PASSION FOR PRECISION

2014 ENGLISH

Head Office & Changwon Factory
172, Sahwa-ro, Uichang-gu, Changwon-city, Gyeongsangnam-do, Korea, 641-847
TEL : 82-55-286-0905 FAX : 82-55-286-0978

WIDIN TEC CO., LTD.
1142-4, Joongri -Dong, SeoGu, DaeGu-City, Korea, 703-833
TEL : 82-53-341-8909~10, 82-53-341-0989~90 FAX : 82-53-353-9809

Chicago Office(WIDIN. INC.)
436 White Pine Rd, Buffalo Glove, IL 60089
TEL : 1-847-947-8320 FAX : 1-847-947-8322

Shanghai Office(WIDIN(SHANGHAI)TRADE CO., LTD.)
B-901, No 400 Pudian Road, Pudong new district, Shanghai, China
TEL : 86-21-5831-8103 FAX : 86-21-5831-8153

www.iwidin.com

PASSION FOR PRECISION 2014 ENGLISH

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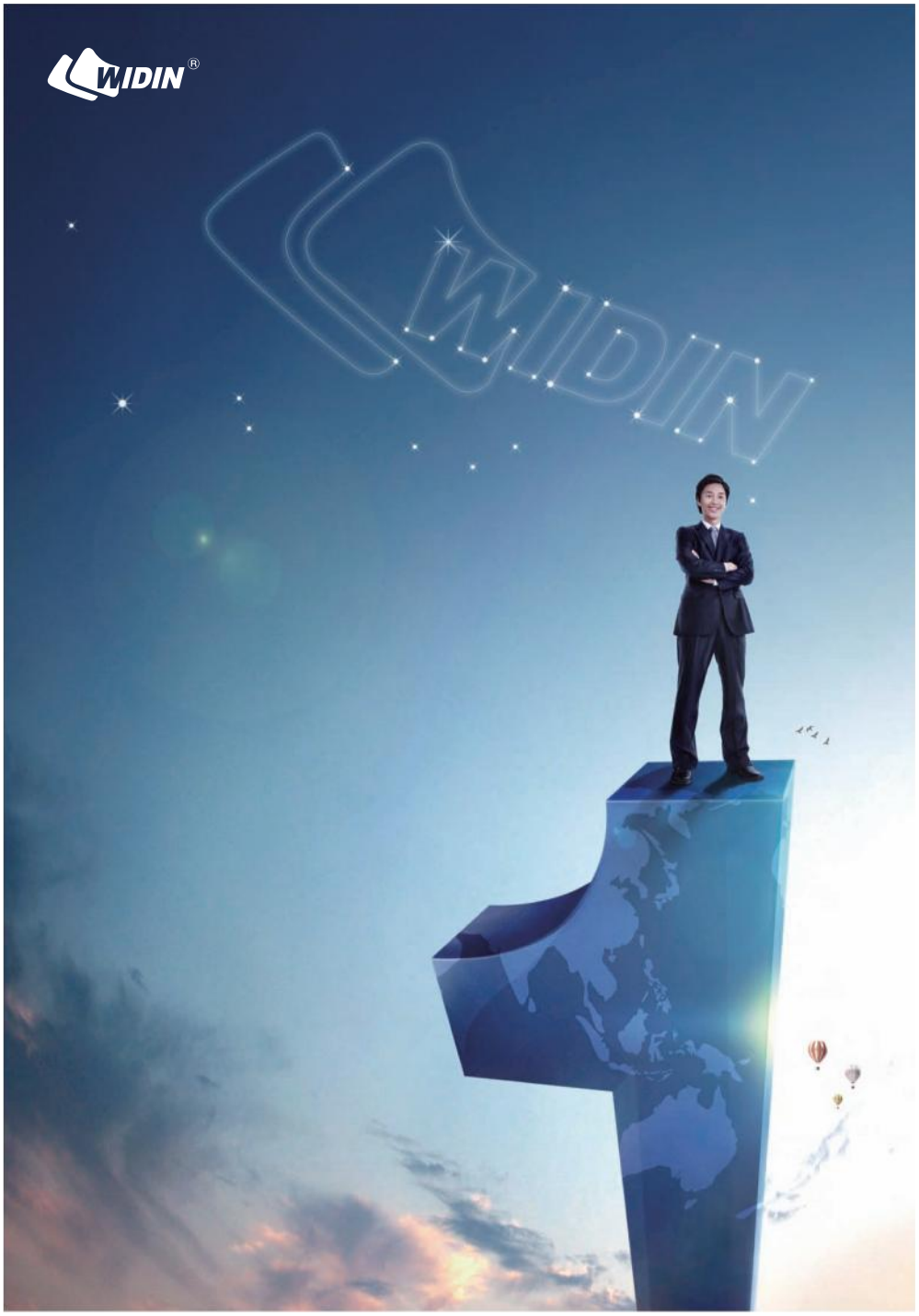
2014 ENGLISH



Best Tools, Best Choice For Your Vision

WIDIN's Local Business Sites

Argentina
Australia
Austria
Belgium
Brazil
Canada
Chicago
China
Colombia
Czech
Denmark
Egypt
England
France
Germany
Greece
Hong Kong
India
Indonesia
Iran
Italy
Japan
Malaysia
Mexico
Netherlands
New Zealand
Norway
Philippines
Poland
Portugal
Shanghai
South Africa
Singapore
Spain
Sweden
Switzerland
Thailand
Turkey
U.S.A
Vietnam

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Shanghai Office	TEL. 86-21-5831-8103/ FAX. 86-21-5831-8153
1 Seoul Office	TEL. 82-2-2679-0980 / FAX. 82-2-2679-0970
2 Shihwa Office	TEL. 82-31-430-5446 / FAX. 82-31-430-5579
3 Daegu Office	TEL. 82-53-604-0968 / FAX. 82-53-604-0932
4 Busan Office	TEL. 82-51-319-0914 / FAX. 82-51-319-0976
5 Changwon Office	TEL. 82-55-277-9911 / FAX. 82-55-237-0904

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The future of WIDIN is always bright.

WIDIN will share the same vision with customers by providing top quality products at competitive price, best service and pursue the core management doctrine of "Customer-based management".

With the WIDIN's rapid growth, its export is also increasing every year through steady improvement in technology, quality and great efforts for opening up a new market.

As WIDIN's mission, endless growth and development, WIDIN will make steady progress to the world.

Global Network

WIDIN will continuously expand its business with the whole world as our market.

Our export started in the late of 90's is growing fast by ceaseless activities to find a new market with our high quality products.

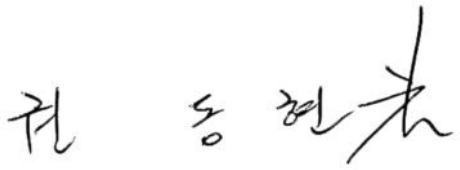
Argentina
Australia
Austria
Belgium
Brazil
Canada
China
Colombia
Czech
Denmark
Egypt
England
France
Germany
Greece
Hong Kong
India
Indonesia
Iran
Italy
Japan
Malaysia
Mexico
Netherlands
New Zealand
Norway
Philippines
Poland
Portugal
South Africa
Singapore
Spain
Sweden
Switzerland
Thailand
Turkey
U.S.A
Vietnam

Greeting

Making customer's dreams a reality- The best mechanical solotion.

Since its establishment in 1988, WIDIN CO.,LTD. has been contributed to pursue the utmost customer satisfaction for the current and potential customers in the globalized market.
With continuously doing development and creativeness of the new technology through the great initiative, we, WIDIN CO.,LTD. is always ready to response of customer needs in customer mind and eye.
To cope with the enormous, various customer demands and satisfaction from popular products to high value added products in the cutting tools industry, WIDIN CO.,LTD. will put its best effort and will play a role of marketing initiator to lead the new 21st era by production and marketing linkage.
Aim to provide the best for money, fine tuned price, utmost quality, excellent customer services based on professionalism, all WIDIN CO.,LTD. will promise to do its best effort at time and where it is.

Thank you.



President and CEO Dong Hyung Kwon

History

1988. 07. Established Hana Cutting Tools Co.,Ltd.
1993. 05. Moved to new premises in Changwon City Korea
2000. 03. Opened the Seoul office at Guro Machine and Tool Complex Area
2001. 04. Appointed as the intensive supporting company for export by Gyeongnam Government
2001. 07. Certified in ISO9001 quality management system
2001. 12. Agreed with Machine Tools Technical Research Center in Changwon International University For Machine Tools Consortium
2002. 05. Registered the Utility Model No. 0277126
2002. 05. Registered the Utility Model No. 0350651
2004. 02 Introduced Automated Tool production Network System
2004. 11. Awarded a Bronze Medal of 34th Precision Technology Encouragement Award
2004. 11. Received a letter of recommendation by Ministry of Commerce & Energy Industry
2005. 02. Opened the Shanghai Office in the Gyeongnam Trade office, Shanghai China
2005. 02. Opened the Busan Office in Busan Industry and Tool Complex Area
2005. 08. Opened the Changwon Office in Changwon
2005. 10. Appointed as a professional manufacturing company in machine parts & materials by the Ministry of Commerce, Industry and Energy
2005. 11. Certified in INNO-BIZ(Innovative company)
2006. 11. Nominated for Excellent Quality Product Manufacturer by Korea chamber of commerce & industry on Nov. 29, 2006
2006. 11. Awarded one million dollar prize
2007. 02 HANA TOOLS CO., LTD. has acquired Patent 'Broken Index type End mill'
2007. 05. Awarded Presidential Prize
2007. 07. Changing name of company from HANA TOOLS CO.,LTD. to WIDIN CO.,LTD.
2008. 07. Observed the 20th anniversary of the foundation with opening new SungJu premises in Changwon city
2008. 11. Awarded three million dollar export prize
2010. 05. Awarded Global standard management awards
2011. 11. Awarded five Million Dollar export achievement prize from Government
2012. 01. Appointed as global hidden champions by Small & medium business Corporation
2012. 06. Moved to a larger facility located in Sahaw-ro, Changwon City

Guide Line to Icons

Raw-Material

- UWC (ULTRA FINE) — **Ultra fine grade** is used in the tool
- MG (FINE GRAIN) — **Micro grain grade** is used in the tool
- WC — **K10~K20 grade** is used in the tool

Number of Teeth

2, 3, 4, 3~5, 3~6, 6, 4~6, 4&8, 6&8

Helix Angle

0° HELIX, 7° HELIX, 12° HELIX, 15° HELIX, 25° HELIX, 30° HELIX, 35° HELIX, 38° HELIX, 45° HELIX, 50° HELIX, 60° HELIX

Coating

- AlTiN HH — AlTiN + HH
- TiAlN SH — TiAlN + SH
- CRN — CRN Coating
- AlTiN H — AlTiN + H
- TiAlN HH — TiAlN + HH
- DIAMOND — Diamond Coating
- AlTiN — AlTiN
- TiAlN — TiAlN
- D.L.C. — D.L.C. Coating

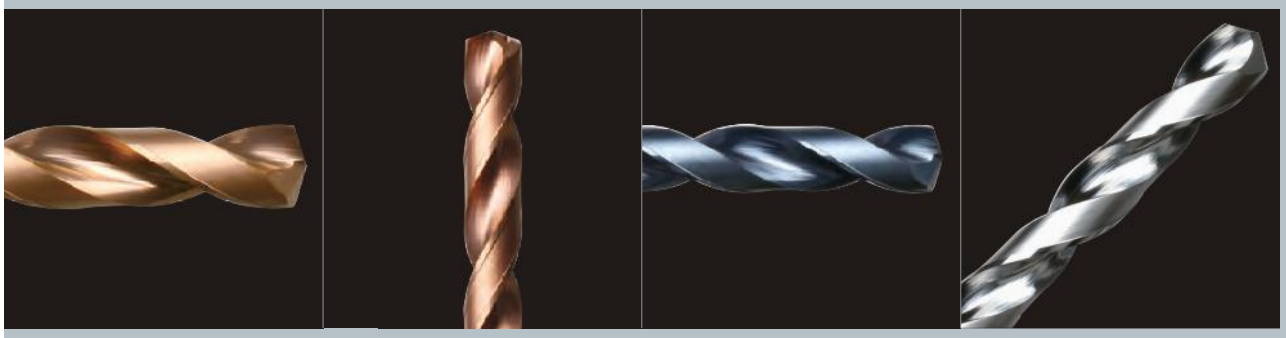
The Type of End Teeth

- R — Ball Nose
- R — Corner Radius
- C — Chamfer

The Type of Periphery

- Fine Pitch Type
- FINE (Flat Shallow Pitch) — Flat Shallow Pitch Type
- CHAMFERED — Chamfered Pitch Type
- COARSE (Conventional Pitch) — Coarse Pitch Type

DRILL series



Power Max Drill Series
Steel, Cast Iron, Stainless Steel — 301

Power Drill Series
Steel, Cast Iron — 347

Solid Spiral Drill Series
Multi-purpose — 355

Technical Data — 358

DRILLS SERIES
METRIC SIZE

Class	Feature	Type	Appearance	No. of Teeth	Item	App.	EDP. No.	Page	
POWER MAX DRILL	High Speed & General Speed Cutting				3 X D		PF503	301	
				2FLUTE	5 X D		PF505	305	
				2FLUTE	3 X D / INTERNAL COOLANT		SF503	309	
				2FLUTE	5 X D / INTERNAL COOLANT		SF505	313	
				2FLUTE	10 X D / INTERNAL COOLANT		SF510	317	
				2FLUTE	20 X D / INTERNAL COOLANT		SF520	319	
				2FLUTE	HIGH PRECISION 3 X D		HP503	320	
				2FLUTE	HIGH PRECISION 3 X D INTERNAL COOLANT		HPI 503	324	
				2FLUTE	HIGH PRECISION 5 X D INTERNAL COOLANT		HPI 505	327	
				2FLUTE	HIGH PRECISION 8 X D INTERNAL COOLANT		HPI 508	332	
				2FLUTE	STUB / DIN 6537K		P503A(F)	335	
				2FLUTE	STUB INTERNAL COOLANT/ DIN 6537K		PI503A(F)	339	
				2FLUTE	MEDIUM INTERNAL COOLANT/ DIN 6537L		PI505A(F)	343	
POWER DRILL	General Speed Cutting			2FLUTE	STUB TYPE - 3 X D		PDS	347	
				2FLUTE	MEDIUM TYPE - 5 X D		PDM	349	
				2FLUTE	STUB TYPE - 3 X D		PDSI	351	
				2FLUTE	MEDIUM TYPE - 5 X D		PDMI	353	
SS DRILL	General Purpose			2FLUTE	REGULAR LENGTH		SSD	355	
				2FLUTE	LONG LENGTH		SSDL	357	

	Carbon Steels (S45C,S55C...) ~ HB225	Alloy Steels (SCM,SK...) HB225~325	Prehardened Steels(NAK..) HRC30~50	Hardened Steels		Copper	Graphite	Cast Iron FCD400. 500~	Aluminum	Stainless Steels
				~HRc55 SKD61	HRc55~ SKD11					
	○	◎	◎	◎	○			◎		◎
	◎	◎	○	○				○		
	○								◎	

Standard Drill Series

DRILL SERIES

Power Max Drill Series

WIDIN

EDP. No.	APPEARANCE	FEATURE	STOCK	PAGE
PF503 ...series		3 X D	•	301
PF505 ...series		5 X D	•	305
SF503 ...series		3 X D / INTERNAL COOLANT	•	309
SF505 ...series		5 X D / INTERNAL COOLANT	•	313
SF510 ...series		10 X D / INTERNAL COOLANT	•	317
SF520 ...series		20 X D / INTERNAL COOLANT	•	319
HP503 ...series		HIGH PRECISION 3 X D	•	320
HPI 503 ...series		HIGH PRECISION 3 X D INTERNAL COOLANT	•	324
HPI 505 ...series		HIGH PRECISION 5 X D INTERNAL COOLANT	•	327
HPI 508 ...series		HIGH PRECISION 8 X D INTERNAL COOLANT	•	332
P503A(F) ...series		STUB / DIN 6537K		335
PI503A(F) ...series		STUB INTERNAL COOLANT/ DIN 6537K		339
PI505A(F) ...series		MEDIUM INTERNAL COOLANT/ DIN 6537L		343

Power Drill Series

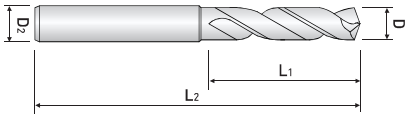
WIDIN

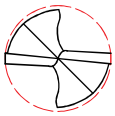
EDP. No.	APPEARANCE	FEATURE	STOCK	PAGE
PDS ...series		3 x D, POWER DRILL - STUB	•	347
PDM ...series		5 x D, POWER DRILL - MEDIUM	•	349
PDSI ...series		3 x D / POWER DRILL - STUB / INTERNAL COOLANT	•	351
PDMI ...series		5 x D / POWER DRILL - MEDIUM / INTERNAL COOLANT	•	353

Solid Spiral Drill Series

WIDIN

EDP. No.	APPEARANCE	FEATURE	STOCK	PAGE
SSD ...series		SOLID DRILL	•	355
SSDL ...series		SOLID DRILL - LONG	•	357





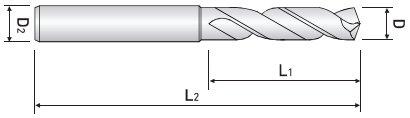
3 X D / POWER MAX DRILL STUB / HIGH SPEED MACHINING

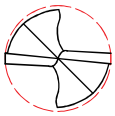
- Suitable for high speed cutting with newly developed raw-material and new coating.

PF503 ...series

ULTRA FINE HELIX h8

EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L_1	L_2	D_2	STOCK
PF503020	2.0	-	.0796	14	50	3	•
PF503021	2.1	-	.0835				•
PF503022	2.2	-	.0875				•
PF503023	2.3	-	.0915				•
PF503024	2.4	-	.0955				•
PF503025	2.5	-	.0994				•
PF503026	2.6	-	.1034				•
PF503027	2.7	-	.1074				•
PF503028	2.8	-	.1114				•
PF503029	2.9	-	.1154				•
PF503030	3.0	-	.1193	18	60		•
PF503031	3.1	-	.1233	20	60	4	•
PF50303175	3.175	1/8	.1250				•
PF503032	3.2	-	.1260				•
PF50303264	3.264	#30	.1285				•
PF503033	3.3	-	.1299				•
PF503034	3.4	-	.1339	22			•
PF503035	3.5	-	.1378				•
PF50303572	3.572	9/64	.1406				•
PF503036	3.6	-	.1417				•
PF503037	3.7	-	.1457				•
PF503038	3.8	-	.1496	24			•
PF503039	3.9	-	.1535				•
PF503040	4.0	-	.1575				•
PF50304039	4.039	#21	.1590				•
PF503041	4.1	-	.1614				•
PF503042	4.2	-	.1654	26	62	5	•
PF503043	4.3	-	.1693				•
PF503044	4.4	-	.1732				•
PF503045	4.5	-	.1772				•
PF503046	4.6	-	.1811				•
PF503047	4.7	-	.1850				•
PF50304763	4.763	3/16	.1875				•
PF503048	4.8	-	.1890				•
PF503049	4.9	-	.1929				•
PF503050	5.0	-	.1969				•
PF503051	5.1	-	.2008				•
PF50305159	5.159	13/64	.2031	28	66	6	•
PF503052	5.2	-	.2047				•
PF503053	5.3	-	.2087				•
PF503054	5.4	-	.2126				•
PF503055	5.5	-	.2165				•





3 X D / POWER MAX DRILL STUB / HIGH SPEED MACHINING

- Suitable for high speed cutting with newly developed raw-material and new coating.

PF503 ...series

ULTRA FINE HELIX h8

EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L1	L2	D2	STOCK
PF50305558	5.558	7/32	.2188	30	66	6	•
PF503056	5.6	-	.2205				•
PF503057	5.7	-	.2244				•
PF503058	5.8	-	.2283				•
PF503059	5.9	-	.2323				•
PF50305953	5.953	15/64	.2344				•
PF503060	6.0	-	.2362				•
PF503061	6.1	-	.2402				•
PF503062	6.2	-	.2441	34	74	7	•
PF503063	6.3	-	.24				•
PF5030635	6.350	1/4	80				•
PF503064	6.4	-	.2500				•
PF503065	6.5	-	.2520				•
PF503066	6.6	-	.2559				•
PF503067	6.7	-	.2598				•
PF50306747	6.747	17/64	.2638	37			•
PF503068	6.8	-	.2656				•
PF503069	6.9	-	.2677				•
PF503070	7.0	-	.2717				•
PF503071	7.1	-	.2756				•
PF50307145	7.145	9/32	.2795	40	79	8	•
PF503072	7.2	-	.2813				•
PF503073	7.3	-	.2835				•
PF503074	7.4	-	.2874				•
PF503075	7.5	-	.2913				•
PF50307541	7.541	19/64	.2953				•
PF503076	7.6	-	.2969				•
PF503077	7.7	-	.2992				•
PF503078	7.8	-	.3031				•
PF503079	7.9	-	.3071				•
PF50307938	7.938	5/16	.3110				•
PF503080	8.0	-	.3125				•
PF503081	8.1	-	.3150				•
PF503082	8.2	-	.3189	43	84	9	•
PF503083	8.3	-	.3228				•
PF50308334	8.334	21/64	.3268				•
PF503084	8.4	-	.3281				•
PF503085	8.5	-	.3307				•
PF503086	8.6	-	.3346				•
PF503087	8.7	-	.3386				•
PF50308733	8.733	-	.3425				•
PF503088	8.8	-	.3438				•

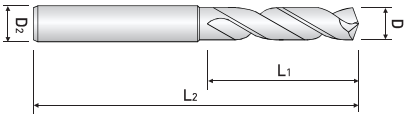
EDP. No.	Dia.			L_1	L_2	D_2	STOCK
	mm	fraction	inch				
PF503089	8.9	-	.3504	43	84	9	•
PF503090	9.0	-	.3543				•
PF503091	9.1	-	.3583				•
PF50309129	9.129	23/64	.3594	47	89	10	•
PF503092	9.2	-	.3622				•
PF503093	9.3	-	.3661				•
PF503094	9.4	-	.3701				•
PF503095	9.5	-	.3740				•
PF50309525	9.525	3/8	.3750				•
PF503096	9.6	-	.3780				•
PF503097	9.7	-	.3819				•
PF503098	9.8	-	.3858				•
PF503099	9.9	-	.3898				•
PF50309921	9.921	25/64	.3906				•
PF503100	10.0	-	.3937				•
PF503101	10.1	-	.3976				•
PF503102	10.2	-	.4016	51	95	11	•
PF503103	10.3	-	.4055				•
PF5031032	10.32	13/32	.4063				•
PF503104	10.4	-	.4094				•
PF503105	10.5	-	.4134				•
PF503106	10.6	-	.4173				•
PF503107	10.7	-	.4213				•
PF50310716	10.716	27/64	.4219				•
PF503108	10.8	-	.4252				•
PF503109	10.9	-	.4291				•
PF503110	11.0	-	.4331				•
PF503111	11.1	-	.4370				•
PF50311113	11.113	7/16	.4375	54	102	12	•
PF503112	11.2	-	.4409				•
PF503113	11.3	-	.4449				•
PF503114	11.4	-	.4488				•
PF503115	11.5	-	.4528				•
PF503116	11.6	-	.4567				•
PF503117	11.7	-	.4606				•
PF503118	11.8	-	.4646				•
PF503119	11.9	15/32	.4685				•
PF50311908	11.908	-	.4688				•
PF503120	12.0	-	.4724				•
PF503121	12.1	-	.4764				•
PF503122	12.2	-	.4803	57	102	13	•
PF503123	12.3	-	.4843				•
PF50312304	12.304	31/64	.4844				•
PF503124	12.4	-	.4882				•
PF503125	12.5	-	.4921				•
PF503126	12.6	-	.4961				•
PF503127	12.7	-	.5000				•
PF503128	12.8	-	.5039				•
PF503129	12.9	-	.5079				•
PF503130	13.0	-	.5118				•
PF50313096	13.096	33/64	.5156				•
PF503131	13.1	-	.5157				•
PF503132	13.2	-	.5197	60	107	14	•
PF503133	13.3	-	.5236				•

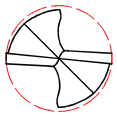
EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L_1	L_2	D_2	STOCK
PF503134	13.4	-	.2188	60	107	14	•
PF50313494	13.494	17/32	.2205				•
PF503135	13.5	-	.2244				•
PF503136	13.6	-	.2283				•
PF503137	13.7	-	.2323				•
PF503138	13.8	-	.2344				•
PF50313891	13.891	35/64	.2362				•
PF503139	13.9	-	.2402				•
PF503140	14.0	-					•
PF503141	14.1	-					•
PF503142	14.2	-	.2441	62	111	15	•
PF50314288	14.288	9/16	.24				•
PF503143	14.3	-	80				•
PF503144	14.4	-	.2500				•
PF503145	14.5	-	.2520				•
PF503146	14.6	-	.2559				•
PF503147	14.7	-	.2598				•
PF503148	14.8	-	.2638				•
PF503149	14.9	-	.2656				•
PF503150	15.0	-	.2677				•
PF50315081	15.081	19/32	.2717				•
PF503151	15.1	-	.2756				•
PF503152	15.2	-	.2795	64	115	16	•
PF503153	15.3	-	.2813				•
PF503154	15.4	-	.2835				•
PF503155	15.5	-	.2874				•
PF503156	15.6	-	.2913				•
PF503157	15.7	-	.2953				•
PF503158	15.8	-	.2969				•
PF50315875	15.875	5/8	.2992				•
PF503160	16.0	-	.3031				•
PF503161	16.1	-	.3071				•
PF503163	16.3	-		66	119	17	•
PF503165	16.5	-					•
PF50316667	16.667	21/32	.3110				•
PF503170	17.0	-	.3125				•
PF503171	17.1	-	.3150				•
PF503172	17.2	-		66	123	18	•
PF503173	17.3	-					•
PF50317463	17.463	11/16					•
PF503175	17.5	-					•
PF503177	17.7	-					•
PF503178	17.8	-					•
PF503180	18.0	-					•
PF503181	18.1	-					•
PF503182	18.2	-	.3189	70	127	19	•
PF503185	18.5	-	.3228				•
PF503190	19.0	-	.3268				•
PF503191	19.1	-	.3281				•
PF503193	19.3	-	.3307	70	131	20	•
PF503195	19.5	-	.3346				•
PF503197	19.7	-	.3425				•
PF503200	20.0	-	.3438				•

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13





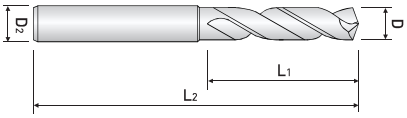
5 X D / POWER MAX DRILL MEDIUM / HIGH SPEED MACHINING

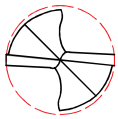
- Suitable for high speed cutting with newly developed raw-material and new coating.

PF505 ...series

ULTRA FINE HELIX h8

EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L1	L2	D2	STOCK
PF505030	3.0	-	.1193	25	60	3	•
PF505031	3.1	-	.1233	27		4	•
PF50503175	3.175	1/8	.1250				•
PF505032	3.2	-	.1260				•
PF50503264	3.264	#30	.1285				•
PF505033	3.3	-	.1299				•
PF505034	3.4	-	.1339	30	65		•
PF505035	3.5	-	.1378				•
PF50503572	3.572	9/64	.1406				•
PF505036	3.6	-	.1417				•
PF505037	3.7	-	.1457				•
PF505038	3.8	-	.1496	33	71		•
PF505039	3.9	-	.1535				•
PF50504039	4.039	#21	.1575				•
PF505040	4.0	-	.1590	33	71	5	•
PF505041	4.1	-	.1614				•
PF505042	4.2	-	.1654				•
PF505043	4.3	-	.1693	36			•
PF505044	4.4	-	.1732				•
PF505045	4.5	-	.1772				•
PF505046	4.6	-	.1811				•
PF505047	4.7	-	.1850				•
PF50504763	4.763	3/16	.1875	39			•
PF505048	4.8	-	.1890				•
PF505049	4.9	-	.1929				•
PF505050	5.0	-	.1969				•
PF505051	5.1	-	.2008	39	83	6	•
PF50505159	5.159	13/64	.2031				•
PF505052	5.2	-	.2047				•
PF505053	5.3	-	.2087				•
PF505054	5.4	-	.2126	43			•
PF505055	5.5	-	.2165				•
PF50505558	5.558	7/32	.2188				•
PF505056	5.6	-	.2205				•
PF505057	5.7	-	.2244				•
PF505058	5.8	-	.2283				•
PF505059	5.9	-	.2323				•
PF50505953	5.953	15/64	.2344				•
PF505060	6.0	-	.2362				•
PF505061	6.1	-	.2402	47	87	7	•
PF505062	6.2	-	.2441				•
PF505063	6.3	-	.2480				•





5 X D / POWER MAX DRILL MEDIUM / HIGH SPEED MACHINING

- Suitable for high speed cutting with newly developed raw-material and new coating.

PF505 ...series

ULTRA FINE HELIX h8

EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L1	L2	D2	STOCK
PF5050635	6.350	1/4	.2500	47	87	7	•
PF505064	6.4	-	.2520				•
PF505065	6.5	-	.2559				•
PF505066	6.6	-	.2598				•
PF505067	6.7	-	.2638				•
PF50506747	6.747	17/64	.2656				•
PF505068	6.8	-	.2677				•
PF505069	6.9	-	.2717				•
PF505070	7.0		.2756				•
PF505071	7.1	-	.2795	52	92	8	•
PF50507145	7.145	9/32	.2813				•
PF505072	7.2	-	.2835				•
PF505073	7.3	-	.2874				•
PF505074	7.4	-	.2913				•
PF505075	7.5	-	.2953				•
PF50507541	7.541	19/64	.2969				•
PF505076	7.6	-	.2992				•
PF505077	7.7	-	.3031				•
PF505078	7.8	-	.3071				•
PF505079	7.9		.3110				•
PF50507938	7.938	5/16	.3125				•
PF505080	8.0	-	.3150				•
PF505081	8.1	-	.3189	56	96	9	•
PF505082	8.2	-	.3228				•
PF505083	8.3	-	.3268				•
PF50508334	8.334	21/64	.3281				•
PF505084	8.4	-	.3307				•
PF505085	8.5	-	.3346				•
PF505086	8.6	-	.3386				•
PF505087	8.7	-	.3325				•
PF50508733	8.733	11/32	.3338				•
PF505088	8.8	-	.3465				•
PF505089	8.9	-	.3504				•
PF505090	9.0	-	.3543				•
PF505091	9.1	-	.3583	62	105	10	•
PF50509129	9.129	23/64	.3594				•
PF505092	9.2	-	.3622				•
PF505093	9.3	-	.3661				•
PF505094	9.4	-	.3701				•
PF505095	9.5	-	.3740				•
PF50509525	9.525	3/8	.3750				•
PF505096	9.6	-	.3780				•

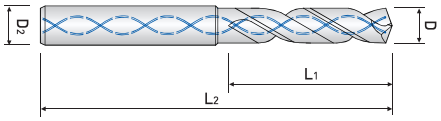
EDP. No.	Dia.			L_1	L_2	D_2	STOCK
	mm	fraction	inch				
PF505097	9.7	-	.3819				•
PF505098	9.8	-	.3858				•
PF505099	9.9	-	.3898	62	105	10	•
PF50509921	9.921	25/64	.3906				•
PF505100	10.0	-	.3937				•
PF505101	10.1	-	.3976				•
PF505102	10.2	-	.4016				•
PF505103	10.3	-	.4055				•
PF50501032	10.32	13/32	.4063				•
PF505104	10.4	-	.4094				•
PF505105	10.5	-	.4134	68	115	11	•
PF505106	10.6	-	.4173				•
PF505107	10.7	-	.4213				•
PF50510716	10.716	27/64	.4219				•
PF505108	10.8	-	.4252				•
PF505109	10.9	-	.4291				•
PF505110	11.0	-	.4331				•
PF505111	11.1	-	.4370				•
PF50511113	11.113	7/16	.4375				•
PF505112	11.2	-	.4409				•
PF505113	11.3	-	.4449				•
PF505114	11.4	-	.4488				•
PF505115	11.5	-	.4528	71	121	12	•
PF505116	11.6	-	.4567				•
PF505117	11.7	-	.4606				•
PF505118	11.8	-	.4646				•
PF505119	11.9	-	.4685				•
PF50511908	11.908	15/32	.4688				•
PF505120	12.0	-	.4724				•
PF505121	12.1	-	.4764				•
PF505122	12.2	-	.4803				•
PF505123	12.3	-	.4843				•
PF50512304	12.304	31/64	.4844				•
PF505124	12.4	-	.4882				•
PF505125	12.5	-	.4921	75	125	13	•
PF505126	12.6	-	.4961				•
PF505127	12.7	-	.5000				•
PF505128	12.8	-	.5039				•
PF505129	12.9	-	.5079				•
PF505130	13.0	-	.5118				•
PF50513096	13.096	33/64	.5156				•
PF505131	13.1	-	.5157				•
PF505132	13.2	-	.5197				•
PF505133	13.3	-	.5236	80	134	14	•
PF505134	13.4	-	.5276				•
PF50513494	13.494	17/32	.5313				•
PF505135	13.5	-	.5315				•

EDP. No.	Dia.			L_1	L_2	D_2	STOCK
	mm	fraction	inch				
PF505136	13.6	-	.5354	80	134	14	•
PF505137	13.7	-	.5394				•
PF505138	13.8	-	.5433				•
PF50513891	13.891	35/64	.5469				•
PF505139	13.9	-	.5472				•
PF505140	14.0	-	.5512				•
PF505141	14.1	-	.5551	83	143	15	•
PF505142	14.2	-	.5591				•
PF50514288	14.288	-	.5625				•
PF505143	14.3	-	.5630				•
PF505144	14.4	-	.5669				•
PF505145	14.5	-	.5709				•
PF505146	14.6	-	.5748				•
PF505147	14.7	-	.5787				•
PF505148	14.8	-	.5827				•
PF505149	14.9	-	.5866				•
PF505150	15.0	-	.5906				•
PF50515081	15.081	19/32	.5937	90	152	16	•
PF505151	15.1	-	.5945				•
PF505152	15.2	-	.5984				•
PF505154	15.4	-	.6063				•
PF505155	15.5	-	.6102				•
PF505156	15.6	-	.6142				•
PF505157	15.7	-	.6181				•
PF505158	15.8	-	.6220				•
PF50515875	15.875	5/8	.6250				•
PF505160	16.0	-	.6299				•
PF505161	16.1	-	.6339	95	155	17	•
PF505163	16.3	-	.6417				•
PF505165	16.5	-	.6496				•
PF50516667	16.667	21/32	.6562				•
PF505170	17.0	-	.6693				•
PF505171	17.1	-	.6732	100	157	18	•
PF505172	17.2	-	.6772				•
PF50517463	17.463	11/16	.6875				•
PF505175	17.5	-	.6890				•
PF505177	17.7	-	.6969				•
PF505178	17.8	-	.7008				•
PF505180	18.0	-	.7087				•
PF505181	18.1	-	.7126	105	160	19	•
PF505182	18.2	-	.7165				•
PF505185	18.5	-	.7283				•
PF505190	19.0	-	.7480				•
PF505191	19.1	-	.7520	110	163	20	•
PF505195	19.5	-	7677				•
PF505197	19.7	-	.7756				•
PF505200	20.0	-	.7874				•

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



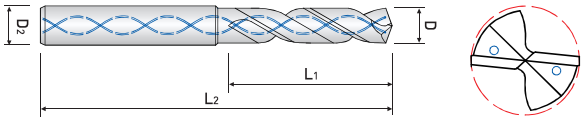
3 X D / POWER MAX DRILL STUB / INTERNAL COOLANT

- Suitable for high speed cutting with newly developed raw-material and new coating.

SF503 ...series

ULTRA FINE HELIX h8

EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L1	L2	D2	STOCK
SF503030	3.0	-	.1193	18	60	3	•
SF503031	3.1	-	.1233	20		4	•
SF50303175	3.175	-	.1250				•
SF503032	3.2	-	.1260				•
SF50303246	3.264	-	.1285				•
SF503033	3.3	-	.1299				•
SF503034	3.4	-	.1339	22			•
SF503035	3.5	-	.1378				•
SF50303572	3.572	-	.1406				•
SF503036	3.6	-	.1417				•
SF503037	3.7	-	.1457				•
SF503038	3.8	-	.1496	24			•
SF503039	3.9	-	.1535				•
SF503040	4.0	-	.1575				•
SF50304039	4.039	-	.1590	24	62	5	•
SF503041	4.1	-	.1614				•
SF503042	4.2	-	.1654	26			•
SF503043	4.3	-	.1693				•
SF503044	4.4	-	.1732				•
SF503045	4.5	-	.1772				•
SF503046	4.6	-	.1811				•
SF503047	4.7	-	.1850				•
SF50304763	4.763	-	.1875				•
SF503048	4.8	-	.1890				•
SF503049	4.9	-	.1929				•
SF503050	5.0	-	.1969				•
SF503051	5.1	-	.2008	28	66	6	•
SF50305159	5.159	-	.2031				•
SF503052	5.2	-	.2047				•
SF503053	5.3	-	.2087				•
SF503054	5.4	-	.2126				•
SF503055	5.5	-	.2165				•
SF50305558	5.558	-	.2188	30			•
SF503056	5.6	-	.2205				•
SF503057	5.7	-	.2244				•
SF503058	5.8	-	.2283				•
SF503059	5.9	-	.2323				•
SF50305953	5.953	-	.2344				•
SF503060	6.0	-	.2362				•
SF503061	6.1	-	.2402	34	74	7	•
SF503062	6.2	-	.2441				•
SF503063	6.3	-	.2480				•



3 X D / POWER MAX DRILL STUB / INTERNAL COOLANT

- Suitable for high speed cutting with newly developed raw-material and new coating.

SF503 ...series

ULTRA FINE HELIX h8

EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L1	L2	D2	STOCK
SF5030635	6.350	-	.2500	34	74	7	•
SF503064	6.4	-	.2520				•
SF503065	6.5	-	.2559				•
SF503066	6.6	-	.2598				•
SF503067	6.7	-	.2638	37			•
SF50306747	6.747		.2656				•
SF503068	6.8	-	.2677				•
SF503069	6.9	-	.2717				•
SF503070	7.0	-	.2756				•
SF503071	7.1	-	.2795	40	79	8	•
SF50307145	7.145	-	.2813				•
SF503072	7.2	-	.2835				•
SF503073	7.3	-	.2874				•
SF503074	7.4	-	.2913				•
SF503075	7.5	-	.2953				•
SF50307541	7.541	-	.2969				•
SF503076	7.6	-	.2992				•
SF503077	7.7	-	.3031				•
SF503078	7.8	-	.3071				•
SF503079	7.9		.3110				•
SF50307938	7.938	-	.3125				•
SF503080	8.0	-	.3150				•
SF503081	8.1	-	.3189	43	84	9	•
SF503082	8.2	-	.3228				•
SF503083	8.3	-	.3268				•
SF50308334	8.334	-	.3281				•
SF503084	8.4	-	.3307				•
SF503085	8.5	-	.3346				•
SF503086	8.6	-	.3386				•
SF503087	8.7	-	.3325				•
SF50308733	8.733	-	.3338				•
SF503088	8.8	-	.3465				•
SF503089	8.9	-	.3504				•
SF503090	9.0	-	.3543				•
SF503091	9.1	-	.3583	47	89	10	•
SF50309129	9.129	-	.3594				•
SF503092	9.2	-	.3622				•
SF503093	9.3	-	.3661				•
SF503094	9.4	-	.3701				•
SF503095	9.5	-	.3740				•
SF50309525	9.525	-	.3750				•
SF503096	9.6	-	.3780				•

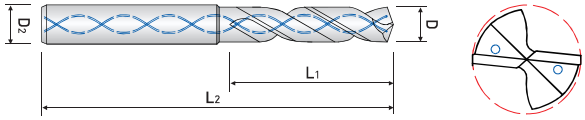
EDP. No.	Dia.			L_1	L_2	D_2	STOCK
	mm	fraction	inch				
SF503097	9.7	-	.3819				•
SF503098	9.8	-	.3858				•
SF503099	9.9	-	.3898	47	89	10	•
SF50309921	9.921	25/64	.3906				•
SF503100	10.0	-	.3937				•
SF503101	10.1	-	.3976				•
SF503102	10.2	-	.4016				•
SF503103	10.3	-	.4055				•
SF5031032	10.32	13/32	.4063				•
SF503104	10.4	-	.4094				•
SF503105	10.5	-	.4134				•
SF503106	10.6	-	.4173	51	95	11	•
SF503107	10.7	-	.4213				•
SF50310716	10.716	27/64	.4219				•
SF503108	10.8	-	.4252				•
SF503109	10.9	-	.4291				•
SF503110	11.0	-	.4331				•
SF503111	11.1	-	.4370				•
SF50311113	11.113	7/16	.4375				•
SF503112	11.2	-	.4409				•
SF503113	11.3	-	.4449				•
SF503114	11.4	-	.4488				•
SF503115	11.5	-	.4528				•
SF503116	11.6	-	.4567	54	102	12	•
SF503117	11.7	-	.4606				•
SF503118	11.8	-	.4646				•
SF503119	11.9	-	.4685				•
SF50311908	11.908	15/32	.4688				•
SF503120	12.0	-	.4724				•
SF503121	12.1	-	.4764				•
SF503122	12.2	-	.4803				•
SF503123	12.3	-	.4843				•
SF50312304	12.304	31/64	.4844				•
SF503124	12.4	-	.4882				•
SF503125	12.5	-	.4921	57	102	13	•
SF503126	12.6	-	.4961				•
SF503127	12.7	-	.5000				•
SF503128	12.8	-	.5039				•
SF503129	12.9	-	.5079				•
SF503130	13.0	-	.5118				•
SF50313096	13.096	33/64	.5156				•
SF503131	13.1	-	.5157				•
SF503132	13.2	-	.5197				•
SF503133	13.3	-	.5236	60	107	14	•
SF503134	13.4	-	.5276				•
SF50313494	13.494	17/32	.5313				•
SF503135	13.5	-	.5315				•

EDP. No.	Dia.			L_1	L_2	D_2	STOCK
	mm	fraction	inch				
SF503136	13.6	-	.5354	60	107	14	•
SF503137	13.7	-	.5394				•
SF503138	13.8	-	.5433				•
SF50313891	13.891	35/64	.5469				•
SF503139	13.9	-	.5472				•
SF503140	14.0	-	.5512				•
SF503141	14.1	-	.5551	62	111	15	•
SF503142	14.2	-	.5591				•
SF50314288	14.288	9/16	.5625				•
SF503143	14.3	-	.5630				•
SF503144	14.4	-	.5669				•
SF503145	14.5	-	.5709				•
SF503146	14.6	-	.5748				•
SF503147	14.7	-	.5787				•
SF503148	14.8	-	.5827				•
SF503149	14.9	-	.5866				•
SF503150	15.0	-	.5906				•
SF50315081	15.081	19/32	.5937	64	115	16	•
SF503151	15.1	-	.5945				•
SF503152	15.2	-	.5984				•
SF503154	15.4	-	.6063				•
SF503155	15.5	-	.6102				•
SF503156	15.6	-	.6142				•
SF503157	15.7	-	.6181				•
SF503158	15.8	-	.6220				•
SF50315875	15.875	5/8	.6250				•
SF503160	16.0	-	.6299				•
SF503161	16.1	-	.6339	66	119	17	•
SF503163	16.3	-	.6417				•
SF503165	16.5	-	.6496				•
SF50316667	16.667	21/32	.6562				•
SF503170	17.0	-	.6693				•
SF503171	17.1	-	.6732	66	123	18	•
SF503172	17.2	-	.6772				•
SF50317463	17.463	11/16	.6875				•
SF503175	17.5	-	.6890				•
SF503177	17.7	-	.6969				•
SF503178	17.8	-	.7008				•
SF503180	18.0	-	.7087				•
SF503181	18.1	-	.7126	70	127	19	•
SF503182	18.2	-	.7165				•
SF503185	18.5	-	.7283				•
SF503190	19.0	-	.7480				•
SF503191	19.1	-	.7520	70	131	20	•
SF503195	19.5	-	7677				•
SF503197	19.7	-	.7756				•
SF503200	20.0	-	.7874				•

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



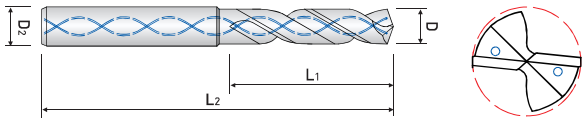
5 X D / POWER MAX DRILL MEDIUM / INTERNAL COOLANT,

- Suitable for high speed cutting with newly developed raw-material and new coating.

SF505 ...series

ULTRA FINE HELIX h8

EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L1	L2	D2	STOCK
SF505031	3.1	-	.1233	27	74	4	•
SF50503175	3.175	1/8	.1250				•
SF505032	3.2	-	.1260				•
SF50503264	3.264	#30	.1285				•
SF505033	3.3	-	.1299				•
SF505034	3.4	-	.1339	30			•
SF505035	3.5	-	.1378				•
SF50503572	3.572	9/64	.1406				•
SF505036	3.6	-	.1417				•
SF505037	3.7	-	.1457				•
SF505038	3.8	-	.1496	33			•
SF505039	3.9	-	.1535				•
SF505040	4.0	-	.1575				•
SF50504039	4.039	#21	.1590	33	80	5	•
SF505041	4.1	-	.1614				•
SF505042	4.2	-	.1654				•
SF505043	4.3	-	.1693	36			•
SF505044	4.4	-	.1732				•
SF505045	4.5	-	.1772				•
SF505046	4.6	-	.1811				•
SF505047	4.7	-	.1850				•
SF50504763	4.763	3/16	.1875	39			•
SF505048	4.8	-	.1890				•
SF505049	4.9	-	.1929				•
SF505050	5.0	-	.1969				•
SF505051	5.1	-	.2008	39	87	6	•
SF50505159	5.159	13/64	.2031				•
SF505052	5.2	-	.2047				•
SF505053	5.3	-	.2087				•
SF505054	5.4	-	.2126	43			•
SF505055	5.5	-	.2165				•
SF50505558	5.558	7/32	.2188				•
SF505056	5.6	-	.2205				•
SF505057	5.7	-	.2244				•
SF505058	5.8	-	.2283				•
SF505059	5.9	-	.2323				•
SF50505953	5.953	15/64	.2344				•
SF505060	6.0	-	.2362				•
SF505061	6.1	-	.2402	47	95	7	•
SF505062	6.2	-	.2441				•
SF505063	6.3	-	.2480				•
SF5050635	6.350	1/4	.2500				•



5 X D / POWER MAX DRILL MEDIUM / INTERNAL COOLANT,

- Suitable for high speed cutting with newly developed raw-material and new coating.

SF505 ...series

ULTRA FINE HELIX h8

EDP. No.	Dia. mm	Dia. fraction	Dia. inch	L1	L2	D2	STOCK
SF505064	6.4	-	.2520	47	95	7	•
SF505065	6.5	-	.2559				•
SF505066	6.6	-	.2598				•
SF505067	6.7	-	.2638				•
SF50506747	6.747	17/64	.2656				•
SF505068	6.8	-	.2677				•
SF505069	6.9	-	.2717				•
SF505070	7.0	-	.2756				•
SF505071	7.1	-	.2795	52	103	8	•
SF50507145	7.145	9/32	.2813				•
SF505072	7.2	-	.2835				•
SF505073	7.3	-	.2874				•
SF505074	7.4	-	.2913				•
SF505075	7.5	-	.2953				•
SF50507541	7.541	19/64	.2969				•
SF505076	7.6	-	.2992				•
SF505077	7.7	-	.3031				•
SF505078	7.8	-	.3071				•
SF505079	7.9	-	.3110				•
SF50507938	7.938	5/16	.3125				•
SF505080	8.0	-	.3150				•
SF505081	8.1	-	.3189	56	105	9	•
SF505082	8.2	-	.3228				•
SF505083	8.3	-	.3268				•
SF50508334	8.334	21/64	.3281				•
SF505084	8.4	-	.3307				•
SF505085	8.5	-	.3346				•
SF505086	8.6	-	.3386				•
SF505087	8.7	-	.3325				•
SF50508733	8.733	11/32	.3338				•
SF505088	8.8	-	.3465				•
SF505089	8.9	-	.3504				•
SF505090	9.0	-	.3543				•
SF505091	9.1	-	.3583	62	108	10	•
SF50509129	9.129	23/64	.3594				•
SF505092	9.2	-	.3622				•
SF505093	9.3	-	.3661				•
SF505094	9.4	-	.3701				•
SF505095	9.5	-	.3740				•
SF50509525	9.525	3/8	.3750				•
SF505096	9.6	-	.3780				•
SF505097	9.7	-	3819				•

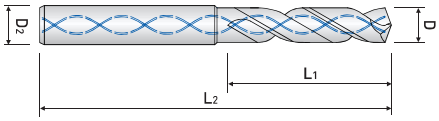
EDP. No.	Dia.			L_1	L_2	D_2	STOCK
	mm	fraction	inch				
SF505098	9.8	-	.3858	62	108	10	•
SF505099	9.9	-	.3898				•
SF50509921	9.921	25/64	.3906				•
SF505100	10.0	-	.3937				•
SF505101	10.1	-	.3976	68	125	11	•
SF505102	10.2	-	.4016				•
SF505103	10.3	-	.4055				•
SF5051032	10.32	13/32	.4063				•
SF505104	10.4	-	.4094				•
SF505105	10.5	-	.4134				•
SF505106	10.6	-	.4173				•
SF505107	10.7	-	.4213				•
SF50510716	10.716	27/64	.4219				•
SF505108	10.8	-	.4252				•
SF505109	10.9	-	.4291				•
SF505110	11.0	-	.4331				•
SF505111	11.1	-	.4370	71	133	12	•
SF50511113	11.113	7/16	.4375				•
SF505112	11.2	-	.4409				•
SF505113	11.3	-	.4449				•
SF505114	11.4	-	.4488				•
SF505115	11.5	-	.4528				•
SF505116	11.6	-	.4567				•
SF505117	11.7	-	.4606				•
SF505118	11.8	-	.4646				•
SF505119	11.9	-	.4685				•
SF50511908	11.908	15/32	.4688				•
SF505120	12.0	-	.4724				•
SF505121	12.1	-	.4764	75	137	13	•
SF505122	12.2	-	.4803				•
SF505123	12.3	-	.4843				•
SF50512304	12.304	31/64	.4844				•
SF505124	12.4	-	.4882				•
SF505125	12.5	-	.4921				•
SF505126	12.6	-	.4961				•
SF505127	12.7	-	.5000				•
SF505128	12.8	-	.5039				•
SF505129	12.9	-	.5079				•
SF505130	13.0	-	.5118				•
SF50513096	13.096	33/64	.5156	80	142	14	•
SF505131	13.1	-	.5157				•
SF505132	13.2	-	.5197				•
SF505133	13.3	-	.5236				•
SF505134	13.4		.5276				•
SF50513494	13.494	-	.5313				•
SF505135	13.5	17/32	.5315				•
SF505136	13.6	-	.5354				•

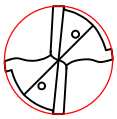
EDP. No.	Dia.			L_1	L_2	D_2	STOCK
	mm	fraction	inch				
SF505137	13.7	-	.5354	80	142	14	•
SF505138	13.8	-	.5394				•
SF50513891	13.891	35/64	.5469				•
SF505139	13.9	-	.5472				•
SF505140	14.0	-	.5512				•
SF505141	14.1	-	.5551	83	148	15	•
SF505142	14.2	-	.5591				•
SF50514288	14.288	9/16	.5625				•
SF505143	14.3	-	.5630				•
SF505144	14.4	-	.5669				•
SF505145	14.5	-	.5709				•
SF505146	14.6	-	.5748				•
SF505147	14.7	-	.5787				•
SF505148	14.8	-	.5827				•
SF505149	14.9	-	.5866				•
SF505150	15.0	-	.5906				•
SF50515081	15.081	19/32	.5937	90	152	16	•
SF505151	15.1	-	.5945				•
SF505152	15.2	-	.5984				•
SF505154	15.4	-	.6063				•
SF505155	15.5	-	.6102				•
SF505156	15.6	-	.6142				•
SF505157	15.7	-	.6181				•
SF505158	15.8	-	.6220				•
SF50515875	15.875	5/8	.6250				•
SF505160	16.0	-	.6299				•
SF505161	16.1	-	.6339	95	155	17	•
SF505163	16.3	-	.6417				•
SF505165	16.5	-	.6496				•
SF50516667	16.667	21/32	.6562				•
SF505170	17.0	-	.6693				•
SF505171	17.1	-	.6732	100	157	18	•
SF505172	17.2	-	.6772				•
SF50517463	17.463	11/16	.6875				•
SF505175	17.5	-	.6890				•
SF505177	17.7	-	.6969				•
SF505178	17.8	-	.7008				•
SF505180	18.0	-	.7087				•
SF505181	18.1	-	.7126	105	160	19	•
SF505182	18.2	-	.7165				•
SF505185	18.5	-	.7283				•
SF505190	19.0	-	.7480				•
SF505191	19.1	-	.7520	110	163	20	•
SF505195	19.5	-	7677				•
SF505197	19.7	-	.7756				•
SF505200	20.0	-	.7874				•

■ Tolerance

㎛=1/1000㎜

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13





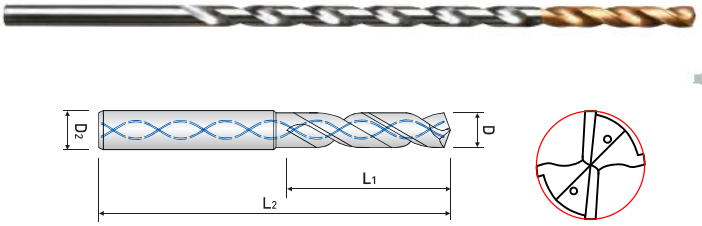
10 X D / POWER MAX DRILL
- LONG / INTERNAL COOLANT

SF510 ...series

ULTRA FINE HELIX

EDP. No.	Dia.	L1	L2	D2	STOCK
SF510 030	3.0	39	87	3	•
SF510 031	3.1	46	94	4	•
SF510 032	3.2				•
SF510 033	3.3				•
SF510 034	3.4				•
SF510 035	3.5				•
SF510 036	3.6	52	101		•
SF510 037	3.7				•
SF510 038	3.8				•
SF510 039	3.9				•
SF510 040	4.0				•
SF510 041	4.1	59	108	5	•
SF510 042	4.2				•
SF510 043	4.3				•
SF510 044	4.4				•
SF510 045	4.5				•
SF510 046	4.6	66	117		•
SF510 047	4.7				•
SF510 048	4.8				•
SF510 049	4.9				•
SF510 050	5.0				•
SF510 051	5.1	72	123	6	•
SF510 052	5.2				•
SF510 053	5.3				•
SF510 054	5.4				•
SF510 055	5.5				•
SF510 056	5.6	79	130		•
SF510 057	5.7				•
SF510 058	5.8				•
SF510 059	5.9				•
SF510 060	6.0				•
SF510 061	6.1	85	138	7	•
SF510 062	6.2				•
SF510 063	6.3				•
SF510 064	6.4				•
SF510 065	6.5				•
SF510 066	6.6	92	145		•

EDP. No.	Dia.	L1	L2	D2	STOCK
SF510 067	6.7	92	145	7	•
SF510 068	6.8				•
SF510 069	6.9				•
SF510 070	7.0				•
SF510 071	7.1	98	153	8	•
SF510 072	7.2				•
SF510 073	7.3				•
SF510 074	7.4				•
SF510 075	7.5				•
SF510 076	7.6	105	160		•
SF510 077	7.7				•
SF510 078	7.8				•
SF510 079	7.9				•
SF510 080	8.0				•
SF510 081	8.1	111	166	9	•
SF510 082	8.2				•
SF510 083	8.3				•
SF510 084	8.4				•
SF510 085	8.5				•
SF510 086	8.6	118	173		•
SF510 087	8.7				•
SF510 088	8.8				•
SF510 089	8.9				•
SF510 090	9.0				•
SF510 091	9.1	124	179	10	•
SF510 092	9.2				•
SF510 093	9.3				•
SF510 094	9.4				•
SF510 095	9.5				•
SF510 096	9.6	131	186		•
SF510 097	9.7				•
SF510 098	9.8				•
SF510 099	9.9				•
SF510 100	10.0				•
SF510 101	10.1	138	193	11	•
SF510 102	10.2				•
SF510 103	10.3				•



10 X D / POWER MAX DRILL - LONG / INTERNAL COOLANT

SF510 ...series

ULTRA FINE HELIX

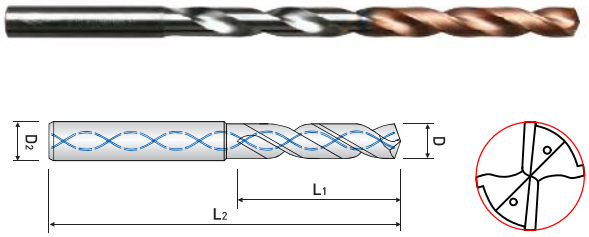
EDP. No.	Dia.	L_1	L_2	D_2	STOCK
SF510 104	10.4	138	193	11	•
SF510 105	10.5				•
SF510 106	10.6	144	205		•
SF510 107	10.7				•
SF510 108	10.8				•
SF510 109	10.9				•
SF510 110	11.0				•
SF510 111	11.1	151	212	12	•
SF510 112	11.2				•
SF510 113	11.3				•
SF510 114	11.4				•
SF510 115	11.5				•

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
SF510 116	11.6	157	218	12	•
SF510 117	11.7				•
SF510 118	11.8				•
SF510 119	11.9				•
SF510 120	12.0				•
SF510 121	12.1	164	225	13	•
SF510 122	12.2				•
SF510 123	12.3				•
SF510 124	12.4				•
SF510 125	12.5				•
SF510 126	12.6	170	236		•
SF510 127	12.7				•
SF510 128	12.8				•
SF510 129	12.9				•
SF510 130	13.0				•

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



20 X D / POWER MAX DRILL
- EXTRA LONG / INTERNAL COOLANT

SF520 ...series

ULTRA FINE HELIX

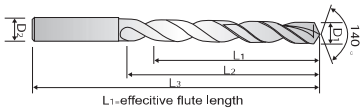
EDP. No.	Dia.	L1	L2	D2	STOCK
SF520 041	4.1	104	155	5	•
SF520 042	4.2				•
SF520 043	4.3				•
SF520 044	4.4				•
SF520 045	4.5				•
SF520 046	4.6	116	167		•
SF520 047	4.7				•
SF520 048	4.8				•
SF520 049	4.9				•
SF520 050	5.0				•
SF520 051	5.1	127	178	6	•
SF520 052	5.2				•
SF520 053	5.3				•
SF520 054	5.4				•
SF520 055	5.5				•
SF520 056	5.6	139	190		•
SF520 057	5.7				•
SF520 058	5.8				•
SF520 059	5.9				•
SF520 060	6.0				•
SF520 061	6.1	150	203	7	•
SF520 062	6.2				•
SF520 063	6.3				•
SF520 064	6.4				•
SF520 065	6.5				•
SF520 066	6.6	162	215		•
SF520 067	6.7				•
SF520 068	6.8				•
SF520 069	6.9				•
SF520 070	7.0				•

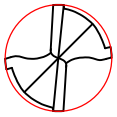
EDP. No.	Dia.	L1	L2	D2	STOCK
SF520 071	7.1	173	228	8	•
SF520 072	7.2				•
SF520 073	7.3				•
SF520 074	7.4				•
SF520 075	7.5				•
SF520 076	7.6	185	240		•
SF520 077	7.7				•
SF520 078	7.8				•
SF520 079	7.9				•
SF520 080	8.0				•
SF520 081	8.1	196	251	9	•
SF520 082	8.2				•
SF520 083	8.3				•
SF520 084	8.4				•
SF520 085	8.5				•
SF520 086	8.6	208	263		•
SF520 087	8.7				•
SF520 088	8.8				•
SF520 089	8.9				•
SF520 090	9.0				•
SF520 091	9.1	219	274	10	•
SF520 092	9.2				•
SF520 093	9.3				•
SF520 094	9.4				•
SF520 095	9.5				•
SF520 096	9.6	231	286		•
SF520 097	9.7				•
SF520 098	9.8				•
SF520 099	9.9				•
SF520 100	10.0				•

■ Tolerance

㎛ =1/1000㎜

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13





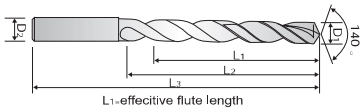
POWER MAX DRILL-HIGH PRECISION

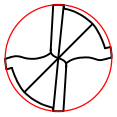
- Applied highly precise hole tolerance on the tool .
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HP503 ...series

ULTRA FINE HELIX

EDP. No.	D_1 (mm)	D_2 (h6)	L_1	L_2	L_3	STOCK
HP503030	3.0	6	14	20	62	•
HP503031	3.1					•
HP503032	3.2					•
HP503033	3.3					•
HP503034	3.4					•
HP503035	3.5					•
HP503036	3.6					•
HP503037	3.7					•
HP503038	3.8	6	17	24	66	•
HP503039	3.9					•
HP503040	4.0					•
HP503041	4.1					•
HP503042	4.2					•
HP503043	4.3					•
HP503044	4.4					•
HP503045	4.5					•
HP503046	4.6					•
HP503047	4.7					•
HP503048	4.8	6	20	28	66	•
HP503049	4.9					•
HP503050	5.0					•
HP503051	5.1					•
HP503052	5.2					•
HP503053	5.3					•
HP503054	5.4					•
HP503055	5.5					•
HP503056	5.6					•
HP503057	5.7					•
HP503058	5.8					•
HP503059	5.9					•
HP503060	6.0					•





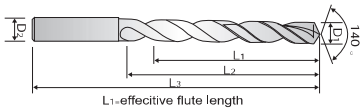
POWER MAX DRILL-HIGH PRECISION

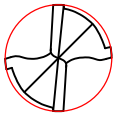
- Applied highly precise hole tolerance on the tool .
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HP503 ...series

ULTRA FINE HELIX

EDP. No.	D_1 (mm)	D_2 (h6)	L_1	L_2	L_3	STOCK
HP503061	6.1	8	24	34	79	•
HP503062	6.2					•
HP503063	6.3					•
HP503064	6.4					•
HP503065	6.5					•
HP503066	6.6					•
HP503067	6.7					•
HP503068	6.8					•
HP503069	6.9					•
HP503070	7.0					•
HP503071	7.1	8	29	41	79	•
HP503072	7.2					•
HP503073	7.3					•
HP503074	7.4					•
HP503075	7.5					•
HP503076	7.6					•
HP503077	7.7					•
HP503078	7.8					•
HP503079	7.9					•
HP503080	8.0					•
HP503081	8.1	10	35	47	89	•
HP503082	8.2					•
HP503083	8.3					•
HP503084	8.4					•
HP503085	8.5					•
HP503086	8.6					•
HP503087	8.7					•
HP503088	8.8					•
HP503089	8.9					•
HP503090	9.0					•
HP503091	9.1					•





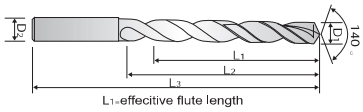
POWER MAX DRILL-HIGH PRECISION

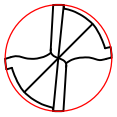
- Applied highly precise hole tolerance on the tool .
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HP503 ...series

ULTRA FINE HELIX

EDP. No.	D1 (mm)	D2 (h6)	L1	L2	L3	STOCK
HP503092	9.2	10	35	47	89	•
HP503093	9.3					•
HP503094	9.4					•
HP503095	9.5					•
HP503096	9.6					•
HP503097	9.7					•
HP503098	9.8					•
HP503099	9.9					•
HP503100	10.0					•
HP503101	10.1	12	40	55	102	•
HP503102	10.2					•
HP503103	10.3					•
HP503104	10.4					•
HP503105	10.5					•
HP503106	10.6					•
HP503107	10.7					•
HP503108	10.8					•
HP503109	10.9					•
HP503110	11.0					•
HP503111	11.1					•
HP503112	11.2					•
HP503113	11.3					•
HP503114	11.4					•
HP503115	11.5					•
HP503116	11.6					•
HP503117	11.7					•
HP503118	11.8					•
HP503119	11.9					•
HP503120	12.0					•





POWER MAX DRILL-HIGH PRECISION

- Applied highly precise hole tolerance on the tool .
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HP503 ...series

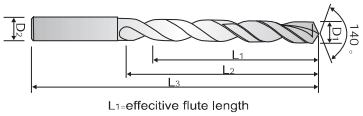
ULTRA FINE HELIX

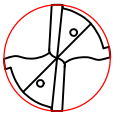
EDP. No.	D1 (mm)	D2 (h6)	L1	L2	L3	STOCK
HP503121	12.1	14	43	60	107	•
HP503122	12.2					•
HP503123	12.3					•
HP503124	12.4					•
HP503125	12.5					•
HP503126	12.6					•
HP503127	12.7					•
HP503128	12.8					•
HP503129	12.9					•
HP503130	13.0					•
HP503131	13.1					•
HP503132	13.2					•
HP503133	13.3					•
HP503135	13.5					•
HP503137	13.7					•
HP503140	14.0					•
HP503142	14.2	16	45	65	115	•
HP503143	14.3					•
HP503145	14.5					•
HP503146	14.6					•
HP503148	14.8					•
HP503150	15.0					•
HP503155	15.5					•
HP503157	15.7					•
HP503160	16.0					•

■ Tolerance

㎛ =1/1000㎜

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(m7)	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13





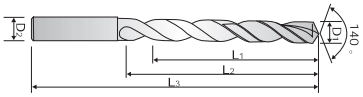
3 X D / POWER MAX DRILL-HIGH PRECISION

- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

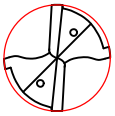
HPI 503 ...series

ULTRA FINE HELIX

EDP. No.	D_1 mm	D_2	L_1	L_2	L_3	STOCK
HPI 50303175	3.175	6	14	20	62	•
HPI 50303264	3.264					•
HPI 50303572	3.572					•
HPI 5030397	3.97	6	17	24	66	•
HPI 503040	4					•
HPI 50304039	4.039					•
HPI 503042	4.2					•
HPI 503043	4.3					•
HPI 503045	4.5					•
HPI 503046	4.6					•
HPI 50304763	4.763	6	20	28	66	•
HPI 503048	4.8					•
HPI 503049	4.9					•
HPI 503050	5					•
HPI 503051	5.1					•
HPI 50305159	5.159					•
HPI 503052	5.2					•
HPI 503053	5.3					•
HPI 503054	5.4					•
HPI 503055	5.5					•
HPI 50305558	5.558					•
HPI 503056	5.6					•
HPI 503057	5.7					•
HPI 503058	5.8					•
HPI 50305953	5.953					•
HPI 503060	6					•
HPI 503062	6.2	8	24	34	79	•
HPI 5030635	6.35					•
HPI 503065	6.5					•
HPI 503066	6.6					•
HPI 50306747	6.747					•
HPI 503068	6.8					•
HPI 503070	7					•
HPI 50307145	7.145	8	29	41	79	•
HPI 503072	7.2					•
HPI 503074	7.4					•
HPI 503075	7.5					•
HPI 50307541	7.541					•



L1=effecitive flute length



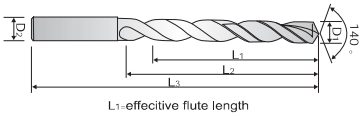
3 X D / POWER MAX DRILL-HIGH PRECISION

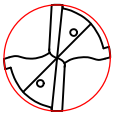
- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HPI 503 ...series

ULTRA FINE HELIX

EDP. No.	D_1 mm	D_2	L_1	L_2	L_3	STOCK
HPI 503078	7.8	8	29	41	79	•
HPI 503079	7.9					•
HPI 50307938	7.938					•
HPI 503080	8					•
HPI 503081	8.1	10	35	47	89	•
HPI 503082	8.2					•
HPI 503083	8.3					•
HPI 50308334	8.334					•
HPI 503085	8.5					•
HPI 503086	8.6					•
HPI 503087	8.7					•
HPI 50308733	8.733					•
HPI 503088	8.8					•
HPI 503090	9					•
HPI 503091	9.1					•
HPI 50309129	9.129					•
HPI 503092	9.2					•
HPI 503093	9.3					•
HPI 503095	9.5					•
HPI 50309525	9.525					•
HPI 503096	9.6					•
HPI 503097	9.7					•
HPI 503098	9.8					•
HPI 50309921	9.921					•
HPI 503100	10					•
HPI 503102	10.2	12	40	55	105	•
HPI 5031032	10.32					•
HPI 503105	10.5					•
HPI 503107	10.7					•
HPI 50310716	10.716					•
HPI 503108	10.8					•
HPI 503110	11					•
HPI 50311113	11.113					•
HPI 503112	11.2					•
HPI 503115	11.5					•
HPI 50311509	11.509					•
HPI 503117	11.7					•
HPI 50311908	11.908					•





3 X D / POWER MAX DRILL-HIGH PRECISION

- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HPI 503 ...series

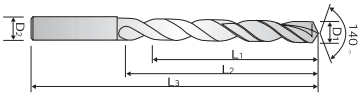
ULTRA FINE HELIX

EDP. No.	D_1 mm	D_2	L_1	L_2	L_3	STOCK
HPI 503120	12	12	40	55	105	•
HPI 503123	12.3	14	43	60	107	•
HPI 50312304	12.304					•
HPI 503125	12.5					•
HPI 503127	12.7					•
HPI 503128	12.8					•
HPI 503130	13					•
HPI 503133	13.3					•
HPI 50313494	13.494					•
HPI 503135	13.5					•
HPI 503137	13.7					•
HPI 50313891	13.891					•
HPI 503140	14					•
HPI 503141	14.1	16	45	65	115	•
HPI 503142	14.2					•
HPI 50314288	14.288					•
HPI 503145	14.5					•
HPI 503147	14.7					•
HPI 503150	15					•
HPI 50315081	15.081					•
HPI 503155	15.5					•
HPI 50315875	15.875					•
HPI 503160	16					•
HPI 503165	16.5	18	51	73	123	•
HPI 503168	16.8					•
HPI 503170	17					•
HPI 503171	17.1					•
HPI 50317463	17.463					•
HPI 503175	17.5					•
HPI 503180	18					•
HPI 503190	19	20	55	79	131	•
HPI 5031905	19.05					•
HPI 503197	19.7					•
HPI 503200	20					•

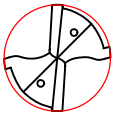
■ Tolerance

㎛=1/1000㎜

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(m7)	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



L1-effecitive flute length



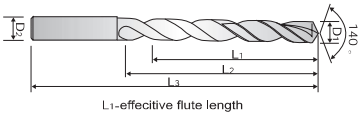
5 X D / POWER MAX DRILL-HIGH PRECISION

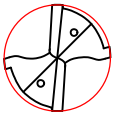
- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HPI 505 ...series

ULTRA FINE HELIX

EDP. No.	D_1 mm	D_2	L_1	L_2	L_3	STOCK
HPI 50503175	3.175	6	24	30	66	•
HPI 50503264	3.264					•
HPI 50503572	3.572					•
HPI 5050397	3.97	6	29	36	74	•
HPI 505040	4					•
HPI 50504039	4.039					•
HPI 505041	4.1					•
HPI 505042	4.2					•
HPI 505043	4.3					•
HPI 50504366	4.366					•
HPI 505044	4.4					•
HPI 505045	4.5					•
HPI 5050458	4.58					•
HPI 505046	4.6					•
HPI 50504623	4.623					•
HPI 505047	4.7					•
HPI 50504763	4.763	6	35	44	82	•
HPI 505048	4.8					•
HPI 505049	4.9					•
HPI 505050	5					•
HPI 505051	5.1					•
HPI 50505159	5.159					•
HPI 505052	5.2					•
HPI 505053	5.3					•
HPI 505054	5.4					•
HPI 5050541	5.41					•
HPI 505055	5.5					•
HPI 50505558	5.558					•
HPI 505056	5.6					•
HPI 505057	5.7					•
HPI 505058	5.8					•
HPI 505059	5.9					•
HPI 50505953	5.953					•
HPI 505060	6					•





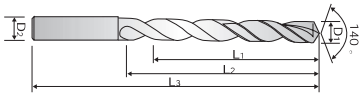
5 X D / POWER MAX DRILL-HIGH PRECISION

- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

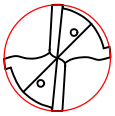
HPI 505 ...series

ULTRA FINE HELIX

EDP. No.	D_1 mm	D_2	L_1	L_2	L_3	STOCK
HPI 505061	6.1	8	43	53	91	•
HPI 505062	6.2					•
HPI 505063	6.3					•
HPI 5050635	6.35					•
HPI 505064	6.4					•
HPI 505065	6.5					•
HPI 50506528	6.528					•
HPI 505066	6.6					•
HPI 505067	6.7					•
HPI 50506747	6.747					•
HPI 505068	6.8					•
HPI 505069	6.9					•
HPI 50506909	6.909					•
HPI 505070	7					•
HPI 505071	7.1					•
HPI 50507145	7.145					•
HPI 505072	7.2					•
HPI 505073	7.3					•
HPI 505074	7.4					•
HPI 505075	7.5					•
HPI 50507541	7.541					•
HPI 505076	7.6					•
HPI 505077	7.7					•
HPI 505078	7.8					•
HPI 505079	7.9					•
HPI 50507938	7.938					•
HPI 505080	8					•
HPI 505081	8.1	10	49	61	103	•
HPI 505082	8.2					•
HPI 505083	8.3					•
HPI 50508334	8.334					•
HPI 505084	8.4					•
HPI 50508433	8.433					•
HPI 505085	8.5					•
HPI 505086	8.6					•
HPI 505087	8.7					•
HPI 50508733	8.733					•



L1-effecitive flute length



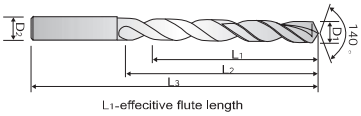
5 X D / POWER MAX DRILL-HIGH PRECISION

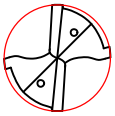
- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HPI 505 ...series

ULTRA FINE HELIX

EDP. No.	D_1			D_2	L_1	L_2	L_3	STOCK
	mm	inch	fraction					
HPI 505088	8.8	.3465	-	10	49	61	103	•
HPI 505089	8.9	.3504	-					•
HPI 505090	9	.3543	-					•
HPI 505091	9.1	.3583	-					•
HPI 50509129	9.129	.3594	23/64					•
HPI 505092	9.2	.3622	-					•
HPI 505093	9.3	.3661	-					•
HPI 50509347	9.347	.3680	-					•
HPI 505094	9.4	.3701	-					•
HPI 505095	9.5	.3740	-					•
HPI 50509525	9.525	.3750	3/8					•
HPI 505096	9.6	.3780	-					•
HPI 505097	9.7	.3819	-					•
HPI 50509703	9.703	.3820	-					•
HPI 50509746	9.746	.3837	-					•
HPI 505098	9.8	.3858	-					•
HPI 505099	9.9	.3898	-					•
HPI 50509921	9.921	.3906	25/64					•
HPI 505100	10	.3937	-					•
HPI 505101	10.1	.3976	-	12	56	71	118	•
HPI 505102	10.2	.4016	-					•
HPI 505103	10.3	.4055	-					•
HPI 5051032	10.32	.4063	13/32					•
HPI 505104	10.4	.4094	-					•
HPI 505105	10.5	.4134	-					•
HPI 505106	10.6	.4173	-					•
HPI 505107	10.7	.4213	-					•
HPI 50510716	10.716	.4219	27/64					•
HPI 505108	10.8	.4252	-					•
HPI 505109	10.9	.4291	-					•
HPI 505110	11	.4331	-					•
HPI 505111	11.1	.4370	-					•
HPI 50511113	11.113	.4375	7/16					•
HPI 505112	11.2	.4409	-					•
HPI 505113	11.3	.4449	-					•
HPI 505114	11.4	.4488	-					•
HPI 505115	11.5	.4528	-					•





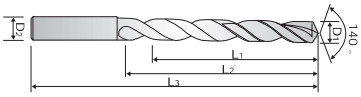
5 X D / POWER MAX DRILL-HIGH PRECISION

- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

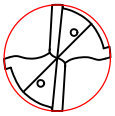
HPI 505 ...series

ULTRA FINE HELIX

EDP. No.	D1 mm	D1 inch	D1 fraction	D2	L1	L2	L3	STOCK
HPI 50511509	11.509	.4531	29/64	12	56	71	118	•
HPI 505116	11.6	.4567	-					•
HPI 505117	11.7	.4606	-					•
HPI 505118	11.8	.4646	-					•
HPI 505119	11.9	.4685	-					•
HPI 50511908	11.908	.4688	15/32					•
HPI 505120	12	.4724	-					•
HPI 505121	12.1	.4764	-	14	60	77	124	•
HPI 505122	12.2	.4803	-					•
HPI 505123	12.3	.4843	-					•
HPI 50512304	12.304	.4844	31/64					•
HPI 505124	12.4	.4882	-					•
HPI 505125	12.5	.4921	-					•
HPI 505126	12.6	.4961	-					•
HPI 505127	12.7	.5000	1/2					•
HPI 505128	12.8	.5039	-					•
HPI 505129	12.9	.5079	-					•
HPI 50512903	12.903	.5080	-					•
HPI 505130	13	.5118	-					•
HPI 50513096	13.096	.5156	33/64					•
HPI 505131	13.1	.5157	-					•
HPI 505133	13.3	.5236	-					•
HPI 50513494	13.494	.5313	17/32					•
HPI 505135	13.5	.5315	-					•
HPI 505137	13.7	.5394	-					•
HPI 505138	13.8	.5433	-					•
HPI 50513891	13.891	.5469	35/64					•
HPI 505140	14	.5512	-					•
HPI 505142	14.2	.5591	-	16	63	83	133	•
HPI 50514288	14.288	.5625	9/16					•
HPI 505145	14.5	.5709	-					•
HPI 505146	14.6	.5748	-					•
HPI 505147	14.7	.5787	-					•
HPI 505149	14.9	.5866	-					•
HPI 505150	15	.5906	-					•
HPI 50515081	15.081	.5937	19/32					•
HPI 505151	15.1	.5945	-					•



L1-effecitive flute length



5 X D / POWER MAX DRILL-HIGH PRECISION

- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HPI 505 ...series

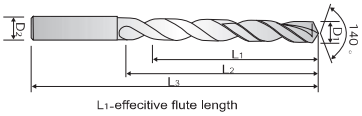
ULTRA FINE HELIX

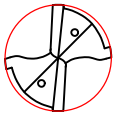
EDP. No.	D1 mm	D1 inch	D1 fraction	D2	L1	L2	L3	STOCK
HPI 505155	15.5	.6102	-	18	63	83	133	•
HPI 505157	15.7	.6181	-					•
HPI 505158	15.8	.6220	-					•
HPI 50515875	15.875	.6250	5/8					•
HPI 505159	15.9	.6260	-					•
HPI 505160	16	.6299	-					•
HPI 50516078	16.078	.6330	-	18	71	93	143	•
HPI 505162	16.2	.6378	-					•
HPI 505164	16.4	.6457	-					•
HPI 505165	16.5	.6496	-					•
HPI 505166	16.6	.6535						•
HPI 50516667	16.667	.6562	21/32					•
HPI 505167	16.7	.6575	-					•
HPI 505170	17	.6693	-					•
HPI 50517463	17.463	.6875	11/16					•
HPI 505175	17.5	.6890	-					•
HPI 505177	17.7	.6969	-					•
HPI 505180	18	.7087						•
HPI 505184	18.4	.7244	-	20	77	101	153	•
HPI 505185	18.5	.7283	-					•
HPI 505186	18.6	.7323	-					•
HPI 505188	18.8	.7402	-					•
HPI 505190	19	.7480						•
HPI 5051905	19.05	.7500	3/4					•
HPI 505192	19.2	.7559	-					•
HPI 50519253	19.253	.7580	-					•
HPI 50519446	19.446	.7656	49/64					•
HPI 505195	19.5	.7677						•
HPI 505197	19.7	.7756	-					•
HPI 50519844	19.844	.7813	25/32					•
HPI 505200	20	.7874	-					•

■ Tolerance

㎛ =1/1000㎜

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(m7)	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13





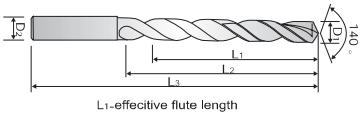
8 X D / POWER MAX DRILL-HIGH PRECISION

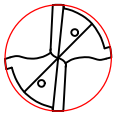
- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HPI 508 ...series

ULTRA FINE HELIX

EDP. No.	D_1 mm	D_2	L_1	L_2	L_3	STOCK
HPI 50803175	3.175	6	37	43	80	•
HPI 50803264	3.264					•
HPI 50803572	3.572					•
HPI 5080397	3.97	6	41	49	87	•
HPI 50804039	4.039					•
HPI 50804763	4.763	6	48	56	94	•
HPI 508050	5					•
HPI 508051	5.1					•
HPI 50805159	5.159					•
HPI 508052	5.2					•
HPI 508053	5.3					•
HPI 508055	5.5					•
HPI 50805558	5.558					•
HPI 508057	5.7					•
HPI 50805953	5.953					•
HPI 508060	6					•
HPI 508061	6.1	8	57	67	105	•
HPI 508062	6.2					•
HPI 508063	6.3					•
HPI 5080635	6.35					•
HPI 508064	6.4					•
HPI 508065	6.5					•
HPI 508066	6.6					•
HPI 508067	6.7					•
HPI 50806746	6.746					•
HPI 508068	6.8					•
HPI 508070	7					•
HPI 50807145	7.145	8	61	72	110	•
HPI 508075	7.5					•
HPI 50807541	7.541					•
HPI 508077	7.7					•
HPI 508078	7.8					•
HPI 50807938	7.938					•
HPI 508080	8					•
HPI 508081	8.1	10	68	80	122	•
HPI 50808334	8.334					•





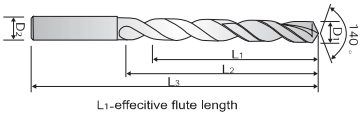
8 X D / POWER MAX DRILL-HIGH PRECISION

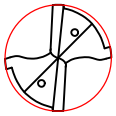
- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HPI 508 ...series

ULTRA FINE HELIX

EDP. No.	D_1 mm	D_2	L_1	L_2	L_3	STOCK
HPI 508085	8.5	10	68	80	122	•
HPI 508086	8.6					•
HPI 508087	8.7					•
HPI 50808733	8.733					•
HPI 508088	8.8					•
HPI 508090	9					•
HPI 508091	9.1					•
HPI 50809129	9.129					•
HPI 508095	9.5					•
HPI 50809525	9.525					•
HPI 508097	9.7					•
HPI 508098	9.8					•
HPI 508099	9.9					•
HPI 50809921	9.921					•
HPI 508100	10					•
HPI 508101	10.1	12	79	94	141	•
HPI 508102	10.2					•
HPI 508103	10.3					•
HPI 5081032	10.32					•
HPI 508105	10.5					•
HPI 50810716	10.716					•
HPI 508108	10.8					•
HPI 508110	11					•
HPI 50811113	11.113					•
HPI 508112	11.2					•
HPI 508113	11.3					•
HPI 508114	11.4					•
HPI 508115	11.5					•
HPI 50811509	11.509					•
HPI 508117	11.7					•
HPI 508118	11.8					•
HPI 50811908	11.908					•
HPI 508120	12					•
HPI 50812304	12.304	14	91	108	155	•
HPI 508125	12.5					•
HPI 508127	12.7					•





8 X D / POWER MAX DRILL-HIGH PRECISION

- Applied highly precise hole tolerance on the tool.
- Increased tool life by minimizing chatter and resonance on the (through hole) penetrated hole or (blind hole) one-side open hole area.

HPI 508 ...series

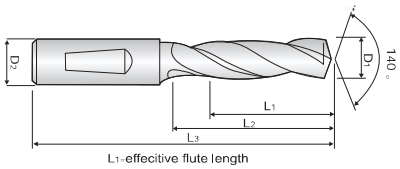
ULTRA FINE HELIX

EDP. No.	D_1 mm	D_1 inch	D_1 fraction	D_2	L_1	L_2	L_3	STOCK
HPI 508128	12.8	.5039	-	14	91	108	155	•
HPI 508130	13	.5118	-					•
HPI 508135	13.5	.5315	-					•
HPI 508140	14	.5512	-					•
HPI 50814288	14.288	.5625	9/16	16	101	121	171	•
HPI 508145	14.5	.5709	-					•
HPI 508150	15	.5906	-					•
HPI 508151	15.1	.5945	-					•
HPI 508152	15.2	.5984	-					•
HPI 508153	15.3	.6024	-					•
HPI 508155	15.5	.6102	-					•
HPI 508158	15.8	.6220	-					•
HPI 50815875	15.875	.6250	5/8					•
HPI 508160	16	.6299	-					•
HPI 50816078	16.078	.6330	-	18	113	135	185	•
HPI 508162	16.2	.6378	-					•
HPI 508165	16.5	.6496	-					•
HPI 508170	17	.6693	-					•
HPI 50817463	17.463	.6875	11/16					•
HPI 508175	17.5	.6890	-					•
HPI 508180	18	.7087	-					•
HPI 508185	18.5	.7283	-	20	124	148	200	•
HPI 508190	19	.7480	-					•
HPI 5081905	19.05	.7500	3/4					•
HPI 50819253	19.253	.7580	-					•
HPI 508198	19.8	.7795	-					•
HPI 508200	20	.7874	-					•

■ Tolerance

㎛=1/1000㎜

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(m7)	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



POWER MAX DRILL - STUB / DIN 6537K

■ Shank Form

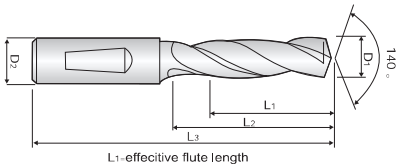
- P503A : DIN 6535 HA - straight A type
- P503F : DIN 6535 HE - 2° Whistle Flat F type

P503A / P503F ...series

ULTRA FINE HELIX

EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
P503A030	P503F030	3.0	6	14	20	62	
P503A031	P503F031	3.1					
P503A032	P503F032	3.2					
P503A033	P503F033	3.3					
P503A034	P503F034	3.4					
P503A035	P503F035	3.5					
P503A036	P503F036	3.6					
P503A037	P503F037	3.7					
P503A038	P503F038	3.8	6	17	24	66	
P503A039	P503F039	3.9					
P503A040	P503F040	4.0					
P503A041	P503F041	4.1					
P503A042	P503F042	4.2					
P503A043	P503F043	4.3					
P503A044	P503F044	4.4					
P503A045	P503F045	4.5					
P503A046	P503F046	4.6					
P503A047	P503F047	4.7					
P503A048	P503F048	4.8	6	20	28	66	
P503A049	P503F049	4.9					
P503A050	P503F050	5.0					
P503A051	P503F051	5.1					
P503A052	P503F052	5.2					
P503A053	P503F053	5.3					
P503A054	P503F054	5.4					
P503A055	P503F055	5.5					
P503A056	P503F056	5.6					
P503A057	P503F057	5.7					
P503A058	P503F058	5.8					
P503A059	P503F059	5.9					
P503A060	P503F060	6.0					
P503A061	P503F061	6.1	8	24	34	79	
P503A062	P503F062	6.2					
P503A063	P503F063	6.3					
P503A064	P503F064	6.4					
P503A065	P503F065	6.5					
P503A066	P503F066	6.6					

※ These tools are manufactured based on order received.



POWER MAX DRILL - STUB / DIN 6537K

■ Shank Form

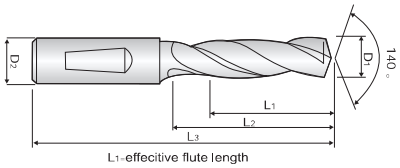
- P503A : DIN 6535 HA - straight A type
- P503F : DIN 6535 HE - 2° Whistle Flat F type

P503A / P503F ...series

ULTRA FINE HELIX

EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
P503A067	P503F067	6.7	8	24	34	79	
P503A068	P503F068	6.8					
P503A069	P503F069	6.9					
P503A070	P503F070	7.0					
P503A071	P503F071	7.1	8	29	41	79	
P503A072	P503F072	7.2					
P503A073	P503F073	7.3					
P503A074	P503F074	7.4					
P503A075	P503F075	7.5					
P503A076	P503F076	7.6					
P503A077	P503F077	7.7					
P503A078	P503F078	7.8					
P503A079	P503F079	7.9					
P503A080	P503F080	8.0					
P503A081	P503F081	8.1	10	35	47	89	
P503A082	P503F082	8.2					
P503A083	P503F083	8.3					
P503A084	P503F084	8.4					
P503A085	P503F085	8.5					
P503A086	P503F086	8.6					
P503A087	P503F087	8.7					
P503A088	P503F088	8.8					
P503A089	P503F089	8.9					
P503A090	P503F090	9.0					
P503A091	P503F091	9.1					
P503A092	P503F092	9.2					
P503A093	P503F093	9.3					
P503A094	P503F094	9.4					
P503A095	P503F095	9.5					
P503A096	P503F096	9.6					
P503A097	P503F097	9.7					
P503A098	P503F098	9.8					
P503A099	P503F099	9.9					
P503A100	P503F100	10.0					
P503A101	P503F101	10.1	12	40	55	102	
P503A102	P503F102	10.2					
P503A103	P503F103	10.3					

※ These tools are manufactured based on order received.



POWER MAX DRILL - STUB / DIN 6537K

■ Shank Form

- P503A : DIN 6535 HA - straight A type
- P503F : DIN 6535 HE - 2° Whistle Flat F type

P503A / P503F ...series

ULTRA FINE HELIX

EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
P503A104	P503F104	10.4	12	40	55	102	
P503A105	P503F105	10.5					
P503A106	P503F106	10.6					
P503A107	P503F107	10.7					
P503A108	P503F108	10.8					
P503A109	P503F109	10.9					
P503A110	P503F110	11.0					
P503A111	P503F111	11.1					
P503A112	P503F112	11.2					
P503A113	P503F113	11.3					
P503A114	P503F114	11.4					
P503A115	P503F115	11.5					
P503A116	P503F116	11.6					
P503A117	P503F117	11.7					
P503A118	P503F118	11.8					
P503A119	P503F119	11.9					
P503A120	P503F120	12.0					
P503A121	P503F121	12.1	14	43	60	107	
P503A122	P503F122	12.2					
P503A123	P503F123	12.3					
P503A124	P503F124	12.4					
P503A125	P503F125	12.5					
P503A126	P503F126	12.6					
P503A127	P503F127	12.7					
P503A128	P503F128	12.8					
P503A129	P503F129	12.9					
P503A130	P503F130	13.0					
P503A131	P503F131	13.1					
P503A132	P503F132	13.2					
P503A133	P503F133	13.3					
P503A134	P503F134	13.4					
P503A135	P503F135	13.5					
P503A136	P503F136	13.6					
P503A137	P503F137	13.7					
P503A138	P503F138	13.8					
P503A139	P503F139	13.9					
P503A140	P503F140	14.0					

※ These tools are manufactured based on order received.

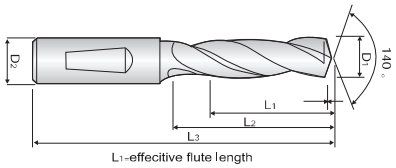
EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
P503A141	P503F141	14.1	16	45	65	115	
P503A142	P503F142	14.2					
P503A143	P503F143	14.3					
P503A144	P503F144	14.4					
P503A145	P503F145	14.5					
P503A146	P503F146	14.6					
P503A147	P503F147	14.7					
P503A148	P503F148	14.8					
P503A149	P503F149	14.9					
P503A150	P503F150	15.0					
P503A151	P503F151	15.1					
P503A152	P503F152	15.2					
P503A153	P503F153	15.3					
P503A154	P503F154	15.4					
P503A155	P503F155	15.5					
P503A156	P503F156	15.6					
P503A157	P503F157	15.7					
P503A158	P503F158	15.8					
P503A159	P503F159	15.9					
P503A160	P503F160	16.0					
P503A161	P503F161	16.1	18	51	73	123	
P503A163	P503F163	16.3					
P503A165	P503F165	16.5					
P503A170	P503F170	17.0					
P503A171	P503F171	17.1					
P503A172	P503F172	17.2					
P503A175	P503F175	17.5					
P503A177	P503F177	17.7					
P503A178	P503F178	17.8					
P503A180	P503F180	18.0					
P503A181	P503F181	18.1	20	55	79	131	
P503A182	P503F182	18.2					
P503A185	P503F185	18.5					
P503A190	P503F190	19.0					
P503A191	P503F191	19.1					
P503A195	P503F195	19.5					
P503A197	P503F197	19.7					
P503A200	P503F200	20.0					

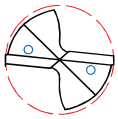
※ These tools are manufactured based on order received.

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(m7)	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13





POWER MX DRILL
STUB INTERNAL COOLANT / DIN 6537K

■ Shank Form

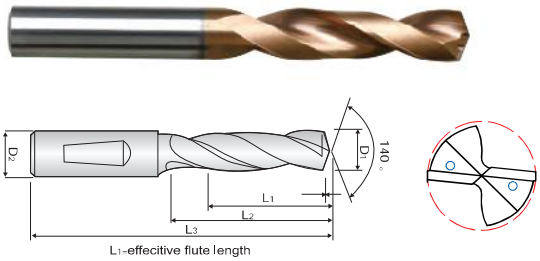
- PI503A : DIN 6535 HA - straight A type
- PI503F : DIN 6535 HE - 2° Whistle Flat F type

PI503A / PI503F ...series

ULTRA FINE HELIX m7

EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
PI503A030	PI503F030	3.0	6	14	20	62	
PI503A031	PI503F031	3.1					
PI503A032	PI503F032	3.2					
PI503A033	PI503F033	3.3					
PI503A034	PI503F034	3.4					
PI503A035	PI503F035	3.5					
PI503A036	PI503F036	3.6					
PI503A037	PI503F037	3.7					
PI503A038	PI503F038	3.8	6	17	24	66	
PI503A039	PI503F039	3.9					
PI503A040	PI503F040	4.0					
PI503A041	PI503F041	4.1					
PI503A042	PI503F042	4.2					
PI503A043	PI503F043	4.3					
PI503A044	PI503F044	4.4					
PI503A045	PI503F045	4.5					
PI503A046	PI503F046	4.6					
PI503A047	PI503F047	4.7					
PI503A048	PI503F048	4.8	6	20	28	66	
PI503A049	PI503F049	4.9					
PI503A050	PI503F050	5.0					
PI503A051	PI503F051	5.1					
PI503A052	PI503F052	5.2					
PI503A053	PI503F053	5.3					
PI503A054	PI503F054	5.4					
PI503A055	PI503F055	5.5					
PI503A056	PI503F056	5.6					
PI503A057	PI503F057	5.7					
PI503A058	PI503F058	5.8					
PI503A059	PI503F059	5.9					
PI503A060	PI503F060	6.0					
PI503A061	PI503F061	6.1	8	24	34	79	
PI503A062	PI503F062	6.2					
PI503A063	PI503F063	6.3					
PI503A064	PI503F064	6.4					
PI503A065	PI503F065	6.5					
PI503A066	PI503F066	6.6					

※ These tools are manufactured based on order received.



POWER MX DRILL
STUB INTERNAL COOLANT / DIN 6537K

■ Shank Form

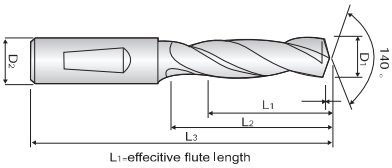
- PI503A : DIN 6535 HA - straight A type
- PI503F : DIN 6535 HE - 2° Whistle Flat F type

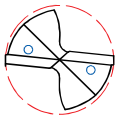
PI503A / PI503F ...series

ULTRA FINE HELIX m7

EDP. No.	EDP. No.	D1 (m7)	D2 (h6)	L1	L2	L3	STOCK
PI503A067	PI503F067	6.7	8	24	34	79	
PI503A068	PI503F068	6.8					
PI503A069	PI503F069	6.9					
PI503A070	PI503F070	7.0					
PI503A071	PI503F071	7.1	8	29	41	79	
PI503A072	PI503F072	7.2					
PI503A073	PI503F073	7.3					
PI503A074	PI503F074	7.4					
PI503A075	PI503F075	7.5					
PI503A076	PI503F076	7.6					
PI503A077	PI503F077	7.7					
PI503A078	PI503F078	7.8					
PI503A079	PI503F079	7.9					
PI503A080	PI503F080	8.0					
PI503A081	PI503F081	8.1	10	35	47	89	
PI503A082	PI503F082	8.2					
PI503A083	PI503F083	8.3					
PI503A084	PI503F084	8.4					
PI503A085	PI503F085	8.5					
PI503A086	PI503F086	8.6					
PI503A087	PI503F087	8.7					
PI503A088	PI503F088	8.8					
PI503A089	PI503F089	8.9					
PI503A090	PI503F090	9.0					
PI503A091	PI503F091	9.1					
PI503A092	PI503F092	9.2					
PI503A093	PI503F093	9.3					
PI503A094	PI503F094	9.4					
PI503A095	PI503F095	9.5					
PI503A096	PI503F096	9.6					
PI503A097	PI503F097	9.7					
PI503A098	PI503F098	9.8					
PI503A099	PI503F099	9.9					
PI503A100	PI503F100	10.0					
PI503A101	PI503F101	10.1	12	40	55	102	
PI503A102	PI503F102	10.2					
PI503A103	PI503F103	10.3					

※ These tools are manufactured based on order received.





POWER MX DRILL
STUB INTERNAL COOLANT / DIN 6537K

■ Shank Form

- PI503A : DIN 6535 HA - straight A type
- PI503F : DIN 6535 HE - 2° Whistle Flat F type

PI503A / PI503F ...series

ULTRA FINE HELIX m7

EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
PI503A104	PI503F104	10.4	12	40	55	102	
PI503A105	PI503F105	10.5					
PI503A106	PI503F106	10.6					
PI503A107	PI503F107	10.7					
PI503A108	PI503F108	10.8					
PI503A109	PI503F109	10.9					
PI503A110	PI503F110	11.0					
PI503A111	PI503F111	11.1					
PI503A112	PI503F112	11.2					
PI503A113	PI503F113	11.3					
PI503A114	PI503F114	11.4					
PI503A115	PI503F115	11.5					
PI503A116	PI503F116	11.6					
PI503A117	PI503F117	11.7					
PI503A118	PI503F118	11.8					
PI503A119	PI503F119	11.9					
PI503A120	PI503F120	12.0					
PI503A121	PI503F121	12.1	14	43	60	107	
PI503A122	PI503F122	12.2					
PI503A123	PI503F123	12.3					
PI503A124	PI503F124	12.4					
PI503A125	PI503F125	12.5					
PI503A126	PI503F126	12.6					
PI503A127	PI503F127	12.7					
PI503A128	PI503F128	12.8					
PI503A129	PI503F129	12.9					
PI503A130	PI503F130	13.0					
PI503A131	PI503F131	13.1					
PI503A132	PI503F132	13.2					
PI503A133	PI503F133	13.3					
PI503A134	PI503F134	13.4					
PI503A135	PI503F135	13.5					
PI503A136	PI503F136	13.6					
PI503A137	PI503F137	13.7					
PI503A138	PI503F138	13.8					
PI503A139	PI503F139	13.9					
PI503A140	PI503F140	14.0					

※ These tools are manufactured based on order received.

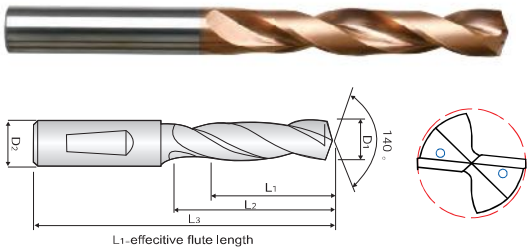
EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
PI503A141	PI503F141	14.1	16	45	65	115	
PI503A142	PI503F142	14.2					
PI503A143	PI503F143	14.3					
PI503A144	PI503F144	14.4					
PI503A145	PI503F145	14.5					
PI503A146	PI503F146	14.6					
PI503A147	PI503F147	14.7					
PI503A148	PI503F148	14.8					
PI503A149	PI503F149	14.9					
PI503A150	PI503F150	15.0					
PI503A151	PI503F151	15.1					
PI503A152	PI503F152	15.2					
PI503A153	PI503F153	15.3					
PI503A154	PI503F154	15.4					
PI503A155	PI503F155	15.5					
PI503A156	PI503F156	15.6					
PI503A157	PI503F157	15.7					
PI503A158	PI503F158	15.8					
PI503A159	PI503F159	15.9					
PI503A160	PI503F160	16.0					
PI503A161	PI503F161	16.1	18	51	73	123	
PI503A163	PI503F163	16.3					
PI503A165	PI503F165	16.5					
PI503A170	PI503F170	17.0					
PI503A171	PI503F171	17.1					
PI503A172	PI503F172	17.2					
PI503A175	PI503F175	17.5					
PI503A177	PI503F177	17.7					
PI503A178	PI503F178	17.8					
PI503A180	PI503F180	18.0					
PI503A181	PI503F181	18.1	20	55	79	131	
PI503A182	PI503F182	18.2					
PI503A185	PI503F185	18.5					
PI503A190	PI503F190	19.0					
PI503A191	PI503F191	19.1					
PI503A195	PI503F195	19.5					
PI503A197	PI503F197	19.7					
PI503A200	PI503F200	20.0					

※ These tools are manufactured based on order received.

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(m7)	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



MEDIUM INTERNAL COOLANT / DIN 6537L

■ Shank Form

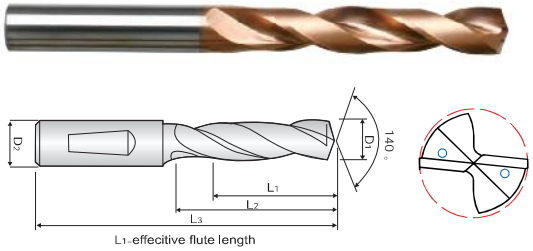
- PI505A : DIN 6535 HA - straight A type
- PI505F : DIN 6535 HE - 2° Whistle Flat F type

PI505A / PI505F ...series

ULTRA FINE HELIX m7

EDP. No.	EDP. No.	D1 (m7)	D2 (h6)	L1	L2	L3	STOCK
PI505A040	PI505F040	4.0	6	29	36	74	
PI505A041	PI505F041	4.1					
PI505A042	PI505F042	4.2					
PI505A043	PI505F043	4.3					
PI505A044	PI505F044	4.4					
PI505A045	PI505F045	4.5					
PI505A046	PI505F046	4.6					
PI505A047	PI505F047	4.7					
PI505A048	PI505F048	4.8	6	35	44	82	
PI505A049	PI505F049	4.9					
PI505A050	PI505F050	5.0					
PI505A051	PI505F051	5.1					
PI505A052	PI505F052	5.2					
PI505A053	PI505F053	5.3					
PI505A054	PI505F054	5.4					
PI505A055	PI505F055	5.5					
PI505A056	PI505F056	5.6					
PI505A057	PI505F057	5.7					
PI505A058	PI505F058	5.8					
PI505A059	PI505F059	5.9					
PI505A060	PI505F060	6.0					
PI505A061	PI505F061	6.1	8	43	53	91	
PI505A062	PI505F062	6.2					
PI505A063	PI505F063	6.3					
PI505A064	PI505F064	6.4					
PI505A065	PI505F065	6.5					
PI505A066	PI505F066	6.6					
PI505A067	PI505F067	6.7					
PI505A068	PI505F068	6.8					
PI505A069	PI505F069	6.9					
PI505A070	PI505F070	7.0					
PI505A071	PI505F071	7.1					
PI505A072	PI505F072	7.2					
PI505A073	PI505F073	7.3					
PI505A074	PI505F074	7.4					
PI505A075	PI505F075	7.5					
PI505A076	PI505F076	7.6					

※ These tools are manufactured based on order received.



MEDIUM INTERNAL COOLANT / DIN 6537L

■ Shank Form

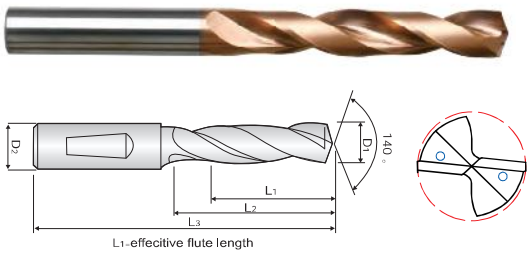
- PI505A : DIN 6535 HA - straight A type
- PI505F : DIN 6535 HE - 2° Whistle Flat F type

PI505A / PI505F ...series

ULTRA FINE HELIX m7

EDP. No.	EDP. No.	D1 (m7)	D2 (h6)	L1	L2	L3	STOCK
PI505A077	PI505F077	7.7	8	43	53	91	
PI505A078	PI505F078	7.8					
PI505A079	PI505F079	7.9					
PI505A080	PI505F080	8.0					
PI505A081	PI505F081	8.1	10	49	61	103	
PI505A082	PI505F082	8.2					
PI505A083	PI505F083	8.3					
PI505A084	PI505F084	8.4					
PI505A085	PI505F085	8.5					
PI505A086	PI505F086	8.6					
PI505A087	PI505F087	8.7					
PI505A088	PI505F088	8.8					
PI505A089	PI505F089	8.9					
PI505A090	PI505F090	9.0					
PI505A091	PI505F091	9.1					
PI505A092	PI505F092	9.2					
PI505A093	PI505F093	9.3					
PI505A094	PI505F094	9.4					
PI505A095	PI505F095	9.5					
PI505A096	PI505F096	9.6					
PI505A097	PI505F097	9.7					
PI505A098	PI505F098	9.8					
PI505A099	PI505F099	9.9					
PI505A100	PI505F100	10.0					
PI505A101	PI505F101	10.1	12	56	71	118	
PI505A102	PI505F102	10.2					
PI505A103	PI505F103	10.3					
PI505A104	PI505F104	10.4					
PI505A105	PI505F105	10.5					
PI505A106	PI505F106	10.6					
PI505A107	PI505F107	10.7					
PI505A108	PI505F108	10.8					
PI505A109	PI505F109	10.9					
PI505A110	PI505F110	11.0					
PI505A111	PI505F111	11.1					
PI505A112	PI505F112	11.2					
PI505A113	PI505F113	11.3					

※ These tools are manufactured based on order received.



MEDIUM INTERNAL COOLANT / DIN 6537L

■ Shank Form

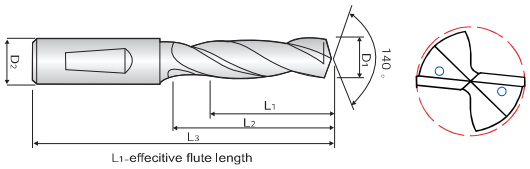
- PI505A : DIN 6535 HA - straight A type
- PI505F : DIN 6535 HE - 2° Whistle Flat F type

PI505A / PI505F ...series

ULTRA FINE HELIX m7

EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
PI505A114	PI503F104	11.4	12	56	71	118	
PI505A115	PI503F105	11.5					
PI505A116	PI503F106	11.6					
PI505A117	PI503F107	11.7					
PI505A118	PI503F108	11.8					
PI505A119	PI503F109	11.9					
PI505A120	PI503F110	12.0					
PI505A121	PI503F111	12.1	14	60	77	124	
PI505A122	PI503F112	12.2					
PI505A123	PI503F113	12.3					
PI505A124	PI503F114	12.4					
PI505A125	PI503F115	12.5					
PI505A126	PI503F116	12.6					
PI505A127	PI503F117	12.7					
PI505A128	PI503F118	12.8					
PI505A129	PI503F119	12.9					
PI505A130	PI503F120	13.0					
PI505A131	PI503F121	13.1					
PI505A132	PI503F122	13.2					
PI505A133	PI503F123	13.3					
PI505A134	PI503F124	13.4					
PI505A135	PI503F125	13.5					
PI505A136	PI503F126	13.6					
PI505A137	PI503F127	13.7					
PI505A138	PI503F128	13.8					
PI505A139	PI503F129	13.9					
PI505A140	PI503F130	14.0					
PI505A141	PI503F131	14.1	16	63	83	133	
PI505A142	PI503F132	14.2					
PI505A143	PI503F133	14.3					
PI505A144	PI503F134	14.4					
PI505A145	PI503F135	14.5					
PI505A146	PI503F136	14.6					
PI505A147	PI503F137	14.7					
PI505A148	PI503F138	14.8					
PI505A149	PI503F139	14.9					
PI505A150	PI503F140	15.0					

※ These tools are manufactured based on order received.



MEDIUM INTERNAL COOLANT / DIN 6537L

■ Shank Form

- PI505A : DIN 6535 HA - straight A type
- PI505F : DIN 6535 HE - 2° Whistle Flat F type

PI505A / PI505F ...series

ULTRA FINE HELIX m7

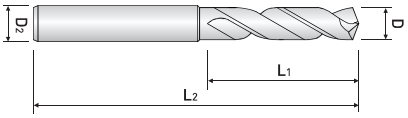
EDP. No.	EDP. No.	D_1 (m7)	D_2 (h6)	L_1	L_2	L_3	STOCK
PI505A151	PI505F151	15.1	16	63	83	133	
PI505A152	PI505F152	15.2					
PI505A153	PI505F153	15.3					
PI505A154	PI505F154	15.4					
PI505A155	PI505F155	15.5					
PI505A156	PI505F156	15.6					
PI505A157	PI505F157	15.7					
PI505A158	PI505F158	15.8					
PI505A159	PI505F159	15.9					
PI505A160	PI505F160	16.0					
PI505A161	PI505F161	16.1	18	71	93	143	
PI505A163	PI505F163	16.3					
PI505A165	PI505F165	16.5					
PI505A170	PI505F170	17.0					
PI505A171	PI505F171	17.1					
PI505A172	PI505F172	17.2					
PI505A175	PI505F175	17.5					
PI505A177	PI505F177	17.7					
PI505A178	PI505F178	17.8					
PI505A180	PI505F180	18.0					
PI505A181	PI505F181	18.1	20	77	101	153	
PI505A182	PI505F182	18.2					
PI505A185	PI505F185	18.5					
PI505A190	PI505F190	19.0					
PI505A191	PI505F191	19.1					
PI505A195	PI505F195	19.5					
PI505A197	PI505F197	19.7					
PI505A200	PI505F200	20.0					

※ These tools are manufactured based on order received.

■ Tolerance

㎛=1/1000㎜

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(m7)	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



POWER DRILL - STUB / 3 x D

PDS ...series

ULTRA FINE HELIX

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDS010	1	8	38	3	•
PDS011	1.1	10	42		•
PDS012	1.2				•
PDS013	1.3				•
PDS014	1.4	11			•
PDS015	1.5				•
PDS016	1.6	12			•
PDS017	1.7				•
PDS018	1.8	13			•
PDS019	1.9				•
PDS 020	2.0	14	50	3	•
PDS 021	2.1				•
PDS 022	2.2				•
PDS 023	2.3				•
PDS 024	2.4				•
PDS 025	2.5				•
PDS 026	2.6				•
PDS 027	2.7				•
PDS 028	2.8				•
PDS 029	2.9				•
PDS 030	3.0	18	60		•
PDS 031	3.1	20	60	4	•
PDS 032	3.2				•
PDS 033	3.3				•
PDS 034	3.4	22			•
PDS 035	3.5				•
PDS 036	3.6				•
PDS 037	3.7				•
PDS 038	3.8	24			•
PDS 039	3.9				•
PDS 040	4.0				•
PDS 041	4.1	24	62	5	•
PDS 042	4.2	26			•
PDS 043	4.3				•
PDS 044	4.4				•
PDS 045	4.5				•
PDS 046	4.6				•
PDS 047	4.7				•
PDS 048	4.8				•
PDS 049	4.9				•
PDS 050	5.0				•
PDS 051	5.1	28	66	6	•

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDS 052	5.2	28	66	6	•
PDS 053	5.3				•
PDS 054	5.4				•
PDS 055	5.5				•
PDS 056	5.6	30			•
PDS 057	5.7				•
PDS 058	5.8				•
PDS 059	5.9				•
PDS 060	6.0				•
PDS 061	6.1	34	74	7	•
PDS 062	6.2				•
PDS 063	6.3				•
PDS 064	6.4				•
PDS 065	6.5				•
PDS 066	6.6				•
PDS 067	6.7	37			•
PDS 068	6.8				•
PDS 069	6.9				•
PDS 070	7.0				•
PDS 071	7.1	40	79	8	•
PDS 072	7.2				•
PDS 073	7.3				•
PDS 074	7.4				•
PDS 075	7.5				•
PDS 076	7.6				•
PDS 077	7.7				•
PDS 078	7.8				•
PDS 079	7.9				•
PDS 080	8.0				•
PDS 081	8.1	43	84	9	•
PDS 082	8.2				•
PDS 083	8.3				•
PDS 084	8.4				•
PDS 085	8.5				•
PDS 086	8.6				•
PDS 087	8.7				•
PDS 088	8.8				•
PDS 089	8.9				•
PDS 090	9.0				•
PDS 091	9.1	47	89	10	•
PDS 092	9.2				•
PDS 093	9.3				•

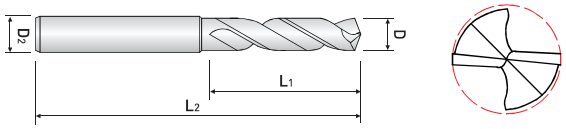
EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDS 094	9.4	47	89	10	•
PDS 095	9.5				•
PDS 096	9.6				•
PDS 097	9.7				•
PDS 098	9.8				•
PDS 099	9.9				•
PDS 100	10.0				•
PDS 101	10.1	51	95	11	•
PDS 102	10.2				•
PDS 103	10.3				•
PDS 104	10.4				•
PDS 105	10.5				•
PDS 106	10.6				•
PDS 107	10.7				•
PDS 108	10.8				•
PDS 109	10.9				•
PDS 110	11.0				•
PDS 111	11.1	54	102	12	•
PDS 112	11.2				•
PDS 113	11.3				•
PDS 114	11.4				•
PDS 115	11.5				•
PDS 116	11.6				•
PDS 117	11.7				•
PDS 118	11.8				•
PDS 119	11.9				•
PDS 120	12.0				•
PDS 121	12.1	57	102	13	•
PDS 122	12.2				•
PDS 123	12.3				•
PDS 124	12.4				•
PDS 125	12.5				•
PDS 126	12.6				•
PDS 127	12.7				•
PDS 128	12.8				•
PDS 129	12.9				•
PDS 130	13.0				•
PDS 131	13.1	60	107	14	•
PDS 132	13.2				•
PDS 133	13.3				•
PDS 132	13.4				•
PDS 135	13.5				•
PDS 136	13.6				•
PDS 137	13.7				•
PDS 138	13.8				•
PDS 139	13.9				•
PDS 140	14.0				•

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDS 141	14.1	62	111	15	•
PDS 142	14.2				•
PDS 143	14.3				•
PDS 144	14.4				•
PDS 145	14.5				•
PDS 146	14.6				•
PDS 147	14.7				•
PDS 148	14.8				•
PDS 149	14.9				•
PDS 150	15.0				•
PDS 151	15.1	64	115	16	•
PDS 152	15.2				•
PDS 154	15.4				•
PDS 155	15.5				•
PDS 156	15.6				•
PDS 157	15.7				•
PDS 158	15.8				•
PDS 159	15.9				•
PDS 160	16.0				•
PDS 161	16.1	66	119	17	•
PDS 163	16.3				•
PDS 164	16.4				•
PDS 165	16.5				•
PDS 170	17.0				•
PDS 171	17.1	66	123	18	•
PDS 172	17.2				•
PDS 173	17.3				•
PDS 175	17.5				•
PDS 177	17.7				•
PDS 178	17.8				•
PDS 180	18.0				•
PDS 181	18.1	70	127	19	•
PDS 182	18.2				•
PDS 185	18.5				•
PDS 190	19.0				•
PDS 191	19.1	70	131	20	•
PDS 192	19.2				•
PDS 195	19.5				•
PDS 197	19.7				•
PDS 200	20.0				•
PDS 220	22.0	75	131	22	•
PDS 225	22.5	80	131	23	•
PDS 230	23.0	86	140	23	•
PDS 235	23.5	86	140	24	•
PDS 240	24.0				•

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



POWER DRILL - MEDIUM / 5 x D

PDM ...series

ULTRA FINE HELIX

EDP. No.	Dia.	L1	L2	D2	STOCK
PDM 030	3.0	25	60	3	•
PDM 031	3.1	27		4	•
PDM 032	3.2				•
PDM 033	3.3				•
PDM 034	3.4	30	65		•
PDM 035	3.5				•
PDM 036	3.6				•
PDM 037	3.7				•
PDM 038	3.8	33	71		•
PDM 039	3.9				•
PDM 040	4.0				•
PDM 041	4.1	33	71	5	•
PDM 042	4.2				•
PDM 043	4.3	36			•
PDM 044	4.4				•
PDM 045	4.5				•
PDM 046	4.6				•
PDM 047	4.7				•
PDM 048	4.8	39			•
PDM 049	4.9				•
PDM 050	5.0				•
PDM 051	5.1	39	83	6	•
PDM 052	5.2				•
PDM 053	5.3				•
PDM 054	5.4	43			•
PDM 055	5.5				•
PDM 056	5.6				•
PDM 057	5.7				•
PDM 058	5.8				•
PDM 059	5.9				•
PDM 060	6.0				•
PDM 061	6.1	47	87	7	•
PDM 062	6.2				•
PDM 063	6.3				•
PDM 064	6.4				•
PDM 065	6.5				•
PDM 066	6.6				•

EDP. No.	Dia.	L1	L2	D2	STOCK
PDM 067	6.7	47	87	7	•
PDM 068	6.8				•
PDM 069	6.9				•
PDM 070	7.0				•
PDM 071	7.1	52	92	8	•
PDM 072	7.2				•
PDM 073	7.3				•
PDM 074	7.4				•
PDM 075	7.5				•
PDM 076	7.6				•
PDM 077	7.7				•
PDM 078	7.8				•
PDM 079	7.9				•
PDM 080	8.0				•
PDM 081	8.1	56	96	9	•
PDM 082	8.2				•
PDM 083	8.3				•
PDM 084	8.4				•
PDM 085	8.5				•
PDM 086	8.6				•
PDM 087	8.7				•
PDM 088	8.8				•
PDM 089	8.9				•
PDM 090	9.0				•
PDM 091	9.1	62	105	10	•
PDM 092	9.2				•
PDM 093	9.3				•
PDM 094	9.4				•
PDM 095	9.5				•
PDM 096	9.6				•
PDM 097	9.7				•
PDM 098	9.8				•
PDM 099	9.9				•
PDM 100	10.0				•
PDM 101	10.1	68	115	11	•
PDM 102	10.2				•
PDM 103	10.3				•

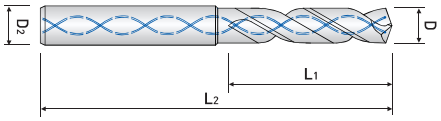
EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDM 104	10.4	68	115	11	•
PDM 105	10.5				•
PDM 106	10.6				•
PDM 107	10.7				•
PDM 108	10.8				•
PDM 109	10.9				•
PDM 110	11.0				•
PDM 111	11.1	71	121	12	•
PDM 112	11.2				•
PDM 113	11.3				•
PDM 114	11.4				•
PDM 115	11.5				•
PDM 116	11.6				•
PDM 117	11.7				•
PDM 118	11.8				•
PDM 119	11.9				•
PDM 120	12.0				•
PDM 121	12.1	75	125	13	•
PDM 122	12.2				•
PDM 123	12.3				•
PDM 124	12.4				•
PDM 125	12.5				•
PDM 126	12.6				•
PDM 127	12.7				•
PDM 128	12.8				•
PDM 129	12.9				•
PDM 130	13.0				•
PDM 131	13.1	80	134	14	•
PDM 132	13.2				•
PDM 133	13.3				•
PDM 134	13.4				•
PDM 135	13.5				•
PDM 136	13.6				•
PDM 137	13.7				•
PDM 138	13.8				•
PDM 139	13.9				•
PDM 140	14.0				•

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDM 141	14.1	83	143	15	•
PDM 142	14.2				•
PDM 143	14.3				•
PDM 144	14.4				•
PDM 145	14.5				•
PDM 146	14.6				•
PDM 147	14.7				•
PDM 148	14.8				•
PDM 149	14.9				•
PDM 150	15.0				•
PDM 151	15.1	90	152	16	•
PDM 152	15.2				•
PDM 154	15.4				•
PDM 155	15.5				•
PDM 156	15.6				•
PDM 157	15.7				•
PDM 158	15.8				•
PDM 160	16.0				•
PDM 161	16.1	95	155	17	•
PDM 163	16.3				•
PDM 165	16.5				•
PDM 170	17.0				•
PDM 171	17.1	100	157	18	•
PDM 172	17.2				•
PDM 175	17.5				•
PDM 177	17.7				•
PDM 178	17.8				•
PDM 180	18.0				•
PDM 181	18.1	105	160	19	•
PDM 182	18.2				•
PDM 185	18.5				•
PDM 190	19.0				•
PDM 191	19.1	110	163	20	•
PDM 195	19.5				•
PDM 197	19.7				•
PDM 200	20.0				•

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



POWER DRILL - STUB / INTERNAL COOLANT / 3 x D

PDSI ...series

ULTRA FINE HELIX h8

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDSI 030	3.0	25	60	3	•
PDSI 031	3.1	20		4	•
PDSI 032	3.2				•
PDSI 033	3.3				•
PDSI 034	3.4	22			•
PDSI 035	3.5				•
PDSI 036	3.6				•
PDSI 037	3.7				•
PDSI 038	3.8	24			•
PDSI 039	3.9				•
PDSI 040	4.0				•
PDSI 041	4.1	24	62	5	•
PDSI 042	4.2	26			•
PDSI 043	4.3				•
PDSI 044	4.4				•
PDSI 045	4.5				•
PDSI 046	4.6				•
PDSI 047	4.7				•
PDSI 048	4.8				•
PDSI 049	4.9				•
PDSI 050	5.0				•
PDSI 051	5.1	28	66	6	•
PDSI 052	5.2				•
PDSI 053	5.3				•
PDSI 054	5.4				•
PDSI 055	5.5				•
PDSI 056	5.6	30			•
PDSI 057	5.7				•
PDSI 058	5.8				•
PDSI 059	5.9				•
PDSI 060	6.0				•
PDSI 061	6.1	34	74	7	•
PDSI 062	6.2				•
PDSI 063	6.3				•
PDSI 064	6.4				•
PDSI 065	6.5				•
PDSI 066	6.6				•

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDSI 067	6.7	37	74	7	•
PDSI 068	6.8				•
PDSI 069	6.9				•
PDSI 070	7.0				•
PDSI 071	7.1	40	79	8	•
PDSI 072	7.2				•
PDSI 073	7.3				•
PDSI 074	7.4				•
PDSI 075	7.5				•
PDSI 076	7.6				•
PDSI 077	7.7				•
PDSI 078	7.8				•
PDSI 079	7.9				•
PDSI 080	8.0				•
PDSI 081	8.1	43	84	9	•
PDSI 082	8.2				•
PDSI 083	8.3				•
PDSI 084	8.4				•
PDSI 085	8.5				•
PDSI 086	8.6				•
PDSI 087	8.7				•
PDSI 088	8.8				•
PDSI 089	8.9				•
PDSI 090	9.0				•
PDSI 091	9.1	47	89	10	•
PDSI 092	9.2				•
PDSI 093	9.3				•
PDSI 094	9.4				•
PDSI 095	9.5				•
PDSI 096	9.6				•
PDSI 097	9.7				•
PDSI 098	9.8				•
PDSI 099	9.9				•
PDSI 100	10.0				•
PDSI 101	10.1	51	95	11	•
PDSI 102	10.2				•
PDSI 103	10.3				•

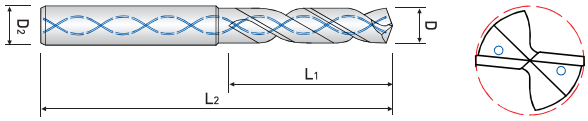
EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDSI 104	10.4	51	95	11	•
PDSI 105	10.5				•
PDSI 106	10.6				•
PDSI 107	10.7				•
PDSI 108	10.8				•
PDSI 109	10.9				•
PDSI 110	11.0				•
PDSI 111	11.1	54	102	12	•
PDSI 112	11.2				•
PDSI 113	11.3				•
PDSI 114	11.4				•
PDSI 115	11.5				•
PDSI 116	11.6				•
PDSI 117	11.7				•
PDSI 118	11.8				•
PDSI 119	11.9				•
PDSI 120	12.0				•
PDSI 121	12.1	57	102	13	•
PDSI 122	12.2				•
PDSI 123	12.3				•
PDSI 124	12.4				•
PDSI 125	12.5				•
PDSI 126	12.6				•
PDSI 127	12.7				•
PDSI 128	12.8				•
PDSI 129	12.9				•
PDSI 130	13.0				•
PDSI 131	13.1	60	107	14	•
PDSI 132	13.2				•
PDSI 133	13.3				•
PDSI 134	13.4				•
PDSI 135	13.5				•
PDSI 136	13.6				•
PDSI 137	13.7				•
PDSI 138	13.8				•
PDSI 139	13.9				•
PDSI 140	14.0				•

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDSI 141	14.1	62	111	15	•
PDSI 142	14.2				•
PDSI 143	14.3				•
PDSI 144	14.4				•
PDSI 145	14.5				•
PDSI 146	14.6				•
PDSI 147	14.7				•
PDSI 148	14.8				•
PDSI 149	14.9				•
PDSI 150	15.0				•
PDSI 151	15.1	64	115	16	•
PDSI 152	15.2				•
PDSI 154	15.4				•
PDSI 155	15.5				•
PDSI 156	15.6				•
PDSI 157	15.7				•
PDSI 158	15.8				•
PDSI 160	16.0				•
PDSI 161	16.1	66	119	17	•
PDSI 163	16.3				•
PDSI 165	16.5				•
PDSI 170	17.0				•
PDSI 171	17.1	66	123	18	•
PDSI 172	17.2				•
PDSI 175	17.5				•
PDSI 177	17.7				•
PDSI 178	17.8				•
PDSI 180	18.0				•
PDSI 181	18.1	70	127	19	•
PDSI 182	18.2				•
PDSI 185	18.5				•
PDSI 190	19.0				•
PDSI 191	19.1	70	131	20	•
PDSI 195	19.5				•
PDSI 197	19.7				•
PDSI 200	20.0				•

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



POWER DRILL - MEDIUM / INTERNAL COOLANT / 5 x D

PDMI ...series

ULTRA FINE HELIX h8

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDMI 031	3.1	27	74	4	•
PDMI 032	3.2				•
PDMI 033	3.3				•
PDMI 034	3.4	30			•
PDMI 035	3.5				•
PDMI 036	3.6				•
PDMI 037	3.7				•
PDMI 038	3.8	33			•
PDMI 039	3.9				•
PDMI 040	4.0				•
PDMI 041	4.1	33	80	5	•
PDMI 042	4.2				•
PDMI 043	4.3	36			•
PDMI 044	4.4				•
PDMI 045	4.5				•
PDMI 046	4.6				•
PDMI 047	4.7				•
PDMI 048	4.8	39			•
PDMI 049	4.9				•
PDMI 050	5.0				•
PDMI 051	5.1	39	87	6	•
PDMI 052	5.2				•
PDMI 053	5.3				•
PDMI 054	5.4	43			•
PDMI 055	5.5				•
PDMI 056	5.6				•
PDMI 057	5.7				•
PDMI 058	5.8				•
PDMI 059	5.9				•
PDMI 060	6.0				•
PDMI 061	6.1	47	95	7	•
PDMI 062	6.2				•
PDMI 063	6.3				•
PDMI 064	6.4				•
PDMI 065	6.5				•
PDMI 066	6.6				•
PDMI 067	6.7				•

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDMI 068	6.8	47	95	7	•
PDMI 069	6.9				•
PDMI 070	7.0				•
PDMI 071	7.1	52	103	8	•
PDMI 072	7.2				•
PDMI 073	7.3				•
PDMI 074	7.4				•
PDMI 075	7.5				•
PDMI 076	7.6				•
PDMI 077	7.7				•
PDMI 078	7.8				•
PDMI 079	7.9				•
PDMI 080	8.0				•
PDMI 081	8.1	56	105	9	•
PDMI 082	8.2				•
PDMI 083	8.3				•
PDMI 084	8.4				•
PDMI 085	8.5				•
PDMI 086	8.6				•
PDMI 087	8.7				•
PDMI 088	8.8				•
PDMI 089	8.9				•
PDMI 090	9.0				•
PDMI 091	9.1	62	108	10	•
PDMI 092	9.2				•
PDMI 093	9.3				•
PDMI 094	9.4				•
PDMI 095	9.5				•
PDMI 096	9.6				•
PDMI 097	9.7				•
PDMI 098	9.8				•
PDMI 099	9.9				•
PDMI 100	10.0				•
PDMI 101	10.1	68	125	11	•
PDMI 102	10.2				•
PDMI 103	10.3				•
PDMI 104	10.4				•

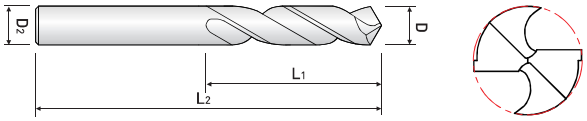
EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDMI 105	10.5	68	125	11	•
PDMI 106	10.6				•
PDMI 107	10.7				•
PDMI 108	10.8				•
PDMI 109	10.9				•
PDMI 110	11.0				•
PDMI 111	11.1	71	133	12	•
PDMI 112	11.2				•
PDMI 113	11.3				•
PDMI 114	11.4				•
PDMI 115	11.5				•
PDMI 116	11.6				•
PDMI 117	11.7				•
PDMI 118	11.8				•
PDMI 119	11.9				•
PDMI 120	12.0				•
PDMI 121	12.1	75	137	13	•
PDMI 122	12.2				•
PDMI 123	12.3				•
PDMI 124	12.4				•
PDMI 125	12.5				•
PDMI 126	12.6				•
PDMI 127	12.7				•
PDMI 128	12.8				•
PDMI 129	12.9				•
PDMI 130	13.0				•
PDMI 131	13.1	80	142	14	•
PDMI 132	13.2				•
PDMI 133	13.3				•
PDMI 134	13.4				•
PDMI 135	13.5				•
PDMI 136	13.6				•
PDMI 137	13.7				•
PDMI 138	13.8				•
PDMI 139	13.9				•
PDMI 140	14.0				•

EDP. No.	Dia.	L_1	L_2	D_2	STOCK
PDMI 141	14.1	83	148	15	•
PDMI 142	14.2				•
PDMI 143	14.3				•
PDMI 144	14.4				•
PDMI 145	14.5				•
PDMI 146	14.6				•
PDMI 147	14.7				•
PDMI 148	14.8				•
PDMI 149	14.9				•
PDMI 150	15.0				•
PDMI 151	15.1	90	152	16	•
PDMI 152	15.2				•
PDMI 154	15.4				•
PDMI 155	15.5				•
PDMI 156	15.6				•
PDMI 157	15.7				•
PDMI 158	15.8				•
PDMI 160	16.0				•
PDMI 161	16.1	95	155	17	•
PDMI 163	16.3				•
PDMI 165	16.5				•
PDMI 170	17.0				•
PDMI 171	17.1	100	157	18	•
PDMI 172	17.2				•
PDMI 175	17.5				•
PDMI 177	17.7				•
PDMI 178	17.8				•
PDMI 180	18.0				•
PDMI 181	18.1	105	160	19	•
PDMI 182	18.2				•
PDMI 185	18.5				•
PDMI 190	19.0				•
PDMI 191	19.1	110	163	20	•
PDMI 195	19.5				•
PDMI 197	19.7				•
PDMI 200	20.0				•

■ Tolerance

μm=1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27	0 -33
Shank(h6)	0 -6	0 -8	0 -9	0 -11	0 -13



SOLID SPIRAL DRILL

SSD ...series

MQ FINE GRAIN · 30° HELIX · 118°

EDP. No.	Dia.	L1	L2	STOCK
SSD010	1.0	10	38	•
SSD011	1.1			•
SSD012	1.2			•
SSD013	1.3			•
SSD014	1.4			•
SSD015	1.5	13	38	•
SSD016	1.6			•
SSD017	1.7			•
SSD018	1.8			•
SSD019	1.9			•
SSD020	2.0	16	45	•
SSD021	2.1			•
SSD022	2.2			•
SSD023	2.3			•
SSD024	2.4	18	50	•
SSD025	2.5	20	50	•
SSD026	2.6			•
SSD027	2.7	22	50	•
SSD028	2.8			•
SSD029	2.9			•
SSD030	3.0			•
SSD031	3.1	25	50	•
SSD032	3.2			•
SSD033	3.3			•
SSD034	3.4			•
SSD035	3.5			•

EDP. No.	Dia.	L1	L2	STOCK
SSD036	3.6	28	55	•
SSD037	3.7			•
SSD038	3.8			•
SSD039	3.9			•
SSD040	4.0			•
SSD041	4.1	30	60	•
SSD042	4.2			•
SSD043	4.3			•
SSD044	4.4			•
SSD045	4.5			•
SSD046	4.6	33	65	•
SSD047	4.7			•
SSD048	4.8	35	65	•
SSD049	4.9			•
SSD050	5.0			•
SSD051	5.1			•
SSD052	5.2			•
SSD053	5.3			•
SSD054	5.4			•
SSD055	5.5			•
SSD056	5.6	38	75	•
SSD057	5.7			•
SSD058	5.8			•
SSD059	5.9			•
SSD060	6.0			•

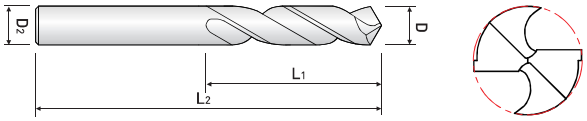
EDP. No.	Dia.	L_1	L_2	STOCK
SSD061	6.1	38	75	•
SSD062	6.2			•
SSD063	6.3			•
SSD064	6.4			•
SSD065	6.5			•
SSD066	6.6	45	80	•
SSD067	6.7			•
SSD068	6.8			•
SSD069	6.9			•
SSD070	7.0			•
SSD071	7.1			•
SSD072	7.2			•
SSD073	7.3			•
SSD074	7.4			•
SSD075	7.5			•
SSD076	7.6	50	85	•
SSD077	7.7			•
SSD078	7.8			•
SSD079	7.9			•
SSD080	8.0			•
SSD081	8.1			•
SSD082	8.2			•
SSD083	8.3			•
SSD084	8.4			•
SSD085	8.5			•
SSD086	8.6	50	95	•
SSD087	8.7			•
SSD088	8.8			•
SSD089	8.9			•
SSD090	9.0			•

EDP. No.	Dia.	L_1	L_2	STOCK
SSD091	9.1	50	95	•
SSD092	9.2			•
SSD093	9.3			•
SSD094	9.4			•
SSD095	9.5			•
SSD096	9.6			•
SSD097	9.7			•
SSD098	9.8			•
SSD099	9.9	55	100	•
SSD100	10.0			•
SSD101	10.1	55	115	•
SSD102	10.2			•
SSD103	10.3			•
SSD104	10.4			•
SSD105	10.5			•
SSD106	10.6	60	115	•
SSD107	10.7			•
SSD108	10.8			•
SSD109	10.9			•
SSD110	11.0			•
SSD111	11.1	65	120	•
SSD112	11.2			•
SSD113	11.3			•
SSD115	11.5			•
SSD118	11.8			•
SSD119	11.9			•
SSD120	12.0			•
SSD124	12.4	70	125	•
SSD125	12.5			•
SSD130	13.0	75	130	•

■ Tolerance

μm =1/1000mm

Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27
Shank(h6)	0 -10	0 -12	0 -15	0 -18



SOLID SPIRAL DRILL - LONG

SSDL ...series

MQ FINE GRAIN · 30° HELIX · 118°

EDP. No.	Dia.	L1	L2	STOCK
SSDL030	3.0	42	73	•
SSDL031	3.1			•
SSDL032	3.2			•
SSDL033	3.3			•
SSDL034	3.4			•
SSDL035	3.5			•
SSDL036	3.6	45	80	•
SSDL037	3.7			•
SSDL038	3.8	48	80	•
SSDL039	3.9	50	80	•
SSDL040	4.0	54	85	•
SSDL041	4.1			•
SSDL042	4.2			•
SSDL043	4.3			•
SSDL044	4.4			•
SSDL045	4.5			•
SSDL046	4.6	59	90	•
SSDL047	4.7			•
SSDL048	4.8			•
SSDL049	4.9			•
SSDL050	5.0			•
SSDL051	5.1	63	95	•
SSDL052	5.2			•
SSDL053	5.3			•
SSDL054	5.4			•
SSDL055	5.5			•
SSDL056	5.6	66	100	•
SSDL057	5.7			•
SSDL058	5.8			•
SSDL059	5.9			•
SSDL060	6.0			•
SSDL061	6.1	70	105	•
SSDL062	6.2			•
SSDL063	6.3			•
SSDL064	6.4			•
SSDL065	6.5			•

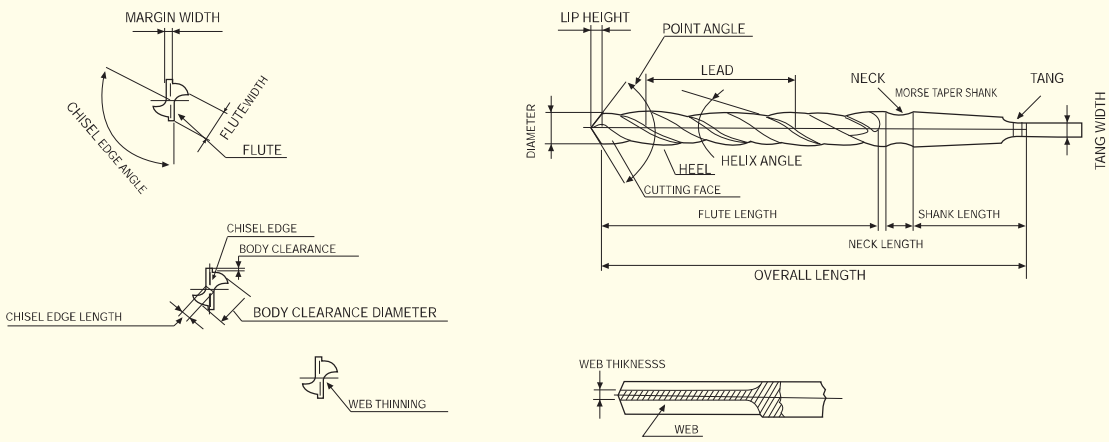
EDP. No.	Dia.	L1	L2	STOCK
SSDL066	6.6	73	105	•
SSDL067	6.7			•
SSDL068	6.8			•
SSDL069	6.9			•
SSDL070	7.0			•
SSDL071	7.1	76	110	•
SSDL072	7.2			•
SSDL073	7.3			•
SSDL074	7.4			•
SSDL075	7.5			•
SSDL076	7.6	80	115	•
SSDL077	7.7			•
SSDL078	7.8			•
SSDL079	7.9			•
SSDL080	8.0			•
SSDL081	8.1	85	125	•
SSDL082	8.2			•
SSDL083	8.3			•
SSDL084	8.4			•
SSDL085	8.5			•
SSDL086	8.6			•
SSDL087	8.7			•
SSDL088	8.8			•
SSDL089	8.9			•
SSDL090	9.0			•
SSDL091	9.1	88	130	•
SSDL092	9.2			•
SSDL093	9.3			•
SSDL094	9.4			•
SSDL095	9.5			•
SSDL096	9.6	90	130	•
SSDL097	9.7			•
SSDL098	9.8			•
SSDL099	9.9			•
SSDL100	10.0			•

■ Tolerance

㎛ =1/1000㎜

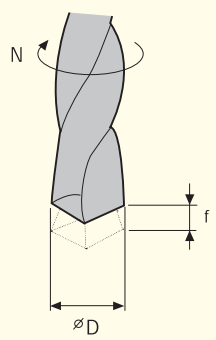
Tolerance \ Dia.	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18
Cutting Edge(h8)	0 -14	0 -18	0 -22	0 -27
Shank(h6)	0 -10	0 -12	0 -15	0 -18

Nomenclature of Drill



Working of Main Angle

POINT ANGLE	HELIX ANGLE	LIP RELIEF ANGLE
70° 118° 140°	10° 38° 40°	7° 10° 12° 15°
Large → Torque → Small Small → Thrust → Large	Bad → Cutting Capacity → Good Good → Chip Ejection → Bad Large → Rigidity of tool → Small	Small → Tool Wear → Large Small → Vibration → Large



•Cutting Speed

$$V = \frac{\pi \times D \times N}{1000} \text{ (m/min)}$$

- V : cutting Speed (m/min)
- D : Diameter of drill (mm)
- N : revolution (rpm)
- π : (3.14)

•Feed

$$f = \frac{S}{N} \text{ (m/rev)}$$

- f : feed (mm/rev)
- S : depth of cut per min (mm/min)
- N : revolution(rpm) (rpm)

•Helix Angle

$$\delta^\circ = \text{Tan}^{-1}\left(\frac{\pi D}{L}\right)$$

- δ : helix angle
- D : Diameter of drill (mm)
- L : lead (mm)
- π : (3.14)

SSD series

Work Material	ToolSteels,AlloySteels SKD,SCM		AluminumRolled, AluminumAlloy AL,AC		Brass,Bronze Bs,PB		Epoxy, Resin	
DIAMETER (mm)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)
3	4000~7000	0.02	10000~12000	0.03	7000~10000	0.02	9000~12000	0.08
5	2400~4200	0.03	6000~8000	0.05	4200~6000	0.04	5400~7200	0.08
8	1500~2600	0.05	3700~5000	0.08	2600~3700	0.08	3400~4500	0.09
12	1000~1700	0.06	2500~3200	0.12	1700~2500	0.12	2200~3000	0.11

PDS, PDM series ▶Power Drill

V : m/min, f : mm/rev

MATERIAL			MILD STEEL·ALLOY STEEL·CARBON STEEL		ALLOY STEEL FORGED STEEL		HIGH HARDENED STEELS		STAINLESS STEEL		DUCTILE CAST IRON		CAST IRON	
			≤HRc 25		HRc 25~ HRc 35		HRc 35~ HRc 45							
TYPE	Dia.	COD	V	f	V	f	V	f	V	f	V	f	V	f
SOLID TYPE	ø3~5	PDS030~050	40~70	0.15~0.25	35~55	0.10~0.20	15~25	0.05~0.15	15~25	0.05~0.15	35~70	0.15~0.25	45~75	0.15~0.30
	ø5~8	PDS051~080	50~75	0.20~0.30	45~60	0.15~0.25	15~30	0.10~0.20	15~30	0.10~0.20	45~75	0.20~0.35	55~85	0.20~0.40
	ø8~10	PDS081~100	50~75	0.25~0.35	45~60	0.15~0.30	20~35	0.10~0.20	15~30	0.10~0.20	45~75	0.25~0.40	55~85	0.20~0.40
	ø10~12	PDS101~120	50~75	0.25~0.35	45~60	0.15~0.30	20~35	0.10~0.25	15~30	0.10~0.25	45~75	0.25~0.40	55~85	0.20~0.45
	ø12~14	PDS121~140	55~80	0.25~0.40	50~70	0.20~0.35	20~35	0.10~0.25	15~30	0.10~0.25	50~80	0.25~0.45	60~90	0.25~0.50
	ø14~20	PDS141~200	55~80	0.30~0.45	50~70	0.20~0.35	20~35	0.10~0.30	15~30	0.10~0.25	50~80	0.25~0.50	60~100	0.25~0.55

PDSI, PDMI series ▶Oil Hole Power Drill

V : m/min, f : mm/rev

MATERIAL	MILD STEEL·ALLOY STEEL·CARBON STEEL		ALLOY STEEL FORGED STEEL		HIGH HARDENED STEELS		STAINLESS STEEL		DUCTILE CAST IRON		CAST IRON	
	≤HRc 25		HRc 25~ HRc 35		HRc 35~ HRc 45							
Dia.	V	f	V	f	V	f	V	f	V	f	V	f
7~8	80~110	0.15~0.25	70~100	0.15~0.25	50~80	0.10~0.20	30~60	0.10~0.20	50~80	0.15~0.25	80~120	0.15~0.30
8~10	90~120	0.20~0.30	80~110	0.15~0.30	60~90	0.15~0.25	30~70	0.10~0.20	60~90	0.20~0.30	100~130	0.25~0.35
10~12	100~130	0.25~0.35	90~120	0.20~0.30	70~100	0.20~0.30	30~70	0.10~0.20	70~100	0.25~0.35	110~140	0.25~0.35
12~16	110~140	0.25~0.35	100~130	0.25~0.35	80~100	0.20~0.30	40~70	0.15~0.25	80~110	0.30~0.40	120~150	0.30~0.40
16~20	120~150	0.25~0.40	110~140	0.25~0.35	90~110	0.20~0.30	40~70	0.15~0.30	90~120	0.30~0.40	130~160	0.30~0.40

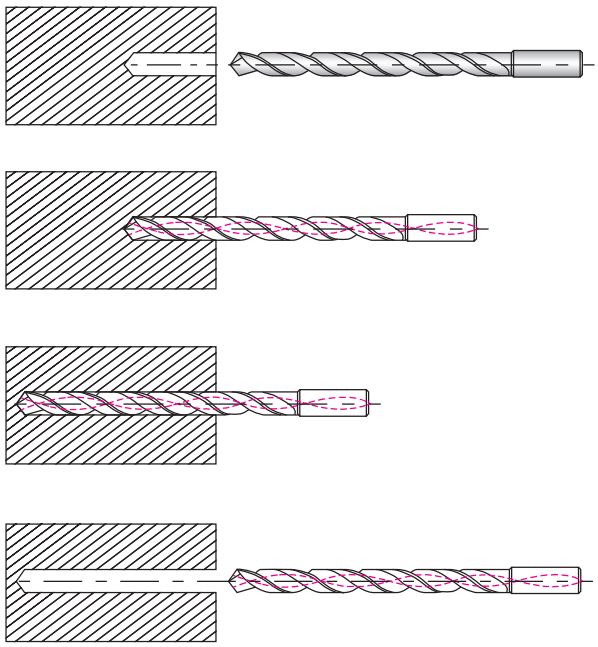
PF50, P50 series

MATERIAL	CARBON STEEL(C<0.3%) ALLOY STEEL / SS400 SCM ~710N/mm²		CARBON STEEL(C≥0.3%) ALLOY STEEL / S50C SCM ~1.060N/mm²		SUJ2·SUS440		SKD61 34~43 HRC		43~48 HRC		SKD11 48~53 HRC		CAST IRON FC 250~350		DUCTILE FC 400~500	
V	80~125m/min		80~125m/min		63~80m/min		40~63m/min		32~45m/min		25~36m/min		80~125m/min		63~90m/min	
DIAMETER (mm)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)
2	12,000	0.06~0.08	12,000	0.06~0.08	11,000	0.06~0.08	8,000	0.06~0.08	6,000	0.05~0.07	4,500	0.03~0.06	15,000	0.06~0.08	11,000	0.06~0.08
3	9,600	0.09~0.12	9,600	0.09~0.12	7,500	0.09~0.12	5,300	0.09~0.12	4,000	0.07~0.11	3,200	0.05~0.09	10,000	0.09~0.12	7,600	0.09~0.12
4	8,000	0.10~0.15	8,000	0.10~0.15	5,650	0.10~0.15	4,000	0.10~0.15	3,000	0.08~0.13	2,600	0.06~0.10	8,000	0.10~0.15	6,000	0.10~0.15
5	6,400	0.12~0.18	6,400	0.12~0.18	4,550	0.12~0.18	3,300	0.12~0.18	2,400	0.10~0.15	2,000	0.8~0.12	6,400	0.12~0.18	4,800	0.12~0.18
6	5,300	0.14~0.20	5,300	0.14~0.20	3,800	0.14~0.20	2,750	0.14~0.20	2,000	0.12~0.18	1,700	0.09~0.15	5,300	0.14~0.20	4,000	0.14~0.20
8	4,000	0.16~0.24	4,000	0.16~0.24	2,850	0.16~0.24	2,100	0.16~0.24	1,500	0.14~0.22	1,300	0.12~0.20	4,000	0.16~0.24	3,000	0.16~0.24
10	3,200	0.18~0.27	3,200	0.18~0.27	2,250	0.18~0.27	1,700	0.18~0.27	1,200	0.15~0.25	1,000	0.13~0.23	3,200	0.18~0.27	2,400	0.18~0.27
12	2,650	0.20~0.30	2,650	0.20~0.30	1,900	0.20~0.30	1,400	0.20~0.30	1,000	0.17~0.26	850	0.14~0.24	2,700	0.20~0.30	2,000	0.20~0.30
14	2,300	0.22~0.35	2,300	0.22~0.35	1,600	0.22~0.35	1,200	0.22~0.35	860	0.18~0.30	730	0.15~0.26	2,300	0.22~0.35	1,700	0.22~0.35
16	2,000	0.25~0.36	2,000	0.25~0.36	1,400	0.25~0.36	1,050	0.25~0.36	760	0.20~0.32	640	0.16~0.26	2,000	0.25~0.36	1,500	0.25~0.36
18	1,800	0.28~0.38	1,800	0.28~0.38	1,250	0.28~0.38	920	0.28~0.38	670	0.23~0.33	570	0.18~0.28	1,800	0.28~0.38	1,350	0.28~0.38
20	1,600	0.30~0.40	1,600	0.30~0.40	1,150	0.30~0.40	850	0.30~0.40	600	0.25~0.35	500	0.20~0.30	1,600	0.30~0.40	1,200	0.30~0.40

SF50, PI50 series

MATERIAL	CARBON STEEL(C<0.3%) ALLOY STEEL / SS400 SCM ~710N/mm²		CARBON STEEL(C≥0.3%) ALLOY STEEL / S50C SCM ~1.060N/mm²		SUJ2·SUS440		SKD61 34~43 HRC		43~48 HRC		SKD11 48~53 HRC		CAST IRON FC 250~350		DUCTILE FC 400~500	
V	80~150m/min		80~150m/min		63~100m/min		40~70m/min		32~50m/min		25~40m/min		80~150m/min		63~100m/min	
DIAMETER (mm)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)	RPM (mm^{-1})	FEED (mm/rev)
3	12,000	0.09~0.12	13,000	0.09~0.12	7,600	0.09~0.12	6,400	0.09~0.12	5,300	0.07~0.11	3,800	0.05~0.09	12,000	0.09~0.12	8,500	0.09~0.12
4	9,500	0.10~0.15	10,000	0.10~0.15	5,700	0.10~0.15	4,800	0.10~0.15	4,000	0.08~0.13	2,950	0.06~0.10	9,000	0.10~0.15	6,350	0.10~0.15
5	7,600	0.12~0.18	8,000	0.12~0.18	4,600	0.12~0.18	3,800	0.12~0.18	3,200	0.10~0.15	2,300	0.8~0.12	7,600	0.12~0.18	5,100	0.12~0.18
6	6,400	0.14~0.20	6,600	0.14~0.20	3,800	0.14~0.20	3,200	0.14~0.20	2,650	0.12~0.18	1,900	0.09~0.15	6,400	0.14~0.20	4,250	0.14~0.20
8	4,800	0.16~0.24	5,000	0.16~0.24	2,900	0.16~0.24	2,400	0.16~0.24	2,000	0.14~0.22	1,450	0.12~0.20	4,800	0.16~0.24	3,200	0.16~0.24
10	3,800	0.18~0.27	4,000	0.18~0.27	2,300	0.18~0.27	1,900	0.18~0.27	1,600	0.15~0.25	1,150	0.13~0.23	3,800	0.18~0.27	2,550	0.18~0.27
12	3,200	0.20~0.30	3,300	0.20~0.30	1,900	0.20~0.30	1,600	0.20~0.30	1,300	0.17~0.26	950	0.14~0.24	3,200	0.20~0.30	2,100	0.20~0.30
14	2,700	0.22~0.35	2,800	0.22~0.35	1,600	0.22~0.35	1,350	0.22~0.35	1,150	0.18~0.30	800	0.15~0.26	2,700	0.22~0.35	1,800	0.22~0.35
16	2,400	0.25~0.36	2,500	0.25~0.36	1,400	0.25~0.36	1,200	0.25~0.36	1,000	0.20~0.32	700	0.16~0.26	2,400	0.25~0.36	1,600	0.25~0.36
18	2,100	0.28~0.38	2,200	0.28~0.38	1,300	0.28~0.38	1,100	0.28~0.38	900	0.23~0.33	650	0.18~0.28	2,100	0.28~0.38	1,400	0.28~0.38
20	1,900	0.30~0.40	2,000	0.30~0.40	1,150	0.30~0.40	1,000	0.30~0.40	800	0.25~0.35	600	0.20~0.30	1,900	0.30~0.40	1,250	0.30~0.40

SF51, SF52 series



1. Guide Drilling should be done as Diameter+0.1mm between 3×D and 5×D
2. For Main Drilling, proceed with low RPM at Guide Drilling segment. (RPM 300, FEED 400mm/min)
3. Just before the end of Guide Drilling segment, reduce feed to zero and increase the RPM according to Recommended Cutting Condition chart (See Below)
4. After then, proceed main drilling by increasing feed without step drilling.
5. When coming out from Guide Drilling start point after drilling, RPM should be reduced as 300 and feed should be 1000 mm/min.
6. When coming out from Guide Drilling segment to the outside, the feed should be decreased as 50%

WORK MATERIAL	CARBON STEELS ALLOY STEEL ~1060 N/mm²		CAST IRON 250~350 N/mm²		DUCTILE CAST IRON 400~500 N/mm²	
Drilling Speed	63~125 m/min		63~125 m/min		60~80 m/min	
Drilling Diameter	Speed (min^{-1})	Feed Rate (mm/rev)	Speed (min^{-1})	Feed Rate (mm/rev)	Speed (min^{-1})	Feed Rate (mm/rev)
3	7500	0.06 ~ 0.12	7500	0.06 ~ 0.12	7500	0.06 ~ 0.12
4	6400	0.08 ~ 0.16	6400	0.08 ~ 0.16	5600	0.08 ~ 0.16
5	5800	0.10 ~ 0.20	5800	0.10 ~ 0.20	4500	0.10 ~ 0.20
6	4800	0.12 ~ 0.24	4800	0.12 ~ 0.24	3800	0.12 ~ 0.24
8	3600	0.16 ~ 0.28	3600	0.16 ~ 0.28	2800	0.16 ~ 0.28
10	2900	0.20 ~ 0.35	2900	0.20 ~ 0.35	2300	0.20 ~ 0.35
12	2900	0.24 ~ 0.42	2400	0.24 ~ 0.42	1900	0.24 ~ 0.42
14	2050	0.28 ~ 0.46	2050	0.28 ~ 0.46	1600	0.28 ~ 0.46

N = R.P.M
S = Feed per Revolution(mm/rev)

Problems	Cause \ Solution	Cutting Conditions					Tool shape						Grade		The Others			
		Cutting Speed	Feed Rate	Step Feed	Initial Feed	Cutting Fluid	Relief Angel	Point Angel	Thinning Angel	Honing	Change the rate of flute and land width	Thinning	Toughness	Hardness	Mechanical rigidity of machine	Drill Rigidity	Guide - Bush	Improvement of setting type
Chipping	• Improper cutting edge						▼		▼	▲			▲					
	• Improper cutting speed	▼				○												
	• Generation of built - up edge					○	▼		▼	▲			▲					
	• Generation of chattering and vibration	▼													▲	▲		○
Excessive wear on cutting edge	• Cutting speed too high in relation to insert grade	▼				○	▲	▲						▲				
Breakage – In the beginning of operating	• Poor surface conditions of workpiece			○	▼												○	
Breakage – In the beginning of operating	• Insufficient rigidity of tool and workpiece														▲			○
Breakage – In the beginning of operating	• Deflection of hole	▼	▼															
Breakage – Under the operating	• Default of chip ejection		▼	○								○						

▲ : Increase ▼ : Decrease ○ : Application ◉ : Proper application

MEMO

Hardness Conversion Table

Rm[N/mm²]	HV 10	HB	HRc
240	75	71	
255	80	76	
270	85	81	
285	90	86	
305	95	90	
320	100	95	
335	105	100	
350	110	105	
370	115	109	
385	120	114	
400	125	119	
415	130	124	
430	135	128	
450	140	133	
465	145	138	
480	150	143	
495	155	147	
510	160	152	
530	165	157	
545	170	162	
560	175	166	
575	180	171	
595	185	176	
610	190	181	
625	195	185	
640	200	190	
660	205	195	
675	210	199	
690	215	204	
705	220	209	
720	225	214	
740	230	219	
755	135	223	
770	140	228	
785	145	233	
800	150	238	22
820	155	242	23
835	160	247	24
860	268	255	25
870	272	258	26
900	280	266	27

Rm[N/mm2]	HV 10	HB	HRc
920	287	273	28
940	293	278	29
970	302	287	30
995	310	295	31
1020	317	301	32
1050	327	311	33
1080	336	319	34
1110	345	328	35
1140	355	337	36
1170	364	346	37
1200	373	354	38
1230	382	363	39
1260	392	372	40
1300	403	383	41
1330	413	393	42
1360	423	402	43
1400	434	413	44
1440	446	424	45
1480	458	435	46
1530	473	449	47
1570	484	460	48
1620	497	472	49
1680	514	488	50
1730	527	501	51
1790	544	517	52
1845	560	532	53
1910	578	549	54
1980	596	567	55
2050	615	584	56
2140	639	607	57
	655	622	58
	675		59
	698		60
	720		61
	745		62
	773		63
	800		64
	829		65
	864		66
	900		67
	940		68