SELECTION OF BORING TOOLS AND REAMERS 272


BORING AND CHAMFERING TOOLS 274


BORING TOOLS 274


REAMERS 279

CUTTING CONDITIONS 282


TOOLS ON REQUEST 285

SELECTION OF BORING TOOLS AND REAMERS

✓ = item from stock

	Z	Page		☐ CARBIDE				
BORING AND CHAMFERING TOOLS								
DIXI 2577 Ø 0.26 - 0.86	-	274		✓				
BORING TOOLS								
DIXI 2579 Ø 0.60 - 3.00	-	274		✓				
DIXI 2580 Ø 0.50 - 20.00	-	275		✓				
DIXI 2581 Ø 0.50 - 25.00	-	277		✓				
REAMERS								
POLY 4001 Ø 0.40 - 12.02	3 - 6	279		✓				
POLY 4005 Ø 2.97 - 6.50	4 - 6	280		✓				
POLY 4007 Ø 0.39 - 12.02	3 - 6	281		✓				

For other types of reamers, see the POLYTOOL catalogue

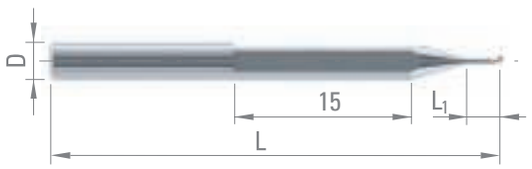
○ good ◎ excellent

Steel < 600MPa	Steel > 600MPa	High alloyed steel	DUPLEX stainless steel	Steel Hardened cast iron > 45 HRC	Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic
◎	◎	○	○		◎	○	◎	◎	◎	◎		◎
◎	◎	○	○		◎	○	◎	◎	◎	◎		◎
◎	◎	○	○		◎	○	◎	◎	◎	◎		◎
◎	◎	○	○		◎	○	◎	◎	◎	◎		◎
◎	◎	○	○		◎	○	◎	◎	◎	◎		◎
◎	◎	○	○		◎	○	◎	◎	◎	◎		◎
◎	◎	○	○		◎	○	◎	◎	◎	◎		◎

DIXI 2577

BORING AND CHAMFERING TOOLS

P. 284

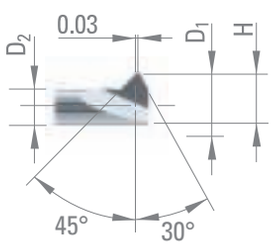


Steel < 600MPa | Steel > 600MPa | High alloyed steel | DUPLEX stainless steel | Cast iron

Refractory alloy | Titanium, titanium alloy | Cu alloy Silver Gold | Cu alloy difficult to machine | Al

Plastic

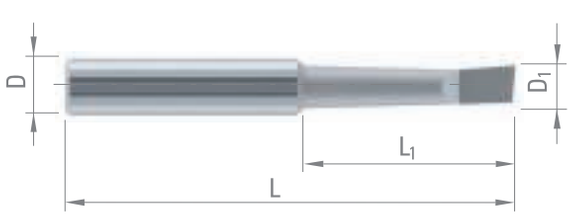
D_1	L_1	D_2	H	D_{h6}	L	for...	CARBIDE
0.26	0.84	0.14	0.20	3	38	S 0.30	☐
0.35	1.04	0.21	0.28	3	38	S 0.40	☐
0.44	1.35	0.28	0.36	3	38	S 0.50	☐
0.53	1.66	0.33	0.43	3	38	S 0.60	☐
0.66	2.04	0.36	0.51	3	38	S 0.70	☐
0.75	2.30	0.43	0.58	3	38	S 0.80	☐
0.86	2.72	0.46	0.66	3	38	S 0.90	☐



DIXI 2579

BORING TOOLS

P. 284



Steel < 600MPa | Steel > 600MPa | High alloyed steel | DUPLEX stainless steel | Cast iron

Refractory alloy | Titanium, titanium alloy | Cu alloy Silver Gold | Cu alloy difficult to machine | Al

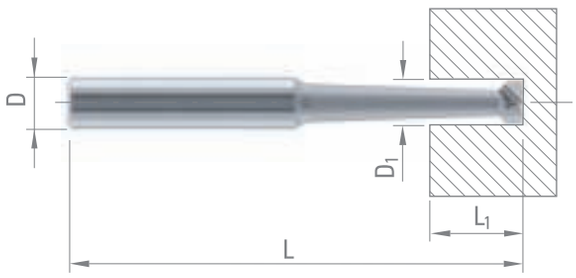
Plastic

D_1	L_1	D_{h6}	L	CARBIDE
0.60	3	4	25	☐
0.80	4	4	25	☐
1.00	5	4	25	☐
1.20	6	4	25	☐
1.50	8	4	32	☐
1.80	9	4	32	☐
2.00	10	4	32	☐
2.50	12	4	32	☐
3.00	15	4	32	☐

DIXI 2580

BORING TOOLS
BLIND HOLE

P. 284



Steel < 600MPa | Steel > 600MPa | High alloyed steel | DUPLEX stainless steel | Cast iron

Refractory alloy | Titanium, titanium alloy | Cu alloy Silver Gold | Cu alloy difficult to machine | Al

Plastic

Ref.	D_1	L_1	D_{h6}	L	CARBIDE
004.0050	0.50	3	4	25	☐
004.0080	0.80	4	4	25	☐
004.0100	1.00	4	4	25	☐
004.0120	1.20	6	4	25	☐
004.0150	1.50	7	4	28	☐
004.0170	1.70	7	4	28	☐
004.0200	2.00	9	4	30	☐
004.0220	2.20	9	4	30	☐
004.0250	2.50	12	4	33	☐
004.0300	3.00	14	4	35	☐
004.0350	3.50	14	4	35	☐
004.0400	4.00	17	4	38	☐
004.0500	5.00	23	4	38	☐
006.0200	2.00	9	6	38	☐
006.0250	2.50	12	6	40	☐
006.0300	3.00	14	6	42	☐
006.0400	4.00	17	6	45	☐
006.0500	5.00	22	6	52	☐
006.0600	6.00	24	6	52	☐
006.0700	7.00	30	6	52	☐
006.0800	8.00	32	6	52	☐
006.1000	10.00	40	6	60	☐
008.0300	3.00	17	8	47	☐
008.0400	4.00	21	8	51	☐
008.0500	5.00	22	8	52	☐
008.0600	6.00	25	8	55	☐
008.0700	7.00	28	8	60	☐
008.1000	10.00	45	8	65	☐
008.1200	12.00	54	8	70	☐
008.1300	13.00	54	8	78	☐

DIXI 2580

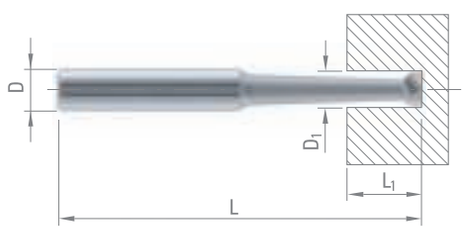
P. 284

Ref.	D_1	L_1	D_{h6}	L	CARBIDE
010.0300	3.00	17	10	45	☐
010.0400	4.00	21	10	49	☐
010.0500	5.00	22	10	50	☐
010.0600	6.00	25	10	54	☐
010.0700	7.00	28	10	56	☐
010.0900	9.00	32	10	65	☐
010.1000	10.00	32	10	65	☐
010.1200	12.00	45	10	70	☐
010.1300	13.00	55	10	80	☐
010.1500	15.00	75	10	100	☐
010.1800	18.00	75	10	100	☐
012.0800	8.00	30	12	70	☐
012.1000	10.00	40	12	80	☐
012.1300	13.00	60	12	90	☐
012.1500	15.00	70	12	100	☐
012.1800	18.00	70	12	100	☐
016.1300	13.00	60	16	115	☐
016.1500	15.00	60	16	115	☐
016.1800	18.00	75	16	115	☐
016.2000	20.00	75	16	115	☐

Steel < 600MPa | Steel > 600MPa | High alloyed steel | DUPLEX stainless steel | Cast iron

Refractory alloy | Titanium, titanium alloy | Cu alloy Silver Gold | Cu alloy difficult to machine | Al

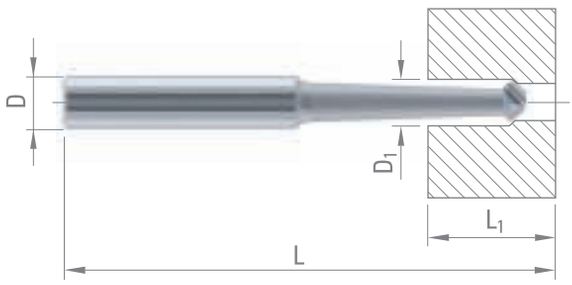
Plastic



DIXI 2581

BORING TOOLS
THROUGH HOLE

P. 284



Steel < 600MPa	Steel > 600MPa	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

Ref.	D_1	L_1	D_{h6}	L	CARBIDE
4.0050	0.50	3	4	25	☐
4.0080	0.80	4	4	25	☐
4.0100	1.00	4	4	25	☐
4.0120	1.20	6	4	25	☐
4.0150	1.50	7	4	28	☐
4.0170	1.70	7	4	28	☐
4.0200	2.00	9	4	30	☐
4.0220	2.20	9	4	30	☐
4.0250	2.50	12	4	33	☐
4.0300	3.00	14	4	35	☐
4.0350	3.50	14	4	35	☐
4.0400	4.00	17	4	38	☐
4.0500	5.00	23	4	38	☐
6.0200	2.00	9	6	38	☐
6.0250	2.50	12	6	40	☐
6.0300	3.00	14	6	42	☐
6.0400	4.00	17	6	45	☐
6.0500	5.00	22	6	52	☐
6.0600	6.00	24	6	52	☐
6.0800	8.00	32	6	52	☐
6.1000	10.00	40	6	60	☐
8.0300	3.00	17	8	47	☐
8.0400	4.00	21	8	51	☐
8.0500	5.00	22	8	52	☐
8.0600	6.00	25	8	55	☐
8.0700	7.00	28	8	60	☐
8.0900	9.00	45	8	65	☐
8.1100	11.00	54	8	70	☐
8.1300	13.00	54	8	78	☐

DIXI 2581

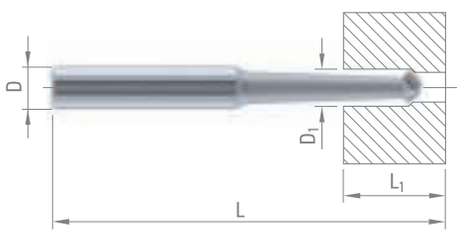
P. 284

Ref.	D_1	L_1	D_{h6}	L	CARBIDE
10.0300	3.00	17	10	45	☐
10.0400	4.00	21	10	49	☐
10.0500	5.00	22	10	50	☐
10.0600	6.00	25	10	54	☐
10.0700	7.00	28	10	56	☐
10.0900	9.00	32	10	65	☐
10.1000	10.00	32	10	65	☐
10.1200	12.00	45	10	70	☐
10.1300	13.00	55	10	80	☐
10.1500	15.00	75	10	100	☐
10.1800	18.00	75	10	100	☐
12.0800	8.00	30	12	70	☐
12.1000	10.00	40	12	80	☐
12.1300	13.00	60	12	90	☐
12.1500	15.00	70	12	100	☐
12.1800	18.00	70	12	100	☐
12.2000	20.00	80	12	110	☐
16.1300	13.00	60	16	115	☐
16.1500	15.00	60	16	115	☐
16.1800	18.00	75	16	115	☐

Steel < 600MPa | Steel > 600MPa | High alloyed steel | DUPLEX stainless steel | Cast iron

Refractory alloy | Titanium, titanium alloy | Cu alloy Silver Gold | Cu alloy difficult to machine | Al

Plastic



POLY 4001

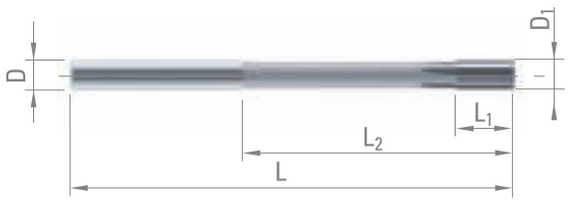
STRAIGHT FLUTE REAMERS
IRREGULAR TEETH

P. 282

> Ø 2.98

Ref. A

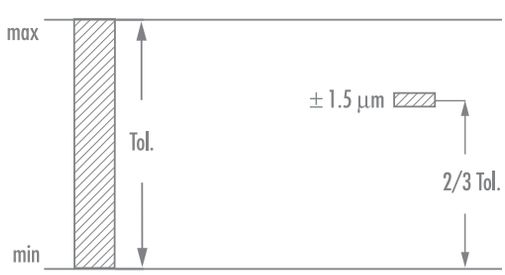
Ref. B



Steel < 600MPa	Steel > 600MPa	High alloyed steel	DUPLEX stainless steel	Cast iron		
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al		
Plastic						

$D_{1\ H7}$	L_1	L_2	D_{h6}	L	Z	Ref.	CARBIDE
0.40 - 0.50	3.0	5	3.0	38	3	B	☐
0.51 - 0.60	4.0	6	3.0	38	3	B	☐
0.61 - 0.70	4.0	7	3.0	38	3	B	☐
0.71 - 0.80	4.0	8	3.0	38	3	B	☐
0.81 - 0.90	5.0	9	3.0	38	3	B	☐
0.91 - 1.00	5.0	10	3.0	38	3	B	☐
1.01 - 1.08	5.0	11	3.0	38	3	B	☐
1.09 - 1.20	5.0	12	3.0	38	3	B	☐
1.21 - 1.40	6.0	13	3.0	38	3	B	☐
1.41 - 1.50	7.0	15	3.0	38	3	B	☐
1.51 - 1.60	7.0	15	3.0	50	3	B	☐
1.61 - 1.70	7.0	16	3.0	50	3	B	☐
1.71 - 1.80	7.0	17	3.0	50	3	B	☐
1.81 - 1.90	8.0	17	3.0	50	3	B	☐
1.91 - 2.30	8.0	18	3.0	50	3	B	☐
2.31 - 2.50	10.0	20	3.0	50	3	B	☐
2.51 - 2.60	10.0	20	3.0	61	4	B	☐
2.61 - 2.97	10.0	25	3.0	61	4	B	☐
2.98 - 3.02	10.0	25	3.0	65	4	B	☐
3.03 - 3.52	10.0	-	3.0	70	4	A	☐
3.53 - 4.02	10.0	-	3.5	75	4	A	☐
4.03 - 4.52	12.0	-	4.0	80	6	A	☐
4.53 - 5.03	12.0	-	4.5	86	6	A	☐
5.04 - 5.79	12.0	-	5.0	93	6	A	☐
5.80 - 6.00	12.0	57	6.0	93	6	B	☐
6.01 - 6.77	14.0	63	6.0	101	6	B	☐
6.78 - 7.30	16.0	69	7.0	109	6	B	☐
7.31 - 7.50	16.0	69	8.0	109	6	B	☐
7.51 - 8.50	16.0	75	8.0	117	6	B	☐
8.51 - 9.50	19.0	81	9.0	125	6	B	☐
9.51 -10.60	19.0	87	10.0	133	6	B	☐
10.61 -11.80	19.0	96	10.0	142	6	B	☐
11.81 -12.02	19.0	105	10.0	151	6	B	☐

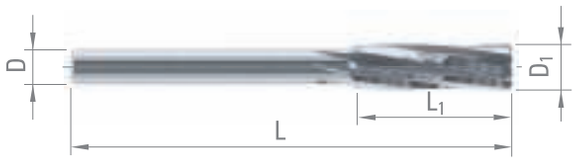
See details of positions in the price list and on the website



POLY 4005

HELICAL REAMERS, RIGHT-HAND SPIRAL
RIGHT-HAND CUTTING, IRREGULAR TEETH

P. 282



Steel < 600MPa | Steel > 600MPa | High alloyed steel | DUPLEX stainless steel | Cast iron

Refractory alloy | Titanium, titanium alloy | Cu alloy Silver Gold | Cu alloy difficult to machine | Al

Plastic

$D_{1\ H7}$	L_1	D_{h6}	L	Z	CARBIDE
2.97 - 3.49	20.0	2.5	56	4	☐
3.50 - 4.00	20.0	3.0	56	4	☐
4.10 - 4.40	22.0	3.5	63	6	☐
4.50 - 5.40	22.0	4.0	63	6	☐
5.50 - 6.50	22.0	5.0	63	6	☐

See details of positions in the price list and on the website

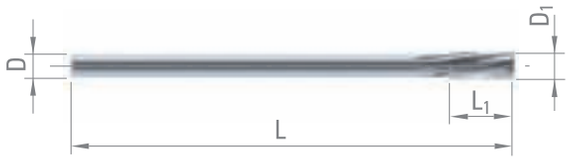
POLY 4007

HELICAL REAMERS, LEFT-HAND SPIRAL
RIGHT-HAND CUTTING, IRREGULAR TEETH

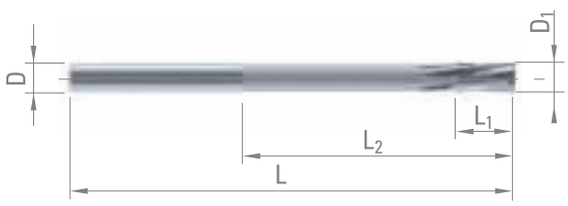
P. 282

> Ø 2.98

Ref. A



Ref. B



Steel < 600MPa | Steel > 600MPa | High alloyed steel | DUPLEX stainless steel | Cast iron

Refractory alloy | Titanium, titanium alloy | Cu alloy Silver Gold | Cu alloy difficult to machine | Al

Plastic

$D_{1\ 0/+0.003}$	L_1	L_2	D_{h6}	L	Z	Ref.	CARBIDE
0.39 - 0.50	3.0	5	3.0	38	3	B	☐
0.51 - 0.60	4.0	6	3.0	38	3	B	☐
0.61 - 0.70	4.0	7	3.0	38	3	B	☐
0.71 - 0.80	4.0	8	3.0	38	3	B	☐
0.81 - 0.90	5.0	9	3.0	38	3	B	☐
0.91 - 1.00	5.0	10	3.0	38	3	B	☐
1.01 - 1.09	5.0	11	3.0	38	3	B	☐
1.10 - 1.20	5.0	12	3.0	38	3	B	☐
1.21 - 1.40	6.0	13	3.0	38	3	B	☐
1.41 - 1.50	7.0	15	3.0	38	3	B	☐
1.51 - 1.60	7.0	15	3.0	50	3	B	☐
1.61 - 1.70	7.0	16	3.0	50	3	B	☐
1.71 - 1.80	7.0	17	3.0	50	3	B	☐
1.81 - 1.90	8.0	17	3.0	50	3	B	☐
1.91 - 2.30	8.0	18	3.0	50	3	B	☐
2.31 - 2.50	10.0	20	3.0	50	3	B	☐
2.51 - 2.60	10.0	20	3.0	61	4	B	☐
2.61 - 2.97	10.0	25	3.0	61	4	B	☐
2.98 - 3.02	10.0	25	3.0	65	4	B	☐
3.03 - 3.52	10.0	-	3.0	70	4	A	☐
3.53 - 4.02	10.0	-	3.5	75	4	A	☐
4.03 - 4.52	12.0	-	4.0	80	6	A	☐
4.53 - 5.03	12.0	-	4.5	86	6	A	☐
5.04 - 5.75	12.0	-	5.0	93	6	A	☐
5.76 - 6.00	12.0	57	6.0	93	6	B	☐
6.01 - 6.77	14.0	63	6.0	101	6	B	☐
6.78 - 7.30	16.0	69	7.0	109	6	B	☐
7.31 - 7.50	16.0	69	8.0	109	6	B	☐
7.51 - 8.52	16.0	75	8.0	117	6	B	☐
8.53 - 9.52	19.0	81	9.0	125	6	B	☐
9.53 -10.60	19.0	87	10.0	133	6	B	☐
10.61 -11.80	19.0	96	10.0	142	6	B	☐
11.81 -12.02	19.0	105	10.0	151	6	B	☐

See details of positions in the price list and on the website

CUTTING CONDITIONS

Materials to be machined			CARBIDE
			Vc [m/min]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²	14 **16** 20
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²	12 **14** 16
P	Lead alloyed cutting steel		25 **50** 70
P	High alloyed steel	700 – 1500 N/mm²	8 **10** 12
M	Stainless steel	400 – 700 N/mm²	10 **12** 16
M	DUPLEX stainless steel	> 800 N/mm²	8 **10** 12
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	20 **30** 40
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	12 **18** 24
K	Nodular ferritic cast iron / Malleable cast iron		14 **20** 32
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	8 **10** 12
S	Titanium, titanium alloys		10 **12** 16
N	Copper alloys - easy to machine (brass - bronze)		20 **30** 40
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	16 **24** 30
N	Aluminium alloys	Si < 8%	20 **40** 60
N	Cast aluminium	Si > 8%	20 **36** 50
N	Plastic		20 **40** 60
N	Plastic with fibres		10 **20** 30
N	Gold, silver		20 **30** 40

$$n\ [tr/min] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

$$Vf\ [mm/min] = n\ [tr/min] \times f\ [mm]$$

Feed per revolution **f [mm]**

Ø D_1 < 2.00	Ø D_1 2.00 - 4.03	Ø D_1 4.03 - 7.51	Ø D_1 7.51 - 12.02	
0.05	0.10	0.30	0.40	
0.15	**0.20**	**0.50**	**0.60**	
0.20	0.30	0.70	0.80	
0.05	0.10	0.25	0.30	
0.15	**0.20**	**0.40**	**0.50**	
0.20	0.30	0.65	0.70	
0.05	0.20	0.40	0.60	
0.15	**0.40**	**0.60**	**0.80**	
0.20	0.50	0.80	1.00	
0.05	0.10	0.20	0.30	
0.15	**0.15**	**0.30**	**0.40**	
0.20	0.25	0.40	0.50	
0.05	0.10	0.20	0.30	
0.15	**0.15**	**0.30**	**0.40**	
0.20	0.20	0.40	0.50	
0.05	0.10	0.20	0.30	
0.15	**0.15**	**0.30**	**0.40**	
0.20	0.25	0.40	0.50	
0.05	0.10	0.40	0.60	
0.15	**0.15**	**0.50**	**0.70**	
0.20	0.25	0.60	0.80	
0.05	0.10	0.30	0.40	
0.15	**0.15**	**0.40**	**0.50**	
0.20	0.20	0.50	0.60	
0.05	0.10	0.30	0.40	
0.15	**0.20**	**0.40**	**0.50**	
0.20	0.30	0.50	0.60	
0.05	0.10	0.20	0.30	
0.15	**0.15**	**0.30**	**0.40**	
0.20	0.20	0.40	0.50	
0.05	0.10	0.20	0.30	
0.15	**0.15**	**0.30**	**0.40**	
0.20	0.20	0.40	0.50	
0.05	0.10	0.30	0.40	
0.15	**0.20**	**0.40**	**0.50**	
0.20	0.30	0.50	0.60	
0.05	0.10	0.30	0.40	
0.15	**0.20**	**0.40**	**0.50**	
0.20	0.30	0.50	0.60	
0.05	0.10	0.40	0.60	
0.20	**0.25**	**0.60**	**0.80**	
0.30	0.40	0.80	1.00	
0.05	0.10	0.40	0.60	
0.20	**0.25**	**0.60**	**0.80**	
0.30	0.40	0.80	1.00	
0.05	0.10	0.40	0.50	
0.20	**0.25**	**0.50**	**0.60**	
0.30	0.40	0.60	0.70	
0.05	0.10	0.30	0.40	
0.20	**0.25**	**0.40**	**0.50**	
0.30	0.40	0.50	0.60	
0.05	0.10	0.40	0.60	
0.15	**0.20**	**0.60**	**0.80**	
0.20	0.30	0.80	1.00	
0.05	0.10	0.10	0.10	
0.10	**0.15**	**0.15**	**0.15**	Reaming allowance Ø [mm]
0.15	0.20	0.20	0.20	

CUTTING CONDITIONS

$$n\ [tr/min] = \frac{Vc\ [m/min] \times 1000}{\pi \times D_1\ [mm]}$$

$$Vf\ [mm/min] = n\ [tr/min] \times f\ [mm]$$

	Materials to be machined		Stationary tool Vc [m/min]	Rotating tool Vc [m/min]	Feed f [mm/tr]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²	**100** - 150	**70** - 120	**0.05** - 0.15
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²	**70** - 120	**50** - 90	**0.04** - 0.10
P	Lead alloyed cutting steel		**120** - 160	**90** - 130	**0.05** - 0.15
P	High alloyed steel	700 – 1500 N/mm²	**30** - 70	**20** - 50	**0.03** - 0.10
M	Stainless steel	400 – 700 N/mm²	**60** - 80	**40** - 60	**0.04** - 0.10
M	DUPLEX stainless steel	> 800 N/mm²	**30** - 70	**20** - 50	**0.03** - 0.10
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	**60** - 150	**40** - 120	**0.05** - 0.15
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	**20** - 80	**15** - 50	**0.04** - 0.10
K	Nodular ferritic cast iron / Malleable cast iron		**30** - 90	**20** - 60	**0.03** - 0.10
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	**10** - 20	**8** - 15	**0.03** - 0.10
S	Titanium, titanium alloys		**15** - 30	**10** - 25	**0.03** - 0.10
N	Copper alloys - easy to machine (brass - bronze)		**150** - 250	**120** - 180	**0.08** - 0.20
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	**120** - 160	**100** - 140	**0.04** - 0.10
N	Aluminium alloys	Si < 8%	**200** - 400	**150** - 300	**0.05** - 0.15
N	Cast aluminium	Si > 8%	**180** - 350	**150** - 250	**0.05** - 0.155
N	Plastic		**200** - 300	**150** - 250	**0.10** - 0.30
N	Gold, silver		**150** - 250	**120** - 180	**0.08** - 0.20

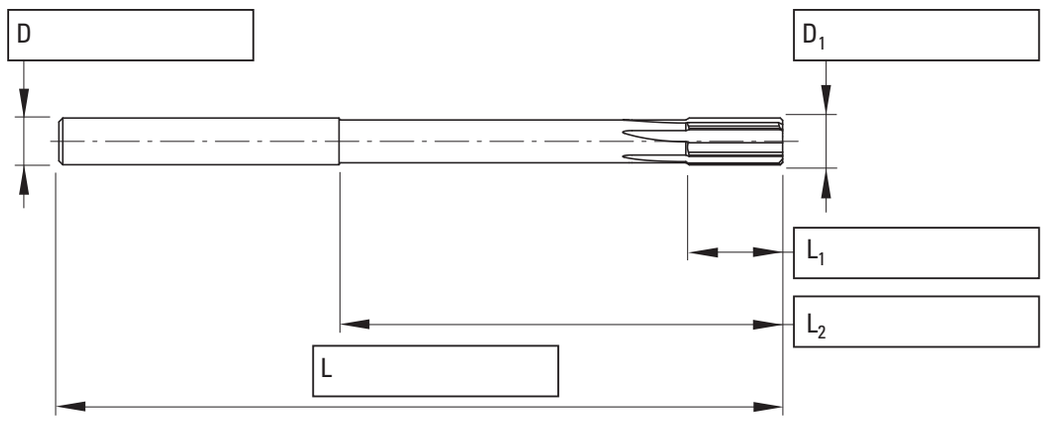
POLY 4001 SP

Z =

Quantity

Dimension and tolerance of the hole to be machined

Material to be machined



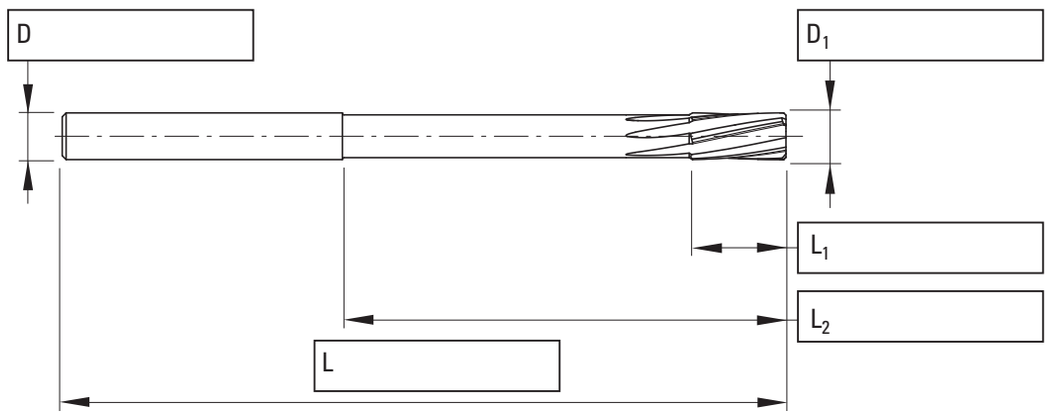
POLY 4007 SP

Z =

Quantity

Dimension and tolerance of the hole to be machined

Material to be machined



POLY 4005 SP

Z =

Quantity

Dimension and tolerance of the hole to be machined

Material to be machined