xD & 20xD

DRILLS / 2 FLUTES / 3xD, 5xD, 8xD, 10xD & 20xD / INTERNAL COOLANT / SINGLE & DOUBLE MARGIN / TiAlN-HH COATING AlCrN COATING (8XD ONLY)



TOLERANCE (Metric)	HARDNESS (HRc)
D1 = +0 / -0.014 (D1 ≤ 3)	
D1 = +0 / -0.018 (D1 = 3.1 to 6)	
D1 = +0 / -0.022 (D1 = 6.1 to 10)	
D1 = +0 / -0.027 (D1 = 10.1 to 18)	
D1 = +0 / -0.033 (D1 > 18)	
D2 = h6	

>>Continue

EDP NO.					Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute											
TiAlN-HH COAT / AlCrN COAT (8XD ONLY)											
Helix 30°											
3xD	5xD	8xD	10xD	20xD	D1			L1	L2	L3	D2
SF503	SF505	SF508	SF510	SF520	Decimal	Fraction	Metric				
-	-	SF508110	-	-	0.4331"	-	11.000	-	106.00	155.00	11.00
-	-	-	SF510110	-	0.4331"	-	11.000	68.000	144.00	205.00	11.00
SF503111	-	-	-	-	0.4370"	-	11.100	-	54.00	102.00	12.00
-	SF505111	-	-	-	0.4370"	-	11.100	-	71.00	133.00	12.00
-	-	SF508111	-	-	0.4370"	-	11.100	-	114.00	163.00	12.00
-	-	-	SF510111	-	0.4370"	-	11.100	71.000	151.00	212.00	12.00
SF50311113	-	-	-	-	0.4375"	7/16"	11.113	-	54.00	102.00	12.00
-	SF50511113	-	-	-	0.4375"	7/16"	11.113	-	71.00	133.00	12.00
-	-	SF50811113	-	-	0.4375"	7/16"	11.113	-	114.00	163.00	12.00
SF503112	-	-	-	-	0.4409"	-	11.200	-	54.00	102.00	12.00
-	SF505112	-	-	-	0.4409"	-	11.200	-	71.00	133.00	12.00
-	-	SF508112	-	-	0.4409"	-	11.200	-	114.00	163.00	12.00
-	-	-	SF510112	-	0.4409"	-	11.200	71.000	151.00	212.00	12.00
SF503113	-	-	-	-	0.4449"	-	11.300	-	54.00	102.00	12.00
-	SF505113	-	-	-	0.4449"	-	11.300	-	71.00	133.00	12.00
-	-	SF508113	-	-	0.4449"	-	11.300	-	114.00	163.00	12.00
-	-	-	SF510113	-	0.4449"	-	11.300	71.000	151.00	212.00	12.00
SF503114	-	-	-	-	0.4488"	-	11.400	-	54.00	102.00	12.00
-	SF505114	-	-	-	0.4488"	-	11.400	-	71.00	133.00	12.00
-	-	SF508114	-	-	0.4488"	-	11.400	-	114.00	163.00	12.00
-	-	-	SF510114	-	0.4488"	-	11.400	71.000	151.00	212.00	12.00
SF503115	-	-	-	-	0.4528"	-	11.500	-	54.00	102.00	12.00
-	SF505115	-	-	-	0.4528"	-	11.500	-	71.00	133.00	12.00
-	-	SF508115	-	-	0.4528"	-	11.500	-	114.00	163.00	12.00
-	-	-	SF510115	-	0.4528"	-	11.500	71.000	151.00	212.00	12.00
-	-	SF50811509	-	-	0.4531"	29/64"	11.509	-	114.00	163.00	12.00
SF503116	-	-	-	-	0.4567"	-	11.600	-	54.00	102.00	12.00
-	SF505116	-	-	-	0.4567"	-	11.600	-	71.00	133.00	12.00
-	-	SF508116	-	-	0.4567"	-	11.600	-	114.00	163.00	12.00
-	-	-	SF510116	-	0.4567"	-	11.600	71.000	157.00	218.00	12.00
SF503117	-	-	-	-	0.4606"	-	11.700	-	54.00	102.00	12.00
-	SF505117	-	-	-	0.4606"	-	11.700	-	71.00	133.00	12.00

Applicable Working Material

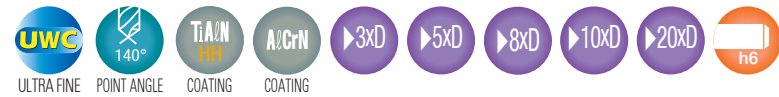
SERIES	CARBON STEELS LOW (100-170)	CARBON STEELS MED (180-200)	CARBON STEELS HIGH (180)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRc	HARDENED STEELS 35-45 HRc	HARDENED STEELS 45-50 HRc	HARDENED STEELS 50-70 HRc	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

Applicable Working Material

SERIES	CARBON STEELS LOW (100-170)	CARBON STEELS MED (180-200)	CARBON STEELS HIGH (180)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRc	HARDENED STEELS 35-45 HRc	HARDENED STEELS 45-50 HRc	HARDENED STEELS 50-70 HRc	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

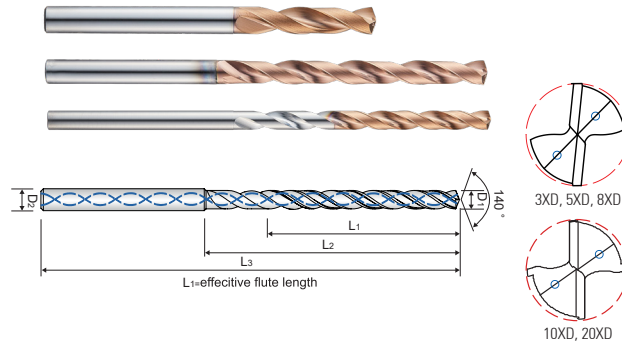
○:GOOD ◎:BEST



SF503, SF505, SF508, SF510 & SF520 SERIES

3xD, 5xD, 8xD, 10xD & 20xD

DRILLS / 2 FLUTES / 3xD, 5xD, 8xD, 10xD & 20xD / INTERNAL COOLANT / SINGLE & DOUBLE MARGIN / TiAlN-HH COATING AlCrN COATING (8XD ONLY)



TOLERANCE (Metric)	HARDNESS (HRc)
D1 = +0 / -0.014 (D1 ≤ 3)	
D1 = +0 / -0.018 (D1 = 3.1 to 6)	
D1 = +0 / -0.022 (D1 = 6.1 to 10)	
D1 = +0 / -0.027 (D1 = 10.1 to 18)	
D1 = +0 / -0.033 (D1 > 18)	
D2 = h6	

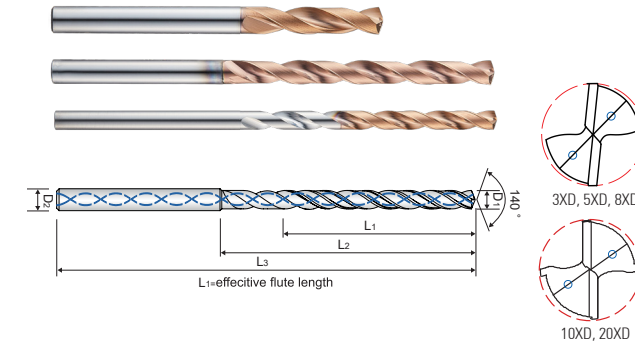
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SF503, SF505, SF508, SF510 & SF520 SERIES

3xD, 5xD, 8xD, 10xD & 20xD

DRILLS / 2 FLUTES / 3xD, 5xD, 8xD, 10xD & 20xD / INTERNAL COOLANT / SINGLE & DOUBLE MARGIN / TiAlN-HH COATING AlCrN COATING (8XD ONLY)



TOLERANCE (Metric)	HARDNESS (HRc)
D1 = +0 / -0.014 (D1 ≤ 3)	
D1 = +0 / -0.018 (D1 = 3.1 to 6)	
D1 = +0 / -0.022 (D1 = 6.1 to 10)	
D1 = +0 / -0.027 (D1 = 10.1 to 18)	
D1 = +0 / -0.033 (D1 > 18)	
D2 = h6	

>>Continue

EDP NO.					Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute											
TiAlN-HH COAT / AlCrN COAT (8XD ONLY)											
Helix 30°											
3xD	5xD	8xD	10xD	20xD	D1			L1	L2	L3	D2
SF503	SF505	SF508	SF510	SF520	Decimal	Fraction	Metric				
-	SF505142	-	-	-	0.5591"	-	14.200	-	83.00	148.00	15.00
SF50314288	-	-	-	-	0.5625"	9/16"	14.288	-	62.00	111.00	15.00
-	SF50514288	-	-	-	0.5625"	9/16"	14.288	-	83.00	148.00	15.00
-	-	SF50814288	-	-	0.5625"	9/16"	14.288	-	152.00	204.00	15.00
SF503143	-	-	-	-	0.5630"	-	14.300	-	62.00	111.00	15.00
-	SF505143	-	-	-	0.5630"	-	14.300	-	83.00	148.00	15.00
SF503144	-	-	-	-	0.5669"	-	14.400	-	62.00	111.00	15.00
-	SF505144	-	-	-	0.5669"	-	14.400	-	83.00	148.00	15.00
SF503145	-	-	-	-	0.5709"	-	14.500	-	62.00	111.00	15.00
-	SF505145	-	-	-	0.5709"	-	14.500	-	83.00	148.00	15.00
-	-	SF508145	-	-	0.5709"	-	14.500	-	152.00	204.00	15.00
SF503146	-	-	-	-	0.5748"	-	14.600	-	62.00	111.00	15.00
-	SF505146	-	-	-	0.5748"	-	14.600	-	83.00	148.00	15.00
-	-	SF50814683	-	-	0.5781"	37/64"	14.683	-	152.00	204.00	15.00
SF503147	-	-	-	-	0.5787"	-	14.700	-	62.00	111.00	15.00
-	SF505147	-	-	-	0.5787"	-	14.700	-	83.00	148.00	15.00
-	-	SF508147	-	-	0.5787"	-	14.700	-	152.00	204.00	15.00
SF503148	-	-	-	-	0.5827"	-	14.800	-	62.00	111.00	15.00
-	SF505148	-	-	-	0.5827"	-	14.800	-	83.00	148.00	15.00
SF503149	-	-	-	-	0.5866"	-	14.900	-	62.00	111.00	15.00
-	SF505149	-	-	-	0.5866"	-	14.900	-	83.00	148.00	15.00
SF503150	-	-	-	-	0.5906"	-	15.000	-	62.00	111.00	15.00
-	SF505150	-	-	-	0.5906"	-	15.000	-	83.00	148.00	15.00
-	-	SF508150	-	-	0.5906"	-	15.000	-	152.00	204.00	15.00
SF50315081	-	-	-	-	0.5937"	19/32"	15.081	-	64.00	115.00	16.00
-	SF50515081	-	-	-	0.5937"	19/32"	15.081	-	90.00	152.00	16.00
-	-	SF50815081	-	-	0.5937"	19/32"	15.081	-	152.00	204.00	16.00
SF503151	-	-	-	-	0.5945"	-	15.100	-	64.00	115.00	16.00
-	SF505151	-	-	-	0.5945"	-	15.100	-	90.00	152.00	16.00
SF503152	-	-	-	-	0.5984"	-	15.200	-	64.00	115.00	16.00
-	SF505152	-	-	-	0.5984"	-	15.200	-	90.00	152.00	16.00
SF503154	-	-	-	-	0.6063"	-	15.400	-	64.00	115.00	16.00

Applicable Working Material

SERIES	CARBON STEELS LOW (100L-100)	CARBON STEELS MED (100L-100)	CARBON STEELS HIGH (100L-100)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRc	HARDENED STEELS 35-45 HRc	HARDENED STEELS 45-50 HRc	HARDENED STEELS 50-70 HRc	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

Applicable Working Material

SERIES	CARBON STEELS LOW (100L-100)	CARBON STEELS MED (100L-100)	CARBON STEELS HIGH (100L-100)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRc	HARDENED STEELS 35-45 HRc	HARDENED STEELS 45-50 HRc	HARDENED STEELS 50-70 HRc	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

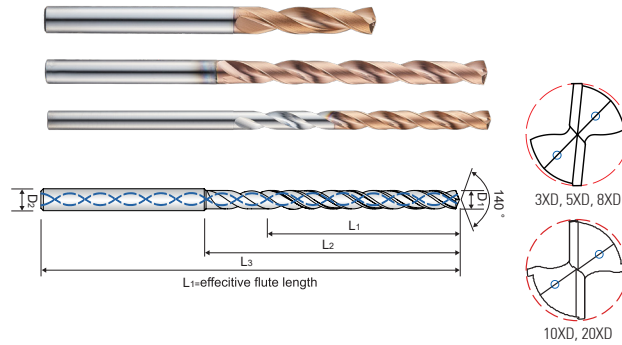
○:GOOD ◎:BEST



SF503, SF505, SF508, SF510 & SF520 SERIES

3xD, 5xD, 8xD, 10xD & 20xD

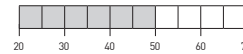
DRILLS / 2 FLUTES / 3xD, 5xD, 8xD, 10xD & 20xD / INTERNAL COOLANT / SINGLE & DOUBLE MARGIN / TiAlN-HH COATING AlCrN COATING (8XD ONLY)



TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 = 10.1 to 18)
D1 = +0 / -0.033 (D1 > 18)
D2 = h6

HARDNESS (HRc)



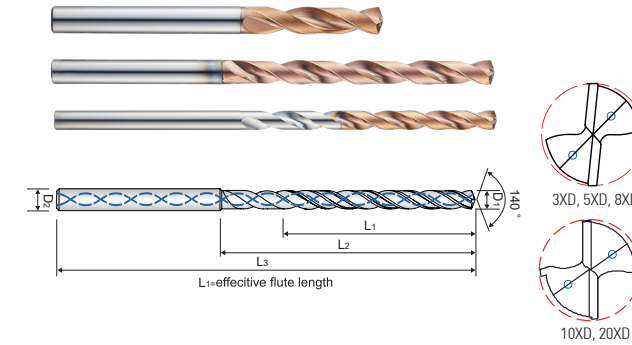
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SF503, SF505, SF508, SF510 & SF520 SERIES

3xD, 5xD, 8xD, 10xD & 20xD

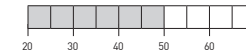
DRILLS / 2 FLUTES / 3xD, 5xD, 8xD, 10xD & 20xD / INTERNAL COOLANT / SINGLE & DOUBLE MARGIN / TiAlN-HH COATING AlCrN COATING (8XD ONLY)



TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 = 10.1 to 18)
D1 = +0 / -0.033 (D1 > 18)
D2 = h6

HARDNESS (HRc)



EDP NO.					Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute											
TiAlN-HH COAT / AlCrN COAT (8XD ONLY)											
Helix 30°											
3xD	5xD	8xD	10xD	20xD	D1			L1	L2	L3	D2
SF503	SF505	SF508	SF510	SF520	Decimal	Fraction	Metric				
SF503172	-	-	-	-	0.6772"	-	17.200	-	66.00	123.00	18.00
-	SF505172	-	-	-	0.6772"	-	17.200	-	100.00	157.00	18.00
SF50317463	-	-	-	-	0.6875"	11/16"	17.463	-	66.00	123.00	18.00
-	SF50517463	-	-	-	0.6875"	11/16"	17.463	-	100.00	157.00	18.00
-	-	SF50817463	-	-	0.6875"	11/16"	17.463	-	171.00	223.00	18.00
SF503175	-	-	-	-	0.6890"	-	17.500	-	66.00	123.00	18.00
-	SF505175	-	-	-	0.6890"	-	17.500	-	100.00	157.00	18.00
-	-	SF508175	-	-	0.6890"	-	17.500	-	171.00	223.00	18.00
SF503177	-	-	-	-	0.6969"	-	17.700	-	66.00	123.00	18.00
-	SF505177	-	-	-	0.6969"	-	17.700	-	100.00	157.00	18.00
SF503178	-	-	-	-	0.7008"	-	17.800	-	66.00	123.00	18.00
-	SF505178	-	-	-	0.7008"	-	17.800	-	100.00	157.00	18.00
SF503180	-	-	-	-	0.7087"	-	18.000	-	66.00	123.00	18.00
-	SF505180	-	-	-	0.7087"	-	18.000	-	100.00	157.00	18.00
-	-	SF508180	-	-	0.7087"	-	18.000	-	171.00	223.00	18.00
SF503181	-	-	-	-	0.7126"	-	18.100	-	70.00	127.00	19.00
-	SF505181	-	-	-	0.7126"	-	18.100	-	105.00	160.00	19.00
SF503182	-	-	-	-	0.7165"	-	18.200	-	70.00	127.00	19.00
-	SF505182	-	-	-	0.7165"	-	18.200	-	105.00	160.00	19.00
SF503185	-	-	-	-	0.7283"	-	18.500	-	70.00	127.00	19.00
-	SF505185	-	-	-	0.7283"	-	18.500	-	105.00	160.00	19.00
-	-	SF508185	-	-	0.7283"	-	18.500	-	191.00	244.00	19.00
SF503190	-	-	-	-	0.7480"	-	19.000	-	70.00	127.00	19.00
-	SF505190	-	-	-	0.7480"	-	19.000	-	105.00	160.00	19.00
-	-	SF508190	-	-	0.7480"	-	19.000	-	191.00	244.00	19.00
-	-	SF5081905	-	-	0.7500"	3/4"	19.050	-	191.00	244.00	20.00
SF503191	-	-	-	-	0.7520"	-	19.100	-	70.00	131.00	20.00
-	SF505191	-	-	-	0.7520"	-	19.100	-	110.00	163.00	20.00
-	-	SF50819446	-	-	0.7656"	49/64"	19.446	-	191.00	244.00	20.00
SF503195	-	-	-	-	0.7677"	-	19.500	-	70.00	131.00	20.00
-	SF505195	-	-	-	0.7677"	-	19.500	-	110.00	163.00	20.00
-	-	SF508195	-	-	0.7677"	-	19.500	-	191.00	244.00	20.00

Applicable Working Material

ALL	CARBON STEELS LOW (1045, 1018)	CARBON STEELS MED (1045, 1018)	CARBON STEELS HIGH (1045, 1018)	ALLOY STEELS (4140, 6440)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRc	HARDENED STEELS 35-45 HRc	HARDENED STEELS 45-50 HRc	HARDENED STEELS 50-70 HRc	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

EDP NO.					Cutting Diameter	Effective Cutting Length	Cutting Length	Overall Length	Shank Diameter		
2 Flute											
TiAlN-HH COAT / AlCrN COAT (8XD ONLY)											
Helix 30°											
3xD	5xD	8xD	10xD	20xD	D1			L1	L2	L3	D2
SF503	SF505	SF508	SF510	SF520	Decimal	Fraction	Metric				
SF503197	-	-	-	-	0.7756"	-	19.700	-	70.00	131.00	20.00
-	SF505197	-	-	-	0.7756"	-	19.700	-	110.00	163.00	20.00
SF503200	-	-	-	-	0.7874"	-	20.000	-	70.00	131.00	20.00
-	SF505200	-	-	-	0.7874"	-	20.000	-	110.00	163.00	20.00
-	-	SF508200	-	-	0.7874"	-	20.000	-	191.00	244.00	20.00

Applicable Working Material

ALL	CARBON STEELS LOW (1045, 1018)	CARBON STEELS MED (1045, 1018)	CARBON STEELS HIGH (1045, 1018)	ALLOY STEELS (4140, 6440)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRc	HARDENED STEELS 35-45 HRc	HARDENED STEELS 45-50 HRc	HARDENED STEELS 50-70 HRc	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

SF503, SF505, SF508 SERIES

RPM=rev./min.
FEED=mm/rev.
IPR=inch/rev.

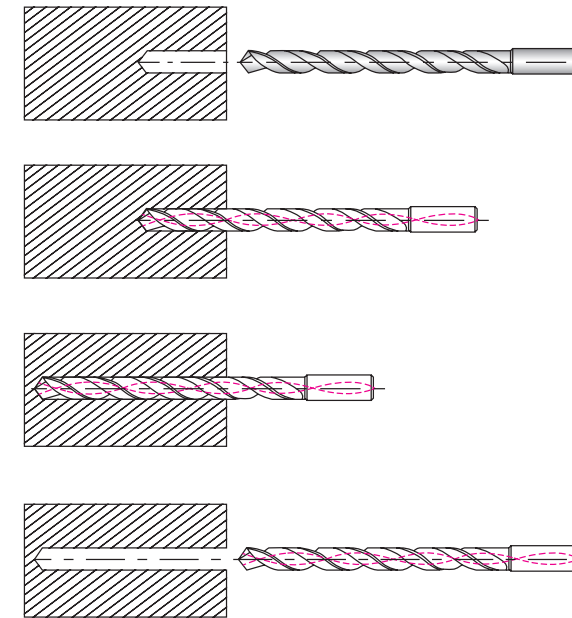
Work Material	Carbon Steels (C<0.3%) Alloy Steel < HB240, GG25			Carbon Steels (C≥0.3%) Alloy Steel < HB300, GG40			52100-AISI440			Hardened Steels 34 ~ 43 HRc		
	Drilling Speed (V)	80~150m/min			80~150m/min			63~100m/min			40~70m/min	
Cutting Diameter (metric)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)
3	12,000	0.09-0.12	0.004	13,000	0.09-0.12	0.004	7,600	0.09-0.12	0.004	6,400	0.09-0.12	0.004
4	9,500	0.10-0.15	0.005	10,000	0.10-0.15	0.005	5,700	0.10-0.15	0.005	4,800	0.10-0.15	0.005
5	7,600	0.12-0.18	0.006	8,000	0.12-0.18	0.006	4,600	0.12-0.18	0.006	3,800	0.12-0.18	0.006
6	6,400	0.14-0.20	0.007	6,600	0.14-0.20	0.007	3,800	0.14-0.20	0.007	3,200	0.14-0.20	0.007
8	4,800	0.16-0.24	0.008	5,000	0.16-0.24	0.008	2,900	0.16-0.24	0.008	2,400	0.16-0.24	0.008
10	3,800	0.18-0.27	0.009	4,000	0.18-0.27	0.009	2,300	0.18-0.27	0.009	1,900	0.18-0.27	0.009
12	3,200	0.20-0.30	0.010	3,300	0.20-0.30	0.010	1,900	0.20-0.30	0.010	1,600	0.20-0.30	0.010
14	2,700	0.22-0.35	0.011	2,800	0.22-0.35	0.011	1,600	0.22-0.35	0.011	1,350	0.22-0.35	0.011
16	2,400	0.25-0.36	0.012	2,500	0.25-0.36	0.012	1,400	0.25-0.36	0.012	1,200	0.25-0.36	0.012
18	2,100	0.28-0.38	0.013	2,200	0.28-0.38	0.013	1,300	0.28-0.38	0.013	1,100	0.28-0.38	0.013
20	1,900	0.30-0.40	0.014	2,000	0.30-0.40	0.014	1,150	0.30-0.40	0.014	1,000	0.30-0.40	0.014
Work Material	Hardened Steels 43 ~ 48 HRc			Hardened Steels 48 ~ 53 HRc			Cast Iron 250 ~ 350 N/mm2			Cast Iron-Ductile 400 ~ 500 N/mm2		
Drilling Speed (V)	32-50m/min			25-40m/min			80-150m/min			63-100m/min		
Cutting Diameter (metric)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)
3	5,300	0.07-0.11	0.004	3,800	0.05-0.09	0.003	12,000	0.09-0.12	0.004	8,500	0.09-0.12	0.004
4	4,000	0.08-0.13	0.004	2,950	0.06-0.10	0.003	9,000	0.10-0.15	0.005	6,350	0.10-0.15	0.005
5	3,200	0.10-0.15	0.005	2,300	0.08-0.12	0.004	7,600	0.12-0.18	0.006	5,100	0.12-0.18	0.006
6	2,650	0.12-0.18	0.006	1,900	0.09-0.15	0.005	6,400	0.14-0.20	0.007	4,250	0.14-0.20	0.007
8	2,000	0.14-0.22	0.007	1,450	0.12-0.20	0.006	4,800	0.16-0.24	0.008	3,200	0.16-0.24	0.008
10	1,600	0.15-0.25	0.008	1,150	0.13-0.23	0.007	3,800	0.18-0.27	0.009	2,550	0.18-0.27	0.009
12	1,300	0.17-0.26	0.008	950	0.14-0.24	0.007	3,200	0.20-0.30	0.010	2,100	0.20-0.30	0.010
14	1,150	0.18-0.30	0.009	800	0.15-0.26	0.008	2,700	0.22-0.35	0.011	1,800	0.22-0.35	0.011
16	1,000	0.20-0.32	0.010	700	0.16-0.27	0.008	2,400	0.25-0.36	0.012	1,600	0.25-0.36	0.012
18	900	0.23-0.33	0.011	650	0.18-0.28	0.009	2,100	0.28-0.38	0.013	1,400	0.28-0.38	0.013
20	800	0.25-0.35	0.012	600	0.20-0.30	0.010	1,900	0.30-0.40	0.014	1,250	0.30-0.40	0.014

- HPI503(3xD) : FEED 100%
- HPI505(5xD) : FEED 90%
- HPI508N(8xD) : FEED 70~80%

SF510, SF520 SERIES

RPM=rev./min.
FEED=mm/rev.
IPR=inch/rev.

Work Material	Carbon Steels (C≥0.3%) Alloy Steel < HB300, GG40			Cast Iron 250-350N/mm ²			Ductile Cast Iron 400-500N/mm ²		
	Drilling Speed (V)	63~125m/min			63~125m/min			60~80m/min	
Cutting Diameter (metric)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)
3	7,500	0.06 ~ 0.12	0.004	7,500	0.06 ~ 0.12	0.004	7,500	0.06 ~ 0.12	0.004
4	6,400	0.08 ~ 0.16	0.005	6,400	0.08 ~ 0.16	0.005	5,600	0.08 ~ 0.16	0.005
5	5,800	0.10 ~ 0.20	0.006	5,800	0.10 ~ 0.20	0.006	4,500	0.10 ~ 0.20	0.006
6	4,800	0.12 ~ 0.24	0.007	4,800	0.12 ~ 0.24	0.007	3,800	0.12 ~ 0.24	0.007
8	3,600	0.16 ~ 0.28	0.009	3,600	0.16 ~ 0.28	0.009	2,800	0.16 ~ 0.28	0.009
10	2,900	0.20 ~ 0.35	0.011	2,900	0.20 ~ 0.35	0.011	2,300	0.20 ~ 0.35	0.011
12	2,900	0.24 ~ 0.42	0.013	2,400	0.24 ~ 0.42	0.013	1,900	0.24 ~ 0.42	0.013
14	2,050	0.28 ~ 0.46	0.015	2,050	0.28 ~ 0.46	0.015	1,600	0.28 ~ 0.46	0.015



1. Guide Drilling should be OD +0.1 and 3XD ~ 5XD
2. For Main Drilling, Entering low speed into Guide drilling parts (RPM 300, FEED 400mm/min)
3. Just before the end of Guide drilling parts, Stop feed and increase RPM (see the above table)
4. Main drilling increasing Feed without step
5. When tool takes back after main drilling, decreasing RPM to 300 and Feed to 1,000mm/min from the entrance of Guide drilling parts
6. Reduce Feed by 50 % When it was completely over

NDP SERIES

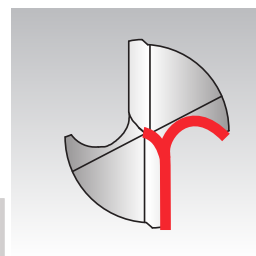
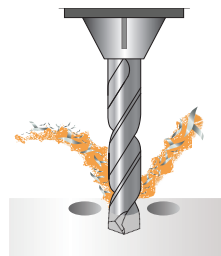
- Provides practical and universal and stable machinability for a variety of workpieces by widening the choice of processing depth.
- It is a New Dynamic Power Drill (NDP) that has stable and excellent workability by improving the chip handling ability compared to the existing Power Drill.

- 1 Upgrade version of PDS, PDM series.
- 2 Chip pocket shape upgrade
- 3 Increase tool life with coating upgrade

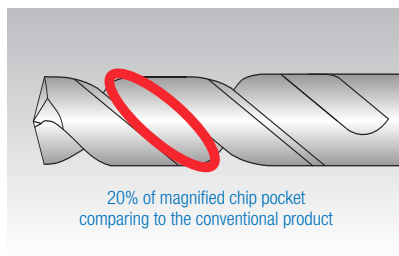


General Features

- Improvement of chip evacuation with wider chip pockets comparing to the conventional products
- Decrease of frictional resistance and heat with optimum margin and back taper
- Responding to various uses by securing products of various specifications



Improvement of chip curling by applying new γ -Flute concept

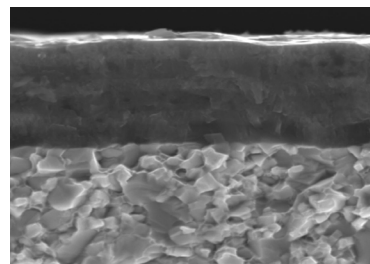


20% of magnified chip pocket comparing to the conventional product

Improvement of minimum friction and chip emission with the optimum margin, back-taper and bigger chip pockets

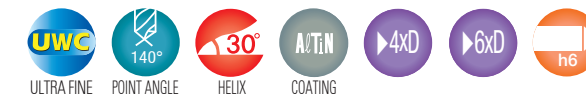
- Adopted nano multilayer thin film with improved wear resistance and chipping resistance and gold gloss color.
- Own surface treatment technique improves the surface roughness of the product, improving chip evacuation and improving lifespan.

Optimal material for general-purpose processing and application of new PVD coating



Adoption of high-hardness nano multilayer thin film technology with improved wear resistance, chipping resistance and lubricity

Secure processability by applying a material that combines optimum wear resistance and strength.



NDPR, NDPL SERIES

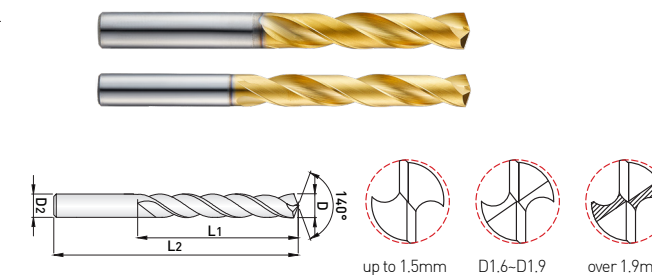
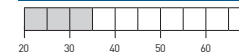
4xD & 6xD

DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE AITiN COATING

TOLERANCE [Metric]

D1 = +0 / -0.01 (D1 ≤ 3)
 D1 = +0 / -0.012 (D1 = 3.1 to 6)
 D1 = +0 / -0.015 (D1 = 6.1 to 10)
 D1 = +0 / -0.018 (D1 = 10.1 to 18)
 D1 = +0 / -0.021 (D1 > 18)
 D2 = h6 / -0.0014, 0.018

HARDNESS [HRc]



EDP NO.		Cutting Diameter	Cutting Length	Overall Length	Shank Diameter
2 Flute					
AITiN					
Helix 30°		D1	L1	L2	D2
4xD	6xD				
NDPR	NDPL				
NDPR010	-	1.00	8.00	38.00	3.00
NDPR011	-	1.10	9.00	42.00	3.00
NDPR012	-	1.20	10.00	42.00	3.00
NDPR013	-	1.30	10.00	42.00	3.00
NDPR014	-	1.40	11.00	42.00	3.00
NDPR015	-	1.50	11.00	42.00	3.00
NDPR016	-	1.60	12.00	42.00	3.00
NDPR017	-	1.70	12.00	42.00	3.00
NDPR018	-	1.80	13.00	42.00	3.00
NDPR019	-	1.90	13.00	42.00	3.00
NDPR020	-	2.00	18.00	50.00	3.00
NDPR021	-	2.10	18.00	50.00	3.00
NDPR022	-	2.20	18.00	50.00	3.00
NDPR023	-	2.30	18.00	50.00	3.00
NDPR024	-	2.40	18.00	50.00	3.00
NDPR025	-	2.50	18.00	50.00	3.00
NDPR026	-	2.60	18.00	50.00	3.00
NDPR027	-	2.70	18.00	50.00	3.00
NDPR028	-	2.80	18.00	50.00	3.00
NDPR029	-	2.90	18.00	50.00	3.00
NDPR030	-	3.00	20.00	55.00	3.00
-	NDPL030	3.00	45.00	80.00	3.00
NDPR031	-	3.10	20.00	55.00	4.00
-	NDPL031	3.10	45.00	80.00	4.00
NDPR032	-	3.20	20.00	55.00	4.00
-	NDPL032	3.20	45.00	80.00	4.00
NDPR033	-	3.30	20.00	55.00	4.00
-	NDPL033	3.30	45.00	80.00	4.00
NDPR034	-	3.40	20.00	55.00	4.00
-	NDPL034	3.40	45.00	80.00	4.00
NDPR035	-	3.50	20.00	55.00	4.00
-	NDPL035	3.50	45.00	80.00	4.00
NDPR036	-	3.60	25.00	55.00	4.00
-	NDPL036	3.60	45.00	80.00	4.00

Applicable Working Material

SERIES	CARBON STEELS LOW TENSILE	CARBON STEELS MED TENSILE	CARBON STEELS HIGH TENSILE	ALLOY STEELS (A1-A5)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (B414)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



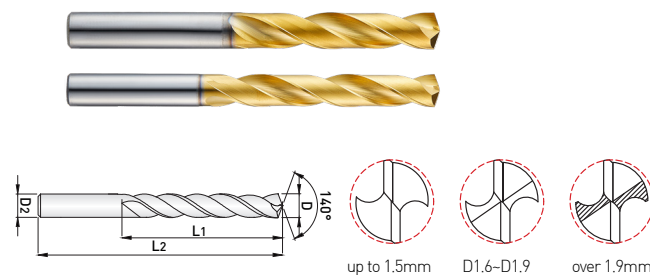
Drills for general speed cutting
NEW DYNAMIC POWER DRILL (N-DOLPHIN DRILL)



NDPR, NDPL SERIES

4xD & 6xD

DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE
AITiN COATING



TOLERANCE (Metric)

D1 = +0 / -0.01 (D1 ≤ 3)
D1 = +0 / -0.012 (D1 = 3.1 to 6)
D1 = +0 / -0.015 (D1 = 6.1 to 10)
D1 = +0 / -0.018 (D1 = 10.1 to 18)
D1 = +0 / -0.021 (D1 > 18)
D2 = h6 / -0.0014, 0.018

HARDNESS (HRC)



up to 1.5mm D1.6-D1.9 over 1.9mm

EDP NO.		Cutting Diameter	Cutting Length	Overall Length	Shank Diameter
2 Flute					
AITiN					
Helix 30°					
4xD	6xD	D1	L1	L2	D2
NDPR	NDPL				
NDPR037	-	3.70	25.00	55.00	4.00
-	NDPL037	3.70	45.00	80.00	4.00
NDPR038	-	3.80	25.00	55.00	4.00
-	NDPL038	3.80	45.00	80.00	4.00
NDPR039	-	3.90	25.00	55.00	4.00
-	NDPL039	3.90	45.00	80.00	4.00
NDPR040	-	4.00	25.00	55.00	4.00
-	NDPL040	4.00	45.00	80.00	4.00
NDPR041	-	4.10	25.00	55.00	5.00
-	NDPL041	4.10	45.00	80.00	5.00
NDPR042	-	4.20	33.00	63.00	5.00
-	NDPL042	4.20	45.00	80.00	5.00
NDPR043	-	4.30	33.00	63.00	5.00
-	NDPL043	4.30	45.00	80.00	5.00
NDPR044	-	4.40	33.00	63.00	5.00
-	NDPL044	4.40	45.00	80.00	5.00
NDPR045	-	4.50	33.00	63.00	5.00
-	NDPL045	4.50	45.00	80.00	5.00
NDPR046	-	4.60	33.00	63.00	5.00
-	NDPL046	4.60	45.00	80.00	5.00
NDPR047	-	4.70	33.00	63.00	5.00
-	NDPL047	4.70	45.00	80.00	5.00
NDPR048	-	4.80	33.00	63.00	5.00
-	NDPL048	4.80	45.00	80.00	5.00
NDPR049	-	4.90	33.00	63.00	5.00
-	NDPL049	4.90	45.00	80.00	5.00
NDPR050	-	5.00	33.00	63.00	5.00
-	NDPL050	5.00	45.00	80.00	5.00
NDPR051	-	5.10	33.00	63.00	6.00
-	NDPL051	5.10	45.00	80.00	6.00
NDPR052	-	5.20	36.00	66.00	6.00
-	NDPL052	5.20	50.00	83.00	6.00
NDPR053	-	5.30	36.00	66.00	6.00
-	NDPL053	5.30	50.00	83.00	6.00

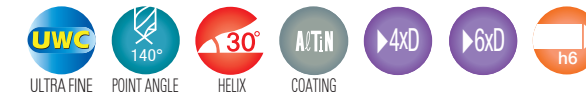
Applicable Working Material

ALL	CARBON STEELS LOW (100-170)	CARBON STEELS MED (170-200)	CARBON STEELS HIGH (200)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



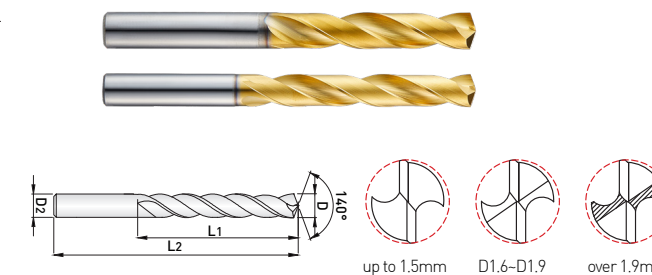
Drills for general speed cutting
NEW DYNAMIC POWER DRILL (N-DOLPHIN DRILL)



NDPR, NDPL SERIES

4xD & 6xD

DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE
AITiN COATING



TOLERANCE (Metric)

D1 = +0 / -0.01 (D1 ≤ 3)
D1 = +0 / -0.012 (D1 = 3.1 to 6)
D1 = +0 / -0.015 (D1 = 6.1 to 10)
D1 = +0 / -0.018 (D1 = 10.1 to 18)
D1 = +0 / -0.021 (D1 > 18)
D2 = h6 / -0.0014, 0.018

HARDNESS (HRC)



up to 1.5mm D1.6-D1.9 over 1.9mm

EDP NO.		Cutting Diameter	Cutting Length	Overall Length	Shank Diameter
2 Flute					
AITiN					
Helix 30°					
4xD	6xD	D1	L1	L2	D2
NDPR	NDPL				
NDPR054	-	5.40	36.00	66.00	6.00
-	NDPL054	5.40	50.00	83.00	6.00
NDPR055	-	5.50	36.00	66.00	6.00
-	NDPL055	5.50	50.00	83.00	6.00
NDPR056	-	5.60	36.00	66.00	6.00
-	NDPL056	5.60	50.00	83.00	6.00
NDPR057	-	5.70	36.00	66.00	6.00
-	NDPL057	5.70	50.00	83.00	6.00
NDPR058	-	5.80	36.00	66.00	6.00
-	NDPL058	5.80	50.00	83.00	6.00
NDPR059	-	5.90	36.00	66.00	6.00
-	NDPL059	5.90	50.00	83.00	6.00
NDPR060	-	6.00	36.00	66.00	6.00
-	NDPL060	6.00	50.00	83.00	6.00
NDPR061	-	6.10	36.00	66.00	7.00
-	NDPL061	6.10	50.00	83.00	7.00
NDPR062	-	6.20	42.00	75.00	7.00
-	NDPL062	6.20	53.00	85.00	7.00
NDPR063	-	6.30	42.00	75.00	7.00
-	NDPL063	6.30	53.00	85.00	7.00
NDPR064	-	6.40	42.00	75.00	7.00
-	NDPL064	6.40	53.00	85.00	7.00
NDPR065	-	6.50	42.00	75.00	7.00
-	NDPL065	6.50	53.00	85.00	7.00
NDPR066	-	6.60	42.00	75.00	7.00
-	NDPL066	6.60	53.00	85.00	7.00
NDPR067	-	6.70	42.00	75.00	7.00
-	NDPL067	6.70	53.00	85.00	7.00
NDPR068	-	6.80	42.00	75.00	7.00
-	NDPL068	6.80	53.00	85.00	7.00
NDPR069	-	6.90	42.00	75.00	7.00
-	NDPL069	6.90	53.00	85.00	7.00
NDPR070	-	7.00	42.00	75.00	7.00
-	NDPL070	7.00	53.00	85.00	7.00

Applicable Working Material

ALL	CARBON STEELS LOW (100-170)	CARBON STEELS MED (170-200)	CARBON STEELS HIGH (200)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



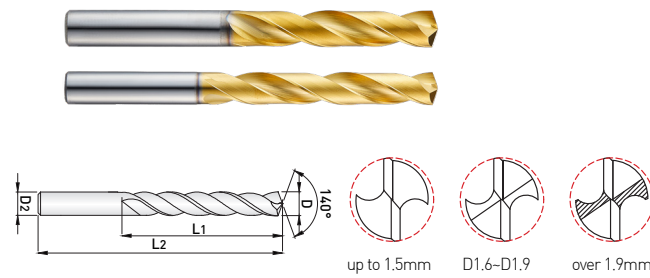
Drills for general speed cutting
NEW DYNAMIC POWER DRILL (N-DOLPHIN DRILL)



NDPR, NDPL SERIES

4xD & 6xD

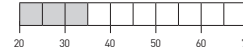
DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE
AITiN COATING



TOLERANCE [Metric]

D1 = +0 / -0.01 (D1 ≤ 3)
D1 = +0 / -0.012 (D1 = 3.1 to 6)
D1 = +0 / -0.015 (D1 = 6.1 to 10)
D1 = +0 / -0.018 (D1 = 10.1 to 18)
D1 = +0 / -0.021 (D1 > 18)
D2 = h6 / -0.0014, 0.018

HARDNESS [HRc]



up to 1.5mm D1.6-D1.9 over 1.9mm

EDP NO.		Cutting Diameter	Cutting Length	Overall Length	Shank Diameter
2 Flute					
AITiN					
Helix 30°					
4xD	6xD	D1	L1	L2	D2
NDPR	NDPL				
NDPR071	-	7.10	42.00	75.00	8.00
-	NDPL071	7.10	53.00	85.00	8.00
NDPR072	-	7.20	46.00	80.00	8.00
-	NDPL072	7.20	58.00	90.00	8.00
NDPR073	-	7.30	46.00	80.00	8.00
-	NDPL073	7.30	58.00	90.00	8.00
NDPR074	-	7.40	46.00	80.00	8.00
-	NDPL074	7.40	58.00	90.00	8.00
NDPR075	-	7.50	46.00	80.00	8.00
-	NDPL075	7.50	58.00	90.00	8.00
NDPR076	-	7.60	46.00	80.00	8.00
-	NDPL076	7.60	58.00	90.00	8.00
NDPR077	-	7.70	46.00	80.00	8.00
-	NDPL077	7.70	58.00	90.00	8.00
NDPR078	-	7.80	46.00	80.00	8.00
-	NDPL078	7.80	58.00	90.00	8.00
NDPR079	-	7.90	46.00	80.00	8.00
-	NDPL079	7.90	58.00	90.00	8.00
NDPR080	-	8.00	46.00	80.00	8.00
-	NDPL080	8.00	58.00	90.00	8.00
NDPR081	-	8.10	46.00	80.00	9.00
-	NDPL081	8.10	58.00	90.00	9.00
NDPR082	-	8.20	50.00	85.00	9.00
-	NDPL082	8.20	64.00	98.00	9.00
NDPR083	-	8.30	50.00	85.00	9.00
-	NDPL083	8.30	64.00	98.00	9.00
NDPR084	-	8.40	50.00	85.00	9.00
-	NDPL084	8.40	64.00	98.00	9.00
NDPR085	-	8.50	50.00	85.00	9.00
-	NDPL085	8.50	64.00	98.00	9.00
NDPR086	-	8.60	50.00	85.00	9.00
-	NDPL086	8.60	64.00	98.00	9.00
NDPR087	-	8.70	50.00	85.00	9.00
-	NDPL087	8.70	64.00	98.00	9.00

Applicable Working Material

Series	Carbon Steels Low (100L-100)	Carbon Steels Med (100L-100)	Carbon Steels High (100L-100)	Alloy Steels (40-40)	Die Steels	Stainless Steels 300	Stainless Steels 400	Stainless Steels 17-4 PH	Cast Iron	Aluminum (6061, 7075)	Aluminum Castings	Nickel Alloys (Inconel)	Titanium (6Al4V)	Hardened Steels 35 HRc	Hardened Steels 35-45 HRc	Hardened Steels 45-50 HRc	Hardened Steels 50-70 HRc	Magnesium	Brass Bronze	Graphite	Cobalt Chrome	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



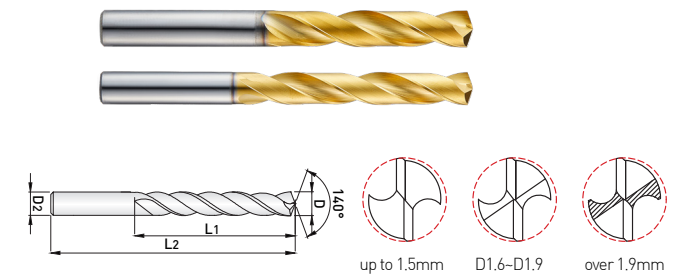
Drills for general speed cutting
NEW DYNAMIC POWER DRILL (N-DOLPHIN DRILL)



NDPR, NDPL SERIES

4xD & 6xD

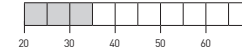
DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE
AITiN COATING



TOLERANCE [Metric]

D1 = +0 / -0.01 (D1 ≤ 3)
D1 = +0 / -0.012 (D1 = 3.1 to 6)
D1 = +0 / -0.015 (D1 = 6.1 to 10)
D1 = +0 / -0.018 (D1 = 10.1 to 18)
D1 = +0 / -0.021 (D1 > 18)
D2 = h6 / -0.0014, 0.018

HARDNESS [HRc]



up to 1.5mm D1.6-D1.9 over 1.9mm

EDP NO.		Cutting Diameter	Cutting Length	Overall Length	Shank Diameter
2 Flute					
AITiN					
Helix 30°					
4xD	6xD	D1	L1	L2	D2
NDPR	NDPL				
NDPR088	-	8.80	50.00	85.00	9.00
-	NDPL088	8.80	64.00	98.00	9.00
NDPR089	-	8.90	50.00	85.00	9.00
-	NDPL089	8.90	64.00	98.00	9.00
NDPR090	-	9.00	50.00	85.00	9.00
-	NDPL090	9.00	64.00	98.00	9.00
NDPR091	-	9.10	50.00	85.00	10.00
-	NDPL091	9.10	64.00	98.00	10.00
NDPR092	-	9.20	55.00	90.00	10.00
-	NDPL092	9.20	68.00	105.00	10.00
NDPR093	-	9.30	55.00	90.00	10.00
-	NDPL093	9.30	68.00	105.00	10.00
NDPR094	-	9.40	55.00	90.00	10.00
-	NDPL094	9.40	68.00	105.00	10.00
NDPR095	-	9.50	55.00	90.00	10.00
-	NDPL095	9.50	68.00	105.00	10.00
NDPR096	-	9.60	55.00	90.00	10.00
-	NDPL096	9.60	68.00	105.00	10.00
NDPR097	-	9.70	55.00	90.00	10.00
-	NDPL097	9.70	68.00	105.00	10.00
NDPR098	-	9.80	55.00	90.00	10.00
-	NDPL098	9.80	68.00	105.00	10.00
NDPR099	-	9.90	55.00	90.00	10.00
-	NDPL099	9.90	68.00	105.00	10.00
NDPR100	-	10.00	55.00	90.00	10.00
-	NDPL100	10.00	68.00	105.00	10.00
NDPR101	-	10.10	55.00	90.00	11.00
-	NDPL101	10.10	68.00	105.00	11.00
NDPR102	-	10.20	57.00	95.00	11.00
-	NDPL102	10.20	73.00	110.00	11.00
NDPR103	-	10.30	57.00	95.00	11.00
-	NDPL103	10.30	73.00	110.00	11.00
NDPR104	-	10.40	57.00	95.00	11.00
-	NDPL104	10.40	73.00	110.00	11.00

Applicable Working Material

Series	Carbon Steels Low (100L-100)	Carbon Steels Med (100L-100)	Carbon Steels High (100L-100)	Alloy Steels (40-40)	Die Steels	Stainless Steels 300	Stainless Steels 400	Stainless Steels 17-4 PH	Cast Iron	Aluminum (6061, 7075)	Aluminum Castings	Nickel Alloys (Inconel)	Titanium (6Al4V)	Hardened Steels 35 HRc	Hardened Steels 35-45 HRc	Hardened Steels 45-50 HRc	Hardened Steels 50-70 HRc	Magnesium	Brass Bronze	Graphite	Cobalt Chrome	
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



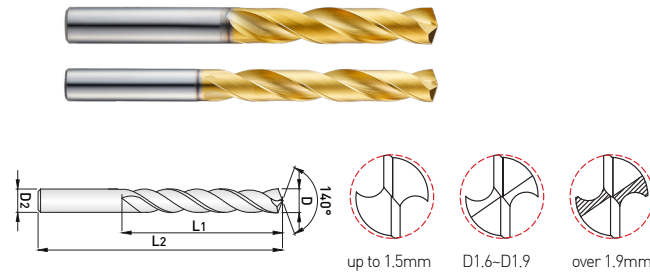
Drills for general speed cutting
NEW DYNAMIC POWER DRILL (N-DOLPHIN DRILL)



NDPR, NDPL SERIES

4xD & 6xD

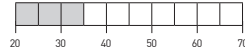
DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE
AITiN COATING



TOLERANCE [Metric]

D1 = +0 / -0.01 (D1 ≤ 3)
D1 = +0 / -0.012 (D1 = 3.1 to 6)
D1 = +0 / -0.015 (D1 = 6.1 to 10)
D1 = +0 / -0.018 (D1 = 10.1 to 18)
D1 = +0 / -0.021 (D1 > 18)
D2 = h6 / -0.0014, 0.018

HARDNESS [HRc]



up to 1.5mm D1.6-D1.9 over 1.9mm



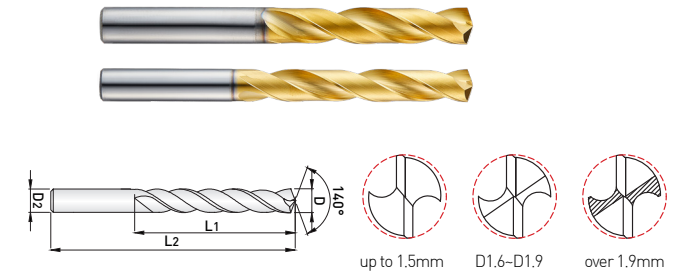
Drills for general speed cutting
NEW DYNAMIC POWER DRILL (N-DOLPHIN DRILL)



NDPR, NDPL SERIES

4xD & 6xD

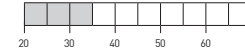
DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE
AITiN COATING



TOLERANCE [Metric]

D1 = +0 / -0.01 (D1 ≤ 3)
D1 = +0 / -0.012 (D1 = 3.1 to 6)
D1 = +0 / -0.015 (D1 = 6.1 to 10)
D1 = +0 / -0.018 (D1 = 10.1 to 18)
D1 = +0 / -0.021 (D1 > 18)
D2 = h6 / -0.0014, 0.018

HARDNESS [HRc]



up to 1.5mm D1.6-D1.9 over 1.9mm

EDP NO.		Cutting Diameter	Cutting Length	Overall Length	Shank Diameter
2 Flute					
AITiN					
Helix 30°					
4xD	6xD	D1	L1	L2	D2
NDPR	NDPL				
NDPR105	-	10.50	57.00	95.00	11.00
-	NDPL105	10.50	73.00	110.00	11.00
NDPR106	-	10.60	57.00	95.00	11.00
-	NDPL106	10.60	73.00	110.00	11.00
NDPR107	-	10.70	57.00	95.00	11.00
-	NDPL107	10.70	73.00	110.00	11.00
NDPR108	-	10.80	57.00	95.00	11.00
-	NDPL108	10.80	73.00	110.00	11.00
NDPR109	-	10.90	57.00	95.00	11.00
-	NDPL109	10.90	73.00	110.00	11.00
NDPR110	-	11.00	57.00	95.00	11.00
-	NDPL110	11.00	73.00	110.00	11.00
NDPR111	-	11.10	57.00	95.00	12.00
-	NDPL111	11.10	73.00	110.00	12.00
NDPR112	-	11.20	63.00	102.00	12.00
-	NDPL112	11.20	80.00	120.00	12.00
NDPR113	-	11.30	63.00	102.00	12.00
-	NDPL113	11.30	80.00	120.00	12.00
NDPR114	-	11.40	63.00	102.00	12.00
-	NDPL114	11.40	80.00	120.00	12.00
NDPR115	-	11.50	63.00	102.00	12.00
-	NDPL115	11.50	80.00	120.00	12.00
NDPR116	-	11.60	63.00	102.00	12.00
-	NDPL116	11.60	80.00	120.00	12.00
NDPR117	-	11.70	63.00	102.00	12.00
-	NDPL117	11.70	80.00	120.00	12.00
NDPR118	-	11.80	63.00	102.00	12.00
-	NDPL118	11.80	80.00	120.00	12.00
NDPR119	-	11.90	63.00	102.00	12.00
-	NDPL119	11.90	80.00	120.00	12.00
NDPR120	-	12.00	63.00	102.00	12.00
-	NDPL120	12.00	80.00	120.00	12.00
NDPR121	-	12.10	63.00	102.00	13.00
-	NDPL121	12.10	80.00	120.00	13.00

Applicable Working Material

ALL	CARBON STEELS LOW (100-170)	CARBON STEELS MED (170-200)	CARBON STEELS HIGH (200)	ALLOY STEELS (40-60)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35-45 HRc	HARDENED STEELS 35-45 HRc	HARDENED STEELS 45-50 HRc	HARDENED STEELS 50-70 HRc	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

Applicable Working Material

ALL	CARBON STEELS LOW (100-170)	CARBON STEELS MED (170-200)	CARBON STEELS HIGH (200)	ALLOY STEELS (40-60)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRc	HARDENED STEELS 35-45 HRc	HARDENED STEELS 45-50 HRc	HARDENED STEELS 50-70 HRc	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



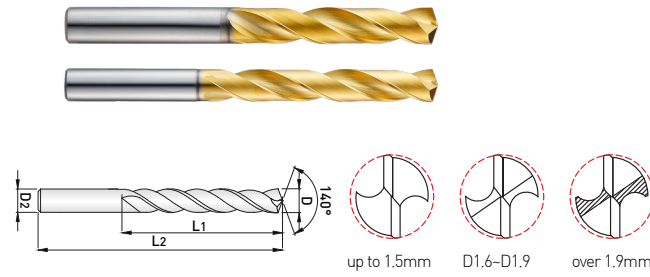
Drills for general speed cutting
NEW DYNAMIC POWER DRILL (N-DOLPHIN DRILL)



NDPR, NDPL SERIES

4xD & 6xD

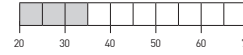
DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE
AITiN COATING



TOLERANCE (Metric)

D1 = +0 / -0.01 (D1 ≤ 3)
D1 = +0 / -0.012 (D1 = 3.1 to 6)
D1 = +0 / -0.015 (D1 = 6.1 to 10)
D1 = +0 / -0.018 (D1 = 10.1 to 18)
D1 = +0 / -0.021 (D1 > 18)
D2 = h6 / -0.0014, 0.018

HARDNESS (HRc)



EDP NO.		Cutting Diameter	Cutting Length	Overall Length	Shank Diameter
2 Flute					
AITiN					
Helix 30°					
4xD	6xD	D1	L1	L2	D2
NDPR	NDPL				
NDPR139	-	13.90	65.00	107.00	14.00
-	NDPL139	13.90	96.00	147.00	14.00
NDPR140	-	14.00	65.00	107.00	14.00
-	NDPL140	14.00	96.00	147.00	14.00
NDPR141	-	14.10	65.00	107.00	15.00
-	NDPL141	14.10	96.00	147.00	15.00
NDPR142	-	14.20	67.00	111.00	15.00
-	NDPL142	14.20	100.00	153.00	15.00
NDPR143	-	14.30	67.00	111.00	15.00
-	NDPL143	14.30	100.00	153.00	15.00
NDPR144	-	14.40	67.00	111.00	15.00
-	NDPL144	14.40	100.00	153.00	15.00
NDPR145	-	14.50	67.00	111.00	15.00
-	NDPL145	14.50	100.00	153.00	15.00
NDPR146	-	14.60	67.00	111.00	15.00
-	NDPL146	14.60	100.00	153.00	15.00
NDPR147	-	14.70	67.00	111.00	15.00
-	NDPL147	14.70	100.00	153.00	15.00
NDPR148	-	14.80	67.00	111.00	15.00
-	NDPL148	14.80	100.00	153.00	15.00
NDPR149	-	14.90	67.00	111.00	15.00
-	NDPL149	14.90	100.00	153.00	15.00
NDPR150	-	15.00	67.00	111.00	15.00
-	NDPL150	15.00	100.00	153.00	15.00
NDPR151	-	15.10	67.00	111.00	16.00
-	NDPL151	15.10	100.00	153.00	16.00
NDPR152	-	15.20	69.00	115.00	16.00
-	NDPL152	15.20	112.00	160.00	16.00
NDPR153	-	15.30	69.00	115.00	16.00
-	NDPL153	15.30	112.00	160.00	16.00
NDPR154	-	15.40	69.00	115.00	16.00
-	NDPL154	15.40	112.00	160.00	16.00
NDPR155	-	15.50	69.00	115.00	16.00
-	NDPL155	15.50	112.00	160.00	16.00

Applicable Working Material

SERIES	CARBON STEELS LOW (1018, 1020)	CARBON STEELS MED (1045, 1045)	CARBON STEELS HIGH (1080)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



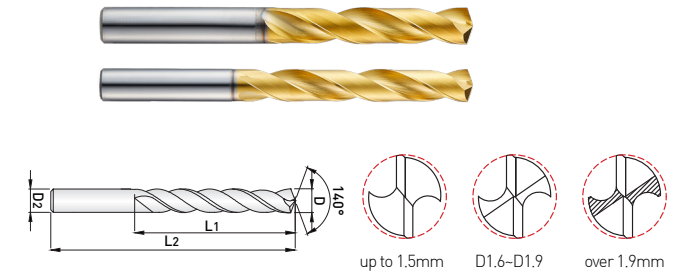
Drills for general speed cutting
NEW DYNAMIC POWER DRILL (N-DOLPHIN DRILL)



NDPR, NDPL SERIES

4xD & 6xD

DRILLS / 2 FLUTES / 4xD & 6xD / SOLID CARBIDE
AITiN COATING



TOLERANCE (Metric)

D1 = +0 / -0.01 (D1 ≤ 3)
D1 = +0 / -0.012 (D1 = 3.1 to 6)
D1 = +0 / -0.015 (D1 = 6.1 to 10)
D1 = +0 / -0.018 (D1 = 10.1 to 18)
D1 = +0 / -0.021 (D1 > 18)
D2 = h6 / -0.0014, 0.018

HARDNESS (HRc)



EDP NO.		Cutting Diameter	Cutting Length	Overall Length	Shank Diameter
2 Flute					
AITiN					
Helix 30°					
4xD	6xD	D1	L1	L2	D2
NDPR	NDPL				
NDPR156	-	15.60	69.00	115.00	16.00
-	NDPL156	15.60	112.00	160.00	16.00
NDPR157	-	15.70	69.00	115.00	16.00
-	NDPL157	15.70	112.00	160.00	16.00
NDPR158	-	15.80	69.00	115.00	16.00
-	NDPL158	15.80	112.00	160.00	16.00
NDPR159	-	15.90	69.00	115.00	16.00
-	NDPL159	15.90	112.00	160.00	16.00
NDPR160	-	16.00	69.00	115.00	16.00
-	NDPL160	16.00	112.00	160.00	16.00
NDPR165	-	16.50	71.00	119.00	17.00
-	NDPL165	16.50	112.00	160.00	17.00
NDPR167	-	16.70	71.00	119.00	17.00
NDPR170	-	17.00	71.00	119.00	17.00
-	NDPL170	17.00	112.00	160.00	17.00
NDPR175	-	17.50	74.00	123.00	18.00
-	NDPL175	17.50	112.00	160.00	18.00
-	NDPL176	17.60	112.00	160.00	18.00
-	NDPL177	17.70	112.00	160.00	18.00
-	NDPL178	17.80	112.00	160.00	18.00
NDPR180	-	18.00	74.00	123.00	18.00
-	NDPL180	18.00	112.00	160.00	18.00
NDPR185	-	18.50	76.00	127.00	19.00
-	NDPL185	18.50	112.00	160.00	19.00
NDPR190	-	19.00	76.00	127.00	19.00
-	NDPL190	19.00	112.00	160.00	19.00
NDPR195	-	19.50	80.00	131.00	20.00
-	NDPL195	19.50	112.00	160.00	20.00
NDPR200	-	20.00	80.00	131.00	20.00
-	NDPL200	20.00	112.00	160.00	20.00

Applicable Working Material

SERIES	CARBON STEELS LOW (1018, 1020)	CARBON STEELS MED (1045, 1045)	CARBON STEELS HIGH (1080)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
All	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

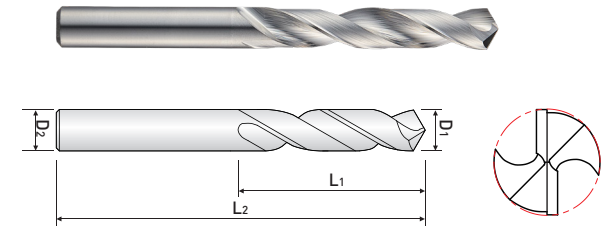
NDPR, NDPL SERIES

SSD SERIES

>>Continue

5xD

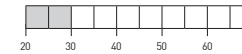
DRILL / 2 FLUTES / JOBBER LENGTH / BRIGHT



TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 > 10)
Dz = h7

HARDNESS (HRc)



FEED=mm/rev.

Work Material	Carbon Steels (C<0.3%) Alloy steels / SS400 SCM -710N/mm ²		High Carbon Steels (C > 0.45%)		Alloy Steels (~ HB180)		Alloy Steels (~ HB280)		High Alloy Steels	
	VC	80-120M/MIN	80-120M/MIN	80-120M/MIN	80-120M/MIN	80-120M/MIN	80-120M/MIN	80-120M/MIN	40-45M/MIN	40-45M/MIN
DIA	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1	13,000	0.04	13,000	0.04	21,300	0.04	14,200	0.04	7,160	0.03
2	13,000	0.06	13,000	0.06	21,300	0.06	14,200	0.06	7,160	0.04
3	13,000	0.13	13,000	0.13	21,000	0.13	14,000	0.13	4,780	0.07
4	9,500	0.14	9,500	0.14	16,000	0.14	10,500	0.14	3,600	0.08
5	7,600	0.15	7,600	0.15	13,000	0.15	8,300	0.15	2,850	0.09
6	6,400	0.17	6,400	0.17	11,000	0.17	6,900	0.17	2,400	0.1
8	4,800	0.21	4,800	0.21	8,000	0.21	5,200	0.21	1,800	0.12
10	3,800	0.25	3,800	0.25	6,400	0.25	4,150	0.25	1,450	0.15
12	3,200	0.27	3,200	0.27	5,300	0.27	3,450	0.27	1,200	0.17
14	2,750	0.29	2,750	0.29	4,550	0.29	3,000	0.29	1,000	0.19
16	2,400	0.31	2,400	0.31	4,000	0.31	2,600	0.31	900	0.21
18	2,100	0.33	2,100	0.33	3,550	0.33	2,300	0.33	800	0.23
20	1,900	0.35	1,900	0.35	3,200	0.35	2,100	0.35	700	0.25

* The above cutting conditions is the ideal condition, required to adjust conditions according to machine conditions.
* NDPL : Apply for 85% on the above condition.

EDP NO.	2 Flute			
	Bright			
	Helix 30°			
	SSD	D1	L1	L2
SSD010	1.00	10.00	38.00	1.00
SSD011	1.10	10.00	38.00	1.10
SSD012	1.20	10.00	38.00	1.20
SSD013	1.30	10.00	38.00	1.30
SSD014	1.40	10.00	38.00	1.40
SSD015	1.50	13.00	38.00	1.50
SSD016	1.60	13.00	38.00	1.60
SSD017	1.70	13.00	38.00	1.70
SSD018	1.80	13.00	38.00	1.80
SSD019	1.90	13.00	38.00	1.90
SSD020	2.00	16.00	45.00	2.00
SSD021	2.10	16.00	45.00	2.10
SSD022	2.20	16.00	45.00	2.20
SSD023	2.30	16.00	45.00	2.30
SSD024	2.40	18.00	50.00	2.40
SSD025	2.50	20.00	50.00	2.50
SSD026	2.60	20.00	50.00	2.60
SSD027	2.70	22.00	50.00	2.70
SSD028	2.80	22.00	50.00	2.80
SSD029	2.90	22.00	50.00	2.90
SSD030	3.00	22.00	50.00	3.00
SSD031	3.10	25.00	50.00	3.10
SSD032	3.20	25.00	50.00	3.20
SSD033	3.30	25.00	50.00	3.30
SSD034	3.40	25.00	50.00	3.40
SSD035	3.50	25.00	50.00	3.50
SSD036	3.60	28.00	55.00	3.60
SSD037	3.70	28.00	55.00	3.70
SSD038	3.80	28.00	55.00	3.80
SSD039	3.90	28.00	55.00	3.90
SSD040	4.00	28.00	55.00	4.00
SSD041	4.10	30.00	60.00	4.10
SSD042	4.20	30.00	60.00	4.20
SSD043	4.30	30.00	60.00	4.30
SSD044	4.40	30.00	60.00	4.40

EDP NO.	2 Flute			
	Bright			
	Helix 30°			
	SSD	D1	L1	L2
SSD045	4.50	30.00	60.00	4.50
SSD046	4.60	33.00	65.00	4.60
SSD047	4.70	33.00	65.00	4.70
SSD048	4.80	35.00	65.00	4.80
SSD049	4.90	35.00	65.00	4.90
SSD050	5.00	35.00	65.00	5.00
SSD051	5.10	35.00	65.00	5.10
SSD052	5.20	35.00	65.00	5.20
SSD053	5.30	35.00	65.00	5.30
SSD054	5.40	35.00	65.00	5.40
SSD055	5.50	35.00	65.00	5.50
SSD056	5.60	38.00	75.00	5.60
SSD057	5.70	38.00	75.00	5.70
SSD058	5.80	38.00	75.00	5.80
SSD059	5.90	38.00	75.00	5.90
SSD060	6.00	38.00	75.00	6.00
SSD061	6.10	38.00	75.00	6.10
SSD062	6.20	38.00	75.00	6.20
SSD063	6.30	38.00	75.00	6.30
SSD064	6.40	38.00	75.00	6.40
SSD065	6.50	38.00	75.00	6.50
SSD066	6.60	45.00	80.00	6.60
SSD067	6.70	45.00	80.00	6.70
SSD068	6.80	45.00	80.00	6.80
SSD069	6.90	45.00	80.00	6.90
SSD070	7.00	45.00	80.00	7.00
SSD071	7.10	45.00	80.00	7.10
SSD072	7.20	45.00	80.00	7.20
SSD073	7.30	45.00	80.00	7.30
SSD074	7.40	45.00	80.00	7.40
SSD075	7.50	45.00	80.00	7.50
SSD076	7.60	50.00	85.00	7.60
SSD077	7.70	50.00	85.00	7.70
SSD078	7.80	50.00	85.00	7.80
SSD079	7.90	50.00	85.00	7.90

Applicable Working Material

SERIES	CARBON STEELS LOW (1045-1075)	CARBON STEELS MED (1045-1075)	CARBON STEELS HIGH (1045-1075)	ALLOY STEELS (4140-4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 55 HRC	HARDENED STEELS 55-60 HRC	HARDENED STEELS 60-65 HRC	HARDENED STEELS 60-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
SSD	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

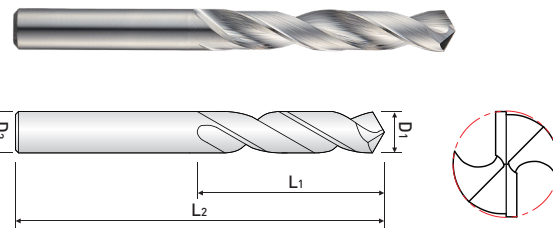
○:GOOD ◎:BEST



SSD SERIES

5xD

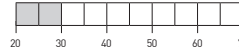
DRILL / 2 FLUTES / JOBBER LENGTH / BRIGHT



TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 > 10)
D2 = h7

HARDNESS (HRC)



EDP NO.	2 Flute	Cutting Diameter (metric)	Cutting Length (metric)	Overall Length (metric)	Shank Diameter (metric)
SSD118	Bright	11.80	65.00	120.00	11.80
SSD119	Bright	11.90	65.00	120.00	11.90
SSD120	Bright	12.00	65.00	120.00	12.00
SSD124	Bright	12.40	70.00	125.00	12.40
SSD125	Bright	12.50	70.00	125.00	12.50
SSD130	Bright	13.00	75.00	130.00	13.00

EDP NO.	2 Flute	Cutting Diameter (metric)	Cutting Length (metric)	Overall Length (metric)	Shank Diameter (metric)
SSD080	Bright	8.00	50.00	85.00	8.00
SSD081	Bright	8.10	50.00	85.00	8.10
SSD082	Bright	8.20	50.00	85.00	8.20
SSD083	Bright	8.30	50.00	85.00	8.30
SSD084	Bright	8.40	50.00	85.00	8.40
SSD085	Bright	8.50	50.00	85.00	8.50
SSD086	Bright	8.60	50.00	95.00	8.60
SSD087	Bright	8.70	50.00	95.00	8.70
SSD088	Bright	8.80	50.00	95.00	8.80
SSD089	Bright	8.90	50.00	95.00	8.90
SSD090	Bright	9.00	50.00	95.00	9.00
SSD091	Bright	9.10	50.00	95.00	9.10
SSD092	Bright	9.20	50.00	95.00	9.20
SSD093	Bright	9.30	50.00	95.00	9.30
SSD094	Bright	9.40	50.00	95.00	9.40
SSD095	Bright	9.50	50.00	95.00	9.50
SSD096	Bright	9.60	50.00	95.00	9.60
SSD097	Bright	9.70	50.00	95.00	9.70
SSD098	Bright	9.80	50.00	95.00	9.80
SSD099	Bright	9.90	55.00	100.00	9.90
SSD100	Bright	10.00	55.00	100.00	10.00
SSD101	Bright	10.10	55.00	115.00	10.10
SSD102	Bright	10.20	55.00	115.00	10.20
SSD103	Bright	10.30	55.00	115.00	10.30
SSD104	Bright	10.40	55.00	115.00	10.40
SSD105	Bright	10.50	55.00	115.00	10.50
SSD106	Bright	10.60	60.00	115.00	10.60
SSD107	Bright	10.70	60.00	115.00	10.70
SSD108	Bright	10.80	60.00	115.00	10.80
SSD109	Bright	10.90	60.00	115.00	10.90
SSD110	Bright	11.00	60.00	115.00	11.00
SSD111	Bright	11.10	65.00	120.00	11.10
SSD112	Bright	11.20	65.00	120.00	11.20
SSD113	Bright	11.30	65.00	120.00	11.30
SSD115	Bright	11.50	65.00	120.00	11.50

Applicable Working Material

SERIES	CARBON STEELS LOW (1018, 1020)	CARBON STEELS MED (1045, 1050)	CARBON STEELS HIGH (1095)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (B414)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
SSD	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

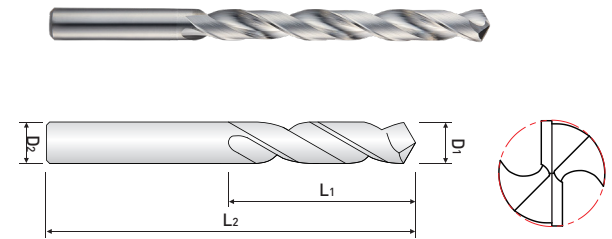
○:GOOD ◎:BEST



SSDL SERIES

8xD

DRILL / 2 FLUTES / X-LONG JOBBER LENGTH / BRIGHT



TOLERANCE (Metric)

D1 = +0 / -0.014 (D1 ≤ 3)
D1 = +0 / -0.018 (D1 = 3.1 to 6)
D1 = +0 / -0.022 (D1 = 6.1 to 10)
D1 = +0 / -0.027 (D1 > 10)
D2 = h7

HARDNESS (HRC)



EDP NO.	2 Flute	Cutting Diameter (metric)	Cutting Length (metric)	Overall Length (metric)	Shank Diameter (metric)
SSDL020	Bright	2.00	30.00	65.00	2.00
SSDL021	Bright	2.10	30.00	65.00	2.10
SSDL022	Bright	2.20	30.00	65.00	2.20
SSDL023	Bright	2.30	30.00	65.00	2.30
SSDL024	Bright	2.40	30.00	65.00	2.40
SSDL025	Bright	2.50	35.00	70.00	2.50
SSDL026	Bright	2.60	35.00	70.00	2.60
SSDL027	Bright	2.70	35.00	70.00	2.70
SSDL028	Bright	2.80	35.00	70.00	2.80
SSDL029	Bright	2.90	35.00	70.00	2.90
SSDL030	Bright	3.00	42.00	73.00	3.00
SSDL031	Bright	3.10	42.00	73.00	3.10
SSDL032	Bright	3.20	42.00	73.00	3.20
SSDL033	Bright	3.30	42.00	73.00	3.30
SSDL034	Bright	3.40	42.00	73.00	3.40
SSDL035	Bright	3.50	42.00	73.00	3.50
SSDL036	Bright	3.60	45.00	80.00	3.60
SSDL037	Bright	3.70	45.00	80.00	3.70
SSDL038	Bright	3.80	48.00	80.00	3.80
SSDL039	Bright	3.90	50.00	80.00	3.90
SSDL040	Bright	4.00	54.00	85.00	4.00
SSDL041	Bright	4.10	54.00	85.00	4.10
SSDL042	Bright	4.20	54.00	85.00	4.20
SSDL043	Bright	4.30	54.00	85.00	4.30
SSDL044	Bright	4.40	54.00	85.00	4.40
SSDL045	Bright	4.50	54.00	85.00	4.50
SSDL046	Bright	4.60	59.00	90.00	4.60
SSDL047	Bright	4.70	59.00	90.00	4.70
SSDL048	Bright	4.80	59.00	90.00	4.80
SSDL049	Bright	4.90	59.00	90.00	4.90
SSDL050	Bright	5.00	59.00	90.00	5.00
SSDL051	Bright	5.10	63.00	95.00	5.10
SSDL052	Bright	5.20	63.00	95.00	5.20
SSDL053	Bright	5.30	63.00	95.00	5.30
SSDL054	Bright	5.40	63.00	95.00	5.40
SSDL055	Bright	5.50	63.00	95.00	5.50
SSDL056	Bright	5.60	66.00	100.00	5.60
SSDL057	Bright	5.70	66.00	100.00	5.70
SSDL058	Bright	5.80	66.00	100.00	5.80
SSDL059	Bright	5.90	66.00	100.00	5.90
SSDL060	Bright	6.00	66.00	100.00	6.00

Applicable Working Material

SERIES	CARBON STEELS LOW (1018, 1020)	CARBON STEELS MED (1045, 1050)	CARBON STEELS HIGH (1095)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (B414)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
SSDL	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST

SSD, SSDL, SSTD SERIES

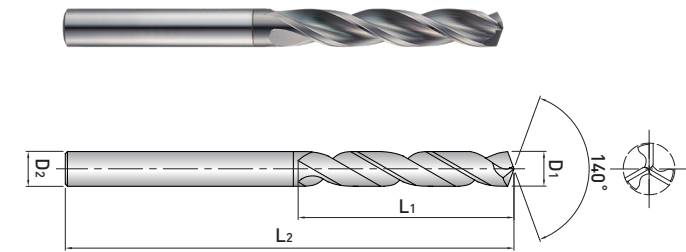


>>Continue

APF505 SERIES

5xD

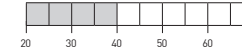
DRILLS / 3 FLUTES / 5xD / DLC COATING



TOLERANCE (Metric)

D1 = +0 / -0.012
D2 = +0 / -0.008 (D2<6)
D2 = +0 / -0.009 (D2≥6)

HARDNESS (HRc)



RPM=rev./min.
FEED=min/rev.
IPR=inch/rev.

Work Material	Tool Steels Alloy Steels			Aluminum Rolled Aluminum Alloys		
	Cutting Diameter (metric)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)
3	4,000-7,000	0.02	0.001	10,000-12,000	0.03	0.001
5	2,400-4,200	0.03	0.001	6,000-8,000	0.05	0.002
8	1,500-2,600	0.05	0.002	3,700-5,000	0.08	0.003
12	1,000-1,700	0.06	0.002	2,500-3,200	0.12	0.005
Work Material	Brass Bronze			Epoxy Resin		
Cutting Diameter (metric)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)
3	7,000-10,000	0.02	0.001	9,000-12,000	0.08	0.003
5	4,200-6,000	0.04	0.002	5,400-7,200	0.08	0.003
8	2,600-3,700	0.08	0.003	3,400-4,500	0.09	0.004
12	1,700-2,500	0.12	0.005	2,200-3,000	0.11	0.004

EDP NO.	Cutting Diameter			Cutting Length	Overall Length	Shank Diameter
	3 Flute					
	DLC					
	Helix 30°					
5xD	D1			L1	L2	D2
APF505	Decimal	Fraction	Metric			
APF505030	0.1181	-	3.000	20.00	60.00	3.00
APF50503175	0.1250	1/8"	3.175	27/32"	2 3/8"	4.00
APF50503263	0.1285	#30	3.263	27/32"	2 3/8"	4.00
APF505035	0.1378	-	3.500	22.00	63.00	4.00
APF50503572	0.1406	9/64"	3.571	15/16"	2 1/2"	4.00
APF50503967	0.1562	5/32"	3.967	15/16"	2 1/2"	4.00
APF505040	0.1575	-	4.000	24.00	65.00	4.00
APF505045	0.1772	-	4.500	24.00	65.00	5.00
APF50504762	0.1875	3/16"	4.762	1 1/4"	2 3/4"	5.00
APF50504800	0.1890	#12	4.800	1 1/4"	2 3/4"	5.00
APF50504851	0.1910	#11	4.851	1 1/4"	2 3/4"	5.00
APF50504914	0.1935	#10	4.914	1 1/4"	2 3/4"	5.00
APF505050	0.1969	-	5.000	32.00	75.00	5.00
APF50505054	0.1990	#8	5.054	1 5/16"	3	6.00
APF50505105	0.2010	#7	5.105	1 5/16"	3	6.00
APF50505158	0.2031	13/64"	5.158	1 5/16"	3	6.00
APF50505181	0.2040	#6	5.181	1 3/8"	3	6.00
APF50505219	0.2055	#5	5.219	1 3/8"	3	6.00
APF50505308	0.2090	#4	5.308	1 3/8"	3	6.00
APF50505410	0.2130	#3	5.410	1 3/8"	3	6.00
APF505055	0.2165	-	5.500	35.00	75.00	6.00
APF50505556	0.2188	7/32"	5.556	1 3/8"	3	6.00
APF50505613	0.2210	#2	5.613	1 3/8"	3	6.00
APF50505791	0.2280	#1	5.791	1 3/8"	3	6.00
APF50505953	0.2344	15/64"	5.953	1 1/2"	3 1/4"	6.00
APF505060	0.2362	-	6.000	38.00	82.00	6.00
APF50506045	0.2380	B	6.045	1 5/8"	3 1/4"	7.00
APF50506146	0.2420	C	6.146	1 5/8"	3 1/4"	7.00
APF50506248	0.2460	D	6.248	1 5/8"	3 1/4"	7.00
APF50506350	0.2500	1/4" / E	6.350	1 5/8"	3 1/4"	7.00
APF505065	0.2559	-	6.500	41.00	82.00	7.00
APF50506527	0.2570	F	6.527	1 11/16"	3 1/4"	7.00
APF50506629	0.2610	G	6.629	1 11/16"	3 1/2"	7.00
APF50506746	0.2656	17/64"	6.746	1 11/16"	3 1/2"	7.00

Applicable Working Material

○:GOOD ◎:BEST

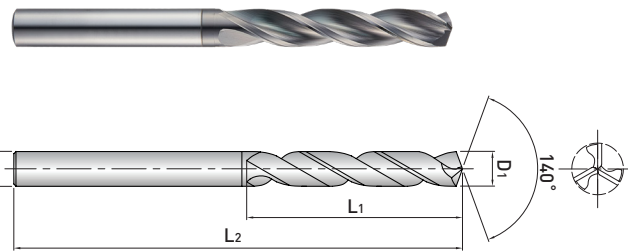
SERIES	CARBON STEELS LOW (1045-1078)	CARBON STEELS MED (1045-1078)	CARBON STEELS HIGH (1045-1078)	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 25-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-55 HRC	HARDENED STEELS 55-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
APF505	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



APF505 SERIES

5xD

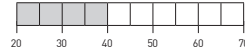
DRILLS / 3 FLUTES / 5xD / DLC COATING



TOLERANCE [Metric]

D1 = +0 / -0.012
D2 = +0 / -0.008 (D2<6)
D2 = +0 / -0.009 (D2≥6)

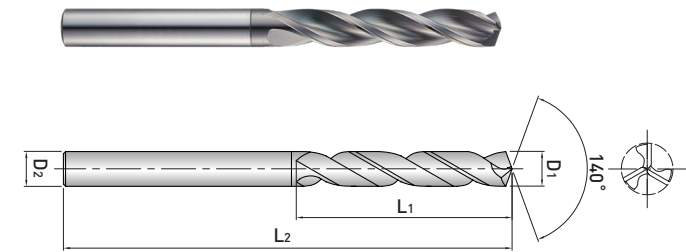
HARDNESS [HRc]



APF505 SERIES

5xD

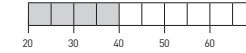
DRILLS / 3 FLUTES / 5xD / DLC COATING



TOLERANCE [Metric]

D1 = +0 / -0.012
D2 = +0 / -0.008 (D2<6)
D2 = +0 / -0.009 (D2≥6)

HARDNESS [HRc]



EDP NO.	Cutting Diameter			Cutting Length	Overall Length	Shank Diameter			
							3 Flute		
							DLC		
							Helix 30°		
5xD	D1			L1	L2	D2			
APF505	Decimal	Fraction	Metric						
APF50506756	0.2660	H	6.756	1 11/16"	3 1/2"	7.00			
APF50506908	0.2720	I	6.908	1 11/16"	3 1/2"	7.00			
APF505070	0.2756	-	7.000	43.00	88.00	7.00			
APF50507035	0.2770	J	7.035	1 11/16"	3 1/2"	8.00			
APF50507142	0.2812	9/32"	7.142	1 3/4"	3 1/2"	8.00			
APF50507366	0.2900	L	7.366	1 3/4"	3 1/2"	8.00			
APF505075	0.2953	-	7.500	44.00	95.00	8.00			
APF50507541	0.2969	19/64"	7.541	1 7/8"	3 3/4"	8.00			
APF50507670	0.3020	N	7.670	1 7/8"	3 3/4"	8.00			
APF50507937	0.3125	5/16"	7.937	1 7/8"	3 3/4"	8.00			
APF505080	0.3150	-	8.000	48.00	95.00	8.00			
APF50508026	0.3160	O	8.026	1 7/8"	3 3/4"	9.00			
APF50508204	0.3230	P	8.204	2 3/32"	3 3/4"	9.00			
APF50508333	0.3281	21/64"	8.333	2 3/32"	4	9.00			
APF50508432	0.3320	Q	8.432	2 3/32"	4	9.00			
APF505085	0.3346	-	8.500	53.00	100.00	9.00			
APF50508610	0.3390	R	8.610	2 3/32"	4	9.00			
APF50508732	0.3438	11/32"	8.732	2 3/16"	4	9.00			
APF50508839	0.3480	S	8.839	2 3/16"	4	9.00			
APF505090	0.3543	-	9.000	55.00	100.00	9.00			
APF50509093	0.3580	T	9.093	2 9/32"	4 1/4"	10.00			
APF50509128	0.3594	23/64"	9.128	2 9/32"	4 1/4"	10.00			
APF50509347	0.3680	U	9.347	2 9/32"	4 1/4"	10.00			
APF505095	0.3740	-	9.500	58.00	108.00	10.00			
APF50509525	0.3750	3/8"	9.525	2 3/8"	4 1/4"	10.00			
APF50509575	0.3770	V	9.575	2 3/8"	4 1/4"	10.00			
APF50509804	0.3860	W	9.804	2 3/8"	4 1/2"	10.00			
APF50509921	0.3906	25/64"	9.921	2 3/8"	4 1/2"	10.00			
APF505100	0.3937	-	10.000	60.00	114.00	10.00			
APF50510083	0.3970	X	10.083	2 1/2"	4 1/2"	11.00			
APF50510261	0.4040	Y	10.261	2 9/16"	4 1/2"	11.00			
APF50510317	0.4062	13/32"	10.317	2 9/16"	4 1/2"	11.00			
APF505105	0.4134	-	10.500	67.00	114.00	11.00			
APF50510716	0.4219	27/64"	10.716	2 11/16"	4 1/2"	11.00			

Applicable Working Material

SERIES	CARBON STEELS LOW (1018, 1018)	CARBON STEELS MED (1020, 1020)	CARBON STEELS HIGH (1045, 1045)	ALLOY STEELS (4140, 4140)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (TA14V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
APF505										⊙	⊙										○	

○:GOOD ⊙:BEST

EDP NO.	Cutting Diameter			Cutting Length	Overall Length	Shank Diameter			
							3 Flute		
							DLC		
							Helix 30°		
5xD	D1			L1	L2	D2			
APF505	Decimal	Fraction	Metric						
APF505110	0.4331	-	11.000	68.00	114.00	11.00			
APF50511112	0.4375	7/16"	11.112	2 13/16"	4 3/4"	12.00			
APF505115	0.4528	-	11.500	70.00	120.00	12.00			
APF50511508	0.4531	29/64"	11.508	2 7/8"	4 3/4"	12.00			
APF50511907	0.4688	15/32"	11.907	2 7/8"	4 3/4"	12.00			
APF505120	0.4724	-	12.000	73.00	120.00	12.00			
APF50512303	0.4844	31/64"	12.303	3	5 5/16"	13.00			
APF505125	0.4921	-	12.500	75.00	135.00	13.00			
APF505127	0.5000	1/2"	12.700	3 1/16"	5 3/8"	13.00			
APF505130	0.5118	-	13.000	78.00	136.00	13.00			
APF50513096	0.5156	33/64"	13.096	3 1/8"	5 3/8"	14.00			
APF50513492	0.5312	17/32"	13.492	3 5/16"	5 11/16"	14.00			
APF50513891	0.5469	35/64"	13.891	3 3/8"	5 13/16"	14.00			
APF505140	0.5512	-	14.000	86.00	148.00	14.00			
APF50514287	0.5625	9/16"	14.287	3 1/2"	5 15/16"	15.00			
APF50514683	0.5781	37/64"	14.683	3 1/2"	6	15.00			
APF505150	0.5906	-	15.000	90.00	152.00	15.00			
APF50515082	0.5938	19/32"	15.082	3 9/16"	6	16.00			
APF50515478	0.6094	39/64"	15.478	3 11/16"	6 3/16"	16.00			
APF50515875	0.6250	5/8"	15.875	3 3/4"	6 5/16"	16.00			
APF505160	0.6299	-	16.000	95.00	160.00	16.00			

Applicable Working Material

SERIES	CARBON STEELS LOW (1018, 1018)	CARBON STEELS MED (1020, 1020)	CARBON STEELS HIGH (1045, 1045)	ALLOY STEELS (4140, 4140)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (TA14V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME	
APF505										⊙	⊙										○	

○:GOOD ⊙:BEST

APF505 SERIES



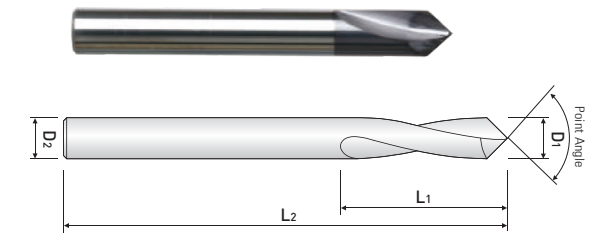
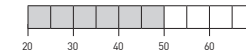
LDA SERIES

NC SPOT DRILLS / 2 FLUTES / SINGLE ENDED / 90°, 120° & 142° / TiAlN COATING

TOLERANCE (Inch)

D1 = +0.0004 / -0.0004
D2 = h6

HARDNESS (HRC)



Work Material	Aluminum Alloy	Cast Aluminum	Magnesium	Copper & Brass	Titanium
Type	6061	380	-	-	6Al-4V
SFM	450 ~ 650	300 ~ 500	250 ~ 500	250 ~ 400	100 ~ 300
Cutting Diameter (Inch)	Chip Load per Flute (Fz)				
3/16	0.0020 ~ 0.0040	0.0015 ~ 0.0030	0.0015 ~ 0.0030	0.0010 ~ 0.0020	0.0010 ~ 0.0020
1/4	0.0025 ~ 0.0050	0.0020 ~ 0.0040	0.0020 ~ 0.0040	0.0020 ~ 0.0030	0.0020 ~ 0.0030
5/16	0.0035 ~ 0.0060	0.0030 ~ 0.0050	0.0030 ~ 0.0050	0.0020 ~ 0.0030	0.0020 ~ 0.0030
3/8	0.0045 ~ 0.0070	0.0030 ~ 0.0060	0.0030 ~ 0.0060	0.0020 ~ 0.0040	0.0020 ~ 0.0040
1/2	0.0055 ~ 0.0080	0.0035 ~ 0.0070	0.0035 ~ 0.0070	0.0030 ~ 0.0050	0.0030 ~ 0.0050
5/8	0.0065 ~ .01000	0.0040 ~ 0.0080	0.0040 ~ 0.0080	0.0030 ~ 0.0060	0.0030 ~ 0.0060
Work Material	Aluminum Alloy	Cast Aluminum	Magnesium	Copper & Brass	Titanium
Type	6061	380	-	-	6Al-4V
V (m/min)	140 ~ 200	90 ~ 150	75 ~ 150	75 ~ 120	30 ~ 90
Cutting Diameter (Metric)	Chip Load per Flute (Fz)				
4	0.050 ~ 0.100	0.038 ~ 0.078	0.038 ~ 0.075	0.025 ~ 0.060	0.025 ~ 0.050
6	0.065 ~ 0.125	0.050 ~ 0.100	0.050 ~ 0.100	0.050 ~ 0.075	0.050 ~ 0.075
8	0.090 ~ 0.150	0.075 ~ 0.125	0.075 ~ 0.125	0.050 ~ 0.075	0.050 ~ 0.075
10	0.115 ~ 0.175	0.075 ~ 0.150	0.075 ~ 0.150	0.050 ~ 0.100	0.050 ~ 0.100
12	0.150 ~ 0.200	0.090 ~ 0.175	0.090 ~ 0.175	0.075 ~ 0.125	0.075 ~ 0.125
16	0.165 ~ 0.250	0.100 ~ 0.200	0.100 ~ 0.200	0.075 ~ 0.150	0.075 ~ 0.150

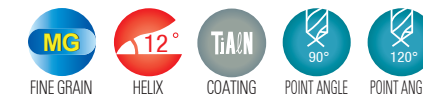
EDP NO.	Cutting Diameter (inch)	Cutting Length (inch)	Overall Length (inch)	Shank Diameter (inch)	Point Angle
TiAlN Helix 12°					Degree
LDA	D1	L1	L2	D2	
LDA006A	3/32	3/8	2	3/32	90°
LDA006B	3/32	3/8	2	3/32	120°
LDA006C	3/32	3/8	2	3/32	142°
LDA008A	1/8	3/8	2	1/8	90°
LDA008B	1/8	3/8	2	1/8	120°
LDA008C	1/8	3/8	2	1/8	142°
LDA012A	3/16	3/4	3	3/16	90°
LDA012B	3/16	3/4	3	3/16	120°
LDA012C	3/16	3/4	3	3/16	142°
LDA016A	1/4	3/4	3	1/4	90°
LDA016B	1/4	3/4	3	1/4	120°
LDA016C	1/4	3/4	3	1/4	142°
LDA020A	5/16	1	3	5/16	90°
LDA020B	5/16	1	3	5/16	120°
LDA020C	5/16	1	3	5/16	142°
LDA024A	3/8	1	3	3/8	90°
LDA024B	3/8	1	3	3/8	120°
LDA024C	3/8	1	3	3/8	142°
LDA028A	7/16	1	4	7/16	90°
LDA028B	7/16	1	4	7/16	120°
LDA028C	7/16	1	4	7/16	142°
LDA032A	1/2	1	4	1/2	90°
LDA032B	1/2	1	4	1/2	120°
LDA032C	1/2	1	4	1/2	142°

Applicable Working Material

SERIES	CARBON STEELS LOW TENSILE	CARBON STEELS MED TENSILE	CARBON STEELS HIGH TENSILE	ALLOY STEELS (AISI 4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al-4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
LDA	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

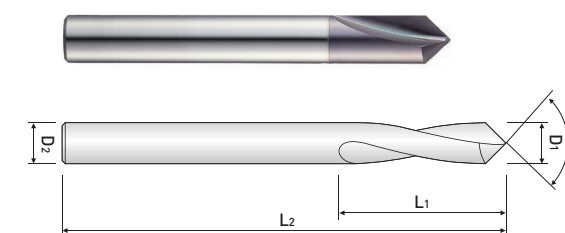
○:GOOD ◎:BEST

LDA SERIES



LDS SERIES

NC SPOT DRILLS / 2 FLUTES / SINGLE ENDED / 90°, 120° / TiAlN COATING



TOLERANCE (Metric)

D1 = +0.01 / -0.01
D2 = h6

HARDNESS (HRC)



RPM=rev./min.
FEED=min/rev.
IPR=inch/rev.

Work Material	Low Carbon Steel 1015-A36 ~500N/mm ²		Medium Carbon Steel 1045, 1046		Alloy Steel 4140, 4142		Alloy tool steel H13 ~ HRC28	
	2,480-3,150 inch/min		1,575-2,362 inch/min		1,260-1,969 inch/min		787-1,102 inch/min	
Drilling Speed(V)	2,480-3,150 inch/min		1,575-2,362 inch/min		1,260-1,969 inch/min		787-1,102 inch/min	
Cutting Diameter (metric)	RPM (rev/min)	IPR (inch/rev)	RPM (rev/min)	IPR (inch/rev)	RPM (rev/min)	IPR (inch/rev)	RPM (rev/min)	IPR (inch/rev)
3/32	7,500	0.0016-0.0032	5,500	0.0016-0.0032	4,500	0.0016-0.0032	2,500	0.0016-0.0032
1/8	7,500	0.0016-0.0032	5,500	0.0016-0.0032	4,500	0.0016-0.0032	2,500	0.0016-0.0032
3/16	5,700	0.002-0.004	4,100	0.002-0.004	3,300	0.002-0.004	1,900	0.002-0.004
1/4	3,800	0.0024-0.0048	2,700	0.0024-0.0048	2,300	0.0024-0.0048	1,250	0.0024-0.0048
5/16	2,800	0.0031-0.0059	2,000	0.0031-0.0059	1,700	0.0031-0.0059	950	0.0031-0.0059
3/8	2,300	0.004-0.007	1,700	0.004-0.007	1,400	0.004-0.007	750	0.004-0.007
7/16	1,900	0.0047-0.0083	1,400	0.0047-0.0083	1,200	0.0047-0.0083	650	0.0047-0.0083
1/2	1,900	0.0047-0.0083	1,400	0.0047-0.0083	1,200	0.0047-0.0083	650	0.0047-0.0083
Work Material	Alloy tool steel H13 ~ HRC34		Cast Iron No 35 B ~ HRC24		Aluminum Alloy 355			
Drilling Speed(V)	630-866 inch/min		2,480-3,937 inch/min		3,149-6,299 inch/min			
Cutting Diameter (metric)	RPM (rev/min)	IPR (inch/rev)	RPM (rev/min)	IPR (inch/rev)	RPM (rev/min)	IPR (inch/rev)	RPM (rev/min)	IPR (inch/rev)
3/32	1,500	0.0016-0.0032	8,000	0.002-0.0035	12,000	0.0039-0.0087		
1/8	1,500	0.0016-0.0032	8,000	0.002-0.0035	12,000	0.0039-0.0087		
3/16	1,100	0.002-0.004	6,500	0.0028-0.0047	9,500	0.0047-0.0098		
1/4	750	0.0024-0.0048	4,300	0.0047-0.007	6,400	0.0055-0.011		
5/16	550	0.0031-0.0059	3,200	0.005-0.0079	4,800	0.007-0.0126		
3/8	450	0.004-0.007	2,600	0.0067-0.0098	3,800	0.0087-0.0142		
7/16	370	0.0047-0.0083	2,200	0.0083-0.0118	3,200	0.0098-0.0157		
1/2	370	0.0047-0.0083	2,200	0.0083-0.0118	3,200	0.0098-0.0157		

EDP NO.	Cutting Diameter (metric)	Cutting Length (metric)	Overall Length (metric)	Shank Diameter (metric)	Point Angle
TiAlN					
Helix 12°					
LDS	D1	L1	L2	D2	Degree
LDS030	3.00	9.00	50.00	3.00	90°
LDS030L	3.00	10.00	100.00	3.00	90°
LDS030A	3.00	9.00	50.00	3.00	120°
LDS040	4.00	10.00	50.00	4.00	90°
LDS040L	4.00	12.00	100.00	4.00	90°
LDS040A	4.00	10.00	50.00	4.00	120°
LDS050	5.00	12.00	50.00	5.00	90°
LDS050A	5.00	12.00	50.00	5.00	120°
LDS060	6.00	13.00	60.00	6.00	90°
LDS060L	6.00	18.00	110.00	6.00	90°
LDS060A	6.00	13.00	60.00	6.00	120°
LDS080	8.00	23.00	70.00	8.00	90°
LDS080L	8.00	23.00	150.00	8.00	90°
LDS080A	8.00	23.00	70.00	8.00	120°
LDS100	10.00	24.00	80.00	10.00	90°
LDS100L	10.00	24.00	150.00	10.00	90°
LDS100A	10.00	24.00	80.00	10.00	120°
LDS120	12.00	28.00	80.00	12.00	90°
LDS120L	12.00	24.00	150.00	12.00	90°
LDS120A	12.00	28.00	80.00	12.00	120°
LDS160	16.00	32.00	90.00	16.00	90°
LDS160A	16.00	32.00	90.00	16.00	120°
LDS200	20.00	35.00	100.00	20.00	90°
LDS200A	20.00	35.00	100.00	20.00	120°

Applicable Working Material

SERIES	CARBON STEELS LOW TENSILE	CARBON STEELS MED TENSILE	CARBON STEELS HIGH TENSILE	ALLOY STEELS (4140, 4340)	DIE STEELS	STAINLESS STEELS 300	STAINLESS STEELS 400	STAINLESS STEELS 17-4 PH	CAST IRON	ALUMINUM (6061, 7075)	ALUMINUM CASTINGS	NICKEL ALLOYS (INCONEL)	TITANIUM (6Al4V)	HARDENED STEELS 35 HRC	HARDENED STEELS 35-45 HRC	HARDENED STEELS 45-50 HRC	HARDENED STEELS 50-70 HRC	MAGNESIUM	BRASS BRONZE	GRAPHITE	COBALT CHROME
LDS	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

○:GOOD ◎:BEST



LDS SERIES

INCH
METRIC

RPM=rev./min.
FEED=mm/rev.
IPR=inch/rev.

	Low Carbon Steel 1015 · A36 ~500N/mm ²			Medium Carbon Steel 1045, 1046			Alloy Steel 4140, 4142			Alloy tool steel H13 ~ HRC28			
	Drilling Speed(V)	2,480~3,150 inch/min			1,575~2,362 inch/min			1,260~1,969 inch/min			787~1,102 inch/min		
Work Material	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	
Power Max Drill Series	3	7,500	0.04-0.08	0.001-0.003	5,500	0.04-0.08	0.001-0.003	4,500	0.04-0.08	0.001-0.003	2,500	0.04-0.08	0.001-0.003
	4	5,700	0.05-0.10	0.002-0.004	4,100	0.05-0.10	0.002-0.004	3,300	0.05-0.10	0.002-0.004	1,900	0.05-0.10	0.002-0.004
	6	3,800	0.06-0.12	0.0025-0.005	2,700	0.06-0.12	0.0025-0.005	2,300	0.06-0.12	0.0025-0.005	1,250	0.06-0.12	0.0025-0.005
	8	2,800	0.08-0.15	0.003-0.006	2,000	0.08-0.15	0.003-0.006	1,700	0.08-0.15	0.003-0.006	950	0.08-0.15	0.003-0.006
	10	2,300	0.10-0.18	0.004-0.007	1,700	0.10-0.18	0.004-0.007	1,400	0.10-0.18	0.004-0.007	750	0.10-0.18	0.004-0.007
	12	1,900	0.12-0.21	0.005-0.0085	1,400	0.12-0.21	0.005-0.0085	1,200	0.12-0.21	0.005-0.0085	650	0.12-0.21	0.005-0.0085
	16	1,400	0.16-0.28	0.006-0.011	1,000	0.16-0.28	0.006-0.011	900	0.16-0.28	0.006-0.011	500	0.16-0.28	0.006-0.011
	20	1,150	0.20-0.34	0.008-0.013	820	0.20-0.34	0.008-0.013	700	0.20-0.34	0.008-0.013	400	0.20-0.34	0.008-0.013
	Alloy tool steel H13 ~ HRC34			Cast Iron No 35 B ~ HRC24			Aluminum Alloy 355						
	Drilling Speed(V)	630~866 inch/min			2,480~3,937 inch/min			3,149~6,299 inch/min					
Work Material	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)				
Solid Spiral Drill Series	3	1,500	0.04-0.08	0.001-0.003	8,000	0.05-0.09	0.002-0.004	12,000	0.10-0.22	0.004-0.009			
	4	1,100	0.05-0.10	0.002-0.004	6,500	0.07-0.12	0.003-0.005	9,500	0.12-0.25	0.005-0.01			
	6	750	0.06-0.12	0.0025-0.005	4,300	0.12-0.18	0.005-0.007	6,400	0.14-0.28	0.0055-0.011			
	8	550	0.08-0.15	0.003-0.006	3,200	0.13-0.20	0.005-0.008	4,800	0.18-0.32	0.007-0.013			
	10	450	0.10-0.18	0.004-0.007	2,600	0.17-0.25	0.006-0.01	3,800	0.22-0.36	0.009-0.014			
	12	370	0.12-0.21	0.005-0.0085	2,200	0.21-0.30	0.008-0.012	3,200	0.25-0.40	0.01-0.016			
	16	280	0.16-0.28	0.006-0.011	1,600	0.24-0.32	0.009-0.013	2,400	0.32-0.48	0.013-0.019			
	20	220	0.20-0.34	0.008-0.013	1,300	0.26-0.40	0.01-0.016	1,900	0.40-0.60	0.016-0.024			
	Drilling Speed(V)												
Work Material	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)	RPM (rev/min)	FEED (mm/rev)	IPR (inch/rev)				
Centering Tools	3	1,500	0.04-0.08	0.001-0.003	8,000	0.05-0.09	0.002-0.004	12,000	0.10-0.22	0.004-0.009			
	4	1,100	0.05-0.10	0.002-0.004	6,500	0.07-0.12	0.003-0.005	9,500	0.12-0.25	0.005-0.01			
	6	750	0.06-0.12	0.0025-0.005	4,300	0.12-0.18	0.005-0.007	6,400	0.14-0.28	0.0055-0.011			
	8	550	0.08-0.15	0.003-0.006	3,200	0.13-0.20	0.005-0.008	4,800	0.18-0.32	0.007-0.013			
	10	450	0.10-0.18	0.004-0.007	2,600	0.17-0.25	0.006-0.01	3,800	0.22-0.36	0.009-0.014			
	12	370	0.12-0.21	0.005-0.0085	2,200	0.21-0.30	0.008-0.012	3,200	0.25-0.40	0.01-0.016			
	16	280	0.16-0.28	0.006-0.011	1,600	0.24-0.32	0.009-0.013	2,400	0.32-0.48	0.013-0.019			
	20	220	0.20-0.34	0.008-0.013	1,300	0.26-0.40	0.01-0.016	1,900	0.40-0.60	0.016-0.024			

MEMO



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