



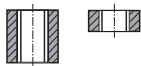
M ISO Metric coarse threads DIN 13

Metrisches ISO-Gewinde DIN 13

► For using multi-purpose and correct thread profiles & long tool life due to special tap geometry. YG-1 company has a patent.

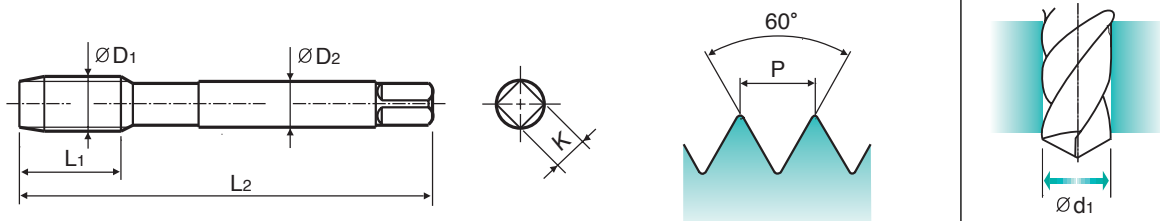
► Für vielfältigen Einsatz, genaue Gewindeprofile und lange Standzeit dank einer besonderen Schneidengeometrie. Von YG-1 patentiert.

Hole type



Material groups: **MU** HSS-E DIN 371/376 6H 60° B Bright TiN

Machine taps
Maschinengewindebohrer



SIZE	Pitch	EDP No.		Thread Length	Overall Length	Shank Diameter	Square Size	Tapping Drill Diameter
		Bright	TiN					
ØD1	P			L1	L2	ØD2	K	Ød1
M2	× 0.4	TC814136	TD814136	8	45	2.8	2.1	1.6
M2.2	× 0.45	TC814156	TD814156	8	45	2.8	2.1	1.75
M2.3	× 0.4	TC814196	TD814196	8	45	2.8	2.1	1.9
M2.5	× 0.45	TC814176	TD814176	9	50	2.8	2.1	2.05
M2.6	× 0.45	TC814496	TD814496	9	50	2.8	2.1	2.1
M3	× 0.5	TC814206	TD814206	11	56	3.5	2.7	2.5
M3.5	× 0.6	TC814226	TD814226	12	56	4	3	2.9
M4	× 0.7	TC814246	TD814246	13	63	4.5	3.4	3.3
M4.5	× 0.75	TC814266	TD814266	14	70	6	4.9	3.7
M5	× 0.8	TC814286	TD814286	15	70	6	4.9	4.2
M6	× 1.0	TC814316	TD814316	17	80	6	4.9	5
M7	× 1.0	TC814346	TD814346	17	80	7	5.5	6
M8	× 1.25	TC814366	TD814366	20	90	8	6.2	6.8
M9	× 1.25	TC814396	TD814396	20	90	9	7	7.8
M10	× 1.5	TC814426	TD814426	22	100	10	8	8.5
M11	× 1.5	TC814466	TD814466	22	100	8	6.2	9.5
M12	× 1.75	TC814506	TD814506	24	110	9	7	10.2
M14	× 2.0	TC814546	TD814546	26	110	11	9	12
M16	× 2.0	TC814606	TD814606	27	110	12	9	14
M18	× 2.5	TC814656	TD814656	30	125	14	11	15.5
M20	× 2.5	TC814706	TD814706	32	140	16	12	17.5
M22	× 2.5	TC814746	TD814746	32	140	18	14.5	18.5
M24	× 3.0	TC814786	TD814786	34	160	18	14.5	21
M27	× 3.0	TC814866	TD814866	36	160	20	16	24
M30	× 3.5	TC814946	TD814946	40	180	22	18	26.5

► DIN371 (M2~M10) and DIN376 (M11~M30)

* The other coating(TiCN or TiAlN) or Surface Treatment(Steam Homo) is available on your request.

Unit : N/mm²

◎ : Excellent ○ : Good

Steel < 400	Steel < 700	Steel < 850	St. Alloy < 850	St. Alloy ≤ 1200	St. Alloy > 1200	INOX Free < 850	INOX Aust. < 850	INOX < 1000	GG Cast < 500	GG Cast < 1000	GGG Cast < 700	GGG Cast < 1000	Ti < 700	Ti Alloy < 900
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Ti Alloy ≤ 1300	Ni < 500	Ni Alloy < 900	Ni Alloy ≤ 1400	Cu < 350	Cu Alloy Short	Cu Alloy Long	Cu-Al-Fe < 1500	Al / Mg < 350	Al Wrought	Al Si ≤ 10%	Al Si > 10%	Plastic Thermosoft	Plastic Thermoset	Plastic FRP
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○



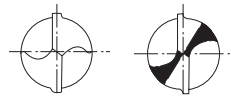
HSS-E STRAIGHT SHANK DRILLS, GOLD-P COATED
HSS-E SPIRALBOHRER, GOLD-P BESCHICHTET

JOBBER

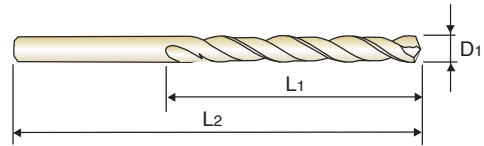
KURZ

- ▶ **Flute Geometry** : Right hand helix
- ▶ **Point Angle** : 135°, under 1.6mm : Normal point
1.6mm & over : Split point
- ▶ **Surface treatment**: Bright body, TiN coating on working area
- ▶ **Application** : Drilling stainless steels, difficult to cut materials such as titanium alloys and inconel.

- ▶ **Nutenform** : Rechtsspirale
- ▶ **Spitzenwinkel** : 135°, unter 1.6mm : Normalanschliff
1.6mm & über : Kreuzanschliff
- ▶ **Oberfläche** : Blank mit TiN-Beschichtung im Arbeitsbereich
- ▶ **Anwendung** : Tiefe Bohrungen in unlegierten und legierten Stählen, Grauguss, Temperguss, Aluminium- und Magnesiumlegierungen



under 1.6mm 1.6mm & over



DIN 338
HSS-E
N 33°
h8
135°
P.169

Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
	D1	L1	L2		D1	L1	L2
DLGP195010	1.0	12	34	DLGP195041	4.1	43	75
DLGP195011	1.1	14	36	DLGP195042	4.2	43	75
DLGP195012	1.2	16	38	DLGP195043	4.3	47	80
DLGP195013	1.3	16	38	DLGP195044	4.4	47	80
DLGP195014	1.4	18	40	DLGP195045	4.5	47	80
DLGP195015	1.5	18	40	DLGP195046	4.6	47	80
DLGP195016	1.6	20	43	DLGP195047	4.7	47	80
DLGP195017	1.7	20	43	DLGP195048	4.8	52	86
DLGP195018	1.8	22	46	DLGP195049	4.9	52	86
DLGP195019	1.9	22	46	DLGP195050	5.0	52	86
DLGP195020	2.0	24	49	DLGP195051	5.1	52	86
DLGP195021	2.1	24	49	DLGP195052	5.2	52	86
DLGP195022	2.2	27	53	DLGP195053	5.3	52	86
DLGP195023	2.3	27	53	DLGP195054	5.4	57	93
DLGP195024	2.4	30	57	DLGP195055	5.5	57	93
DLGP195025	2.5	30	57	DLGP195056	5.6	57	93
DLGP195026	2.6	30	57	DLGP195057	5.7	57	93
DLGP195027	2.7	33	61	DLGP195058	5.8	57	93
DLGP195028	2.8	33	61	DLGP195059	5.9	57	93
DLGP195029	2.9	33	61	DLGP195060	6.0	57	93
DLGP195030	3.0	33	61	DLGP195061	6.1	63	101
DLGP195031	3.1	36	65	DLGP195062	6.2	63	101
DLGP195032	3.2	36	65	DLGP195063	6.3	63	101
DLGP195033	3.3	36	65	DLGP195064	6.4	63	101
DLGP195034	3.4	39	70	DLGP195065	6.5	63	101
DLGP195035	3.5	39	70	DLGP195066	6.6	63	101
DLGP195036	3.6	39	70	DLGP195067	6.7	63	101
DLGP195037	3.7	39	70	DLGP195068	6.8	69	109
DLGP195038	3.8	43	75	DLGP195069	6.9	69	109
DLGP195039	3.9	43	75	DLGP195070	7.0	69	109
DLGP195040	4.0	43	75	DLGP195071	7.1	69	109

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze	CFRP
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~								
◎	◎					○	○	○	○			



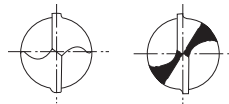
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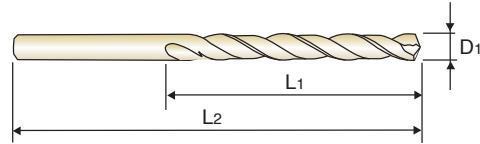
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under 1.6mm 1.6mm & over



Unit : mm

EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
	D1	L1	L2		D1	L1	L2
DLGP195072	7.2	69	109	DLGP195102	10.2	87	133
DLGP195073	7.3	69	109	DLGP195103	10.3	87	133
DLGP195074	7.4	69	109	DLGP195104	10.4	87	133
DLGP195075	7.5	69	109	DLGP195105	10.5	87	133
DLGP195076	7.6	75	117	DLGP195106	10.6	87	133
DLGP195077	7.7	75	117	DLGP195107	10.7	94	142
DLGP195078	7.8	75	117	DLGP195108	10.8	94	142
DLGP195079	7.9	75	117	DLGP195109	10.9	94	142
DLGP195080	8.0	75	117	DLGP195110	11.0	94	142
DLGP195081	8.1	75	117	DLGP195111	11.1	94	142
DLGP195082	8.2	75	117	DLGP195112	11.2	94	142
DLGP195083	8.3	75	117	DLGP195113	11.3	94	142
DLGP195084	8.4	75	117	DLGP195114	11.4	94	142
DLGP195085	8.5	75	117	DLGP195115	11.5	94	142
DLGP195086	8.6	81	125	DLGP195116	11.6	94	142
DLGP195087	8.7	81	125	DLGP195117	11.7	94	142
DLGP195088	8.8	81	125	DLGP195118	11.8	94	142
DLGP195089	8.9	81	125	DLGP195119	11.9	101	151
DLGP195090	9.0	81	125	DLGP195120	12.0	101	151
DLGP195091	9.1	81	125	DLGP195121	12.1	101	151
DLGP195092	9.2	81	125	DLGP195122	12.2	101	151
DLGP195093	9.3	81	125	DLGP195123	12.3	101	151
DLGP195094	9.4	81	125	DLGP195124	12.4	101	151
DLGP195095	9.5	81	125	DLGP195125	12.5	101	151
DLGP195096	9.6	87	133	DLGP195126	12.6	101	151
DLGP195097	9.7	87	133	DLGP195127	12.7	101	151
DLGP195098	9.8	87	133	DLGP195128	12.8	101	151
DLGP195099	9.9	87	133	DLGP195129	12.9	101	151
DLGP195100	10.0	87	133	DLGP195130	13.0	101	151
DLGP195101	10.1	87	133				

◎ : Excellent ○ : Good

Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels		Cast Iron	Aluminum	Stainless Steels	Titanium	Mild Steels	Copper	Bronze	CFRP
~HB225	HB225~325	HRc30~45	HRc45~55	HRc55~								
◎	◎					○	○	○	○			



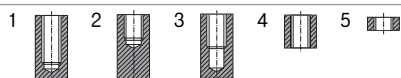
MACHINE TAPS

RECOMMENDATION TABLE

USE

⊙ = EXCELLENT

○ = GOOD



MATERIAL GROUPS			MU	MU	MU
DIN 371/376	M	EDP No. (Page)	TC804 (p.375)	TD804 (p.375)	TC804-IC (p.378)
DIN 371/376	EG-M	EDP No. (Page)			
DIN 352	M	EDP No. (Page)			
DIN 374	MF	EDP No. (Page)	TC844 (p.376)	TD844 (p.376)	
DIN 371/376	UNC	EDP No. (Page)	TC824 (p.384)	TD824 (p.384)	
DIN 371/376	EG-UNC	EDP No. (Page)			
DIN 371/374	UNF	EDP No. (Page)	TC864 (p.385)	TD864 (p.385)	
DIN 371/376	EG-UNF	EDP No. (Page)			
DIN 2182/2183	BSW	EDP No. (Page)			
DIN 357/5156	M/G(BSP)	EDP No. (Page)			
LONG	M	EDP No. (Page)			
SURFACE TREATMENT / COATING			Bright	TiN	Bright
SPIRAL FLUTE ANGLE			R40	R40	R40
CHAMFER LEAD ACC. DIN 2197			C	C	C
HOLE TYPE			1-2-3	1-2-3	1-2-3

COOLANT

- A = Cutting Oil
- T = Oil Emulsion
- X = Cutting Oil/Oil Emulsion
- S = Dry
- Z = Dry/Oil Emulsion

MATERIAL GROUPS	LIST OF MATERIALS	HARDNESS	TENSILE STRENGTH	CHIP	CUTTING SPEED	COOLANT	COOLANT	COOLANT	COOLANT	COOLANT
10. STEELS	11 Steel < 400	Magnetic soft steels	< 120	< 400	Extra long	15-20	T	⊙	⊙	⊙
	12 Steel < 700	Structure steels	< 200	< 700	Medium/long	15-20	T	⊙	⊙	⊙
	13 Steel < 850	Plain carbon steels	< 250	< 850	Long	12-18	T	⊙	⊙	⊙
	14 St. Alloy < 850	Alloy steels	< 250	< 850	Long	10-15	X	⊙	⊙	⊙
	15 St. Alloy ≤ 1,200	Alloy steels, Hardened steels	< 350	≤ 1,200	Long	6-10	X	⊙	⊙	⊙
	16 St. Alloy > 1,200	Alloy steels, Hardened steels	> 350	> 1,200	Long	3-5	A			
20. STAINLESS STEELS	21 INOX Free < 850	Free machining	< 250	< 850	Medium	7-10	A	⊙	⊙	⊙
	22 INOX Aust.< 850	Austenitic	< 250	< 850	Long	5-8	A	⊙	⊙	⊙
	23 INOX < 1,100	Ferritic, Ferritic+Austenitic, Martensitic	< 300	< 1,100	Long	4-6	A	⊙	⊙	⊙
30. CAST IRON	31 GG Cast < 500	Grey cast iron	< 150	< 500	Extra short	10-15	X	⊙	⊙	⊙
	32 GG Cast < 1,000	Grey cast iron	< 300	< 1,000	Extra short	5-8	T	⊙	⊙	⊙
	33 GGG Cast < 700	Nodular graphite, Malleable cast iron	< 200	< 700	Short	10-15	X	⊙	⊙	⊙
	34 GGG Cast < 1,000	Nodular graphite, Malleable cast iron	< 300	< 1,000	Short	5-8	X	⊙	⊙	⊙
40. TITANIUM	41 Ti < 700	Titanium, Unalloyed	< 200	< 700	Extra long	10-15	T	⊙	⊙	⊙
	42 Ti Alloy < 900	Titanium, Alloyed	< 270	< 900	Medium/Short	8-12	A	○	○	○
	43 Ti Alloy ≤ 1,300	Titanium, Alloyed	< 350	≤ 1,300	Medium/Short	4-6	A			
50. NICKEL	51 Ni < 500	Nickel, Unalloyed	< 150	< 500	Extra long	8-12	A	⊙	⊙	⊙
	52 Ni Alloy < 900	Nickel, Alloyed	< 270	< 900	Long	10-15	A	○	○	○
	53 Ni Alloy ≤ 1,400	Nickel, Alloyed	< 410	≤ 1,400	Long	2-4	A			
60. COPPER, BRASS, BRONZE	61 Cu < 350	Copper, Unalloyed	< 100	< 350	Extra long	8-12	T	⊙	⊙	⊙
	62 Cu Alloy (Short)	Short chip Brass, Bronze, Copper	< 200	< 700	Medium/Short	25-35	T	⊙	⊙	⊙
	63 Cu Alloy (Long)	Long chip Brass, Bronze, Copper	< 200	< 700	Long	15-20	T	⊙	⊙	⊙
	64 Cu-Al-Fe < 1,500	Cu-Al-Fe alloys	< 470	< 1,500	Short	3-5	A			
70. ALUMINUM	71 Al/Mg < 350	Aluminum, Magnesium, Unalloyed	< 100	< 350	Extra long	10-15	T			
	72 Al Wrought	Aluminum, Alloyed Si < 0.5%	< 150	< 500	Medium	25-35	T	⊙	⊙	⊙
	73 Al (Si ≤ 10%)	Aluminum, Alloyed, Si ≤ 10%	< 120	< 400	Medium/Short	15-20	T	⊙	⊙	⊙
	74 Al (Si > 10%)	Aluminum, Alloyed, Si > 10%	< 120	< 400	Short	10-15	T	⊙	⊙	⊙
80. PLASTICS	81 Thermosoft.	Thermoplastics			Extra long	20-30	T			
	82 Thermoset.	Thermosetting Plastics			Short	8-12	Z			
	83 FRP	Fiber Reinforced Plastics			Extra short	5-7	Z			

CUTTING SPEED TABLE

CUTTING SPEED TABLE SCHNITTGESCHWINDIGKEITSTABELLE Cutting Speeds m/min. into revolutions per minute

TOOL R.P.M.(rev/min)																
Tool Dia.	Cutting Speed (m/min)															
	1	2	3	4	5	6	8	10	12	15	20	25	30	40	50	60
1	318	637	955	1274	1592	1910	2548	3185	3822	4777	6396	7962	9554	12739	15924	19108
2	159	318	478	637	796	955	1274	1592	1911	2388	3185	3981	4777	6369	7962	9554
3	106	212	318	425	531	637	849	1062	1274	1592	2123	2654	3185	4246	5308	6369
4	80	159	239	318	398	478	637	796	955	1194	1592	1990	2389	3185	3981	4777
5	64	127	191	255	318	382	510	637	764	955	1274	1592	1911	2548	3185	3822
6	53	106	159	212	265	318	425	531	637	796	1062	1327	1592	2123	2653	3185
8	40	80	119	159	199	239	318	398	478	597	796	955	1194	1592	1990	2388
10	31	64	96	127	159	191	255	318	382	478	637	796	955	1274	1592	1911
12	26	53	80	106	133	159	212	265	318	398	531	663	796	1062	1327	1592
14	23	45	68	91	114	136	182	227	273	341	455	569	682	910	1137	1365
16	20	40	60	80	100	119	159	199	239	299	398	498	597	796	995	1194
18	18	35	53	71	88	106	142	177	212	265	354	442	531	708	885	1062
20	16	32	48	64	80	96	127	159	191	239	318	398	478	637	796	955
25	13	25	38	51	64	76	102	127	153	191	255	318	382	510	637	764
30	11	21	32	42	53	64	85	106	127	159	212	265	318	425	531	637
35	9	18	27	36	45	55	73	91	109	136	182	227	273	364	455	546
40	8	16	24	32	40	48	64	80	96	119	159	199	239	118	398	478

RPM = rev/min

V = m/min

D = Dia.(mm)

$$V = \frac{RPM \cdot \pi \cdot D}{1000}$$

$$RPM = \frac{1000 \cdot V}{\pi \cdot D}$$



GOLD-P COATED DRILLS GOLD-P BESCHICHTET BOHRER

I-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL TYPE

DREAM DRILLS for HARDENED STEELS

GENERAL CARBIDE DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

TECHNICAL DATA

D1GP125, D1GP165, DLGP195 SERIES

WORK MATERIAL	CARBON STEELS		CARBON STEELS		ALLOY STEELS		STAINLESS STEELS		TITANIUM ALLOYS		ALUMINUM ALLOYS, ZINC ALLOYS		MAGNESIUM ALLOYS	
	N	S	N	S	N	S	N	S	N	S	N	S	N	S
HARDNESS			~ HRC23		~ HRC23 ~ 34		HRC23							
STRENGTH	~ 570 N/mm ²		~ 830 N/mm ²		810 ~ 1110 N/mm ²		~ 830 N/mm ²		~ 410 N/mm ²					
DRILLING SPEED	35 ~ 45 m/min		30 ~ 40 m/min		20 ~ 25 m/min		20 ~ 25 m/min		20 ~ 25 m/min		85 ~ 95 m/min		30 ~ 35 m/min	
DIAMETER	N	S	N	S	N	S	N	S	N	S	N	S	N	S
1.0	14000	0.02	12500	0.02	7700	0.02	7000	0.02	8050	0.02	30000	0.02	11500	0.03
2.0	7000	0.06	6100	0.06	3850	0.06	3500	0.06	4050	0.06	15000	0.06	5800	0.09
3.0	4650	0.10	4100	0.08	2550	0.08	2350	0.08	2700	0.08	9900	0.10	3850	0.13
4.0	3500	0.11	3050	0.11	1950	0.10	1750	0.10	2000	0.09	7450	0.11	2900	0.15
5.0	2800	0.12	2450	0.11	1550	0.10	1400	0.10	1600	0.10	5950	0.12	2300	0.17
6.0	2350	0.14	2050	0.13	1300	0.12	1150	0.12	1350	0.12	4950	0.14	1950	0.19
7.0	2000	0.16	1750	0.15	1100	0.14	1000	0.14	1150	0.14	4250	0.16	1650	0.22
8.0	1750	0.18	1550	0.18	960	0.15	875	0.15	1000	0.15	3700	0.18	1450	0.24
9.0	1550	0.20	1350	0.22	855	0.18	780	0.18	895	0.17	3300	0.20	1280	0.27
10.0	1400	0.21	1250	0.22	770	0.18	700	0.18	805	0.18	3000	0.23	1150	0.29
11.0	1250	0.22	1100	0.22	700	0.18	650	0.18	730	0.18	2700	0.23	1050	0.30
12.0	1150	0.23	1000	0.22	650	0.20	585	0.20	670	0.20	2480	0.23	960	0.31
13.0	1050	0.23	950	0.22	595	0.20	540	0.20	620	0.20	2300	0.23	890	0.31

N = R.P.M

S = Feed per Revolution (mm/rev.)

GOLD-P COATED DRILLS for DEEP HOLES GOLD-P BESCHICHTET BOHRER für TIEFLOCH MIT ZYLINDERSCHAFT

DLGP506 SERIES

WORK MATERIAL	CARBON STEELS ALLOY STEELS		TOOL STEELS HARDENED STEELS		SOFT GREY CAST IRON		HARD GREY CAST IRON	
	N	S	N	S	N	S	N	S
HARDNESS	HRC15 ~ 30		HRC20 ~ 40					
STRENGTH	700 ~ 1000 N/mm ²		800 ~ 1200 N/mm ²					
DRILLING SPEED	23 ~ 28 m/min		15 ~ 20 m/min		40 ~ 50 m/min		25 ~ 30 m/min	
DIAMETER	N	S	N	S	N	S	N	S
1.0	8750	0.02	6300	0.02	16000	0.02	9800	0.02
2.0	4400	0.06	3150	0.06	7900	0.07	4900	0.07
3.0	2900	0.08	2100	0.08	5250	0.11	3250	0.11
4.0	2200	0.09	1600	0.09	3950	0.14	2450	0.14
5.0	1750	0.10	1250	0.10	3150	0.14	1950	0.14
6.0	1450	0.12	1050	0.12	2650	0.18	1650	0.18
7.0	1250	0.14	900	0.14	2250	0.20	1400	0.20
8.0	1100	0.15	790	0.15	1950	0.22	1250	0.22
9.0	975	0.17	700	0.17	1750	0.24	1100	0.24
10.0	875	0.18	630	0.18	1600	0.28	980	0.28
11.0	800	0.20	575	0.20	1450	0.28	890	0.28
12.0	730	0.20	525	0.20	1300	0.28	815	0.28
13.0	675	0.20	485	0.20	1200	0.28	755	0.28

N = R.P.M

S = Feed per Revolution (mm/rev.)