

POWER MAX DRILL SERIES

PF503



Endmill & Drill

POWER MAX DRILL - STUB / HIGH SPEED MACHINING

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

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK	
PF503020	2.0	14	50	3	●	
PF503021	2.1				●	
PF503022	2.2				●	
PF503023	2.3				●	
PF503024	2.4				●	
PF503025	2.5				●	
PF503026	2.6				●	
PF503027	2.7				●	
PF503028	2.8				●	
PF503029	2.9				●	
PF503030	3.0	18	60	4	●	
PF503031	3.1	20	60		●	
PF503032	3.2				●	
PF503033	3.3				●	
PF503034	3.4				22	●
PF503035	3.5					●
PF503036	3.6					●
PF503037	3.7				24	●
PF503038	3.8	●				
PF50039	3.9	●				
PF503040	4.0	26		62	5	●
PF503041	4.1		●			
PF503042	4.2		●			
PF503043	4.3		●			
PF503044	4.4		●			
PF503045	4.5		●			
PF503046	4.6		●			
PF503047	4.7		●			
PF503048	4.8		●			
PF503049	4.9		●			
PF503050	5.0		●			
PF503051	5.1	●				

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK			
PF503052	5.2	28	66	6	●			
PF503053	5.3				●			
PF503054	5.4				●			
PF503055	5.5				●			
PF503056	5.6				●			
PF503057	5.7				●			
PF503058	5.8	30	74	7	●			
PF503059	5.9				●			
PF503060	6.0				●			
PF503061	6.1				●			
PF503062	6.2				34	79	8	●
PF503063	6.3	●						
PF503064	6.4	●						
PF503065	6.5	●						
PF503066	6.6	37	●					
PF503067	6.7		●					
PF503068	6.8		●					
PF503069	6.9	40	84	9				●
PF503070	7.0							●
PF503071	7.1							●
PF503072	7.2				43	89	10	●
PF503073	7.3							●
PF503074	7.4							●
PF503075	7.5							●
PF503076	7.6							●
PF503077	7.7							●
PF503078	7.8							●
PF503079	7.9							●
PF503080	8.0	●						
PF503081	8.1	47	89	10				●
PF503082	8.2				●			
PF503083	8.3				●			
PF503084	8.4				●			
PF503085	8.5				●			
PF503086	8.6				●			
PF503087	8.7				●			
PF503088	8.8				●			
PF503089	8.9				●			
PF503090	9.0				●			
PF503091	9.1	47	89	10	●			
PF503092	9.2				●			
PF503093	9.3				●			
PF503094	9.4				●			
PF503095	9.5				●			
PF503096	9.6				●			
PF503097	9.7				●			
PF503098	9.8				●			
PF503099	9.9				●			
PF503100	10.0				●			
PF503101	10.1	●						

POWER MAX DRILL SERIES

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PF503102	10.2	51	95	11	●
PF503103	10.3				●
PF503104	10.4				●
PF503105	10.5				●
PF503106	10.6				●
PF503107	10.7				●
PF503108	10.8				●
PF503109	10.9				●
PF503110	11.0				●
PF503111	11.1				●
PF503112	11.2				54
PF503113	11.3	●			
PF503114	11.4	●			
PF503115	11.5	●			
PF503116	11.6	●			
PF503117	11.7	●			
PF503118	11.8	●			
PF503119	11.9	●			
PF503120	12.0	●			
PF503121	12.1	●			
PF503122	12.2	57	102	13	
PF503123	12.3				●
PF503124	12.4				●
PF503125	12.5				●
PF503126	12.6				●
PF503127	12.7				●
PF503128	12.8				●
PF503129	12.9				●
PF503130	13.0				●
PF503131	13.1				●
PF503132	13.2				60
PF503133	13.3	●			
PF503134	13.4	●			
PF503135	13.5	●			
PF503136	13.6	●			
PF503137	13.7	●			
PF503138	13.8	●			
PF503139	13.9	●			
PF503140	14.0	●			
PF503141	14.1	●			
PF503142	14.2	62	111	15	
PF503143	14.3				●
PF503144	14.4				●
PF503145	14.5				●
PF503146	14.6				●
PF503147	14.7				●
PF503148	14.8				●
PF503149	14.9				●
PF503150	15.0				●
PF503151	15.1				●

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK			
PF503152	15.2	64	115	16	●			
PF503154	15.4				●			
PF503155	15.5				●			
PF503156	15.6				●			
PF503157	15.7				●			
PF503158	15.8				●			
PF503160	16.0				●			
PF503161	16.1				●			
PF503163	16.3				66	119	17	●
PF503165	16.5							●
PF503170	17.0							●
PF503171	17.1	●						
PF503172	17.2	66	123	18				●
PF503175	17.5							●
PF503177	17.7							●
PF503178	17.8							●
PF503180	18.0							●
PF503181	18.1							●
PF503182	18.2							70
PF503185	18.5				●			
PF503190	19.0				●			
PF503191	19.1				●			
PF503195	19.5				70	131	20	
PF503197	19.7	●						
PF503200	20.0	●						

Data → P164

Endmill & Drill

μm=1/1000mm

Tolerance	Dia.	μm=1/1000mm				
		from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge (h8)		0	0	0	0	0
		-14	-18	-22	-27	-33
Shank (h6)		0	0	0	0	0
		-6	-8	-9	-11	-13



POWER MAX DRILL SERIES

PF505



Endmill & Drill

POWER MAX DRILL - MEDIUM / HIGH SPEED MACHINING

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

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PF505030	3.0	25	60	3	●
PF505031	3.1	27		4	●
PF505032	3.2				●
PF505033	3.3	●			
PF505034	3.4	30	65		●
PF505035	3.5			●	
PF505036	3.6			●	
PF505037	3.7			●	
PF505038	3.8	33	71	●	
PF505039	3.9			●	
PF505040	4.0			●	
PF505041	4.1			33	71
PF505042	4.2	5	●		
PF505043	4.3		●		
PF505044	4.4		●		
PF505045	4.5		●		
PF505046	4.6	●			
PF505047	4.7	●			
PF505048	4.8	39	●		
PF505049	4.9		●		
PF505050	5.0	39	83		
PF505051	5.1			6	●
PF505052	5.2				●
PF505053	5.3				●
PF505054	5.4				●
PF505055	5.5			43	●
PF505056	5.6				●
PF505057	5.7				●
PF505058	5.8				●
PF505059	5.9			●	
PF505060	6.0	●			

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PF505061	6.1	47	87	7	●
PF505062	6.2				●
PF505063	6.3				●
PF505064	6.4				●
PF505065	6.5				●
PF505066	6.6				●
PF505067	6.7				●
PF505068	6.8				●
PF505069	6.9				●
PF505070	7.0				●
PF505071	7.1	52	92	8	●
PF505072	7.2				●
PF505073	7.3				●
PF505074	7.4				●
PF505075	7.5				●
PF505076	7.6				●
PF505077	7.7				●
PF505078	7.8				●
PF505079	7.9				●
PF505080	8.0				●
PF505081	8.1	56	96	9	●
PF505082	8.2				●
PF505083	8.3				●
PF505084	8.4				●
PF505085	8.5				●
PF505086	8.6				●
PF505087	8.7				●
PF505088	8.8				●
PF505089	8.9				●
PF505090	9.0				●
PF505091	9.1	62	105	10	●
PF505092	9.2				●
PF505093	9.3				●
PF505094	9.4				●
PF505095	9.5				●
PF505096	9.6				●
PF505097	9.7				●
PF505098	9.8				●
PF505099	9.9				●
PF505100	10.0				●
PF505101	10.1	68	115	11	●
PF505102	10.2				●
PF505103	10.3				●
PF505104	10.4				●
PF505105	10.5				●
PF505106	10.6				●
PF505107	10.7				●
PF505108	10.8				●
PF505109	10.9				●
PF505110	11.0				●

POWER MAX DRILL SERIES

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PF505111	11.1	71	121	12	●
PF505112	11.2				●
PF505113	11.3				●
PF505114	11.4				●
PF505115	11.5				●
PF505116	11.6				●
PF505117	11.7				●
PF505118	11.8				●
PF505119	11.9				●
PF505120	12.0				●
PF505121	12.1	75	125	13	●
PF505122	12.2				●
PF505123	12.3				●
PF505124	12.4				●
PF505125	12.5				●
PF505126	12.6				●
PF505127	12.7				●
PF505128	12.8				●
PF505129	12.9				●
PF505130	13.0				●
PF505131	13.1	80	134	14	●
PF505132	13.2				●
PF505133	13.3				●
PF505134	13.4				●
PF505135	13.5				●
PF505136	13.6				●
PF505137	13.7				●
PF505138	13.8				●
PF505139	13.9				●
PF505140	14.0				●
PF505141	14.1	83	143	15	●
PF505142	14.2				●
PF505143	14.3				●
PF505144	14.4				●
PF505145	14.5				●
PF505146	14.6				●
PF505147	14.7				●
PF505148	14.8				●
PF505149	14.9				●
PF505150	15.0				●
PF505151	15.1	90	152	16	●
PF505152	15.2				●
PF505154	15.4				●
PF505155	15.5				●
PF505156	15.6				●
PF505157	15.7				●
PF505158	15.8				●
PF505160	16.0				●

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PF505161	16.1	95	155	17	●
PF505163	16.3				●
PF505165	16.5				●
PF505170	17.0				●
PF505171	17.1				●
PF505172	17.2	100	157	18	●
PF505175	17.5				●
PF505177	17.7				●
PF505178	17.8				●
PF505180	18.0				●
PF505181	18.1	105	160	19	●
PF505182	18.2				●
PF505185	18.5				●
PF505190	19.0				●
PF505191	19.1				110
PF505195	19.5	●			
PF505197	19.7	●			
PF505200	20.0	●			

Data → P164

Endmill & Drill

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 MAX DRILL SERIES

SF503



Endmill & Drill

POWER MAX DRILL - STUB / INTERNAL COOLANT

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

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK																								
SF503030	3.0	18	60	3	●																								
SF503031	3.1	20		60	4	●																							
SF503032	3.2					●																							
SF503033	3.3	22				60	4	●																					
SF503034	3.4							●																					
SF503035	3.5							●																					
SF503036	3.6							●																					
SF503037	3.7	24						60	4	●																			
SF503038	3.8									●																			
SF503039	3.9	26								62	5	●																	
SF503040	4.0		●																										
SF503041	4.1		28	66	6							●																	
SF503042	4.2											66	6	6	●														
SF503043	4.3					66	6								6	●													
SF503044	4.4															66	6	6	●										
SF503045	4.5																		66	6	6	●							
SF503046	4.6																					66	6	6	●				
SF503047	4.7							66	6																6	●			
SF503048	4.8																									66	6	6	●
SF503049	4.9	66								6	6																		●
SF503050	5.0																												66
SF503051	5.1		30	66	6																								
SF503052	5.2											30	66	6															
SF503053	5.3					30	66								6														
SF503054	5.4															30	66	6											
SF503055	5.5																		30	66	6								
SF503056	5.6																					30	66	6					
SF503057	5.7							30	66																6				
SF503058	5.8																									30	66	6	
SF503059	5.9	30								66	6																		
SF503060	6.0																												30

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK																								
SF503061	6.1	34	74	7	●																								
SF503062	6.2				34	74	7	●																					
SF503063	6.3							34	74	7	●																		
SF503064	6.4										34	74	7	●															
SF503065	6.5													34	74	7	●												
SF503066	6.6																34	74	7	●									
SF503067	6.7																			34	74	7	●						
SF503068	6.8																						34	74	7	●			
SF503069	6.9																									34	74	7	●
SF503070	7.0																												34
SF503071	7.1	37	79	8																									
SF503072	7.2				37	79	8																						
SF503073	7.3							37	79	8																			
SF503074	7.4										37	79	8																
SF503075	7.5													37	79	8													
SF503076	7.6																37	79	8										
SF503077	7.7																			37	79	8							
SF503078	7.8																						37	79	8				
SF503079	7.9																									37	79	8	
SF503080	8.0																												37
SF503081	8.1	43	84	9																									
SF503082	8.2				43	84	9																						
SF503083	8.3							43	84	9																			
SF503084	8.4										43	84	9																
SF503085	8.5													43	84	9													
SF503086	8.6																43	84	9										
SF503087	8.7																			43	84	9							
SF503088	8.8																						43	84	9				
SF503089	8.9																									43	84	9	
SF503090	9.0																												43
SF503091	9.1	47	89	10																									
SF503092	9.2				47	89	10																						
SF503093	9.3							47	89	10																			
SF503094	9.4										47	89	10																
SF503095	9.5													47	89	10													
SF503096	9.6																47	89	10										
SF503097	9.7																			47	89	10							
SF503098	9.8																						47	89	10				
SF503099	9.9																									47	89	10	
SF503100	10.0																												47
SF503101	10.1	51	95	11																									
SF503102	10.2				51	95	11																						
SF503103	10.3							51	95	11																			
SF503104	10.4										51	95	11																
SF503105	10.5													51	95	11													
SF503106	10.6																51	95	11										
SF503107	10.7																			51	95	11							
SF503108	10.8																						51	95	11				
SF503109	10.9																									51	95	11	
SF503110	11.0																												51

POWER MAX DRILL SERIES

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
SF503111	11.1	54	102	12	●
SF503112	11.2				●
SF503113	11.3				●
SF503114	11.4				●
SF503115	11.5				●
SF503116	11.6				●
SF503117	11.7				●
SF503118	11.8				●
SF503119	11.9				●
SF503120	12.0				●
SF503121	12.1	57	102	13	●
SF503122	12.2				●
SF503123	12.3				●
SF503124	12.4				●
SF503125	12.5				●
SF503126	12.6				●
SF503127	12.7				●
SF503128	12.8				●
SF503129	12.9				●
SF503130	13.0				●
SF503131	13.1	60	107	14	●
SF503132	13.2				●
SF503133	13.3				●
SF503134	13.4				●
SF503135	13.5				●
SF503136	13.6				●
SF503137	13.7				●
SF503138	13.8				●
SF503139	13.9				●
SF503140	14.0				●
SF503141	14.1	62	111	15	●
SF503142	14.2				●
SF503143	14.3				●
SF503144	14.4				●
SF503145	14.5				●
SF503146	14.6				●
SF503147	14.7				●
SF503148	14.8				●
SF503149	14.9				●
SF503150	15.0				●
SF503151	15.1	64	115	16	●
SF503152	15.2				●
SF503154	15.4				●
SF503155	15.5				●
SF503156	15.6				●
SF503157	15.7				●
SF503158	15.8				●
SF503160	16.0				●

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK			
SF503161	16.1	66	119	17	●			
SF503163	16.3				●			
SF503165	16.5				●			
SF503170	17.0				●			
SF503171	17.1				66	123	18	●
SF503172	17.2							●
SF503175	17.5	●						
SF503177	17.7	●						
SF503178	17.8	●						
SF503180	18.0	●						
SF503181	18.1	70	127	19	●			
SF503182	18.2				●			
SF503185	18.5				●			
SF503190	19.0				●			
SF503191	19.1	70	131	20	●			
SF503195	19.5				●			
SF503197	19.7				●			
SF503200	20.0				●			

Data → P164

Endmill & Drill

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	0	0	0	0
	-14	-18	-22	-27	-33
Shank (h6)	0	0	0	0	0
	-6	-8	-9	-11	-13



POWER MAX DRILL SERIES

SF505



POWER MAX DRILL - MEDIUM / INTERNAL COOLANT

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

Endmill & Drill

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK			
SF505031	3.1	27	74	4	●			
SF505032	3.2				●			
SF505033	3.3				●			
SF505034	3.4	●						
SF505035	3.5	30		80	5	●		
SF505036	3.6					●		
SF505037	3.7				●			
SF505038	3.8	33			87	6	●	
SF505039	3.9						●	
SF505040	4.0						●	
SF505041	4.1	33	87				6	●
SF505042	4.2							●
SF505043	4.3							●
SF505044	4.4	36				87		6
SF505045	4.5			●				
SF505046	4.6			●				
SF505047	4.7	39		87			6	
SF505048	4.8				●			
SF505049	4.9				●			
SF505050	5.0	39			87			6
SF505051	5.1		●					
SF505052	5.2		●					
SF505053	5.3	43	87				6	
SF505054	5.4					●		
SF505055	5.5					●		
SF505056	5.6	43				87		6
SF505057	5.7			●				
SF505058	5.8			●				
SF505059	5.9	43		87			6	
SF505060	6.0				●			

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
SF505061	6.1	47	95	7	●
SF505062	6.2				●
SF505063	6.3				●
SF505064	6.4				●
SF505065	6.5				●
SF505066	6.6				●
SF505067	6.7				●
SF505068	6.8				●
SF505069	6.9				●
SF505070	7.0				●
SF505071	7.1	52	103	8	●
SF505072	7.2				●
SF505073	7.3				●
SF505074	7.4				●
SF505075	7.5				●
SF505076	7.6				●
SF505077	7.7				●
SF505078	7.8				●
SF505079	7.9				●
SF505080	8.0				●
SF505081	8.1	56	105	9	●
SF505082	8.2				●
SF505083	8.3				●
SF505084	8.4				●
SF505085	8.5				●
SF505086	8.6				●
SF505087	8.7				●
SF505088	8.8				●
SF505089	8.9				●
SF505090	9.0				●
SF505091	9.1	62	108	10	●
SF505092	9.2				●
SF505093	9.3				●
SF505094	9.4				●
SF505095	9.5				●
SF505096	9.6				●
SF505097	9.7				●
SF505098	9.8				●
SF505099	9.9				●
SF505100	10.0				●
SF505101	10.1	68	125	11	●
SF505102	10.2				●
SF505103	10.3				●
SF505104	10.4				●
SF505105	10.5				●
SF505106	10.6				●
SF505107	10.7				●
SF505108	10.8				●
SF505109	10.9				●
SF505110	11.0				●

POWER MAX DRILL SERIES

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
SF505111	11.1	71	133	12	●
SF505112	11.2				●
SF505113	11.3				●
SF505114	11.4				●
SF505115	11.5				●
SF505116	11.6				●
SF505117	11.7				●
SF505118	11.8				●
SF505119	11.9				●
SF505120	12.0				●
SF505121	12.1	75	137	13	●
SF505122	12.2				●
SF505123	12.3				●
SF505124	12.4				●
SF505125	12.5				●
SF505126	12.6				●
SF505127	12.7				●
SF505128	12.8				●
SF505129	12.9				●
SF505130	13.0				●
SF505131	13.1	80	142	14	●
SF505132	13.2				●
SF505133	13.3				●
SF505134	13.4				●
SF505135	13.5				●
SF505136	13.6				●
SF505137	13.7				●
SF505138	13.8				●
SF505139	13.9				●
SF505140	14.0				●
SF505141	14.1	83	148	15	●
SF505142	14.2				●
SF505143	14.3				●
SF505144	14.4				●
SF505145	14.5				●
SF505146	14.6				●
SF505147	14.7				●
SF505148	14.8				●
SF505149	14.9				●
SF505150	15.0				●
SF505151	15.1	90	152	16	●
SF505152	15.2				●
SF505154	15.4				●
SF505155	15.5				●
SF505156	15.6				●
SF505157	15.7				●
SF505158	15.8				●
SF505160	16.0				●

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
SF505161	16.1	95	155	17	●
SF505163	16.3				●
SF505165	16.5				●
SF505170	17.0				●
SF505171	17.1				●
SF505172	17.2	100	157	18	●
SF505175	17.5				●
SF505177	17.7				●
SF505178	17.8				●
SF505180	18.0				●
SF505181	18.1	105	160	19	●
SF505182	18.2				●
SF505185	18.5				●
SF505190	19.0				●
SF505191	19.1				110
SF505195	19.5	●			
SF505197	19.7	●			
SF505200	20.0	●			

Data → P164

Endmill & Drill

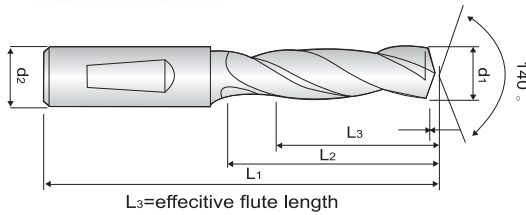
μm=1/1000mm

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 MAX DRILL SERIES

P503A
P503F



POWER MAX DRILL - STUB / DIN 6537K

■ Shank Form

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

EDP. No.	EDP. No.	d ₁ (m7)	d ₂ (h6)	L ₁	L ₂	L ₃	STOCK
P503A030	P503F030	3.0					
P503A031	P503F031	3.1					
P503A032	P503F032	3.2					
P503A033	P503F033	3.3	6	62	20	14	
P503A034	P503F034	3.4					
P503A035	P503F035	3.5					
P503A036	P503F036	3.6					
P503A037	P503F037	3.7					
P503A038	P503F038	3.8					
P503A039	P503F039	3.9					
P503A040	P503F040	4.0					
P503A041	P503F041	4.1					
P503A042	P503F042	4.2	6	66	24	17	
P503A043	P503F043	4.3					
P503A044	P503F044	4.4					
P503A045	P503F045	4.5					
P503A046	P503F046	4.6					
P503A047	P503F047	4.7					
P503A048	P503F048	4.8					
P503A049	P503F049	4.9					
P503A050	P503F050	5.0					
P503A051	P503F051	5.1					
P503A052	P503F052	5.2					
P503A053	P503F053	5.3					
P503A054	P503F054	5.4	6	66	28	20	
P503A055	P503F055	5.5					
P503A056	P503F056	5.6					
P503A057	P503F057	5.7					
P503A058	P503F058	5.8					
P503A059	P503F059	5.9					
P503A060	P503F060	6.0					

EDP. No.	EDP. No.	d ₁ (m7)	d ₂ (h6)	L ₁	L ₂	L ₃	STOCK
P503A061	P503F061	6.1					
P503A062	P503F062	6.2					
P503A063	P503F063	6.3					
P503A064	P503F064	6.4					
P503A065	P503F065	6.5	8	79	34	24	
P503A066	P503F066	6.6					
P503A067	P503F067	6.7					
P503A068	P503F068	6.8					
P503A069	P503F069	6.9					
P503A070	P503F070	7.0					
P503A071	P503F071	7.1					
P503A072	P503F072	7.2					
P503A073	P503F073	7.3					
P503A074	P503F074	7.4					
P503A075	P503F075	7.5	8	79	41	29	
P503A076	P503F076	7.6					
P503A077	P503F077	7.7					
P503A078	P503F078	7.8					
P503A079	P503F079	7.9					
P503A080	P503F080	8.0					
P503A081	P503F081	8.1					
P503A082	P503F082	8.2					
P503A083	P503F083	8.3					
P503A084	P503F084	8.4					
P503A085	P503F085	8.5	10	89	47	35	
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	10	89	47	35	
P503A096	P503F096	9.6					
P503A097	P503F097	9.7					
P503A098	P503F098	9.8					
P503A099	P503F099	9.9					
P503A100	P503F100	10.0					
P503A101	P503F101	10.1					
P503A102	P503F102	10.2					
P503A103	P503F103	10.3					
P503A104	P503F104	10.4					
P503A105	P503F105	10.5	12	102	55	40	
P503A106	P503F106	10.6					
P503A107	P503F107	10.7					
P503A108	P503F108	10.8					
P503A109	P503F109	10.9					
P503A110	P503F110	11.0					

POWER MAX DRILL SERIES

EDP. No.	EDP. No.	d1(m7)	d2(h6)	L1	L2	L3	STOCK
P503A111	P503F111	11.1	12	102	55	40	
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	14	107	60	43	
P503A119	P503F119	11.9					
P503A120	P503F120	12.0					
P503A121	P503F121	12.1					
P503A122	P503F122	12.2					
P503A123	P503F123	12.3					
P503A124	P503F124	12.4					
P503A125	P503F125	12.5	14	107	60	43	
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	16	115	65	45	
P503A139	P503F139	13.9					
P503A140	P503F140	14.0					
P503A141	P503F141	14.1					
P503A142	P503F142	14.2					
P503A143	P503F143	14.3					
P503A144	P503F144	14.4					
P503A145	P503F145	14.5	16	115	65	45	
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					

EDP. No.	EDP. No.	d1(m7)	d2(h6)	L1	L2	L3	STOCK
P503A161	P503F161	16.1	18	123	73	51	
P503A163	P503F163	16.3					
P503A165	P503F165	16.5					
P503A170	P503F170	17.0					
P503A171	P503F171	17.1	18	123	73	51	
P503A172	P503F172	17.2					
P503A175	P503F175	17.5					
P503A177	P503F177	17.7					
P503A178	P503F178	17.8	20	131	79	55	
P503A180	P503F180	18.0					
P503A181	P503F181	18.1					
P503A182	P503F182	18.2					
P503A185	P503F185	18.5	20	131	79	55	
P503A190	P503F190	19.0					
P503A191	P503F191	19.1					
P503A195	P503F195	19.5					
P503A197	P503F197	19.7					
P503A200	P503F200	20.0					

Data → P164

Endmill & Drill

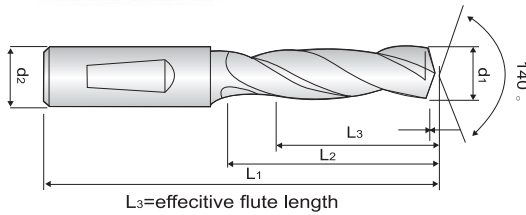
μm=1/1000mm

Tolerance	Dia.				
	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge (h7)	+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 SERIES

PI503A
PI503F



POWER MAX DRILL
- STUB INTERNAL COOLANT/ DIN 6537K

Shank Form

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

EDP. No.	EDP. No.	d ₁ (m7)	d ₂ (h6)	L ₁	L ₂	L ₃	STOCK
PI503A030	PI503F030	3.0					
PI503A031	PI503F031	3.1					
PI503A032	PI503F032	3.2					
PI503A033	PI503F033	3.3	6	62	20	14	
PI503A034	PI503F034	3.4					
PI503A035	PI503F035	3.5					
PI503A036	PI503F036	3.6					
PI503A037	PI503F037	3.7					
PI503A038	PI503F038	3.8					
PI503A039	PI503F039	3.9					
PI503A040	PI503F040	4.0					
PI503A041	PI503F041	4.1					
PI503A042	PI503F042	4.2	6	66	24	17	
PI503A043	PI503F043	4.3					
PI503A044	PI503F044	4.4					
PI503A045	PI503F045	4.5					
PI503A046	PI503F046	4.6					
PI503A047	PI503F047	4.7					
PI503A048	PI503F048	4.8					
PI503A049	PI503F049	4.9					
PI503A050	PI503F050	5.0					
PI503A051	PI503F051	5.1					
PI503A052	PI503F052	5.2					
PI503A053	PI503F053	5.3					
PI503A054	PI503F054	5.4	6	66	28	20	
PI503A055	PI503F055	5.5					
PI503A056	PI503F056	5.6					
PI503A057	PI503F057	5.7					
PI503A058	PI503F058	5.8					
PI503A059	PI503F059	5.9					
PI503A060	PI503F060	6.0					

EDP. No.	EDP. No.	d ₁ (m7)	d ₂ (h6)	L ₁	L ₂	L ₃	STOCK
PI503A061	PI503F061	6.1					
PI503A062	PI503F062	6.2					
PI503A063	PI503F063	6.3					
PI503A064	PI503F064	6.4					
PI503A065	PI503F065	6.5	8	79	34	24	
PI503A066	PI503F066	6.6					
PI503A067	PI503F067	6.7					
PI503A068	PI503F068	6.8					
PI503A069	PI503F069	6.9					
PI503A070	PI503F070	7.0					
PI503A071	PI503F071	7.1					
PI503A072	PI503F072	7.2					
PI503A073	PI503F073	7.3					
PI503A074	PI503F074	7.4					
PI503A075	PI503F075	7.5	8	79	41	29	
PI503A076	PI503F076	7.6					
PI503A077	PI503F077	7.7					
PI503A078	PI503F078	7.8					
PI503A079	PI503F079	7.9					
PI503A080	PI503F080	8.0					
PI503A081	PI503F081	8.1					
PI503A082	PI503F082	8.2					
PI503A083	PI503F083	8.3					
PI503A084	PI503F084	8.4					
PI503A085	PI503F085	8.5	10	89	47	35	
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	10	89	47	35	
PI503A096	PI503F096	9.6					
PI503A097	PI503F097	9.7					
PI503A098	PI503F098	9.8					
PI503A099	PI503F099	9.9					
PI503A100	PI503F100	10.0					
PI503A101	PI503F101	10.1					
PI503A102	PI503F102	10.2					
PI503A103	PI503F103	10.3					
PI503A104	PI503F104	10.4					
PI503A105	PI503F105	10.5	12	102	55	40	
PI503A106	PI503F106	10.6					
PI503A107	PI503F107	10.7					
PI503A108	PI503F108	10.8					
PI503A109	PI503F109	10.9					
PI503A110	PI503F110	11.0					

POWER MAX DRILL SERIES

EDP. No.	EDP. No.	d1(m7)	d2(h6)	L1	L2	L3	STOCK
PI503A111	PI503F111	11.1	12	102	55	40	
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	107	60	43	
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	14	107	60	43	
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					
PI503A141	PI503F141	14.1	16	115	65	45	
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	16	115	65	45	
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					

EDP. No.	EDP. No.	d1(m7)	d2(h6)	L1	L2	L3	STOCK
PI503A161	PI503F161	16.1	18	123	73	51	
PI503A163	PI503F163	16.3					
PI503A165	PI503F165	16.5					
PI503A170	PI503F170	17.0					
PI503A171	PI503F171	17.1					
PI503A172	PI503F172	17.2	18	123	73	51	
PI503A175	PI503F175	17.5					
PI503A177	PI503F177	17.7					
PI503A178	PI503F178	17.8					
PI503A180	PI503F180	18.0					
PI503A181	PI503F181	18.1	20	131	79	55	
PI503A182	PI503F182	18.2					
PI503A185	PI503F185	18.5					
PI503A190	PI503F190	19.0					
PI503A191	PI503F191	19.1					
PI503A195	PI503F195	19.5	20	131	79	55	
PI503A197	PI503F197	19.7					
PI503A200	PI503F200	20.0					

Data → P164

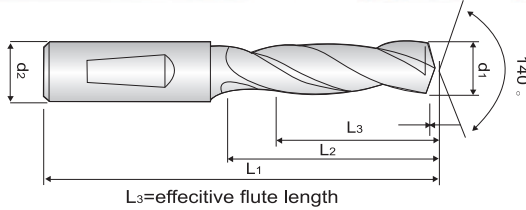
μm=1/1000mm

Tolerance	Dia.				
	from 1 to 3	over 3 to 6	over 6 to 10	over 10 to 18	over 18 to 30
Cutting Edge (h7)	+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 SERIES

PI505A
PI505F



POWER MAX DRILL
- MEDIUM INTERNAL COOLANT/ DIN 6537L

■ Shank Form

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

EDP. No.	EDP. No.	d ₁ (m7)	d ₂ (h6)	L ₁	L ₂	L ₃	STOCK
PI505A040	PI505F040	4.0					
PI505A041	PI505F041	4.1					
PI505A042	PI505F042	4.2					
PI505A043	PI505F043	4.3					
PI505A044	PI505F044	4.4	6	74	36	29	
PI505A045	PI505F045	4.5					
PI505A046	PI505F046	4.6					
PI505A047	PI505F047	4.7					
PI505A048	PI505F048	4.8					
PI505A049	PI505F049	4.9					
PI505A050	PI505F050	5.0					
PI505A051	PI505F051	5.1					
PI505A052	PI505F052	5.2					
PI505A053	PI505F053	5.3					
PI505A054	PI505F054	5.4	6	82	44	35	
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					
PI505A062	PI505F062	6.2					
PI505A063	PI505F063	6.3					
PI505A064	PI505F064	6.4					
PI505A065	PI505F065	6.5					
PI505A066	PI505F066	6.6	8	91	53	43	
PI505A067	PI505F067	6.7					
PI505A068	PI505F068	6.8					
PI505A069	PI505F069	6.9					
PI505A070	PI505F070	7.0					

EDP. No.	EDP. No.	d ₁ (m7)	d ₂ (h6)	L ₁	L ₂	L ₃	STOCK
PI505A071	PI505F071	7.1					
PI505A072	PI505F072	7.2					
PI505A073	PI505F073	7.3					
PI505A074	PI505F074	7.4					
PI505A075	PI505F075	7.5	8	91	53	43	
PI505A076	PI505F076	7.6					
PI505A077	PI505F077	7.7					
PI505A078	PI505F078	7.8					
PI505A079	PI505F079	7.9					
PI505A080	PI505F080	8.0					
PI505A081	PI505F081	8.1					
PI505A082	PI505F082	8.2					
PI505A083	PI505F083	8.3					
PI505A084	PI505F084	8.4					
PI505A085	PI505F085	8.5	10	103	61	49	
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	10	103	61	49	
PI505A096	PI505F096	9.6					
PI505A097	PI505F097	9.7					
PI505A098	PI505F098	9.8					
PI505A099	PI505F099	9.9					
PI505A100	PI505F100	10.0					
PI505A101	PI505F101	10.1					
PI505A102	PI505F102	10.2					
PI505A103	PI505F103	10.3					
PI505A104	PI505F104	10.4					
PI505A105	PI505F105	10.5	12	118	71	56	
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					
PI505A114	PI505F114	11.4					
PI505A115	PI505F115	11.5	12	118	71	56	
PI505A116	PI505F116	11.6					
PI505A117	PI505F117	11.7					
PI505A118	PI505F118	11.8					
PI505A119	PI505F119	11.9					
PI505A120	PI505F120	12.0					

POWER MAX DRILL SERIES

EDP. No.	EDP. No.	d ₁ (m7)	d ₂ (h6)	L ₁	L ₂	L ₃	STOCK
PI505A121	PI505F121	12.1	14	124	77	60	
PI505A122	PI505F122	12.2					
PI505A123	PI505F123	12.3					
PI505A124	PI505F124	12.4					
PI505A125	PI505F125	12.5					
PI505A126	PI505F126	12.6					
PI505A127	PI505F127	12.7					
PI505A128	PI505F128	12.8					
PI505A129	PI505F129	12.9					
PI505A130	PI505F130	13.0					
PI505A131	PI505F131	13.1	14	124	77	60	
PI505A132	PI505F132	13.2					
PI505A133	PI505F133	13.3					
PI505A134	PI505F134	13.4					
PI505A135	PI505F135	13.5					
PI505A136	PI505F136	13.6					
PI505A137	PI505F137	13.7					
PI505A138	PI505F138	13.8					
PI505A139	PI505F139	13.9					
PI505A140	PI505F140	14.0					
PI505A141	PI505F141	14.1	16	133	83	63	
PI505A142	PI505F142	14.2					
PI505A143	PI505F143	14.3					
PI505A144	PI505F144	14.4					
PI505A145	PI505F145	14.5					
PI505A146	PI505F146	14.6					
PI505A147	PI505F147	14.7					
PI505A148	PI505F148	14.8					
PI505A149	PI505F149	14.9					
PI505A150	PI505F150	15.0					
PI505A151	PI505F151	15.1	16	133	83	63	
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					

EDP. No.	EDP. No.	d ₁ (m7)	d ₂ (h6)	L ₁	L ₂	L ₃	STOCK
PI505A161	PI505F161	16.1	18	143	93	71	
PI505A163	PI505F163	16.3					
PI505A165	PI505F165	16.5					
PI505A170	PI505F170	17.0					
PI505A171	PI505F171	17.1					
PI505A172	PI505F172	17.2	18	143	93	71	
PI505A175	PI505F175	17.5					
PI505A177	PI505F177	17.7					
PI505A178	PI505F178	17.8					
PI505A180	PI505F180	18.0					
PI505A181	PI505F181	18.1	20	153	101	77	
PI505A182	PI505F182	18.2					
PI505A185	PI505F185	18.5					
PI505A190	PI505F190	19.0					
PI505A191	PI505F191	19.1					
PI505A195	PI505F195	19.5	20	153	101	77	
PI505A197	PI505F197	19.7					
PI505A200	PI505F200	20.0					

Data → P164

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 (h7)	+12 +2	+16 +4	+21 +6	+25 +7	+29 +8
Shank (h6)	0 -6	0 -8	0 -9	0 -11	0 -13



POWER DRILL SERIES

PDS



POWER DRILL - STUB

Endmill & Drill

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
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				●
PDS 035	3.5				●
PDS 036	3.6				●
PDS 037	3.7				●
PDS 038	3.8				●
PDS 039	3.9	24	●		
PDS 040	4.0	24	62	5	●
PDS 041	4.1				●
PDS 042	4.2				●
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	●			

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PDS 051	5.1	28	66	6	●
PDS 052	5.2				●
PDS 053	5.3				●
PDS 054	5.4				●
PDS 055	5.5				●
PDS 056	5.6				●
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				●
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				●
PDS 094	9.4				●
PDS 095	9.5				●
PDS 096	9.6				●
PDS 097	9.7				●
PDS 098	9.8				●
PDS 099	9.9				●
PDS 100	10.0				●

POWER DRILL SERIES

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
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				●
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				●

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK			
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 160	16.0				●			
PDS 161	16.1				66	119	17	●
PDS 163	16.3							●
PDS 165	16.5	●						
PDS 170	17.0	●						
PDS 171	17.1	66	123	18	●			
PDS 172	17.2				●			
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 195	19.5				●			
PDS 197	19.7				●			
PDS 200	20.0				●			

Data → P163

Endmill & Drill

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 SERIES

PDM



Endmill & Drill

POWER DRILL - MEDIUM

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PDM 030	3.0	25	60	3	●
PDM 031	3.1	27		4	●
PDM 032	3.2				●
PDM 033	3.3	30	65		●
PDM 034	3.4			●	
PDM 035	3.5			●	
PDM 036	3.6	33	71	●	
PDM 037	3.7			●	
PDM 038	3.8			●	
PDM 039	3.9	33	71	●	
PDM 040	4.0			●	
PDM 041	4.1			36	71
PDM 042	4.2	●			
PDM 043	4.3	●			
PDM 044	4.4	36	71	●	
PDM 045	4.5			●	
PDM 046	4.6			●	
PDM 047	4.7	39	71	●	
PDM 048	4.8			●	
PDM 049	4.9			●	
PDM 050	5.0	39	83	●	
PDM 051	5.1			●	
PDM 052	5.2			●	
PDM 053	5.3	43	83	●	
PDM 054	5.4			●	
PDM 055	5.5			●	
PDM 056	5.6	43	83	●	
PDM 057	5.7			●	
PDM 058	5.8			●	
PDM 059	5.9	43	83	●	
PDM 060	6.0			●	

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
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				●
PDM 067	6.7				●
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				●
PDM 104	10.4				●
PDM 105	10.5				●
PDM 106	10.6				●
PDM 107	10.7				●
PDM 108	10.8				●
PDM 109	10.9				●
PDM 110	11.0				●

POWER DRILL SERIES

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
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				●
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				●

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PDM 161	16.1	95	155	17	●
PDM 163	16.3				●
PDM 165	16.5				●
PDM 170	17.0				●
PDM 171	17.1				●
PDM 172	17.2	100	157	18	●
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				●
PDM 195	19.5	110	163	20	●
PDM 197	19.7				●
PDM 200	20.0				●

Data → P163

Endmill & Drill

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 SERIES

PDSI



POWER DRILL - STUB / INTERNAL COOLANT

Endmill & Drill

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK									
PDSI 030	3.0	18	60	3	●									
PDSI 031	3.1	20		60	4	●								
PDSI 032	3.2					●								
PDSI 033	3.3	22				60	4	●						
PDSI 034	3.4							●						
PDSI 035	3.5							●						
PDSI 036	3.6							●						
PDSI 037	3.7	24						60	4	●				
PDSI 038	3.8									●				
PDSI 039	3.9	26								62	5	●		
PDSI 040	4.0		●											
PDSI 041	4.1		28	66	6							●		
PDSI 042	4.2											66	6	6
PDSI 043	4.3					●								
PDSI 044	4.4					●								
PDSI 045	4.5					●								
PDSI 046	4.6					30	66							
PDSI 047	4.7							●						
PDSI 048	4.8					30		66	6					
PDSI 049	4.9	●												
PDSI 050	5.0	●												
PDSI 051	5.1	30	66	6	●									
PDSI 052	5.2				66					6	6	●		
PDSI 053	5.3											●		
PDSI 054	5.4											●		
PDSI 055	5.5											●		
PDSI 056	5.6						●							
PDSI 057	5.7						●							
PDSI 058	5.8					●								
PDSI 059	5.9					●								
PDSI 060	6.0					●								

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK			
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				●			
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				43	84	9	●
PDSI 081	8.1	●						
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	47	89	10	●			
PDSI 091	9.1				●			
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	51	95	11	●			
PDSI 101	10.1				●			
PDSI 102	10.2				●			
PDSI 103	10.3				●			
PDSI 104	10.4				●			
PDSI 105	10.5				●			
PDSI 106	10.6				●			
PDSI 107	10.7				●			
PDSI 108	10.8				●			
PDSI 109	10.9				●			
PDSI 110	11.0	●						

POWER DRILL SERIES

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
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				●
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				●

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PDSI 161	16.1	66	119	17	●
PDSI 163	16.3				●
PDSI 165	16.5				●
PDSI 170	17.0				●
PDSI 171	17.1				●
PDSI 172	17.2	66	123	18	●
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				●
PDSI 195	19.5	70	131	20	●
PDSI 197	19.7				●
PDSI 200	20.0				●

Data → P163

Endmill & Drill

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 SERIES

PDMI



Endmill & Drill

POWER DRILL - MEDIUM / INTERNAL COOLANT

EDP. No.	Dia.	F.L.	OAL	SH.Dia.	STOCK			
PDMI 031	3.1	27	74	4	●			
PDMI 032	3.2				●			
PDMI 033	3.3				●			
PDMI 034	3.4	●						
PDMI 035	3.5	30		74	4	●		
PDMI 036	3.6					●		
PDMI 037	3.7					●		
PDMI 038	3.8	●						
PDMI 039	3.9	33			74	4	●	
PDMI 040	4.0						●	
PDMI 041	4.1	33	80				5	●
PDMI 042	4.2							●
PDMI 043	4.3					●		
PDMI 044	4.4	36				80		5
PDMI 045	4.5			●				
PDMI 046	4.6			●				
PDMI 047	4.7			●				
PDMI 048	4.8	39		80			5	
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				87	6	●
PDMI 055	5.5							●
PDMI 056	5.6							●
PDMI 057	5.7				●			
PDMI 058	5.8			●				
PDMI 059	5.9			●				
PDMI 060	6.0						●	

EDP. No.	Dia.	F.L.	OAL	SH.Dia.	STOCK
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				●
PDMI 068	6.8				●
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				●
PDMI 105	10.5				●
PDMI 106	10.6				●
PDMI 107	10.7				●
PDMI 108	10.8				●
PDMI 109	10.9				●
PDMI 110	11.0				●

POWER DRILL SERIES

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
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				●
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				●

EDP. No.	Dia.	F.L	OAL	SH.Dia.	STOCK
PDMI 161	16.1	95	155	17	●
PDMI 163	16.3				●
PDMI 165	16.5				●
PDMI 170	17.0				●
PDMI 171	17.1				●
PDMI 172	17.2	100	157	18	●
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				●
PDMI 195	19.5	110	163	20	●
PDMI 197	19.7				●
PDMI 200	20.0				●

Data → P163

Endmill & Drill

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 SERIES

SSD



Endmill & Drill

SOLID SPIRAL DRILL

EDP. No.	Dia.	F.L	OAL	STOCK	
SSD010	1.0	10	38	●	
SSD011	1.1			●	
SSD012	1.2			●	
SSD013	1.3			●	
SSD014	1.4			●	
SSD015	1.5	13		●	
SSD016	1.6			●	
SSD017	1.7			●	
SSD018	1.8			●	
SSD019	1.9			●	
SSD020	2.0	16	45	●	
SSD021	2.1	16	45	●	
SSD022	2.2			●	
SSD023	2.3			●	
SSD024	2.4	18		50	●
SSD025	2.5	20			●
SSD026	2.6		●		
SSD027	2.7	22	●		
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			●	
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		●	
SSD049	4.9			●	
SSD050	5.0			●	

SOLID SPIRAL DRILL SERIES

EDP. No.	Dia.	F.L	OAL	STOCK
SSD051	5.1	35	65	●
SSD052	5.2			●
SSD053	5.3			●
SSD054	5.4			●
SSD055	5.5			●
SSD056	5.6	38	70	●
SSD057	5.7			●
SSD058	5.8			●
SSD059	5.9			●
SSD060	6.0			●
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	45	80	●
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	50	85	●
SSD082	8.2			●
SSD083	8.3			●
SSD084	8.4			●
SSD085	8.5			●
SSD086	8.6	95	95	●
SSD087	8.7			●
SSD088	8.8			●
SSD089	8.9			●
SSD090	9.0			●

EDP. No.	Dia.	F.L	OAL	STOCK
SSD091	9.1	50	95	●
SSD092	9.2			●
SSD093	9.3			●
SSD094	9.4			●
SSD095	9.5			●
SSD096	9.6	55	100	●
SSD097	9.7			●
SSD098	9.8			●
SSD099	9.9			●
SSD100	10.0			●
SSD101	10.1	55	115	●
SSD102	10.2			●
SSD103	10.3			●
SSD104	10.4			●
SSD105	10.5			●
SSD106	10.6	60	120	●
SSD107	10.7			●
SSD108	10.8			●
SSD109	10.9			●
SSD110	11.0			●
SSD115	11.5	65	120	●
SSD120	12.0			●
SSD125	12.5	70	125	●
SSD130	13.0	75	130	●

Endmill & Drill

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 (h7)	0 -10	0 -12	0 -18	0 -18



SOLID SPIRAL DRILL SERIES

SSDL



SOLID SPIRAL DRILL - LONG

Endmill & Drill

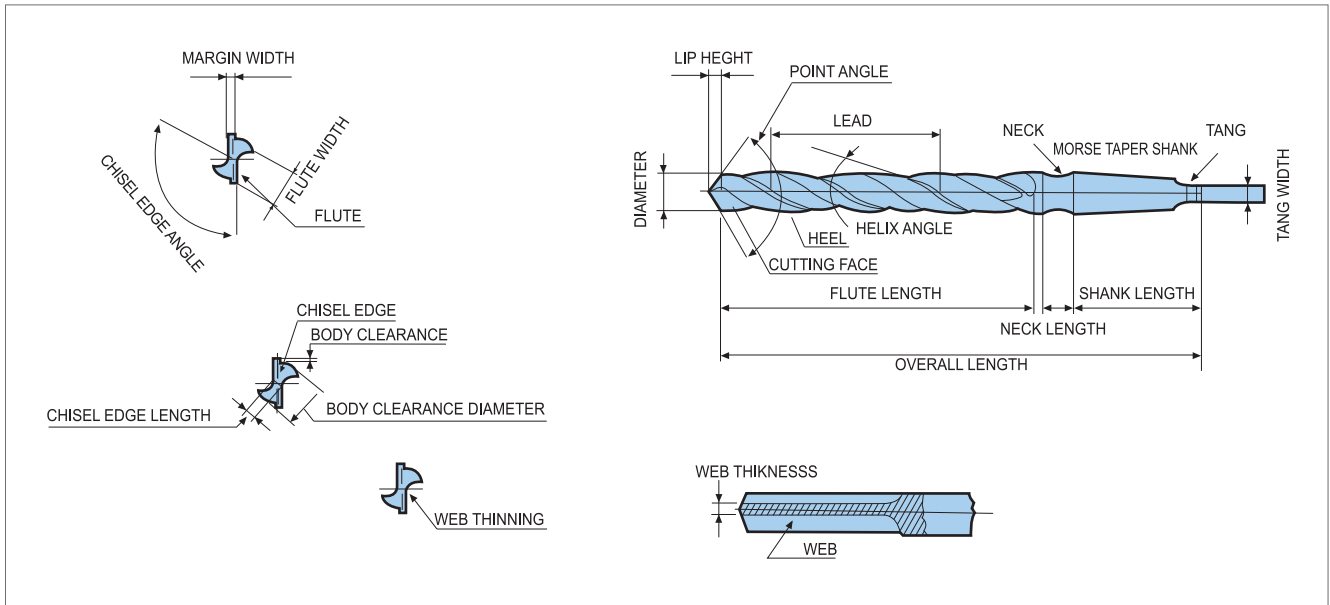
EDP. No.	Dia.	F.L	OAL	STOCK
SSDL030	3.0	42	73	●
SSDL031	3.1			●
SSDL032	3.2			●
SSDL033	3.3			●
SSDL034	3.4			●
SSDL035	3.5	45	80	●
SSDL036	3.6			●
SSDL037	3.7			●
SSDL038	3.8			●
SSDL039	3.9	50	85	●
SSDL040	4.0	54		●
SSDL041	4.1	54	85	●
SSDL042	4.2			●
SSDL043	4.3			●
SSDL044	4.4			●
SSDL045	4.5			●
SSDL046	4.6			●
SSDL047	4.7	59	90	●
SSDL048	4.8			●
SSDL049	4.9			●
SSDL050	5.0			●
SSDL051	5.1			●
SSDL052	5.2	63	95	●
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			●

EDP. No.	Dia.	F.L	OAL	STOCK
SSDL061	6.1	70	105	●
SSDL062	6.2			●
SSDL063	6.3			●
SSDL064	6.4			●
SSDL065	6.5			●
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		●
SSDL097	9.7			●
SSDL098	9.8			●
SSDL099	9.9			●
SSDL100	10.0			●

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 (h7)		0 -10	0 -12	0 -18	0 -18

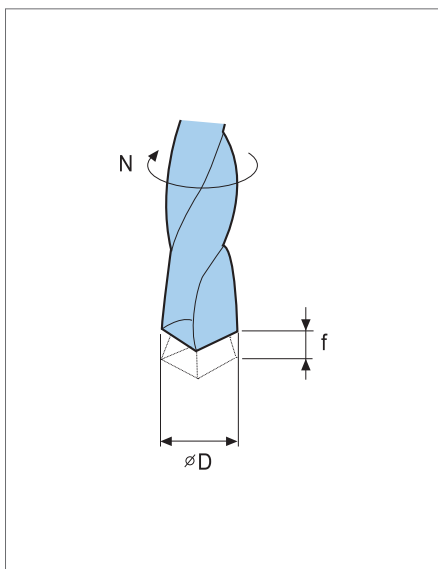
Nomenclature of Drill



Endmill & 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 (m/min)
- S : depth of cut per min (mm)
- N : revolution (rpm)

■ Cutting Speed

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

- δ : helix angle (m/min)
- D : Diameter of drill (mm)
- L : lea (rpm)
- π : (3.14)

TECHNICAL DATA

Trouble Shooting for Drilling

Problems	Cause	Cutting Conditions					Tool shape					Grade		The Others				
		Cutting Speed	Feed Rate	Step Feed	Initial Feed	Cutting Fluid	Relief Angle	Point Angle	Thinning Angle	Honing	Change the rate of flute and land width	Thinning	Toughness	Hardness	Machanical 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 dege	• Cutting speed too high in relation to insert grade	▼				○	▲	▲						▲				
Breakage	In the beginning of operating	• Poor surface conditions of workpiece			○	▼												▼
		• Insufficient rigidity of tool and workpiece													▲			○
	• Deflection of hole	▼	▼															
Under the operating	• Default of chip ejection		▼	○							○							

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

TECHNICAL DATA

Recommendation of Cutting Conditions

PDS - Power Drill

V : m/min, f : mm/rev

DRILL		MILD STEEL · ALLOY STEEL · CARBON STEEL		ALLOY STEEL FORGED STEEL		HIGH HARDENED STEEL		STAINLESS STEEL		DUCTILE CAST IRON		CAST IRON		
		≤ HRc 25		HRc 25 ~ HRc 35		HRc 35 ~ HRc 45								
SOLD TYPE	Dia.	COD	V	F	V	F	V	F	V	F	V	F	V	F
	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 - Oil Hole Power Drill

V : m/min, f : mm/rev

DRILL		MILD STEEL · ALLOY STEEL · CARBON STEEL		ALLOY STEEL FORGED STEEL		HIGH HARDENED STEEL		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

TECHNICAL DATA

Recommendation of Cutting Conditions

PF50, P50

MATERIAL	CARBON STEEL (C < 0.3%) ALLOY STEEL / SS400 SCM-710N/mm ²		CARBON STEEL (C ≥ 0.3%) ALLOY STEEL / S50C SCM-1,060N/mm ²		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

Endmill & Drill

SF50, PI50

MATERIAL	CARBON STEEL (C < 0.3%) ALLOY STEEL / SS400 SCM-710N/mm ²		CARBON STEEL (C ≥ 0.3%) ALLOY STEEL / S50C SCM-1,060N/mm ²		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

