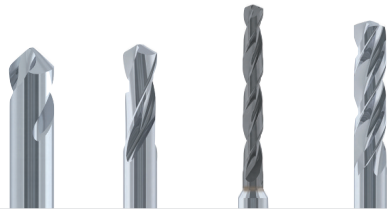
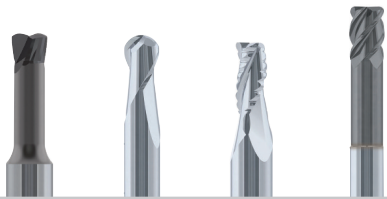
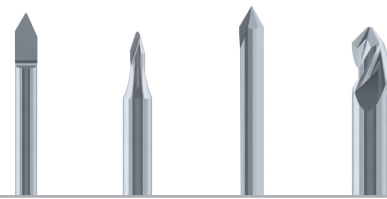
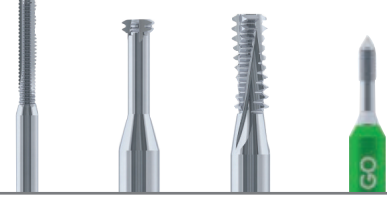
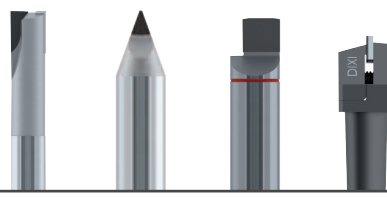
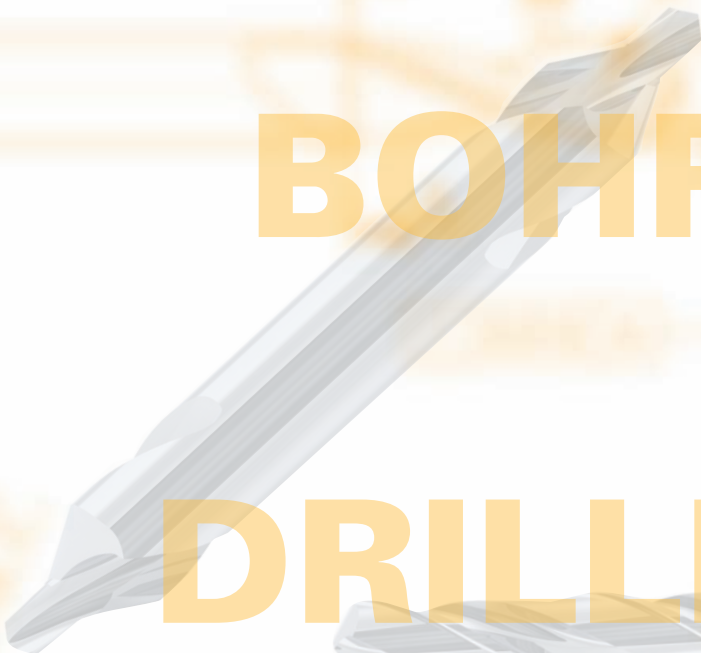


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PERÇAGE



BOHREN

DRILLING



FORATURA



FÚRÁS

TALADRADO



SELECTION OF DRILLS 4



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TWIST DRILLS FOR COMPOSITES / KEVLAR® 57



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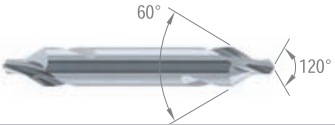
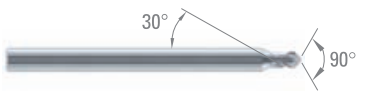
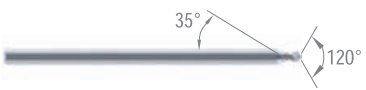
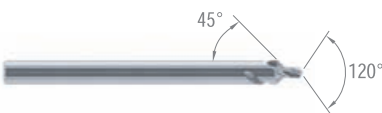
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SELECTION OF DRILLS

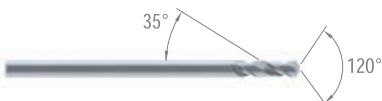
✓ = item from stock

	Z	Page	LC	CARBIDE	TiAIN	DICUT	
CENTRE AND SPOTTING DRILLS							
DIXI 1101 Ø 0.80 - 4.00 	2	12		✓			
DIXI 1106 Ø 1.00 - 20.00 	2	13		✓	✓		
DIXI 1106 L Ø 4.00 - 6.00 	2	14		✓			
DIXI 1107 Ø 1.00 - 20.00 	2	14		✓			
DIXI 1108 Ø 0.50 - 2.50 	2	15	1 - 2 x Ø	✓	✓		
DIXI 1109 Ø 0.50 - 2.50 	2	16	1 - 2 x Ø	✓		✓	
DIXI 1110 Ø 0.80 - 1.45 	2	17	1 - 2 x Ø	✓	✓		

HELICAL GUN DRILLS Z = 1

DIXI 1111 Ø 0.10 - 2.00 	1	18	4 - 9 x Ø	✓			
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TWIST DRILLS Z = 2

DIXI 1126 Ø 1.00 - 14.00 	2	19	 7 - 12 x Ø	✓		✓	
DIXI 1130 Ø 0.30 - 14.00 	2	20	 2 - 16 x Ø	✓		✓	
DIXI 1130 L Ø 0.30 - 8.00 	2	22	4 - 16 x Ø	✓		✓	
DIXI 1132 Ø 0.40 - 2.00 	2	24	4 - 15 x Ø	✓		✓	

○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
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⊙	○	○	○		⊙	○	○	⊙	○	⊙		⊙
⊙	⊙	○	⊙		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	⊙		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	⊙		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	⊙		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	⊙		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	⊙		⊙	○	⊙	⊙	⊙	⊙		⊙

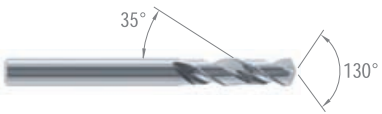
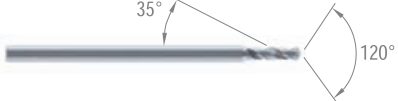
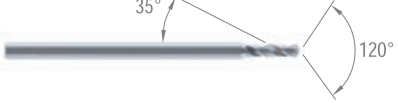
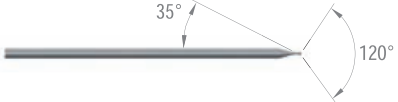
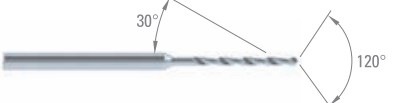
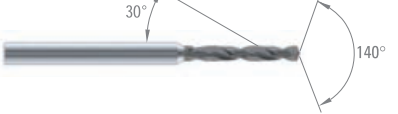
⊙								⊙	⊙			
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⊙	○	○	○		⊙	○	○	⊙	○	○	○	○
⊙	○	○			⊙		○	⊙	○	○	○	○
⊙	○	○			⊙		○	⊙	○	○	○	○
○	⊙	○	⊙		○	○	⊙	○	⊙	○	○	○

SELECTION OF DRILLS

✓ = item from stock

* = for non-ferrous material

	Z	Page	LC	CARBIDE	TiAIN	DICUT	DLC *
TWIST DRILLS Z = 2							
DIXI 1133 Ø 0.50 - 6.00 	2	25	4 - 18 x Ø	✓		✓	
TWIST DRILLS - REINFORCED SHANK Z = 2							
DIXI 1131 Ø 0.05 - 2.45 	2	26	 4 - 9 x Ø	✓		✓	✓*
DIXI 1131 L Ø 0.10 - 2.45 	2	29	 4 - 9 x Ø	✓		✓	
DIXI 1134 Ø 0.50 - 1.95 	2	32	 6 - 9 x Ø	✓		✓	
DIXI 1135 Ø 0.20 - 2.49 	2	33	3 - 8 x Ø	✓		✓	
DIXI 1136 Ø 0.20 - 1.99 	2	36	4 - 8 x Ø	✓		✓	
DIXI 1137 Ø 0.15 - 0.32 	2	38	3 - 6 x Ø	✓			
DIXI 1138 Ø 0.05 - 2.80 	2	39	4 - 9 x Ø	✓	✓		
DIXI 1139 Ø 0.50 - 3.00 	2	41	12 x Ø	✓	✓		
SELF-CENTERING DRILLS Z = 2							
DIXI 1149 Ø 1.00 - 14.00 	2	43	 3 - 4 x Ø		✓		
DIXI 1147 Ø 0.50 - 10.00 	2	45	6.5 x Ø		✓		

○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
○	○	○	○		○		○	⊙	⊙	⊙		○

⊙	○	○	○		⊙	○	⊙	⊙	○	○	⊙	○
⊙	○	○	○		⊙	○	⊙	⊙	○	○	○	○
○	⊙	○	⊙		○	○	⊙	○	⊙	○		
○	⊙	○	⊙		○	○	⊙	○	⊙	○		
○	⊙	○	⊙		○	○	⊙	○	⊙	○		
○	⊙	○	⊙		○	○	⊙	○	⊙	○		
○	⊙	○	⊙		○	○	⊙	○	⊙	○		
○	⊙	○	⊙		○	○	⊙	○	⊙	○		

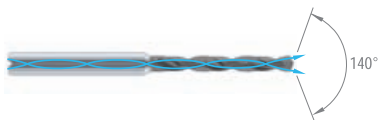
○	○	⊙	⊙		⊙	○	⊙		○	○		
⊙	⊙	⊙	○		○	⊙	○			○		

SELECTION OF DRILLS

✓ = item from stock

SELF-CENTERING DRILLS WITH THROUGH COOLANT Z = 2

DIXI 1145-HH
Ø 0.70 - 14.00



Z

Page

LC

□ CARBIDE

■ TiAIN

■ XIDUR

2

47

DIN 6537L
5 - 7 x Ø

✓

DIXI 1146-HH
Ø 0.80 - 10.00



2

49

10 x Ø

✓

TWIST DRILLS FOR HARDENED STEEL > 45 HRC

DIXI 1280
Ø 0.25 - 12.00



2

51

3 - 7 x Ø

✓

TWIST DRILLS Z = 3

DIXI 1151
Ø 1.00 - 14.00



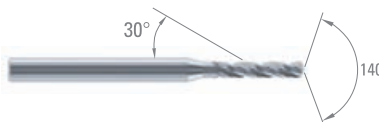
3

53

3 - 8 x Ø

✓

DIXI 1152
Ø 0.15 - 2.90



3

55

6 - 10 x Ø

✓

DRILLS FOR COMPOSITE MATERIALS / KEVLAR®

DIXI 1290
Ø 2.50 - 12.70



2

57

3 - 7 x Ø

✓

TOOLS ON REQUEST

SPADE DRILLS

DIXI 1112 R+L
Ø 0.08 - 5.99



2

58

HALF-MOON BITS

DIXI 1114 R+L
Ø 0.08 - 5.99



1

58

ON REQUEST

STRAIGHT FLUTE SLOT DRILLS

DIXI 1118 R+L
Ø 0.08 - 5.99



2

58



○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
○	○	⊙	⊙		⊙	○	⊙		○	○		
⊙	⊙	⊙	○		○	⊙	○			○		

		○		⊙		○						
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○	○				⊙		⊙	⊙		○		
○	○				⊙		⊙	⊙		○		

Kevlar®

												⊙
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○					○			⊙	○	○		○
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⊙								⊙	⊙	○		○
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○					○			⊙	○	○		○
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SELECTION OF DRILLS

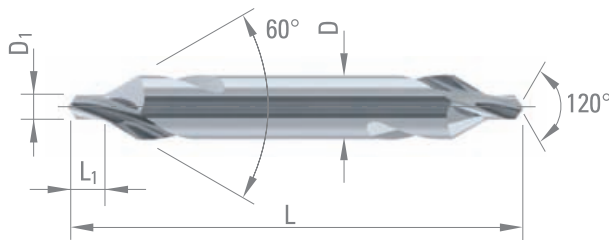
✓ = item from stock

	Z	Page	LC	☐ CARBIDE					
STEPPED TWIST DRILLS									
DIXI 1501 R+L 		59							
DIXI 1502 R+L 		60							
DIXI 1503 R+L 		61							
DIXI 1504 R+L 		62							
DIXI 1512 		59 - 62							
DIXI 1514 		59 - 62							
DIXI 1518 		59 - 62							

ON REQUEST

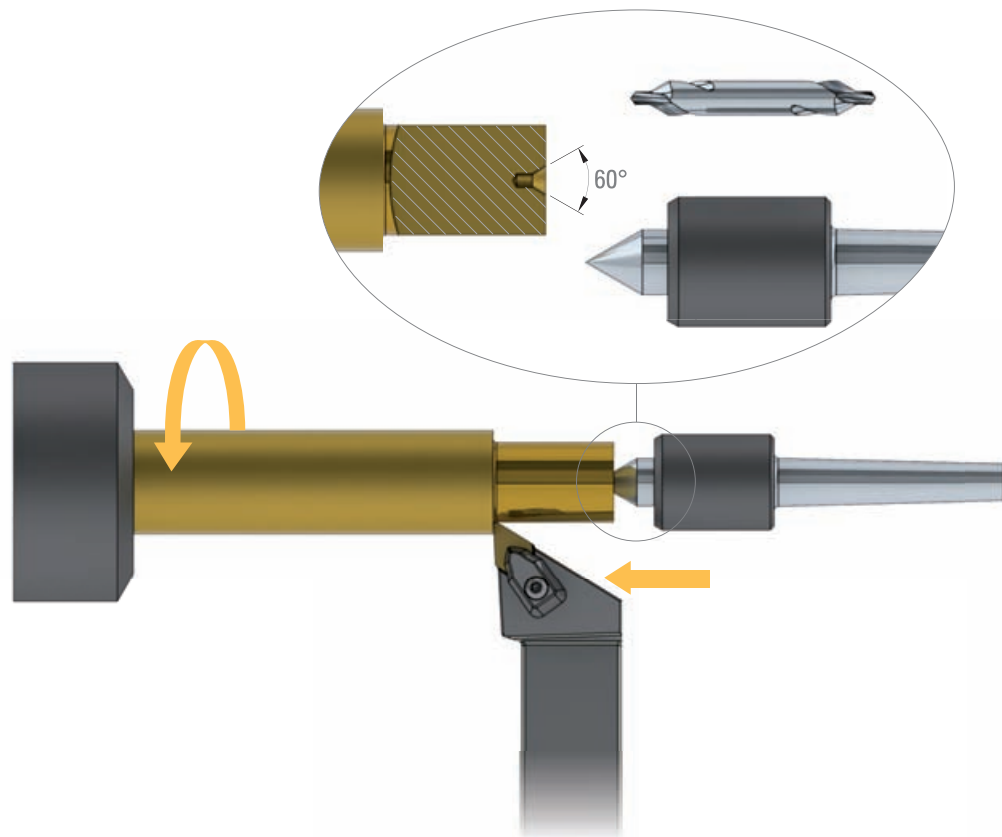
○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
⊙	○	○	○		○	○	○	⊙	○	⊙		○
⊙	○	○	○		○	○	○	⊙	○	⊙		○
⊙	○	○	○		○	○	○	⊙	○	⊙		○
⊙	○	○	○		○	○	○	⊙	○	⊙		○
○					○			⊙	○	○		○
⊙								⊙	⊙	○		○
○					○			⊙	○	○		○



Steel + Pb	Low alloyed steel	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 _{h5}	L	CARBIDE
0.80 ^{+0.14} / ₀	1.30 ±0.1	3.15	31.50 ±2	37253
1.00 ^{+0.14} / ₀	1.60 ±0.2	3.15	31.50 ±2	37254
1.25 ^{+0.14} / ₀	1.90 ±0.2	3.15	31.50 ±2	37255
1.60 ^{+0.14} / ₀	2.40 ±0.2	4.00	35.50 ±2	37256
2.00 ^{+0.14} / ₀	2.90 ±0.2	5.00	40.00 ±2	29156
2.50 ^{+0.14} / ₀	3.60 ±0.2	6.30	45.00 ±2	37257
3.15 ^{+0.18} / ₀	4.40 ±0.3	8.00	50.00 ±2	24756
4.00 ^{+0.18} / ₀	5.60 ±0.4	10.00	56.00 ±3	32950

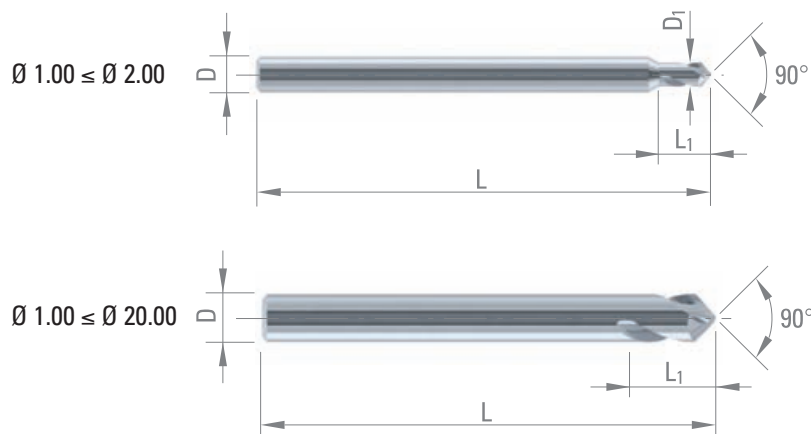


SPOTTING DRILLS

Z = 2



P. 64



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

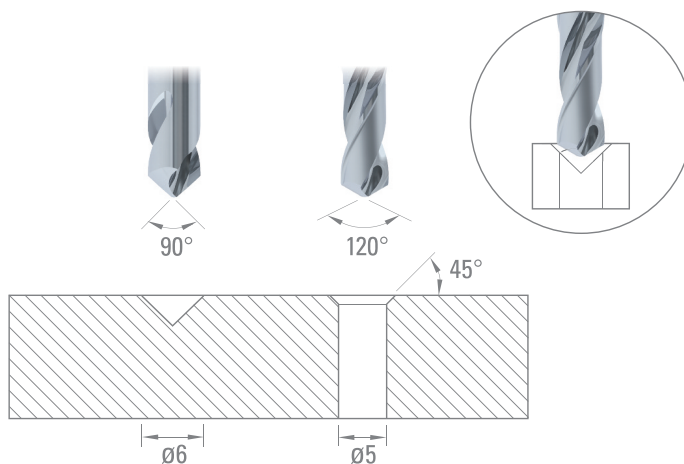
D _{1 h6}	L ₁	D _{h5}	L	CARBIDE	TiAlN
1.00	3	3	38	956799	957230
1.50	5	3	38	956800	957231
2.00	5	3	38	956801	957232



D _{h5}	L ₁	L	CARBIDE	TiAlN
1.00	3	32	953781	953780
1.50	5	32	953778	953779
2.00	5	32	47101	62892
3.00	9	38	43231	34090
4.00	10	50	36911	61280
5.00	13	50	47716	63736
* 6.00	13	57	42788	63757
* 8.00	27	63	42789	63758
* 10.00	30	72	43233	61561
* 12.00	35	83	43064	41463
* 16.00	46	92	43234	63759
* 20.00	52	104	43235	63760



* = logarithmic relief



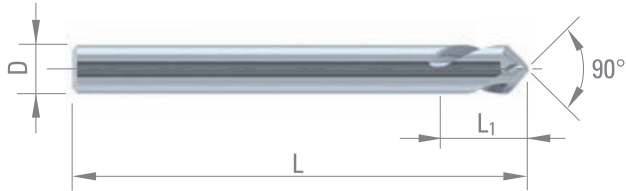
DIXI 1106 L 90°

LEFT HAND SPOTTING DRILLS

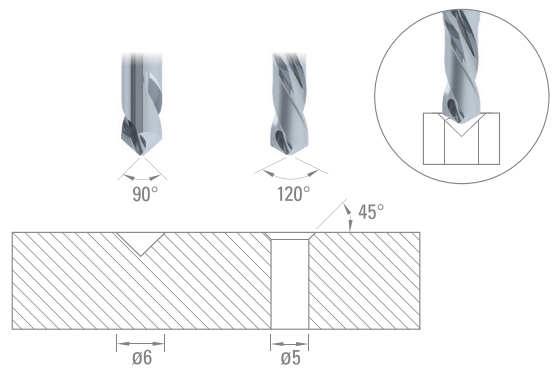
Z = 2



P. 64



Steel + Pb	Low alloyed steel	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 _{h5}	L ₁	L	CARBIDE
4.00	10	50	47714
5.00	13	50	47715
6.00	13	57	48813

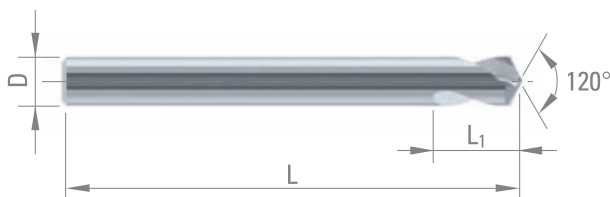
DIXI 1107 120°

SPOTTING DRILLS

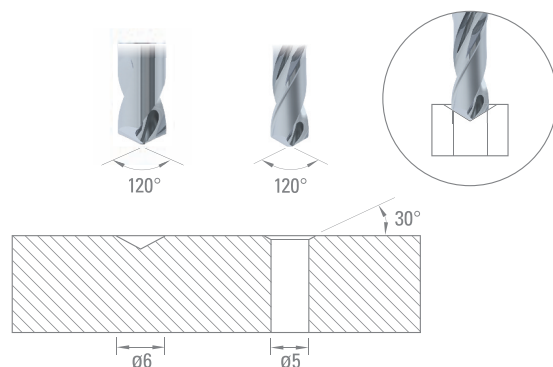
Z = 2



P. 64



Steel + Pb	Low alloyed steel	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 _{h5}	L ₁	L	CARBIDE
1.00	3	38	985118
2.00	5	38	985120
3.00	9	38	43236
4.00	10	50	36914
6.00	13	57	43238
* 8.00	27	63	43239
* 10.00	30	72	43240
* 12.00	35	83	43241
* 16.00	46	92	43242
* 20.00	52	104	43243

* = logarithmic relief

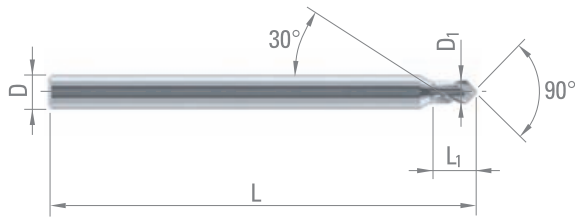


SPOTTING DRILLS REINFORCED SHANK

Z = 2



P. 64



Steel + Pb	Low alloyed steel	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 h6}	L ₁	D _{h5}	L	CARBIDE	TiAlN
0.50	1.0	3	38	983702	
0.60	1.0	3	38	964801	
0.65	1.0	3	38	964800	
0.70	1.0	3	38	964799	
0.75	1.0	3	38	964798	
0.80	1.5	3	38	956678	956679
0.82	1.5	3	38	956681	956682
0.85	1.5	3	38	956684	956685
0.87	1.5	3	38	956687	956689
0.90	1.5	3	38	956691	956693
0.92	1.5	3	38	956695	956696
0.95	1.5	3	38	956697	956703
0.97	1.5	3	38	956704	956706
1.00	1.5	3	38	956708	956707
1.02	2.0	3	38	956709	956710
1.05	2.0	3	38	956711	956712
1.07	2.0	3	38	956713	956714
1.10	2.0	3	38	956715	956716
1.12	2.0	3	38	956717	956718
1.15	2.0	3	38	956719	956720
1.17	2.0	3	38	956721	956722
1.20	2.0	3	38	956723	956724
1.22	2.0	3	38	956725	956726
1.25	2.0	3	38	956727	956728
1.27	2.0	3	38	956729	956730
1.30	2.0	3	38	956731	956732
1.32	2.0	3	38	956733	956734
1.35	2.0	3	38	956735	956736
1.37	2.0	3	38	956737	956738
1.40	2.0	3	38	956739	956740
1.42	2.0	3	38	956741	956742
1.45	2.0	3	38	956743	956744
1.47	2.0	3	38	956745	956746
1.50	2.0	3	38	956747	956748
1.52	3.0	3	38	956749	956750
1.55	3.0	3	38	956751	956752
1.57	3.0	3	38	956753	956754
1.60	3.0	3	38	956755	956756
1.62	3.0	3	38	956757	956758
1.65	3.0	3	38	956759	956760
1.67	3.0	3	38	956761	956762

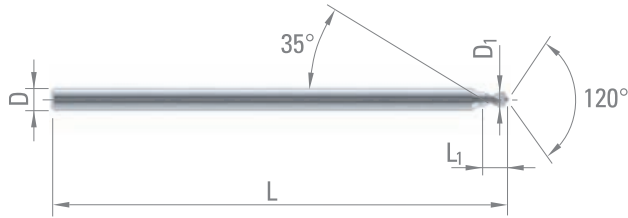
D _{1 h6}	L ₁	D _{h5}	L	CARBIDE	TiAlN
1.70	3.0	3	38	956763	956764
1.72	3.0	3	38	956765	956766
1.75	3.0	3	38	956767	956768
1.77	3.0	3	38	956769	956770
1.80	3.0	3	38	956771	956772
1.82	3.0	3	38	956773	956774
1.85	3.0	3	38	956775	956776
1.87	3.0	3	38	956777	956778
1.90	3.0	3	38	956779	956780
1.92	3.0	3	38	956781	956782
1.95	3.0	3	38	956783	956784
1.97	3.0	3	38	956785	956786
2.00	3.0	3	38	956803	956804
2.10	3.0	3	38	956812	956813
2.20	3.0	3	38	956820	956821
2.30	3.0	3	38	956828	956830
2.40	3.0	3	38	956837	956838
2.50	3.0	3	38	956845	956846

SPOTTING DRILLS
REINFORCED SHANK

Z = 2

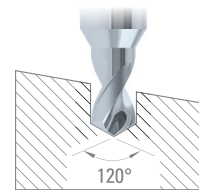
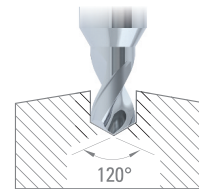
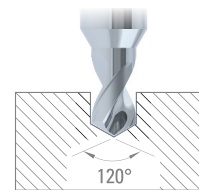


P. 64



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE	DICUT
0.50	1.0	1.5	30	62674	67354
0.55	1.0	1.5	30	62675	67355
0.60	1.2	1.5	30	62676	67356
0.65	1.2	1.5	30	62677	67357
0.70	1.5	1.5	30	62678	67358
0.75	1.5	1.5	30	62679	67359
0.80	2.0	1.5	30	52126	60989
0.85	2.0	1.5	30	52127	67360
0.90	2.0	1.5	30	52128	60990
0.95	2.0	1.5	30	52129	67361
1.00	2.0	1.5	30	52130	60991
1.05	2.0	1.5	30	52131	67362
1.10	2.0	1.5	30	52132	60992
1.15	2.4	1.5	30	52133	62487
1.20	2.4	1.5	30	52134	60993
1.25	2.4	1.5	30	52135	67363
1.30	2.4	1.5	30	52136	60994
1.35	2.4	1.5	30	52137	67364
1.40	2.4	1.5	30	52138	63485
1.45	2.4	1.5	30	52139	67365
1.50	3.0	2.0	32	981825	981839
1.55	3.0	2.0	32	981826	981840
1.60	3.0	2.0	32	981827	981841
1.65	3.0	2.0	32	981828	981842
1.70	3.0	2.0	32	981829	981843
1.75	3.5	2.0	32	981830	981844
1.80	3.5	2.0	32	981831	981845
1.85	3.5	2.0	32	981832	981847
1.90	3.5	2.0	32	981833	981848
1.95	3.5	2.0	32	981834	981849
2.00	4.0	2.5	32	981317	981325
2.10	4.0	2.5	32	981835	981850
2.20	4.0	2.5	32	981836	981852
2.30	4.0	2.5	32	981837	981853
2.40	4.0	2.5	32	981838	981854
2.50	4.0	2.5	32	981320	981327

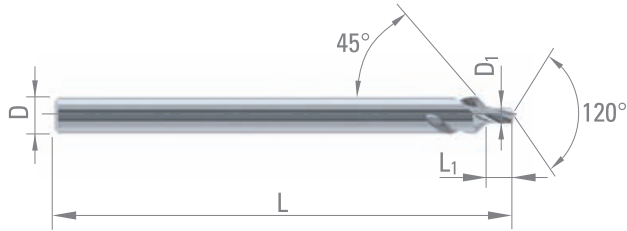


SPOTTING AND CHAMFERING DRILLS

Z = 2



P. 64



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

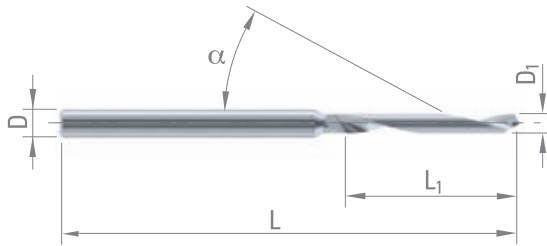
$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE	TiAIN
0.80	2.0	3	38	60268	64055
0.85	2.0	3	38	60269	67239
0.90	2.0	3	38	60270	64000
0.95	2.0	3	38	60271	67240
1.00	2.0	3	38	60272	64056
1.05	2.0	3	38	60273	67241
1.10	2.0	3	38	60274	63523
1.15	2.4	3	38	60275	67242
1.20	2.4	3	38	60276	64001
1.25	2.4	3	38	60277	67243
1.30	2.4	3	38	60278	67244
1.35	2.4	3	38	60279	67245
1.40	2.4	3	38	60280	64002
1.45	2.4	3	38	60281	67246

HELICAL GUN DRILLS

Z = 1



P. 66



Low
alloyed
steel

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE
0.10	0.7	1.0	30	955371
0.15	1.0	1.0	30	955374
0.20	1.0	1.0	30	955375
0.25	1.0	1.0	30	955377
0.30	1.5	1.0	30	955378
0.35	1.5	1.0	30	955379
0.40	2.0	1.0	30	955380
0.45	3.6	1.0	30	955381
0.50	4.0	1.0	30	955382
0.55	4.5	1.0	30	955383
0.60	4.5	1.0	30	955384
0.65	5.0	1.0	30	955385
0.70	5.6	1.0	30	955386
0.75	5.6	1.0	30	955387
0.80	6.3	1.5	30	955388
0.85	6.3	1.5	30	955389
0.90	7.1	1.5	30	955390
0.95	7.1	1.5	30	955391
1.00	9.0	1.5	30	955392
1.05	9.0	1.5	30	955393
1.10	9.0	1.5	30	955394
1.15	9.0	1.5	30	955395
1.20	10.0	1.5	30	955396
1.30	10.0	1.5	30	965839
1.40	11.2	1.5	30	965840
1.45	11.2	1.5	30	965841
1.50	12.0	2.0	38	961881
1.60	12.0	2.0	38	965842
1.65	12.0	2.0	38	965843
1.70	12.0	2.0	38	961882
1.75	12.0	2.0	38	965844
1.80	12.0	2.0	38	961883
2.00	12.0	2.5	43	959038

$D_1 \pm 1 \mu\text{m}$ on request

Other diameters until Ø 5.99 on request



DIXI 1126

TWIST DRILLS

Z = 2



P. 63



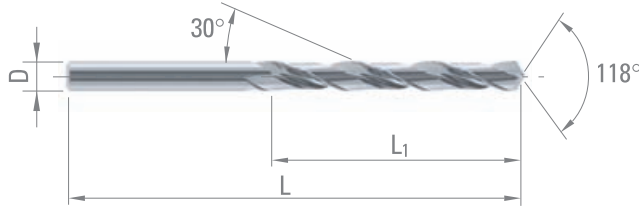
P. 68



$D_1 \geq 3.1$



DIN
338



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic			

D_{h5}	L_1	L	CARBIDE	DICUT
1.00	12	34	40244	53697
1.10	14	36	40656	53698
1.20	16	38	40657	53699
1.30	16	38	40658	53700
1.40	18	40	40659	53701
1.50	18	40	40077	53702
1.60	20	43	40703	53703
1.70	20	43	38677	53704
1.80	22	46	41510	53705
1.90	22	46	41370	53706
2.00	24	49	41593	53707
2.10	24	49	40707	53708
2.20	27	53	40125	53709
2.30	27	53	43515	53710
2.40	30	57	45074	53711
2.50	30	57	40978	53712
2.60	30	57	40607	53713
2.70	33	61	41318	53714
2.80	33	61	41024	54284
2.90	33	61	40608	53715
3.00	33	61	40059	53716
3.10	36	65	40173	53717
3.20	36	65	41511	53718
3.30	36	65	40575	53736
3.40	39	70	41247	53737
3.50	39	70	41451	53738
3.60	39	70	40078	53739
3.70	39	70	40174	53740
3.80	43	75	40060	53741
3.90	43	75	43676	53742
4.00	43	75	43497	53743
4.10	43	75	41218	53744
4.20	43	75	41295	53745
4.30	47	80	41452	53746
4.40	47	80	42866	53747
4.50	47	80	40263	53748
4.60	47	80	41991	53749
4.70	47	80	34710	53750
4.80	52	86	40126	53751
4.90	52	86	42661	53752

D_{h5}	L_1	L	CARBIDE	DICUT
5.00	52	86	40061	53753
5.10	52	86	42022	53754
5.20	52	86	40062	53755
5.30	52	86	40063	53756
5.40	57	93	40064	53757
5.50	57	93	40065	53758
5.60	57	93	41992	53759
5.70	57	93	43357	53760
5.80	57	93	40864	53761
5.90	57	93	40258	53762
6.00	57	93	39996	53763
6.10	63	101	40704	54264
6.20	63	101	40066	54267
6.30	63	101	40067	54283
6.40	63	101	40068	54287
6.50	63	101	40069	54290
6.60	63	101	40070	54293
6.70	63	101	40071	54304
6.80	69	109	40943	54306
6.90	69	109	41512	54309
7.00	69	109	40072	54312
7.50	69	109	40912	54315
7.70	75	117	53196	54318
7.80	75	117	45792	54321
8.00	75	117	40073	54324
8.50	75	117	40074	54811
9.00	81	125	40075	54778
9.50	81	125	41641	54781
10.00	87	133	40812	54784
10.20	87	133	40944	54787
10.50	87	133	34732	54790
11.00	94	142	40127	54793
11.50	94	142	40865	54795
12.00	101	151	41513	54798
12.50	101	151	41642	54801
13.00	101	151	40660	54804
13.50	108	160	40076	54807
14.00	108	160	40771	54810



DIXI 1130

TWIST DRILLS

Z = 2



P. 63



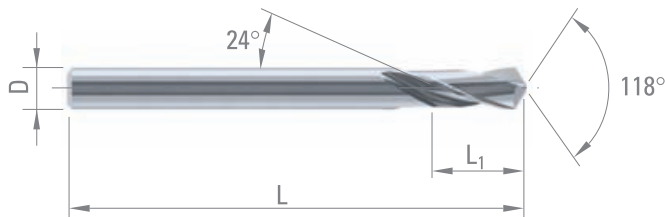
P. 70



$D_1 \geq 3.1$



DIN
6539



Steel + Pb	Low alloyed steel	High alloyed steel	Cast iron	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic

D_{h5}	L_1	L	CARBIDE	DICUT
0.30	5	30	24828	953165
0.35	5	30	37861	953167
0.40	6	30	244	953169
0.45	6	30	245	953171
0.50	6	30	246	54480
0.55	6	30	247	54481
0.60	6	30	248	54482
0.65	6	30	249	54483
0.70	6	30	250	54484
0.75	6	30	251	54485
0.80	7	30	252	54487
0.85	7	30	253	54486
0.90	7	30	254	54528
0.95	7	30	255	54488
1.00	7	30	256	54490
1.05	8	30	257	54491
1.10	8	30	258	54492
1.15	8	30	259	54493
1.20	8	30	260	54494
1.25	8	30	261	54495
1.30	8	30	262	54496
1.35	8	30	263	54497
1.40	8	30	264	54498
1.45	8	30	265	54499
1.50	8	30	266	54500
1.55	9	38	267	54501
1.60	9	38	268	54502
1.65	9	38	269	54503
1.70	9	38	270	54504
1.75	9	38	271	54505
1.80	9	38	272	54506
1.85	9	38	32277	54507
1.90	9	38	274	54509
1.95	9	38	275	54508
2.00	9	38	276	54510
2.05	9	38	39575	54511
2.10	9	38	39757	54512
2.15	10	40	33192	54513
2.20	10	40	39655	54514

D_{h5}	L_1	L	CARBIDE	DICUT
2.25	10	40	4562	54516
2.30	10	40	43350	54529
2.35	10	40	1756	54530
2.40	11	43	42869	54531
2.45	11	43	4563	54532
2.50	11	43	43351	54533
2.55	11	43	41514	54534
2.60	11	43	41874	54535
2.65	11	43	4564	54536
2.70	12	46	42139	54539
2.75	12	46	4565	54537
2.80	12	46	42339	54538
2.85	12	46	42522	54540
2.90	12	46	41911	54541
2.95	12	46	41501	54542
3.00	12	46	41840	54543
3.05	14	49	4607	54544
3.10	14	49	41456	54545
3.15	14	49	1757	54546
3.20	14	49	42023	54547
3.25	14	49	3356	54548
3.30	14	49	290	54549
3.35	14	49	4567	54550
3.40	15	52	42200	54551
3.45	15	52	4020	54552
3.50	15	52	41534	54553
3.55	15	52	4568	54554
3.60	15	52	41535	54556
3.65	15	52	42523	54557
3.70	15	52	43037	54558
3.75	15	52	4570	54560
3.80	17	55	4610	54562
3.85	17	55	4571	54563
3.90	17	55	4142	54565
3.95	17	55	42870	54567
4.00	17	55	42093	54568
4.05	17	55	42871	54569
4.10	17	55	42652	54570
4.15	17	55	15177	54571





P. 63



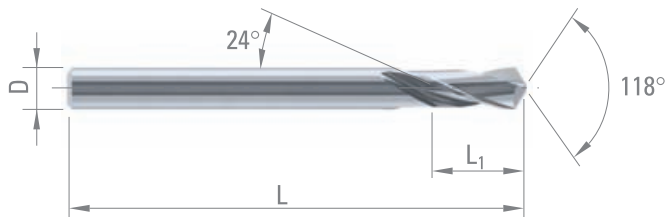
P. 70



$D_1 \geq 3.1$



**DIN
6539**



Steel + Pb	Low alloyed steel	High alloyed steel	Cast iron	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic

D_{h5}	L_1	L	CARBIDE	DICUT
4.20	17	55	42340	54572
4.25	17	55	39938	54573
4.30	18	58	301	54574
4.35	18	58	39939	54575
4.40	18	58	29689	54576
4.45	18	58	4616	54577
4.50	18	58	303	54578
4.55	18	58	40790	54579
4.60	18	58	39013	54580
4.65	18	58	19790	54581
4.70	18	58	42170	54582
4.75	18	58	40791	54583
4.80	20	62	29756	54584
4.85	20	62	42524	54585
4.90	20	62	41914	54586
4.95	20	62	39997	54587
5.00	20	62	29758	54588
5.10	20	62	29759	54589
5.20	20	62	29760	54590
5.30	20	62	29761	54593
5.40	21	66	29693	54594
5.50	21	66	29694	54595
5.60	21	66	41594	54596
5.70	21	66	45724	54597
5.80	21	66	316	54599
5.90	21	66	28594	54600
6.00	21	66	42173	54601
6.10	23	70	29762	54602
6.20	23	70	41457	54618
6.30	23	70	29764	54619
6.40	23	70	42171	54620
6.50	23	70	42220	54621
6.60	23	70	41515	54622
6.70	23	70	41680	54623
6.80	25	74	326	54624
6.90	25	74	327	54625
7.00	25	74	328	54626
7.10	25	74	8646	54627
7.20	25	74	50671	54628

D_{h5}	L_1	L	CARBIDE	DICUT
7.30	25	74	53054	54629
7.50	25	74	5389	54631
7.60	27	79	53056	54632
7.70	27	79	22351	54633
7.80	27	79	50331	54634
7.90	27	79	53057	54635
8.00	27	79	42821	54636
8.10	27	79	53058	54639
8.20	27	79	25291	54640
8.30	27	79	53479	54641
8.40	27	79	53059	54642
8.50	27	79	42653	54643
8.80	29	84	57852	59399
9.00	29	84	35325	54644
9.20	29	84	57851	59401
9.50	29	84	39660	54645
9.80	31	89	57853	963531
10.00	31	89	7958	54646
10.20	31	89	34340	54647
10.50	31	89	30130	54648
11.00	33	95	28591	54649
11.50	33	95	41092	54650
12.00	35	102	14939	54651
13.00	35	102	21462	54653
13.50	37	107	45725	54654
14.00	37	107	23729	54655



LEFT HAND TWIST DRILLS

Z = 2



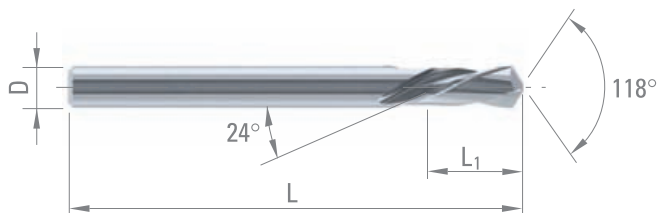
P. 63



P. 70



$D_1 \geq 3.1$



Steel + Pb	Low alloyed steel	High alloyed steel	Cast iron	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic

D_{h5}	L_1	L	CARBIDE	DICUT
0.30	5	30	37906	953748
0.35	5	30	37907	953752
0.40	6	30	330	953754
0.45	6	30	331	953758
0.50	6	30	332	54659
0.55	6	30	333	54660
0.60	6	30	334	54661
0.65	6	30	335	54662
0.70	6	30	336	54663
0.75	6	30	37908	54664
0.80	8	30	338	54665
0.85	8	30	339	54666
0.90	8	30	340	54667
0.95	8	30	341	54668
1.00	8	30	29560	54669
1.05	10	30	343	54670
1.10	10	30	344	54671
1.15	10	30	345	54672
1.20	10	30	346	54673
1.25	10	30	347	54674
1.30	10	30	348	54675
1.35	10	30	349	54676
1.40	10	30	350	54677
1.45	10	30	351	54678
1.50	10	30	352	54679
1.55	16	38	38634	54680
1.60	16	38	38826	54681
1.65	16	38	39127	54682
1.70	16	38	39126	54683
1.75	16	38	38827	54684
1.80	16	38	395	54685
1.85	16	38	38921	54686
1.90	16	38	30637	54687
1.95	16	38	38997	54688
2.00	16	38	35181	54689
2.05	16	38	27526	54690
2.10	16	38	39657	54691
2.15	16	40	39041	54692
2.20	16	40	38965	54693

D_{h5}	L_1	L	CARBIDE	DICUT
2.25	16	40	40245	54694
2.30	16	40	38769	54695
2.35	16	40	26575	54696
2.40	16	43	23429	54698
2.45	16	43	45720	54699
2.50	16	43	43245	54700
2.55	16	43	41034	54701
2.60	16	43	39043	54702
2.65	16	43	4026	54703
2.70	16	46	40247	54704
2.75	16	46	43036	54705
2.80	16	46	370	54706
2.85	16	46	40266	54707
2.90	16	46	40793	54708
2.95	16	46	40511	54709
3.00	16	46	42787	54710
3.05	18	49	40079	54711
3.10	18	49	40661	54712
3.15	18	49	40794	54713
3.20	18	49	40267	54714
3.25	18	49	40080	54715
3.30	18	49	375	54716
3.35	18	49	40296	54717
3.40	20	50	376	54718
3.45	20	50	37957	54719
3.50	20	50	377	54720
3.55	20	50	41596	54721
3.60	20	50	40662	54722
3.65	20	50	40797	54723
3.70	20	50	379	54724
3.75	20	50	38922	54725
3.80	22	50	40172	54726
3.85	22	50	37960	54727
3.90	22	50	38923	54728
3.95	22	50	37962	54729
4.00	22	50	382	54730
4.05	22	50	40801	54731
4.10	22	50	383	54732
4.15	22	50	40576	54733



DIXI 1130 L



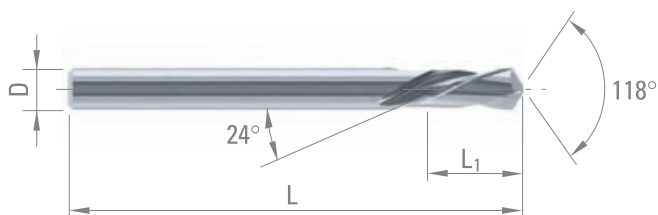
P. 63



P. 70



$D_1 \geq 3.1$



Steel + Pb	Low alloyed steel	High alloyed steel	Cast iron	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic

D_{h5}	L_1	L	CARBIDE DICUT	
4.20	22	50	384	54734
4.25	22	50	39658	54735
4.30	24	50	385	54736
4.35	24	50	37966	54737
4.40	24	50	37967	54738
4.45	24	50	27518	54739
4.50	24	50	387	54740
4.55	24	50	37968	54741
4.60	24	50	388	54742
4.75	24	50	37970	54745
4.80	25	50	390	54746
4.85	25	50	37971	54747
4.90	25	50		54748
4.95	25	50	37972	54749
5.00	25	50	392	54750
5.20	25	50	4141	
5.50	25	50	27042	54755
5.60	25	50	27041	54756
5.70	25	50	37981	54757
5.90	25	50	6489	54759
6.00	28	66	43390	54760
6.10	31	70	43915	54761
6.40	31	70	45723	54764
6.50	31	70	37994	54765
6.60	31	70	37996	54766
6.70	31	70	45721	54767
6.80	34	74	43847	953776
6.90	34	74	45722	54769
7.50	34	74	38021	54771
8.00	37	79	26530	54772

TWIST DRILLS

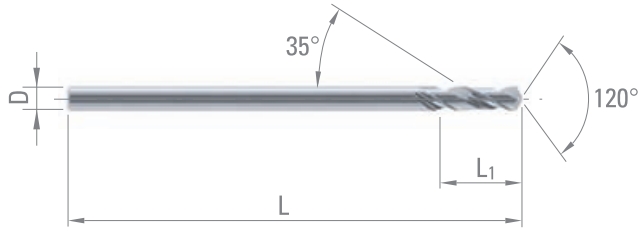
Z = 2



P. 63



P. 74



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphit	Plastic			

D _{h5}	L ₁	L	CARBIDE	DICUT
0.40	6	30	197	953186
0.45	6	30	198	58925
0.50	6	30	199	53585
0.55	6	30	200	53586
0.60	6	30	201	53582
0.65	6	30	202	53588
0.70	6	30	203	53589
0.75	6	30	204	53587
0.80	7	30	205	53590
0.85	7	30	206	53591
0.90	7	30	207	53592
0.95	7	30	208	53593
1.00	7	30	40275	53583
1.05	8	30	210	53594
1.10	8	30	41502	53595
1.15	8	30	212	53596
1.20	8	30	41150	53597
1.25	8	30	41319	53598
1.30	8	30	215	53599
1.35	8	30	41320	53600
1.40	8	30	217	53584
1.45	8	30	218	53601
1.50	8	30	219	53602
1.55	9	38	220	53604
1.60	9	38	221	53605
1.65	9	38	5418	53606
1.70	9	38	222	53607
1.75	9	38	42537	53608
1.80	9	38	223	53609
1.85	9	38	42538	53610
1.90	9	38	224	53611
1.95	9	38	42539	53612
2.00	9	38	225	53613

DIXI 1133

TWIST DRILLS

Z = 2



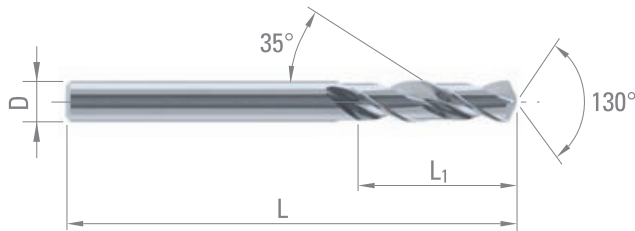
P. 63



P. 76



$D_1 \geq 3.1$



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

D_{h5}	L_1	L	CARBIDE	DICUT
0.50	9	38	91	57557
0.55	9	38	92	57558
0.60	13	38	93	57559
0.65	13	38	94	57560
0.70	13	38	95	55471
0.75	13	38	96	55473
0.80	13	38	97	55475
0.85	13	38	98	55482
0.90	16	38	99	55599
0.95	16	38	100	55601
1.00	16	38	101	55603
1.05	16	38	102	55605
1.10	16	38	103	55607
1.15	16	38	104	55609
1.20	16	38	105	55611
1.25	16	38	106	55613
1.30	16	38	107	55615
1.35	16	38	108	55617
1.40	16	38	109	55619
1.45	16	38	110	55621
1.50	16	38	111	55623
1.55	16	38	2972	55625
1.60	16	38	112	55627
1.65	16	38	3360	55629
1.70	16	38	113	55631
1.75	16	38	3361	55633
1.80	16	38	114	55635
1.85	16	38	115	55637
1.90	16	38	116	55639
1.95	16	38	3362	55641
2.00	16	38	117	55643
2.10	16	38	118	55645
2.20	16	40	119	55647
2.30	16	40	120	55649
2.40	16	43	121	55651
2.50	16	43	122	55653
2.60	16	43	35575	55655

D_{h5}	L_1	L	CARBIDE	DICUT
3.00	16	46	35726	55657
3.30	18	49	35665	55659
3.50	20	50	35727	55661
4.00	22	55	34062	55663
4.20	22	55	35728	55665
4.50	24	58	35729	55667
5.00	26	62	35730	55669
5.50	28	66	45735	55671
6.00	28	66	45736	55673



TWIST DRILLS
REINFORCED SHANK

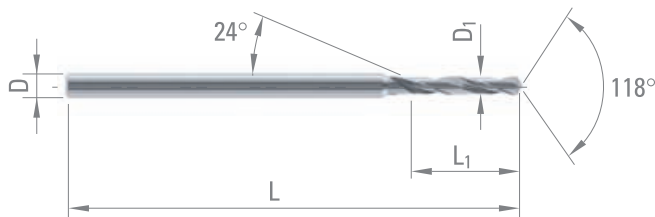
Z = 2



P. 63



P. 72

DIN
1899

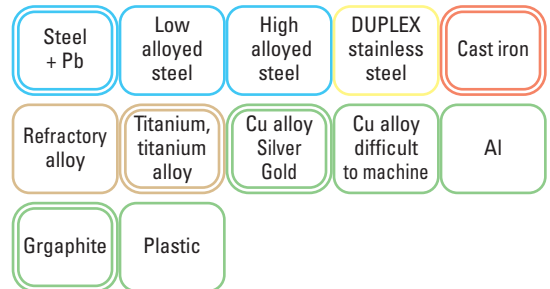
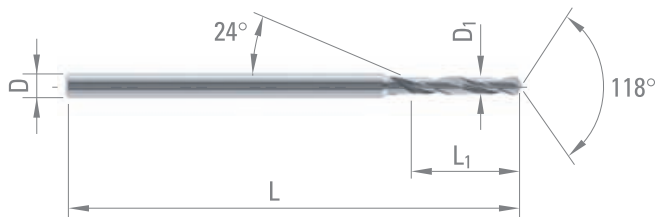
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Grgaphite	Plastic			

D _{1 0/-0.004}	L ₁	D _{h5}	L	CARBIDE	DICUT	DLC*
0.05	0.35	1.0	30	962703		
0.06	0.4	1.0	30	962702		
0.07	0.5	1.0	30	962701		
0.08	0.6	1.0	30	962700		
0.09	0.65	1.0	30	962699		
0.10	0.7	1.0	30	36792		
0.11	0.7	1.0	30	40829		
0.12	0.7	1.0	30	40627		
0.13	0.7	1.0	30	40628		
0.14	0.7	1.0	30	40629		
0.15	1.0	1.0	30	35600		
0.16	1.0	1.0	30	38658		
0.17	1.0	1.0	30	38659		
0.18	1.0	1.0	30	38660		
0.19	1.0	1.0	30	38661		
0.20	1.0	1.0	30	26824	952580	955953
0.21	1.0	1.0	30	29609	952581	955954
0.22	1.0	1.0	30	29610	952582	955955
0.23	1.0	1.0	30	29611	950087	955956
0.23 >	2.2	1.0	30	62513	952583	962712
0.24	1.0	1.0	30	25957	952496	955957
0.24 >	2.2	1.0	30	62514	952584	962713
0.25	1.0	1.0	30	28712	950088	955958
0.25 >	2.2	1.0	30	38282	952585	962714
0.26	1.0	1.0	30	38665	952587	955959
0.27	1.0	1.0	30	37358	952588	955960
0.28	1.0	1.0	30	37258	952589	955961
0.29	1.0	1.0	30	30568	952590	955962
0.30	1.5	1.0	30	28713	952591	955963
0.31	1.5	1.0	30	35421	952592	955964
0.32	1.5	1.0	30	38662	952593	955965
0.32 >	3.0	1.0	30	62515	952594	962715
0.33	1.5	1.0	30	38663	952595	955966
0.33 >	3.0	1.0	30	62516	952596	962716
0.34	1.5	1.0	30	29570	952597	955967
0.34 >	3.0	1.0	30	62517	952598	962717
0.35	1.5	1.0	30	31747	952599	955968
0.36	1.5	1.0	30	39018	952600	955970
0.37	1.5	1.0	30	40633	952601	955971
0.38	1.5	1.0	30	40634	952602	955972
0.39	1.5	1.0	30	40635	952603	955973

D _{1 0/-0.004}	L ₁	D _{h5}	L	CARBIDE	DICUT	DLC*
0.40	2.0	1.0	30	25992	63706	955974
0.41	2.0	1.0	30	29571	952604	955975
0.42	2.0	1.0	30	38419	952605	955976
0.43	2.0	1.0	30	35804	950186	955977
0.44	2.0	1.0	30	40636	952606	955978
0.45	3.6	1.0	30	45726	59562	955979
0.46	3.6	1.0	30	45727	952607	955980
0.47	3.6	1.0	30	45728	952497	955981
0.48	3.6	1.0	30	45729	952608	955982
0.49	4.0	1.0	30	45730	952609	955983
0.50	4.0	1.0	30	25994	55141	955984
0.51	4.0	1.0	30	45731	55142	955985
0.52	4.0	1.0	30	45732	55143	955986
0.53	4.0	1.0	30	45733	55144	955987
0.54	4.5	1.0	30	40640	55145	955988
0.55	4.5	1.0	30	28375	55146	955989
0.56	4.5	1.0	30	41925	55147	955990
0.57	4.5	1.0	30	40641	55148	955991
0.58	4.5	1.0	30	40642	55149	955993
0.59	4.5	1.0	30	40643	55150	955997
0.60	4.5	1.0	30	29643	55151	956048
0.61	5.0	1.0	30	37639	55152	956049
0.62	5.0	1.0	30	25270	55153	956050
0.63	5.0	1.0	30	40644	55154	956051
0.64	5.0	1.0	30	40645	55155	956052
0.65	5.0	1.0	30	41679	55156	956053
0.66	5.0	1.0	30	41886	55157	956054
0.67	5.0	1.0	30	42286	55158	956055
0.68	5.6	1.0	30	42287	55159	956056
0.69	5.6	1.0	30	41788	55160	956057
0.70	5.6	1.0	30	32099	55161	956058
0.71	5.6	1.0	30	42288	55162	956059
0.72	5.6	1.0	30	40983	55163	956060
0.73	5.6	1.0	30	35422	55164	956061
0.74	5.6	1.0	30	36102	55165	956062
0.75	5.6	1.0	30	35423	55166	956063
0.76	6.3	1.0	30	18579	55167	956064
0.77	6.3	1.0	30	42706	55168	956065
0.78	6.3	1.0	30	41887	55169	956066
0.79	6.3	1.0	30	36640	55170	956068

* for non-ferrous material





$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE	DICUT	DLC*
0.80	6.3	1.5	30	402	55171	956069
0.81	6.3	1.5	30	36144	55172	956070
0.82	6.3	1.5	30	34510	55173	956071
0.83	6.3	1.5	30	42290	55174	956072
0.84	6.3	1.5	30	27400	55175	956074
0.85	6.3	1.5	30	35551	55176	956075
0.86	7.1	1.5	30	29254	55177	956076
0.87	7.1	1.5	30	42291	55178	956077
0.88	7.1	1.5	30	19601	55179	956080
0.89	7.1	1.5	30	41789	55180	956081
0.90	7.1	1.5	30	32100	55181	956082
0.91	7.1	1.5	30	42292	55182	956083
0.92	7.1	1.5	30	36859	55183	956084
0.93	7.1	1.5	30	42293	55184	956085
0.94	7.1	1.5	30	42167	55185	956086
0.95	7.1	1.5	30	35183	55186	956087
0.96	8.0	1.5	30	37741	55188	956088
0.97	8.0	1.5	30	29255	55189	956089
0.98	8.0	1.5	30	42294	55190	956091
0.99	8.0	1.5	30	41790	55191	956092
1.00	9.0	1.5	30	406	55192	956093
1.01	9.0	1.5	30	34996	55193	956094
1.02	9.0	1.5	30	42876	55195	956095
1.03	9.0	1.5	30	34778	55196	956096
1.04	9.0	1.5	30	43984	55200	956097
1.05	9.0	1.5	30	4774	55201	956098
1.06	9.0	1.5	30	43985	55202	956099
1.07	9.0	1.5	30	42228	55203	956100
1.08	9.0	1.5	30	43198	55204	956101
1.09	9.0	1.5	30	28779	55205	956102
1.10	9.0	1.5	30	407	55206	956103
1.11	9.0	1.5	30	43986	55207	956104
1.12	9.0	1.5	30	43347	55208	956105
1.13	9.0	1.5	30	42853	55209	956106
1.14	9.0	1.5	30	43987	55210	956107
1.15	9.0	1.5	30	3530	55211	956108
1.16	9.0	1.5	30	22712	55212	956109
1.17	9.0	1.5	30	4775	55213	956110
1.18	9.0	1.5	30	42230	55214	956111
1.19	10.0	1.5	30	41791	55215	956112

$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE	DICUT	DLC*
1.20	10.0	1.5	30	408	55216	956113
1.21	10.0	1.5	30	42168	55217	956114
1.22	10.0	1.5	30	25751	55218	956115
1.23	10.0	1.5	30	23285	55219	956116
1.24	10.0	1.5	30	45524	55220	956118
1.25	10.0	1.5	30	3531	55221	956119
1.26	10.0	1.5	30	42005	55222	956120
1.27	10.0	1.5	30	3761	55223	956121
1.28	10.0	1.5	30	42169	55224	956122
1.29	10.0	1.5	30	37694	55225	956124
1.30	10.0	1.5	30	409	55226	956125
1.31	10.0	1.5	30	45525	55227	956128
1.32	10.0	1.5	30	29712	55228	956130
1.33	11.2	1.5	30	34695	55229	956131
1.34	11.2	1.5	30	45526	55230	956132
1.35	11.2	1.5	30	3532	55231	956133
1.36	11.2	1.5	30	45527	55232	956134
1.37	11.2	1.5	30	35556	55233	956135
1.38	11.2	1.5	30	45055	55234	956136
1.39	11.2	1.5	30	45297	55235	956137
1.40	11.2	1.5	30	410	55236	956138
1.41	11.2	1.5	30	33499	55237	956139
1.42	11.2	1.5	30	43348	55238	956140
1.43	11.2	1.5	30	45056	55239	956141
1.44	11.2	1.5	30	45528	55240	956142
1.45	11.2	1.5	30	36006	55241	956143
1.46	11.2	1.5	30	45529	55242	956144
1.47	11.2	1.5	30	45530	55243	956145
1.48	11.2	1.5	30	45057	55244	956146
1.49	11.2	1.5	30	35681	55245	956147
1.50	11.2	2.0	38	411	55246	956148
1.51	12.0	2.0	38	27735	55247	956149
1.52	12.0	2.0	38	27736	55248	956150
1.53	12.0	2.0	38	23286	55249	956151
1.54	12.0	2.0	38	45909	55250	956152
1.55	12.0	2.0	38	25686	55251	956153
1.56	12.0	2.0	38	58194	58196	956154
1.57	12.0	2.0	38	55541	58193	956155
1.58	12.0	2.0	38	39953	55252	956156
1.59	12.0	2.0	38	34993	55253	956157

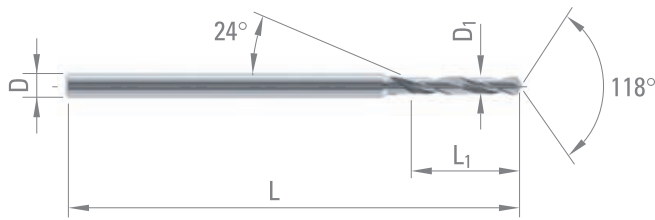
* for non-ferrous material



P. 63



P. 72



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic			

$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE	DICUT	DLC*
1.60	12.0	2.0	38	412	55254	956158
1.61	12.0	2.0	38	40288	55255	956159
1.62	12.0	2.0	38	46968	55256	956160
1.63	12.0	2.0	38	45605	55257	956161
1.64	12.0	2.0	38	45910	55258	956162
1.65	12.0	2.0	38	32283	55259	956163
1.66	12.0	2.0	38	47198	55260	956164
1.67	12.0	2.0	38	50763	55261	956165
1.68	12.0	2.0	38	31684	55262	956166
1.69	12.0	2.0	38	45339	55263	956167
1.70	12.0	2.0	38	413	55264	956169
1.71	12.0	2.0	38	45911	55265	956175
1.72	12.0	2.0	38	27925	55266	956177
1.73	12.0	2.0	38	42609	55267	956178
1.74	12.0	2.0	38	45912	55268	956179
1.75	12.0	2.0	38	45734	55269	956180
1.76	12.0	2.0	38	45913	55270	956181
1.77	12.0	2.0	38	38757	61408	956182
1.78	12.0	2.0	38	46957	55271	956183
1.79	12.0	2.0	38	45340	55272	956185
1.80	12.0	2.0	38	31497	55273	956186
1.81	12.0	2.0	38	45914	55274	956187
1.82	12.0	2.0	38	46969	55275	956188
1.83	12.0	2.0	38	58717	61407	956189
1.84	12.0	2.0	38	46970	55276	956190
1.85	12.0	2.0	38	36793	55277	956191
1.86	12.0	2.0	38	50761	55278	956192
1.87	12.0	2.0	38	36487	55279	956195
1.88	12.0	2.0	38	45801	55280	956196
1.89	12.0	2.0	38	45341	55281	956197
1.90	12.0	2.0	38	415	55282	956198
1.91	12.0	2.0	38	45915	55283	956200
1.92	12.0	2.0	38	45916	55284	956201
1.93	12.0	2.0	38	44853	55285	956202
1.94	12.0	2.0	38	45917	55286	956203
1.95	12.0	2.0	38	32284	55287	956204
1.96	12.0	2.0	38	60692	61404	956205
1.97	12.0	2.0	38	50332	61401	956206
1.98	12.0	2.0	38	46959	55288	956207
1.99	12.0	2.0	38	45342	55289	956208

$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE	DICUT	DLC*
2.00	12.0	2.5	43	416	55290	956209
2.01	12.0	2.5	43	45498	55291	956210
2.02	12.0	2.5	43	48962	61399	956211
2.03	12.0	2.5	43	50685	55292	956212
2.04	12.0	2.5	43	60958	60962	956213
2.05	12.0	2.5	43	40813	55293	956214
2.10	12.0	2.5	43	42295	55294	956215
2.15	12.0	2.5	43	40814	55295	956216
2.20	12.0	2.5	43	418	55296	956217
2.25	12.0	2.5	43	40815	55297	956218
2.30	12.0	2.5	43	419	55298	956219
2.34	12.0	2.5	43	955569	955572	956228
2.35	12.0	2.5	43	6341	55299	956220
2.40	12.0	2.5	43	420	55300	956221
2.45	12.0	2.5	43	40816	55301	956222

* for non-ferrous material

LEFT HAND TWIST DRILLS REINFORCED SHANK

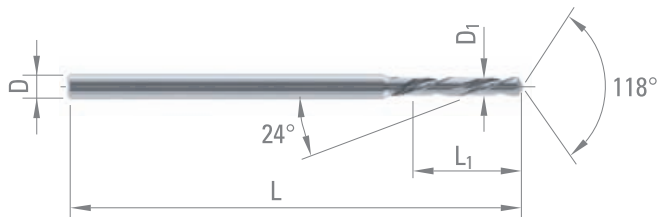
Z = 2



P. 63



P. 72



Steel + Pb	Low alloy steel	High alloy steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic			

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
0.10	0.7	1.0	30	36916	
0.11	0.7	1.0	30	36917	
0.12	0.7	1.0	30	36918	
0.13	0.7	1.0	30	36919	
0.14	0.7	1.0	30	36920	
0.15	1.0	1.0	30	36921	
0.16	1.0	1.0	30	36922	
0.17	1.0	1.0	30	38654	
0.18	1.0	1.0	30	36924	
0.19	1.0	1.0	30	36925	
0.20	1.0	1.0	30	36926	952652
0.21	1.0	1.0	30	36927	952653
0.22	1.0	1.0	30	36928	952654
0.23	1.0	1.0	30	36929	952655
0.24	1.0	1.0	30	36930	952656
0.25	1.0	1.0	30	36931	952657
0.26	1.0	1.0	30	36932	952658
0.27	1.0	1.0	30	36933	952659
0.28	1.0	1.0	30	36934	952660
0.29	1.0	1.0	30	36935	952661
0.30	1.5	1.0	30	36936	952662
0.31	1.5	1.0	30	36937	952663
0.32	1.5	1.0	30	36938	952664
0.33	1.5	1.0	30	36939	952665
0.34	1.5	1.0	30	36940	952666
0.35	1.5	1.0	30	36941	952667
0.36	1.5	1.0	30	36942	952669
0.37	1.5	1.0	30	36943	952672
0.38	1.5	1.0	30	36944	952673
0.39	1.5	1.0	30	36945	952674
0.40	2.0	1.0	30	15026	952676
0.41	2.0	1.0	30	35708	952677
0.42	2.0	1.0	30	36946	952678
0.43	2.0	1.0	30	36947	952679
0.44	2.0	1.0	30	36948	952680
0.45	3.6	1.0	30	38054	952681
0.46	3.6	1.0	30	38057	952682
0.47	3.6	1.0	30	38059	952683
0.48	3.6	1.0	30	38062	952684
0.49	4.0	1.0	30	38063	952685

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
0.50	4.0	1.0	30	38065	55302
0.51	4.0	1.0	30	38066	55303
0.52	4.0	1.0	30	38068	55304
0.53	4.0	1.0	30	38069	55305
0.54	4.5	1.0	30	38245	55306
0.55	4.5	1.0	30	38246	55307
0.56	4.5	1.0	30	38190	55308
0.57	4.5	1.0	30	38187	55309
0.58	4.5	1.0	30	38103	55310
0.59	4.5	1.0	30	38070	55311
0.60	4.5	1.0	30	38188	55312
0.61	5.0	1.0	30	38247	55313
0.62	5.0	1.0	30	38364	55314
0.63	5.0	1.0	30	38072	55315
0.64	5.0	1.0	30	38073	55316
0.65	5.0	1.0	30	38075	55317
0.66	5.0	1.0	30	36966	55318
0.67	5.0	1.0	30	36838	55319
0.68	5.6	1.0	30	21766	55320
0.69	5.6	1.0	30	4021	55321
0.70	5.6	1.0	30	450	55322
0.71	5.6	1.0	30	38078	55323
0.72	5.6	1.0	30	38182	55324
0.73	5.6	1.0	30	22294	55325
0.74	5.6	1.0	30	38080	55326
0.75	5.6	1.0	30	36975	55327
0.76	6.3	1.0	30	36976	55328
0.77	6.3	1.0	30	40866	55329
0.78	6.3	1.0	30	36978	55330
0.79	6.3	1.0	30	38082	55331
0.80	6.3	1.5	30	38317	55332
0.81	6.3	1.5	30	36981	55333
0.82	6.3	1.5	30	36982	55334
0.83	6.3	1.5	30	36983	55335
0.84	6.3	1.5	30	38292	55336
0.85	6.3	1.5	30	38293	55337
0.86	7.1	1.5	30	38294	55338
0.87	7.1	1.5	30	38251	55339
0.88	7.1	1.5	30	36988	55340
0.89	7.1	1.5	30	36989	55341





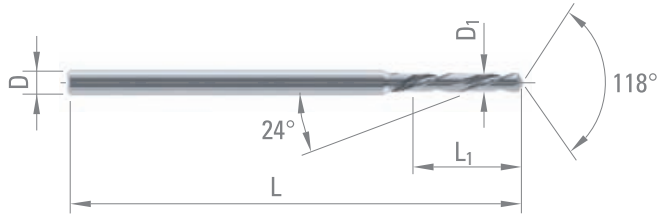
P. 63



P. 72



DIN
1899



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic			

D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE	DICUT
0.90	7.1	1.5	30	24182	55342
0.91	7.1	1.5	30	38295	55343
0.92	7.1	1.5	30	36360	55344
0.93	7.1	1.5	30	35871	55345
0.94	7.1	1.5	30	38086	55346
0.95	7.1	1.5	30	455	55347
0.96	8.0	1.5	30	38296	55348
0.97	8.0	1.5	30	36996	55349
0.98	8.0	1.5	30	36997	55350
0.99	8.0	1.5	30	36998	55351
1.00	9.0	1.5	30	36999	55352
1.01	9.0	1.5	30	37000	55353
1.02	9.0	1.5	30	37001	55354
1.03	9.0	1.5	30	37002	55355
1.04	9.0	1.5	30	37003	55356
1.05	9.0	1.5	30	37004	55357
1.06	9.0	1.5	30	37005	55358
1.07	9.0	1.5	30	37006	55359
1.08	9.0	1.5	30	37007	55360
1.09	9.0	1.5	30	37008	55361
1.10	9.0	1.5	30	457	55362
1.11	9.0	1.5	30	37009	55363
1.12	9.0	1.5	30	37010	55364
1.13	9.0	1.5	30	14573	55365
1.14	9.0	1.5	30	37011	55366
1.15	9.0	1.5	30	19337	55367
1.16	9.0	1.5	30	37012	55368
1.17	9.0	1.5	30	37013	55369
1.18	9.0	1.5	30	37014	55370
1.19	10.0	1.5	30	37015	55371
1.20	10.0	1.5	30	37016	55372
1.21	10.0	1.5	30	26225	55373
1.22	10.0	1.5	30	37017	55374
1.23	10.0	1.5	30	45717	55375
1.24	10.0	1.5	30	37019	55376
1.25	10.0	1.5	30	26763	55377
1.26	10.0	1.5	30	27862	55378
1.27	10.0	1.5	30	6197	55379
1.28	10.0	1.5	30	25663	55380
1.29	10.0	1.5	30	27863	55381

D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE	DICUT
1.30	10.0	1.5	30	459	55382
1.31	10.0	1.5	30	37020	55383
1.32	10.0	1.5	30	37021	55384
1.33	11.2	1.5	30	37022	55385
1.34	11.2	1.5	30	45718	55386
1.35	11.2	1.5	30	37024	55387
1.36	11.2	1.5	30	37025	55388
1.37	11.2	1.5	30	37026	55389
1.38	11.2	1.5	30	37027	55390
1.39	11.2	1.5	30	37028	55391
1.40	11.2	1.5	30	460	55392
1.41	11.2	1.5	30	26226	55393
1.42	11.2	1.5	30	37029	55394
1.43	11.2	1.5	30	37030	55395
1.44	11.2	1.5	30	37031	55396
1.45	11.2	1.5	30	26459	55397
1.46	11.2	1.5	30	37032	55398
1.47	11.2	1.5	30	37033	55399
1.48	11.2	1.5	30	37034	55400
1.49	11.2	1.5	30	37035	55401
1.50	11.2	2.0	38	461	55402
1.51	12.0	2.0	38	38089	55403
1.52	12.0	2.0	38	38962	55404
1.53	12.0	2.0	38	38938	55405
1.54	12.0	2.0	38	45531	55406
1.55	12.0	2.0	38	38090	55407
1.56	12.0	2.0	38	45532	55408
1.57	12.0	2.0	38	45351	55409
1.58	12.0	2.0	38	38252	55410
1.59	12.0	2.0	38	45533	55411
1.60	12.0	2.0	38	37234	55412
1.61	12.0	2.0	38	40655	55413
1.62	12.0	2.0	38	29286	55414
1.63	12.0	2.0	38	40910	55415
1.64	12.0	2.0	38	41297	55416
1.65	12.0	2.0	38	37235	55417
1.66	12.0	2.0	38	45534	55418
1.67	12.0	2.0	38	44015	55419
1.68	12.0	2.0	38	38092	55420
1.69	12.0	2.0	38	45535	55421





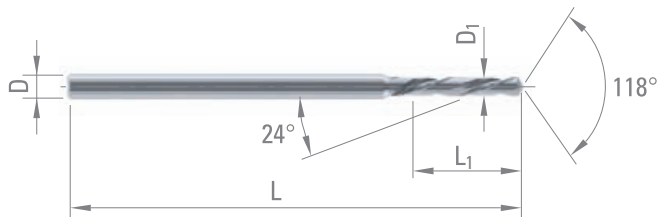
P. 63



P. 72



DIN
1899



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic			

D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE	DICUT
1.70	12.0	2.0	38	463	55422
1.71	12.0	2.0	38	45536	55423
1.72	12.0	2.0	38	45075	55424
1.73	12.0	2.0	38	43415	55425
1.74	12.0	2.0	38	45537	55426
1.75	12.0	2.0	38	38093	55427
1.76	12.0	2.0	38	58052	58054
1.77	12.0	2.0	38	42174	55428
1.78	12.0	2.0	38	57881	57888
1.79	12.0	2.0	38	58197	58199
1.80	12.0	2.0	38	464	55429
1.81	12.0	2.0	38	58636	61392
1.82	12.0	2.0	38	26183	55430
1.83	12.0	2.0	38	61388	61390
1.84	12.0	2.0	38	50611	55431
1.85	12.0	2.0	38	38094	55432
1.86	12.0	2.0	38	61385	61387
1.87	12.0	2.0	38	42119	55433
1.88	12.0	2.0	38	61382	61384
1.89	12.0	2.0	38	50657	55434
1.90	12.0	2.0	38	41217	55435
1.91	12.0	2.0	38	61150	61367
1.92	12.0	2.0	38	48963	57890
1.93	12.0	2.0	38	50158	58056
1.94	12.0	2.0	38	60780	60782
1.95	12.0	2.0	38	45719	55436
1.96	12.0	2.0	38	61368	61370
1.97	12.0	2.0	38	61372	61371
1.98	12.0	2.0	38	44254	57892
1.99	12.0	2.0	38	58741	60784
2.00	12.0	2.5	43	466	55437
2.01	12.0	2.5	43	38096	55438
2.02	12.0	2.5	43	47857	55439
2.03	12.0	2.5	43	61256	61375
2.04	12.0	2.5	43	61376	61378
2.05	12.0	2.5	43	61379	61381
2.10	12.0	2.5	43	467	55440
2.12	12.0	2.5	43	47858	55441
2.15	12.0	2.5	43	38097	55442
2.45	12.0	2.5	43	38098	55443



TWIST DRILLS
REINFORCED SHANK

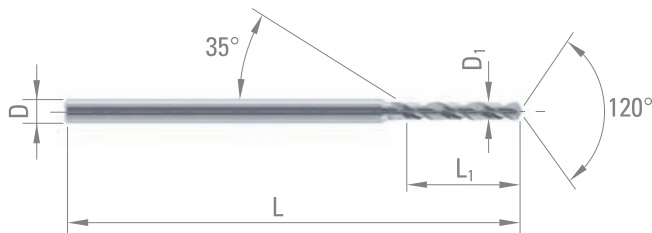
Z = 2



P. 63



P. 74

DIN
1899

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
0.50	4.0	1.0	30	21228	57565
0.55	4.5	1.0	30	39029	57566
0.60	4.5	1.0	30	176	57567
0.65	5.0	1.0	30	39030	57568
0.70	5.6	1.0	30	178	55679
0.75	5.6	1.0	30	39031	55681
0.80	6.3	1.5	30	180	55683
0.81	6.3	1.5	30	957990	957991
0.82	6.3	1.5	30	957040	957994
0.83	6.3	1.5	30	45775	957802
0.84	6.3	1.5	30	45776	957804
0.85	6.3	1.5	30	181	55685
0.86	7.1	1.5	30	957995	957996
0.87	7.1	1.5	30	957998	957999
0.88	7.1	1.5	30	958001	958002
0.89	7.1	1.5	30	56626	957806
0.90	7.1	1.5	30	182	55687
0.91	7.1	1.5	30	958006	958007
0.92	7.1	1.5	30	957949	958004
0.93	7.1	1.5	30	957042	957808
0.94	7.1	1.5	30	957043	957810
0.95	7.1	1.5	30	39032	55689
0.96	9.0	1.5	30	49329	957812
0.97	9.0	1.5	30	957045	957829
0.98	9.0	1.5	30	43498	957831
0.99	9.0	1.5	30	61003	957834
1.00	9.0	1.5	30	184	55691
1.01	9.0	1.5	30	48709	957865
1.02	9.0	1.5	30	58334	957867
1.03	9.0	1.5	30	958010	958011
1.04	9.0	1.5	30	958013	958015
1.05	9.0	1.5	30	39033	55757
1.06	9.0	1.5	30	958017	958018
1.07	9.0	1.5	30	58335	957879
1.08	9.0	1.5	30	57722	957884
1.09	9.0	1.5	30	958020	958021
1.10	9.0	1.5	30	39034	55759
1.11	9.0	1.5	30	45752	957887
1.12	9.0	1.5	30	62921	954726

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
1.13	9.0	1.5	30	957889	954727
1.14	9.0	1.5	30	958023	958024
1.15	9.0	1.5	30	39035	55761
1.16	10.0	1.5	30	50299	957893
1.17	10.0	1.5	30	52449	957895
1.18	10.0	1.5	30	58333	957897
1.19	10.0	1.5	30	958026	958027
1.20	10.0	1.5	30	39036	55762
1.21	10.0	1.5	30	50233	957899
1.22	10.0	1.5	30	59610	957901
1.23	10.0	1.5	30	46797	957902
1.24	10.0	1.5	30	958029	958030
1.25	10.0	1.5	30	39037	55764
1.26	10.0	1.5	30	65858	50057
1.27	10.0	1.5	30	50558	957912
1.28	10.0	1.5	30	958032	958033
1.29	10.0	1.5	30	958035	958037
1.30	10.0	1.5	30	187	55766
1.31	11.2	1.5	30	958199	958200
1.32	11.2	1.5	30	50068	957914
1.33	11.2	1.5	30	44387	957916
1.34	11.2	1.5	30	53518	958203
1.35	11.2	1.5	30	39038	55768
1.36	11.2	1.5	30	58147	957921
1.37	11.2	1.5	30	958205	958206
1.38	11.2	1.5	30	958208	958209
1.39	11.2	1.5	30	958211	958212
1.40	11.2	1.5	30	188	55777
1.45	11.2	1.5	30	39039	55779
1.50	11.2	2.0	38	39040	55780
1.55	12.0	2.0	38	52209	55782
1.60	12.0	2.0	38	52210	55786
1.65	12.0	2.0	38	52211	54986
1.70	12.0	2.0	38	191	55789
1.75	12.0	2.0	38	52212	55791
1.80	12.0	2.0	38	49082	55793
1.85	12.0	2.0	38	52213	55795
1.90	12.0	2.0	38	193	55797
1.95	12.0	2.0	38	52214	55799



TWIST DRILLS
REINFORCED SHANK

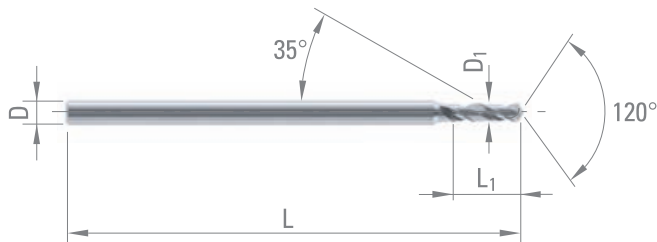
Z = 2



P. 63



P. 74



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
0.20	1.5	1.5	30	950342	950234
0.21	1.5	1.5	30	950235	950248
0.22	1.5	1.5	30	950236	950249
0.23	1.5	1.5	30	950240	950250
0.24	1.5	1.5	30	950241	950251
0.25	2.0	1.5	30	950253	950278
0.26	2.0	1.5	30	950254	950279
0.27	2.0	1.5	30	950255	950280
0.28	2.0	1.5	30	950256	950281
0.29	2.0	1.5	30	950084	950282
0.30	2.0	1.5	30	950276	950283
0.31	2.5	1.5	30	950284	950299
0.32	2.5	1.5	30	950285	950301
0.33	2.5	1.5	30	950286	950302
0.34	2.5	1.5	30	950287	950303
0.35	2.5	1.5	30	950288	950304
0.36	2.5	1.5	30	950085	950305
0.37	2.5	1.5	30	950289	950306
0.38	2.5	1.5	30	950290	950307
0.39	3.0	1.5	30	950308	950330
0.40	3.0	1.5	30	950309	950331
0.41	3.0	1.5	30	950310	950332
0.42	3.0	1.5	30	950311	950333
0.43	3.0	1.5	30	950312	950334
0.44	3.0	1.5	30	950313	950335
0.45	3.0	1.5	30	950314	950336
0.46	3.0	1.5	30	950315	950337
0.47	3.0	1.5	30	950316	950338
0.48	3.0	1.5	30	950317	950339
0.49	3.0	1.5	30	950318	950340
0.50	4.0	1.5	30	60922	61017
0.51	4.0	1.5	30	60923	61018
0.52	4.0	1.5	30	60924	61020
0.53	4.0	1.5	30	60925	61021
0.54	4.0	1.5	30	60926	61022
0.55	4.0	1.5	30	60927	61023
0.56	4.0	1.5	30	60928	61024
0.57	4.0	1.5	30	60929	61025
0.58	4.0	1.5	30	60930	61026
0.59	4.0	1.5	30	60931	61027

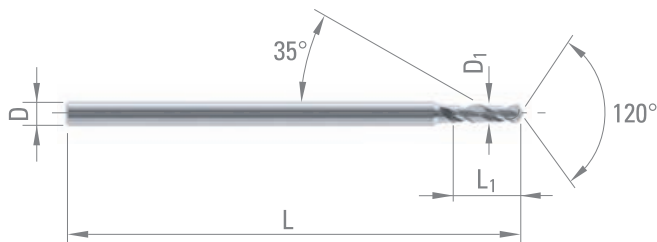
D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
0.60	4.5	1.5	30	60932	61028
0.61	4.5	1.5	30	60933	61029
0.62	4.5	1.5	30	60934	61030
0.63	4.5	1.5	30	60935	61031
0.64	4.5	1.5	30	60936	61032
0.65	4.5	1.5	30	60937	61033
0.66	4.5	1.5	30	60938	61034
0.67	4.5	1.5	30	60939	61035
0.68	4.5	1.5	30	56623	61036
0.69	4.5	1.5	30	60940	61037
0.70	4.5	1.5	30	56364	57571
0.71	4.5	1.5	30	56365	57573
0.72	4.5	1.5	30	56366	57575
0.73	4.5	1.5	30	56367	57577
0.74	4.5	1.5	30	56368	57587
0.75	4.5	1.5	30	56369	57589
0.76	4.5	1.5	30	56370	57579
0.77	4.5	1.5	30	56371	57581
0.78	4.5	1.5	30	56372	57583
0.79	4.5	1.5	30	56373	57585
0.80	5.0	1.5	30	52140	55801
0.81	5.0	1.5	30	52141	55803
0.82	5.0	1.5	30	52142	55805
0.83	5.0	1.5	30	52143	55807
0.84	5.0	1.5	30	52144	55809
0.85	5.0	1.5	30	52145	55811
0.86	5.0	1.5	30	52146	55813
0.87	5.0	1.5	30	52147	55815
0.88	5.0	1.5	30	52148	55817
0.89	5.0	1.5	30	52149	55819
0.90	5.0	1.5	30	52150	55821
0.91	5.0	1.5	30	52151	55823
0.92	5.0	1.5	30	52152	55825
0.93	5.0	1.5	30	52153	55827
0.94	5.0	1.5	30	52154	55829
0.95	5.0	1.5	30	52155	55831
0.96	5.0	1.5	30	52156	55833
0.97	5.0	1.5	30	52157	55835
0.98	5.0	1.5	30	52158	55837
0.99	5.0	1.5	30	52159	55839



P. 63



P. 74



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE	DICUT
1.00	5.0	1.5	30	52160	55841
1.01	5.0	1.5	30	52161	55842
1.02	5.0	1.5	30	52162	55844
1.03	5.0	1.5	30	52163	55848
1.04	5.0	1.5	30	52164	55850
1.05	5.0	1.5	30	52165	55852
1.06	5.0	1.5	30	52166	55854
1.07	5.0	1.5	30	52167	55856
1.08	5.0	1.5	30	52168	55858
1.09	5.0	1.5	30	52169	55860
1.10	5.0	1.5	30	52170	55861
1.11	5.0	1.5	30	52171	55863
1.12	5.0	1.5	30	52172	55865
1.13	5.0	1.5	30	52173	55871
1.14	5.0	1.5	30	52174	55872
1.15	5.0	1.5	30	52175	55873
1.16	5.0	1.5	30	52176	55875
1.17	5.0	1.5	30	52177	55877
1.18	5.0	1.5	30	52178	55878
1.19	5.0	1.5	30	52179	55893
1.20	6.0	1.5	30	52180	55880
1.21	6.0	1.5	30	52181	55882
1.22	6.0	1.5	30	52182	55884
1.23	6.0	1.5	30	52183	55886
1.24	6.0	1.5	30	52184	55896
1.25	6.0	1.5	30	52185	55898
1.26	6.0	1.5	30	52186	55900
1.27	6.0	1.5	30	52187	55902
1.28	6.0	1.5	30	52188	55904
1.29	6.0	1.5	30	52189	55906
1.30	6.0	1.5	30	52190	55908
1.31	6.0	1.5	30	52191	55910
1.32	6.0	1.5	30	52192	55912
1.33	6.0	1.5	30	52193	55914
1.34	6.0	1.5	30	52194	55916
1.35	6.0	1.5	30	52195	55918
1.36	6.0	1.5	30	52196	55920
1.37	6.0	1.5	30	52197	55922
1.38	6.0	1.5	30	52198	55924
1.39	6.0	1.5	30	52199	55926

D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE	DICUT
1.40	6.0	1.5	30	52200	55929
1.41	6.0	1.5	30	52201	55932
1.42	6.0	1.5	30	52202	55934
1.43	6.0	1.5	30	52203	55936
1.44	6.0	1.5	30	52204	55938
1.45	6.0	1.5	30	52205	55940
1.46	6.0	1.5	30	52206	55942
1.47	6.0	1.5	30	52207	55944
1.48	6.0	1.5	30	52208	55946
1.49	6.0	1.5	30	52216	55948
1.50	7.0	2.0	38	56431	57591
1.51	7.0	2.0	38	56374	57593
1.52	7.0	2.0	38	56375	57595
1.53	7.0	2.0	38	56376	57597
1.54	7.0	2.0	38	56377	57599
1.55	7.0	2.0	38	56378	57601
1.56	7.0	2.0	38	56379	57603
1.57	7.0	2.0	38	56380	57605
1.58	7.0	2.0	38	56381	57607
1.59	7.0	2.0	38	56382	57609
1.60	7.0	2.0	38	56383	57611
1.61	7.0	2.0	38	56384	57613
1.62	7.0	2.0	38	56385	57615
1.63	7.0	2.0	38	56386	57617
1.64	7.0	2.0	38	56387	57619
1.65	7.0	2.0	38	56388	57621
1.66	7.0	2.0	38	56389	57623
1.67	7.0	2.0	38	56390	57625
1.68	7.0	2.0	38	56391	57627
1.69	7.0	2.0	38	56392	57629
1.70	7.0	2.0	38	56393	57631
1.71	7.0	2.0	38	56394	57633
1.72	7.0	2.0	38	56395	57635
1.73	7.0	2.0	38	56396	57637
1.74	7.0	2.0	38	56397	57639
1.75	7.0	2.0	38	56398	57641
1.76	8.0	2.0	38	56399	57643
1.77	8.0	2.0	38	56400	57645
1.78	8.0	2.0	38	56401	57647
1.79	8.0	2.0	38	56402	57649

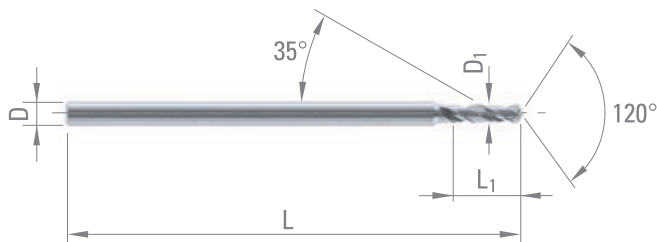




P. 63



P. 74



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
1.80	8.0	2.0	38	56403	57651
1.81	8.0	2.0	38	56404	57653
1.82	8.0	2.0	38	56405	57655
1.83	8.0	2.0	38	56406	57657
1.84	8.0	2.0	38	56407	57659
1.85	8.0	2.0	38	56408	57661
1.86	8.0	2.0	38	56409	57663
1.87	8.0	2.0	38	56410	57665
1.88	8.0	2.0	38	56411	57667
1.89	8.0	2.0	38	56412	57669
1.90	8.0	2.0	38	56413	57671
1.91	8.0	2.0	38	56414	57673
1.92	8.0	2.0	38	56415	57675
1.93	8.0	2.0	38	56416	57677
1.94	8.0	2.0	38	56417	57679
1.95	8.0	2.0	38	56418	57681
1.96	8.0	2.0	38	56419	57683
1.97	8.0	2.0	38	56420	57685
1.98	8.0	2.0	38	56421	57687
1.99	8.0	2.0	38	56422	57689
2.00	9.0	2.5	43	951030	951165
2.01	9.0	2.5	43	951034	951166
2.02	9.0	2.5	43	951035	951167
2.03	9.0	2.5	43	951036	951168
2.04	9.0	2.5	43	951039	951169
2.05	9.0	2.5	43	59122	951170
2.06	9.0	2.5	43	951040	951171
2.07	9.0	2.5	43	951041	951172
2.08	9.0	2.5	43	951042	951173
2.09	9.0	2.5	43	951043	951214
2.10	9.0	2.5	43	951058	951215
2.11	9.0	2.5	43	951059	951216
2.12	9.0	2.5	43	951060	951217
2.13	9.0	2.5	43	951061	951218
2.14	9.0	2.5	43	951062	951219
2.15	9.0	2.5	43	951063	951220
2.16	9.0	2.5	43	951064	951621
2.17	9.0	2.5	43	951065	951622
2.18	9.0	2.5	43	951066	951624
2.19	9.0	2.5	43	951067	951625

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
2.20	9.0	2.5	43	951068	951626
2.21	9.0	2.5	43	951069	951627
2.22	9.0	2.5	43	951070	951628
2.23	9.0	2.5	43	951071	951629
2.24	9.0	2.5	43	951072	951630
2.25	9.0	2.5	43	951073	951631
2.26	9.0	2.5	43	951074	951632
2.27	9.0	2.5	43	951075	951633
2.28	9.0	2.5	43	951076	951634
2.29	9.0	2.5	43	951077	951636
2.30	9.0	2.5	43	951078	951637
2.31	9.0	2.5	43	951079	951638
2.32	9.0	2.5	43	951080	951639
2.33	9.0	2.5	43	951081	951640
2.34	9.0	2.5	43	951082	951641
2.35	9.0	2.5	43	951083	951642
2.36	9.0	2.5	43	951084	951643
2.37	9.0	2.5	43	951085	951644
2.38	9.0	2.5	43	951086	951645
2.39	9.0	2.5	43	951087	951646
2.40	9.0	2.5	43	951089	951647
2.41	9.0	2.5	43	951090	951648
2.42	9.0	2.5	43	951091	951649
2.43	9.0	2.5	43	951092	951650
2.44	9.0	2.5	43	951093	951651
2.45	9.0	2.5	43	951094	951652
2.46	9.0	2.5	43	951095	951653
2.47	9.0	2.5	43	951096	951654
2.48	9.0	2.5	43	951097	951655
2.49	9.0	2.5	43	951098	951656



TWIST DRILLS
REINFORCED SHANK
0/+4 μ m TOLERANCE

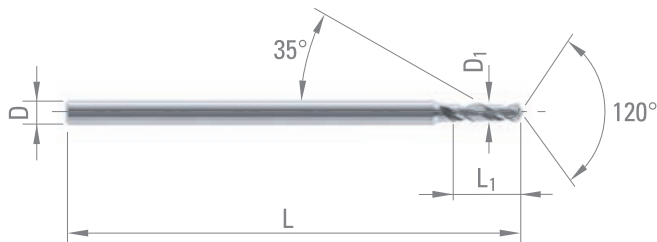
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P. 63



P. 74



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D ₁ 0/+0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
0.20	1.5	1.5	30	990662	990642
0.21	1.5	1.5	30	990643	990676
0.22	1.5	1.5	30	990644	990677
0.23	1.5	1.5	30	990674	990678
0.24	1.5	1.5	30	990675	990679
0.25	2.0	1.5	30	990680	990659
0.26	2.0	1.5	30	990681	990660
0.27	2.0	1.5	30	990682	990663
0.28	2.0	1.5	30	990683	990664
0.29	2.0	1.5	30	990631	990665
0.30	2.0	1.5	30	990658	990666
0.31	2.5	1.5	30	990667	990645
0.32	2.5	1.5	30	990668	990646
0.33	2.5	1.5	30	990669	990647
0.34	2.5	1.5	30	990670	990648
0.35	2.5	1.5	30	990671	990649
0.36	2.5	1.5	30	990632	990650
0.37	2.5	1.5	30	990672	990651
0.38	2.5	1.5	30	990673	990652
0.39	3.0	1.5	30	990653	990633
0.40	3.0	1.5	30	990654	990634
0.41	3.0	1.5	30	990655	990635
0.42	3.0	1.5	30	990656	990636
0.43	3.0	1.5	30	990684	990637
0.44	3.0	1.5	30	990685	990638
0.45	3.0	1.5	30	990686	990639
0.46	3.0	1.5	30	990687	990640
0.47	3.0	1.5	30	990688	990641
0.48	3.0	1.5	30	990689	990657
0.49	3.0	1.5	30	990690	990661
0.50	4.0	1.5	30	990616	990605
0.51	4.0	1.5	30	990617	990606
0.52	4.0	1.5	30	990618	990607
0.53	4.0	1.5	30	990619	990608
0.54	4.0	1.5	30	990620	990609
0.55	4.0	1.5	30	990621	990610
0.56	4.0	1.5	30	990622	990630
0.57	4.0	1.5	30	990623	990592
0.58	4.0	1.5	30	990624	990593
0.59	4.0	1.5	30	990625	990594
0.60	4.5	1.5	30	990626	990595
0.61	4.5	1.5	30	990627	990596
0.62	4.5	1.5	30	990628	990597
0.63	4.5	1.5	30	990629	990598
0.64	4.5	1.5	30	990599	990604

D ₁ 0/+0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
0.65	4.5	1.5	30	990600	990612
0.66	4.5	1.5	30	990601	990613
0.67	4.5	1.5	30	990602	990614
0.68	4.5	1.5	30	990440	990615
0.69	4.5	1.5	30	990603	990611
0.70	4.5	1.5	30	990523	990576
0.71	4.5	1.5	30	990524	990577
0.72	4.5	1.5	30	990525	990578
0.73	4.5	1.5	30	990526	990579
0.74	4.5	1.5	30	990527	990581
0.75	4.5	1.5	30	990528	990582
0.76	4.5	1.5	30	990529	990588
0.77	4.5	1.5	30	990530	990589
0.78	4.5	1.5	30	990531	990590
0.79	4.5	1.5	30	990532	990591
0.80	5.0	1.5	30	990426	990485
0.81	5.0	1.5	30	990410	990550
0.82	5.0	1.5	30	990411	990551
0.83	5.0	1.5	30	990412	990552
0.84	5.0	1.5	30	990413	990470
0.85	5.0	1.5	30	990414	990471
0.86	5.0	1.5	30	990415	990472
0.87	5.0	1.5	30	990416	990473
0.88	5.0	1.5	30	990417	990504
0.89	5.0	1.5	30	990418	990505
0.90	5.0	1.5	30	990419	990506
0.91	5.0	1.5	30	990420	990507
0.92	5.0	1.5	30	990421	990508
0.93	5.0	1.5	30	990422	990509
0.94	5.0	1.5	30	990423	990510
0.95	5.0	1.5	30	990424	990511
0.96	5.0	1.5	30	990425	990512
0.97	5.0	1.5	30	990444	990474
0.98	5.0	1.5	30	990445	990475
0.99	5.0	1.5	30	990446	990476
1.00	5.0	1.5	30	990447	990477
1.01	5.0	1.5	30	990448	990478
1.02	5.0	1.5	30	990339	990479
1.03	5.0	1.5	30	990340	990480
1.04	5.0	1.5	30	990341	990543
1.05	5.0	1.5	30	990441	990544
1.06	5.0	1.5	30	990442	990449
1.07	5.0	1.5	30	990443	990488
1.08	5.0	1.5	30	990427	990489
1.09	5.0	1.5	30	990428	990490

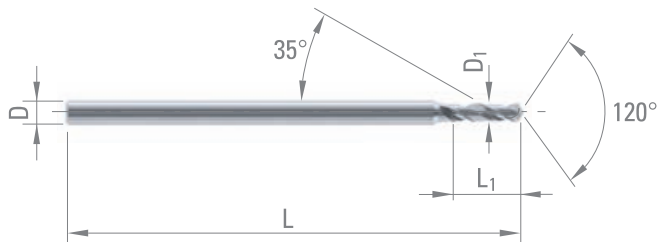




P. 63



P. 74



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D ₁ 0/+0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
1.10	5.0	1.5	30	990429	990491
1.11	5.0	1.5	30	990430	990492
1.12	5.0	1.5	30	990431	990493
1.13	5.0	1.5	30	990432	990494
1.14	5.0	1.5	30	990433	990495
1.15	5.0	1.5	30	990434	990496
1.16	5.0	1.5	30	990435	990497
1.17	5.0	1.5	30	990436	990498
1.18	5.0	1.5	30	990437	990499
1.19	5.0	1.5	30	990438	990466
1.20	6.0	1.5	30	990439	990500
1.21	6.0	1.5	30	990342	990371
1.22	6.0	1.5	30	990343	990372
1.23	6.0	1.5	30	990344	990373
1.24	6.0	1.5	30	990345	990517
1.25	6.0	1.5	30	990346	990518
1.26	6.0	1.5	30	990347	990368
1.27	6.0	1.5	30	990348	990369
1.28	6.0	1.5	30	990349	990370
1.29	6.0	1.5	30	990350	990458
1.30	6.0	1.5	30	990351	990459
1.31	6.0	1.5	30	990352	990460
1.32	6.0	1.5	30	990353	990461
1.33	6.0	1.5	30	990354	990462
1.34	6.0	1.5	30	990355	990463
1.35	6.0	1.5	30	990356	990464
1.36	6.0	1.5	30	990357	990465
1.37	6.0	1.5	30	990358	990467
1.38	6.0	1.5	30	990359	990468
1.39	6.0	1.5	30	990360	990469
1.40	6.0	1.5	30	990361	990393
1.41	6.0	1.5	30	990362	990401
1.42	6.0	1.5	30	990363	990402
1.43	6.0	1.5	30	990364	990403
1.44	6.0	1.5	30	990365	990404
1.45	6.0	1.5	30	990366	990405
1.46	6.0	1.5	30	990367	990406
1.47	6.0	1.5	30	990331	990407
1.48	6.0	1.5	30	990332	990408
1.49	6.0	1.5	30	990333	990409
1.50	7.0	2.0	38	990400	990583
1.51	7.0	2.0	38	990533	990584
1.52	7.0	2.0	38	990534	990560
1.53	7.0	2.0	38	990535	990561
1.54	7.0	2.0	38	990536	990481

D ₁ 0/+0.004	L ₁	D _{h5}	L	CARBIDE	DICUT
1.55	7.0	2.0	38	990537	990482
1.56	7.0	2.0	38	990538	990483
1.57	7.0	2.0	38	990539	990484
1.58	7.0	2.0	38	990540	990501
1.59	7.0	2.0	38	990541	990502
1.60	7.0	2.0	38	990542	990503
1.61	7.0	2.0	38	990545	990486
1.62	7.0	2.0	38	990546	990487
1.63	7.0	2.0	38	990547	990513
1.64	7.0	2.0	38	990548	990514
1.65	7.0	2.0	38	990549	990515
1.66	7.0	2.0	38	990519	990516
1.67	7.0	2.0	38	990520	990562
1.68	7.0	2.0	38	990521	990563
1.69	7.0	2.0	38	990522	990564
1.70	7.0	2.0	38	990374	990565
1.71	7.0	2.0	38	990375	990585
1.72	7.0	2.0	38	990376	990586
1.73	7.0	2.0	38	990377	990587
1.74	7.0	2.0	38	990378	990553
1.75	7.0	2.0	38	990394	990554
1.76	8.0	2.0	38	990395	990555
1.77	8.0	2.0	38	990396	990556
1.78	8.0	2.0	38	990397	990557
1.79	8.0	2.0	38	990398	990558
1.80	8.0	2.0	38	990399	990559
1.81	8.0	2.0	38	990379	990566
1.82	8.0	2.0	38	990380	990567
1.83	8.0	2.0	38	990381	990568
1.84	8.0	2.0	38	990334	990569
1.85	8.0	2.0	38	990335	990570
1.86	8.0	2.0	38	990336	990571
1.87	8.0	2.0	38	990337	990572
1.88	8.0	2.0	38	990338	990573
1.89	8.0	2.0	38	990382	990574
1.90	8.0	2.0	38	990383	990575
1.91	8.0	2.0	38	990384	990450
1.92	8.0	2.0	38	990385	990451
1.93	8.0	2.0	38	990386	990452
1.94	8.0	2.0	38	990387	990453
1.95	8.0	2.0	38	990388	990454
1.96	8.0	2.0	38	990389	990455
1.97	8.0	2.0	38	990390	990456
1.98	8.0	2.0	38	990391	990457
1.99	8.0	2.0	38	990392	990580



TWIST DRILLS FOR DIAL DRILLING

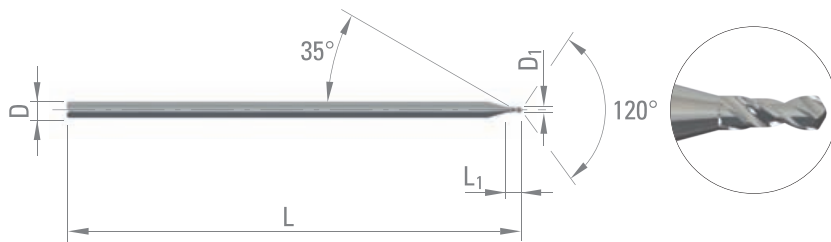
Z = 2



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Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Mother-of-pearl				

D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE
0.15	1.0	1.0	30	332714
0.16	1.0	1.0	30	332715
0.17	1.0	1.0	30	332716
0.18	1.0	1.0	30	332717
0.19	1.0	1.0	30	332718
0.20	1.0	1.0	30	328127
0.21	1.0	1.0	30	332719
0.22	1.0	1.0	30	332720
0.23	1.0	1.0	30	332721
0.24	1.0	1.0	30	332722
0.25	1.0	1.0	30	332723
0.26	1.0	1.0	30	332724
0.27	1.0	1.0	30	332001
0.28	1.0	1.0	30	332726
0.29	1.0	1.0	30	332727
0.30	1.0	1.0	30	332728
0.31	1.0	1.0	30	333573
0.32	1.0	1.0	30	333574

TWIST DRILLS REINFORCED SHANK

Z = 2



P. 63

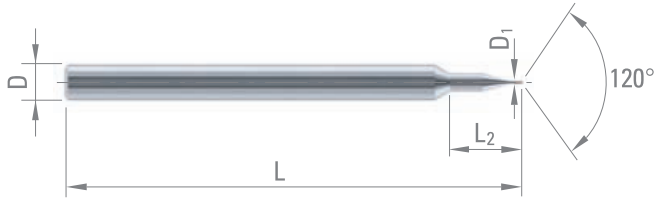


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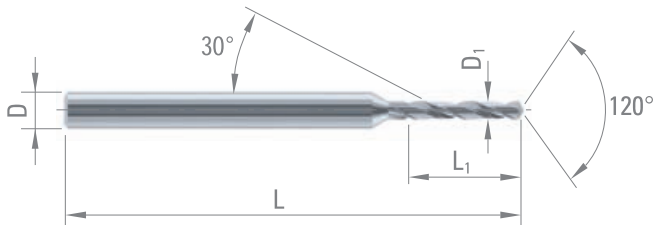


$D_1 \geq 0.5$

$\emptyset 0.05 < \emptyset 0.50$



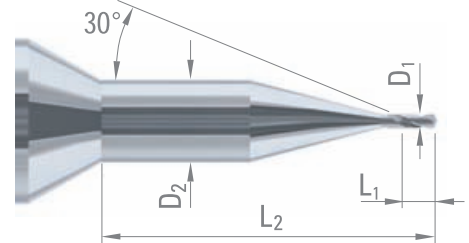
$\emptyset 0.50 \leq \emptyset 2.80$



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D_1 0/-0.004	L_1	D_2	L_2	D_{h5}	L	CARBIDE	TiAIN
0.05	0.35	1.5	5.35	3	38	962810	
0.06	0.40	1.5	5.40	3	38	962809	
0.07	0.50	1.5	5.50	3	38	962808	
0.08	0.60	1.5	5.65	3	38	962807	
0.09	0.65	1.5	5.70	3	38	962806	960258
0.10	0.70	1.5	5.70	3	38	960016	200513
0.15	1.00	1.5	6.00	3	38	960014	200512
0.20	1.00	1.5	6.00	3	38	960013	200511
0.25	1.00	1.5	6.00	3	38	960012	200510
0.30	1.50	1.5	6.50	3	38	960011	200509
0.35	1.50	1.5	6.50	3	38	960010	200508
0.40	2.00	1.5	7.00	3	38	960009	200507
0.45	3.60	1.5	8.60	3	38	960007	

D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE	TiAIN
0.50	4.0	3	38	200157	200439
0.53	4.5	3	38	960034	200514
0.55	4.5	3	38	200189	200471
0.60	4.5	3	38	200148	200429
0.62	5.0	3	38	960035	200515
0.65	5.0	3	38	200190	200472
0.70	5.6	3	38	200149	200431
0.71	5.6	3	38	960036	200516
0.75	5.6	3	38	200191	200473
0.80	6.3	3	38	200150	200432
0.81	6.3	3	38	200210	200492
0.82	6.3	3	38	200185	200467
0.83	6.3	3	38	200167	200449
0.84	6.3	3	38	200168	200450
0.85	6.3	3	38	200151	200433
0.86	7.1	3	38	200211	200493
0.87	7.1	3	38	200207	200489
0.88	7.1	3	38	200208	200490
0.89	7.1	3	38	200204	200486
0.90	7.1	3	38	200152	200434
0.91	7.1	3	38	200209	200491
0.92	7.1	3	38	200213	200495
0.93	7.1	3	38	200184	200466
0.94	7.1	3	38	200186	200468
0.95	7.1	3	38	200192	200474
0.96	9.0	3	38	200160	200442
0.97	9.0	3	38	200187	200469
0.98	9.0	3	38	200201	200483
0.99	9.0	3	38	200182	200464
1.00	9.0	3	38	959533	200430
1.01	9.0	3	38	200169	200451



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$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE	TiAlN
1.02	9.0	3	38	200178	200460
1.03	9.0	3	38	200214	200496
1.04	9.0	3	38	200215	200497
1.05	9.0	3	38	200193	200475
1.06	9.0	3	38	200219	200501
1.07	9.0	3	38	200179	200461
1.08	9.0	3	38	200180	200462
1.09	9.0	3	38	200216	200498
1.10	9.0	3	38	200194	200476
1.11	9.0	3	38	200164	200446
1.12	9.0	3	38	200183	200465
1.13	9.0	3	38	200212	200494
1.14	9.0	3	38	200220	200502
1.15	9.0	3	38	200195	200477
1.16	10.0	3	38	200166	200448
1.17	10.0	3	38	200163	200445
1.18	10.0	3	38	200177	200459
1.19	10.0	3	38	200217	200499
1.20	10.0	3	38	200196	200478
1.21	10.0	3	38	200165	200447
1.22	10.0	3	38	200181	200463
1.23	10.0	3	38	200161	200443
1.24	10.0	3	38	200221	200503
1.25	10.0	3	38	200197	200479
1.26	10.0	3	38	200206	200488
1.27	10.0	3	38	200203	200485
1.28	10.0	3	38	200218	200500
1.29	10.0	3	38	200222	200504
1.30	10.0	3	38	200153	200435
1.31	11.2	3	38	200188	200470
1.32	11.2	3	38	200176	200458
1.33	11.2	3	38	200162	200444
1.34	11.2	3	38	200202	200484
1.35	11.2	3	38	200198	200480
1.36	11.2	3	38	200205	200487
1.37	11.2	3	38	200158	200440
1.38	11.2	3	38	200223	200505
1.39	11.2	3	38	200224	200506
1.40	11.2	3	38	200154	200436
1.45	11.2	3	38	200199	200481
1.50	11.2	3	38	200200	200482
1.55	12.0	3	38	200170	200452
1.60	12.0	3	38	200171	200453
1.65	12.0	3	38	200172	200454
1.70	12.0	3	38	200155	200437
1.75	12.0	3	38	200173	200455
1.80	12.0	3	38	200159	200441
1.85	12.0	3	38	200174	200456
1.90	12.0	3	38	200156	200438
1.95	12.0	3	38	200175	200457
2.00	12.0	3	38	960037	200517
2.05	15.0	3	38	960038	200518
2.10	15.0	3	38	960039	200519
2.15	15.0	3	38	960040	200520
2.20	15.0	3	38	960041	200521
2.25	15.0	3	38	960042	200522
2.30	15.0	3	38	960043	200523
2.35	15.0	3	38	960044	200524
2.40	15.0	3	38	960045	200525
2.45	15.0	3	38	960046	200526
2.50	15.0	3	38	960047	200527
2.55	15.0	3	38	960048	200528
2.80	16.0	3	38	960049	200529



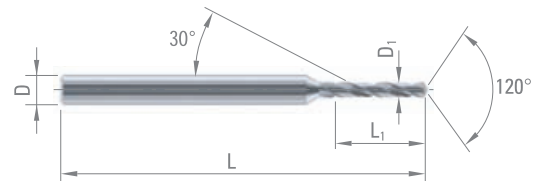
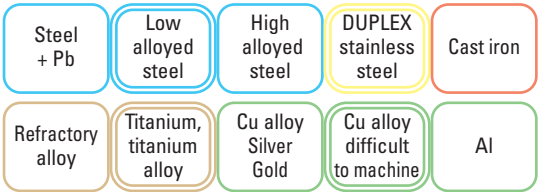
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$D_1 \geq 0.5$



TWIST DRILLS REINFORCED SHANK

Z = 2

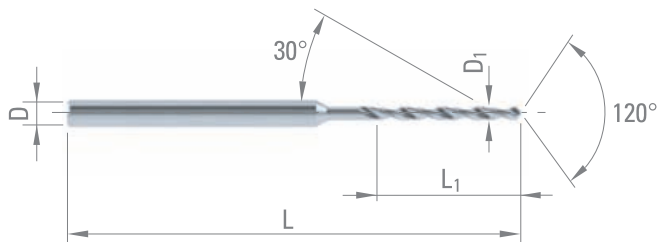


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$$L_1 = 12 \times D_1$$



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE	TiAlN
0.50	6.00	3.0	38	317729	317900
0.51	6.10	3.0	38	317730	317901
0.52	6.30	3.0	38	317731	317902
0.53	6.40	3.0	38	317732	317903
0.54	6.50	3.0	38	317733	317904
0.55	6.60	3.0	38	317734	317905
0.56	6.70	3.0	38	317735	317906
0.57	6.90	3.0	38	317736	317907
0.58	7.00	3.0	38	317737	317908
0.59	7.10	3.0	38	317738	317909
0.60	7.20	3.0	38	317739	317910
0.61	7.30	3.0	38	317740	317911
0.62	7.50	3.0	38	317741	317912
0.63	7.60	3.0	38	317742	317913
0.64	7.70	3.0	38	317743	317914
0.65	7.80	3.0	38	317744	317915
0.66	7.90	3.0	38	317745	317916
0.67	8.10	3.0	38	317746	317917
0.68	8.20	3.0	38	317747	317918
0.69	8.30	3.0	38	317748	317919
0.70	8.40	3.0	38	317749	317920
0.71	8.50	3.0	38	317750	317921
0.72	8.70	3.0	38	317751	317922
0.73	8.80	3.0	38	317752	317923
0.74	8.90	3.0	38	317753	317924
0.75	9.00	3.0	38	317754	317925
0.76	9.10	3.0	38	317755	317926
0.77	9.30	3.0	38	317756	317927
0.78	9.40	3.0	38	317757	317928
0.79	9.50	3.0	38	317758	317929
0.80	9.60	3.0	38	317759	317930
0.81	9.70	3.0	38	317760	317931
0.82	9.90	3.0	38	317761	317932
0.83	10.00	3.0	38	317762	317933
0.84	10.10	3.0	38	317763	317934
0.85	10.20	3.0	38	317764	317935
0.86	10.30	3.0	38	317765	317936
0.87	10.50	3.0	38	317766	317937
0.88	10.60	3.0	38	317767	317938
0.89	10.70	3.0	38	317768	317939
0.90	10.80	3.0	38	317769	317940
0.91	10.90	3.0	38	317770	317941
0.92	11.10	3.0	38	317771	317942
0.93	11.20	3.0	38	317772	317943
0.94	11.30	3.0	38	317773	317944

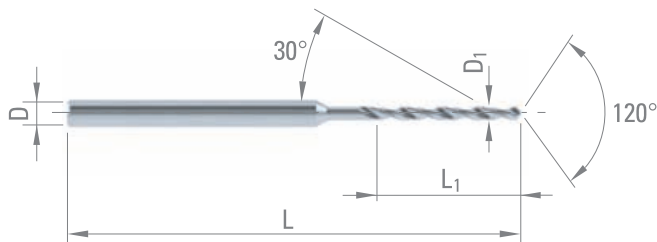
D_1 0/-0.004	L_1	D_{h5}	L	CARBIDE	TiAlN
0.95	11.40	3.0	38	317774	317945
0.96	11.50	3.0	38	317775	317946
0.97	11.70	3.0	38	317776	317947
0.98	11.80	3.0	38	317777	317948
0.99	11.90	3.0	38	317778	317949
1.00	12.00	3.0	38	317779	317950
1.01	12.10	3.0	38	317780	317951
1.02	12.30	3.0	38	317781	317952
1.03	12.40	3.0	38	317782	317953
1.04	12.50	3.0	38	317783	317954
1.05	12.60	3.0	38	317784	317955
1.06	12.70	3.0	38	317785	317956
1.07	12.90	3.0	38	317786	317957
1.08	13.00	3.0	38	317787	317958
1.09	13.10	3.0	38	317788	317959
1.10	13.20	3.0	38	317789	317960
1.11	13.30	3.0	38	317790	317961
1.12	13.50	3.0	38	317791	317962
1.13	13.60	3.0	38	317792	317963
1.14	13.70	3.0	38	317793	317964
1.15	13.80	3.0	38	317794	317965
1.16	13.90	3.0	38	317795	317966
1.17	14.10	3.0	38	317796	317967
1.18	14.20	3.0	38	317797	317968
1.19	14.30	3.0	38	317798	317969
1.20	14.40	3.0	38	317799	317970
1.21	14.50	3.0	38	317800	317971
1.22	14.70	3.0	38	317801	317972
1.23	14.80	3.0	38	317802	317973
1.24	14.90	3.0	38	317803	317974
1.25	15.00	3.0	38	317804	317975
1.26	15.10	3.0	50	317805	317976
1.27	15.30	3.0	50	317806	317977
1.28	15.40	3.0	50	317807	317978
1.29	15.50	3.0	50	317808	317979
1.30	15.60	3.0	50	317809	317980
1.31	15.70	3.0	50	317810	317981
1.32	15.90	3.0	50	317811	317982
1.33	16.00	3.0	50	317812	317983
1.34	16.10	3.0	50	317813	317984
1.35	16.20	3.0	50	317814	317985
1.36	16.30	3.0	50	317815	317986



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Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	TiAlN
1.37	16.50	3.0	50	317816	317987
1.38	16.60	3.0	50	317817	317988
1.39	16.70	3.0	50	317818	317989
1.40	16.80	3.0	50	317819	317990
1.41	16.90	3.0	50	317820	317991
1.42	17.10	3.0	50	317821	317992
1.43	17.20	3.0	50	317822	317993
1.44	17.30	3.0	50	317823	317994
1.45	17.40	3.0	50	317824	317995
1.46	17.50	3.0	50	317825	317996
1.47	17.70	3.0	50	317826	317997
1.48	17.80	3.0	50	317827	317998
1.49	17.90	3.0	50	317828	317999
1.50	18.00	3.0	50	317829	318000
1.51	18.10	3.0	50	317830	318001
1.52	18.30	3.0	50	317831	318002
1.53	18.40	3.0	50	317832	318003
1.54	18.50	3.0	50	317833	318004
1.55	18.60	3.0	50	317834	318005
1.56	18.70	3.0	50	317835	318006
1.57	18.90	3.0	50	317836	318007
1.58	19.00	3.0	50	317837	318008
1.59	19.10	3.0	50	317838	318009
1.60	19.20	3.0	50	317839	318010
1.61	19.30	3.	50	317840	318011
1.62	19.40	3.0	50	317841	318012
1.63	19.60	3.0	50	317842	318013
1.64	19.70	3.0	50	317843	318014
1.65	19.80	3.0	50	317844	318015
1.66	19.90	3.0	50	317845	318016
1.67	20.10	3.0	50	317846	318017
1.68	20.20	3.0	50	317847	318018
1.69	20.30	3.0	50	317848	318019
1.70	20.40	3.0	50	317849	318020
1.71	20.50	3.0	50	317850	318021
1.72	20.70	3.0	50	317851	318022
1.73	20.80	3.0	50	317852	318023
1.74	20.90	3.0	50	317853	318024
1.75	21.00	3.0	50	317854	318025
1.76	21.10	3.0	50	317855	318026
1.77	21.30	3.0	50	317856	318027
1.78	21.40	3.0	50	317857	318028
1.79	21.50	3.0	50	317858	318029

D ₁ 0/-0.004	L ₁	D _{h5}	L	CARBIDE	TiAlN
1.80	21.60	3.0	50	317859	318030
1.81	21.70	3.0	50	317860	318031
1.82	21.90	3.0	50	317861	318032
1.83	22.00	3.0	50	317862	318033
1.84	22.10	3.0	50	317863	318034
1.85	22.20	3.0	50	317864	318035
1.86	22.30	3.0	50	317865	318036
1.87	22.50	3.0	50	317866	318037
1.88	22.60	3.0	50	317867	318038
1.89	22.70	3.0	50	317868	318039
1.90	22.80	3.0	50	317869	318040
1.91	22.90	3.0	50	317870	318041
1.92	23.10	3.0	50	317871	318042
1.93	23.20	3.0	50	317872	318043
1.94	23.30	3.0	50	317873	318044
1.95	23.40	3.0	50	317874	318045
1.96	23.50	3.0	50	317875	318046
1.97	23.70	3.0	50	317876	318047
1.98	23.80	3.0	50	317877	318048
1.99	23.90	3.0	50	317878	318049
2.00	24.00	3.0	61	317879	318050
2.05	24.60	3.0	61	317880	318051
2.10	25.20	3.0	61	317881	318052
2.15	25.80	3.0	61	317882	318053
2.20	26.40	3.0	61	317883	318054
2.25	27.00	3.0	61	317884	318055
2.30	27.60	3.0	61	317885	318056
2.35	28.20	3.0	61	317886	318057
2.40	28.80	3.0	61	317887	318058
2.45	29.40	3.0	61	317888	318059
2.50	30.00	3.0	61	317889	318060
2.55	30.60	3.0	61	317890	318061
2.60	31.20	3.0	61	317891	318062
2.65	31.80	3.0	61	317892	318063
2.70	32.40	3.0	61	317893	318064
2.75	33.00	3.0	61	317894	318065
2.80	33.60	3.0	61	317895	318066
2.85	34.20	3.0	61	317896	318067
2.90	34.80	3.0	61	317897	318068
2.95	35.40	3.0	61	317898	318069
3.00	36.00	3.0	61	317899	318070

DIXI 1149 TiAlN

SELF-CENTERING TWIST DRILLS REINFORCED SHANK

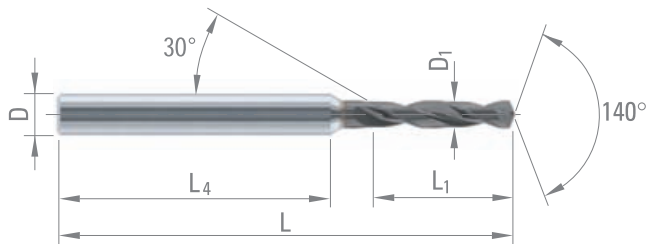
Z = 2



P. 63



P. 78



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy difficult to machine	Al	

$D_{1\ h6}$	L_1	L_4	D_{h5}	L	TiAlN
1.00	5	26	3	38	976857
1.10	5	26	3	38	976858
1.20	5	26	3	38	976859
1.30	5	26	3	38	976860
1.40	5	26	3	38	976861
1.50	7	25	3	38	976862
1.60	7	25	3	38	976863
1.70	7	25	3	38	976864
1.80	7	25	3	38	976865
1.90	7	25	3	38	976866
2.00	9	35	3	50	43300
2.10	9	35	3	50	43301
2.20	9	35	3	50	43302
2.30	9	35	3	50	43303
2.40	9	35	3	50	43304
2.50	9	36	3	50	43305
2.60	11	31	4	50	43306
2.70	11	31	4	50	43307
2.80	11	31	4	50	41777
2.90	11	31	4	50	43308
3.00	14	39	6	62	43309
3.10	14	39	6	62	43310
3.175	14	39	6	62	64419
3.20	14	39	6	62	43311
3.30	14	39	6	62	43312
3.40	14	39	6	62	43313
3.50	14	39	6	62	43314
3.60	14	39	6	62	43315
3.70	14	40	6	62	43316
3.80	17	40	6	66	43317
3.90	17	40	6	66	43318
4.00	17	40	6	66	43319
4.10	17	40	6	66	43320
4.20	17	40	6	66	43321
4.30	17	40	6	66	43322
4.40	17	40	6	66	43323
4.50	17	40	6	66	43324
4.60	17	40	6	66	43325
4.70	17	40	6	66	43326

DIXI 1149 TiAlN

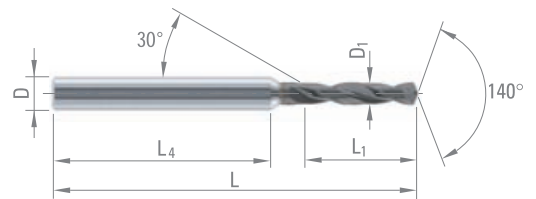
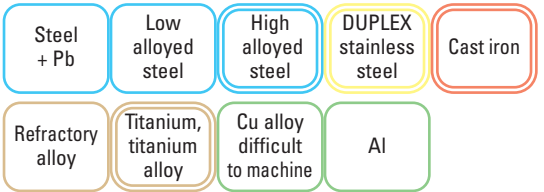
D_{1h6}	L_1	L_4	D_{h5}	L	TiAlN
4.762	20	37	6	66	43673
4.80	20	37	6	66	43327
4.90	20	38	6	66	43328
5.00	20	38	6	66	43329
5.10	20	38	6	66	966749
5.20	20	38	6	66	43330
5.30	20	38	6	66	43331
5.40	20	38	6	66	966750
5.50	20	38	6	66	43332
5.60	22	37	6	66	960752
5.70	22	37	6	66	966751
5.80	22	37	6	66	43333
5.90	22	37	6	66	966752
6.00	22	37	6	66	43334
6.20	24	43	8	79	43447
6.30	24	43	8	79	43538
6.35	24	43	8	79	44585
6.40	24	43	8	79	63641
6.50	24	43	8	79	39394
6.60	24	43	8	79	43539
6.70	24	43	8	79	966756
6.80	24	44	8	79	43540
6.90	24	44	8	79	966757
7.00	24	43	8	79	43541
7.20	29	38	8	79	56826
7.50	29	38	8	79	43542
7.80	29	38	8	79	43543
8.00	29	39	8	79	43544
8.20	35	40	10	89	43448
8.40	35	40	10	89	55450
8.50	35	40	10	89	42654
8.70	35	41	10	89	54604
8.80	35	41	10	89	56828
9.00	35	41	10	89	43545
9.20	35	41	10	89	55451
9.50	35	41	10	89	43546
9.80	35	41	10	89	43547
10.00	35	42	10	89	43548
10.10	40	47	12	102	978563
10.20	40	47	12	102	43549
10.50	40	47	12	102	43550
10.80	40	48	12	102	59472
11.00	40	48	12	102	43551
11.50	41	47	12	102	43552
12.00	42	47	12	102	43553
13.00	46	47	14	107	43554
14.00	49	45	14	107	43556



P. 63



P. 78

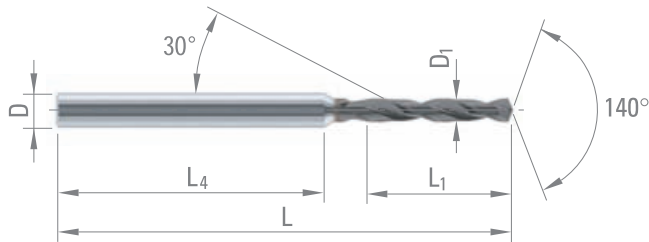


DIXI 1147 TiAlN

SELF-CENTERING TWIST DRILLS REINFORCED SHANK

Z = 2

$$L_1 = 6.5 \times D_1$$



P. 63



P. 80



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Al		

D_1 h6	L_1	L_4	D_{h5}	L	TiAlN
0.50	3.3	29	3	38	960468
0.55	3.6	29	3	38	960469
0.60	3.9	29	3	38	960470
0.65	4.2	33	3	43	960471
0.70	4.6	33	3	43	960472
0.75	4.9	33	3	43	960473
0.80	5.2	32	3	43	960474
0.85	5.5	32	3	43	960475
0.90	5.9	32	3	43	960476
0.95	6.2	32	3	43	960477
1.00	6.5	31	3	43	960478
1.10	7.2	31	3	43	960479
1.20	7.8	37	3	50	960480
1.30	8.5	37	3	50	960481
1.40	9.1	36	3	50	960482
1.50	9.8	35	3	50	960483
1.60	10.4	35	3	50	960484
1.70	11.1	34	3	50	960485
1.80	11.7	34	3	50	960486
1.90	12.4	33	3	50	960487
2.00	13.0	43	4	62	960137
2.10	13.7	42	4	62	960138
2.20	14.3	42	4	62	960139
2.30	15.0	41	4	62	960140
2.40	15.6	41	4	62	960141
2.50	16.3	40	4	62	960142
2.60	16.9	39	4	62	960143
2.70	17.6	39	4	62	960144
2.80	18.2	38	4	62	960145
2.90	18.9	38	4	62	960146
3.00	19.5	37	4	62	960147
3.10	20.2	53	6	79	960148
3.20	20.8	52	6	79	960149
3.30	21.5	51	6	79	960150
3.40	22.1	51	6	79	960151
3.50	22.8	50	6	79	960152
3.60	23.4	50	6	79	966741
3.75	24.4	49	6	79	960153
3.80	24.7	48	6	79	960154
3.90	25.4	47	6	79	961304

DIXI 1147 TiAlN

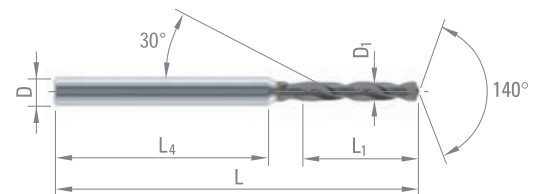
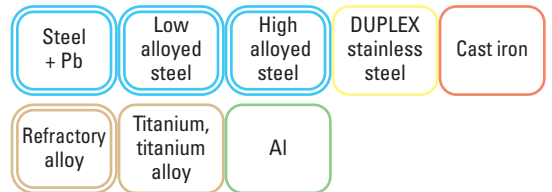
$D_{1\ h6}$	L_1	L_4	D_{h5}	L	TiAlN
4.00	26.0	47	6	79	960155
4.10	26.7	46	6	79	960156
4.20	27.3	45	6	79	960157
4.30	28.0	45	6	79	960158
4.40	28.6	44	6	79	959769
4.50	29.3	43	6	79	960159
4.60	29.9	43	6	79	960160
4.70	30.6	42	6	79	960161
4.80	31.2	42	6	79	960162
4.90	31.9	41	6	79	960163
5.00	32.5	50	6	89	959770
5.10	33.2	49	6	89	960167
5.20	33.8	49	6	89	960169
5.30	33.5	48	6	89	960170
5.40	35.1	48	6	89	966742
5.50	35.8	47	6	89	960171
5.60	36.4	46	6	89	960172
5.70	37.1	46	6	89	966743
5.80	37.7	45	6	89	960173
5.90	38.4	44	6	89	966744
6.00	39.0	44	6	89	960174
6.10	39.7	54	8	102	960175
6.20	40.3	53	8	102	960176
6.30	41.0	53	8	102	960177
6.35	41.3	53	8	102	960178
6.40	41.6	52	8	102	966745
6.50	42.3	51	8	102	960179
6.60	42.9	51	8	102	960180
6.70	43.6	50	8	102	966747
6.80	44.2	50	8	102	960181
6.90	44.9	49	8	102	966748
7.00	45.5	48	8	102	960182
7.20	46.8	47	8	102	960183
7.50	48.8	45	8	102	960184
7.80	50.7	43	8	102	960185
8.00	52.0	42	8	102	960186
8.20	53.3	54	10	118	960187
8.40	54.0	54	10	118	960188
8.50	55.3	52	10	118	960189
8.80	57.2	51	10	118	960190
9.00	58.5	49	10	118	960191
9.50	61.8	46	10	118	960192
9.80	63.7	44	10	118	960193
10.00	65.0	43	10	118	960194



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DIXI 1145-HH TiAlN

SELF-CENTERING TWIST DRILLS
REINFORCED SHANK
WITH THROUGH COOLANT

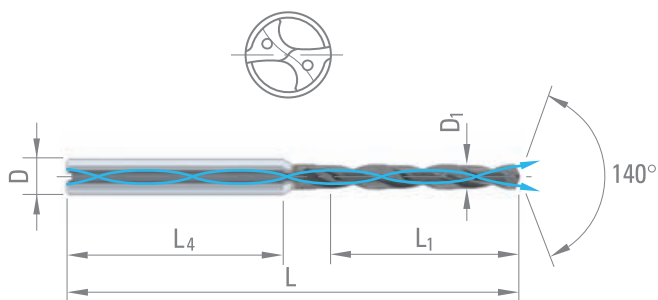
Z = 2



P. 63



P. 78



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy difficult to machine	Al	

D ₁ h6	L ₁	L ₄	D _{h5}	L	TiAlN
0.70	5	26	3	38	956705
0.80	5	26	3	38	954321
1.10	7	24	3	38	956700
1.40	7	25	3	38	956694
1.50	11	20	3	38	956692
1.60	11	20	3	38	956690
1.70	11	20	3	38	956688
1.80	11	20	3	38	956686
1.90	11	20	3	38	956683
2.00	15	18	3	38	954320
2.10	15	18	3	38	956325
2.20	15	18	3	38	956326
2.30	15	26	4	50	956327
2.40	15	27	4	50	956328
2.50	18	24	4	50	956329
2.60	18	24	4	50	956330
2.70	18	24	4	50	956331
2.80	18	24	4	50	956332
2.90	23	35	6	66	956333
3.00	23	35	6	66	65470
3.10	23	35	6	66	953836
3.20	23	35	6	66	953835
3.30	23	35	6	66	65471
3.40	23	35	6	66	953837
3.50	23	35	6	66	65472
3.60	29	35	6	74	966718
3.70	29	35	6	74	966719
3.75	29	36	6	74	65473
3.80	29	36	6	74	953838
3.90	29	36	6	74	966720
4.00	29	36	6	74	45540
4.10	29	36	6	74	953839
4.20	29	36	6	74	56829
4.30	29	36	6	74	62995
4.40	29	36	6	74	956579
4.50	35	38	6	82	953840
4.60	35	38	6	82	966721
4.70	35	38	6	82	966722
4.80	35	38	6	82	45541
4.90	35	38	6	82	966826

DIXI 1145-HH TiAlN

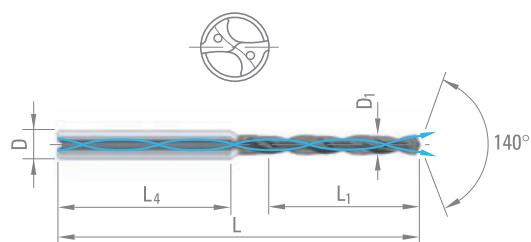
$D_{1\ h6}$	L_1	L_4	D_{h5}	L	TiAlN
5.00	35	39	6	82	43272
5.10	35	39	6	82	953841
5.20	35	39	6	82	56830
5.30	35	39	6	82	59465
5.40	35	39	6	82	953842
5.50	35	39	6	82	45542
5.60	35	39	6	82	954509
5.70	35	39	6	82	966723
5.80	35	39	6	82	59466
5.90	35	39	6	82	966724
6.00	35	40	6	82	38821
6.10	43	36	8	91	953843
6.20	43	36	8	91	56831
6.30	43	36	8	91	43279
6.35	43	36	8	91	59467
6.40	43	36	8	91	953844
6.50	43	36	8	91	39758
6.60	43	36	8	91	59468
6.70	43	36	8	91	956886
6.80	43	36	8	91	45614
6.90	43	36	8	91	966725
7.00	43	36	8	91	43283
7.20	43	36	8	91	56833
7.30	43	36	8	91	954510
7.40	43	36	8	91	59384
7.50	43	36	8	91	43284
7.60	43	36	8	91	954511
7.80	43	36	8	91	43285
8.00	43	-	8	91	39530
8.10	49	40	10	103	954512
8.20	49	40	10	103	56834
8.30	49	40	10	103	954513
8.40	49	40	10	103	59469
8.50	49	40	10	103	52633
8.60	49	40	10	103	954514
8.80	49	40	10	103	45615
9.00	49	41	10	103	43288
9.20	49	41	10	103	953849
9.40	49	41	10	103	954515
9.50	49	41	10	103	63430
9.60	49	41	10	103	954516
9.70	49	41	10	103	953846
9.80	49	41	10	103	44777
10.00	49	-	10	103	40751
10.10	56	47	12	118	954326
10.20	56	47	12	118	56837
10.30	56	47	12	118	954518
10.50	56	47	12	118	44152
10.60	56	47	12	118	954517
10.80	56	47	12	118	45616
11.00	56	48	12	118	43294
11.30	58	46	12	118	954519
11.50	58	46	12	118	45207
12.00	60	45	12	118	40752
13.00	65	45	14	124	44339
14.00	70	-	14	124	45649



P. 63



P. 78



DIXI 1146-HH TiAlN

SELF-CENTERING TWIST DRILLS
REINFORCED SHANK
WITH THROUGH COOLANT

Z = 2



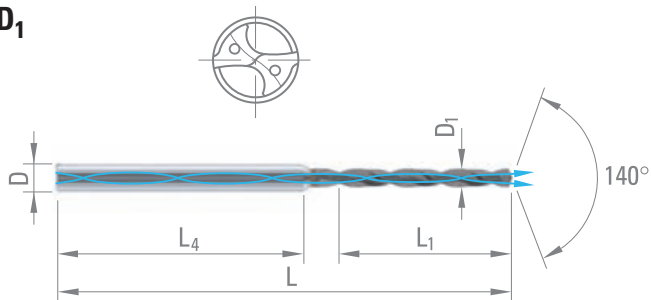
P. 63



P. 80



$$L_1 = 10 \times D_1$$



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Al		

$D_{1\ h6}$	L_1	L_4	D_{h5}	L	TiAlN
0.80	8.0	37	3	50	960206
0.85	8.5	37	3	50	960208
0.90	9.0	36	3	50	960209
0.95	9.5	36	3	50	960210
1.00	10.0	35	3	50	960211
1.10	11.0	34	3	50	960212
1.20	12.0	33	3	50	960214
1.30	13.0	33	3	50	960215
1.40	14.0	32	3	50	960216
1.50	15.0	43	3	62	960217
1.60	16.0	42	3	62	960218
1.70	17.0	41	3	62	960219
1.80	18.0	40	3	62	960220
1.90	19.0	39	3	62	960221
2.00	20.0	38	3	62	960222
2.10	21.0	37	3	62	960223
2.20	22.0	36	3	62	960224
2.30	23.0	51	4	79	960225
2.40	24.0	50	4	79	960226
2.50	25.0	49	4	79	960227
2.60	26.0	48	4	79	960228
2.70	27.0	47	4	79	960229
2.80	28.0	46	4	79	960230
2.90	29.0	44	6	79	960231
3.00	30.0	43	6	79	960232
3.10	31.0	52	6	89	966726
3.20	32.0	51	6	89	966727
3.30	33.0	50	6	89	960243
3.40	34.0	49	6	89	966728
3.50	35.0	48	6	89	960244
3.60	36.0	47	6	89	966729
3.75	37.5	46	6	89	960245
3.90	39.0	44	6	89	966730
4.00	40.0	56	6	102	960246
4.10	41.0	55	6	102	966731
4.20	42.0	54	6	102	960247
4.30	43.0	53	6	102	960248
4.40	44.0	52	6	102	966732
4.50	45.0	51	6	102	960249



DIXI 1146-HH TiAlN

$D_{1\ h6}$	L_1	L_4	D_{h5}	L	TiAlN
4.60	46.0	50	6	102	966733
4.70	47.0	49	6	102	966734
4.80	48.0	48	6	102	960250
4.90	49.0	47	6	102	966735
5.00	50.0	46	6	102	960251
5.10	51.0	45	6	102	966736
5.20	52.0	44	6	102	960252
5.30	53.0	43	6	102	960253
5.40	54.0	42	6	102	966737
5.50	55.0	41	6	102	960254
5.60	56.0	56	6	118	966738
5.70	57.0	55	6	118	966739
5.80	58.0	54	6	118	960255
5.90	59.0	53	6	118	963660
6.00	60.0	52	6	118	960256
6.10	61.0	49	8	118	966740
6.20	62.0	48	8	118	960257
6.30	63.0	47	8	118	960426
6.35	63.5	47	8	118	960427
6.50	65.0	45	8	118	960428
6.60	66.0	59	8	133	960429
6.80	68.0	57	8	133	960430
6.90	69.0	56	8	133	963661
7.00	70.0	55	8	133	960431
7.20	72.0	53	8	133	960432
7.50	75.0	50	8	133	960433
7.80	78.0	47	8	133	960434
8.00	80.0	45	8	133	960435
8.20	82.0	59	10	151	960436
8.40	84.0	57	10	151	960437
8.50	85.0	56	10	151	960438
8.80	88.0	53	10	151	960439
9.00	90.0	60	10	160	960440
9.20	92.0	58	10	160	960441
9.40	94.0	56	10	160	960442
9.525	95.3	55	10	160	960443
9.80	98.0	52	10	160	960444
10.00	100.0	50	10	160	960445



P. 63



P. 80



Steel
+ Pb

Low
alloyed
steel

High
alloyed
steel

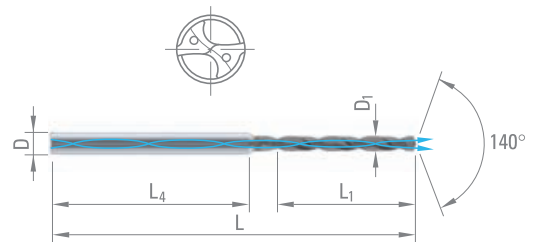
DUPLEX
stainless
steel

Cast iron

Refractory
alloy

Titanium,
titanium
alloy

Al



DIXI 1280 XIDUR

TWIST DRILLS FOR HARDENED STEEL REINFORCED SHANK

Z = 2



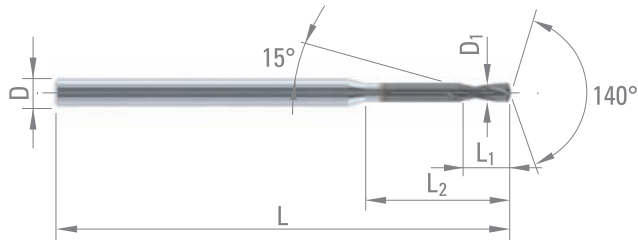
P. 63



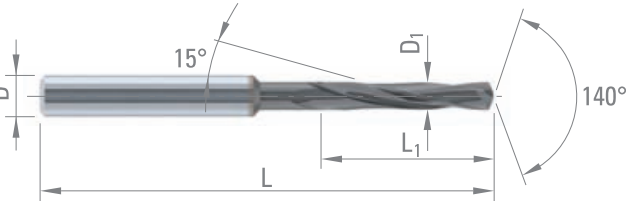
P. 82



$\emptyset 0.25 < \emptyset 2.50$

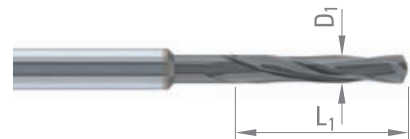
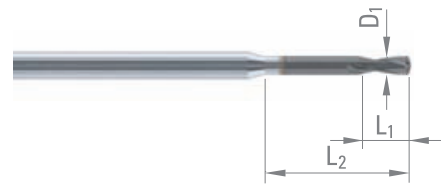


$\emptyset 2.50 \leq \emptyset 12.00$



$D_{1\ h6}$	L_1	L_2	D_{h5}	L	XIDUR
0.25	0.75	2.0	3	38	957466
0.30	0.90	2.5	3	38	956658
0.40	1.20	3.2	3	38	956659
0.50	1.50	4.0	3	38	956660
0.60	1.80	4.8	3	38	956661
0.70	2.10	5.6	3	38	956662
0.80	2.40	6.5	3	38	956663
0.90	2.70	7.5	3	38	956664
1.00	3.00	8.0	3	38	956665
1.10	3.30	8.0	3	50	957524
1.20	3.60	10.0	3	50	956666
1.30	3.90	12.0	3	50	957525
1.40	4.20	12.0	3	50	957467
1.50	4.50	12.0	3	50	956667
1.60	4.80	15.0	3	50	957526
1.70	5.10	15.0	3	50	957527
1.80	5.40	15.0	3	50	956668
1.90	5.80	15.0	3	50	957528
2.00	6.00	16.0	3	50	956669

$D_{1\ h6}$	L_1	D_{h5}	L	XIDUR
2.50	15	3	62	62529
2.60	15	3	62	62843
2.70	15	3	62	62844
2.80	15	3	62	62845
2.90	15	3	62	62846
3.00	20	4	66	62530
3.175	20	4	66	62848
3.30	20	4	66	62849
3.40	20	4	66	62850
3.50	20	4	66	62531
3.57	20	4	66	62851
3.70	20	4	66	62852
3.80	20	4	66	62853
3.90	20	4	66	62854
4.00	30	6	66	62532
4.10	30	6	66	62855
4.20	30	6	66	62533
4.30	30	6	66	62857
4.365	30	6	66	62858
4.50	30	6	66	62859



DIXI 1280 XIDUR

D_{1h6}	L_1	D_{h5}	L	XIDUR
4.60	30	6	66	62860
4.70	30	6	66	62861
4.762	30	6	66	62862
4.90	30	6	66	62863
5.00	30	6	66	62534
5.10	30	6	66	62414
5.16	30	6	66	62864
5.50	30	6	66	62867
5.80	30	6	66	62870
6.00	40	8	79	62872
6.35	40	8	79	62874
6.50	40	8	79	62877
6.80	40	8	79	62535
7.00	40	8	79	62878
7.50	40	8	79	62880
7.80	40	8	79	62881
8.00	50	10	89	62882
8.33	50	10	89	62883
8.50	50	10	89	62536
8.73	50	10	89	62884
9.00	50	10	89	62885
9.525	50	10	89	62886
9.80	50	10	89	62887
10.00	60	12	102	62888
10.20	60	12	102	62889
10.50	60	12	102	62890
10.80	60	12	102	62891
11.00	60	12	102	62895
11.50	60	12	102	62896
12.00	60	12	102	62897



P. 63



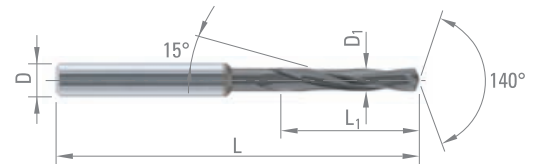
P. 82



High
alloyed
steel

Steel
Hardened
cast iron

Refractory
alloy



3 FLUTE TWIST DRILLS

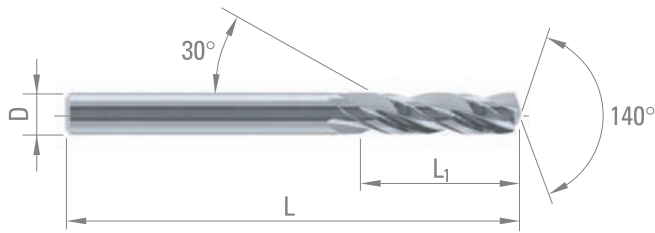
Z = 3



P. 63



P. 82



Steel
+ Pb

Low
alloyed
steel

Cast iron

Titanium,
titanium
alloy

Cu alloy
Silver
Gold

Al

D _{h5}	L ₁	L	CARBIDE
1.00	8	30	31446
1.05	8	30	47890
1.10	10	30	31573
1.15	10	30	37288
1.20	10	30	31574
1.25	10	30	34553
1.30	10	30	31575
1.35	10	30	37506
1.40	10	30	31576
1.45	10	30	47039
1.50	10	30	31560
1.55	12	38	47891
1.60	12	38	31577
1.63	12	38	41603
1.64	12	38	58867
1.65	12	38	38467
1.70	12	38	31578
1.75	12	38	43738
1.80	12	38	31579
1.85	12	38	47899
1.90	12	38	31294
1.95	12	38	47040
2.00	12	38	31580
2.04	12	38	954146
2.10	12	38	31581
2.20	13	40	41993
2.30	13	40	31583
2.40	14	43	39320
2.50	14	43	41454
2.60	14	43	42140
2.70	16	46	31295
2.80	16	46	31296
2.90	16	46	31586
3.00	16	46	29106
3.10	18	49	31197
3.20	18	49	31728
3.30	18	49	29107
3.40	20	52	33271
3.50	20	52	29108

DIXI 1151

D _{h5}	L ₁	L	CARBIDE
3.60	20	52	31297
3.70	20	52	32311
3.80	22	55	29109
3.90	22	55	42942
4.00	22	55	42305
4.10	22	55	42939
4.20	22	55	29111
4.30	24	58	32871
4.40	24	58	33427
4.50	24	58	29112
4.60	24	58	32862
4.70	24	58	32312
4.80	26	62	29113
4.90	26	62	31590
5.00	26	62	29114
5.10	26	62	41455
5.20	26	62	32639
5.30	26	62	31717
5.40	28	66	34791
5.50	28	66	29115
5.60	28	66	41597
5.70	28	66	32313
5.80	28	66	43809
5.90	28	66	45905
6.00	28	66	41120
6.10	31	70	41620
6.20	31	70	32640
6.30	31	70	34792
6.40	31	70	33105
6.50	31	70	29118
6.60	31	70	34754
6.70	31	70	31506
6.80	34	74	29119
6.90	34	74	32860
7.00	34	74	29120
7.50	34	74	29121
7.80	37	79	29122
8.00	37	79	43769
8.20	37	79	32237
8.50	37	79	41927
8.80	40	84	29125
9.00	40	84	29126
9.50	40	84	29127
9.80	43	89	29128
10.00	43	89	29129
10.20	43	89	29130
10.50	43	89	29131
11.00	47	95	29132
11.50	47	95	29133
12.00	51	102	29134
12.50	51	102	32641
13.00	51	102	29135
13.50	54	107	32642
14.00	54	107	29136



P. 63



P. 82

Steel
+ Pb

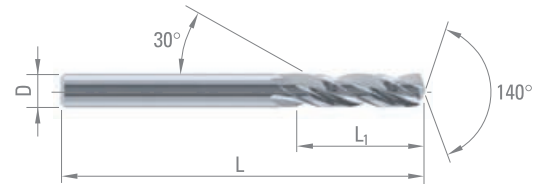
Low
alloyed
steel

Cast iron

Titanium,
titanium
alloy

Cu alloy
Silver
Gold

Al

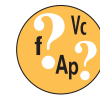


3 FLUTE TWIST DRILLS REINFORCED SHANK

Z = 3

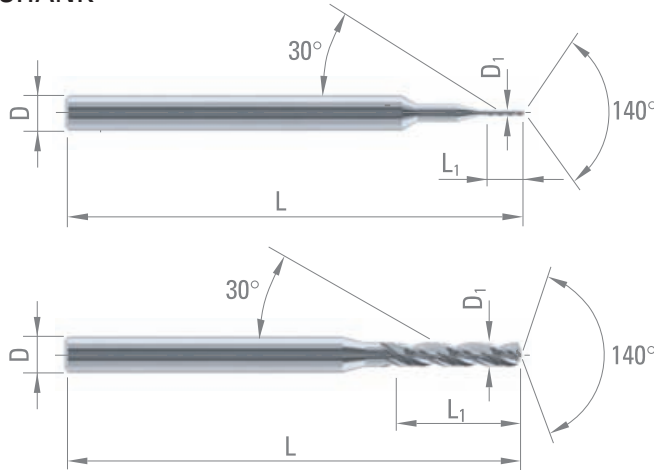


P. 63

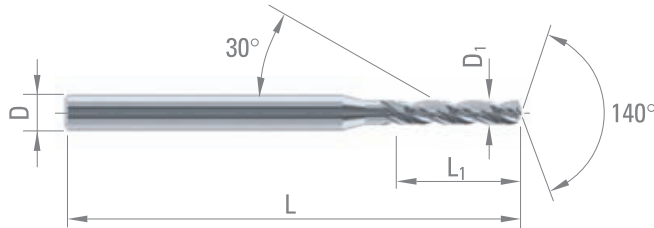


P. 82

$\emptyset 0.15 < \emptyset 0.50$



$\emptyset 0.50 \leq \emptyset 2.90$



$D_{10/-0.004}$	L_1	D_2	L_2	D_{h5}	L	CARBIDE
0.15	1.5	1.5	6.80	3.0	38	962817
0.20	1.5	1.5	6.80	3.0	38	962818
0.25	2.0	1.5	7.35	3.0	38	962819
0.30	2.0	1.5	7.35	3.0	38	962820
0.35	2.0	1.5	7.35	3.0	38	962821
0.40	2.0	1.5	7.35	3.0	38	962822
0.45	3.6	1.5	8.95	3.0	38	962850

$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE
0.50	4.0	3.0	38	962851
0.53	4.5	3.0	38	962852
0.55	4.5	3.0	38	962853
0.60	4.5	3.0	38	962854
0.62	5.0	3.0	38	962855
0.65	5.0	3.0	38	962856
0.70	5.6	3.0	38	962857
0.71	5.6	3.0	38	962858
0.75	5.6	3.0	38	962859
0.80	6.3	3.0	38	962860
0.81	6.3	3.0	38	962861
0.82	6.3	3.0	38	962862
0.83	6.3	3.0	38	962863
0.84	6.3	3.0	38	962864
0.85	6.3	3.0	38	962865
0.86	7.1	3.0	38	962866
0.87	7.1	3.0	38	962867
0.88	7.1	3.0	38	962868
0.89	7.1	3.0	38	962869
0.90	7.1	3.0	38	962870
0.91	7.1	3.0	38	962871
0.92	7.1	3.0	38	962872
0.93	7.1	3.0	38	962873
0.94	7.1	3.0	38	962874
0.95	7.1	3.0	38	962875
0.96	9.0	3.0	38	962876
0.97	9.0	3.0	38	962877
0.98	9.0	3.0	38	962878
0.99	9.0	3.0	38	962879
1.00	9.0	3.0	38	962880
1.01	9.0	3.0	38	962881
1.02	9.0	3.0	38	962882
1.03	9.0	3.0	38	962883
1.04	9.0	3.0	38	962884
1.05	9.0	3.0	38	962885
1.06	9.0	3.0	38	962886
1.07	9.0	3.0	38	962887

Steel
+ Pb

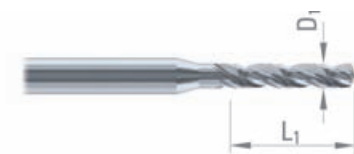
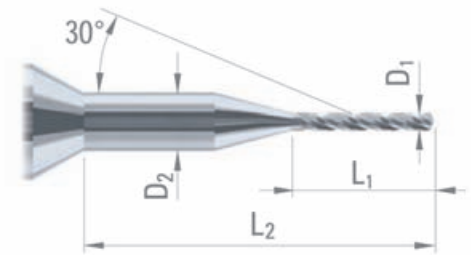
Low
alloyed
steel

Cast iron

Titanium,
titanium
alloy

Cu alloy
Silver
Gold

Al



DIXI 1152

$D_{10/-0.004}$	L_1	D_{h5}	L	CARBIDE
1.08	9.0	3.0	38	962888
1.09	9.0	3.0	38	962889
1.10	9.0	3.0	38	962890
1.11	9.0	3.0	38	962901
1.12	9.0	3.0	38	962902
1.13	9.0	3.0	38	962903
1.14	9.0	3.0	38	962904
1.15	9.0	3.0	38	962905
1.16	10.0	3.0	38	962906
1.17	10.0	3.0	38	962907
1.18	10.0	3.0	38	962908
1.19	10.0	3.0	38	962909
1.20	10.0	3.0	38	962910
1.21	10.0	3.0	38	962911
1.22	10.0	3.0	38	962912
1.23	10.0	3.0	38	962913
1.24	10.0	3.0	38	962914
1.25	10.0	3.0	38	962915
1.26	10.0	3.0	38	962916
1.27	10.0	3.0	38	962917
1.28	10.0	3.0	38	962918
1.29	10.0	3.0	38	962919
1.30	10.0	3.0	38	962920
1.31	11.2	3.0	38	962921
1.32	11.2	3.0	38	962922
1.33	11.2	3.0	38	962923
1.34	11.2	3.0	38	962925
1.35	11.2	3.0	38	962926
1.36	11.2	3.0	38	962927
1.37	11.2	3.0	38	962928
1.38	11.2	3.0	38	962930
1.39	11.2	3.0	38	962931
1.40	11.2	3.0	38	962932
1.45	11.2	3.0	38	962933
1.50	11.2	3.0	38	962934
1.55	12.0	3.0	38	962935
1.60	12.0	3.0	38	962936
1.65	12.0	3.0	38	962937
1.67	12.0	3.0	38	969259
1.70	12.0	3.0	38	962938
1.75	12.0	3.0	38	962940
1.80	12.0	3.0	38	962941
1.85	12.0	3.0	38	962942
1.90	12.0	3.0	38	962943
1.95	12.0	3.0	38	962944
2.00	12.0	3.0	38	962945
2.03	15.0	3.0	38	969260
2.04	15.0	3.0	38	969261
2.05	15.0	3.0	38	963109
2.10	15.0	3.0	38	963111
2.15	15.0	3.0	38	963115
2.20	15.0	3.0	38	963116
2.25	15.0	3.0	38	963117
2.30	15.0	3.0	38	963118
2.35	15.0	3.0	38	963119
2.40	15.0	3.0	38	963120
2.45	15.0	3.0	38	963121
2.50	15.0	3.0	38	963122
2.55	15.0	3.0	38	963123
2.60	15.0	3.0	38	963124
2.70	16.0	3.0	38	963125
2.80	16.0	3.0	38	963126
2.90	16.0	3.0	38	963127



P. 63



P. 82

Steel
+ Pb

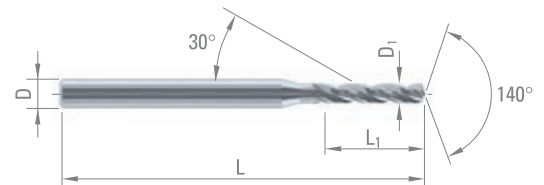
Low
alloyed
steel

Cast iron

Titanium,
titanium
alloy

Cu alloy
Silver
Gold

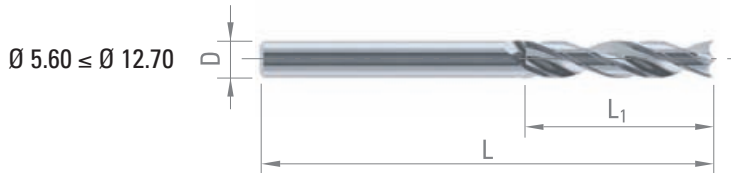
Al



DIXI 1290

TWIST DRILLS FOR COMPOSITES / KEVLAR®

Z = 2



Kevlar®

Cutting conditions: $V_c = 100 - 150 \text{ m/min}$
 $f = 0.05 - 0.15 \text{ mm/rev}$

D _{h5}	inches	L ₁	L	CARBIDE
2.50		18	50	29322
3.00		18	50	26766
3.175	1/8"	18	50	27059
3.20		18	50	27948
3.30		18	50	28660
3.50		20	50	27949
3.80		20	50	26283
3.968	5/32"	22	50	27950
4.00		22	50	26767
4.10		22	50	29224
4.20		25	55	27951
4.50		25	58	27731
4.80		25	62	29324
5.00		25	62	29299
5.20		25	62	29072
5.50		25	66	27952
5.556	7/32"	25	60	26588



D _{h5}	inches	L ₁	L	CARBIDE
5.60		30	66	29215
6.00		30	66	43244
6.35	1/4"	30	70	27199
6.50		30	70	28661
8.00		35	75	26663
9.00		35	75	27957
9.525	3/8"	35	75	27959
10.00		35	75	27684
11.00		50	100	29493
12.00		50	100	26723
12.70	1/2"	50	100	26661



DIXI 1112 R+L

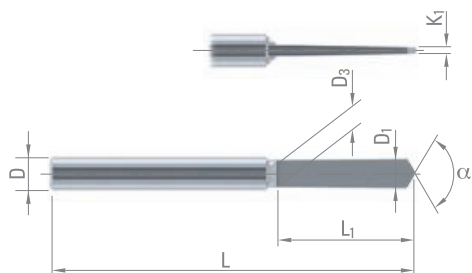
SPADE DRILLS

Ø 0.08 - 5.99

Z = 2



P. 66



Steel + Pb	Cast iron	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

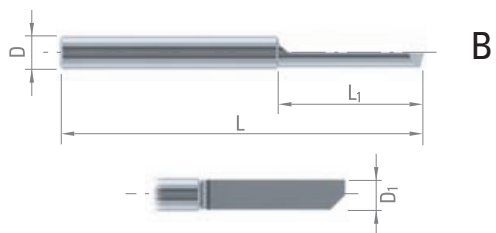
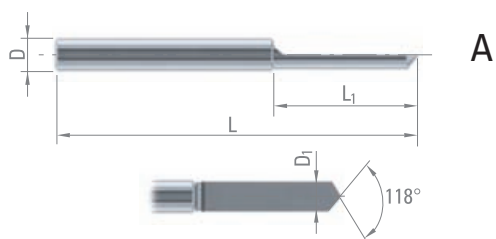
DIXI 1114 R+L

HALF-MOON BITS EXECUTION A OR B

Ø 0.08 - 5.99

Z = 1

Indicative values to define
DIXI 1112, 1114 and 1118's geometry.



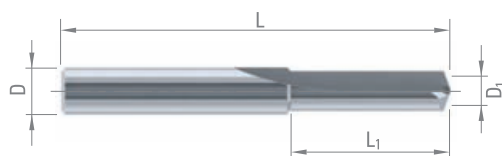
$D_{10/-0.004}$	L_1	D_{h5}	L
0.08 - 0.14	0.7	1.0	30
0.15 - 0.29	1.0	1.0	30
0.30 - 0.39	1.5	1.0	30
0.40 - 0.44	2.0	1.0	30
0.45 - 0.48	3.6	1.0	30
0.49 - 0.53	4.0	1.0	30
0.54 - 0.60	4.5	1.0	30
0.61 - 0.67	5.0	1.0	30
0.68 - 0.75	5.6	1.0	30
0.76 - 0.79	6.3	1.0	30
0.80 - 0.85	6.3	1.5	30
0.86 - 0.95	7.1	1.5	30
0.96 - 0.99	8.0	1.5	30
1.00 - 1.18	9.0	1.5	30
1.19 - 1.32	10.0	1.5	30
1.33 - 1.49	11.2	1.5	30
1.50 - 1.99	12.0	2.0	38
2.00 - 2.49	12.0	2.5	43
2.50 - 2.99	15.0	3.0	46
3.00 - 3.49	18.0	3.5	50
3.50 - 3.99	18.0	4.0	50
4.00 - 4.49	20.0	4.5	50
4.50 - 4.99	22.0	5.0	50
5.00 - 5.49	25.0	5.5	50
5.50 - 5.99	25.0	6.0	50

DIXI 1118 R+L

STRAIGHT FLUTE SLOT DRILLS

Ø 0.08 - 5.99

Z = 2





TOOLS ON REQUEST



P. 66
P. 84

☐ DIXI 1501



☐ DIXI 1514 (Z = 1)



Helix angle depending on the material to be machined.

☐ DIXI 1512 (Z = 2)



☐ DIXI 1518 (Z = 2)



Unless specified, standard DIXI tolerances and dimensions will be used.

R ☐ L ☐

Z =

Helix angle

Quantity

D

Material to be machined

L

α_2

α_1

D₁

L₁

L₂

Notice

VISIT OUR E-QUOTATION ON WWW.DIXIPOLYTOOL.COM



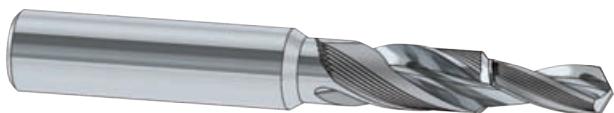


TOOLS ON REQUEST

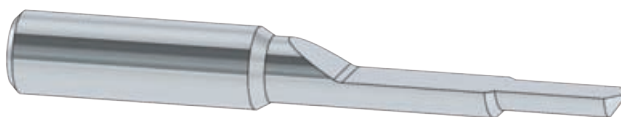


P. 66
P. 84

☐ DIXI 1502

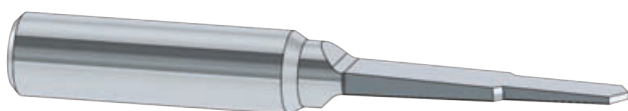


☐ DIXI 1514 (Z = 1)

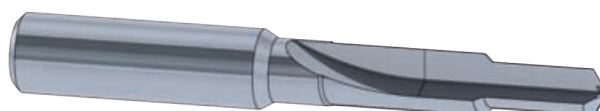


Helix angle depending on the material to be machined.

☐ DIXI 1512 (Z = 2)



☐ DIXI 1518 (Z = 2)



Unless specified, standard DIXI tolerances will be used.

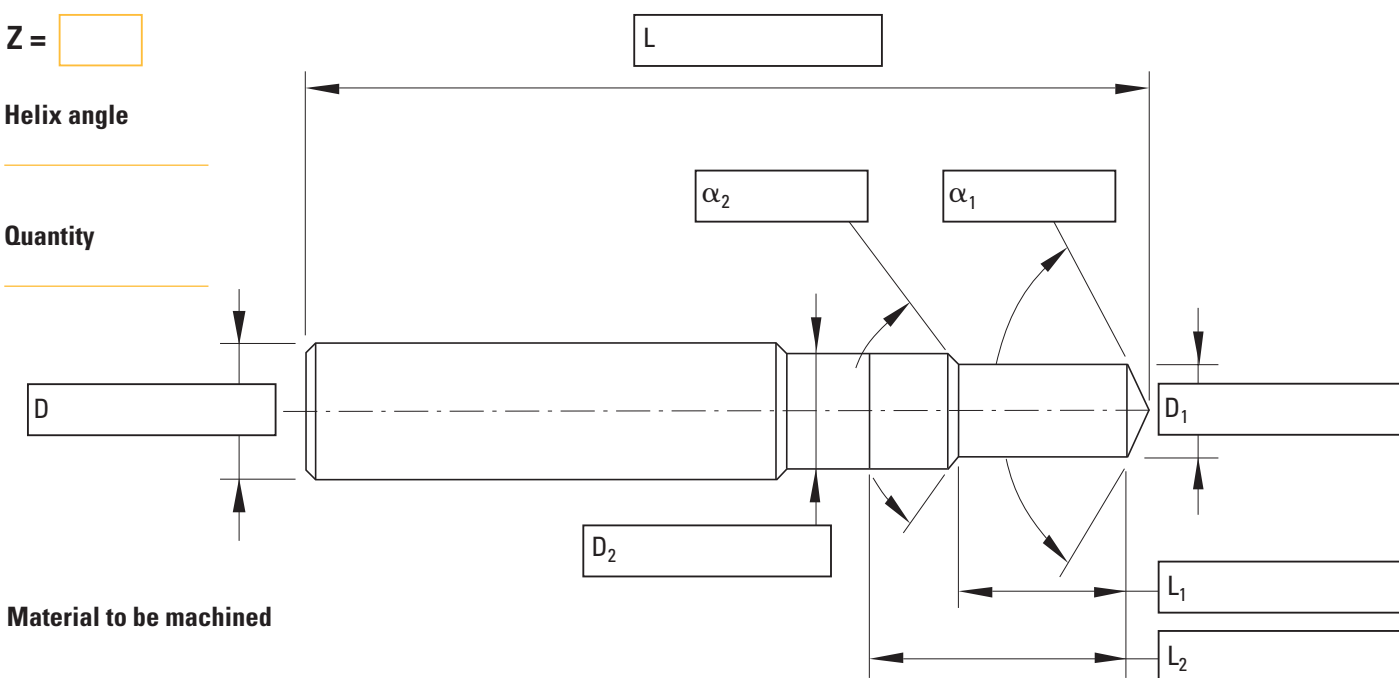
R ☐ L ☐

Z =

Helix angle

Quantity

Material to be machined



Notice

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TOOLS ON REQUEST



P. 66
P. 84

☐ DIXI 1503



☐ DIXI 1514 (Z = 1)



Helix angle depending on the material to be machined.

☐ DIXI 1512 (Z = 2)



☐ DIXI 1518 (Z = 2)



Unless specified, standard DIXI tolerances will be used.

R ☐ L ☐

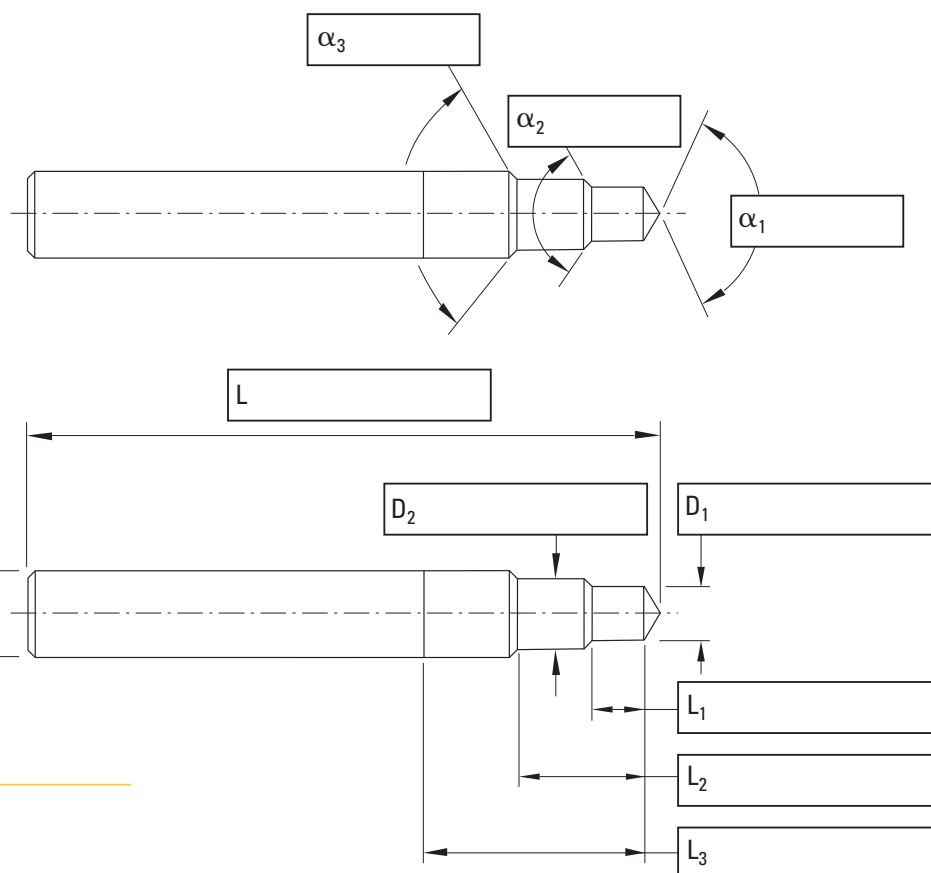
Z =

Helix angle

Quantity

Material to be machined

Notice



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TOOLS ON REQUEST

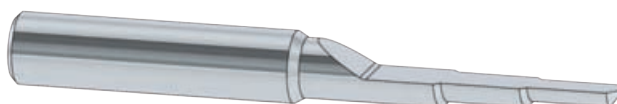


P. 66
P. 84

☐ DIXI 1504

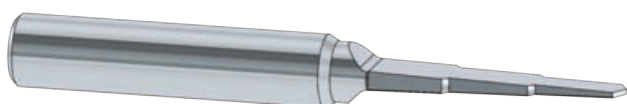


☐ DIXI 1514 (Z = 1)



Helix angle depending on the material to be machined.

☐ DIXI 1512 (Z = 2)



☐ DIXI 1518 (Z = 2)



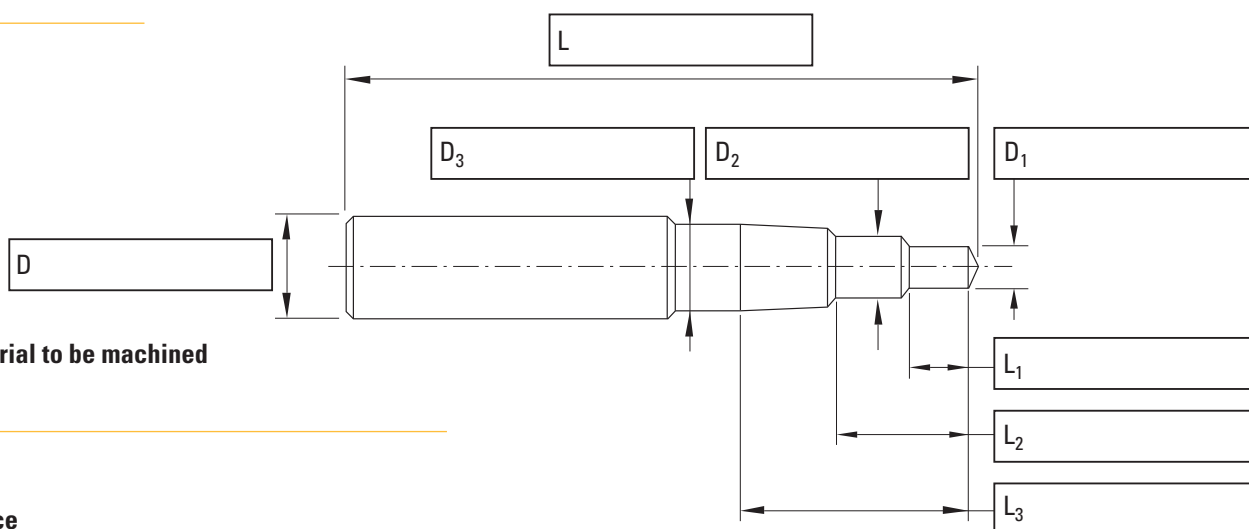
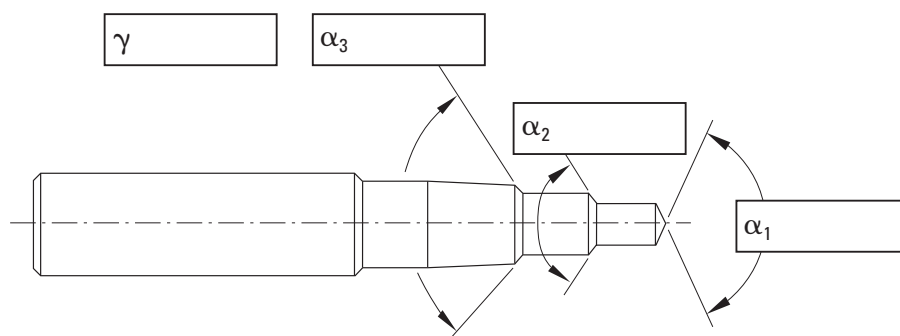
Unless specified, standard DIXI tolerances will be used.

R ☐ L ☐

Z =

Helix angle

Quantity



Material to be machined

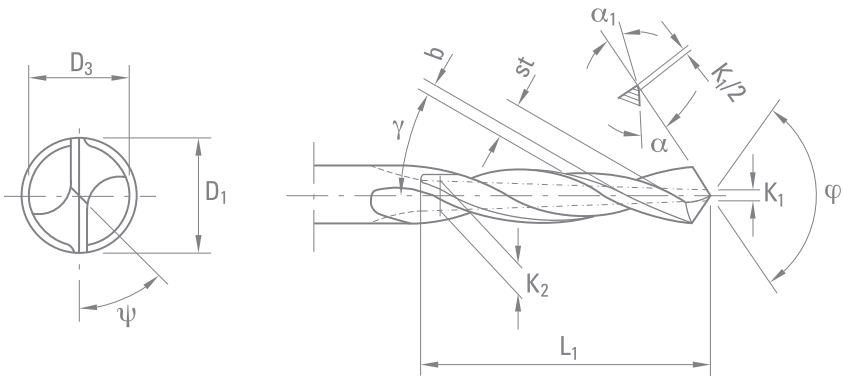
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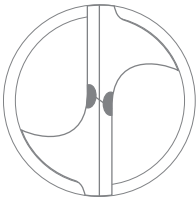


DRILL GEOMETRY

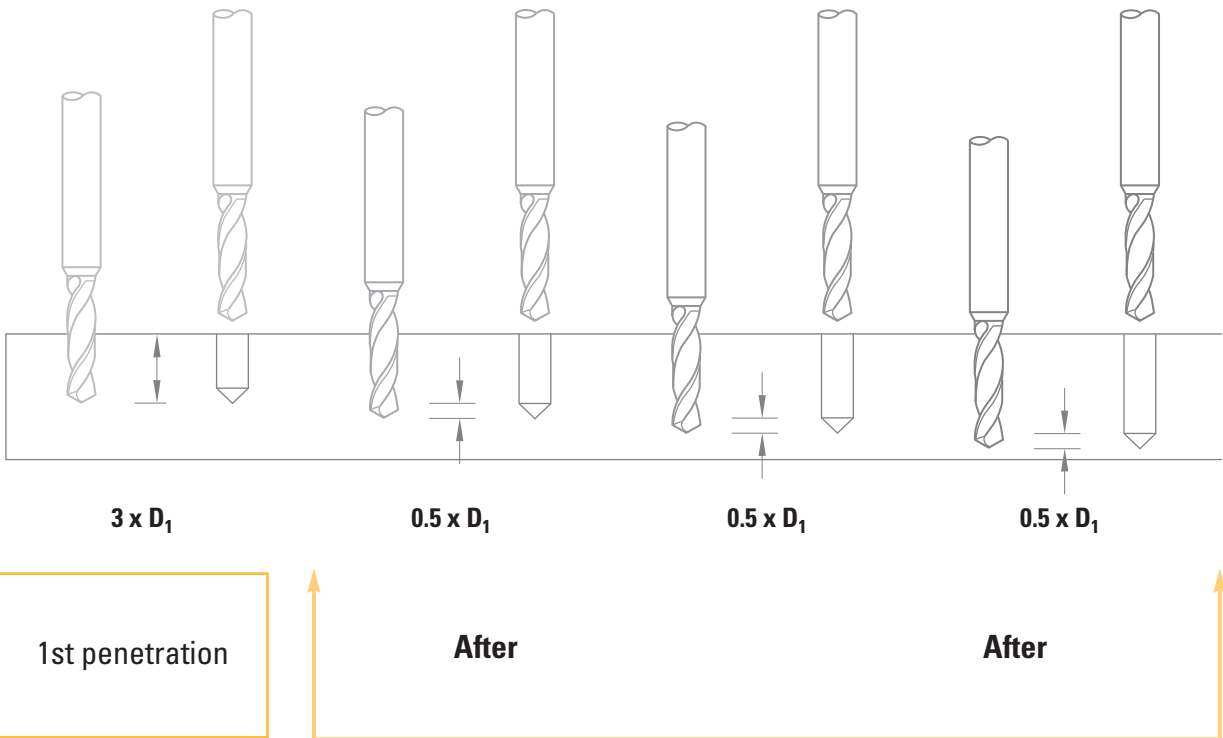
The geometrical nomenclature of our twist drills for general use is illustrated alongside. Straight or reinforced shanks are available.



WEB THINNING



SOLUTION FOR DIFFICULT DRILLING



CUTTING CONDITIONS

Materials to be machined

			CARBIDE		TiAlN		DICUT	
			Vc [m/min]		Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60	50	70	50	70
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	30	50	40	60	40	60
P	Lead alloyed cutting steel		60	90	65	100	65	100
P	High alloyed steel	700 – 1500 N/mm ²	15	40	25	50	25	50
M	Stainless steel	400 – 700 N/mm ²	35	50	40	60	40	60
M	DUPLEX stainless steel	> 800 N/mm ²	20	40	30	50		
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	30	50	40	60		
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	30	50	40	60		
K	Nodular ferritic cast iron / Malleable cast iron		10	30	20	40		
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	10	25	20	50		
S	Titanium, titanium alloys		40	70				
N	Copper alloys - easy to machine (brass - bronze)		90	120	100	130	100	130
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	80	100	90	120		
N	Aluminium alloys	Si < 8%	90	150	120	160		
N	Cast aluminium	Si > 8%	70	110	90	130		
N	Plastic		30	60	50	80		
N	Gold, silver		50	80	65	100		

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

Ø D ₁ 0.50 - 1.00	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 5.00	Ø D ₁ 5.00 - 7.00	Ø D ₁ 7.00 - 10.00	Ø D ₁ 10.00 - 14.00	Ø D ₁ 14.00 - 16.00	Ø D ₁ 16.00 - 20.00
0.009 - 0.020	0.016 - 0.030	0.024 - 0.04	0.03 - 0.05	0.05 - 0.10	0.08 - 0.14	0.11 - 0.20	0.16 - 0.28	0.22 - 0.32	0.26 - 0.40
0.007 - 0.015	0.013 - 0.023	0.020 - 0.03	0.03 - 0.04	0.04 - 0.08	0.07 - 0.11	0.09 - 0.15	0.13 - 0.21	0.18 - 0.24	0.21 - 0.30
0.009 - 0.020	0.016 - 0.030	0.024 - 0.04	0.03 - 0.05	0.05 - 0.10	0.08 - 0.14	0.11 - 0.20	0.16 - 0.28	0.22 - 0.32	0.26 - 0.40
0.006 - 0.015	0.011 - 0.023	0.017 - 0.03	0.02 - 0.04	0.03 - 0.08	0.06 - 0.11	0.08 - 0.15	0.11 - 0.21	0.15 - 0.24	0.18 - 0.30
0.007 - 0.015	0.013 - 0.023	0.020 - 0.03	0.03 - 0.04	0.04 - 0.08	0.07 - 0.11	0.09 - 0.15	0.13 - 0.21	0.18 - 0.24	0.21 - 0.30
0.006 - 0.015	0.011 - 0.023	0.017 - 0.03	0.02 - 0.04	0.03 - 0.08	0.06 - 0.11	0.08 - 0.15	0.11 - 0.21	0.15 - 0.24	0.18 - 0.30
0.006 - 0.015	0.011 - 0.023	0.017 - 0.03	0.02 - 0.04	0.03 - 0.08	0.06 - 0.11	0.08 - 0.15	0.11 - 0.21	0.15 - 0.24	0.18 - 0.30
0.007 - 0.015	0.013 - 0.023	0.020 - 0.03	0.03 - 0.04	0.04 - 0.08	0.07 - 0.11	0.09 - 0.15	0.13 - 0.21	0.18 - 0.24	0.21 - 0.30
0.006 - 0.015	0.011 - 0.020	0.017 - 0.03	0.02 - 0.04	0.03 - 0.08	0.06 - 0.11	0.08 - 0.15	0.11 - 0.21	0.15 - 0.24	0.18 - 0.30
0.006 - 0.015	0.011 - 0.023	0.017 - 0.03	0.02 - 0.04	0.03 - 0.08	0.06 - 0.11	0.08 - 0.15	0.11 - 0.21	0.15 - 0.24	0.18 - 0.30
0.009 - 0.020	0.016 - 0.030	0.024 - 0.04	0.03 - 0.05	0.05 - 0.10	0.08 - 0.14	0.11 - 0.20	0.16 - 0.28	0.22 - 0.32	0.26 - 0.40
0.011 - 0.030	0.020 - 0.045	0.030 - 0.06	0.04 - 0.08	0.06 - 0.15	0.10 - 0.21	0.14 - 0.30	0.20 - 0.42	0.28 - 0.48	0.32 - 0.60
0.011 - 0.030	0.020 - 0.045	0.030 - 0.06	0.04 - 0.08	0.06 - 0.15	0.10 - 0.21	0.14 - 0.30	0.20 - 0.42	0.28 - 0.48	0.32 - 0.60
0.011 - 0.030	0.020 - 0.045	0.030 - 0.06	0.04 - 0.08	0.06 - 0.15	0.10 - 0.21	0.14 - 0.30	0.20 - 0.42	0.28 - 0.48	0.32 - 0.60
0.011 - 0.030	0.020 - 0.045	0.030 - 0.06	0.04 - 0.08	0.06 - 0.15	0.10 - 0.21	0.14 - 0.30	0.20 - 0.42	0.28 - 0.48	0.32 - 0.60
0.013 - 0.045	0.027 - 0.068	0.041 - 0.09	0.05 - 0.11	0.08 - 0.23	0.14 - 0.32	0.19 - 0.45	0.27 - 0.63	0.38 - 0.72	0.43 - 0.90
0.011 - 0.030	0.020 - 0.045	0.030 - 0.06	0.04 - 0.08	0.06 - 0.15	0.10 - 0.21	0.14 - 0.30	0.20 - 0.42	0.28 - 0.48	0.32 - 0.60



CUTTING CONDITIONS

Materials to be machined

		CARBIDE	
		Vc [m/min]	
P	Lead alloyed cutting steel	40	60
N	Copper alloys - easy to machine (brass - bronze)	50	70
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	30	50
N	Gold, silver	30	60
N	Plastic	30	60

DIXI 1112 - 1118 - 1512 - 1518

		CARBIDE	
		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel < 600 N/mm ²	20	40
P	Lead alloyed cutting steel	40	60
K	Nodular ferritic cast iron / Malleable cast iron	20	40
N	Copper alloys - easy to machine (brass - bronze)	50	80
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	30	50
N	Aluminium alloys Si < 8%	60	100
N	Cast aluminium Si > 8%	50	90
N	Plastic	30	60

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

$\emptyset D_1$ 0.08 - 0.70	$\emptyset D_1$ 0.70 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 2.00	$\emptyset D_1$ 2.00 - 3.00	$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 6.00	
0.001 - 0.011	0.008 - 0.016	0.012 - 0.02	0.02 - 0.03	0.02 - 0.05	0.04 - 0.06	0.05 - 0.10	
0.001 - 0.018	0.011 - 0.025	0.015 - 0.04	0.02 - 0.05	0.03 - 0.08	0.05 - 0.10	0.06 - 0.15	
0.001 - 0.011	0.008 - 0.016	0.012 - 0.024	0.018 - 0.032	0.024 - 0.048	0.04 - 0.06	0.05 - 0.10	
0.001 - 0.018	0.011 - 0.025	0.015 - 0.04	0.02 - 0.05	0.03 - 0.08	0.05 - 0.10	0.06 - 0.15	
0.002 - 0.004	0.003 - 0.059	0.036 - 0.08	0.05 - 0.10	0.06 - 0.14	0.09 - 0.22	0.13 - 0.29	

Feed per revolution

f [mm]

$\emptyset D_1$ 0.08 - 0.70	$\emptyset D_1$ 0.70 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 2.00	$\emptyset D_1$ 2.00 - 3.00	$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 6.00	
0.001 - 0.011	0.008 - 0.016	0.012 - 0.024	0.018 - 0.032	0.024 - 0.048	0.04 - 0.06	0.05 - 0.10	
0.001 - 0.011	0.008 - 0.016	0.012 - 0.024	0.018 - 0.032	0.024 - 0.048	0.04 - 0.06	0.05 - 0.10	
0.001 - 0.009	0.008 - 0.013	0.011 - 0.020	0.017 - 0.026	0.022 - 0.039	0.03 - 0.05	0.04 - 0.08	
0.001 - 0.018	0.011 - 0.025	0.015 - 0.038	0.023 - 0.050	0.030 - 0.075	0.05 - 0.10	0.06 - 0.15	
0.001 - 0.011	0.008 - 0.016	0.012 - 0.024	0.018 - 0.032	0.024 - 0.048	0.04 - 0.06	0.05 - 0.10	
0.001 - 0.018	0.011 - 0.025	0.015 - 0.038	0.023 - 0.050	0.030 - 0.075	0.05 - 0.10	0.06 - 0.15	
0.001 - 0.018	0.011 - 0.025	0.015 - 0.038	0.023 - 0.050	0.030 - 0.075	0.05 - 0.10	0.06 - 0.15	
0.002 - 0.004	0.003 - 0.059	0.036 - 0.08	0.05 - 0.10	0.06 - 0.14	0.09 - 0.22	0.13 - 0.29	

$D_1 < 1\text{mm} \Rightarrow V_c - 30\%$

CUTTING CONDITIONS

Materials to be machined

			CARBIDE		DICUT	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60	50	70
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			30	40
P	Lead alloyed cutting steel		70	100		
P	High alloyed steel	700 – 1500 N/mm ²			25	40
M	Stainless steel	400 – 700 N/mm ²			45	60
M	DUPLEX stainless steel	> 800 N/mm ²			30	50
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	50	80	60	90
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	50	80
K	Nodular ferritic cast iron / Malleable cast iron				40	60
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			20	40
S	Titanium, titanium alloys		30	50		
N	Copper alloy - easy to machine (brass - bronze)		80	100		
N	Copper alloy - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	40	70	50	80
N	Aluminium alloys	Si < 8%	90	110	120	130
N	Cast aluminium	Si > 8%	70	110	90	130
N	Plastic		30	60		
N	Gold, silver		50	80		

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.00 - 5.00	Ø D ₁ 5.00 - 6.00	Ø D ₁ 6.00 - 8.00	Ø D ₁ 8.00 - 10.00	Ø D ₁ 10.00 - 12.00	Ø D ₁ 12.00 - 14.00
0.014 - 0.032	0.027 - 0.041	0.034 - 0.06	0.05 - 0.08	0.06 - 0.09	0.07 - 0.11	0.08 - 0.14	0.11 - 0.18	0.14 - 0.22	0.17 - 0.25
0.011 - 0.025	0.023 - 0.032	0.029 - 0.05	0.04 - 0.06	0.05 - 0.07	0.06 - 0.08	0.07 - 0.11	0.10 - 0.14	0.12 - 0.17	0.14 - 0.20
0.014 - 0.032	0.027 - 0.041	0.034 - 0.06	0.05 - 0.08	0.06 - 0.09	0.07 - 0.11	0.08 - 0.14	0.11 - 0.18	0.14 - 0.22	0.17 - 0.25
0.008 - 0.023	0.020 - 0.030	0.024 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.06 - 0.10	0.08 - 0.13	0.10 - 0.16	0.12 - 0.18
0.011 - 0.025	0.023 - 0.032	0.029 - 0.05	0.04 - 0.06	0.05 - 0.07	0.06 - 0.08	0.07 - 0.11	0.10 - 0.14	0.12 - 0.17	0.14 - 0.20
0.008 - 0.023	0.020 - 0.030	0.024 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.06 - 0.10	0.08 - 0.13	0.10 - 0.16	0.12 - 0.18
0.011 - 0.025	0.023 - 0.032	0.029 - 0.05	0.04 - 0.06	0.05 - 0.07	0.06 - 0.08	0.07 - 0.11	0.10 - 0.14	0.12 - 0.17	0.14 - 0.20
0.008 - 0.023	0.020 - 0.030	0.024 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.06 - 0.10	0.08 - 0.13	0.10 - 0.16	0.12 - 0.18
0.008 - 0.023	0.020 - 0.030	0.024 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.06 - 0.10	0.08 - 0.13	0.10 - 0.16	0.12 - 0.18
0.008 - 0.023	0.020 - 0.030	0.024 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.06 - 0.10	0.08 - 0.13	0.10 - 0.16	0.12 - 0.18
0.011 - 0.025	0.023 - 0.032	0.029 - 0.05	0.04 - 0.06	0.05 - 0.07	0.06 - 0.08	0.07 - 0.11	0.10 - 0.14	0.12 - 0.17	0.14 - 0.20
0.008 - 0.023	0.020 - 0.030	0.024 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.06 - 0.10	0.08 - 0.13	0.10 - 0.16	0.12 - 0.18
0.014 - 0.032	0.027 - 0.041	0.034 - 0.06	0.05 - 0.08	0.06 - 0.09	0.07 - 0.11	0.08 - 0.14	0.11 - 0.18	0.14 - 0.22	0.17 - 0.25
0.017 - 0.050	0.035 - 0.064	0.043 - 0.09	0.06 - 0.12	0.07 - 0.14	0.09 - 0.17	0.11 - 0.22	0.14 - 0.28	0.18 - 0.34	0.22 - 0.39
0.017 - 0.050	0.035 - 0.064	0.043 - 0.09	0.06 - 0.12	0.07 - 0.14	0.09 - 0.17	0.11 - 0.22	0.14 - 0.28	0.18 - 0.34	0.22 - 0.39
0.021 - 0.072	0.049 - 0.092	0.060 - 0.13	0.08 - 0.17	0.10 - 0.20	0.13 - 0.24	0.15 - 0.32	0.20 - 0.40	0.25 - 0.48	0.30 - 0.56
0.017 - 0.050	0.035 - 0.064	0.043 - 0.09	0.06 - 0.21	0.07 - 0.14	0.09 - 0.17	0.11 - 0.22	0.14 - 0.28	0.18 - 0.34	0.22 - 0.39



CUTTING CONDITIONS

Materials to be machined

			CARBIDE		DICUT		DLC	
			Vc [m/min]		Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60	50	70		
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			30	40		
P	Lead alloyed cutting steel		60	90				
P	High alloyed steel	700 – 1500 N/mm ²			25	40		
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	50	80	60	90		
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB			30	50		
K	Nodular ferritic cast iron / Malleable cast iron				40	60		
S	Titanium, titanium alloys		30	50				
N	Copper alloys - easy to machine (brass - bronze)		80	100			90	110
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	40	70	50	80	50	80
N	Aluminium alloys	Si < 8%	80	130			100	150
N	Cast aluminium	Si > 8%	70	110			90	130
N	Plastic		30	60	50	80	50	80
N	Gold, silver		50	80	70	100	70	100

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

$\emptyset D_1$ 0.10 - 0.30	$\emptyset D_1$ 0.30 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 2.00	$\emptyset D_1$ 2.00 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 14.00	$\emptyset D_1$ 14.00 - 16.00
0.002 - 0.004	0.003 - 0.028	0.021 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.11	0.08 - 0.14	0.11 - 0.20	0.15 - 0.28	0.21 - 0.32
0.002 - 0.004	0.003 - 0.021	0.018 - 0.03	0.03 - 0.04	0.03 - 0.05	0.04 - 0.08	0.07 - 0.11	0.09 - 0.15	0.13 - 0.21	0.18 - 0.24
0.002 - 0.004	0.003 - 0.028	0.021 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.11	0.08 - 0.14	0.11 - 0.20	0.15 - 0.28	0.21 - 0.32
0.002 - 0.004	0.003 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.05	0.04 - 0.07	0.06 - 0.10	0.08 - 0.14	0.11 - 0.20	0.15 - 0.22
0.002 - 0.004	0.003 - 0.021	0.018 - 0.03	0.03 - 0.04	0.03 - 0.05	0.04 - 0.08	0.07 - 0.11	0.09 - 0.15	0.13 - 0.21	0.18 - 0.24
0.002 - 0.004	0.003 - 0.021	0.015 - 0.03	0.02 - 0.04	0.03 - 0.05	0.04 - 0.07	0.06 - 0.10	0.09 - 0.14	0.11 - 0.20	0.15 - 0.22
0.002 - 0.004	0.003 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.05	0.04 - 0.07	0.06 - 0.10	0.08 - 0.14	0.11 - 0.20	0.15 - 0.22
0.002 - 0.004	0.003 - 0.021	0.018 - 0.03	0.03 - 0.04	0.03 - 0.05	0.04 - 0.08	0.07 - 0.11	0.09 - 0.15	0.13 - 0.21	0.18 - 0.24
0.002 - 0.004	0.003 - 0.028	0.021 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.11	0.08 - 0.14	0.11 - 0.20	0.15 - 0.28	0.21 - 0.32
0.002 - 0.004	0.003 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.05	0.04 - 0.07	0.06 - 0.10	0.08 - 0.14	0.11 - 0.20	0.15 - 0.22
0.002 - 0.004	0.003 - 0.042	0.27 - 0.05	0.04 - 0.07	0.05 - 0.10	0.06 - 0.16	0.10 - 0.21	0.13 - 0.30	0.19 - 0.42	0.27 - 0.48
0.002 - 0.004	0.003 - 0.042	0.027 - 0.05	0.04 - 0.07	0.05 - 0.10	0.06 - 0.16	0.10 - 0.21	0.13 - 0.30	0.19 - 0.42	0.27 - 0.48
0.002 - 0.004	0.003 - 0.059	0.036 - 0.08	0.05 - 0.10	0.06 - 0.14	0.09 - 0.22	0.13 - 0.29	0.18 - 0.42	0.26 - 0.59	0.36 - 0.67
0.002 - 0.004	0.003 - 0.042	0.027 - 0.05	0.04 - 0.07	0.05 - 0.10	0.06 - 0.16	0.10 - 0.21	0.13 - 0.30	0.19 - 0.42	0.27 - 0.48

$D_1 < 1\text{mm} \Rightarrow V_c - 30 \%$



CUTTING CONDITIONS

Materials to be machined

			CARBIDE		DICUT		DLC	
			Vc [m/min]		Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60	50	70		
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			30	40		
P	Lead alloyed cutting steel		60	90				
P	High alloyed steel	700 – 1500 N/mm ²			25	40		
M	Stainless steel	400 – 700 N/mm ²			45	60		
M	DUPLEX stainless steel	> 800 N/mm ²			30	50		
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	50	80	60	90		
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB			30	50		
K	Nodular ferritic cast iron / Malleable cast iron				40	60		
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			20	40		
S	Titanium, titanium alloys		30	50				
N	Copper alloys - easy to machine (brass - bronze)		80	100			90	110
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	40	70	50	80	50	80
N	Aluminium alloys	Si < 8%	80	130			100	150
N	Cast aluminium	Si > 8%	70	110			90	130
N	Graphite						60	100
N	Plastic		30	60	50	80	50	80
N	Gold, silver		50	80	70	100	70	100

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

$\emptyset D_1$ 0.05 - 0.30	$\emptyset D_1$ 0.30 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 2.00	$\emptyset D_1$ 2.00 - 2.45	
0.002 - 0.004	0.003 - 0.028	0.021 - 0.04	0.03 - 0.05	0.04 - 0.07	
0.002 - 0.004	0.003 - 0.021	0.018 - 0.03	0.03 - 0.04	0.03 - 0.05	
0.002 - 0.004	0.003 - 0.028	0.021 - 0.04	0.03 - 0.05	0.04 - 0.07	
0.002 - 0.004	0.003 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.05	
0.002 - 0.004	0.003 - 0.021	0.018 - 0.03	0.03 - 0.04	0.03 - 0.05	
0.002 - 0.004	0.003 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.05	
0.002 - 0.004	0.003 - 0.021	0.018 - 0.03	0.03 - 0.04	0.03 - 0.05	
0.002 - 0.004	0.003 - 0.021	0.015 - 0.03	0.02 - 0.04	0.03 - 0.05	
0.002 - 0.004	0.003 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.05	
0.001 - 0.002	0.002 - 0.010	0.015 - 0.02	0.015 - 0.025	0.02 - 0.04	
0.002 - 0.004	0.003 - 0.021	0.018 - 0.03	0.03 - 0.04	0.03 - 0.05	
0.002 - 0.004	0.003 - 0.028	0.021 - 0.04	0.03 - 0.05	0.04 - 0.07	
0.002 - 0.004	0.003 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.05	
0.002 - 0.004	0.003 - 0.042	0.27 - 0.05	0.04 - 0.07	0.05 - 0.10	
0.002 - 0.004	0.003 - 0.042	0.027 - 0.05	0.04 - 0.07	0.05 - 0.10	
0.002 - 0.004	0.003 - 0.059	0.036 - 0.08	0.05 - 0.10	0.06 - 0.14	
0.002 - 0.004	0.003 - 0.059	0.036 - 0.08	0.05 - 0.10	0.06 - 0.14	
0.002 - 0.004	0.003 - 0.042	0.027 - 0.05	0.04 - 0.07	0.05 - 0.10	

$D_1 < 1\text{mm} \Rightarrow V_c - 30\%$



CUTTING CONDITIONS

Materials to be machined

			CARBIDE		DICUT- TiAlN	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60	50	70
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			40	60
P	Lead alloyed cutting steel		60	90		
P	High alloyed steel	700 – 1500 N/mm ²			40	60
M	Stainless steel	400 – 700 N/mm ²	40	60	50	70
M	DUPLEX stainless steel	> 800 N/mm ²	20	40	30	50
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	50	80	60	80
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	60	50	70
K	Nodular ferritic cast iron / Malleable cast iron		30	50	40	60
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	15	25	20	40
S	Titanium, titanium alloys		35	55		
N	Copper alloys - easy to machine (brass - bronze)		80	100		
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	40	70	60	90
N	Aluminium alloys	Si < 8%	80	100	90	130
N	Cast aluminium	Si > 8%	70	90	80	120
N	Plastic		30	60		
N	Gold, silver		50	80		

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

$\emptyset D_1$ 0.05 - 0.30	$\emptyset D_1$ 0.30 - 0.60	$\emptyset D_1$ 0.60 - 0.80	$\emptyset D_1$ 0.80 - 1.00	$\emptyset D_1$ 1.00 - 1.20	$\emptyset D_1$ 1.20 - 1.40	$\emptyset D_1$ 1.40 - 1.60	$\emptyset D_1$ 1.60 - 1.80	$\emptyset D_1$ 1.80 - 2.00	$\emptyset D_1$ 2.00 - 3.00
0.0006 - 0.007	0.004 - 0.014	0.007 - 0.019	0.010 - 0.024	0.012 - 0.029	0.013 - 0.035	0.014 - 0.037	0.016 - 0.041	0.018 - 0.044	0.020 - 0.066
0.0005 - 0.006	0.003 - 0.012	0.006 - 0.015	0.008 - 0.019	0.010 - 0.023	0.011 - 0.028	0.011 - 0.029	0.013 - 0.033	0.014 - 0.035	0.016 - 0.053
0.0007 - 0.009	0.004 - 0.017	0.009 - 0.023	0.012 - 0.029	0.014 - 0.035	0.016 - 0.043	0.017 - 0.044	0.019 - 0.050	0.022 - 0.053	0.024 - 0.079
0.0004 - 0.005	0.003 - 0.010	0.005 - 0.013	0.007 - 0.017	0.008 - 0.020	0.009 - 0.025	0.010 - 0.026	0.011 - 0.029	0.013 - 0.031	0.014 - 0.046
0.0005 - 0.006	0.003 - 0.012	0.006 - 0.015	0.008 - 0.019	0.010 - 0.023	0.011 - 0.028	0.011 - 0.029	0.013 - 0.033	0.014 - 0.035	0.016 - 0.053
0.0004 - 0.005	0.002 - 0.009	0.005 - 0.012	0.006 - 0.016	0.008 - 0.019	0.009 - 0.023	0.009 - 0.024	0.010 - 0.027	0.012 - 0.029	0.013 - 0.043
0.0008 - 0.009	0.005 - 0.018	0.009 - 0.024	0.012 - 0.030	0.015 - 0.036	0.017 - 0.044	0.018 - 0.046	0.020 - 0.052	0.023 - 0.055	0.025 - 0.083
0.0006 - 0.007	0.004 - 0.014	0.007 - 0.019	0.010 - 0.024	0.012 - 0.029	0.013 - 0.035	0.014 - 0.037	0.016 - 0.041	0.018 - 0.044	0.020 - 0.066
0.0006 - 0.007	0.004 - 0.014	0.007 - 0.019	0.010 - 0.024	0.012 - 0.029	0.013 - 0.035	0.014 - 0.037	0.016 - 0.041	0.018 - 0.044	0.020 - 0.066
0.0003 - 0.004	0.002 - 0.007	0.004 - 0.010	0.005 - 0.012	0.006 - 0.014	0.007 - 0.018	0.007 - 0.018	0.008 - 0.021	0.009 - 0.022	0.010 - 0.033
0.0006 - 0.007	0.004 - 0.014	0.007 - 0.019	0.010 - 0.024	0.012 - 0.029	0.013 - 0.035	0.014 - 0.037	0.016 - 0.041	0.018 - 0.044	0.020 - 0.066
0.0008 - 0.009	0.005 - 0.018	0.009 - 0.024	0.012 - 0.030	0.015 - 0.036	0.017 - 0.044	0.018 - 0.046	0.020 - 0.052	0.023 - 0.055	0.025 - 0.083
0.0006 - 0.007	0.004 - 0.014	0.007 - 0.019	0.010 - 0.024	0.012 - 0.029	0.013 - 0.035	0.014 - 0.037	0.016 - 0.041	0.018 - 0.044	0.020 - 0.066
0.0008 - 0.009	0.005 - 0.018	0.009 - 0.024	0.012 - 0.030	0.017 - 0.040	0.018 - 0.050	0.018 - 0.046	0.020 - 0.052	0.023 - 0.055	0.025 - 0.083
0.0006 - 0.007	0.004 - 0.014	0.007 - 0.019	0.010 - 0.024	0.012 - 0.029	0.013 - 0.035	0.014 - 0.037	0.016 - 0.041	0.018 - 0.044	0.020 - 0.066
0.0008 - 0.009	0.005 - 0.018	0.009 - 0.024	0.012 - 0.030	0.017 - 0.040	0.018 - 0.050	0.018 - 0.046	0.020 - 0.052	0.023 - 0.055	0.025 - 0.083
0.0006 - 0.007	0.004 - 0.014	0.007 - 0.019	0.010 - 0.024	0.012 - 0.029	0.013 - 0.035	0.014 - 0.037	0.016 - 0.041	0.018 - 0.044	0.020 - 0.066

$D_1 < 1\text{mm} \Rightarrow V_c - 30\%$

CUTTING CONDITIONS

Materials to be machined

			CARBIDE		DICUT - TiAlN	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60	50	70
P	Lead alloyed cutting steel		60	90		
P	High alloyed steel	700 – 1500 N/mm ²	15	30	20	40
M	Stainless steel	400 – 700 N/mm ²	35	50	40	60
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	50	80	60	80
K	Nodular ferritic cast iron / Malleable cast iron		30	50	40	60
S	Titanium, titanium alloys		30	50		
N	Copper alloys - easy to machine (brass - bronze)		80	100		
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	40	70	50	80
N	Aluminium alloys	Si < 8%	80	100	90	110
N	Plastic		30	60		
N	Gold, silver		50	80		

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

$\emptyset D_1$ 0.20 - 0.70	$\emptyset D_1$ 0.70 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 2.00	$\emptyset D_1$ 2.00 - 3.00	$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 5.00	$\emptyset D_1$ 5.00 - 6.00	
0.005 - 0.013	0.010 - 0.018	0.014 - 0.04	0.02 - 0.05	0.04 - 0.06	0.04 - 0.09	0.06 - 0.10	0.08 - 0.11	
0.005 - 0.013	0.010 - 0.018	0.014 - 0.04	0.02 - 0.05	0.04 - 0.06	0.04 - 0.09	0.06 - 0.10	0.08 - 0.11	
0.003 - 0.009	0.007 - 0.013	0.010 - 0.03	0.02 - 0.05	0.03 - 0.04	0.03 - 0.06	0.04 - 0.07	0.06 - 0.08	
0.005 - 0.010	0.008 - 0.014	0.012 - 0.03	0.02 - 0.035	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.07 - 0.08	
0.004 - 0.010	0.008 - 0.014	0.012 - 0.03	0.02 - 0.035	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.07 - 0.08	
0.004 - 0.010	0.008 - 0.014	0.012 - 0.03	0.02 - 0.04	0.03 - 0.05	0.04 - 0.07	0.05 - 0.08	0.07 - 0.08	
0.003 - 0.009	0.007 - 0.013	0.010 - 0.03	0.02 - 0.04	0.03 - 0.04	0.03 - 0.06	0.04 - 0.07	0.06 - 0.08	
0.006 - 0.020	0.013 - 0.028	0.018 - 0.05	0.03 - 0.06	0.05 - 0.09	0.05 - 0.13	0.07 - 0.15	0.10 - 0.17	
0.005 - 0.013	0.010 - 0.018	0.014 - 0.04	0.02 - 0.05	0.04 - 0.06	0.04 - 0.09	0.06 - 0.10	0.08 - 0.11	
0.006 - 0.020	0.013 - 0.028	0.018 - 0.05	0.03 - 0.06	0.05 - 0.09	0.05 - 0.13	0.07 - 0.15	0.10 - 0.17	
0.008 - 0.028	0.018 - 0.040	0.025 - 0.08	0.04 - 0.08	0.07 - 0.13	0.08 - 0.19	0.10 - 0.22	0.14 - 0.24	
0.006 - 0.020	0.013 - 0.028	0.018 - 0.05	0.03 - 0.06	0.05 - 0.09	0.05 - 0.13	0.07 - 0.15	0.10 - 0.17	

$D_1 < 1\text{mm} \Rightarrow V_c - 30 \%$



CUTTING CONDITIONS

Materials to be machined			Ø D ₁ < 2.00		Ø D ₁ ≥ 2.00	
			TiAlN V _c [m/min]		TiAlN V _c [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	30	60	70	90
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	35	50	40	60
P	High alloyed steel	700 – 1500 N/mm ²	15	30	70	90
M	Stainless steel	400 – 700 N/mm ²	10	25	35	50
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	30	60	70	100
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	10	25	50	80
K	Nodular ferritic cast iron / Malleable cast iron		15	30	50	80
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	10	25	15	35
S	Titanium, titanium alloys		20	45	40	70
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	50	90	90	110
N	Aluminium alloys	Si < 8%	90	120	100	130

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			TiAlN V _c [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	90
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	40	60
P	High alloyed steel	700 – 1500 N/mm ²	35	50
M	Stainless steel	400 – 700 N/mm ²	35	50
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	60
K	Nodular ferritic cast iron / Malleable cast iron		30	50
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	12	30
S	Titanium, titanium alloys		30	60
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	70	90
N	Aluminium alloys	Si < 8%	130	160



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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

Ø D ₁ < 1.00	Ø D ₁ 1.00 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 4.50	Ø D ₁ 4.50 - 6.00	Ø D ₁ 6.00 - 7.00	Ø D ₁ 7.00 - 8.00	Ø D ₁ 8.00 - 10.00	Ø D ₁ 10.00 - 12.00	Ø D ₁ 12.00 - 14.00
0.02 - 0.03	0.03 - 0.05	0.03 - 0.06	0.04 - 0.10	0.08 - 0.12	0.10 - 0.14	0.11 - 0.16	0.13 - 0.20	0.15 - 0.25	0.20 - 0.30
0.01 - 0.02	0.015 - 0.04	0.02 - 0.05	0.04 - 0.08	0.07 - 0.09	0.08 - 0.11	0.09 - 0.12	0.10 - 0.15	0.13 - 0.18	0.16 - 0.20
0.005 - 0.008	0.007 - 0.012	0.01 - 0.04	0.03 - 0.08	0.07 - 0.09	0.08 - 0.11	0.09 - 0.12	0.10 - 0.15	0.13 - 0.18	0.16 - 0.20
0.005 - 0.008	0.009 - 0.02	0.01 - 0.04	0.03 - 0.08	0.06 - 0.09	0.07 - 0.11	0.08 - 0.12	0.09 - 0.15	0.12 - 0.18	0.15 - 0.20
0.02 - 0.03	0.03 - 0.04	0.04 - 0.05	0.04 - 0.08	0.07 - 0.09	0.08 - 0.11	0.09 - 0.12	0.10 - 0.15	0.13 - 0.18	0.16 - 0.20
0.01 - 0.02	0.02 - 0.03	0.03 - 0.04	0.03 - 0.08	0.06 - 0.09	0.07 - 0.11	0.08 - 0.12	0.09 - 0.15	0.12 - 0.18	0.15 - 0.20
0.02 - 0.03	0.03 - 0.04	0.04 - 0.05	0.04 - 0.08	0.07 - 0.09	0.08 - 0.11	0.09 - 0.12	0.10 - 0.15	0.13 - 0.18	0.16 - 0.20
0.004 - 0.01	0.005 - 0.015	0.005 - 0.02	0.012 - 0.04	0.02 - 0.05	0.03 - 0.08	0.04 - 0.09	0.05 - 0.11	0.06 - 0.12	0.07 - 0.15
0.008 - 0.02	0.01 - 0.03	0.01 - 0.04	0.03 - 0.08	0.06 - 0.09	0.07 - 0.11	0.08 - 0.12	0.09 - 0.15	0.12 - 0.18	0.15 - 0.20
0.03 - 0.04	0.04 - 0.05	0.045 - 0.06	0.05 - 0.10	0.08 - 0.12	0.10 - 0.14	0.11 - 0.16	0.13 - 0.20	0.16 - 0.25	0.20 - 0.30
0.04 - 0.05	0.05 - 0.06	0.06 - 0.08	0.07 - 0.12	0.09 - 0.14	0.11 - 0.16	0.12 - 0.18	0.14 - 0.22	0.18 - 0.28	0.22 - 0.32

Ø D ₁ 1.00 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.00 - 5.00	Ø D ₁ 5.00 - 6.00	Ø D ₁ 6.00 - 7.00	Ø D ₁ 7.00 - 8.00	Ø D ₁ 8.00 - 9.00	Ø D ₁ 9.00 - 10.00	Ø D ₁ 10.00 - 14.00
0.02 - 0.04	0.03 - 0.06	0.04 - 0.09	0.06 - 0.11	0.08 - 0.12	0.10 - 0.14	0.11 - 0.16	0.13 - 0.18	0.15 - 0.20	0.15 - 0.30
0.02 - 0.04	0.02 - 0.05	0.04 - 0.07	0.05 - 0.08	0.07 - 0.09	0.08 - 0.11	0.09 - 0.12	0.10 - 0.14	0.12 - 0.15	0.13 - 0.20
0.01 - 0.03	0.01 - 0.40	0.03 - 0.07	0.05 - 0.08	0.07 - 0.09	0.07 - 0.11	0.08 - 0.12	0.09 - 0.14	0.12 - 0.15	0.12 - 0.20
0.01 - 0.03	0.01 - 0.04	0.03 - 0.07	0.05 - 0.08	0.07 - 0.09	0.08 - 0.11	0.09 - 0.12	0.09 - 0.14	0.12 - 0.15	0.12 - 0.20
0.02 - 0.04	0.04 - 0.05	0.04 - 0.07	0.05 - 0.08	0.07 - 0.09	0.08 - 0.11	0.09 - 0.12	0.10 - 0.14	0.12 - 0.15	0.13 - 0.20
0.02 - 0.04	0.04 - 0.05	0.04 - 0.07	0.05 - 0.08	0.07 - 0.09	0.08 - 0.11	0.09 - 0.12	0.10 - 0.14	0.12 - 0.15	0.13 - 0.20
0.02 - 0.04	0.03 - 0.04	0.03 - 0.07	0.05 - 0.08	0.07 - 0.09	0.07 - 0.11	0.08 - 0.12	0.09 - 0.14	0.12 - 0.15	0.12 - 0.20
0.008 - 0.03	0.01 - 0.03	0.03 - 0.07	0.05 - 0.08	0.07 - 0.09	0.07 - 0.11	0.08 - 0.12	0.09 - 0.14	0.12 - 0.15	0.12 - 0.20
0.008 - 0.03	0.01 - 0.03	0.03 - 0.07	0.05 - 0.08	0.07 - 0.09	0.07 - 0.12	0.08 - 0.12	0.09 - 0.14	0.12 - 0.15	0.12 - 0.20
0.02 - 0.04	0.02 - 0.06	0.05 - 0.08	0.06 - 0.10	0.08 - 0.12	0.10 - 0.14	0.11 - 0.16	0.13 - 0.18	0.13 - 0.20	0.16 - 0.30
0.02 - 0.04	0.02 - 0.06	0.05 - 0.08	0.06 - 0.10	0.08 - 0.12	0.10 - 0.14	0.11 - 0.16	0.13 - 0.18	0.13 - 0.20	0.16 - 0.30



CUTTING CONDITIONS

Materials to be machined

			TiAlN	
			Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	80	120
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	70	100
P	Lead alloyed cutting steel		80	120
P	High alloyed steel	700 – 1500 N/mm ²	40	70
M	DUPLEX stainless steel	> 800 N/mm ²	30	50
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	90	130
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	80	120
K	Nodular ferritic cast iron / Malleable cast iron		70	100
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	15	30
S	Titanium, titanium alloys		50	100
N	Aluminium alloys	Si < 8%	140	170

DIXI 1147

			TiAlN	
			Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100
P	Unalloyed steel / Low alloy steel	600 – 1500 N/mm ^{2ed}	60	90
P	Lead alloyed cutting steel		80	110
P	High alloyed steel	700 – 1500 N/mm ²	30	60
M	DUPLEX cast iron	> 800 N/mm ²	30	50
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	90	130
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	80	120
K	Nodular ferritic cast iron / Malleable cast iron		70	100
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	15	30
S	Titanium, titanium alloys		50	100
N	Aluminium alloys	Si < 8%	130	160



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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

Ø D ₁ 0.80 - 1.00	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 5.00	Ø D ₁ 5.00 - 7.00	Ø D ₁ 7.00 - 10.00	
0.03 - 0.11	0.06 - 0.16	0.08 - 0.21	0.11 - 0.25	0.13 - 0.27	0.16 - 0.33	0.19 - 0.35	
0.03 - 0.10	0.06 - 0.15	0.08 - 0.20	0.10 - 0.23	0.12 - 0.25	0.15 - 0.27	0.18 - 0.30	
0.03 - 0.12	0.07 - 0.17	0.09 - 0.23	0.11 - 0.25	0.14 - 0.27	0.17 - 0.30	0.21 - 0.35	
0.03 - 0.10	0.06 - 0.15	0.08 - 0.17	0.12 - 0.22	0.12 - 0.23	0.15 - 0.25	0.18 - 0.28	
0.008 - 0.02	0.01 - 0.04	0.02 - 0.06	0.03 - 0.08	0.04 - 0.10	0.05 - 0.12	0.07 - 0.14	
0.03 - 0.12	0.07 - 0.17	0.09 - 0.23	0.12 - 0.29	0.14 - 0.35	0.17 - 0.40	0.21 - 0.46	
0.03 - 0.12	0.07 - 0.17	0.09 - 0.23	0.12 - 0.29	0.14 - 0.35	0.17 - 0.40	0.21 - 0.46	
0.03 - 0.10	0.06 - 0.15	0.08 - 0.20	0.10 - 0.25	0.12 - 0.30	0.15 - 0.35	0.18 - 0.40	
0.008 - 0.02	0.01 - 0.04	0.02 - 0.06	0.03 - 0.08	0.04 - 0.10	0.05 - 0.12	0.07 - 0.14	
0.008 - 0.02	0.01 - 0.04	0.02 - 0.06	0.03 - 0.08	0.04 - 0.10	0.05 - 0.12	0.07 - 0.14	
0.03 - 0.12	0.07 - 0.17	0.09 - 0.23	0.12 - 0.29	0.14 - 0.35	0.17 - 0.40	0.21 - 0.46	

Ø D ₁ 0.50 - 1.00	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 5.00	Ø D ₁ 5.00 - 7.00	Ø D ₁ 7.00 - 10.00	
0.03 - 0.11	0.06 - 0.16	0.08 - 0.21	0.11 - 0.26	0.13 - 0.32	0.16 - 0.37	0.19 - 0.42	
0.03 - 0.10	0.06 - 0.15	0.08 - 0.20	0.10 - 0.25	0.12 - 0.30	0.15 - 0.35	0.18 - 0.40	
0.03 - 0.12	0.07 - 0.17	0.09 - 0.23	0.12 - 0.29	0.14 - 0.35	0.17 - 0.40	0.21 - 0.46	
0.03 - 0.10	0.06 - 0.15	0.08 - 0.20	0.12 - 0.25	0.12 - 0.30	0.15 - 0.35	0.18 - 0.40	
0.008 - 0.02	0.01 - 0.04	0.02 - 0.06	0.03 - 0.08	0.04 - 0.10	0.05 - 0.12	0.07 - 0.14	
0.03 - 0.12	0.07 - 0.17	0.09 - 0.23	0.12 - 0.29	0.14 - 0.35	0.17 - 0.40	0.21 - 0.46	
0.03 - 0.12	0.07 - 0.17	0.09 - 0.23	0.12 - 0.29	0.14 - 0.35	0.17 - 0.40	0.21 - 0.46	
0.03 - 0.10	0.06 - 0.15	0.08 - 0.20	0.10 - 0.25	0.12 - 0.30	0.15 - 0.35	0.18 - 0.40	
0.008 - 0.02	0.01 - 0.04	0.02 - 0.06	0.03 - 0.08	0.04 - 0.10	0.05 - 0.12	0.07 - 0.14	
0.008 - 0.02	0.01 - 0.04	0.02 - 0.06	0.03 - 0.08	0.04 - 0.10	0.05 - 0.12	0.07 - 0.14	
0.03 - 0.10	0.06 - 0.15	0.08 - 0.20	0.10 - 0.25	0.12 - 0.30	0.15 - 0.35	0.18 - 0.40	



CUTTING CONDITIONS

Materials to be machined

			CARBIDE	
			Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	35	50
P	Lead alloyed cutting steel		60	90
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	50	80
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	35	50
K	Nodular ferritic cast iron / Malleable cast iron		40	55
S	Titanium, titanium alloys		30	50
N	Copper alloys - easy to machine (brass - bronze)		60	100
N	Cast aluminium	Si > 8%	70	110
N	Gold, silver		50	80

DIXI 1280

			XIDUR	
			Vc [m/min]	
P	High alloyed steel	700 – 1500 N/mm ²	30	30
H	Hardened tool steel and cast iron	> 1500 N/mm ² (45 - 65 HRC)	15	25
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	15	30

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

Ø D ₁ 0.15 - 0.50	Ø D ₁ 0.50 - 1.00	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 5.00	Ø D ₁ 5.00 - 7.00	Ø D ₁ 7.00 - 10.00	Ø D ₁ 10.00 - 14.00	
0.0012 - 0.009	0.004 - 0.018	0.008 - 0.028	0.011 - 0.037	0.011 - 0.05	0.020 - 0.07	0.03 - 0.10	0.04 - 0.14	0.06 - 0.19	
0.001 - 0.007	0.003 - 0.015	0.006 - 0.022	0.010 - 0.029	0.008 - 0.04	0.016 - 0.06	0.03 - 0.08	0.04 - 0.12	0.05 - 0.15	
0.0014 - 0.011	0.005 - 0.022	0.010 - 0.033	0.014 - 0.044	0.013 - 0.06	0.023 - 0.09	0.04 - 0.12	0.05 - 0.07	0.07 - 0.23	
0.0015 - 0.012	0.005 - 0.023	0.010 - 0.035	0.015 - 0.046	0.013 - 0.06	0.024 - 0.09	0.04 - 0.13	0.06 - 0.18	0.08 - 0.24	
0.0012 - 0.009	0.004 - 0.018	0.008 - 0.028	0.011 - 0.037	0.011 - 0.05	0.020 - 0.07	0.03 - 0.10	0.04 - 0.14	0.06 - 0.19	
0.0012 - 0.009	0.004 - 0.018	0.008 - 0.028	0.011 - 0.037	0.011 - 0.05	0.020 - 0.07	0.03 - 0.10	0.04 - 0.14	0.06 - 0.19	
0.0012 - 0.009	0.004 - 0.018	0.008 - 0.028	0.011 - 0.037	0.011 - 0.05	0.020 - 0.07	0.03 - 0.10	0.04 - 0.14	0.06 - 0.19	
0.0015 - 0.012	0.005 - 0.023	0.010 - 0.035	0.015 - 0.046	0.013 - 0.06	0.024 - 0.09	0.04 - 0.13	0.06 - 0.18	0.08 - 0.24	
0.0017 - 0.013	0.006 - 0.026	0.011 - 0.039	0.017 - 0.052	0.015 - 0.07	0.027 - 0.10	0.04 - 0.14	0.06 - 0.20	0.09 - 0.27	
0.0012 - 0.009	0.004 - 0.018	0.008 - 0.028	0.011 - 0.037	0.011 - 0.05	0.020 - 0.07	0.03 - 0.10	0.04 - 0.14	0.06 - 0.19	

D₁ < 1mm ⇒ V_c - 30 %

Ø D ₁ 0.25 - 0.50	Ø D ₁ 0.50 - 1.00	Ø D ₁ 1.00 - 2.50	Ø D ₁ 2.50 - 3.00	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.00 - 5.00	Ø D ₁ 5.00 - 8.00	Ø D ₁ 8.00 - 12.00	
0.015	0.022	0.03	0.035	0.044	0.055	0.06	0.08	
0.01	0.02	0.025	0.03	0.04	0.05	0.05	0.06	
0.015	0.022	0.03	0.035	0.044	0.055	0.06	0.08	

Pecking cycle = 0.25 x D₁

CUTTING CONDITIONS

Materials to be machined

			CARBIDE		TiAlN	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60	50	70
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	30	50	40	60
P	Lead alloyed cutting steel		60	90	70	100
P	High alloyed steel	700 – 1500 N/mm ²	35	50	25	50
M	Stainless steel	400 – 700 N/mm ²	15	40	40	60
M	DUPLEX stainless steel	> 800 N/mm ²	30	50	40	60
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	10	30	60	90
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	50	80	40	60
K	Nodular ferritic cast iron / Malleable cast iron		30	50	40	60
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	40	30	50
S	Titanium, titanium alloys		30	50	40	60
N	Copper alloys - easy to machine (brass - bronze)		80	100	90	120
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	40	70	60	80
N	Aluminium alloys	Si < 8%	80	120	100	160
N	Cast aluminium	Si > 8%	70	110	90	130
N	Plastic		30	60	50	80
N	Gold, silver		50	80	65	100

Generally, we use the **average Ø** of the stepped drill to calculate the spindle rotation (n)

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per revolution

f [mm]

Ø D ₁ 0.30 - 1.00	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 5.00	Ø D ₁ 5.00 - 7.00	Ø D ₁ 7.00 - 10.00	Ø D ₁ 10.00 - 14.00	Ø D ₁ 14.00 - 16.00	Ø D ₁ 16.00 - 20.00
0.003 - 0.018	0.014 - 0.027	0.021 - 0.04	0.03 - 0.05	0.04 - 0.09	0.07 - 0.13	0.10 - 0.18	0.14 - 0.25	0.20 - 0.29	0.22 - 0.36
0.002 - 0.014	0.012 - 0.021	0.018 - 0.03	0.02 - 0.04	0.04 - 0.07	0.06 - 0.10	0.08 - 0.14	0.12 - 0.20	0.17 - 0.22	0.19 - 0.28
0.003 - 0.018	0.014 - 0.027	0.021 - 0.04	0.03 - 0.05	0.04 - 0.09	0.07 - 0.13	0.10 - 0.18	0.14 - 0.25	0.20 - 0.29	0.22 - 0.36
0.002 - 0.014	0.012 - 0.021	0.018 - 0.03	0.02 - 0.04	0.04 - 0.07	0.06 - 0.10	0.08 - 0.14	0.12 - 0.20	0.17 - 0.22	0.19 - 0.28
0.002 - 0.013	0.010 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.07	0.05 - 0.09	0.07 - 0.13	0.10 - 0.18	0.14 - 0.21	0.16 - 0.26
0.002 - 0.014	0.012 - 0.021	0.018 - 0.03	0.02 - 0.04	0.04 - 0.07	0.06 - 0.10	0.08 - 0.14	0.12 - 0.20	0.17 - 0.22	0.19 - 0.28
0.002 - 0.013	0.010 - 0.02	0.015 - 0.03	0.02 - 0.03	0.03 - 0.07	0.05 - 0.09	0.07 - 0.13	0.10 - 0.18	0.14 - 0.21	0.16 - 0.26
0.002 - 0.014	0.012 - 0.021	0.018 - 0.03	0.02 - 0.04	0.04 - 0.07	0.06 - 0.10	0.08 - 0.14	0.12 - 0.20	0.17 - 0.22	0.19 - 0.28
0.002 - 0.013	0.010 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.07	0.05 - 0.09	0.07 - 0.13	0.10 - 0.18	0.14 - 0.21	0.16 - 0.26
0.001 - 0.008	0.006 - 0.010	0.008 - 0.02	0.01 - 0.03	0.02 - 0.04	0.03 - 0.06	0.04 - 0.08	0.06 - 0.11	0.07 - 0.12	0.08 - 0.14
0.002 - 0.013	0.010 - 0.020	0.015 - 0.03	0.02 - 0.03	0.03 - 0.07	0.05 - 0.09	0.07 - 0.13	0.10 - 0.18	0.14 - 0.21	0.16 - 0.26
0.004 - 0.028	0.018 - 0.042	0.027 - 0.06	0.04 - 0.07	0.05 - 0.14	0.09 - 0.20	0.13 - 0.28	0.18 - 0.39	0.25 - 0.45	0.29 - 0.56
0.003 - 0.018	0.014 - 0.027	0.021 - 0.04	0.03 - 0.05	0.04 - 0.09	0.07 - 0.13	0.10 - 0.18	0.14 - 0.25	0.20 - 0.29	0.22 - 0.36
0.004 - 0.028	0.018 - 0.042	0.027 - 0.06	0.04 - 0.07	0.05 - 0.14	0.09 - 0.20	0.13 - 0.28	0.18 - 0.39	0.25 - 0.45	0.29 - 0.56
0.004 - 0.028	0.018 - 0.042	0.027 - 0.06	0.04 - 0.07	0.05 - 0.14	0.09 - 0.20	0.13 - 0.28	0.18 - 0.39	0.25 - 0.45	0.29 - 0.56
0.005 - 0.040	0.025 - 0.060	0.038 - 0.08	0.05 - 0.10	0.08 - 0.20	0.13 - 0.28	0.18 - 0.40	0.25 - 0.56	0.35 - 0.64	0.40 - 0.80
0.004 - 0.028	0.018 - 0.042	0.027 - 0.06	0.04 - 0.07	0.05 - 0.14	0.09 - 0.20	0.13 - 0.28	0.18 - 0.39	0.25 - 0.45	0.29 - 0.56

D₁ < 1mm ⇒ V_c - 30 %





FRAISAGE

FRÄSEN

MILLING

FRESATURA

MARÁS

FRESADO

SELECTION OF END MILLS 88



END MILLS $Z = 1$ 102



END MILLS $Z = 2$ 107



END MILLS $Z = 3$ 118



END MILLS $Z = 4$ 128



MULTI-TOOTH END MILLS 132



ROUGHING END MILLS 134



END MILLS WITH RADIUS CORNER 137



BALL-NOSE END MILLS 142



DIAMOND & PCD END MILLS 100



ROUTERS FOR COMPOSITES 151



TOOLS ON REQUEST 152



INFORMATION 153



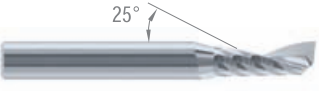
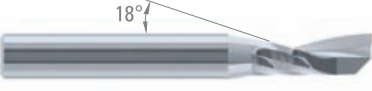
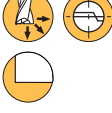
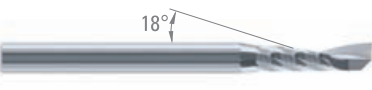
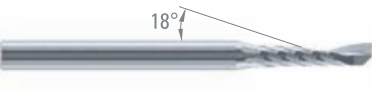
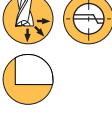
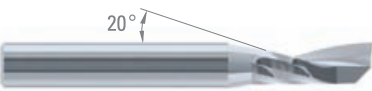
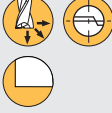
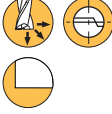
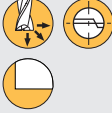
CUTTING CONDITIONS 154

✓ = item from stock

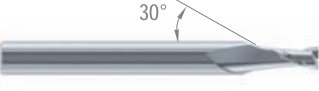
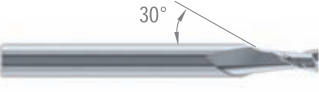
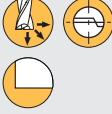
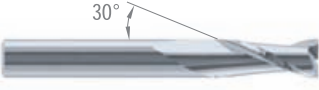
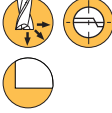
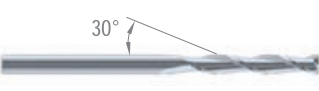
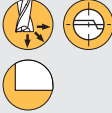
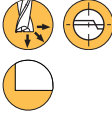
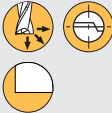
* = for non-ferrous material

SELECTION OF END MILLS

END MILLS Z=1

		Z	Page	Roughing Finishing		☐ CARBIDE	☒ TiAIN	☒ C-TOP	☒ DLC*	☒ DIAMANT*
DIXI 7561 Ø 2.00 - 12.00		1	102	Roughing ●●●●○ Finishing ●●●●○		✓			✓*	
DIXI 7301 Ø 2.00 - 8.00		1	102	Roughing ●●●●○ Finishing ●●●●○		✓				
DIXI 7302 Ø 3.00 - 12.00		1	103	Roughing ●●●●○ Finishing ●●●●○		✓				
DIXI 7303 Ø 2.00 - 4.00		1	103	Roughing ●●●●○ Finishing ●●●●○		✓				
DIXI 7311 Ø 1.00 - 12.00		1	104	Roughing ●●●●○ Finishing ●●●●○		✓				
DIXI 7060 Ø 0.50 - 6.00		1	105	Roughing ●●●●○ Finishing ●●●●○		✓				
DIXI 7063 Ø 0.40 - 4.00		1	106	Roughing ●●●●○ Finishing ●●●●○		✓				

END MILLS Z=2

DIXI 7242 Ø 0.10 - 18.00		2	107	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7342 Ø 0.10 - 12.00		2	108	Roughing ●●●●○ Finishing ●●●●○		✓		✓		
DIXI 7202 Ø 1.50 - 12.00		2	109	Roughing ●●●●○ Finishing ●●●●○		✓	✓			✓*
DIXI 7222 Ø 3.00 - 20.00		2	110	Roughing ●●●●○ Finishing ●●●●○		✓	✓			✓*
DIXI 7240 Ø 0.04 - 5.50		2	111	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7237 Ø 0.15 - 3.00		2	112	Roughing ●●●●○ Finishing ●●●●○		✓	✓			



○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
								○		⊙		○
												⊙
												⊙
												⊙
												⊙
					○			⊙	○	○		○
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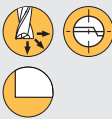
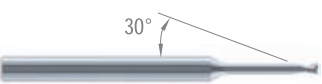
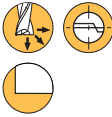
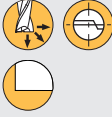
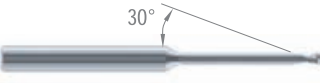
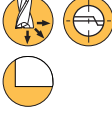
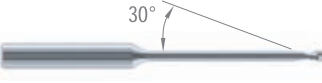
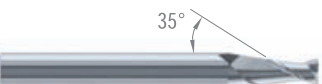
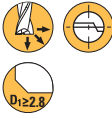
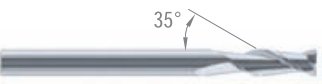
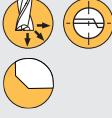
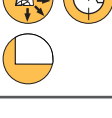
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⊙	○		○				○	⊙	○	○	⊙	○
⊙	○		○				○	⊙	○	○	⊙	○
⊙	○	○	○		⊙	○	○	⊙	○	○		○
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✓ = item from stock

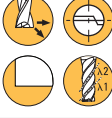
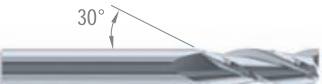
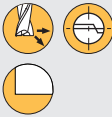
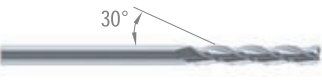
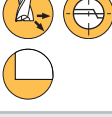
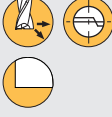
* = for non-ferrous material

SELECTION OF END MILLS

END MILLS Z=2

	Z	Page	Roughing Finishing		☐ CARBIDE	☒ TiAIN	☐ C-TOP	☐ CUTINOX	☐ DIAMANT*
DIXI 7238 Ø 0.30 - 3.00 	2	112	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7239 Ø 0.40 - 3.00 	2	112	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7239-10D Ø 0.50 - 3.00 	2	112	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7239-12D Ø 0.50 - 1.70 	2	112	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7239-15D Ø 0.50 - 1.35 	2	112	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7582 Ø 1.00 - 20.00 	2	116	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7572 Ø 3.00 - 12.00 	2	117	Roughing ●●●●○ Finishing ●●●●○		✓	✓			✓*
DIXI 7232 Ø 2.00 - 8.00 	2	117	Roughing ●●●●○ Finishing ●●●●○		✓				

END MILLS Z=3

DIXI 7243 Ø 0.35 - 20.00 	3	118	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7343 Ø 0.30 - 16.00 	3	119	Roughing ●●●●● Finishing ●●●●○		✓		✓		
DIXI 7203 Ø 2.00 - 20.00 	3	120	Roughing ●●●●○ Finishing ●●●●○		✓	✓			
DIXI 7223 Ø 3.00 - 16.00 	3	121	Roughing ●●●●○ Finishing ●●●●○		✓	✓			✓*
DIXI 7333 Ø 0.30 - 10.00 	3	122	Roughing ●●●●● Finishing ●●●●○		✓			✓	



○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
⊙	○	○	○		⊙	○	○	⊙	○	○		○
⊙	○	○	○		⊙	○	○	⊙	○	○		○
⊙	○	○	○		⊙	○	○	⊙	○	○		○
⊙	○	○	○		⊙	○	○	⊙	○	○		○
⊙	○	○	○		⊙	○	○	⊙	○	○		○
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○								○	○	⊙	⊙	○
					○			⊙		⊙		○

⊙	○	○	○		⊙		○	⊙	○	⊙		○
⊙	⊙	⊙	⊙		○	⊙	⊙	○	⊙			
⊙	○	○	○		⊙		○	⊙	○	⊙		○
⊙	○	○	○		⊙		○	⊙	○	⊙	⊙	○
⊙	⊙	⊙	⊙		⊙	○	⊙	○	⊙	○		○

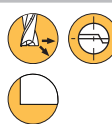
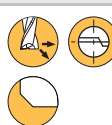
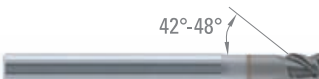
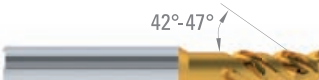
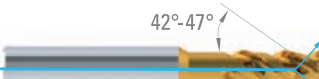
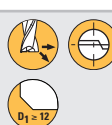


✓ = item from stock

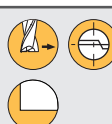
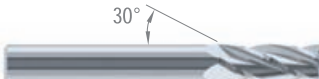
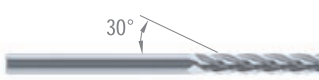
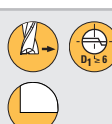
* = for non-ferrous material

SELECTION OF END MILLS

END MILLS Z=3

	Z	Page	Roughing Finishing		☐ CARBIDE	☒ TiAIN	☒ XIDUR	☒ CUTINOX	☒ DIXAL	☒ DLC*	☒ DIAMANT
DIXI 7333-3D Ø 0.30 - 4.00 	3	123	Roughing ●●●●● Finishing ●●●●●		✓			✓			
DIXI 7333-5D Ø 0.30 - 3.00 	3	123	Roughing ●●●●● Finishing ●●●●●		✓			✓			
DIXI 7333-8D Ø 0.30 - 3.00 	3	123	Roughing ●●●●● Finishing ●●●●●		✓			✓			
DIXI 7543 Ø 1.00 - 12.00 	3	124	Roughing ●●●●● Finishing ●●●●●				✓				
DIXI 7583 Ø 0.30 - 6.00 	3	125	Roughing ●●●●● Finishing ●●●●●		✓	✓				✓*	
DIXI 7253 Ø 3.00 - 16.00 	3	126	Roughing ●●●●● Finishing ●●●●●					✓			
DIXI 7563 Ø 4.00 - 20.00 	3	126	Roughing ●●●●● Finishing ●●●●●						✓		
DIXI 7563-FC Ø 6.00 - 20.00 	3	126	Roughing ●●●●● Finishing ●●●●●						✓		
DIXI 7273 Ø 3.00 - 20.00 	3	127	Roughing ●●●●● Finishing ●●●●●		✓	✓					
DIXI 7593 Ø 6.00 - 20.00 	3-4	127	Roughing ●●●●● Finishing ●●●●●		✓						

END MILLS Z=4

DIXI 7244 Ø 0.40 - 20.00 	4	128	Roughing ●●●●● Finishing ●●●●●		✓	✓					✓*
DIXI 7204 Ø 2.00 - 6.00 	4	129	Roughing ●●●●● Finishing ●●●●●		✓	✓					
DIXI 7224 Ø 3.00 - 20.00 	4	129	Roughing ●●●●● Finishing ●●●●●		✓	✓					✓*



○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
⊙	⊙	⊙	⊙		⊙	○	⊙	○	⊙	○		○
⊙	⊙	⊙	⊙		⊙	○	⊙	○	⊙	○		○
⊙	⊙	⊙	⊙		⊙	○	⊙	○	⊙	○		○
⊙	○	○	○		○		○					
○	○	○	○		○		○	○	○	⊙		○
○	⊙	⊙	⊙		○	⊙	⊙					
								○	○	⊙		○
								○	○	⊙		○
⊙	○				○		○	○	○	⊙		○
										⊙		

⊙	○	○	○		⊙		○	⊙	○	⊙	⊙	○
⊙	○	○	○		⊙		○	⊙	○	⊙		○
⊙	○				○		○	⊙	○	⊙	⊙	○

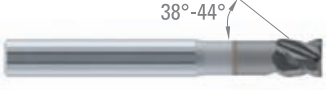


✓ = item from stock

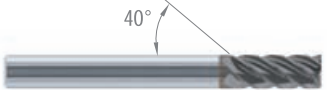
* = for non-ferrous material

SELECTION OF END MILLS

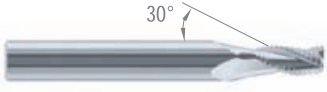
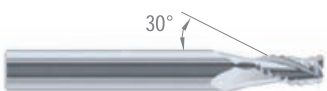
END MILLS Z=4

	Z	Page	Roughing Finishing		CARBIDE	TiAIN	XIDUR	CUTINOX	DAC	DLC*
DIXI 7264 Ø 1.50 - 20.00 	4	130	Roughing ●●●●○ Finishing ●●●●●	 				✓		
DIXI 7264-3D Ø 6.00 - 20.00 	4	130	Roughing ●●●●○ Finishing ●●●●●	 				✓		
DIXI 7254 Ø 3.00 - 16.00 	4	131	Roughing ●●●●○ Finishing ●●●●○	 				✓		

MULTI-TOOTH END MILLS

DIXI 7560 Ø 0.35 - 20.00 	3-8	132	Roughing ●●●●○ Finishing ●●●●●	 	✓	✓				✓*
DIXI 7520 Ø 0.40 - 16.00 	3-10	133	Roughing ●●●●○ Finishing ●●●●●	 			✓			

ROUGHING END MILLS

DIXI 7210 Ø 3.00 - 12.00 	3	134	Roughing ●●●●● Finishing ○●○○○	 	✓			✓		
DIXI 7213 Ø 4.00 - 20.00 	3	134	Roughing ●●●●○ Finishing ○●○○○	 	✓	✓				
DIXI 7214 Ø 6.00 - 20.00 	4	135	Roughing ●●●●○ Finishing ○●○○○	 	✓	✓				
DIXI 7215 Ø 6.00 - 16.00 	3	135	Roughing ●●●●● Finishing ○●○○○	 				✓		
DIXI 7215-FC Ø 6.00 - 16.00 	3	135	Roughing ●●●●● Finishing ○●○○○	 				✓		

HIGH FEED END MILLS

DIXI 7702 Ø 0.50 - 12.00 	2	136	Roughing ●●●●○ Finishing ●●●●●	 			✓			
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○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
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○	⊙	⊙	⊙		○	⊙	⊙					
○	⊙	⊙	⊙		○	⊙	⊙					
○	⊙	⊙	⊙		○	⊙	⊙					

⊙	⊙	○	⊙		⊙	○	○	⊙	⊙			
		○		⊙		○						

⊙	⊙	○	⊙		⊙		⊙	○	○	⊙		
⊙	○	○	○		⊙		○	○	○	○		
⊙	○	○	○		⊙		○	○	○	○		
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								○	○	⊙		

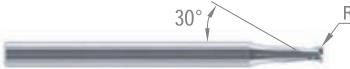
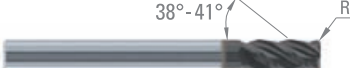
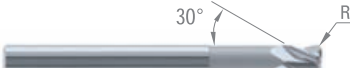
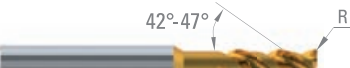
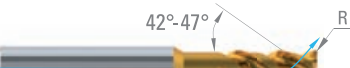
⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	○		
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✓ = item from stock

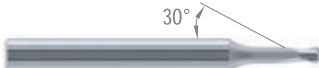
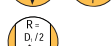
* = for non-ferrous material

SELECTION OF END MILLS

END MILLS WITH CORNER RADIUS

	Z	Page	Roughing Finishing		☐ CARBIDE	☒ TiAlN	☒ DICUT	☒ XIDUR	☒ CUTINOX	☒ DIXAL	☒ DIAMANT*
DIXI 7237-10 Ø 0.40 - 3.00 	2	137	Roughing  Finishing 	 	✓	✓					
DIXI 7070 Ø 3.00 - 12.00 	4 - 6	138	Roughing  Finishing 	 				✓			
DIXI 7265 Ø 2.00 - 12.00 	4	139	Roughing  Finishing 	 					✓		
DIXI 7554 Ø 2.00 - 12.00 	4	140	Roughing  Finishing 	 	✓	✓					
DIXI 7552 Ø 3.00 - 16.00 	2	140	Roughing  Finishing 	 	✓		✓				
DIXI 7565 Ø 4.00 - 20.00 	3	141	Roughing  Finishing 	 						✓	
DIXI 7565-FC Ø 6.00 - 20.00 	3	141	Roughing  Finishing 	 						✓	

BALL-NOSE END MILLS

DIXI 7032 Ø 0.06 - 20.00 	2	142	Roughing  Finishing 	 	✓	✓	✓				✓*
DIXI 7042 Ø 2.00 - 20.00 	2	143	Roughing  Finishing 	 	✓	✓					✓*
DIXI 7046 Ø 0.20 - 12.00 	2	144	Roughing  Finishing 	 	✓	✓	✓				✓*
DIXI 7045 Ø 0.20 - 12.00 	2	145	Roughing  Finishing 	 	✓	✓	✓				✓*
DIXI 7047-8D Ø 0.20 - 12.00 	2	145	Roughing  Finishing 	 	✓	✓	✓				✓*
DIXI 7047-10D Ø 0.20 - 12.00 	2	145	Roughing  Finishing 	 	✓	✓	✓				✓*

○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
⊙	○	○	○		⊙	○	⊙	⊙	⊙	○		○
		○		⊙		○						
⊙	○	○	○		⊙		⊙	○	○	○		○
⊙	○	○	○		⊙		⊙	○	○	○		○
○	○				○		⊙	○	⊙	○		○
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								○	○	⊙		○

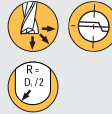
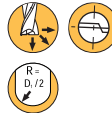
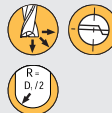
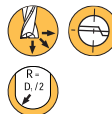
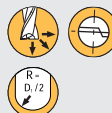
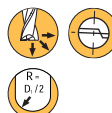
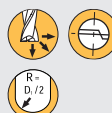
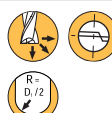
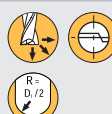
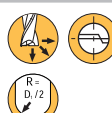
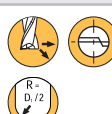
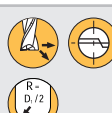
⊙	○	○	○		⊙	○	○	⊙	○	⊙	⊙	⊙
⊙	○	○	○		⊙	○	○	⊙	○	⊙	⊙	⊙
⊙	⊙	⊙	⊙		○	○	⊙	○	⊙	○	⊙	○
⊙	⊙	⊙	⊙		○	○	⊙	○	⊙	○	⊙	○
⊙	⊙	⊙	⊙		○	○	⊙	○	⊙	○	⊙	○
⊙	⊙	⊙	⊙		○	○	⊙	○	⊙	○	⊙	○

✓ = item from stock

* = for non-ferrous material

SELECTION OF END MILLS

BALL-NOSE END MILLS

	Z	Page	Roughing Finishing		☐ CARBIDE	☒ TiAIN	☒ DICUT	☒ XIDUR	☒ DIAMANT*
DIXI 7047-12D Ø 0.20 - 5.00 	2	145	Roughing ●●●●● Finishing ●●●●●		✓	✓	✓		✓*
DIXI 7047-15D Ø 0.20 - 4.00 	2	145	Roughing ●●●●● Finishing ●●●●●		✓	✓	✓		✓*
DIXI 7047-18D Ø 0.20 - 3.00 	2	145	Roughing ●●●●● Finishing ●●●●●		✓	✓	✓		✓*
DIXI 7532 Ø 0.20 - 8.00 	2	147	Roughing ●●●●● Finishing ●●●●●					✓	
DIXI 7532-3D Ø 0.20 - 10.00 	2	148	Roughing ●●●●● Finishing ●●●●●					✓	
DIXI 7532-5D Ø 0.20 - 10.00 	2	148	Roughing ●●●●● Finishing ●●●●●					✓	
DIXI 7532-8D Ø 0.20 - 4.00 	2	148	Roughing ●●●●● Finishing ●●●●●					✓	
DIXI 7532-10D Ø 0.40 - 3.00 	2	148	Roughing ●●●●● Finishing ●●●●●					✓	
DIXI 7532-12D Ø 0.50 - 2.00 	2	148	Roughing ●●●●● Finishing ●●●●●					✓	
DIXI 7532-15D Ø 0.60 - 2.00 	2	148	Roughing ●●●●● Finishing ●●●●●					✓	
DIXI 7542 Ø 1.00 - 12.00 	2	149	Roughing ●●●●● Finishing ●●●●●					✓	
DIXI 7033 Ø 1.00 - 10.00 	3	150	Roughing ●●●●● Finishing ●●●●●		✓	✓			
DIXI 7034 Ø 8.00 - 20.00 	4	150	Roughing ●●●●● Finishing ●●●●●		✓	✓			



○ good ⊙ excellent

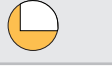
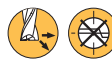
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Hardened cast iron > 45 HRC	Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic
⊙	⊙	⊙	⊙		○	○	⊙	○	⊙	○	⊙	○
⊙	⊙	⊙	⊙		○	○	⊙	○	⊙	○	⊙	○
⊙	⊙	⊙	⊙		○	○	⊙	○	⊙	○	⊙	○
		○		⊙		○						
		○		⊙		○						
		○		⊙		○						
		○		⊙		○						
		○		⊙		○						
		○		⊙		○						
		○		⊙		○						
		○		⊙		○						
⊙	⊙	⊙	○		⊙	○	○	⊙		⊙		⊙
⊙	⊙	⊙	○		⊙	○	○	○	○	○		○



SELECTION OF END MILLS

✓ = item from stock

DIAMOND & PCD MILLING CUTTERS

	Z	Page	Roughing Finishing		☐ CARBIDE	☒ PCD	☒ DIA	
DIXI 72420-SH Ø 1.00 - 20.00 	1 - 2	384	Roughing ●●●●● Finishing ●●●●●	 		✓		
DIXI 70520-SH Ø 1.00 - 20.00 	1 - 2	385	Roughing ●●●●● Finishing ●●●●●	 		✓		
DIXI 70600 PCD Ø 1.00 - 10.00 	1	386	Roughing ●●●●● Finishing ●●●●●	 		✓		
DIXI 70600 DIA Ø 3.00 - 6.00 	1	386	Roughing ○○○○○ Finishing ●●●●●	 			✓	
DIXI 72310 DIA Ø 0.30 - 2.00 	1	387	Roughing ○○○○○ Finishing ●●●●●	 			✓	
DIXI 72421 DIA Ø 6.00 - 12.00 	1	388	Roughing ○○○○○ Finishing ●●●●●	 			✓	
DIXI 70320-SH Ø 2.00 - 20.00 	1 - 2	389	Roughing ●●●●● Finishing ●●●●●	 		✓		

ROUTERS FOR COMPOSITES / KEVLAR®

DIXI 7112 Ø 5.00 - 12.70 	2	151	Roughing ●●●●● Finishing ●●●●●	 	✓			
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○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
								⊙	⊙	⊙	⊙	⊙
								⊙	⊙	⊙	⊙	⊙
								⊙	⊙	⊙	⊙	⊙
								⊙	○	⊙		⊙
								⊙	○	⊙		⊙
												⊙
								⊙	⊙	⊙	⊙	⊙

Kevlar®

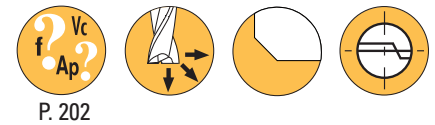
												⊙
--	--	--	--	--	--	--	--	--	--	--	--	---



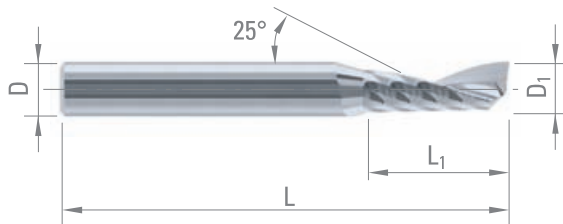
DIXI 7561

SINGLE FLUTE END MILLS FOR ALUMINIUM

Z = 1



P. 202



Cu alloy
Silver
Gold

Al

Plastic

Roughing



Finishing



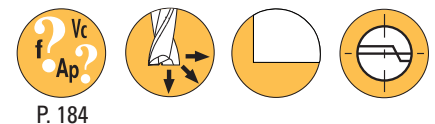
D_1 e8		L_1	D_{h5}	L	CARBIDE	DLC*
2.00	0.10 x 45°	4.0	3	38	46560	97284
3.00	0.15 x 45°	6.0	3	38	46561	97285
4.00	0.15 x 45°	12.0	4	50	46562	97286
5.00	0.15 x 45°	14.0	5	50	46563	960345
6.00	0.20 x 45°	16.0	6	50	46564	967038
8.00	0.20 x 45°	20.0	8	60	46565	992675
10.00	0.20 x 45°	22.0	10	70	46566	996345
12.00	0.20 x 45°	25.0	12	70	46567	965525

* for non-ferrous material

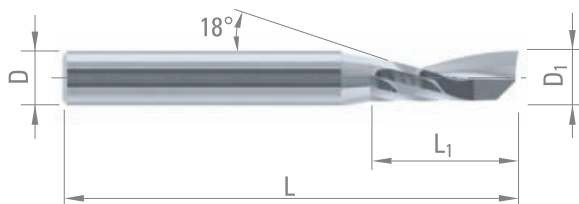
DIXI 7301

SINGLE FLUTE END MILLS FOR PLASTIC SHORT SERIES

Z = 1



P. 184



Plastic

Roughing



Finishing

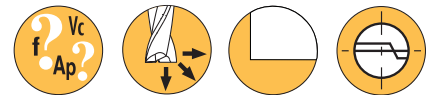


D_1 e8	L_1	D_{h5}	L	CARBIDE
2.00	6.0	3	38	965241
3.00	12.0	3	50	963955
4.00	16.0	4	50	964011
5.00	16.0	5	50	964012
6.00	16.0	6	50	964014
8.00	23.0	8	50	964016

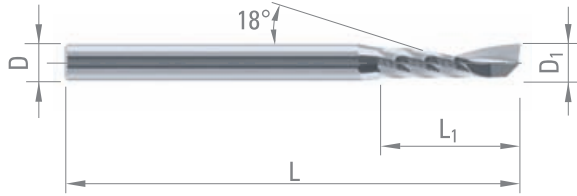
DIXI 7302

SINGLE FLUTE END MILLS, LONG SERIES

Z = 1



P. 184



Plastic

Roughing



Finishing

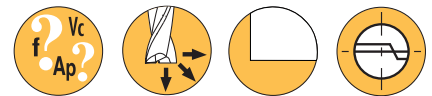


D_1 e8	L_1	D_{h5}	L	CARBIDE
3.00	17.0	3	61	963956
4.00	23.0	4	61	964031
5.00	23.0	5	61	964032
6.00	23.0	6	75	964033
8.00	32.0	8	75	964034
10.00	33.0	10	75	964093
12.00	33.0	12	100	964094

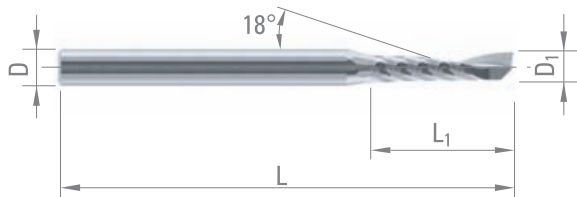
DIXI 7303

SINGLE FLUTE END MILLS, LONG SERIES REINFORCED SHANK

Z = 1



P. 184



Plastic

Roughing



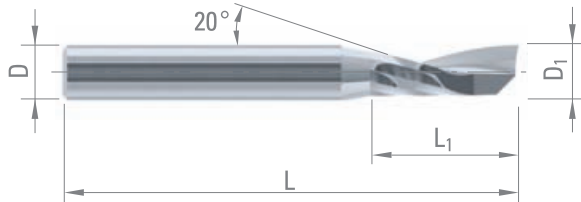
Finishing



D_1 e8	L_1	D_{h5}	L	CARBIDE
2.00	8.0	6	50	964147
3.00	18.0	6	75	963957
4.00	23.0	6	75	964079



P. 184



Plastic

Roughing



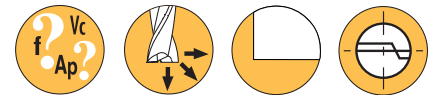
Finishing



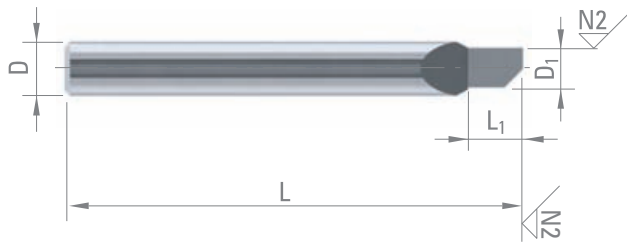
$D_{1\ e8}$	L_1	D_{h5}	L	CARBIDE
1.00	4.0	3	30	305388
1.50	6.0	3	30	305390
2.00	8.0	3	30	305391
	8.0	6	58	974194
	10.0	6	58	974195
2.50	10.0	6	58	974197
3.00	10.0	3	58	974198
	15.0	3	58	974199
	20.0	3	58	305392
	10.0	6	58	974200
	15.0	6	58	974201
	20.0	6	58	305393
4.00	12.0	4	58	974206
	15.0	4	58	305394
	22.0	4	58	974207
	30.0	4	75	305395
	12.0	6	58	974208
	22.0	6	58	974209
5.00	14.0	5	58	974214
	22.0	5	58	974215
	14.0	6	58	974216
	22.0	6	58	974217
6.00	16.0	6	58	974222
	22.0	6	58	305778
	32.0	6	75	974223
	38.0	6	80	305396
8.00	22.0	8	64	974227
	30.0	8	80	974228
	38.0	8	80	974229
	42.0	8	80	305397
10.00	30.0	10	80	974230
12.00	30.0	12	83	974231

STRAIGHT FLUTE SLOT DRILLS

Z = 1



P. 186



Cast iron

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al

Plastic

Roughing



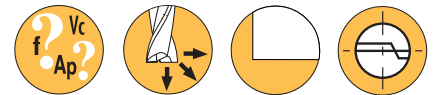
Finishing



$D_{1 \pm 0.01}$	L_1	D_{h5}	L	CARBIDE
0.50	1.0	4	35	965456
0.60	1.2	4	35	965457
0.70	1.5	4	35	965458
0.80	1.5	4	35	960645
0.90	1.5	4	35	960646
1.00	1.5	4	35	960647
1.00 >	2.5	4	35	964328
1.10	2.0	4	35	960648
1.20	2.0	4	35	960649
1.30	2.0	4	35	960650
1.40	2.0	4	35	960651
1.50	2.0	4	35	960652
1.60	2.0	4	35	960653
1.70	2.5	4	35	960654
1.80	2.5	4	35	960655
1.90	2.5	4	35	960656
2.00	2.5	4	35	960657
2.50	3.0	4	35	960658
3.00	3.5	4	42	960659
3.50	4.0	4	42	960660
4.00	5.0	4	42	960661
4.50	6.0	6	50	960662
5.00	7.0	6	50	960663
6.00	7.0	8	50	960664

SINGLE FLUTE END MILLS 3/4

Z = 1



P. 186



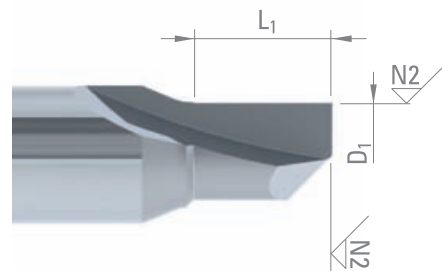
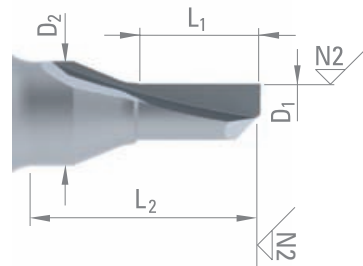
Cast iron	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic
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Roughing
●●●●○

Finishing
●●●●●

$D_1 \pm 0.01$	L_1	D_2	L_2	D_{h5}	L	CARBIDE
0.40	0.8	1.5	4.6	4	35	987593
0.50	1.0	1.5	4.6	4	35	983250
0.60	1.2	1.5	4.6	4	35	987594
0.70	1.5	1.5	4.6	4	35	987595
0.80	1.5	1.5	4.6	4	35	987596
0.90	1.5	2.0	5.1	4	35	987581
1.00	1.5	2.0	5.1	4	35	983251
1.00 >	2.5	2.0	5.1	4	35	987582
1.10	2.5	2.0	6.0	4	35	987597
1.20	2.5	2.0	6.0	4	35	987598
1.30	2.5	3.0	6.0	4	35	987599
1.40	2.5	3.0	6.0	4	35	987583
1.50	2.5	3.0	6.0	4	35	983252
1.50 >	3.5	3.0	6.5	4	35	987600
1.60	3.5	3.0	6.5	4	35	987585
1.70	3.5	3.0	6.5	4	35	987586

$D_1 \pm 0.01$	L_1	D_{h5}	L	CARBIDE
1.80	3.5	4	35	987601
1.90	3.5	4	35	987602
2.00	4.0	4	35	983253
2.20	4.0	4	35	987603
2.50	4.0	4	35	987604
2.80	4.0	4	35	987605
3.00	4.0	4	35	983254
4.00	5.0	4	35	987584



DIXI 7242

SLOT DRILLS REINFORCED SHANK

Z = 2



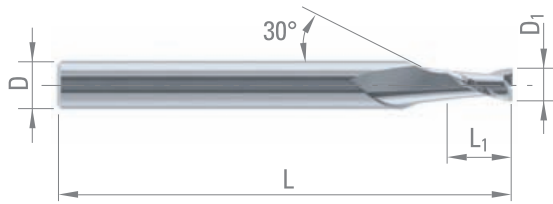
P. 162



$D_1 > 6$



DIN
6527



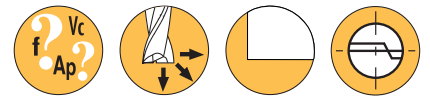
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic
Roughing ●●●●○		Finishing ●●●●○		

D_1	L_1	D_{h5}	L	CARBIDE	TiAIN
$\emptyset < 2.00 - 0/-0.01$					
$\emptyset < 3.00 - 0/-0.02$					
$\emptyset \geq 3.00 - e8$					
0.10	0.25	3	38	334534	
0.15	0.3	3	38	52628	64920
0.20	0.4	3	38	45705	60021
0.25	0.6	3	38	47916	64921
0.30	0.6	3	38	42172	60121
0.30 >	1.0	3	38	48850	60122
0.35	0.8	3	38	47917	950699
0.40	0.8	3	38	42126	60123
0.40 >	2.0	3	38	48851	60124
0.45	1.0	3	38	47918	952421
0.50	1.0	3	38	35241	36230
0.50 >	2.5	3	38	48852	60125
0.55	1.2	3	38	47921	952422
0.60	1.2	3	38	35242	36231
0.60 >	3.0	3	38	48853	60126
0.65	1.4	3	38	47922	952423
0.70	1.4	3	38	35243	36232
0.70 >	3.5	3	38	48854	57162
0.75	1.6	3	38	47923	57163
0.80	1.6	3	38	35244	36233
0.80 >	4.0	3	38	48855	57164
0.85	1.8	3	38	47066	57165
0.90	1.8	3	38	35245	36234
0.90 >	4.5	3	38	48856	57166
0.95	2.0	3	38	42846	57167
1.00	2.0	3	38	35246	36235
1.00 >	5.0	3	38	42735	55950
1.05	2.2	3	38	47924	57168
1.10	2.2	3	38	35247	57169
1.15	2.4	3	38	47925	57170
1.20	2.4	3	38	35248	36237
1.20 >	6.0	3	38	48857	57171
1.25	2.6	3	38	47926	57172
1.30	2.6	3	38	35249	57173
1.35	2.8	3	38	47927	57174
1.40	2.8	3	38	35250	36239
1.45	3.0	3	38	47928	57175
1.50	3.0	3	38	38489	36240
1.50 >	7.0	3	38	48858	57176

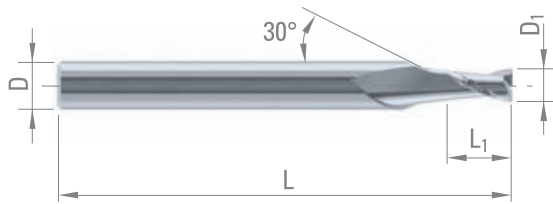
D_1	L_1	D_{h5}	L	CARBIDE	TiAIN
$\emptyset < 2.00 - 0/-0.01$					
$\emptyset < 3.00 - 0/-0.02$					
$\emptyset \geq 3.00 - e8$					
1.60	3.2	3	38	38490	57177
1.70	3.4	3	38	38491	44939
1.80	3.6	3	38	42096	38613
1.90	4.0	3	38	38493	57178
2.00	6.0	3	38	42784	39577
2.10	7.0	3	38	44058	64794
2.20	7.0	3	38	43956	64795
2.30	7.0	3	38	44877	60627
2.40	7.0	3	38	43527	64796
2.50	7.0	3	38	42201	36242
3.00	7.0	6	57	41806	46440
3.50	7.0	6	57	43353	57179
4.00	8.0	6	57	41856	57180
4.50	8.0	6	57	42202	57181
5.00	10.0	6	57	41996	36247
5.50	10.0	6	57	41807	57182
6.00	10.0	6	57	41907	57183
6.50	13.0	8	63	28932	57184
7.00	13.0	8	63	28933	57185
7.50	16.0	8	63	28934	57186
8.00	16.0	8	63	42271	57187
8.50	16.0	10	72	28936	57195
9.00	16.0	10	72	28937	57196
9.50	19.0	10	72	43038	57197
10.00	19.0	10	72	42352	57198
12.00	22.0	12	83	39944	57199
18.00	26.0	18	92	42355	57202

SLOT DRILLS REINFORCED SHANK

Z = 2



P. 188
P. 190



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	

Roughing



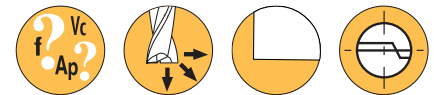
Finishing



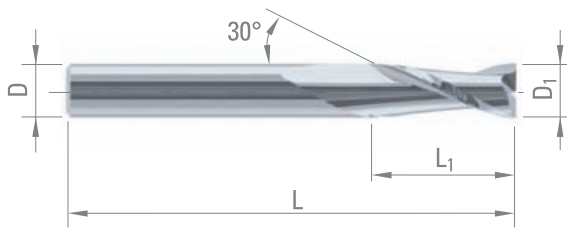
D ₁	L ₁	D _{h5}	L	CARBIDE	C-TOP
Ø < 0.10 - 0/-0.01					
Ø < 2.00 - 0/-0.02					
Ø ≥ 6.00 - e8					
0.10	0.15	4	38	334850	334910
0.15	0.23	4	38	334851	334911
0.20	0.30	4	38	334852	334912
0.25	0.38	4	38	334853	334913
0.30	0.45	4	38	334854	334914
0.35	0.53	4	38	334855	334915
0.40	0.60	4	38	334856	334916
0.50	0.75	4	38	334857	334917
0.60	0.90	4	38	334858	334918
0.70	1.05	4	38	334859	334919
0.80	1.20	4	38	334860	334920
0.90	1.35	4	38	334861	334921
1.00	1.50	4	38	334862	334922
1.10	1.65	4	38	334863	334923
1.20	1.80	4	38	334864	334924
1.30	1.95	4	38	334865	334925
1.40	2.10	4	38	334866	334926
1.50	2.25	4	38	334867	334927
1.60	2.40	4	38	334868	334928
1.70	2.55	4	38	334869	334929
1.80	2.70	4	38	334870	334930
1.90	2.85	4	38	334871	334931
2.00	3.00	4	38	334872	334932
2.50	3.75	4	38	334873	334933
3.00	4.50	6	55	334874	334934
4.00	6.00	6	55	334875	334935
5.00	7.50	6	55	334876	334936
6.00	9.00	6	55	334877	334937
8.00	12.00	8	64	334878	334938
10.00	15.00	10	67	334879	334939
12.00	18.00	12	74	334880	334940

SLOT DRILLS

Z = 2



P. 162



Steel + Pb	Low alloyed steel	DUPLEX stainless steel	Titanium, titanium alloy	Cu alloy Silver Gold
Cu alloy difficult to machine	Al	Graphite	Plastic	

Roughing



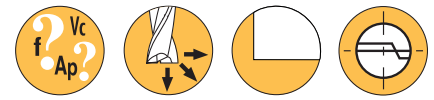
Finishing



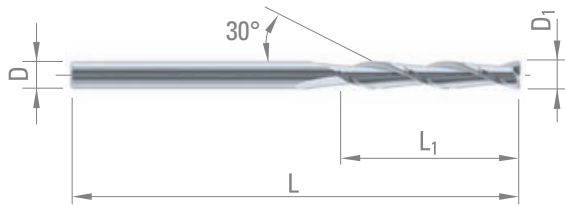
D ₁ e8 Ø < 2.00 - 0/-0.01 Ø ≥ 2.00 - e8	L ₁	D _{h5}	L	CARBIDE	TiN	DIAMANT
1.50	6	2.0	32	690	57063	
2.00	8	2.0	32	691	57064	61616
2.50	8	2.5	32	692	57065	
3.00	10	3.0	38	693	57066	36199
3.50	12	3.5	38	34760	57067	
4.00	12	4.0	50	694	57068	63847
4.50	12	4.5	50	41135	57069	
5.00	14	5.0	50	34623	57070	
6.00	16	6.0	50	34624	57071	62991
7.00	18	7.0	60	29769	57072	
8.00	20	8.0	63	698	57073	67513
9.00	20	9.0	67	43726		
10.00	22	10.0	72	699	57075	
11.00	22	11.0	73	28686		
12.00	22	12.0	73	30940	57077	

SLOT DRILLS LONG SERIES

Z = 2



P. 178



Steel + Pb	Low alloyed steel	DUPLEX stainless steel	Titanium, titanium alloy	Cu alloy Silver Gold
Cu alloy difficult to machine	Al	Graphite	Plastic	

Roughing



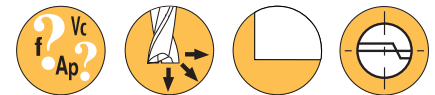
Finishing



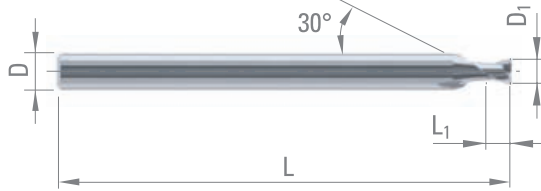
D ₁ e8	L ₁	D _{h5}	L	CARBIDE	TiAIN	DIAMANT
3.00	30.0	3	60	44756	57124	60231
4.00	30.0	4	60	44757	57125	60232
5.00	35.0	5	75	44758	57133	60233
6.00	40.0	6	100	44759	57134	60234
8.00	40.0	8	100	44760	57135	60235
10.00	40.0	10	100	44761	57136	60236
12.00	45.0	12	100	44762	57137	60237
16.00	65.0	16	150	44764		
20.00	65.0	20	150	44766	57140	

SLOT DRILLS, EXTRA SHORT REINFORCED SHANK

Z = 2



P. 162



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic	Roughing		Finishing	
	●●●●●○		●●●●○●	

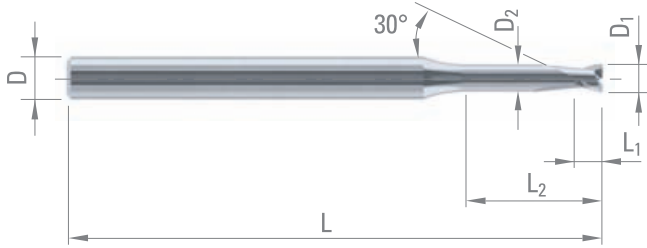
D ₁	L ₁	D _{h5}	L	CARBIDE	TiAIN
Ø < 2.00 - 0/-0.01					
Ø < 3.00 - 0/-0.02					
Ø ≥ 3.00 - e8					
0.04	0.04	3	38	954084	
0.05	0.05	3	38	954085	
0.06	0.06	3	38	951973	
0.07	0.07	3	38	954087	
0.08	0.08	3	38	954086	
0.09	0.09	3	38	954089	
0.10	0.10	3	38	63609	64354
0.12	0.12	3	38	954090	956316
0.15	0.15	3	38	63608	64355
0.20	0.20	3	38	63610	64356
0.25	0.25	3	38	63678	64357
0.30	0.30	3	38	63679	64253
0.35	0.35	3	38	63680	64358
0.40	0.40	3	38	56551	61443
0.45	0.45	3	38	63681	64359
0.50	0.50	3	38	63682	64254
0.55	0.55	3	38	63683	64360
0.60	0.60	3	38	45571	64361
0.65	0.65	3	38	63684	64362
0.70	0.70	3	38	63685	64363
0.75	0.75	3	38	63686	64364
0.80	0.80	3	38	63687	64255
0.85	0.85	3	38	63688	64365
0.90	0.90	3	38	63689	62538
0.95	0.95	3	38	63690	64366
1.00	1.00	3	38	50547	64367
1.05	1.05	3	38	63691	64368
1.10	1.10	3	38	63692	64369
1.15	1.15	3	38	63805	64370
1.20	1.20	3	38	63806	64371
1.25	1.25	3	38	63807	64372
1.30	1.30	3	38	63808	64373
1.35	1.35	3	38	63809	64374
1.40	1.40	3	38	63810	64375
1.45	1.45	3	38	63811	64376

D ₁	L ₁	D _{h5}	L	CARBIDE	TiAIN
Ø < 2.00 - 0/-0.01					
Ø < 3.00 - 0/-0.02					
Ø ≥ 3.00 - e8					
1.50	1.50	3	38	50548	56840
1.55	1.55	3	38	63812	64377
1.60	1.60	3	38	63813	64378
1.65	1.65	3	38	63814	64379
1.70	1.70	3	38	63815	64380
1.75	1.75	3	38	63816	64381
1.80	1.80	3	38	63817	64382
1.85	1.85	3	38	63818	64383
1.90	1.90	3	38	63819	64384
1.95	1.95	3	38	63820	64385
2.00	2.00	6	50	63821	64386
2.10	2.10	6	50	63823	64387
2.20	2.20	6	50	63824	64388
2.30	2.30	6	50	63825	64389
2.40	2.40	6	50	63826	64390
2.50	2.50	6	50	63827	64391
3.00	3.00	6	50	63828	64392
3.50	3.50	6	50	63829	64393
4.00	4.00	6	50	63830	64394
4.50	4.50	6	50	63831	64395
5.00	5.00	6	50	63832	64397
5.50	5.50	6	50	63833	64398

DIXI 7237 - 7238 - 7239 - 7239-D

SLOT DRILLS, EXTRA SHORT
NECKED DOWN

Z = 2



P. 162
P. 164



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic	Roughing ●●●●○		Finishing ●●●●○	

D ₁	L ₁	D ₂	D _{h5}	L	L ₂	DIXI	CARBIDE	TiAIN
Ø < 2.00 - 0/-0.01								
Ø < 3.00 - 0/-0.02								
Ø ≥ 3.00 - e8								
0.15	0.15	0.13	3	38	0.45	7237	66047	66149
0.20	0.20	0.17	3	38	0.60	7237	66068	66150
0.25	0.25	0.22	3	38	0.75	7237	66070	66151
0.30	0.30	0.27	3	38	0.90	7237	66071	66152
					1.50	7238	66196	66254
0.35	0.35	0.32	3	38	1.05	7237	66072	66153
					1.75	7238	66197	66255
					1.20	7237	66073	66154
0.40	0.40	0.37	3	38	2.00	7238	66199	66256
					3.20	7239	66296	66355
					1.35	7237	66074	66155
0.45	0.45	0.42	3	38	2.25	7238	66201	66257
					3.60	7239	66297	66356
					1.50	7237	66075	66156
					2.50	7238	66202	66258
0.50	0.50	0.45	3	38	4.00	7239	66298	66357
					5.00	7239-10D	978569	979371
					6.00	7239-12D	979313	979447
					7.50	7239-15D	979475	979497
					1.65	7237	66076	66157
0.55	0.55	0.50	3	38	2.75	7238	66203	66259
					4.40	7239	66299	66358
					5.50	7239-10D	979332	979373
					6.60	7239-12D	979413	979448
					8.25	7239-15D	979478	979498
					1.80	7237	66077	66158
					3.00	7238	66205	66260
0.60	0.60	0.55	3	38	4.80	7239	66300	66366
					6.00	7239-10D	979333	979374
					7.20	7239-12D	979416	979449
					9.00	7239-15D	979480	979499
					1.95	7237	66078	66159
0.65	0.65	0.60	3	38	3.25	7238	66206	66261
					5.20	7239	66301	66367
					6.50	7239-10D	979334	979375
					7.80	7239-12D	979417	979450
					9.75	7239-15D	979482	979500
					2.10	7237	66079	66160
					3.50	7238	66207	66262
0.70	0.70	0.65	3	38	5.60	7239	66302	66368
					7.00	7239-10D	979335	979376
					8.40	7239-12D	979419	979451
					10.50	7239-15D	979483	979503
					2.25	7237	66080	66161
0.75	0.75	0.70	3	38	3.75	7238	66208	66263
					6.00	7239	66303	66369
					7.50	7239-10D	979336	979377
					9.00	7239-12D	979420	979452
					11.25	7239-15D	979484	979505
					2.40	7237	66081	66162
					4.00	7238	66209	66264
0.80	0.80	0.75	3	38	6.40	7239	66304	66370
					8.00	7239-10D	979337	979378
					9.60	7239-12D	979421	979453
					12.00	7239-15D	979485	979506

DIXI 7237

$L_2 = 3 \times D_1$

DIXI 7238

$L_2 = 5 \times D_1$

DIXI 7239

$L_2 = 8 \times D_1$

DIXI 7239-10D

$L_2 = 10 \times D_1$

DIXI 7239-12D

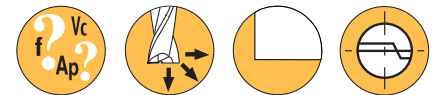
$L_2 = 12 \times D_1$

DIXI 7239-15D

$L_2 = 15 \times D_1$

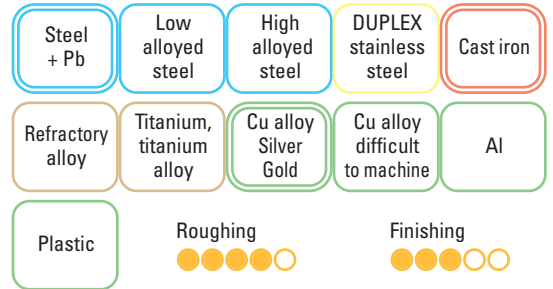


DIXI 7237 - 7238 - 7239 - 7239-D



P. 162
P. 164

D ₁	L ₁	D ₂	D _{h5}	L	L ₂	DIXI	CARBIDE	TiAIN
$\emptyset < 2.00 - 0/-0.01$ $\emptyset < 3.00 - 0/-0.02$ $\emptyset \geq 3.00 - e8$								
0.85	0.85	0.80	3	38	2.55	7237	66082	66164
					4.25	7238	66210	66265
					6.80	7239	66305	66371
					8.50	7239-10D	979338	979409
					10.20	7239-12D	979423	979454
					12.75	7239-15D	979486	979507
0.90	0.90	0.85	3	38	2.70	7237	66083	66165
					4.50	7238	66211	66266
					7.20	7239	66306	66372
					9.00	7239-10D	979339	979379
					10.80	7239-12D	979430	979455
					13.50	7239-15D	979487	979509
0.95	0.95	0.90	3	38	2.85	7237	66084	66166
					4.75	7238	66212	66267
					7.60	7239	66307	66373
					9.50	7239-10D	979340	979380
					11.40	7239-12D	979431	979456
					14.25	7239-15D	979488	979510
1.00	1.00	0.95	3	38	3.00	7237	66110	66167
					5.00	7238	66213	66268
					8.00	7239	66308	66374
					10.00	7239-10D	979341	979381
					12.00	7239-12D	979206	979457
					15.00	7239-15D	979489	979511
1.05	1.05	1.00	3	38	3.15	7237	66113	66168
					5.25	7238	66214	66269
					8.40	7239	66309	66375
					10.50	7239-10D	979342	979382
					12.60	7239-12D	979432	979458
					15.75	7239-15D	979490	979512
1.10	1.10	1.05	3	38	3.30	7237	66115	66169
					5.50	7238	66218	66270
					8.80	7239	66310	66376
					11.00	7239-10D	979343	979383
					13.20	7239-12D	979433	979459
					16.50	7239-15D	979491	979513
1.15	1.15	1.10	3	38	3.45	7237	66116	66170
					5.75	7238	66219	66271
					9.20	7239	66313	66377
					11.50	7239-10D	979344	979384
					13.80	7239-12D	979434	979460
					17.25	7239-15D	979492	979514
1.20	1.20	1.15	3	38	3.60	7237	66117	66171
					6.00	7238	66220	66272
					9.60	7239	66314	66378
					12.00	7239-10D	979345	979385
					14.40	7239-12D	979435	979461
					18.00	7239-15D	979493	979515
1.25	1.25	1.20	3	38	3.75	7237	66118	66172
					6.25	7238	66221	66273
					10.00	7239	66315	66379
					12.50	7239-10D	979346	979386
					15.00	7239-12D	979437	979462
					18.75	7239-15D	979494	979516
1.30	1.30	1.25	3	38	3.90	7237	66119	66173
					6.50	7238	66222	66274
					10.40	7239	66316	66380
					13.00	7239-10D	979347	979387
					15.60	7239-12D	979438	979463
					19.50	7239-15D	979495	979517
1.35	1.35	1.30	3	38	4.05	7237	66120	66174
					6.75	7238	66223	66275
					10.80	7239	66317	66381
					13.50	7239-10D	979348	979388
					16.20	7239-12D	979439	979464
					20.25	7239-15D	979496	979518



DIXI 7237 $L_2 = 3 \times D_1$

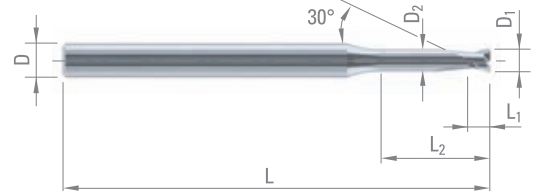
DIXI 7238 $L_2 = 5 \times D_1$

DIXI 7239 $L_2 = 8 \times D_1$

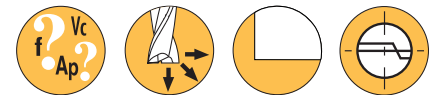
DIXI 7239-10D $L_2 = 10 \times D_1$

DIXI 7239-12D $L_2 = 12 \times D_1$

DIXI 7239-15D $L_2 = 15 \times D_1$

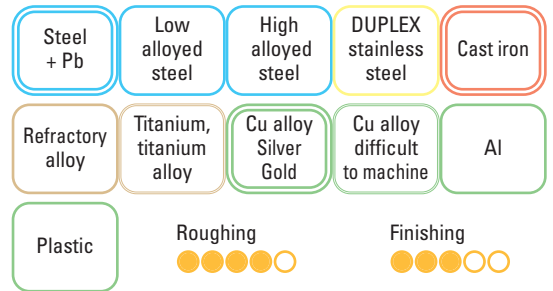


DIXI 7237 - 7238 - 7239 - 7239-D



P. 162
P. 164

D_1	L_1	D_2	D_{h5}	L	L_2	DIXI	CARBIDE	TiAIN
$\emptyset < 2.00 - 0/-0.01$ $\emptyset < 3.00 - 0/-0.02$ $\emptyset \geq 3.00 - e8$								
1.40	1.40	1.35	3	38	4.20	7237	66123	66175
					7.00	7238	66224	66276
					11.20	7239	66318	66382
					14.00	7239-10D	979349	979389
					16.80	7239-12D	979440	979465
1.45	1.45	1.35	3	38	4.35	7237	66124	66176
					7.25	7238	66225	66277
					11.60	7239	66319	66383
					14.50	7239-10D	979350	979390
					17.40	7239-12D	979441	979466
1.50	1.50	1.45	3	38	4.50	7237	66125	66177
					7.50	7238	66226	66278
					12.00	7239	66320	66384
					15.00	7239-10D	979351	979391
					18.00	7239-12D	979442	979467
1.55	1.55	1.50	3	38	4.65	7237	66126	66178
					7.75	7238	66227	66279
					12.40	7239	66323	66385
					15.50	7239-10D	979352	979392
					18.60	7239-12D	979443	979468
1.60	1.60	1.55	3	38	4.80	7237	66127	66179
					8.00	7238	66228	66280
					12.80	7239	66324	66386
					16.00	7239-10D	979353	979393
					19.20	7239-12D	979444	979469
1.65	1.65	1.60	3	38	4.95	7237	66128	66180
					8.25	7238	66229	66281
					13.20	7239	66325	66387
					16.50	7239-10D	979354	979394
					19.80	7239-12D	979445	979470
1.70	1.70	1.65	3	38	5.10	7237	66129	66182
					8.50	7238	66230	66282
					13.60	7239	66326	66388
					17.00	7239-10D	979355	979395
					20.40	7239-12D	979446	979471
1.75	1.75	1.70	3	38	5.25	7237	66130	66183
					8.75	7238	66231	66283
					14.00	7239	66327	66389
					17.50	7239-10D	979356	979396
					5.40	7237	66133	66184
1.80	1.80	1.75	3	38	9.00	7238	66232	66284
					14.40	7239	66328	66390
					18.00	7239-10D	979357	979398
					5.55	7237	66134	66185
					9.25	7238	66233	66285
1.85	1.85	1.80	3	38	14.80	7239	66329	66391
					18.50	7239-10D	979358	979399
					5.70	7237	66135	66186
					9.50	7238	66234	66286
					15.20	7239	66330	66392
1.90	1.90	1.85	3	38	19.00	7239-10D	979359	979400
					5.85	7237	66136	66187
					9.75	7238	66235	66287
					15.60	7239	66333	66393
					19.50	7239-10D	979360	979401
2.00	2.00	1.95	6	50	6.00	7237	66137	66188
					10.00	7238	66236	66288
					16.00	7239	66334	66394
					20.00	7239-10D	979361	979402
					6.30	7237	66138	66189
2.10	2.10	2.00	6	50	10.50	7238	66237	66289
					16.80	7239	66335	66395
					21.00	7239-10D	979362	979403
					6.60	7237	66194	66195
					11.00	7238	66238	66290
2.20	2.20	2.10	6	50	17.60	7239	66350	66396
					22.00	7239-10D	979363	979404



DIXI 7237 $L_2 = 3 \times D_1$

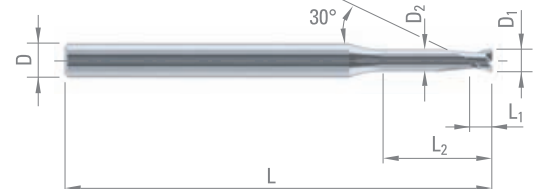
DIXI 7238 $L_2 = 5 \times D_1$

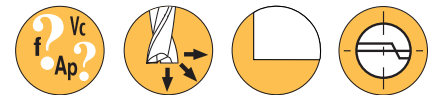
DIXI 7239 $L_2 = 8 \times D_1$

DIXI 7239-10D $L_2 = 10 \times D_1$

DIXI 7239-12D $L_2 = 12 \times D_1$

DIXI 7239-15D $L_2 = 15 \times D_1$





P. 162
P. 164

D ₁	L ₁	D ₂	D _{h5}	L	L ₂	DIXI	CARBIDE	TiAIN
$\emptyset < 2.00 - 0/-0.01$ $\emptyset < 3.00 - 0/-0.02$ $\emptyset \geq 3.00 - e8$								
2.30	2.30	2.20	6	50	6.90	7237	66139	66190
					11.50	7238	66239	66291
					18.40	7239	66351	66397
					23.00	7239-10D	979364	979405
					7.20	7237	66140	66191
2.40	2.40	2.30	6	50	12.00	7238	66240	66292
					19.20	7239	66352	66398
					24.00	7239-10D	979368	979406
					7.50	7237	66143	66192
2.50	2.50	2.40	6	50	12.50	7238	66241	66293
					20.00	7239	66353	66399
					25.00	7239-10D	979369	979407
					9.00	7237	66144	66193
3.00	3.00	2.90	6	50	15.00	7238	66294	66295
					24.00	7239	66354	66400
					30.00	7239-10D	979370	979408

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic	Roughing ●●●●○		Finishing ●●●●○	

DIXI 7237 $L_2 = 3 \times D_1$

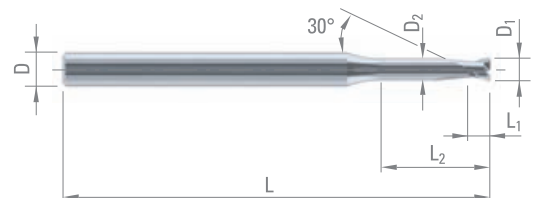
DIXI 7238 $L_2 = 5 \times D_1$

DIXI 7239 $L_2 = 8 \times D_1$

DIXI 7239-10D $L_2 = 10 \times D_1$

DIXI 7239-12D $L_2 = 12 \times D_1$

DIXI 7239-15D $L_2 = 15 \times D_1$



SLOT DRILLS REINFORCED SHANK

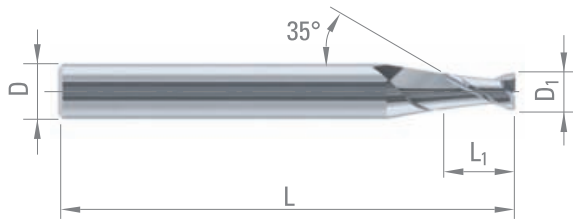
Z = 2



P. 202



$D_1 \geq 2.8$



Steel + Pb	Cast iron	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine
Al	Plastic			

Roughing



Finishing

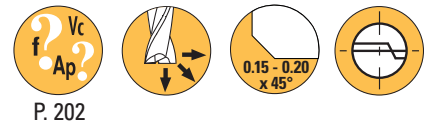


D_1 $\emptyset < 2.00 - 0/-0.01$ $\emptyset < 3.00 - 0/-0.02$ $\emptyset \geq 3.00 - e8$	L_1	D_{h5}	L	CARBIDE	TiAlN
1.00	2.0	3	38	47357	56304
1.50	3.0	3	38	47358	56305
2.00	4.0	4	50	47359	56306
2.50	5.0	4	50	47360	56307
2.80	6.0	6	50	35734	36304
3.00	6.0	6	50	30298	36305
3.80	8.0	6	50	34973	36306
4.00	8.0	6	50	30299	36607
4.50	10.0	6	50	35709	56983
5.00	10.0	6	50	30300	36309
5.50	10.0	6	50	35735	56303
6.00	10.0	6	50	29100	36299
8.00	15.0	8	60	29101	36300
10.00	18.0	10	66	29102	56334
12.00	20.0	12	73	30521	36302
16.00	25.0	16	82	30523	56318
20.00	35.0	20	104	31858	56335

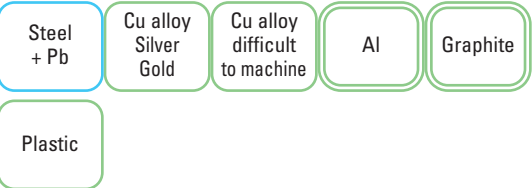
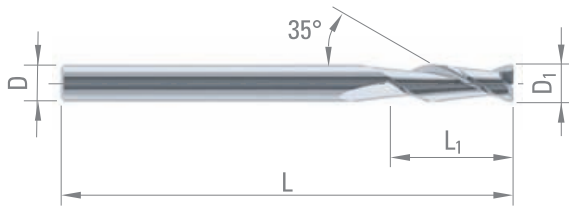
DIXI 7572

SLOT DRILLS, LONG SERIES

Z = 2



P. 202



Roughing



Finishing



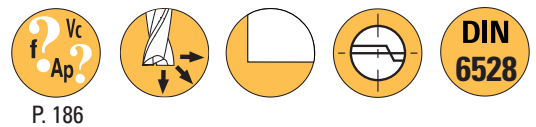
D_1 e8	L_1	D_{h5}	L	CARBIDE	TiAIN	DIAMANT*
3.00	14.0	3	50	32484	56320	57045
4.00	16.0	4	50	32485	56321	57046
5.00	18.0	5	60	32486	56322	57047
6.00	20.0	6	75	32487	56337	57048
7.00	22.0	7	75	32488		
8.00	25.0	8	75	32489	56336	57050
10.00	30.0	10	90	32491	56341	
12.00	36.0	12	100	32492	56342	

* for non-ferrous material

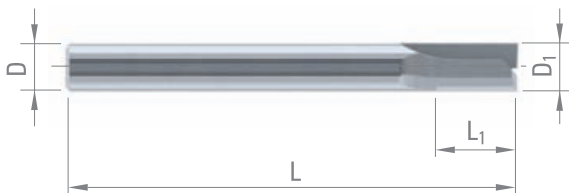
DIXI 7232

STRAIGHT FLUTE SLOT DRILLS

Z = 2



P. 186



Roughing



Finishing



D_1 e8	L_1	D_{h5}	L	CARBIDE
2.00	6.0	2	38	42540
3.00	7.0	3	38	42541
4.00	8.0	4	50	42542
6.00	10.0	6	57	42543
8.00	16.0	8	63	42544

DIXI 7243

END MILLS REINFORCED SHANK

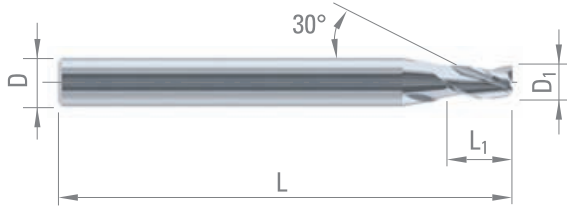
Z = 3



P. 166



$D_1 > 6$



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

Roughing
●●●●●

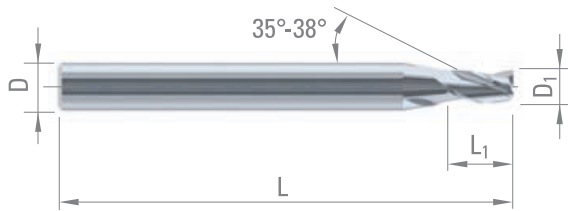
Finishing
●●●●●

D_1	L_1	D_{h5}	L	CARBIDE	TiAlN
$\varnothing < 2.00 - 0/-0.01$ $\varnothing < 3.00 - 0/-0.02$ $\varnothing \geq 3.00 - e8$					
0.35	1.0	3	38	956955	956956
0.40	1.2	3	38	956957	956958
0.50	1.5	3	38	48089	60914
0.60	1.8	3	38	61842	61841
0.70	2.1	3	38	61843	61844
0.75	2.4	3	38	48090	57205
0.80	2.4	3	38	66799	61845
0.90	2.7	3	38	60383	952308
1.00	3.0	3	38	48091	57206
1.10	3.3	3	38	59356	950790
1.20	3.6	3	38	39932	61352
1.25	3.9	3	38	48092	57207
1.30	3.9	3	38	49835	950044
1.40	4.2	3	38	60201	952191
1.50	4.5	3	38	48093	57208
1.60	4.8	3	38	64985	950045
1.70	5.1	3	38	57785	67283
1.75	5.4	3	38	48094	57209
1.80	5.4	3	38	50297	66988
1.90	5.7	3	38	66798	952309
2.00	6.0	3	38	42203	40868
2.10	7.0	3	38	45168	64847
2.20	7.0	3	38	57873	67276
2.30	7.0	3	38	40848	67277
2.40	7.0	3	38	42329	64809
2.50	7.0	3	38	41909	42105
3.00	7.0	6	57	41855	42106
3.50	7.0	6	57	41928	57210
4.00	8.0	6	57	41880	42341
4.50	8.0	6	57	41808	57211
5.00	10.0	6	57	41858	42107
5.50	10.0	6	57	41910	57690
6.00	10.0	6	57	41908	35589
6.00 >	12.0	8	63	43409	57214

D_1	L_1	D_{h5}	L	CARBIDE	TiAlN
$\varnothing < 2.00 - 0/-0.01$ $\varnothing < 3.00 - 0/-0.02$ $\varnothing \geq 3.00 - e8$					
6.50	13.0	8	63	28948	57691
7.00	13.0	8	63	42562	57217
7.50	16.0	8	63	43920	57218
8.00	16.0	8	63	41809	36267
8.00 >	15.0	10	63	28951	57692
8.50	16.0	10	72	43215	57220
9.00	16.0	10	72	28953	57221
9.50	19.0	10	72	28954	57222
10.00	19.0	10	72	42357	57223
12.00	22.0	12	83	39945	57224
14.00	22.0	14	83	27781	57225
16.00	26.0	16	92	42358	57226
18.00	26.0	18	92	42359	57227
20.00	32.0	20	104	42360	57228

END MILLS REINFORCED SHANK WITH VARIABLE HELIX

Z = 3



P. 192
P. 194



Steel
+ Pb

Low
alloyed
steel

High
alloyed
steel

DUPLEX
stainless
steel

Cast iron

Refractory
alloy

Titanium,
titanium
alloy

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Roughing



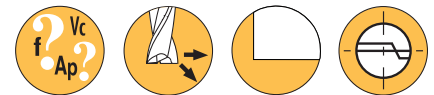
Finishing



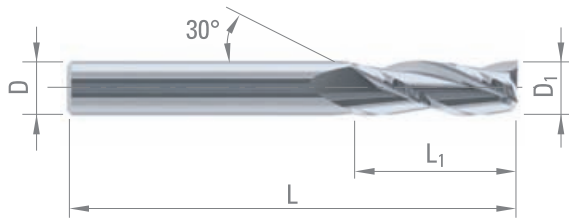
D ₁	L ₁	D _{h5}	L	CARBIDE	C-TOP
$\emptyset < 0.30 - 0/-0.01$ $\emptyset < 2.00 - 0/-0.02$ $\emptyset \geq 6.00 - e8$					
0.30	0.70	4	38	334881	334941
0.35	0.80	4	38	334882	334942
0.40	0.90	4	38	334883	334943
0.45	1.00	4	38	334884	334944
0.50	1.10	4	38	334885	334945
0.60	1.40	4	38	334886	334946
0.70	1.60	4	38	334887	334947
0.80	1.80	4	38	334888	334948
0.90	2.00	4	38	334889	334949
1.00	2.20	4	38	334890	334950
1.10	2.40	4	38	334891	334951
1.20	2.60	4	38	334892	334952
1.30	2.80	4	38	334893	334953
1.40	3.00	4	38	334894	334954
1.50	3.20	4	38	334895	334955
1.60	3.40	4	38	334896	334956
1.70	3.60	4	38	334897	334957
1.80	3.80	4	38	334898	334958
1.90	4.00	4	38	334899	334959
2.00	4.30	4	38	334900	334960
2.50	5.30	4	38	334901	334961
3.00	6.30	6	55	334902	334962
4.00	8.30	6	55	334903	334963
5.00	10.30	6	55	334904	334964
6.00	13.00	6	55	334905	334965
8.00	18.00	8	64	334906	334966
10.00	22.00	10	67	334907	334967
12.00	26.00	12	74	334908	334968
16.00	30.00	16	83	334909	334969

END MILLS

Z = 3



P. 166



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

Roughing



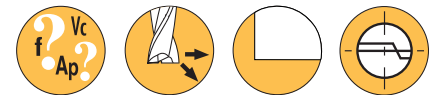
Finishing



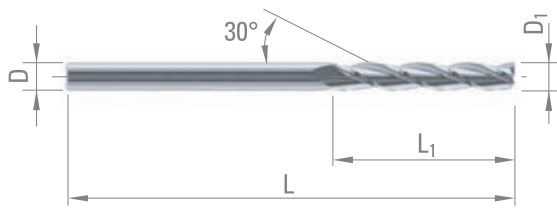
D ₁ e8	L ₁	D _{h5}	L	CARBIDE	TiAlN
2.00	8.0	2.0	32	701	57082
2.50	8.0	2.5	32	702	57089
3.00	10.0	3.0	38	703	57090
3.50	12.0	3.5	38	34761	57101
4.00	12.0	4.0	50	704	57102
5.00	15.0	5.0	50	34626	57103
6.00	18.0	6.0	50	34627	57104
7.00	20.0	7.0	60	27097	57105
8.00	25.0	8.0	63	707	57106
9.00	25.0	9.0	67	43184	57107
10.00	30.0	10.0	72	30853	57108
11.00	30.0	11.0	73	30938	57109
12.00	30.0	12.0	73	30854	57110
13.00	30.0	13.0	75	23885	57111
15.00	30.0	15.0	75	23886	57113
16.00	30.0	16.0	92	27072	57114
18.00	40.0	18.0	125	26086	57115
20.00	40.0	20.0	130	26087	57117

END MILLS, LONG SERIES

Z = 3



P. 178



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic
Plastic	Roughing ●○○○○		Finishing ●●●●○	

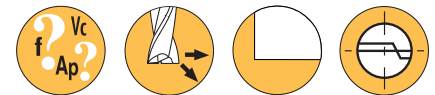
D_1 e8	L_1	D_{h5}	L	CARBIDE	TiAlN	DIAMANT*
3.00	30.0	3	60	44695	57141	60249
4.00	30.0	4	60	44696	57142	60250
5.00	35.0	5	75	44697	57143	60251
6.00	40.0	6	100	44698	57144	59009
8.00	40.0	8	100	44699	57145	60252
10.00	40.0	10	100	44700	57146	60253
12.00	45.0	12	100	44701	57147	60254
14.00	65.0	14	150	44702	57149	
16.00	65.0	16	150	44703	57150	

* for non-ferrous material

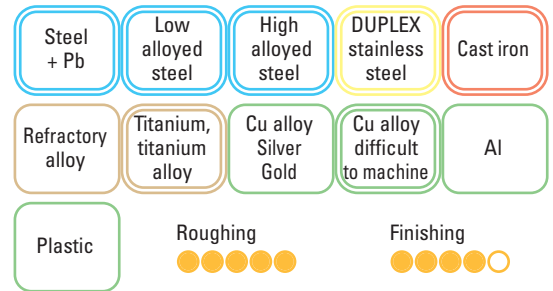
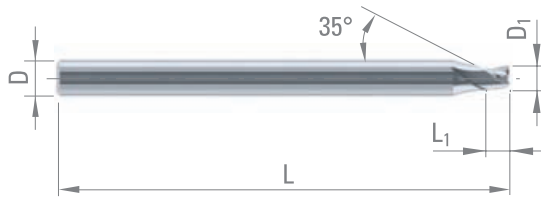


SLOT DRILLS, EXTRA SHORT

Z = 3



P. 180



D ₁	L ₁	D _{h5}	L	CARBIDE	CUTINOX
$\varnothing < 2.00 - 0/-0.01$ $\varnothing < 3.00 - 0/-0.02$ $\varnothing \geq 3.00 - e8$					
0.30	0.3	3	38	977779	977815
0.40	0.4	3	38	977780	977816
0.50	0.5	3	38	977781	977817
0.60	0.6	3	38	977782	977818
0.70	0.7	3	38	977783	977819
0.80	0.8	3	38	977784	977820
0.90	0.9	3	38	977785	977821
1.00	1.0	3	38	977786	977822
1.10	1.1	3	38	977787	977823
1.20	1.2	3	38	977788	977825
1.30	1.3	3	38	977789	977826
1.40	1.4	3	38	977790	977827
1.50	1.5	3	38	977791	977828
1.60	1.6	3	38	977792	977829
1.70	1.7	3	38	977793	977830
1.80	1.8	3	38	977794	977831
1.90	1.9	3	38	977795	977832
2.00	2.0	3	38	977796	977833
2.50	2.5	3	38	977797	977834
3.00	3.0	3	38	977798	977835
4.00	4.0	4	42	977799	977836
5.00	5.0	5	50	977800	977837
6.00	6.0	6	50	977801	977838
8.00	8.0	8	63	977802	977839
10.00	10.0	10	72	977803	977840

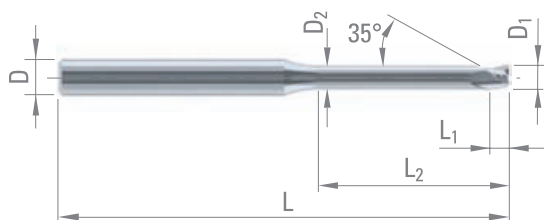
DIXI 7333-D

SLOT DRILLS, EXTRA SHORT NECKED DOWN

Z = 3



P. 180



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic	Roughing ●●●●●		Finishing ●●●●○	

D ₁	L ₁	D ₂	D _{h5}	L	L ₂	DIXI	CARBIDE	CUTINOX
$\emptyset < 2.00 - 0/-0.01$ $\emptyset < 3.00 - 0/-0.02$ $\emptyset \geq 3.00 - e8$								

0.30	0.3	0.27	3	38	0.90	7333-3D	978791	978793
					1.50	7333-5D	978895	978896
					2.40	7333-8D	978591	978922
0.40	0.4	0.37	3	38	1.20	7333-3D	978794	978795
					2.00	7333-5D	978897	978898
					3.20	7333-8D	978928	979009
0.50	0.5	0.45	3	38	1.50	7333-3D	978796	978798
					2.50	7333-5D	978899	978900
					4.00	7333-8D	979010	979011
0.60	0.6	0.55	3	38	1.80	7333-3D	978799	978800
					3.00	7333-5D	978901	978902
					4.80	7333-8D	979012	979014
0.70	0.7	0.65	3	38	2.10	7333-3D	978801	978802
					3.50	7333-5D	978903	978904
					5.60	7333-8D	979016	979017
0.80	0.8	0.75	3	38	2.40	7333-3D	978803	978804
					4.00	7333-5D	978905	978906
					6.40	7333-8D	979018	979019
0.90	0.9	0.85	3	38	2.70	7333-3D	978805	978806
					4.50	7333-5D	978907	978908
					7.20	7333-8D	979020	979021
1.00	1.0	0.95	3	38	3.00	7333-3D	978807	978808
					5.00	7333-5D	978909	978910
					8.00	7333-8D	979022	979023
1.10	1.1	1.05	3	38	3.30	7333-3D	978809	978811
					5.50	7333-5D	978911	978912
					8.80	7333-8D	979024	979025
1.20	1.2	1.15	3	38	3.60	7333-3D	978812	978813
					6.00	7333-5D	978913	978914
					9.60	7333-8D	979026	979027
1.30	1.3	1.25	3	38	3.90	7333-3D	978814	978815
					6.50	7333-5D	978915	978916
					10.40	7333-8D	979028	979029
1.40	1.4	1.35	3	38	4.20	7333-3D	978816	978817
					7.00	7333-5D	978917	978918
					11.20	7333-8D	979030	979031
1.50	1.5	1.45	3	38	4.50	7333-3D	978818	978819
					7.50	7333-5D	978919	978920
					12.00	7333-8D	979032	979033
1.60	1.6	1.55	3	38	4.80	7333-3D	978820	978821
					8.00	7333-5D	978921	978923
					12.80	7333-8D	979034	979035
1.70	1.7	1.65	3	38	5.10	7333-3D	978823	978824
					8.50	7333-5D	978924	978925
					13.60	7333-8D	979036	979037
1.80	1.8	1.75	3	38	5.40	7333-3D	978826	978828
					9.00	7333-5D	978926	978927
					14.40	7333-8D	979038	979039
1.90	1.9	1.85	3	38	5.70	7333-3D	978829	978830
					9.50	7333-5D	978929	978930
					15.20	7333-8D	979041	979040

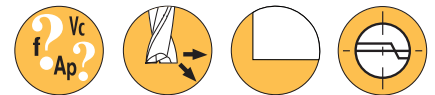
DIXI 7333-3D $L_2 = 3 \times D_1$

DIXI 7333-5D $L_2 = 5 \times D_1$

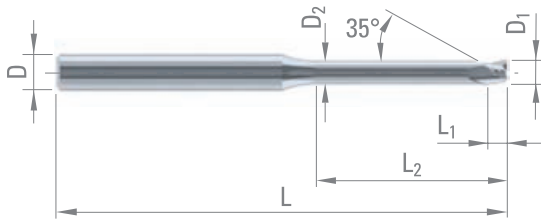
DIXI 7333-8D $L_2 = 8 \times D_1$

DIXI 7333-D

Z = 3



P. 180



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic	Roughing ●●●●●		Finishing ●●●●○	

D ₁	L ₁	D ₂	D _{h5}	L	L ₂	DIXI	CARBIDE	CUTINOX
Ø < 2.00 - 0/-0.01								
Ø < 3.00 - 0/-0.02								
Ø ≥ 3.00 - e8								

2.00	2.0	1.90	3	38	6.00	7333-3D	978848	978849
					10.00	7333-5D	978931	978932
					16.00	7333-8D	979042	979043
2.50	2.5	2.40	3	38	7.50	7333-3D	978850	978851
					12.50	7333-5D	978933	978934
					20.00	7333-8D	979044	979045
3.00	2.9	2.90	3	38	9.00	7333-3D	978852	978853
					15.00	7333-5D	978935	978936
					24.00	7333-8D	979046	979047
4.00	4.0	3.80	4	42	12.00	7333-3D	978854	978855

DIXI 7333-3D L₂ = 3 x D₁

DIXI 7333-5D L₂ = 5 x D₁

DIXI 7333-8D L₂ = 8 x D₁

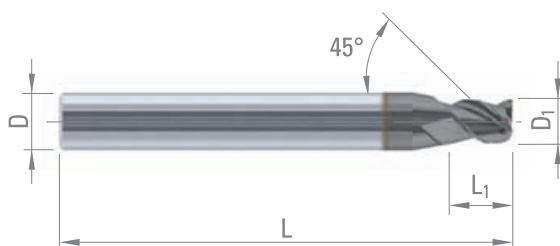
DIXI 7543 XIDUR

END MILLS
REINFORCED SHANK

Z = 3



P. 204



D ₁	L ₁	D _{h5}	L	XIDUR
Ø < 2.00 - 0/-0.01				
Ø < 3.00 - 0/-0.02				
Ø ≥ 3.00 - e8				

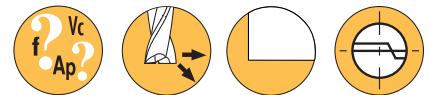
1.00	2.0	4	50	51704
1.50	3.0	4	50	63945
2.00	3.0	4	50	51705
2.50	3.0	4	50	63946
3.00	4.5	6	57	51706
4.00	6.0	6	57	51707
5.00	7.0	6	57	51708
6.00	8.0	8	63	51709
8.00	10.0	10	72	51710
10.00	12.0	10	72	51711
12.00	15.0	12	83	51712

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Roughing ●●●●○		Finishing ●●●●●	

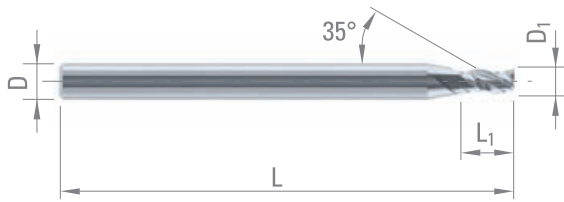


END MILLS REINFORCED SHANK

Z = 3



P. 166



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

Roughing



Finishing



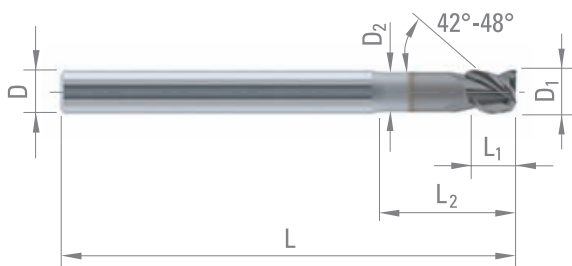
D ₁	L ₁	D _{h5}	L	CARBIDE	TiAlN	DLC*
Ø < 2.00 - 0/-0.01						
Ø < 3.00 - 0/-0.02						
Ø ≥ 3.00 - e8						
0.30	0.6	3	38	972403	972404	975572
0.40	0.8	3	38	972405	972406	982427
0.50	1.0	3	38	52565	963644	977361
0.60	1.2	3	38	963676	963678	982428
0.70	1.4	3	38	963677	963679	973037
0.80	1.6	3	38	954650	963680	982429
0.90	1.8	3	38	951666	963681	983104
1.00	2.0	3	38	31445	44659	960097
1.10	2.2	3	38	66496	66497	983105
1.20	2.4	3	38	66498	66499	973027
1.30	2.6	3	38	66500	66501	983106
1.40	2.8	3	38	66502	66503	983107
1.50	3.0	3	38	29407	40913	957103
1.60	3.2	3	38	41962	66510	983108
1.70	3.4	3	38	66504	66505	983109
1.80	3.6	3	38	66506	66507	983111
1.90	3.8	3	38	66508	66509	983112
2.00	4.0	3	38	39304	40081	61971
2.50	5.0	3	38	39213	40580	61973
3.00	6.0	6	50	40739	41954	61974
4.00	8.0	6	50	34377	53324	984169
5.00	10.0	6	50	48700	53325	984170
6.00	12.0	6	50	978074	978075	984171

* for non-ferrous material

DIXI 7253 CUTINOX

END MILLS WITH VARIABLE HELIX
NECKED DOWN

Z = 3



P. 168
P. 170



$D_1 \geq 10$



Steel
+ Pb

Low
alloyed
steel

High
alloyed
steel

DUPLEX
stainless
steel

Cast iron

Refractory
alloy

Titanium,
titanium
alloy

Roughing



Finishing



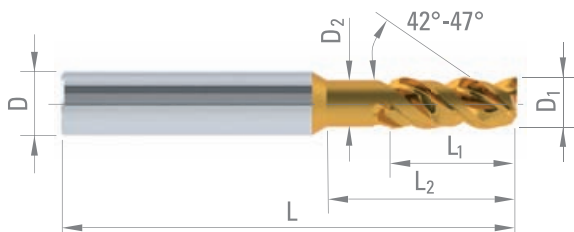
$D_{1\text{e8}}$	L_1	D_2	L_2	D_{h5}	L	CUTINOX
3.00	4.0	2.80	9	6	57	968764
4.00	5.0	3.70	12	6	57	968765
5.00	6.0	4.60	15	6	57	968766
6.00	7.0	5.50	18	8	63	968767
8.00	9.0	7.50	24	10	72	968768
10.00	11.0	9.30	30	10	72	968769
12.00	13.0	11.20	36	12	83	968770
16.00	17.0	15.20	48	16	92	968771

DIXI 7563 - 7563-FC DIXAL

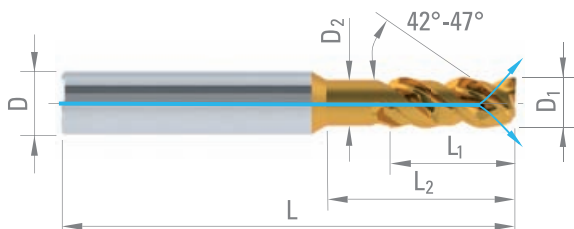
END MILL WITH VARIABLE HELIX

Z = 3

7563



7563-FC



P. 206



Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al

Plastic

Roughing



Finishing



7563



7563-FC



$D_{1\text{h10}}$	L_1	D_2	L_2	D_{h5}	L	DIXAL	DIXAL
4.00	9.0	3.60	14	4	57	991388	
6.00	13.0	5.60	21	6	57	991389	321899
8.00	19.0	7.40	26	8	63	991390	321900
10.00	22.0	9.30	30	10	72	991391	321901
12.00	26.0	11.00	37	12	83	991392	321902
16.00	32.0	15.00	42	16	92	991393	321903
20.00	38.0	19.00	50	20	104	991394	322866

DIXI 7273

FINISHING END MILLS

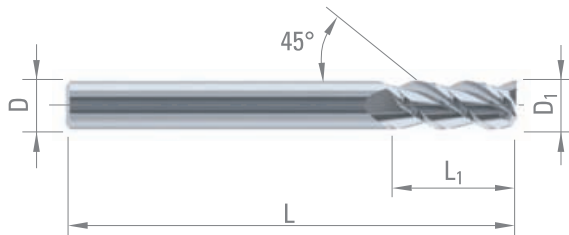
Z = 3



P. 166



$D_1 \geq 12$



Steel + Pb	Low alloyed steel	Cast iron	Titanium, titanium alloy	Cu alloy Silver Gold
Cu alloy difficult to machine	Al	Plastic		

Roughing



Finishing



$D_{1\text{e8}}$	L_1	D_{h5}	L	CARBIDE	TiAlN
3.00	10.0	3	38	35741	57254
4.00	12.0	4	50	35742	57255
5.00	14.0	5	50	34225	57256
6.00	16.0	6	57	35743	57258
8.00	20.0	8	63	34227	57259
10.00	22.0	10	72	34228	57260
12.00	22.0	12	73	34229	57261
16.00	27.0	16	82	35745	
20.00	35.0	20	104	35747	

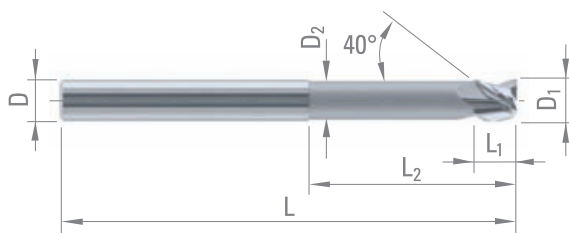
DIXI 7593

END MILLS NECKED DOWN

Z = 3-4



P. 204



Roughing



Finishing



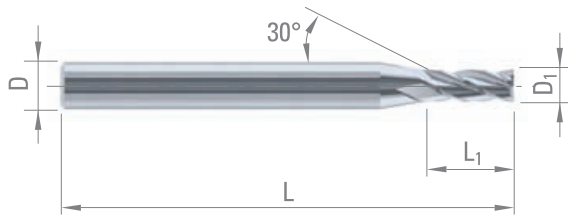
$D_{1\text{h5}}$	L_1	D_2	L_2	D_{h5}	L	Z	CARBIDE
6.00	6.0	5.6	30	6	66	3	49281
8.00	8.0	7.6	45	8	81	3	49282
10.00	10.0	9.6	50	10	90	3	49283
12.00	12.0	11.6	55	12	100	3	49284
16.00	16.0	15.6	72	16	120	3	49285
20.00	20.0	19.6	80	20	130	4	49286

SLOT DRILLS REINFORCED SHANK

Z = 4



P. 176



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite
Plastic	Roughing ●●●○			Finishing ●●●●○

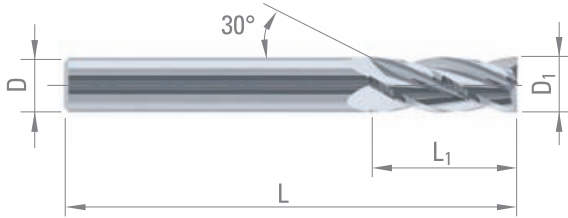
D ₁	L ₁	D _{h5}	L	CARBIDE	TiAlN	DIAMANT*
Ø < 2.00 - 0/-0.01						
Ø < 3.00 - 0/-0.02						
Ø ≥ 3.00 - e8						
0.40	1.2	3	38	45695	61846	
0.50	1.5	3	38	45696	61345	
1.00	3.0	3	38	55964	57230	63697
1.50	4.0	3	38	56731	57231	63698
2.00	7.0	3	38	52357	57232	63699
3.00	8.0	6	57	28959	57233	63700
4.00	11.0	6	57	42123	57239	63701
4.50	11.0	6	57	42124	57241	
5.00	13.0	6	57	41881	57242	63703
6.00	13.0	6	57	28965	57243	36278
7.00	16.0	8	63	28967	57244	
8.00	19.0	8	63	42906	57245	
9.00	19.0	10	72	28971	57246	
10.00	22.0	10	72	42361	57247	
12.00	26.0	12	83	39946	57248	
14.00	26.0	14	83	42362	57249	
16.00	32.0	16	92	42363	57251	
20.00	38.0	20	104	42227	57253	

* for non-ferrous material

DIXI 7204

END MILLS

Z = 4



P. 176



$D_1 \geq 6$

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titane, alliage de titane	Alliage Cu Argent Or	Alliage Cu difficile	Al	Plastic

Roughing



Finishing

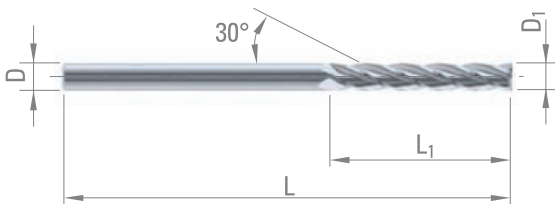


D_1 e8	L_1	D_{h5}	L	CARBIDE	TiAIN
2.00	8.0	2.0	32	32944	57118
2.50	8.0	2.5	32	32945	57119
3.00	10.0	3.0	38	710	57120
4.00	12.0	4.0	50	711	57121
5.00	14.0	5.0	50	34629	57122
6.00	16.0	6.0	50	34630	57123

DIXI 7224

END MILLS, LONG SERIES

Z = 4



P. 178



$D_1 \geq 6$

Steel + Pb	Low alloyed steel	Cast iron	Titanium, titanium alloy	Cu alloy Silver Gold
Cu alloy difficult to machine	Al	Graphite	Plastic	

Roughing



Finishing



D_1 e8	L_1	D_{h5}	L	CARBIDE	TiAIN	DIAMANT*
3.00	30.0	3	60	44769	57152	60255
4.00	30.0	4	60	44770	57154	60258
5.00	35.0	5	75	44771	57155	60259
6.00	40.0	6	100	44706	57156	60260
8.00	40.0	8	100	44772	57157	60003
10.00	40.0	10	100	44707	57158	60004
12.00	45.0	12	100	44773	57159	60261
14.00	65.0	14	150	44708	57160	
16.00	65.0	16	150	44709	55770	
20.00	65.0	20	150	44776	57161	

* for non-ferrous material

DIXI 7264 - 7264-3D CUTINOX

END MILLS WITH VARIABLE HELIX
AND IRREGULAR TEETH

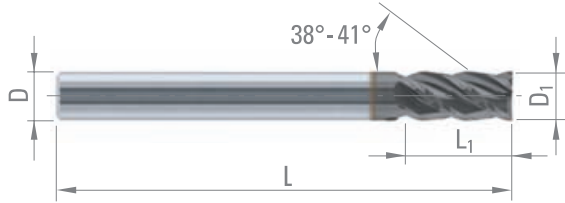
Z = 4



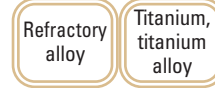
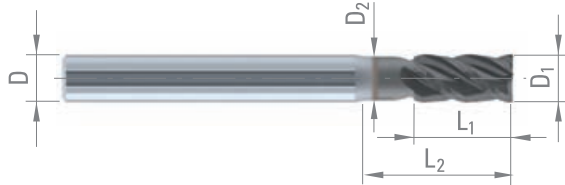
P. 174

D₁ ≥ 10

7264



7264-3D



Roughing



Finishing

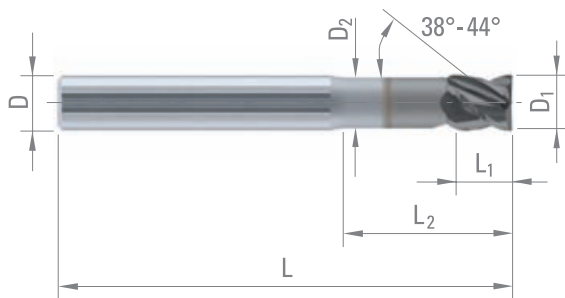


D ₁ Ø < 3.00 - 0/-0.02 Ø ≥ 3.00 - e8	L ₁	D _{h5}	L	DIXI	D ₂	L ₂	CUTINOX
1.50	3.0	3	38	7264	-	-	974805
2.00	4.0	3	38	7264	-	-	974804
3.00	8.0	6	57	7264	-	-	968672
4.00	11.0	6	57	7264	-	-	968678
5.00	13.0	6	57	7264	-	-	968679
6.00	13.0	6	57	7264	-	-	968680
				7264-3D	5.5	18	997930
8.00	19.0	8	63	7264	-	-	968681
				7264-3D	7.5	24	997931
10.00	22.0	10	72	7264	-	-	968682
				7264-3D	9.25	30	997932
12.00	26.0	12	83	7264	-	-	968683
				7264-3D	11.0	36	997933
16.00	32.0	16	92	7264	-	-	968684
				7264-3D	15.0	48	997934
20.00	38.0	20	104	7264	-	-	968685
				7264-3D	19.0	60	997935

DIXI 7254 CUTINOX

END MILLS WITH VARIABLE HELIX
NECKED DOWN

$Z = 4$



P. 170



$D_1 \geq 10$



Steel
+ Pb

Low
alloyed
steel

High
alloyed
steel

DUPLEX
stainless
steel

Cast iron

Refractory
alloy

Titanium,
titanium
alloy

Roughing



Finishing



$D_{1\text{ e8}}$	L_1	D_2	L_2	D_{h5}	L	CUTINOX
3.00	4.0	2.80	9	6	57	968686
4.00	5.0	3.70	12	6	57	968687
5.00	6.0	4.60	15	6	57	968688
6.00	7.0	5.50	18	8	63	968689
8.00	9.0	7.50	24	10	72	968690
10.00	11.0	9.30	30	10	72	968691
12.00	13.0	11.20	36	12	83	968692
16.00	17.0	15.20	48	16	92	968693

DIXI 7560

MULTI-TOOTH END MILLS

Z = 3-8



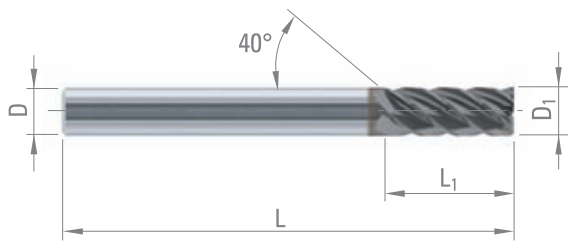
P. 182



$D_1 > 6$



$D_1 \leq 1.90$



D_1 L_1 D_{h5} L Z CARBIDE TiAlN DLC*

$\emptyset < 2.00 - 0/-0.01$
 $\emptyset \geq 2.00 - e8$

0.35	0.90	3.0	38	3	964114	966117	966057
0.40	1.00	3.0	38	3	964115	966118	966058
0.45	1.10	3.0	38	3	964116	966119	966059
0.50	1.25	3.0	38	3	964117	966120	966060
0.55	1.40	3.0	38	3	964118	966121	966061
0.60	1.50	3.0	38	3	964119	966122	966062
0.65	1.70	3.0	38	3	964120	966123	966063
0.70	1.75	3.0	38	3	964121	966124	966064
0.75	1.90	3.0	38	3	964122	966125	966065
0.80	2.00	3.0	38	3	964123	966126	966066
0.85	2.15	3.0	38	3	964124	966127	966067
0.90	2.25	3.0	38	3	964125	966128	966068
0.95	2.40	3.0	38	3	964126	966129	966069
1.00	2.50	3.0	38	3	964127	966130	966070
1.10	2.75	3.0	38	3	964128	966131	966071
1.20	3.00	3.0	38	3	964129	966132	966072
1.30	3.25	3.0	38	3	964130	966133	966073
1.40	3.50	3.0	38	3	964131	966134	966074
1.50	3.75	3.0	38	3	964132	966136	966075
1.60	4.00	3.0	38	3	964133	966138	966076
1.70	4.25	3.0	38	3	964134	966139	966094
1.80	4.50	3.0	38	3	964135	966140	966095
1.90	4.75	3.0	38	3	964136	966142	966096
2.00	8.00	3.0	38	5	964108	964112	964113
2.10	5.25	3.0	38	5	964137	966145	966097
2.20	5.50	3.0	38	5	964140	966146	966098
2.30	5.75	3.0	38	5	964141	966147	966099
2.40	6.00	3.0	38	5	964142	966148	966101
2.50	8.00	3.0	38	5	964109	964110	964111
2.60	6.50	3.0	38	5	964143	966149	966102
2.70	6.75	3.0	38	5	964144	966150	966104
2.80	7.00	3.0	38	5	964145	966151	966105
2.90	7.00	3.0	38	5	964146	966152	966106
3.00	10.00	3.0	38	5	45657	49683	966107
4.00	12.00	4.0	50	5	45658	49684	964325
5.00	14.00	5.0	50	5	45659	49685	966115
6.00	16.00	6.0	57	5	45546	49686	966116
8.00	19.00	8.0	63	5	45547	49688	
9.00	22.00	9.0	67	5	45661	49689	
10.00	22.00	10.0	72	6	45548	49690	
12.00	26.00	12.0	83	6	45662	49691	
16.00	32.00	16.0	92	6	45549	49693	
20.00	38.00	20.0	104	8	45550	49694	

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	

Roughing



Finishing



* for non-ferrous material



DIXI 7520 XIDUR

MULTI-TOOTH END MILLS

Z = 3-10



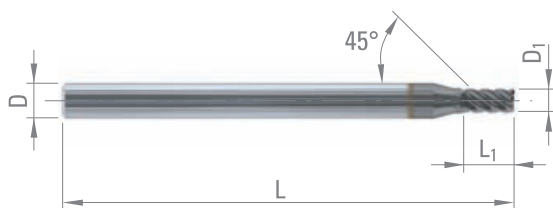
P. 210



$D_1 \geq 6$



$D_1 \leq 1.50$



High
alloyed
steel

Steel
Cast iron
> 45 HRC

Refractory
alloy

Roughing



Finishing



D_1	L_1	D_{h5}	L	Z	XIDUR
$\emptyset < 2.00 - 0/-0.01$ $\emptyset < 3.00 - 0/-0.02$ $\emptyset \geq 3.00 - e8$					
0.40	0.8	3	38	3	956595
0.50	1.0	3	38	3	956596
0.60	1.2	3	38	3	956597
0.70	1.4	3	38	3	956598
0.80	1.6	3	38	3	956599
0.90	1.8	3	38	3	956600
1.00	2.0	3	38	4	956601
1.50	3.0	3	38	4	956602
2.00	4.0	3	38	5	956603
2.50	5.0	3	38	5	957465
3.00	6.0	3	38	5	49107
4.00	8.0	4	50	5	49108
6.00	12.0	6	57	6	49109
8.00	16.0	8	63	6	49110
10.00	20.0	10	72	6	49111
12.00	24.0	12	83	8	49112
16.00	32.0	16	92	10	49113

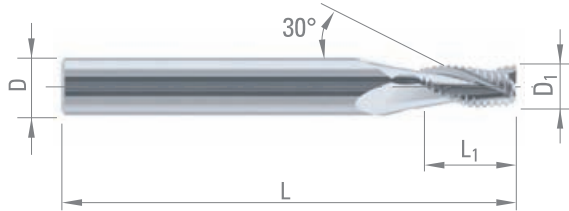
DIXI 7210

ROUGHING END MILLS

Z = 3



P. 184



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	
Roughing ●●●●●		Finishing ○○○○○		

D _{1 d12}	L ₁	D _{h5}	L	CARBIDE	CUTINOX
3.00	8.0	6	57	955178	955179
4.00	10.0	6	57	955092	955091
5.00	13.0	6	57	955089	955090
6.00	13.0	8	63	955088	955087
7.00	16.0	8	63	955086	955085
8.00	16.0	8	63	955082	955033
10.00	22.0	10	72	955093	955094
12.00	25.0	12	83	959048	956993



On request

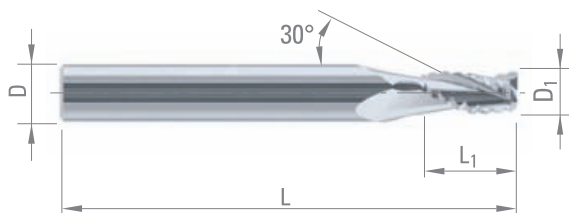
DIXI 7213

ROUGHING END MILLS

Z = 3



P. 186



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	
Roughing ●●●●●		Finishing ○○○○○		

D _{1 d12}	L ₁	D _{h5}	L	CARBIDE	TiAIN
4.00	10.0	6	57	31451	57018
5.00	13.0	6	57	37136	57019
6.00	13.0	8	63	37137	57020
7.00	16.0	8	63	37138	57021
8.00	16.0	10	72	43218	57022
10.00	22.0	10	72	43214	57024
11.00	22.0	12	83	37142	57025
12.00	25.0	12	83	37143	57026
14.00	27.0	14	83	37144	57027
16.00	36.0	16	100	37145	57028
20.00	40.0	20	104	37588	57029



On request



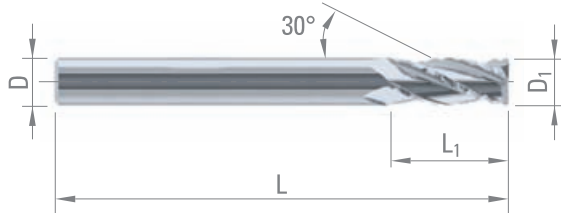
DIXI 7214

ROUGHING END MILLS

Z = 4



P. 186



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	
Roughing ●●●●●		Finishing ○●●●○		

D _{1 d12}	L ₁	D _{h5}	L	CARBIDE	TiAlN
6.00	15.0	6	57	45798	61412
8.00	16.0	10	72	39954	62426
10.00	22.0	10	72	37146	31133
12.00	25.0	12	83	37148	60949
16.00	36.0	16	100	37151	63333
20.00	40.0	20	104	37152	63334



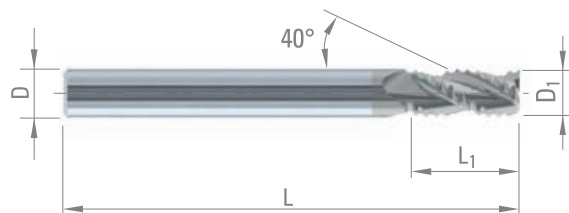
On request

DIXI 7215 - 7215-FC DAC

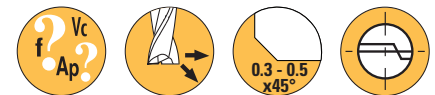
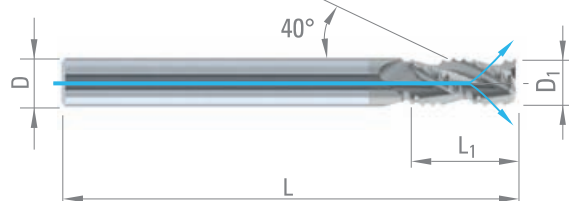
ALU ROUGHING END MILLS

Z = 3

7215



7215-FC



P. 212

Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Roughing ●●●●●		Finishing ○●●●○



D _{1 d12}	L ₁	D _{h6}	L	DAC	DAC
6.00	13.0	6	57	993017	995594
8.00	19.0	8	63	993018	995595
10.00	22.0	10	72	993003	995596
12.00	26.0	12	83	990143	995597
16.00	32.0	16	92	993019	307320



On request

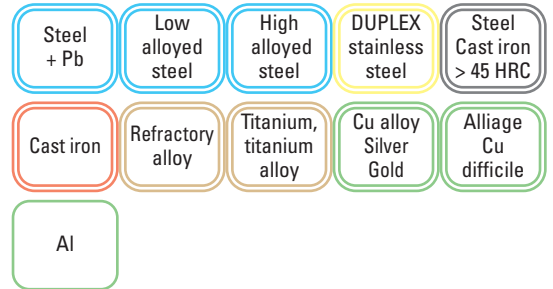
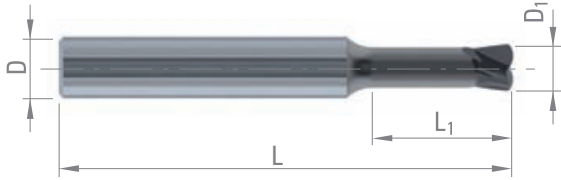
DIXI 7702 XIDUR

HIGH FEED END MILLS

Z = 2



P. 196



Roughing



Finishing



D ₁	L ₁	D _{h6}	L	XIDUR
0.50	1.50	6	40	305279
0.80	2.40	6	40	305280
1.00	3.00	6	40	997920
1.50	4.50	6	40	997921
2.00	6.00	6	40	997922
3.00	9.00	6	40	997923
4.00	12.00	6	57	997924
5.00	15.00	6	57	997925
6.00	18.00	8	63	997926
8.00	24.00	10	80	997927
10.00	30.00	10	80	997928
12.00	36.00	12	80	997929

Download the cutting conditions (pdf + xls) and the dxf profiles
www.dixipolytool.com

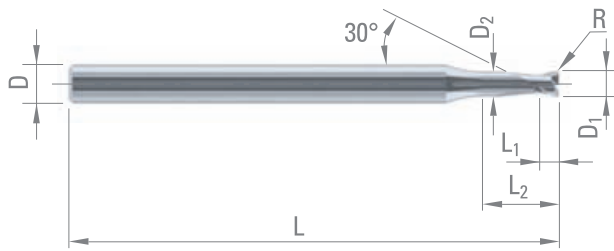


SLOT DRILLS EXTRA SHORT
WITH CORNER RADIUS
NECKED DOWN, $L_2 = 3 \times D_1$

Z = 2



P. 162



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Allyage Cu difficile	Al
Plastic	Roughing		Finishing	
	●●●●●○		●●●●●○	

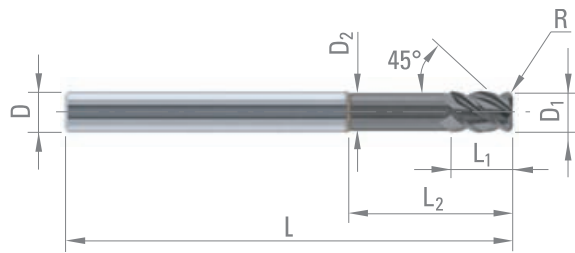
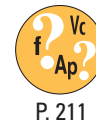
D_1	L_1	D_2	L_2	D_{h5}	L	R	CARBIDE	TiAIN
$\emptyset < 2.00 - 0/-0.01$ $\emptyset < 3.00 - 0/-0.02$ $\emptyset \geq 3.00 - e8$								
0.40	0.40	0.37	1.20	3	38	0.05	958447	958452
0.45	0.45	0.42	1.35	3	38	0.05	958453	958454
0.50	0.50	0.45	1.50	3	38	0.05	958455	958456
0.55	0.55	0.50	1.65	3	38	0.05	958457	958458
0.60	0.60	0.55	1.80	3	38	0.05	958465	958466
0.65	0.65	0.60	1.95	3	38	0.05	958467	958468
0.70	0.70	0.65	2.10	3	38	0.05	958469	958470
0.75	0.75	0.70	2.25	3	38	0.05	958472	958473
0.80	0.80	0.75	2.40	3	38	0.05	958474	958475
0.85	0.85	0.80	2.55	3	38	0.05	958476	958477
0.90	0.90	0.85	2.70	3	38	0.10	958478	958479
0.95	0.95	0.90	2.85	3	38	0.10	958481	958482
1.00	1.00	0.95	3.00	3	38	0.10	958483	958484
1.05	1.05	1.00	3.15	3	38	0.10	958486	958487
1.10	1.10	1.05	3.30	3	38	0.10	958488	958489
1.15	1.15	1.10	3.45	3	38	0.10	958490	958491
1.20	1.20	1.15	3.60	3	38	0.10	958492	958493
1.25	1.25	1.20	3.75	3	38	0.10	958494	958495
1.30	1.30	1.25	3.90	3	38	0.10	958496	958497
1.35	1.35	1.30	4.05	3	38	0.10	958499	958501
1.40	1.40	1.35	4.20	3	38	0.10	958502	958503
1.45	1.45	1.40	4.35	3	38	0.10	958504	958505
1.50	1.50	1.45	4.50	3	38	0.20	958506	958507
1.55	1.55	1.50	4.65	3	38	0.20	958508	958509
1.60	1.60	1.55	4.80	3	38	0.20	958510	958511
1.65	1.65	1.60	4.95	3	38	0.20	958512	958513
1.70	1.70	1.65	5.10	3	38	0.20	958514	958515
1.75	1.75	1.70	5.25	3	38	0.20	958516	958517
1.80	1.80	1.75	5.40	3	38	0.20	958518	958519
1.85	1.85	1.80	5.55	3	38	0.20	958520	958521
1.90	1.90	1.85	5.70	3	38	0.20	958522	958523
1.95	1.95	1.90	5.85	3	38	0.20	958524	958525
2.00	2.00	1.90	6.00	6	50	0.20	958527	958531
2.10	2.10	2.00	6.30	6	50	0.20	958532	958533
2.20	2.20	2.10	6.60	6	50	0.20	958534	958535
2.30	2.30	2.20	6.90	6	50	0.20	958886	958887
2.40	2.40	2.30	7.20	6	50	0.20	958888	958889
2.50	2.50	2.40	7.50	6	50	0.20	958890	958891
3.00	3.00	2.90	9.00	6	50	0.20	958892	958893



DIXI 7070 XIDUR

MULTI-TOOTH END MILLS
WITH CORNER RADIUS
NECKED DOWN

Z = 4-6



High
alloyed
steel

Steel
Cast iron
> 45 HRC

Refractory
alloy

Roughing



Finishing



D _{1 e8}	L ₁	D ₂	L ₂	D _{h5}	L	Z	R	XIDUR
3.00	4.5	2.75	12.0	6	57	4	0.5	56643
4.00	6.0	3.70	13.5	6	57	4	0.5	56644
5.00	7.5	4.60	17.5	6	57	4	0.5	56645
6.00	9.0	5.50	24.0	6	66	4	0.5	56627
							0.8	56646
							1.0	56628
							1.5	56647
8.00	10.0	7.50	28.0	8	75	4	0.5	56634
							1.0	56635
							1.5	56648
							2.0	56649
10.00	12.0	9.25	30.0	10	75	6	0.5	56636
							1.0	56637
							1.5	56650
							2.0	56651
12.00	12.0	11.00	32.0	12	83	6	2.5	56652
							1.0	56653
							1.5	56654
							2.0	56655
							3.0	56656

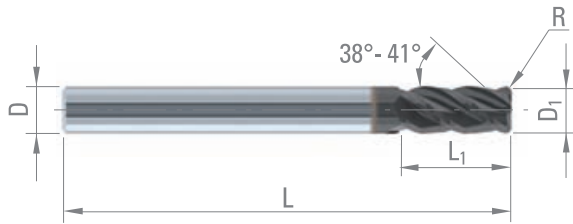
DIXI 7265 CUTINOX

END MILLS WITH VARIABLE HELIX
WITH CORNER RADIUS

Z = 4



P. 172
P. 174



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

Roughing



Finishing



D ₁ Ø < 3.00 - 0/-0.02 Ø ≥ 3.00 - e8	L ₁	D _{h5}	L	R	CUTINOX
2.00	4.0	3	38	0.5	997936
3.00	8.0	6	57	0.5	997937
4.00	11.0	6	57	0.5	997938
5.00	13.0	6	57	0.5	997939
6.00	13.0	6	57	0.5	997940
				1.0	997941
8.00	19.0	8	63	0.5	997942
				1.0	997943
10.00	22.0	10	72	0.5	997944
				1.0	997945
12.00	26.0	12	83	0.5	997946
				1.0	997947

DIXI 7554

END MILLS WITH CORNER RADIUS
NECKED DOWN

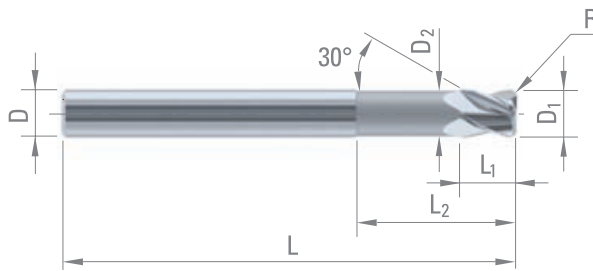
Z = 4



P. 176



$D_1 \geq 6$



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

Roughing
●●●●○

Finishing
●●●●○

D_1 $\emptyset < 3.00 - 0/-0.02$ $\emptyset \geq 3.00 - e8$	L_1	D_2	L_2	D_{h5}	L	R	CARBIDE	TiAIN
2.00	3.0	1.90	10	4	42	0.2	64465	64466
3.00	4.0	2.80	15	6	57	0.2	64467	64468
4.00	5.0	3.80	18	6	57	0.3	64469	64470
6.00	7.0	5.70	20	6	57	0.5	64471	64472
						1.0	64473	64474
8.00	10.0	7.70	30	8	63	0.5	64475	64476
						1.0	64477	64478
10.00	12.0	9.60	35	10	72	0.5	64479	64480
						1.0	64481	64482
12.00	14.0	11.50	40	12	83	0.5	64485	64486
						1.0	64487	64488

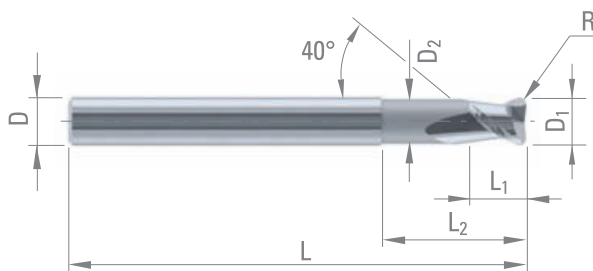
DIXI 7552

END MILLS WITH CORNER RADIUS
NECKED DOWN

Z = 2



P. 202



Steel + Pb	Low alloyed steel	Cast iron	Titanium, titanium alloy	Cu alloy Silver Gold
Cu alloy difficult to machine	Alu	Plastic		

Roughing
●●●●○

Finishing
●●●●○

D_1 e8	L_1	D_2	L_2	D_{h5}	L	R	CARBIDE	DICUT
3.00	4.0	2.75	10	6	57	0.5	60765	63493
4.00	5.0	3.70	12	6	57	0.5	60766	63494
5.00	6.0	4.60	15	6	57	0.5	60767	63495
6.00	7.0	5.50	18	6	57	1.0	60768	63496
8.00	9.0	7.50	23	8	63	1.0	60769	63497
10.00	11.0	9.25	30	10	75	1.5	60770	63498
12.00	13.0	11.00	35	12	83	1.5	60771	63499
16.00	17.0	15.00	44	16	92	2.0	60772	952918

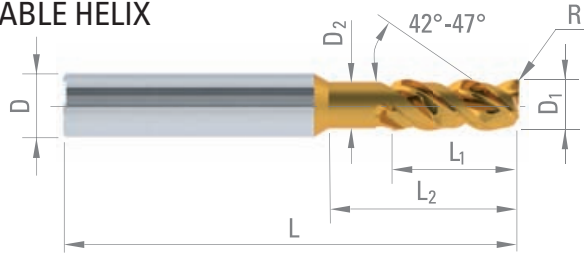


DIXI 7565 - 7565-FC DIXAL

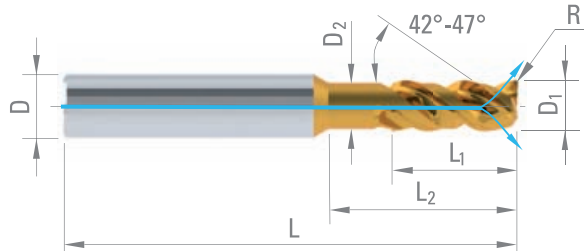
END MILLS WITH CORNER RADIUS
AND VARIABLE HELIX

Z = 3

7565



7565-FC



P. 206



Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al

Plastic

Roughing



Finishing



7565

7565-FC



D₁

L₁

D₂

L₂

D_{h5}

L

R

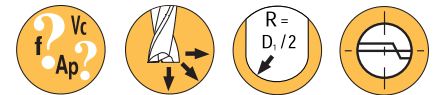
DIXAL

DIXAL

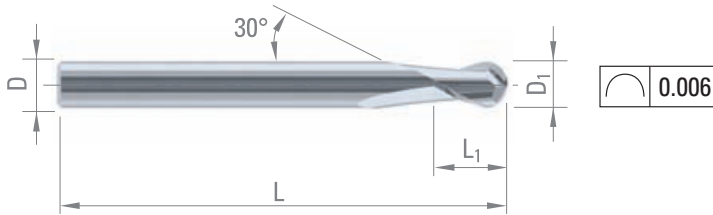
D ₁	L ₁	D ₂	L ₂	D _{h5}	L	R	DIXAL	DIXAL
4.00	9.0	3.60	14	4	57	0.5	339042	
						1.0	339043	
6.00	13.0	5.60	21	6	57	0.5	339044	339067
						1.0	339045	339068
						1.5	339046	339069
8.00	19.0	7.40	26	8	63	0.5	339047	339070
						1.0	339048	339071
						2.0	339049	339072
						3.0	339050	339073
10.00	22.0	9.30	30	10	72	0.5	339051	339074
						1.0	339052	339075
						2.0	339053	339076
						3.0	339054	339077
12.00	26.0	11.00	37	12	83	0.5	339055	339078
						1.0	339056	339079
						2.0	339057	339080
						3.0	339058	339081
16.00	32.0	15.00	42	16	92	1.0	339059	339082
						2.0	339060	339083
						3.0	339061	339084
						4.0	339062	339085
20.00	38.0	19.00	50	20	104	1.0	339063	339086
						2.0	339064	339087
						3.0	339065	339088
						4.0	339066	339089

BALL-NOSE END MILLS

Z = 2

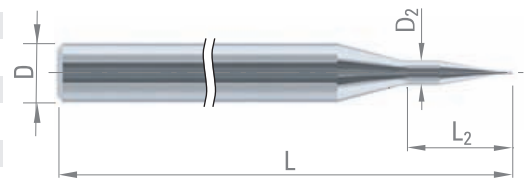


P. 154

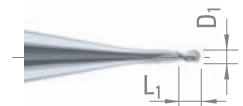


Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic			

D ₁	L ₁	D _{h5}	L	CARBIDE	TiAIN	DICUT	DIAMANT*	Roughing	Finishing
Ø 0.30 - 0/-0.01								●●●●●	●●●●●
Ø < 3.00 - 0/-0.02									
Ø ≥ 3.00 - e8									
0.06	0.12	3	38	959060					
0.08	0.16	3	38	959059					
0.10	0.20	3	38	959058					
0.15	0.30	3	38	954665					
0.20	0.30	3	38	952795	952796	952797	952799		
0.25	0.40	3	38	952800	952801	952802	952803		
0.30	0.50	3	38	952804	952805	952806	58852		
0.40	0.60	3	38	952807	952808	952809	952810		
0.50	0.80	3	38	952811	952812	952813	952814		
0.60	0.90	3	38	952815	952816	952817	952818		
0.70	1.10	3	38	952819	952820	952821	950363		
0.80	1.20	3	38	952822	952823	950703	950364		
0.90	1.40	3	38	952825	952826	952824	950365		
1.00	1.50	3	38	952827	952828	952829	952830		
1.10	1.70	3	38	952832	952833	952831	950366		
1.20	1.80	3	38	952835	952836	952834	950367		
1.30	1.90	3	38	952838	952839	952837	950368		
1.40	2.10	3	38	952841	952842	952840	950369		
1.50	2.30	3	38	952843	952846	952845	952844		
1.60	2.50	3	38	55539	955784	956236	956237		
1.70	2.50	3	38	60112	956238	956239	956240		
1.80	2.75	3	38	48747	956241	956242	956243		
1.90	2.75	3	38	57714	956244	956245	956246		
2.00	3.00	3	38	44604	56136	64280	59783		
2.10	3.00	3	38	55540	956247	956248	956249		
2.20	3.50	3	38	48457	956250	956251	956253		
2.30	3.50	3	38	66547	62925	956254	956255		
2.40	3.50	3	38	60788	62926	956256	956257		
2.50	4.00	3	38	44605	56137	64288	60221		
3.00	5.00	3	38	43115	56138	63876	59988		
3.50	6.00	4	50	44607	56139	64289	950370		
4.00	6.00	4	50	34120	56140	64290	59784		
4.50	7.00	5	50	44609	56141	64291	950371		
5.00	8.00	5	50	34748	36172	64292	60222		
5.50	9.00	6	57	44611	56172	64293	950372		
6.00	9.00	6	57	34749	56179	63923	46800		
7.00	11.00	7	60	34740	56176	64294	66878		
8.00	12.00	8	63	43389	36174	64295	58860		
10.00	15.00	10	72	42940	56177	63924	36175		
12.00	18.00	12	73	32387	56173	64296	60223		
16.00	24.00	16	82	32136	56175				
20.00	30.00	20	104		56183				



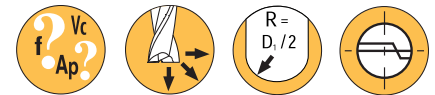
For $D_1 \leq 0.15$:
 $D_2 = 1.20$
 $L_2 = 5.30$



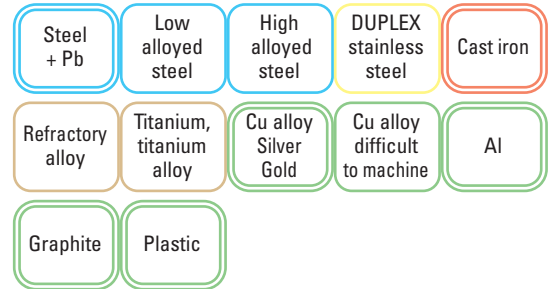
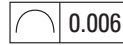
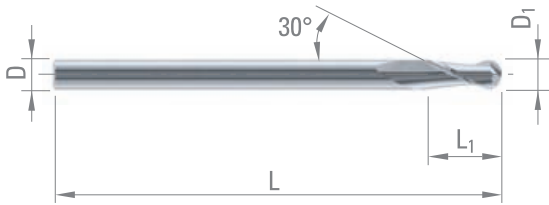
* for non-ferrous material

BALL-NOSE END MILLS

Z = 2



P. 160



Roughing



Finishing



$D_{1\ e8}$	L_1	D_{h5}	L	CARBIDE	TiAlN	DIAMANT*
2.00	10	2	61	41974	56238	60224
3.00	10	3	61	39512	56239	60225
4.00	12	4	75	38639	56240	60226
5.00	14	5	86	38942	56241	60227
6.00	16	6	93	38623	56242	60228
8.00	20	8	100	38640	56243	60229
10.00	24	10	100	38641	56244	58790
12.00	28	12	110	40728	56245	60230
16.00	36	16	120	40730	56247	
20.00	45	20	150	40732	56248	

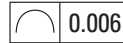
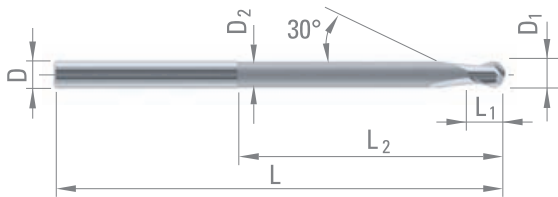
* for non-ferrous material

BALL-NOSE END MILLS
NECKED DOWN

Z = 2



P. 158



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic	Roughing ○○○○○		
		Finishing ●●●●○		

D ₁	L ₁	D ₂	L ₂	D _{h5}	L	CARBIDE	TiAIN	DICUT	DIAMANT*
Ø < 3.00 - 0/-0.02 Ø ≥ 3.00 - e8									
0.20	0.5	0.18	1.0	4	55	64714	64719	64724	64729
0.30	0.6	0.27	1.5	4	55	64715	64720	64725	64730
0.40	0.8	0.37	2.0	4	55	64716	64721	64726	64731
0.50	1.0	0.45	3.0	4	55	64542	64556	64572	64584
0.60	1.6	0.55	4.0	4	55	64717	64722	64727	64732
0.80	1.8	0.75	5.0	4	55	64718	64723	64728	64733
1.00	2.0	0.95	6.0	4	55	64544	64557	64573	64585
1.50	2.5	1.45	9.0	4	55	64546	64558	64574	64586
2.00	3.0	1.90	12.0	4	55	64547	64559	64575	64587
2.50	4.0	2.40	12.0	4	55	64548	64560	64576	64588
3.00	5.0	2.80	12.0	6	57	64549	64561	64577	64589
4.00	6.0	3.80	15.0	6	57	64550	64562	64578	64590
5.00	7.0	4.80	15.0	6	57	64551	64567	64579	64591
6.00	8.0	5.70	15.0	6	57	64552	64568	64580	64592
8.00	10.0	7.70	25.0	8	63	64553	64569	64581	64593
10.00	12.0	9.60	30.0	10	72	64554	64570	64582	64594
12.00	14.0	11.60	40.0	12	83	64555	64571	64583	64595

* for non-ferrous material

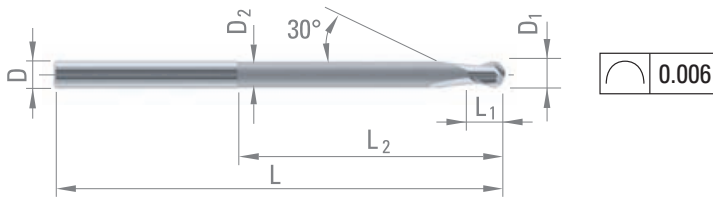
DIXI 7045 - 7047-D

BALL-NOSE END MILLS NECKED DOWN

Z = 2



P. 158



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic	Roughing		
		Finishing		

D ₁	L ₁	D ₂	D _{h5}	L	L ₂	DIXI	CARBIDE	TiAlN	DICUT	DIAMANT*
Ø < 3.00 - 0/-0.02 Ø ≥ 3.00 - e8										
0.20	0.5	0.18	4	62	1.0	7045	64694	64699	64704	64709
					1.6	7047-8D	979531	979555	979576	979595
					2.0	7047-10D	64735	64742	64750	64755
					2.4	7047-12D	979613	979626	979639	979664
					3.0	7047-15D	979711	979722	979732	979744
					3.6	7047-18D	979756	979768	979779	979790
0.30	0.6	0.27	4	62	1.5	7045	64695	64700	64705	64710
					2.4	7047-8D	979534	979558	979578	979596
					3.0	7047-10D	64738	64743	64751	64756
					3.6	7047-12D	979614	979627	979640	979652
					4.5	7047-15D	979712	979724	979733	979745
					5.4	7047-18D	979757	979769	979780	979791
0.40	0.8	0.37	4	62	2.0	7045	64696	64701	64706	64711
					3.2	7047-8D	979535	979559	979579	979597
					4.0	7047-10D	64739	64744	64752	64757
					4.8	7047-12D	979615	979628	979641	979653
					6.0	7047-15D	979713	979723	979734	979746
					7.2	7047-18D	979758	979770	979781	979792
0.50	1.0	0.45	4	62	3.0	7045	64491	64503	64515	64527
					4.0	7047-8D	979536	979560	979580	979598
					5.0	7047-10D	64596	64608	64623	64635
					6.0	7047-12D	979616	979629	979642	979654
					7.5	7047-15D	979714	979725	979735	979747
					9.0	7047-18D	979759	979771	979782	979793
0.60	1.6	0.55	4	62	4.0	7045	64697	64702	64707	64712
					4.8	7047-8D	979537	979561	979581	979599
					6.0	7047-10D	64740	64745	64753	64758
					7.2	7047-12D	979617	979630	979643	979655
					9.0	7047-15D	979715	979726	979736	979748
					10.8	7047-18D	979760	979772	979783	979794
0.80	1.8	0.75	4	62	5.0	7045	64698	64703	64708	64713
					6.4	7047-8D	979538	979562	979582	979600
					8.0	7047-10D	64741	64746	64754	64759
					9.6	7047-12D	979618	979631	979644	979656
					12.0	7047-15D	979716	979727	979737	979749
					14.4	7047-18D	979761	979773	979784	979795
1.00	2.0	0.95	4	75	6.0	7045	64492	64504	64516	64528
					8.0	7047-8D	979540	979563	979583	979601
					10.0	7047-10D	64597	64609	64624	64636
					12.0	7047-12D	979619	954101	979314	979657
					15.0	7047-15D	975225	979728	979738	979750
					18.0	7047-18D	979522	979774	979785	979523
1.50	2.5	1.45	4	75	9.0	7045	64493	64505	64517	64529
					12.0	7047-8D	979541	979565	979585	979602
					15.0	7047-10D	64598	64610	64625	64637
					18.0	7047-12D	979620	979632	979645	979658
					22.5	7047-15D	979717	979729	979739	979751
					27.0	7047-18D	979763	979775	979786	979799

* for non-ferrous material

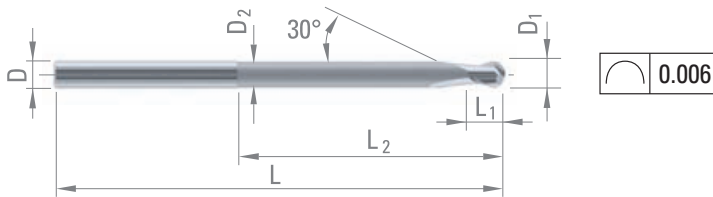


DIXI 7045 - 7047-D

Z = 2



P. 158



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic	Roughing ○○○○ Finishing ●●●●○		

D ₁	L ₁	D ₂	D _{h5}	L	L ₂	DIXI	CARBIDE	TiAlN	DICUT	DIAMANT*
2.00	3.0	1.90	4	75	12.0	7045	64494	64506	64518	64530
					16.0	7047-8D	979542	979566	979588	979603
					20.0	7047-10D	64599	64611	64626	64638
					24.0	7047-12D	979621	979633	979646	979659
					30.0	7047-15D	972993	954105	979740	979752
					36.0	7047-18D	979765	979776	979787	979796
2.50	4.0	2.40	4	75	12.0	7045	64495	64507	64519	64531
					20.0	7047-8D	979544	979567	979589	979604
					25.0	7047-10D	64600	64612	64627	64639
					30.0	7047-12D	979622	979635	979648	979660
					37.5	7047-15D	979719	979718	979741	979753
					45.0	7047-18D	979766	979777	979788	979797
3.00	5.0	2.80	6	102	12.0	7045	64496	64508	64520	64532
					24.0	7047-8D	979545	979568	979590	979605
					30.0	7047-10D	64601	64613	64628	64640
					36.0	7047-12D	979623	979636	979649	979661
					45.0	7047-15D	979720	979730	979742	979754
					54.0	7047-18D	979767	979778	979789	979798
4.00	6.0	3.80	6	102	15.0	7045	64497	64509	64521	64533
					32.0	7047-8D	979547	979569	979591	979607
					40.0	7047-10D	64602	64614	64629	64641
					48.0	7047-12D	979624	979637	979650	979662
					60.0	7047-15D	979721	979731	979743	979755
					15.0	7045	64498	64510	64522	64534
5.00	7.0	4.80	6	102	40.0	7047-8D	979549	979570	979592	979608
					50.0	7047-10D	64603	64615	64630	64642
					60.0	7047-12D	979625	979638	979651	979663
					15.0	7045	64499	64511	64523	64536
					48.0	7047-8D	979550	979571	979593	979609
					60.0	7047-10D	64604	64616	64631	64643
8.00	10.0	7.70	8	117	25.0	7045	64500	64512	64524	64537
					64.0	7047-8D	979551	979572	979594	979610
					80.0	7047-10D	64605	64617	64632	64644
					30.0	7045	64501	64513	64525	64538
					80.0	7047-8D	979552	979573	979586	979611
					90.0	7047-10D	64606	64618	64633	64645
10.00	12.0	9.60	10	133	40.0	7045	64502	64514	64526	64539
					96.0	7047-8D	979553	979574	979587	979612
					110.0	7047-10D	64607	64619	64634	64646
					15.0	7045	64499	64511	64523	64536
					48.0	7047-8D	979550	979571	979593	979609
					60.0	7047-10D	64604	64616	64631	64643
12.00	14.0	11.60	12	151	25.0	7045	64500	64512	64524	64537
					64.0	7047-8D	979551	979572	979594	979610
					80.0	7047-10D	64605	64617	64632	64644
					30.0	7045	64501	64513	64525	64538
					80.0	7047-8D	979552	979573	979586	979611
					90.0	7047-10D	64606	64618	64633	64645

* for non-ferrous material

DIXI 7045 L₂ = 2.5-6 x D₁

DIXI 7047-8D L₂ = 8 x D₁

DIXI 7047-10D L₂ = 10 x D₁

DIXI 7047-12D L₂ = 12 x D₁

DIXI 7047-15D L₂ = 15 x D₁

DIXI 7047-18D L₂ = 18 x D₁



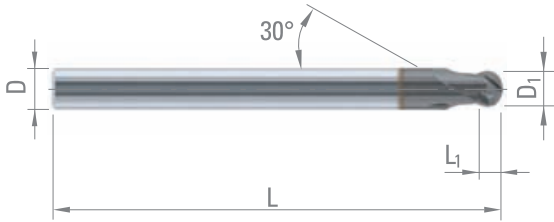
DIXI 7532 XIDUR

BALL-NOSE END MILLS

Z = 2



P. 208



0.006

High
alloyed
steel

Steel
Cast iron
> 45 HRC

Refractory
alloy

Roughing



Finishing



D ₁	L ₁	D _{h5}	L	XIDUR
Ø < 3.00 - 0/-0.02				
Ø ≥ 3.00 - e8				
0.20	0.2	4	50	973380
0.30	0.3	4	50	972176
0.40	0.4	4	50	973379
0.50	0.5	4	50	973378
0.60	0.6	4	50	973377
0.70	0.7	4	50	972177
0.80	0.8	4	50	973376
0.90	0.8	4	50	973375
1.00	0.8	4	50	67253
1.50	1.2	4	50	67254
2.00	1.6	4	50	67257
3.00	2.4	6	57	67258
4.00	3.2	6	66	67259
5.00	4.0	6	66	67260
6.00	4.8	6	66	67261
8.00	6.4	8	75	67262

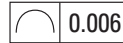
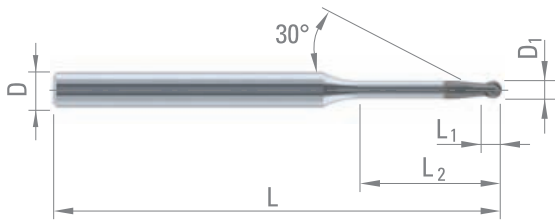
DIXI 7532-D XIDUR

BALL-NOSE END MILLS

Z = 2



P. 208



High alloyed steel

Steel Cast iron > 45 HRC

Refractory alloy

Roughing



Finishing



D ₁	L ₁	D _{h5}	L	L ₂	DIXI	XIDUR
Ø < 3.00 - 0/-0.02						
Ø ≥ 3.00 - e8						
0.20	0.2	4	50	0.6	7532-3D	978593
				1.0	7532-5D	979083
				1.6	7532-8D	979102
0.30	0.3	4	50	0.9	7532-3D	979058
				1.5	7532-5D	979084
				2.4	7532-8D	979103
0.40	0.4	4	50	1.2	7532-3D	979059
				2.0	7532-5D	979085
				3.2	7532-8D	979104
				4.0	7532-10D	979116
0.50	0.5	4	50	1.5	7532-3D	979060
				2.5	7532-5D	979086
				4.0	7532-8D	979105
				5.0	7532-10D	979117
				6.0	7532-12D	979136
0.60	0.6	4	50	1.8	7532-3D	979061
				3.0	7532-5D	979087
				4.8	7532-8D	979106
				6.0	7532-10D	979118
				7.2	7532-12D	979137
				9.0	7532-15D	979144
0.70	0.7	4	50	2.1	7532-3D	979062
				3.5	7532-5D	979088
				5.6	7532-8D	979107
				7.0	7532-10D	979119
				8.4	7532-12D	979138
				10.5	7532-15D	979145
0.80	0.8	4	50	2.4	7532-3D	979063
				4.0	7532-5D	979089
				6.4	7532-8D	979108
				8.0	7532-10D	979120
				9.6	7532-12D	979139
				12.0	7532-15D	979146
0.90	0.8	4	50	2.7	7532-3D	979064
				4.5	7532-5D	979091
				7.2	7532-8D	979109
				9.0	7532-10D	979121
				10.8	7532-12D	979140
				13.5	7532-15D	979147
1.00	0.8	4	50	3.0	7532-3D	979065
				5.0	7532-5D	979092
				8.0	7532-8D	979111
				10.0	7532-10D	979122
				12.0	7532-12D	979141
				15.0	7532-15D	979148
1.50	1.2	4	50	4.5	7532-3D	979066
				7.5	7532-5D	979093
				12.0	7532-8D	979112
				15.0	7532-10D	979123
				18.0	7532-12D	979142
				22.5	7532-15D	979149

DIXI 7532-3D

$L_2 = 3 \times D_1$

DIXI 7532-5D

$L_2 = 5 \times D_1$

DIXI 7532-8D

$L_2 = 8 \times D_1$

DIXI 7532-10D

$L_2 = 10 \times D_1$

DIXI 7532-12D

$L_2 = 12 \times D_1$

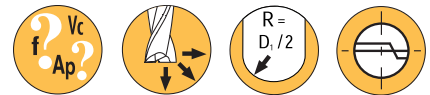
DIXI 7532-15D

$L_2 = 15 \times D_1$



DIXI 7532-D XIDUR

Z = 2



P. 208

D ₁	L ₁	D _{h5}	L	L ₂	DIXI	XIDUR
Ø < 3.00 - 0/-0.02 Ø ≥ 3.00 - e8						
2.00	1.6	4	50	6.0	7532-3D	979067
				10.0	7532-5D	979094
				16.0	7532-8D	979113
				20.0	7532-10D	979124
				24.0	7532-12D	979143
				30.0	7532-15D	979150
3.00	2.4	6	57	9.0	7532-3D	979068
				15.0	7532-5D	979095
				24.0	7532-8D	979114
				30.0	7532-10D	979125
4.00	3.2	6	66	12.0	7532-3D	979069
				20.0	7532-5D	979096
				32.0	7532-8D	979115
5.00	4.0	6	66	15.0	7532-3D	979070
				25.0	7532-5D	979097
6.00	4.8	6	66	18.0	7532-3D	979071
				30.0	7532-5D	979098
8.00	6.4	8	66	24.0	7532-3D	979072
				40.0	7532-5D	979099
10.00	8.0	10	66	30.0	7532-3D	979073
				50.0	7532-5D	979100

High
alloyed
steel

Steel
Cast iron
> 45 HRC

Refractory
alloy

Roughing



Finishing



DIXI 7532-3D

$$L_2 = 3 \times D_1$$

DIXI 7532-5D

$$L_2 = 5 \times D_1$$

DIXI 7532-8D

$$L_2 = 8 \times D_1$$

DIXI 7532-10D

$$L_2 = 10 \times D_1$$

DIXI 7532-12D

$$L_2 = 12 \times D_1$$

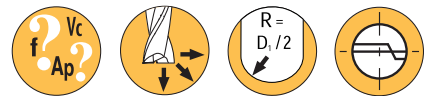
DIXI 7532-15D

$$L_2 = 15 \times D_1$$

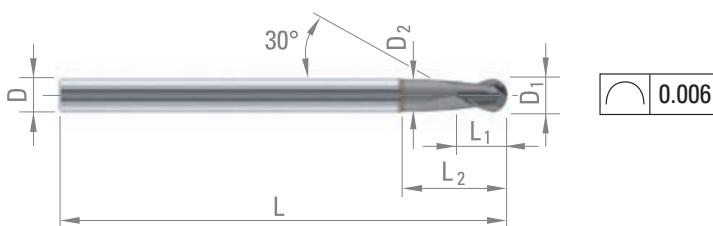
DIXI 7542 XIDUR

BALL-NOSE END MILLS
NECKED DOWN

Z = 2



P. 209



High
alloyed
steel

Steel
Cast iron
> 45 HRC

Refractory
alloy

Roughing



Finishing

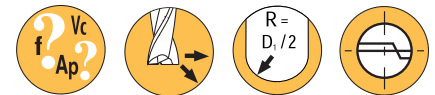
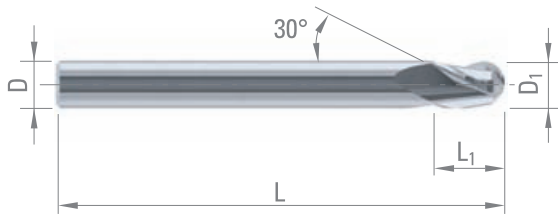


D ₁	L ₁	D ₂	L ₂	D _{h5}	L	XIDUR
Ø < 3.00 - 0/-0.02 Ø ≥ 3.00 - e8						
1.00	2.0	0.90	3.2	6	66	61355
1.50	3.0	1.40	4.7	6	66	61356
2.00	3.0	1.85	6.2	6	66	61357
3.00	5.0	2.85	9.2	6	66	61358
4.00	6.0	3.80	12.5	6	80	61359
5.00	7.0	4.70	15.5	6	80	61360
6.00	9.0	5.70	19.0	6	80	61361
8.00	12.0	7.50	25.0	8	90	61362
10.00	15.0	9.50	31.0	10	110	61363
12.00	18.0	11.50	37.0	12	120	61364

DIXI 7033

BALL-NOSE END MILLS

Z = 3



P. 156

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Al	Plastic

Roughing



Finishing

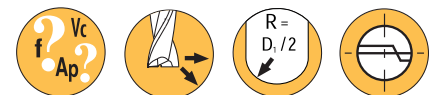
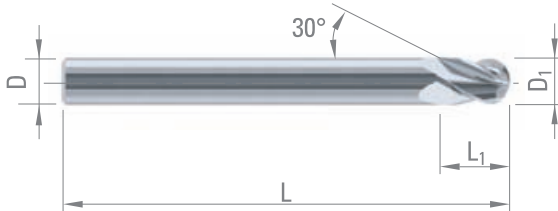


D ₁	L ₁	D _{h5}	L	CARBIDE	TiAlN
Ø < 3.00 - 0/-0.02					
Ø ≥ 3.00 - e8					
1.00	2.0	3	38	45950	56154
1.50	2.5	3	38	45230	56155
2.00	3.0	3	38	45231	56156
2.50	4.0	3	38	45232	56157
3.00	5.0	3	38	43637	56158
4.00	6.0	4	50	43638	56159
5.00	8.0	5	50	43639	56162
6.00	9.0	6	57	42993	56163
8.00	12.0	8	63	32969	56165
10.00	15.0	10	72	32970	56166

DIXI 7034

BALL-NOSE END MILLS

Z = 4



P. 156

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

Roughing

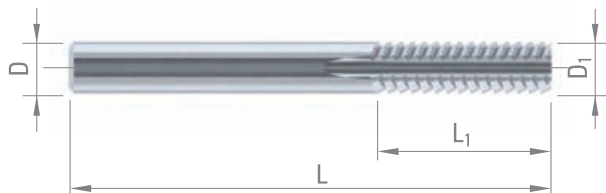


Finishing



D ₁ e8	L ₁	D _{h5}	L	CARBIDE	TiAlN
8.00	12	8	63	43641	
12.00	18	12	73	32975	56149
14.00	21	14	75	32976	
16.00	24	16	82	42827	56151
20.00	30	20	104	35740	





Kevlar®

Roughing



Finishing



D ₁	inches	L ₁	D _{h5}	L	CARBIDE
5.00		20	5.00	75	26252
6.00		25	6.00	75	26873
6.35	1/4"	25	6.35	75	26264
8.00		25	8.00	75	27851
10.00		25	10.00	75	28072
12.70	1/2"	27	12.70	75	26254

CUTTING CONDITIONS:

Routing

V_c = 250 - 500 m/min

V_f = 500 - 2000 mm/min



TOOLS ON REQUEST

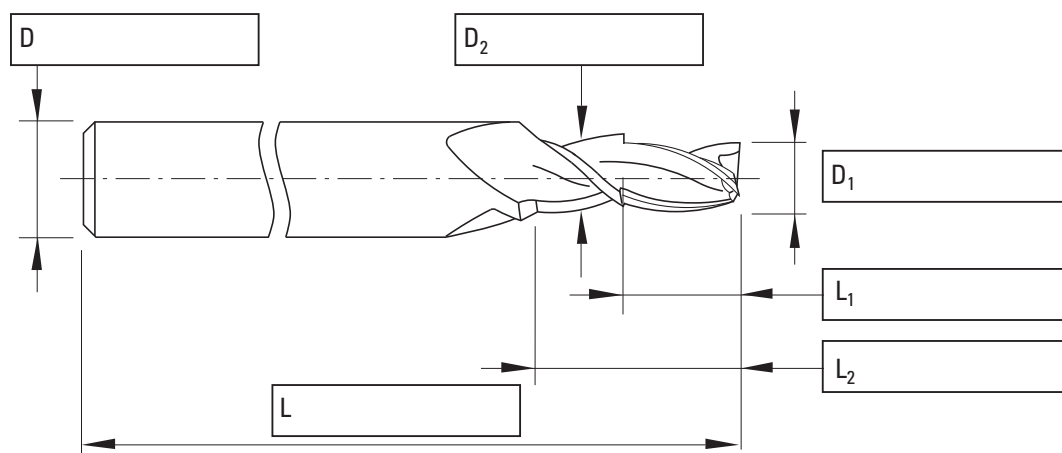
DIXI 7631 SP R ☐ L ☐ Z =

STEPPED END MILLS

☐☐

Quantity

Material to be machined



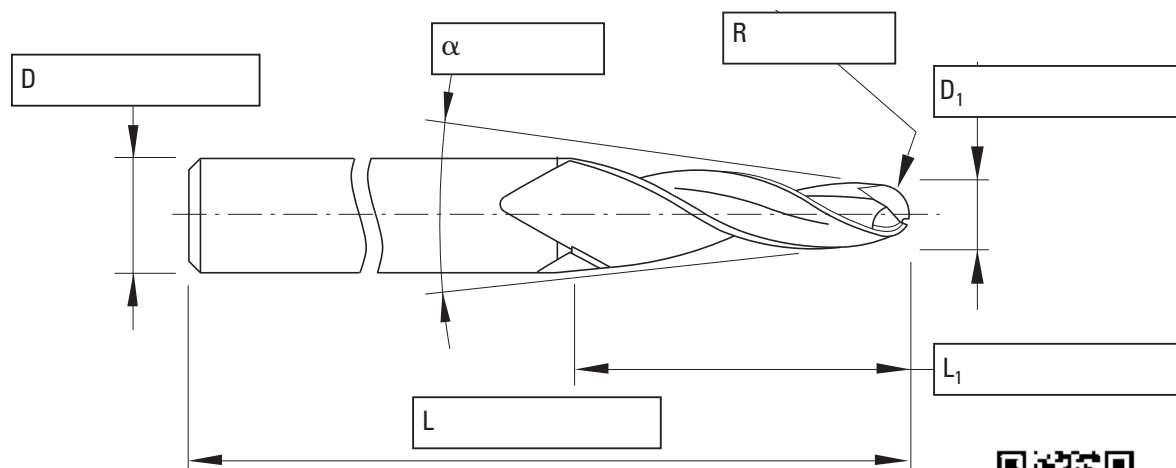
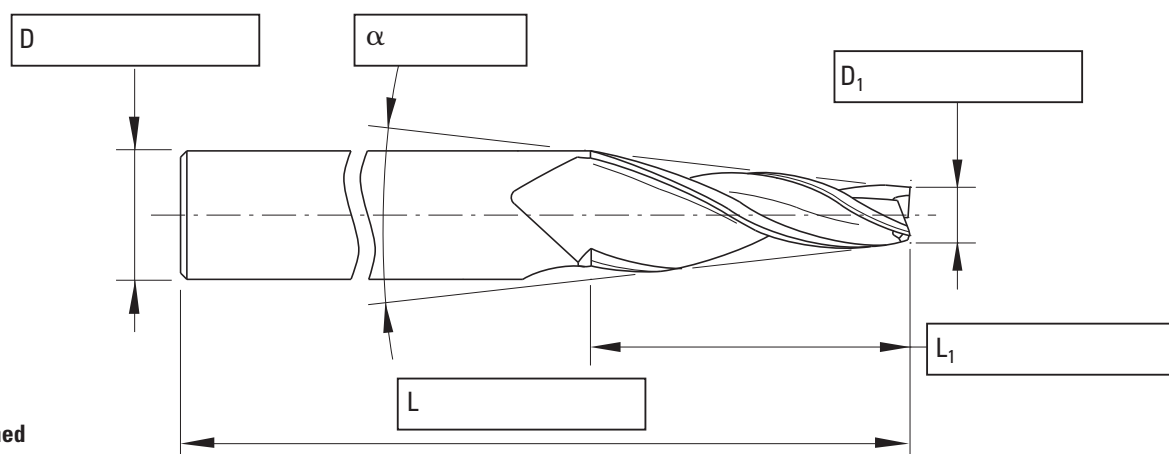
DIXI 7645 SP R ☐ L ☐

TAPERED END MILLS

Z =

Quantity

Material to be machined



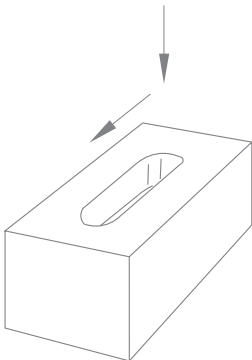
VISIT OUR E-QUOTATION ON WWW.DIXIPOLYTOOL.COM



CHOOSING THE NUMBER OF TEETH



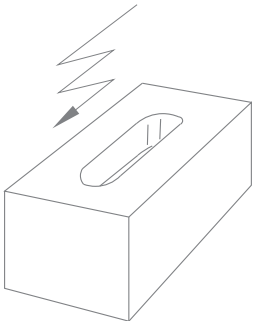
1 Key Slotting



Z 2



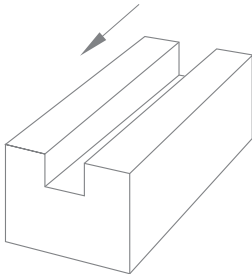
2 Ramping



Z 2 - Z 3



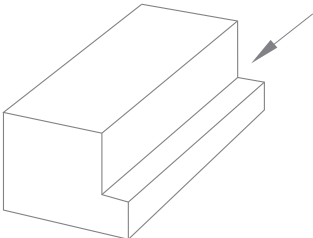
3 Slotting



Z 2 - Z 3



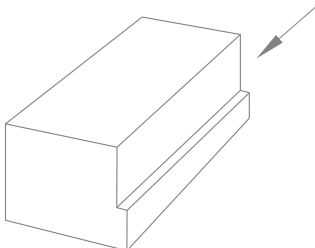
Routing (roughing)



Z 3 - Z 4



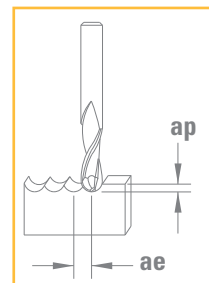
Routing (finishing)



Multi-tooth



CUTTING CONDITIONS



Materials to be machined

			CARBIDE	DICUT	TiAlN	DIAMANT	ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]	Vc [m/min]	Vc [m/min]		
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70 100			90 110	<0.15 x ØD1	<0.5 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70 90		<0.15 x ØD1	<0.5 x ØD1
P	Lead alloyed cutting steel		70 100				<0.2 x ØD1	<0.5 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40 70		<0.15 x ØD1	<0.5 x ØD1
M	Stainless steel	400 – 700 N/mm ²			70 90		<0.15 x ØD1	<0.5 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			40 70		<0.1 x ØD1	<0.4 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70 100		90 110		<0.1 x ØD1	<0.4 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40 70		70 90		<0.15 x ØD1	<0.5 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70 100		90 110		<0.1 x ØD1	<0.4 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25 35		<0.05 x ØD1	<0.25 x ØD1
S	Titanium, titanium alloys		30 45				<0.15 x ØD1	<0.5 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140 160				<0.15 x ØD1	<0.5 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120 140	170 190	170 190		<0.15 x ØD1	<0.5 x ØD1
N	Aluminium alloys	Si < 8%	180 260		230 340		<0.25 x ØD1	<0.5 x ØD1
N	Cast aluminium	Si > 8%	140 160		210 230		<0.25 x ØD1	<0.5 x ØD1
N	Graphite					200 300	<0.3 x ØD1	<0.6 x ØD1
N	Plastic		240 260		300 340		<0.3 x ØD1	<0.6 x ØD1
N	Gold, silver		140 160		200 220		<0.15 x ØD1	<0.5 x ØD1

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

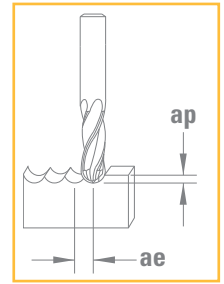
Feed per tooth

fz [mm]

$\emptyset D_1$ 0.06 - 0.60	$\emptyset D_1$ 0.60 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 14.00	$\emptyset D_1$ 14.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00
0.0016 - 0.005	0.003 - 0.009	0.005 - 0.01	0.008 - 0.02	0.016 - 0.05	0.026 - 0.06	0.036 - 0.09	0.05 - 0.13	0.07 - 0.15	0.08 - 0.18
0.0012 - 0.004	0.002 - 0.007	0.004 - 0.01	0.006 - 0.02	0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13
0.0020 - 0.008	0.004 - 0.013	0.007 - 0.02	0.010 - 0.03	0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26
0.0012 - 0.004	0.002 - 0.007	0.004 - 0.01	0.006 - 0.02	0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13
0.0012 - 0.004	0.002 - 0.007	0.004 - 0.01	0.006 - 0.02	0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13
0.0012 - 0.004	0.002 - 0.007	0.004 - 0.01	0.006 - 0.02	0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13
0.0016 - 0.005	0.003 - 0.009	0.005 - 0.01	0.008 - 0.02	0.016 - 0.05	0.026 - 0.06	0.036 - 0.09	0.05 - 0.13	0.07 - 0.15	0.08 - 0.18
0.0012 - 0.004	0.002 - 0.007	0.004 - 0.01	0.006 - 0.02	0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13
0.0016 - 0.005	0.003 - 0.009	0.005 - 0.01	0.008 - 0.02	0.016 - 0.05	0.026 - 0.06	0.036 - 0.09	0.05 - 0.13	0.07 - 0.15	0.08 - 0.18
		0.004 - 0.01	0.006 - 0.02	0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13
0.0012 - 0.004	0.002 - 0.007	0.004 - 0.01	0.006 - 0.02	0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13
0.0020 - 0.008	0.004 - 0.013	0.007 - 0.02	0.010 - 0.03	0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26
0.0012 - 0.004	0.002 - 0.007	0.004 - 0.01	0.006 - 0.02	0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13
0.0020 - 0.008	0.004 - 0.013	0.007 - 0.02	0.010 - 0.03	0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26
0.0020 - 0.008	0.004 - 0.013	0.007 - 0.02	0.010 - 0.03	0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26
0.0027 - 0.012	0.005 - 0.020	0.009 - 0.03	0.014 - 0.05	0.027 - 0.10	0.046 - 0.14	0.064 - 0.20	0.09 - 0.27	0.13 - 0.31	0.15 - 0.39
0.0027 - 0.012	0.005 - 0.020	0.009 - 0.03	0.014 - 0.05	0.027 - 0.10	0.046 - 0.14	0.064 - 0.20	0.09 - 0.27	0.13 - 0.31	0.15 - 0.39
0.0020 - 0.008	0.004 - 0.013	0.007 - 0.02	0.010 - 0.03	0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26



CUTTING CONDITIONS



Materials to be machined

			CARBIDE		TiAlN				ap [mm]	ae [mm]
			Vc [m/min]		Vc [m/min]					
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	90	110			<0.15 x ØD1	<0.3 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70	90			<0.15 x ØD1	<0.3 x ØD1
P	Lead alloyed cutting steel		70	100					<0.2 x ØD1	<0.3 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40	70			<0.1 x ØD1	<0.2 x ØD1
M	Stainless steel	400 – 700 N/mm ²			70	90			<0.15 x ØD1	<0.3 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			40	70			<0.1 x ØD1	<0.2 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	90	110			<0.15 x ØD1	<0.3 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	70	90			<0.1 x ØD1	<0.2 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70	100	90	110			<0.15 x ØD1	<0.3 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25	35			<0.1 x ØD1	<0.2 x ØD1
S	Titanium, titanium alloys		30	45					<0.1 x ØD1	<0.2 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140	160					<0.15 x ØD1	<0.3 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120	140	170	190			<0.15 x ØD1	<0.3 x ØD1
N	Aluminium alloys	Si < 8%	180	260	230	340			<0.25 x ØD1	<0.3 x ØD1
N	Cast aluminium	Si > 8%	140	160	210	230			<0.25 x ØD1	<0.3 x ØD1
N	Plastic		240	260	300	340			<0.3 x ØD1	<0.4 x ØD1
N	Gold, silver		140	160	200	220			<0.15 x ØD1	<0.3 x ØD1

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

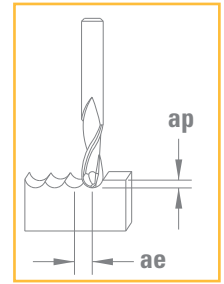
Feed per tooth

f_z [mm]

$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 20.00	
0.016 - 0.05	0.026 - 0.06	0.036 - 0.09	0.05 - 0.13	0.07 - 0.15	0.08 - 0.18	0.11 - 0.22	
0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13	0.09 - 0.17	
0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26	0.13 - 0.29	
0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13	0.09 - 0.17	
0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13	0.09 - 0.17	
0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13	0.09 - 0.17	
0.016 - 0.05	0.026 - 0.06	0.036 - 0.09	0.05 - 0.13	0.07 - 0.15	0.08 - 0.18	0.11 - 0.21	
0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13	0.09 - 0.17	
0.016 - 0.05	0.026 - 0.06	0.036 - 0.09	0.05 - 0.13	0.07 - 0.15	0.08 - 0.18	0.11 - 0.21	
0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13	0.09 - 0.17	
0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13	0.09 - 0.17	
0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26	0.13 - 0.29	
0.012 - 0.03	0.020 - 0.05	0.027 - 0.07	0.04 - 0.09	0.05 - 0.10	0.06 - 0.13	0.09 - 0.17	
0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26	0.13 - 0.29	
0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26	0.13 - 0.29	
0.027 - 0.10	0.046 - 0.14	0.064 - 0.20	0.09 - 0.27	0.13 - 0.31	0.15 - 0.39	0.18 - 0.42	
0.020 - 0.07	0.033 - 0.09	0.046 - 0.13	0.07 - 0.18	0.09 - 0.21	0.10 - 0.26	0.13 - 0.29	



CUTTING CONDITIONS



Materials to be machined

			CARBIDE	DICUT	TiAlN	DIAMANT	ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]	Vc [m/min]	Vc [m/min]		
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70 100		90 110		<0.15 x ØD1	<0.5 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70 90		<0.15 x ØD1	<0.5 x ØD1
P	Lead alloyed cutting steel		70 100				<0.2 x ØD1	<0.5 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40 70		<0.1 x ØD1	<0.4 x ØD1
M	Stainless steel	400 – 700 N/mm ²			70 90		<0.15 x ØD1	<0.5 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			40 70		<0.1 x ØD1	<0.4 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70 100		90 110		<0.15 x ØD1	<0.5 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40 70		70 90		<0.1 x ØD1	<0.4 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70 100		90 110		<0.15 x ØD1	<0.5 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25 35		<0.1 x ØD1	<0.1 x ØD1
S	Titanium, titanium alloys		30 45				<0.1 x ØD1	<0.4 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140 160				<0.15 x ØD1	<0.5 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120 140	170 190	170 190		<0.15 x ØD1	<0.5 x ØD1
N	Aluminium alloys	Si < 8%	180 240		230 340		<0.25 x ØD1	<0.5 x ØD1
N	Cast aluminium	Si > 8%	140 160			200 300	<0.25 x ØD1	<0.5 x ØD1
N	Graphite					200 300	<0.3 x ØD1	<0.6 x ØD1
N	Plastic		240 260		300 340		<0.3 x ØD1	<0.6 x ØD1
N	Gold, silver		140 160		200 220		<0.15 x ØD1	<0.5 x ØD1

n and Vf are indicative and shall be adjusted according to L₂

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

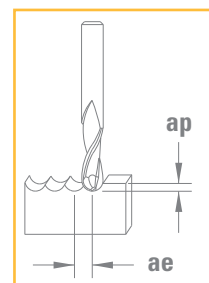
Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.20 - 0.60	$\emptyset D_1$ 0.60 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	
0.0014 - 0.005	0.003 - 0.008	0.005 - 0.01	0.007 - 0.02	0.014 - 0.04	0.023 - 0.06	0.032 - 0.08	0.05 - 0.11	
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08	
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16	
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08	
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08	
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08	
0.0014 - 0.005	0.003 - 0.008	0.005 - 0.01	0.007 - 0.02	0.014 - 0.04	0.023 - 0.06	0.032 - 0.08	0.05 - 0.11	
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08	
0.0014 - 0.005	0.003 - 0.008	0.005 - 0.01	0.007 - 0.02	0.014 - 0.04	0.023 - 0.06	0.032 - 0.08	0.05 - 0.11	
		0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08	
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08	
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16	
0.0010 - 0.003	0.002 - 0.006	0.003 - 0.01	0.005 - 0.015	0.010 - 0.03	0.017 - 0.04	0.024 - 0.06	0.03 - 0.08	
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16	
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16	
0.0024 - 0.010	0.005 - 0.017	0.008 - 0.03	0.012 - 0.04	0.024 - 0.09	0.040 - 0.12	0.056 - 0.17	0.08 - 0.24	
0.0024 - 0.010	0.005 - 0.017	0.008 - 0.03	0.012 - 0.04	0.024 - 0.09	0.040 - 0.12	0.056 - 0.17	0.08 - 0.24	
0.0017 - 0.007	0.003 - 0.012	0.006 - 0.02	0.009 - 0.03	0.017 - 0.06	0.029 - 0.08	0.040 - 0.12	0.06 - 0.16	



CUTTING CONDITIONS



Materials to be machined

			CARBIDE		TiAlN		DIAMANT			ap [mm]	ae [mm]
			Vc [m/min]		Vc [m/min]		Vc [m/min]				
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	60	90	80	100				<0.1 x ØD1	<0.3 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			60	80				<0.1 x ØD1	<0.3 x ØD1
P	Lead alloyed cutting steel		60	90	80	100				<0.15 x ØD1	<0.3 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			30	60				<0.05 x ØD1	<0.2 x ØD1
M	Stainless steel	400 – 700 N/mm ²			60	80				<0.1 x ØD1	<0.3 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			30	60				<0.05 x ØD1	<0.2 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	60	90	80	100				<0.1 x ØD1	<0.3 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	30	50	60	80				<0.05 x ØD1	<0.2 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		60	90	80	100				<0.1 x ØD1	<0.3 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			20	30				<0.05 x ØD1	<0.2 x ØD1
S	Titanium, titanium alloys		25	35	30	50				<0.05 x ØD1	<0.2 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		100	130	140	180				<0.1 x ØD1	<0.3 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	90	110	130	160				<0.1 x ØD1	<0.3 x ØD1
N	Aluminium alloys	Si < 8%	130	180	150	250				<0.2 x ØD1	<0.3 x ØD1
N	Cast aluminium	Si > 8%	100	130			200	300		<0.2 x ØD1	<0.3 x ØD1
N	Graphite						200	300		<0.25 x ØD1	<0.4 x ØD1
N	Plastic		180	220	200	250				<0.25 x ØD1	<0.4 x ØD1
N	Gold, silver		100	130	140	180				<0.1 x ØD1	<0.3 x ØD1

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

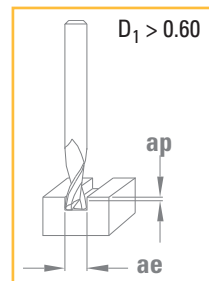
Feed per tooth

fz [mm]

Ø D ₁ 2.00 - 2.50	Ø D ₁ 2.50 - 3.00	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.00 - 5.00	Ø D ₁ 5.00 - 6.00	Ø D ₁ 6.00 - 8.00	Ø D ₁ 8.00 - 10.00	Ø D ₁ 10.00 - 14.00	Ø D ₁ 14.00 - 16.00	Ø D ₁ 16.00 - 20.00
0.010 - 0.021	0.012 - 0.03	0.014 - 0.03	0.019 - 0.04	0.024 - 0.05	0.029 - 0.07	0.038 - 0.08	0.05 - 0.12	0.07 - 0.13	0.08 - 0.17
0.007 - 0.015	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.018 - 0.04	0.022 - 0.05	0.029 - 0.06	0.04 - 0.08	0.05 - 0.10	0.06 - 0.12
0.012 - 0.030	0.015 - 0.04	0.018 - 0.05	0.024 - 0.06	0.030 - 0.07	0.036 - 0.10	0.048 - 0.12	0.06 - 0.17	0.08 - 0.19	0.10 - 0.24
0.007 - 0.015	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.018 - 0.04	0.022 - 0.05	0.029 - 0.06	0.04 - 0.08	0.05 - 0.10	0.06 - 0.12
0.007 - 0.015	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.018 - 0.04	0.022 - 0.05	0.029 - 0.06	0.04 - 0.08	0.05 - 0.10	0.06 - 0.12
0.007 - 0.015	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.018 - 0.04	0.022 - 0.05	0.029 - 0.06	0.04 - 0.08	0.05 - 0.10	0.06 - 0.12
0.010 - 0.021	0.012 - 0.03	0.014 - 0.03	0.019 - 0.04	0.024 - 0.05	0.029 - 0.07	0.038 - 0.08	0.05 - 0.12	0.07 - 0.13	0.08 - 0.17
0.007 - 0.015	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.018 - 0.04	0.022 - 0.05	0.029 - 0.06	0.04 - 0.08	0.05 - 0.10	0.06 - 0.12
0.010 - 0.021	0.012 - 0.03	0.014 - 0.03	0.019 - 0.04	0.024 - 0.05	0.029 - 0.07	0.038 - 0.08	0.05 - 0.12	0.07 - 0.13	0.08 - 0.17
0.007 - 0.015	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.018 - 0.04	0.022 - 0.05	0.029 - 0.06	0.04 - 0.08	0.05 - 0.10	0.06 - 0.12
0.007 - 0.015	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.018 - 0.04	0.022 - 0.05	0.029 - 0.06	0.04 - 0.08	0.05 - 0.10	0.06 - 0.12
0.012 - 0.030	0.015 - 0.04	0.018 - 0.05	0.024 - 0.06	0.030 - 0.07	0.036 - 0.10	0.048 - 0.12	0.06 - 0.17	0.08 - 0.19	0.10 - 0.24
0.007 - 0.015	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.018 - 0.04	0.022 - 0.05	0.029 - 0.06	0.04 - 0.08	0.05 - 0.10	0.06 - 0.12
0.012 - 0.030	0.015 - 0.04	0.018 - 0.05	0.024 - 0.06	0.030 - 0.07	0.036 - 0.10	0.048 - 0.12	0.06 - 0.17	0.08 - 0.19	0.10 - 0.24
0.012 - 0.030	0.015 - 0.04	0.018 - 0.05	0.024 - 0.06	0.030 - 0.07	0.036 - 0.10	0.048 - 0.12	0.06 - 0.17	0.08 - 0.19	0.10 - 0.24
0.017 - 0.045	0.021 - 0.05	0.025 - 0.07	0.034 - 0.09	0.042 - 0.11	0.050 - 0.14	0.067 - 0.18	0.08 - 0.25	0.12 - 0.29	0.13 - 0.36
0.017 - 0.045	0.021 - 0.05	0.025 - 0.07	0.034 - 0.09	0.042 - 0.11	0.050 - 0.14	0.067 - 0.18	0.08 - 0.25	0.12 - 0.29	0.13 - 0.36
0.012 - 0.030	0.015 - 0.04	0.018 - 0.05	0.024 - 0.06	0.030 - 0.07	0.036 - 0.10	0.048 - 0.12	0.06 - 0.17	0.08 - 0.19	0.10 - 0.24



CUTTING CONDITIONS



Materials to be machined

			CARBIDE		TiAlN		DIAMANT			ap [mm]	ae [mm]
			Vc [m/min]		Vc [m/min]		Vc [m/min]				
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	90	110				< 1 x ØD1	1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70	90				< 0.6 x ØD1	1 x ØD1
P	Lead alloyed cutting steel		70	100						< 1 x ØD1	1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40	70				< 0.5 x ØD1	1 x ØD1
M	Stainless steel	400 – 700 N/mm ²			70	90				< 0.8 x ØD1	1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			40	70				< 0.8 x ØD1	1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	90	110				< 1 x ØD1	1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	70	90				< 0.6 x ØD1	1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70	100	90	110				< 0.6 x ØD1	1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25	35				< 0.4 x ØD1	1 x ØD1
S	Titanium, titanium alloys		30	45						< 0.5 x ØD1	1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140	160						< 1 x ØD1	1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120	140	170	190				< 0.7 x ØD1	1 x ØD1
N	Aluminium alloys	Si < 8%	180	260	230	340				< 1.2 x ØD1	1 x ØD1
N	Cast aluminium	Si > 8%	140	160	210	230				< 0.9 x ØD1	1 x ØD1
N	Graphite						200	300		< 1 x ØD1	1 x ØD1
N	Plastic		240	260	300	340				< 1.2 x ØD1	1 x ØD1
N	Gold, silver		140	160	200	220				< 0.9 x ØD1	1 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth

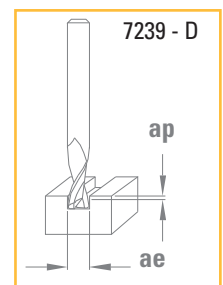
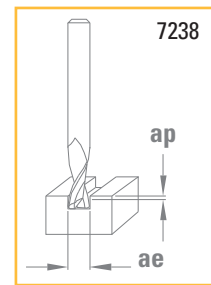
f_z [mm]

$\emptyset D_1$ 0.04 - 0.50	$\emptyset D_1$ 0.50 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 13.00	$\emptyset D_1$ 13.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20
0.002 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.002 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.002 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
		0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.002 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.13	0.07 - 0.14
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.21	0.10 - 0.24	0.11 - 0.30
0.003 - 0.01	0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20

The plunging feed (V_{fp}) of an end mill $Z = 2$ (drilling) must be reduced by 40 to 80 % depending on the material to be machined



CUTTING CONDITIONS



Materials to be machined

			CARBIDE		TiAlN		ap	ae	ap	ae
			Vc	[m/min]	Vc	[m/min]	[mm]	[mm]	[mm]	[mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	90	110	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70	90	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
P	Lead alloyed cutting steel		70	100			< 0.12 x ØD1	1 x ØD1	< 0.06 x ØD1	1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40	70	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
M	Stainless steel	400 – 700 N/mm ²			70	90	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			40	70	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	90	110	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	70	90	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70	100	90	110	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25	35	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
S	Titanium, titanium alloys		30	45			< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140	160			< 0.12 x ØD1	1 x ØD1	< 0.06 x ØD1	1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120	140	170	190	< 0.1 x ØD1	1 x ØD1	< 0.04 x ØD1	1 x ØD1
N	Aluminium alloys	Si < 8%	180	260	230	340	< 0.12 x ØD1	1 x ØD1	< 0.06 x ØD1	1 x ØD1
N	Cast aluminium	Si > 8%	140	160	210	230	< 0.12 x ØD1	1 x ØD1	< 0.06 x ØD1	1 x ØD1
N	Plastic		240	260	300	340	< 0.15 x ØD1	1 x ØD1	< 0.10 x ØD1	1 x ØD1
N	Gold, silver		140	160	200	220	< 0.12 x ØD1	1 x ØD1	< 0.06 x ØD1	1 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -25 \%$

n and Vf are indicative and shall be adjusted according to L₂

The plunging feed (Vfp) of an end mill Z = 2 (drilling) must be reduced by 40 to 80 % depending on the material to be machined

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

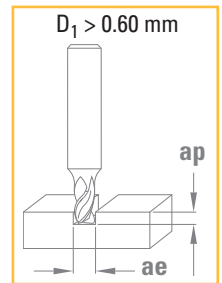
Feed per tooth

fz [mm]

Ø D ₁ 0.15 - 0.30	Ø D ₁ 0.30 - 0.40	Ø D ₁ 0.40 - 0.60	Ø D ₁ 0.60 - 0.90	Ø D ₁ 0.90 - 1.20	Ø D ₁ 1.20 - 1.50	Ø D ₁ 1.50 - 1.80	Ø D ₁ 1.80 - 2.10	Ø D ₁ 2.10 - 2.50	Ø D ₁ 2.50 - 3.00
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.0003 - 0.001	0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.0003 - 0.001	0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
		0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04
0.002 - 0.003	0.002 - 0.004	0.003 - 0.01	0.008 - 0.012	0.010 - 0.015	0.012 - 0.016	0.013 - 0.02	0.015 - 0.022	0.02 - 0.025	0.022 - 0.04



CUTTING CONDITIONS



Materials to be machined

			CARBIDE		TiAlN			ap [mm]	ae [mm]
			Vc [m/min]		Vc [m/min]				
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	90	110		< 1 x ØD1	1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	50	80	70	90		< 0.6 x ØD1	1 x ØD1
P	Lead alloyed cutting steel		70	100				< 1 x ØD1	1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40	70		< 0.5 x ØD1	1 x ØD1
M	Stainless steel	400 – 700 N/mm ²	40	60	70	90		< 0.8 x ØD1	1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			40	70		< 0.5 x ØD1	1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	90	110		< 1 x ØD1	1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	70	90		< 0.6 x ØD1	1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70	100	90	110		< 0.6 x ØD1	1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25	35		< 0.4 x ØD1	1 x ØD1
S	Titanium, titanium alloys		30	45				< 0.5 x ØD1	1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140	160				< 1 x ØD1	1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)		120	140	170	190		< 0.7 x ØD1	1 x ØD1
N	Aluminium alloys	Si < 8%	180	260	230	340		< 1.2 x ØD1	1 x ØD1
N	Cast aluminium	Si > 8%	140	160	210	230		< 0.9 x ØD1	1 x ØD1
N	Graphite		140	160	200	220		< 0.9 x ØD1	1 x ØD1
N	Plastic		240	260	300	340		< 1.2 x ØD1	1 x ØD1
N	Gold, silver		140	160	200	220		< 0.9 x ØD1	1 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (ap \ \& \ ae) - 95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (ap \ \& \ ae) - 85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (ap \ \& \ ae) - 70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (ap \ \& \ ae) - 50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (ap \ \& \ ae) - 25 \%$

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

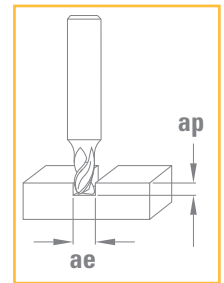
Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.30 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 14.00	$\emptyset D_1$ 14.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.14	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.005 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.21	0.10 - 0.24	0.11 - 0.30	
0.006 - 0.015	0.005 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	



CUTTING CONDITIONS - SLOTTING



Materials to be machined

CUTINOX

Vc [m/min]

ap
[mm]

P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	100	170	< 1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	90	150	< 1 x ØD1
P	Lead alloyed cutting steel		120	180	< 1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²	50	90	< 0.7 x ØD1
M	Stainless steel	400 – 700 N/mm ²	60	95	< 1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²	50	90	< 0.7 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	140	180	< 1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	110	150	< 1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		100	140	< 1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	40	< 1 x ØD1
S	Titanium, titanium alloys		40	70	< 0.3 x ØD1

Cutting conditions based on oil lubrication.

For high alloyed steels (> 12% Chrome), stainless steels, titanium alloys, cutting speed shall be reduced by 20% when emulsion is used.

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

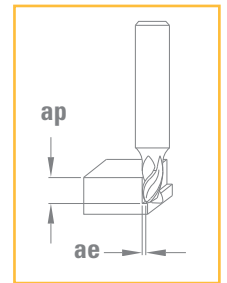
Feed per tooth

f_z [mm]

$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	
0.010 - 0.017	0.013 - 0.035	0.020 - 0.055	0.023 - 0.070	0.029 - 0.080	0.035 - 0.090	
0.009 - 0.015	0.012 - 0.030	0.017 - 0.045	0.020 - 0.060	0.025 - 0.070	0.030 - 0.080	
0.013 - 0.023	0.017 - 0.045	0.026 - 0.068	0.030 - 0.090	0.038 - 0.105	0.045 - 0.120	
0.007 - 0.013	0.010 - 0.025	0.015 - 0.040	0.017 - 0.050	0.021 - 0.060	0.026 - 0.070	
0.009 - 0.015	0.012 - 0.030	0.017 - 0.045	0.020 - 0.060	0.025 - 0.070	0.030 - 0.080	
0.007 - 0.013	0.010 - 0.025	0.015 - 0.040	0.017 - 0.050	0.021 - 0.060	0.026 - 0.070	
0.013 - 0.023	0.017 - 0.045	0.026 - 0.068	0.030 - 0.090	0.038 - 0.105	0.045 - 0.120	
0.012 - 0.020	0.016 - 0.040	0.023 - 0.060	0.027 - 0.080	0.034 - 0.095	0.041 - 0.110	
0.012 - 0.020	0.016 - 0.040	0.023 - 0.060	0.027 - 0.080	0.034 - 0.095	0.041 - 0.110	
0.004 - 0.010	0.005 - 0.013	0.007 - 0.020	0.010 - 0.023	0.013 - 0.026	0.013 - 0.033	
0.010 - 0.017	0.013 - 0.035	0.020 - 0.055	0.023 - 0.070	0.029 - 0.080	0.035 - 0.090	



CUTTING CONDITIONS - ROUTING



Materials to be machined

			CUTINOX			ap [mm]	ae [mm]
			Vc [m/min]				
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	160	200		< 1 x ØD1	< 0.6 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	130	170		< 1 x ØD1	< 0.6 x ØD1
P	Lead alloyed cutting steel		160	200		< 1 x ØD1	< 0.6 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²	70	100		< 1 x ØD1	< 0.5 x ØD1
M	Stainless steel	400 – 700 N/mm ²	80	110		< 1 x ØD1	< 0.5 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²	70	100		< 1 x ØD1	< 0.5 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	160	200		< 1 x ØD1	< 0.6 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	130	170		< 1 x ØD1	< 0.6 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		110	150		< 1 x ØD1	< 0.6 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	50		< 1 x ØD1	< 0.3 x ØD1
S	Titanium, titanium alloys		40	70		< 1 x ØD1	< 0.6 x ØD1

Cutting conditions based on oil lubrication.

For high alloyed steels (> 12% Chrome), stainless steels, titanium alloys, cutting speed shall be reduced by 20% when emulsion is used.

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

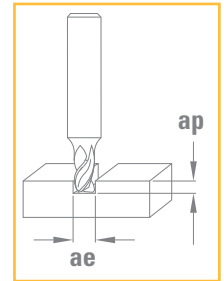
Feed per tooth

f_z [mm]

$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	
0.019 - 0.045	0.029 - 0.070	0.040 - 0.100	0.052 - 0.115	0.057 - 0.130	0.063 - 0.155	
0.017 - 0.040	0.023 - 0.065	0.035 - 0.085	0.046 - 0.105	0.052 - 0.115	0.058 - 0.135	
0.029 - 0.065	0.035 - 0.100	0.052 - 0.130	0.069 - 0.155	0.081 - 0.175	0.086 - 0.210	
0.014 - 0.035	0.017 - 0.050	0.029 - 0.070	0.040 - 0.085	0.046 - 0.090	0.052 - 0.110	
0.017 - 0.040	0.023 - 0.065	0.035 - 0.085	0.046 - 0.105	0.052 - 0.115	0.058 - 0.135	
0.014 - 0.035	0.017 - 0.050	0.029 - 0.070	0.040 - 0.085	0.046 - 0.090	0.052 - 0.110	
0.029 - 0.065	0.035 - 0.100	0.052 - 0.130	0.069 - 0.155	0.081 - 0.175	0.086 - 0.210	
0.024 - 0.055	0.029 - 0.085	0.044 - 0.111	0.059 - 0.132	0.068 - 0.149	0.073 - 0.179	
0.024 - 0.055	0.029 - 0.085	0.044 - 0.111	0.059 - 0.132	0.068 - 0.149	0.073 - 0.179	
0.007 - 0.017	0.009 - 0.025	0.012 - 0.035	0.017 - 0.040	0.023 - 0.050	0.026 - 0.060	
0.019 - 0.045	0.029 - 0.070	0.040 - 0.100	0.052 - 0.115	0.057 - 0.130	0.063 - 0.155	



CUTTING CONDITIONS - SLOTTING



Materials to be machined

CUTINOX

Vc [m/min]

ap
[mm]

P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	100	170	< 1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	90	150	< 1 x ØD1
P	Lead alloyed cutting steel		120	180	< 1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²	50	90	< 0.7 x ØD1
M	Stainless steel	400 – 700 N/mm ²	60	95	< 1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²	50	90	< 0.7 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	140	180	< 1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	110	150	< 1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		100	140	< 1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	50	< 0.3 x ØD1
S	Titanium, titanium alloys		40	70	< 1 x ØD1

Cutting conditions based on oil lubrication.

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

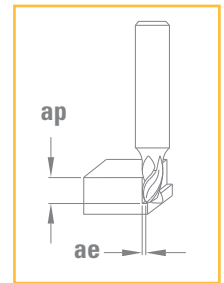
Feed per tooth

f_z [mm]

$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00	
0.005 - 0.010	0.008 - 0.020	0.011 - 0.030	0.017 - 0.040	0.022 - 0.050	0.025 - 0.055	0.030 - 0.065	0.040 - 0.085	
0.005 - 0.010	0.008 - 0.018	0.010 - 0.025	0.015 - 0.035	0.020 - 0.045	0.023 - 0.050	0.025 - 0.060	0.035 - 0.075	
0.010 - 0.020	0.013 - 0.030	0.015 - 0.045	0.023 - 0.050	0.025 - 0.070	0.030 - 0.075	0.032 - 0.080	0.035 - 0.110	
0.004 - 0.010	0.006 - 0.015	0.008 - 0.020	0.013 - 0.030	0.018 - 0.035	0.020 - 0.040	0.025 - 0.050	0.030 - 0.060	
0.005 - 0.010	0.008 - 0.018	0.010 - 0.025	0.015 - 0.035	0.020 - 0.045	0.023 - 0.050	0.025 - 0.060	0.035 - 0.075	
0.004 - 0.010	0.006 - 0.015	0.008 - 0.020	0.013 - 0.030	0.018 - 0.035	0.020 - 0.040	0.025 - 0.050	0.030 - 0.060	
0.010 - 0.020	0.013 - 0.030	0.015 - 0.045	0.023 - 0.050	0.025 - 0.070	0.030 - 0.075	0.032 - 0.080	0.035 - 0.110	
0.008 - 0.015	0.011 - 0.025	0.013 - 0.040	0.019 - 0.045	0.021 - 0.060	0.026 - 0.065	0.027 - 0.070	0.030 - 0.095	
0.008 - 0.015	0.011 - 0.025	0.013 - 0.040	0.019 - 0.045	0.021 - 0.060	0.026 - 0.065	0.027 - 0.070	0.030 - 0.095	
0.001 - 0.005	0.003 - 0.008	0.004 - 0.010	0.005 - 0.015	0.008 - 0.018	0.010 - 0.020	0.010 - 0.025	0.015 - 0.030	
0.005 - 0.010	0.008 - 0.020	0.011 - 0.030	0.017 - 0.040	0.022 - 0.050	0.025 - 0.055	0.030 - 0.065	0.040 - 0.085	



CUTTING CONDITIONS - ROUTING



Materials to be machined

Materials to be machined			CUTINOX		ap [mm]	ae [mm]
			Vc [m/min]			
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²	160	200	< 2 x ØD1	< 0.4 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²	130	170	< 2 x ØD1	< 0.3 x ØD1
P	Lead alloyed cutting steel		160	200	< 2 x ØD1	< 0.4 x ØD1
P	High alloyed steel	700 – 1500 N/mm²	70	100	< 2 x ØD1	< 0.3 x ØD1
M	Stainless steel	400 – 700 N/mm²	80	110	< 2 x ØD1	< 0.3 x ØD1
M	DUPLEX stainless steel	> 800 N/mm²	70	100	< 2 x ØD1	< 0.3 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	160	200	< 2 x ØD1	< 0.4 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	130	170	< 2 x ØD1	< 0.4 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		110	150	< 2 x ØD1	< 0.3 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	50	< 2 x ØD1	< 0.2 x ØD1
S	Titanium, titanium alloys		40	70	< 2 x ØD1	< 0.3 x ØD1

Cutting conditions based on oil lubrication.

If ae < 0.1 x D, increase Vc and fz from 25%.

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

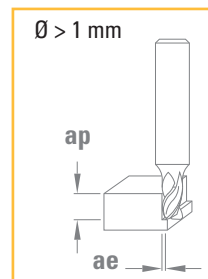
Feed per tooth

f_z [mm]

$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00	
0.015 - 0.030	0.019 - 0.040	0.025 - 0.060	0.035 - 0.085	0.045 - 0.100	0.050 - 0.110	0.055 - 0.135	0.075 - 0.160	
0.011 - 0.025	0.015 - 0.035	0.020 - 0.055	0.030 - 0.075	0.040 - 0.090	0.045 - 0.100	0.050 - 0.120	0.068 - 0.144	
0.021 - 0.045	0.025 - 0.055	0.030 - 0.085	0.045 - 0.115	0.060 - 0.135	0.070 - 0.150	0.075 - 0.180	0.100 - 0.220	
0.008 - 0.020	0.012 - 0.030	0.015 - 0.045	0.025 - 0.060	0.035 - 0.075	0.040 - 0.080	0.045 - 0.095	0.055 - 0.115	
0.011 - 0.025	0.015 - 0.035	0.020 - 0.055	0.030 - 0.075	0.040 - 0.090	0.045 - 0.100	0.050 - 0.120	0.065 - 0.145	
0.008 - 0.020	0.012 - 0.030	0.015 - 0.045	0.025 - 0.060	0.035 - 0.075	0.040 - 0.080	0.045 - 0.095	0.055 - 0.115	
0.021 - 0.045	0.025 - 0.055	0.030 - 0.085	0.045 - 0.115	0.060 - 0.135	0.070 - 0.150	0.075 - 0.180	0.100 - 0.220	
0.017 - 0.037	0.021 - 0.047	0.026 - 0.072	0.038 - 0.098	0.051 - 0.115	0.060 - 0.128	0.064 - 0.153	0.085 - 0.187	
0.017 - 0.037	0.021 - 0.047	0.026 - 0.072	0.038 - 0.098	0.051 - 0.115	0.060 - 0.128	0.064 - 0.153	0.085 - 0.187	
0.003 - 0.007	0.006 - 0.015	0.008 - 0.020	0.010 - 0.030	0.015 - 0.035	0.020 - 0.040	0.023 - 0.050	0.028 - 0.060	
0.013 - 0.030	0.017 - 0.040	0.025 - 0.060	0.035 - 0.085	0.045 - 0.100	0.050 - 0.110	0.055 - 0.135	0.075 - 0.160	



CUTTING CONDITIONS



Materials to be machined			CARBIDE	TiAlN	DIAMANT		ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]	Vc [m/min]			
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70 100	90 110			< 1 x ØD1	< 0.3 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²		70 90			< 1 x ØD1	< 0.2 x ØD1
P	Lead alloyed cutting steel		70 100				< 1.5 x ØD1	< 0.3 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²		40 55			< 1 x ØD1	< 0.2 x ØD1
M	Stainless steel	400 – 700 N/mm ²		70 90			< 1 x ØD1	< 0.3 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²		40 55			< 1 x ØD1	< 0.2 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70 100	90 110			< 1 x ØD1	< 0.3 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40 70	70 90			< 1 x ØD1	< 0.3 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70 100	90 110			< 1 x ØD1	< 0.3 x ØD1
S	Titanium, titanium alloys		30 45				< 1 x ØD1	< 0.3 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140 160				< 1.5 x ØD1	< 0.3 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)		120 140	170 190			< 1 x ØD1	< 0.2 x ØD1
N	Aluminium alloys	Si < 8%	180 220	230 270			< 1.5 x ØD1	< 0.3 x ØD1
N	Cast aluminium	Si > 8%	140 160	210 230			< 1.5 x ØD1	< 0.3 x ØD1
N	Graphite				200 300		< 1.5 x ØD1	< 0.2 x ØD1
N	Plastic		240 260	300 340		< 1.5 x ØD1	< 0.3 x ØD1	0.006 - 0.015
N	Gold, silver		140 160	200 220		< 1.5 x ØD1	< 0.3 x ØD1	0.006 - 0.015

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

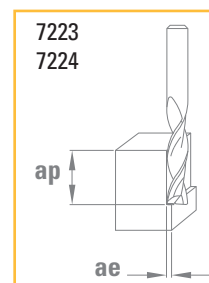
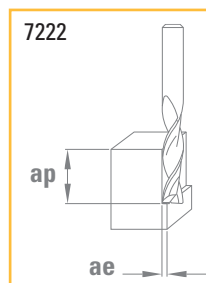
Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.40 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 14.00	$\emptyset D_1$ 14.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.10	0.06 - 0.11	0.07 - 0.14	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.07	0.06 - 0.08	0.07 - 0.10	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.13	0.06 - 0.14	0.07 - 0.15	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.13	0.06 - 0.14	0.07 - 0.15	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.13	0.06 - 0.14	0.07 - 0.15	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.13	0.06 - 0.14	0.07 - 0.15	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.13	0.06 - 0.14	0.07 - 0.15	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.13	0.06 - 0.14	0.07 - 0.15	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.07	0.06 - 0.08	0.07 - 0.10	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20		
0.005 - 0.02	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20		



CUTTING CONDITIONS



Materials to be machined

			CARBIDE		TiAlN		ap	ae	ap	ae
			Vc [m/min]	Vc [m/min]	Vc [m/min]	Vc [m/min]	[mm]	[mm]	[mm]	[mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	45	50	50	60	3 x ØD1	< 0.3 x ØD1	3 x ØD1	< 0.2 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			35	45	3 x ØD1	< 0.2 x ØD1	3 x ØD1	< 0.1 x ØD1
P	Lead alloyed cutting steel		45	50			3 x ØD1	< 0.3 x ØD1	3 x ØD1	< 0.2 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			30	45	3 x ØD1	< 0.15 x ØD1	3 x ØD1	< 0.07 x ØD1
M	Stainless steel	400 – 700 N/mm ²			35	45	3 x ØD1	< 0.2 x ØD1	3 x ØD1	< 0.1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			30	45	3 x ØD1	< 0.3 x ØD1	3 x ØD1	< 0.07 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	25	35	35	45	3 x ØD1	< 0.15 x ØD1	3 x ØD1	< 0.2 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	25	35	35	45	3 x ØD1	< 0.3 x ØD1	3 x ØD1	< 0.07 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		25	35	35	45	3 x ØD1	< 0.1 x ØD1	3 x ØD1	< 0.2 x ØD1
S	Titanium, titanium alloys		15	25			3 x ØD1	< 0.15 x ØD1	3 x ØD1	< 0.03 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		80	100			3 x ØD1	< 0.3 x ØD1	3 x ØD1	< 0.2 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)		60	80	80	100	3 x ØD1	< 0.3 x ØD1	3 x ØD1	< 0.2 x ØD1
N	Aluminium alloys	Si < 8%	80	110	100	130	3 x ØD1	< 0.4 x ØD1	3 x ØD1	< 0.3 x ØD1
N	Cast aluminium	Si > 8%	80	100	100	120	3 x ØD1	< 0.4 x ØD1	3 x ØD1	< 0.3 x ØD1
N	Plastic		90	110	110	130	3 x ØD1	< 0.4 x ØD1	3 x ØD1	< 0.3 x ØD1
N	Gold, silver		80	100	100	120	3 x ØD1	< 0.4 x ØD1	3 x ØD1	< 0.3 x ØD1

DIXI 7222 - 7223 - 7224 DIAMANT

CUTTING CONDITIONS

Materials to be machined

		DIAMANT		ap	ae
		Vc [m/min]	Vc [m/min]	[mm]	[mm]
N	Graphite	200	300	3 x ØD1	< 0.30 x ØD1

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 5.00	$\emptyset D_1$ 5.00 - 6.00	$\emptyset D_1$ 6.00 - 7.00	$\emptyset D_1$ 7.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 14.00	$\emptyset D_1$ 14.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00
0.006 - 0.01	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.014 - 0.03	0.018 - 0.04	0.02 - 0.04	0.02 - 0.05	0.03 - 0.06	0.03 - 0.07
0.005 - 0.01	0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.02 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.008 - 0.02	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.023 - 0.05	0.03 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10
0.005 - 0.01	0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.02 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.005 - 0.01	0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.02 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.005 - 0.01	0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.02 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.006 - 0.01	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.014 - 0.03	0.018 - 0.04	0.02 - 0.04	0.02 - 0.05	0.03 - 0.06	0.03 - 0.07
0.005 - 0.01	0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.02 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.006 - 0.01	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.014 - 0.03	0.018 - 0.04	0.02 - 0.04	0.02 - 0.05	0.03 - 0.06	0.03 - 0.07
0.005 - 0.01	0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.02 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.008 - 0.02	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.023 - 0.05	0.03 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10
0.005 - 0.01	0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.014 - 0.03	0.02 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.008 - 0.02	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.023 - 0.05	0.03 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10
0.008 - 0.02	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.023 - 0.05	0.03 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10
0.011 - 0.03	0.014 - 0.04	0.018 - 0.05	0.021 - 0.05	0.025 - 0.06	0.032 - 0.08	0.04 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.15
0.008 - 0.02	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.023 - 0.05	0.03 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10

The plunging feed (V_{fp}) of an end mill $Z = 2$ (drilling) must be reduced by 40 to 80 % depending on the material to be machined.

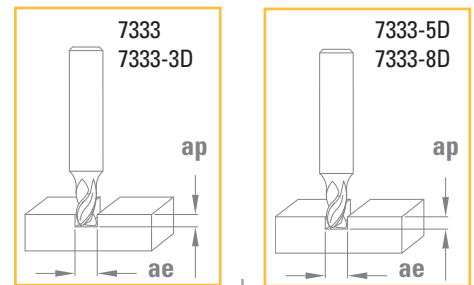
Feed per tooth

f_z [mm]

$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 5.00	$\emptyset D_1$ 5.00 - 6.00	$\emptyset D_1$ 6.00 - 7.00	$\emptyset D_1$ 7.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 14.00	$\emptyset D_1$ 14.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00
0.011 - 0.03	0.014 - 0.04	0.018 - 0.05	0.021 - 0.05	0.025 - 0.06	0.032 - 0.08	0.04 - 0.09	0.04 - 0.11	0.05 - 0.12	0.06 - 0.15



CUTTING CONDITIONS



Materials to be machined

			CARBIDE		CUTINOX		ap	ae	ap	ae
			Vc [m/min]		Vc [m/min]		[mm]	[mm]	[mm]	[mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	50	80	80	120	1 x ØD1	< 1 x ØD1	0.8 x ØD1	< 1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	30	60	70	100	1 x ØD1	< 1 x ØD1	0.6 x ØD1	< 1 x ØD1
P	Lead alloyed cutting steel		80	120	100	180	1 x ØD1	< 1 x ØD1	1 x ØD1	< 1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²	30	50	40	70	0.8 x ØD1	< 1 x ØD1	0.5 x ØD1	< 1 x ØD1
M	Stainless steel	400 – 700 N/mm ²	40	60	60	90	0.8 x ØD1	< 1 x ØD1	0.5 x ØD1	< 1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²	20	40	30	60	0.7 x ØD1	< 1 x ØD1	0.4 x ØD1	< 1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	100	150	150	200	1 x ØD1	< 1 x ØD1	1 x ØD1	< 1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	50	80	60	100	1 x ØD1	< 1 x ØD1	0.8 x ØD1	< 1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		50	80	60	90	1 x ØD1	< 1 x ØD1	0.8 x ØD1	< 1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	10	20	20	40	0.4 x ØD1	< 1 x ØD1	0.2 x ØD1	< 1 x ØD1
S	Titanium, titanium alloys		30	60	40	70	1 x ØD1	< 1 x ØD1	0.8 x ØD1	< 1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		150	250	100	250	1 x ØD1	< 1 x ØD1	1 x ØD1	< 1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	80	150	80	150	1 x ØD1	< 1 x ØD1	0.8 x ØD1	< 1 x ØD1
N	Aluminium alloys	Si < 8%	150	300	150	300	1 x ØD1	< 1 x ØD1	1 x ØD1	< 1 x ØD1
N	Cast aluminium	Si > 8%	100	150	150	250	1 x ØD1	< 1 x ØD1	3 x ØD1	< 1 x ØD1
N	Plastic		100	150	100	150	1 x ØD1	< 1 x ØD1	3 x ØD1	< 1 x ØD1
N	Gold, silver		100	150	100	150	1 x ØD1	< 1 x ØD1	1 x ØD1	< 1 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap} \ \& \ \text{ae}) -25 \%$

n and Vf are indicative and shall be adjusted according to L₂

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

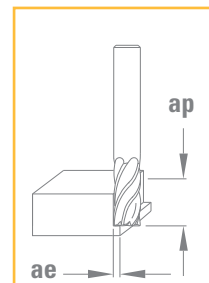
Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.30 - 0.50	$\emptyset D_1$ 0.60 - 0.90	$\emptyset D_1$ 1.00 - 2.00	$\emptyset D_1$ 2.00 - 4.00	$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	
0.0024 - 0.008	0.0048 - 0.014	0.008 - 0.028	0.016 - 0.052	0.031 - 0.07	0.05 - 0.09	0.06 - 0.10	
0.0022 - 0.007	0.0043 - 0.012	0.007 - 0.025	0.014 - 0.047	0.028 - 0.06	0.04 - 0.08	0.04 - 0.09	
0.0029 - 0.009	0.0058 - 0.016	0.010 - 0.034	0.019 - 0.062	0.037 - 0.09	0.06 - 0.11	0.07 - 0.12	
0.0019 - 0.006	0.0038 - 0.011	0.006 - 0.022	0.013 - 0.042	0.025 - 0.06	0.04 - 0.07	0.05 - 0.08	
0.0019 - 0.006	0.0038 - 0.011	0.006 - 0.022	0.013 - 0.042	0.025 - 0.06	0.04 - 0.07	0.05 - 0.08	
0.0017 - 0.005	0.0034 - 0.009	0.006 - 0.020	0.011 - 0.036	0.022 - 0.05	0.03 - 0.06	0.04 - 0.07	
0.003 - 0.009	0.006 - 0.017	0.010 - 0.035	0.02 - 0.065	0.039 - 0.09	0.06 - 0.11	0.08 - 0.13	
0.0024 - 0.008	0.0048 - 0.014	0.008 - 0.028	0.016 - 0.052	0.031 - 0.07	0.05 - 0.09	0.06 - 0.10	
0.0024 - 0.008	0.0048 - 0.014	0.008 - 0.028	0.016 - 0.052	0.031 - 0.07	0.05 - 0.09	0.06 - 0.10	
0.0012 - 0.004	0.0024 - 0.007	0.004 - 0.014	0.008 - 0.026	0.016 - 0.04	0.02 - 0.04	0.03 - 0.05	
0.0024 - 0.008	0.0048 - 0.014	0.008 - 0.028	0.016 - 0.052	0.031 - 0.07	0.05 - 0.09	0.06 - 0.10	
0.003 - 0.009	0.006 - 0.017	0.010 - 0.035	0.02 - 0.065	0.039 - 0.09	0.06 - 0.11	0.08 - 0.13	
0.0034 - 0.011	0.0067 - 0.019	0.011 - 0.039	0.022 - 0.073	0.044 - 0.10	0.06 - 0.12	0.09 - 0.14	
0.0034 - 0.011	0.0067 - 0.019	0.011 - 0.039	0.022 - 0.073	0.044 - 0.10	0.06 - 0.12	0.09 - 0.14	
0.0031 - 0.010	0.0062 - 0.018	0.010 - 0.036	0.021 - 0.068	0.041 - 0.09	0.04 - 0.11	0.08 - 0.13	
0.0034 - 0.011	0.0067 - 0.019	0.011 - 0.039	0.022 - 0.073	0.044 - 0.10	0.06 - 0.12	0.09 - 0.14	
0.0031 - 0.010	0.0062 - 0.018	0.010 - 0.036	0.021 - 0.068	0.041 - 0.09	0.04 - 0.11	0.08 - 0.13	



CUTTING CONDITIONS



Materials to be machined

Materials to be machined			CARBIDE		TiAlN		DLC		ae	
			Vc [m/min]		Vc [m/min]		Vc [m/min]			ap [mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²	90	110	110	130			1.5 x ØD1	< 0.1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²			80	100			1.5 x ØD1	< 0.1 x ØD1
P	Lead alloyed cutting steel		80	110					1.5 x ØD1	< 0.3 x ØD1
P	High alloyed steel	700 – 1500 N/mm²			60	80			1.5 x ØD1	< 0.05 x ØD1
M	Stainless steel	400 – 700 N/mm²			80	100			1.5 x ØD1	< 0.05 x ØD1
M	DUPLEX stainless steel	> 800 N/mm²			60	80			1.5 x ØD1	< 0.05 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	80	110	110	140			1.5 x ØD1	< 0.2 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	50	70	80	100			1.5 x ØD1	< 0.05 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		80	110	110	130			1.5 x ØD1	< 0.1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			35	50			1.5 x ØD1	< 0.05 x ØD1
S	Titanium, titanium alloys		40	55			50	80	1.5 x ØD1	< 0.1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		160	200			200	300	1.5 x ØD1	< 0.3 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Amoco)	140	160	170	220	200	270	1.5 x ØD1	< 0.1 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

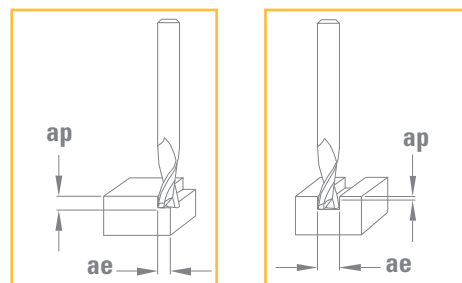
Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.35 - 1.90 (Z = 3)	$\emptyset D_1$ 2.00 - 3.00 (Z = 5)	$\emptyset D_1$ 3.00 - 5.00 (Z = 5)	$\emptyset D_1$ 5.00 - 8.00 (Z = 5)	$\emptyset D_1$ 8.00 - 10.00 (Z = 6)	$\emptyset D_1$ 10.00 - 14.00 (Z = 6)	$\emptyset D_1$ 14.00 - 16.00 (Z = 6)	$\emptyset D_1$ 16.00 - 20.00 (Z = 6)	
0.0021 - 0.03	0.012 - 0.05	0.02 - 0.08	0.03 - 0.12	0.04 - 0.13	0.05 - 0.17	0.07 - 0.18	0.07 - 0.20	
0.0019 - 0.03	0.011 - 0.04	0.02 - 0.07	0.02 - 0.11	0.04 - 0.12	0.05 - 0.15	0.06 - 0.16	0.06 - 0.18	
0.0025 - 0.03	0.014 - 0.05	0.02 - 0.09	0.03 - 0.14	0.05 - 0.16	0.06 - 0.20	0.08 - 0.21	0.09 - 0.24	
0.0017 - 0.02	0.010 - 0.04	0.01 - 0.06	0.02 - 0.10	0.03 - 0.10	0.04 - 0.13	0.05 - 0.14	0.06 - 0.16	
0.0017 - 0.02	0.010 - 0.04	0.01 - 0.06	0.02 - 0.10	0.03 - 0.10	0.04 - 0.13	0.05 - 0.14	0.06 - 0.16	
0.0015 - 0.02	0.008 - 0.03	0.01 - 0.05	0.02 - 0.08	0.03 - 0.09	0.04 - 0.12	0.05 - 0.12	0.05 - 0.14	
0.0026 - 0.04	0.015 - 0.06	0.02 - 0.09	0.03 - 0.15	0.05 - 0.16	0.06 - 0.21	0.08 - 0.22	0.09 - 0.25	
0.0021 - 0.03	0.012 - 0.05	0.02 - 0.08	0.03 - 0.12	0.04 - 0.13	0.05 - 0.17	0.07 - 0.18	0.07 - 0.20	
0.0021 - 0.03	0.012 - 0.05	0.02 - 0.08	0.03 - 0.12	0.04 - 0.13	0.05 - 0.17	0.07 - 0.18	0.07 - 0.20	
0.0011 - 0.01	0.006 - 0.02	0.01 - 0.04	0.01 - 0.06	0.02 - 0.07	0.03 - 0.08	0.03 - 0.09	0.04 - 0.10	
0.0021 - 0.03	0.012 - 0.05	0.02 - 0.08	0.03 - 0.12	0.04 - 0.13	0.05 - 0.17	0.07 - 0.18	0.07 - 0.20	
0.0026 - 0.04	0.015 - 0.06	0.02 - 0.09	0.03 - 0.15	0.05 - 0.16	0.06 - 0.21	0.08 - 0.22	0.09 - 0.25	
0.0029 - 0.04	0.017 - 0.06	0.03 - 0.11	0.04 - 0.17	0.06 - 0.18	0.07 - 0.24	0.09 - 0.25	0.10 - 0.28	



CUTTING CONDITIONS

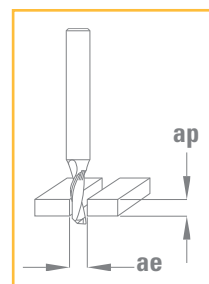


Materials to be machined

			CARBIDE		CUTINOX		ap	ae	ap	ae
			Vc	[m/min]	Vc	[m/min]	[mm]	[mm]	[mm]	[mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	100	120	1.5 x ØD1	0.5 x ØD1	< 1.3 x ØD1	1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			80	100	1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
P	Lead alloyed cutting steel		70	100			1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			50	70	1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
M	Stainless steel	400 – 700 N/mm ²			80	100	1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	100	120	1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	80	100	1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70	100	100	120	1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
S	Titanium, titanium alloys		30	45			1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		160	180	220	240	1 x ØD1	1 x ØD1	< 1.5 x ØD1	0.5 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe)		100	130	120	150	1 x ØD1	1 x ØD1	< 1.5 x ØD1	0.5 x ØD1
N	Aluminium alloy	Si < 8%	130	250	200	300	1.5 x ØD1	0.5 x ØD1	< 1 x ØD1	1 x ØD1
N	Gold, silver		140	160	200	220	< 1 x ØD1	1 x ØD1	< 1.5 x ØD1	< 0.5 x ØD1

DIXI 7301 - 7302 - 7303 - 7311

CUTTING CONDITIONS



Materials to be machined

		CARBIDE		ap	ae
		Vc	[m/min]	[mm]	[mm]
N	Plastic	130	200	< 1.5 x ØD1	1 x ØD1

The plunging feed (Vfp) of an end mill Z = 1 (drilling) must be reduced by 40 to 80 % depending on the material to be machined

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth

f_z [mm]

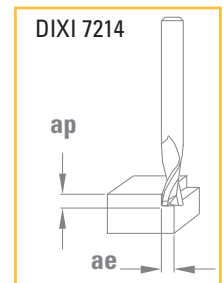
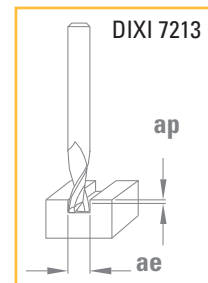
$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 5.00	$\emptyset D_1$ 5.00 - 6.00	$\emptyset D_1$ 6.00 - 7.00	$\emptyset D_1$ 7.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.02 - 0.03	0.025 - 0.04	0.028 - 0.045	0.032 - 0.05	0.035 - 0.06	0.04 - 0.08	0.06 - 0.10	
0.03 - 0.04	0.04 - 0.06	0.05 - 0.08	0.06 - 0.09	0.07 - 0.1	0.08 - 0.11	0.09 - 0.12	
0.01 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.020 - 0.05	0.023 - 0.05	0.025 - 0.06	

Feed per tooth

f_z [mm]

$\emptyset D_1$ 2.00 - 2.50	$\emptyset D_1$ 2.50 - 3.00	$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 5.00	$\emptyset D_1$ 5.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	
0.020 - 0.05	0.025 - 0.06	0.03 - 0.08	0.04 - 0.10	0.05 - 0.12	0.06 - 0.16	0.08 - 0.20	0.10 - 0.28	

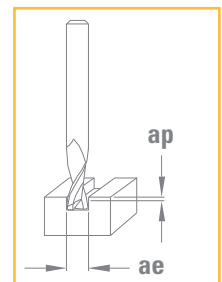


CUTTING CONDITIONS

Materials to be machined

			CARBIDE		TiAlN		ap [mm]	ae [mm]	ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]	Vc [m/min]	Vc [m/min]				
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	90	110	< 1 x ØD1	1 x ØD1	< 1 x ØD1	< 0.5 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70	90	< 0.5 x ØD1	1 x ØD1	< 1 x ØD1	< 0.3 x ØD1
P	Lead alloyed cutting steel		70	100			< 1 x ØD1	1 x ØD1	< 1.5 x ØD1	< 0.5 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40	60	< 0.5 x ØD1	1 x ØD1	< 1 x ØD1	< 0.3 x ØD1
M	Stainless steel	400 – 700 N/mm ²			80	100	< 0.5 x ØD1	1 x ØD1	< 1 x ØD1	< 0.3 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	90	110	< 1 x ØD1	1 x ØD1	< 1 x ØD1	< 0.5 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	70	90	< 0.4 x ØD1	1 x ØD1	< 1 x ØD1	< 0.4 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70	100	90	110	< 0.4 x ØD1	1 x ØD1	< 1 x ØD1	< 0.4 x ØD1
S	Titanium, titanium alloys		30	45			< 0.5 x ØD1	1 x ØD1	< 1 x ØD1	< 0.3 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140	160			< 2 x ØD1	1 x ØD1	< 1.5 x ØD1	< 0.5 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe)		120	140	170	190	< 1 x ØD1	1 x ØD1	< 1 x ØD1	< 0.3 x ØD1
N	Aluminium alloys	Si < 8%	180	260	230	340	< 2 x ØD1	1 x ØD1	< 1.5 x ØD1	< 0.5 x ØD1
N	Cast aluminium	Si > 8%	140	160	210	230	< 2 x ØD1	1 x ØD1	< 1.5 x ØD1	< 0.5 x ØD1
N	Gold, silver		140	160	200	220	< 1 x ØD1	1 x ØD1	< 1.5 x ØD1	< 0.5 x ØD1

DIXI 7060 - 7063 - 7232
CUTTING CONDITIONS
Materials to be machined

			CARBIDE		ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]		
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	100	150	< 1 x ØD1	1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140	160	< 1 x ØD1	1 x ØD1
N	Plastic		140	160	< 0.9 x ØD1	1 x ØD1
N	Gold, silver		240	260	< 1.2 x ØD1	1 x ØD1
N	Aluminium alloys	Si < 8%	240	300	< 1.2 x ØD1	1 x ØD1



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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 4.00 - 5.00	$\emptyset D_1$ 5.00 - 6.00	$\emptyset D_1$ 6.00 - 7.00	$\emptyset D_1$ 7.00 - 8.00	$\emptyset D_1$ 8.00 - 9.00	$\emptyset D_1$ 9.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 14.00	$\emptyset D_1$ 14.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00
0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.014 - 0.03	0.016 - 0.03	0.018 - 0.04	0.020 - 0.04	0.02 - 0.05	0.03 - 0.06	0.03 - 0.07
0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.012 - 0.02	0.014 - 0.03	0.015 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.020 - 0.05	0.023 - 0.05	0.025 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10
0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.012 - 0.02	0.014 - 0.03	0.015 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.012 - 0.02	0.014 - 0.03	0.015 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.014 - 0.03	0.016 - 0.03	0.018 - 0.04	0.020 - 0.04	0.02 - 0.05	0.03 - 0.06	0.03 - 0.07
0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.012 - 0.02	0.014 - 0.03	0.015 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.014 - 0.03	0.016 - 0.03	0.018 - 0.04	0.020 - 0.04	0.02 - 0.05	0.03 - 0.06	0.03 - 0.07
0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.012 - 0.02	0.014 - 0.03	0.015 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.020 - 0.05	0.023 - 0.05	0.025 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10
0.006 - 0.01	0.008 - 0.02	0.009 - 0.02	0.011 - 0.02	0.012 - 0.02	0.014 - 0.03	0.015 - 0.03	0.02 - 0.04	0.02 - 0.04	0.02 - 0.05
0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.020 - 0.05	0.023 - 0.05	0.025 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10
0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.020 - 0.05	0.023 - 0.05	0.025 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10
0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.018 - 0.04	0.020 - 0.05	0.023 - 0.05	0.025 - 0.06	0.03 - 0.07	0.04 - 0.08	0.04 - 0.10

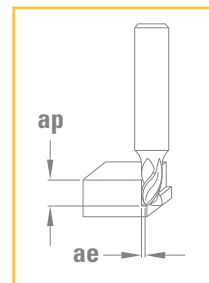
Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.40 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.1



CUTTING CONDITIONS - ROUTING



Materials to be machined

			CARBIDE	C-TOP		ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]			
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²		100 200		<1.5 x ØD1	<0.4 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²		80 170		<1.5 x ØD1	<0.3 x ØD1
P	Lead alloyed cutting steel			120 200		<1.5 x ØD1	<0.4 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²		70 100		<1.5 x ØD1	<0.3 x ØD1
M	Stainless steel	400 – 700 N/mm ²		80 110		<1.5 x ØD1	<0.3 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²		50 80		<1.5 x ØD1	<0.3 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	120 150	160 200		<1.5 x ØD1	<0.4 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	100 130	130 170		<1.5 x ØD1	<0.3 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		80 110	110 150		<1.5 x ØD1	<0.3 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20 45	30 60		<1.5 x ØD1	<0.15 x ØD1
S	Titanium, titanium alloys		45 75	50 80		<1.5 x ØD1	<0.3 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		90 130	120 200		<1.5 x ØD1	<0.4 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	70 120	80 140		<1.5 x ØD1	<0.4 x ØD1
N	Gold, silver		140 190	150 200		<1.5 x ØD1	<0.4 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

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

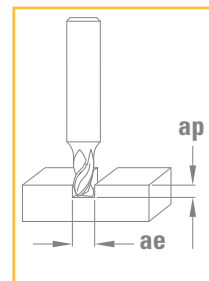
$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth **fz [mm]**

$\emptyset D_1$ 0.10 - 0.40	$\emptyset D_1$ 0.40 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 6.00	$\emptyset D_1$ 6.00 - 12.00	
0.0013 - 0.0075	0.005 - 0.019	0.010 - 0.028	0.014 - 0.053	0.026 - 0.105	0.049 - 0.195	
0.0011 - 0.0056	0.004 - 0.017	0.009 - 0.025	0.012 - 0.046	0.023 - 0.092	0.043 - 0.172	
0.0015 - 0.0075	0.006 - 0.023	0.012 - 0.034	0.017 - 0.063	0.032 - 0.126	0.059 - 0.234	
0.0010 - 0.0070	0.004 - 0.015	0.008 - 0.023	0.011 - 0.042	0.021 - 0.084	0.039 - 0.156	
0.0010 - 0.0060	0.004 - 0.015	0.008 - 0.023	0.011 - 0.042	0.021 - 0.084	0.039 - 0.156	
0.0008 - 0.0045	0.003 - 0.011	0.006 - 0.017	0.008 - 0.032	0.016 - 0.063	0.029 - 0.117	
0.0015 - 0.0075	0.006 - 0.023	0.012 - 0.034	0.017 - 0.063	0.032 - 0.16	0.059 - 0.234	
0.0011 - 0.0056	0.004 - 0.017	0.009 - 0.025	0.012 - 0.046	0.023 - 0.092	0.043 - 0.172	
0.0011 - 0.0056	0.004 - 0.017	0.009 - 0.025	0.012 - 0.046	0.023 - 0.092	0.043 - 0.172	
0.0005 - 0.0030	0.002 - 0.008	0.004 - 0.011	0.006 - 0.021	0.011 - 0.042	0.020 - 0.078	
0.0013 - 0.0075	0.005 - 0.019	0.010 - 0.028	0.014 - 0.053	0.026 - 0.105	0.049 - 0.195	
0.0020 - 0.0120	0.008 - 0.030	0.016 - 0.045	0.023 - 0.084	0.042 - 0.168	0.078 - 0.312	
0.0013 - 0.0075	0.005 - 0.019	0.010 - 0.028	0.014 - 0.053	0.026 - 0.105	0.049 - 0.195	
0.0013 - 0.0075	0.005 - 0.019	0.010 - 0.028	0.014 - 0.053	0.026 - 0.105	0.049 - 0.195	



CUTTING CONDITIONS - SLOTTING



Materials to be machined

Materials to be machined			CARBIDE		C-TOP				
			Vc [m/min]		Vc [m/min]		ap [mm]	ae [mm]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²			75	150		<1.5 x ØD1	<1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²			60	130		<1.2 x ØD1	<1 x ØD1
P	Lead alloyed cutting steel				90	150		<1.5 x ØD1	<1 x ØD1
P	High alloyed steel	700 – 1500 N/mm²			50	75		<1 x ØD1	<1 x ØD1
M	Stainless steel	400 – 700 N/mm²			60	80		<1 x ØD1	<1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm²			40	60		<0.8 x ØD1	<1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	90	160	120	200		<1.5 x ØD1	<1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	75	100	90	130		<1 x ØD1	<1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		60	80	80	110		<1 x ØD1	<1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	30	25	45		<0.2 x ØD1	<1 x ØD1
S	Titanium, titanium alloys		35	60	35	60		<1 x ØD1	<1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		75	150	100	170		<1.5 x ØD1	<1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	50	100	60	110		<1 x ØD1	<1 x ØD1
N	Gold, silver		100	150	110	150		<1 x ØD1	<1 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

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

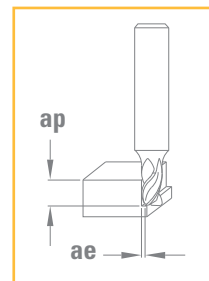
$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth **fz [mm]**

$\emptyset D_1$ 0.10 - 0.40	$\emptyset D_1$ 0.40 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 6.00	$\emptyset D_1$ 6.00 - 12.00	
0.0006 - 0.0038	0.0025 - 0.009	0.005 - 0.014	0.007 - 0.026	0.013 - 0.053	0.013 - 0.088	
0.0006 - 0.0028	0.0022 - 0.008	0.004 - 0.012	0.006 - 0.023	0.012 - 0.046	0.011 - 0.077	
0.0008 - 0.0038	0.0030 - 0.011	0.006 - 0.017	0.008 - 0.032	0.016 - 0.063	0.015 - 0.105	
0.0005 - 0.0035	0.0020 - 0.008	0.004 - 0.011	0.006 - 0.021	0.011 - 0.042	0.010 - 0.070	
0.0005 - 0.0030	0.0020 - 0.008	0.004 - 0.011	0.006 - 0.021	0.011 - 0.042	0.010 - 0.070	
0.0004 - 0.0023	0.0015 - 0.006	0.003 - 0.008	0.004 - 0.016	0.008 - 0.032	0.008 - 0.053	
0.0008 - 0.0038	0.0030 - 0.011	0.006 - 0.017	0.008 - 0.032	0.016 - 0.063	0.015 - 0.105	
0.0006 - 0.0028	0.0022 - 0.008	0.004 - 0.012	0.006 - 0.023	0.012 - 0.046	0.011 - 0.077	
0.0006 - 0.0028	0.0022 - 0.008	0.004 - 0.012	0.006 - 0.023	0.012 - 0.046	0.011 - 0.077	
0.0003 - 0.0015	0.0010 - 0.004	0.002 - 0.006	0.003 - 0.011	0.005 - 0.021	0.005 - 0.035	
0.0006 - 0.0038	0.0025 - 0.009	0.005 - 0.014	0.007 - 0.026	0.013 - 0.053	0.013 - 0.088	
0.0010 - 0.0060	0.004 - 0.015	0.008 - 0.023	0.011 - 0.042	0.021 - 0.084	0.020 - 0.140	
0.0006 - 0.0038	0.0025 - 0.009	0.005 - 0.014	0.007 - 0.026	0.013 - 0.053	0.013 - 0.088	
0.0006 - 0.0038	0.0025 - 0.009	0.005 - 0.014	0.007 - 0.026	0.013 - 0.053	0.013 - 0.088	



CUTTING CONDITIONS - ROUTING



Materials to be machined

			CARBIDE	C-TOP		ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]			
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²		100 200		<2 x ØD1	<0.4 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²		80 170		<2 x ØD1	<0.3 x ØD1
P	Lead alloyed cutting steel			120 200		<2 x ØD1	<0.4 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²		70 100		<2 x ØD1	<0.3 x ØD1
M	Stainless steel	400 – 700 N/mm ²		80 110		<2 x ØD1	<0.3 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²		50 80		<2 x ØD1	<0.3 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	120 150	160 200		<2 x ØD1	<0.4 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	100 130	130 170		<2 x ØD1	<0.3 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		80 110	110 150		<2 x ØD1	<0.3 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20 45	30 60		<2 x ØD1	<0.15 x ØD1
S	Titanium, titanium alloys		45 75	50 80		<2 x ØD1	<0.3 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		90 130	120 200		<2 x ØD1	<0.4 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	70 120	80 140		<2 x ØD1	<0.4 x ØD1
N	Gold, silver		140 190	150 200		<2 x ØD1	<0.4 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

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

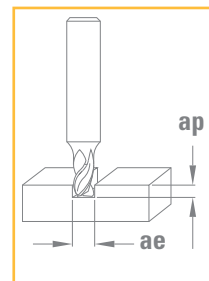
$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth **fz [mm]**

$\emptyset D_1$ 0.30 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 6.00	$\emptyset D_1$ 6.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	
0.0030 - 0.019	0.010 - 0.028	0.014 - 0.053	0.026 - 0.105	0.049 - 0.195	0.090 - 0.260	
0.0033 - 0.017	0.009 - 0.025	0.012 - 0.046	0.023 - 0.092	0.043 - 0.172	0.079 - 0.229	
0.0045 - 0.023	0.012 - 0.034	0.017 - 0.063	0.032 - 0.126	0.059 - 0.234	0.108 - 0.312	
0.0030 - 0.015	0.008 - 0.023	0.011 - 0.042	0.021 - 0.084	0.039 - 0.156	0.072 - 0.208	
0.0030 - 0.015	0.008 - 0.023	0.011 - 0.042	0.021 - 0.084	0.039 - 0.156	0.072 - 0.208	
0.0023 - 0.011	0.006 - 0.017	0.008 - 0.032	0.016 - 0.063	0.030 - 0.117	0.048 - 0.156	
0.0045 - 0.023	0.012 - 0.034	0.017 - 0.063	0.032 - 0.126	0.059 - 0.234	0.108 - 0.312	
0.0033 - 0.017	0.009 - 0.025	0.012 - 0.046	0.023 - 0.092	0.043 - 0.172	0.079 - 0.229	
0.0033 - 0.017	0.009 - 0.025	0.012 - 0.046	0.023 - 0.092	0.043 - 0.172	0.079 - 0.229	
0.0015 - 0.008	0.004 - 0.011	0.006 - 0.021	0.011 - 0.042	0.020 - 0.078	0.036 - 0.104	
0.0038 - 0.019	0.010 - 0.028	0.014 - 0.053	0.026 - 0.105	0.049 - 0.195	0.090 - 0.260	
0.0060 - 0.030	0.016 - 0.045	0.023 - 0.084	0.042 - 0.168	0.078 - 0.312	0.144 - 0.416	
0.0038 - 0.019	0.010 - 0.028	0.014 - 0.053	0.026 - 0.105	0.049 - 0.195	0.090 - 0.260	
0.0038 - 0.019	0.010 - 0.028	0.014 - 0.053	0.026 - 0.105	0.049 - 0.195	0.090 - 0.260	



CUTTING CONDITIONS - SLOTTING



Materials to be machined

			CARBIDE	C-TOP		ap [mm]	ae [mm]
			Vc [m/min]	Vc [m/min]			
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²		75 150		<2 x ØD1	<1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²		60 130		<1.5 x ØD1	<1 x ØD1
P	Lead alloyed cutting steel			90 150		<2 x ØD1	<1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²		50 75		<1 x ØD1	<1 x ØD1
M	Stainless steel	400 – 700 N/mm ²		60 80		<1 x ØD1	<1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²		40 60		<0.8 x ØD1	<1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	90 160	120 200		<2 x ØD1	<1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	75 100	90 130		<1 x ØD1	<1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		60 80	80 110		<1 x ØD1	<1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20 30	25 45		<0.2 x ØD1	<1 x ØD1
S	Titanium, titanium alloys		35 60	35 60		<1 x ØD1	<1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		75 150	100 170		<2 x ØD1	<1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	50 100	60 110		<1.5 x ØD1	<1 x ØD1
N	Gold, silver		100 150	110 150		<1 x ØD1	<1 x ØD1

 $D_1 \leq 0.1 \text{ mm} \Rightarrow (\text{ap \& ae}) -95 \%$
 $D_1 \leq 0.2 \text{ mm} \Rightarrow (\text{ap \& ae}) -85 \%$
 $D_1 \leq 0.3 \text{ mm} \Rightarrow (\text{ap \& ae}) -70 \%$
 $D_1 \leq 0.4 \text{ mm} \Rightarrow (\text{ap \& ae}) -50 \%$
 $D_1 \leq 0.5 \text{ mm} \Rightarrow (\text{ap \& ae}) -25 \%$

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth **fz [mm]**

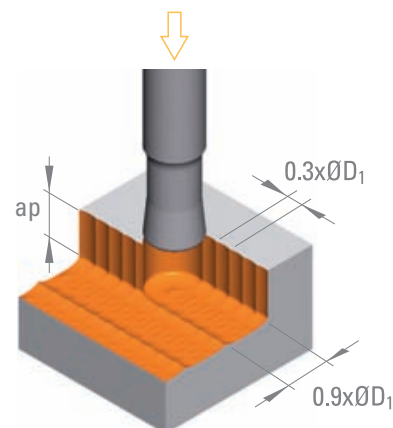
$\emptyset D_1$ 0.30 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 6.00	$\emptyset D_1$ 6.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	
0.0012 - 0.008	0.004 - 0.011	0.006 - 0.021	0.011 - 0.0426	0.020 - 0.078	0.036 - 0.104	
0.0013 - 0.007	0.004 - 0.010	0.005 - 0.018	0.009 - 0.037	0.017 - 0.069	0.032 - 0.092	
0.0018 - 0.009	0.005 - 0.014	0.007 - 0.025	0.013 - 0.050	0.023 - 0.094	0.043 - 0.125	
0.0012 - 0.006	0.003 - 0.009	0.005 - 0.017	0.008 - 0.034	0.016 - 0.062	0.029 - 0.083	
0.0012 - 0.006	0.003 - 0.009	0.005 - 0.017	0.008 - 0.034	0.016 - 0.062	0.029 - 0.083	
0.0009 - 0.005	0.002 - 0.007	0.003 - 0.013	0.006 - 0.025	0.012 - 0.47	0.019 - 0.062	
0.0018 - 0.009	0.005 - 0.014	0.007 - 0.025	0.013 - 0.050	0.023 - 0.094	0.043 - 0.125	
0.0013 - 0.007	0.004 - 0.010	0.005 - 0.018	0.009 - 0.037	0.017 - 0.69	0.032 - 0.092	
0.0013 - 0.007	0.004 - 0.010	0.005 - 0.018	0.009 - 0.037	0.017 - 0.69	0.032 - 0.092	
0.0006 - 0.003	0.002 - 0.005	0.002 - 0.008	0.004 - 0.017	0.008 - 0.031	0.014 - 0.042	
0.0015 - 0.008	0.004 - 0.011	0.006 - 0.021	0.011 - 0.042	0.020 - 0.078	0.036 - 0.104	
0.0024 - 0.012	0.006 - 0.018	0.009 - 0.034	0.017 - 0.067	0.031 - 0.125	0.058 - 0.166	
0.0015 - 0.008	0.004 - 0.011	0.006 - 0.021	0.011 - 0.042	0.020 - 0.078	0.036 - 0.104	
0.0015 - 0.008	0.004 - 0.011	0.006 - 0.021	0.011 - 0.042	0.020 - 0.078	0.036 - 0.104	



CUTTING CONDITIONS

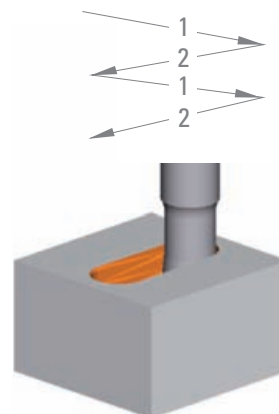
Plunge milling

Materials to be machined		XIDUR V _c [m/min]	α [°]
P	Unalloyed steel / Low alloyed steel < 600 N/mm ²	175	<1xØD ₁
P	Unalloyed steel / Low alloyed steel 600 – 1500 N/mm ²	140	<1xØD ₁
P	Lead alloyed cutting steel	175	<1xØD ₁
P	High alloyed steel 700 – 1500 N/mm ²	140	<1xØD ₁
H	Hardened steel >50HRC	50	<0.8xØD ₁
M	Stainless steel 400 – 700 N/mm ²	80	<0.8xØD ₁
M	DUPLEX stainless steel > 800 N/mm ²	60	<1xØD ₁
K	Grey cast iron / Nodular pearlitic iron < 250 HB	110	<1xØD ₁
K	Alloyed cast iron / Nodular pearlitic iron > 250 HB	70	<1xØD ₁
K	Nodular ferritic cast iron / Malleable cast iron	80	<1xØD ₁
S	Special alloys / Heat resistant stainless steel	80	<0.8xØD ₁
S	Titanium, titanium alloys	70	<0.8xØD ₁
N	Copper alloys - easy to machine (brass - bronze)	280	<1xØD ₁
N	Copper alloys - difficult to machine / Aluminium bronze	200	<1xØD ₁
N	Aluminium alloys Si < 8%	300	<1xØD ₁
N	Cast aluminium Si > 8%	250	<1xØD ₁
N	Gold, silver	200	<1xØD ₁

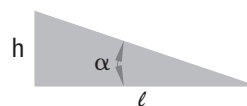


Ramping

Materials to be machined		XIDUR V _c [m/min]	α [°]
P	Unalloyed steel / Low alloyed steel < 600 N/mm ²	200	<1xØD ₁
P	Unalloyed steel / Low alloyed steel 600 – 1500 N/mm ²	150	0.75
P	Lead alloyed cutting steel	200	0.75
P	High alloyed steel 700 – 1500 N/mm ²	150	0.75
H	Hardened steel >50HRC	200	0.75
M	Stainless steel 400 – 700 N/mm ²	110	0.50
M	DUPLEX stainless steel > 800 N/mm ²	80	0.50
K	Grey cast iron / Nodular pearlitic iron < 250 HB	150	0.75
K	Alloyed cast iron / Nodular pearlitic iron > 250 HB	100	0.75
K	Nodular ferritic cast iron / Malleable cast iron	80	0.75
S	Special alloys / Heat resistant stainless steel	60	0.50
S	Titanium, titanium alloys	80	0.50
N	Copper alloys - easy to machine (brass - bronze)	330	1.20
N	Copper alloys - difficult to machine / Aluminium bronze	250	1.00
N	Aluminium alloys Si < 8%	350	1.20
N	Cast aluminium Si > 8%	300	1.00
N	Gold, silver	250	1.00



Ramping value calculation:



1. $h = l \times \tan \alpha$
2. Return to the horizontal position l

Feed per tooth **fz [mm]**

Ø D ₁ 0.50	Ø D ₁ 0.80	Ø D ₁ 1.00	Ø D ₁ 1.50	Ø D ₁ 2.00	Ø D ₁ 3.00	Ø D ₁ 4.00	Ø D ₁ 5.00	Ø D ₁ 6.00	Ø D ₁ 8.00	Ø D ₁ 10.00	Ø D ₁ 12.00
0.004	0.006	0.008	0.012	0.016	0.024	0.032	0.040	0.048	0.064	0.080	0.096
0.003	0.005	0.006	0.010	0.013	0.019	0.026	0.032	0.038	0.051	0.064	0.077
0.004	0.006	0.008	0.012	0.016	0.024	0.032	0.040	0.048	0.064	0.080	0.096
0.003	0.005	0.006	0.010	0.013	0.019	0.026	0.032	0.038	0.051	0.064	0.077
0.003	0.004	0.006	0.008	0.011	0.017	0.022	0.028	0.034	0.045	0.056	0.067
0.003	0.004	0.006	0.008	0.011	0.017	0.022	0.028	0.034	0.045	0.056	0.067
0.003	0.004	0.006	0.008	0.011	0.017	0.022	0.028	0.034	0.045	0.056	0.067
0.004	0.006	0.008	0.012	0.016	0.024	0.032	0.040	0.048	0.064	0.080	0.096
0.003	0.005	0.006	0.010	0.013	0.019	0.026	0.032	0.038	0.051	0.064	0.077
0.003	0.004	0.006	0.008	0.011	0.017	0.022	0.028	0.034	0.045	0.056	0.067
0.002	0.004	0.005	0.007	0.010	0.014	0.019	0.024	0.029	0.038	0.048	0.058
0.003	0.004	0.006	0.008	0.011	0.017	0.022	0.028	0.034	0.045	0.056	0.067
0.006	0.009	0.012	0.018	0.024	0.036	0.048	0.06	0.072	0.096	0.12	0.144
0.005	0.007	0.010	0.014	0.019	0.029	0.038	0.048	0.058	0.077	0.096	0.115
0.006	0.009	0.012	0.018	0.024	0.036	0.048	0.06	0.072	0.096	0.12	0.144
0.004	0.006	0.008	0.012	0.016	0.024	0.032	0.04	0.048	0.064	0.08	0.096
0.004	0.006	0.008	0.012	0.016	0.024	0.032	0.04	0.048	0.064	0.08	0.096

Feed per tooth **fz [mm]**

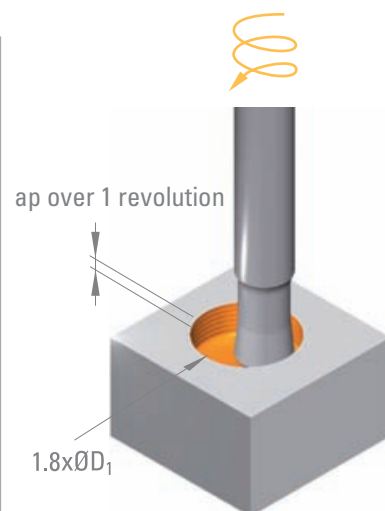
Ø D ₁ 0.50	Ø D ₁ 0.80	Ø D ₁ 1.00	Ø D ₁ 1.50	Ø D ₁ 2.00	Ø D ₁ 3.00	Ø D ₁ 4.00	Ø D ₁ 5.00	Ø D ₁ 6.00	Ø D ₁ 8.00	Ø D ₁ 10.00	Ø D ₁ 12.00
0.013	0.021	0.026	0.040	0.053	0.079	0.106	0.132	0.158	0.211	0.264	0.317
0.012	0.019	0.024	0.036	0.048	0.072	0.096	0.120	0.144	0.192	0.240	0.288
0.013	0.021	0.026	0.040	0.053	0.079	0.106	0.132	0.158	0.211	0.264	0.317
0.012	0.019	0.024	0.036	0.048	0.072	0.096	0.120	0.144	0.192	0.240	0.288
0.004	0.006	0.008	0.012	0.016	0.024	0.032	0.040	0.048	0.064	0.080	0.096
0.010	0.015	0.019	0.029	0.038	0.058	0.077	0.096	0.115	0.154	0.192	0.230
0.010	0.015	0.019	0.029	0.038	0.058	0.077	0.096	0.115	0.154	0.192	0.230
0.010	0.015	0.019	0.029	0.038	0.058	0.077	0.096	0.115	0.154	0.192	0.230
0.007	0.012	0.014	0.022	0.029	0.043	0.058	0.072	0.086	0.115	0.144	0.173
0.006	0.010	0.013	0.019	0.026	0.038	0.051	0.064	0.077	0.102	0.128	0.154
0.007	0.012	0.014	0.022	0.029	0.043	0.058	0.072	0.086	0.115	0.144	0.173
0.008	0.013	0.017	0.025	0.034	0.050	0.067	0.084	0.101	0.134	0.168	0.202
0.020	0.032	0.039	0.060	0.080	0.119	0.159	0.198	0.237	0.317	0.396	0.476
0.016	0.025	0.031	0.048	0.064	0.095	0.127	0.158	0.190	0.253	0.317	0.380
0.020	0.032	0.039	0.060	0.080	0.119	0.159	0.198	0.237	0.317	0.396	0.476
0.013	0.021	0.026	0.040	0.053	0.079	0.106	0.132	0.158	0.211	0.264	0.317
0.013	0.021	0.026	0.040	0.053	0.079	0.106	0.132	0.158	0.211	0.264	0.317



CUTTING CONDITIONS

Helical milling

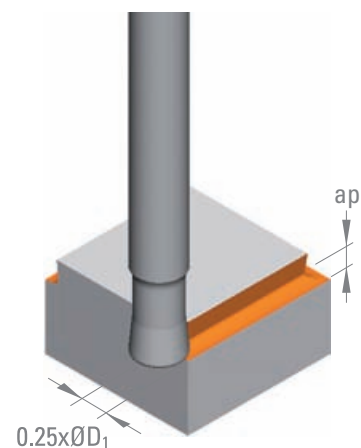
Materials to be machined		XIDUR V _c [m/min]	α [°]
P	Unalloyed steel / Low alloyed steel < 600 N/mm ²	250	0.75
P	Unalloyed steel / Low alloyed steel 600 – 1500 N/mm ²	200	0.75
P	Lead alloyed cutting steel	250	0.75
P	High alloyed steel 700 – 1500 N/mm ²	200	0.75
H	Hardened steel >50HRC	200	0.75
M	Stainless steel 400 – 700 N/mm ²	150	0.50
M	DUPLEX stainless steel > 800 N/mm ²	110	0.50
K	Grey cast iron / Nodular pearlitic iron < 250 HB	150	0.75
K	Alloyed cast iron / Nodular pearlitic iron > 250 HB	100	0.75
K	Nodular ferritic cast iron / Malleable cast iron	80	0.75
S	Special alloys / Heat resistant stainless steel	80	0.50
S	Titanium, titanium alloys	100	0.50
N	Copper alloys - easy to machine (brass - bronze)	380	1.20
N	Copper alloys - difficult to machine / Aluminium bronze	300	1.00
N	Aluminium alloys Si < 8%	400	1.20
N	Cast aluminium Si > 8%	350	1.00
N	Gold, silver	300	1.00



Value calculation of helical pitch:
 $ap \text{ over 1 revolution} = \pi \times D_1 \times \tan \alpha$

Routing

Materials to be machined		XIDUR V _c [m/min]	ap [mm]
P	Unalloyed steel / Low alloyed steel < 600 N/mm ²	250	<0.5xØD ₁
P	Unalloyed steel / Low alloyed steel 600 – 1500 N/mm ²	200	<0.5xØD ₁
P	Lead alloyed cutting steel	250	<0.5xØD ₁
P	High alloyed steel 700 – 1500 N/mm ²	200	<0.5xØD ₁
H	Hardened steel >50HRC	200	<0.4xØD ₁
M	Stainless steel 400 – 700 N/mm ²	150	<0.4xØD ₁
M	DUPLEX stainless steel > 800 N/mm ²	110	<0.4xØD ₁
K	Grey cast iron / Nodular pearlitic iron < 250 HB	150	<0.5xØD ₁
K	Alloyed cast iron / Nodular pearlitic iron > 250 HB	100	<0.5xØD ₁
K	Nodular ferritic cast iron / Malleable cast iron	80	<0.5xØD ₁
S	Special alloys / Heat resistant stainless steel	80	<0.4xØD ₁
S	Titanium, titanium alloys	100	<0.4xØD ₁
N	Copper alloys - easy to machine (brass - bronze)	350	<0.5xØD ₁
N	Copper alloys - difficult to machine / Aluminium bronze	300	<0.5xØD ₁
N	Aluminium alloys Si < 8%	400	<0.5xØD ₁
N	Cast aluminium Si > 8%	300	<0.5xØD ₁
N	Gold, silver	300	<0.5xØD ₁



Feed per tooth **fz [mm]**

Ø D ₁ 0.50	Ø D ₁ 0.80	Ø D ₁ 1.00	Ø D ₁ 1.50	Ø D ₁ 2.00	Ø D ₁ 3.00	Ø D ₁ 4.00	Ø D ₁ 5.00	Ø D ₁ 6.00	Ø D ₁ 8.00	Ø D ₁ 10.00	Ø D ₁ 12.00
0.018	0.028	0.035	0.053	0.070	0.106	0.141	0.176	0.211	0.282	0.352	0.422
0.016	0.026	0.032	0.048	0.064	0.096	0.128	0.160	0.192	0.256	0.320	0.384
0.018	0.028	0.035	0.053	0.070	0.106	0.141	0.176	0.211	0.282	0.352	0.422
0.016	0.026	0.032	0.048	0.064	0.096	0.128	0.160	0.192	0.256	0.320	0.384
0.005	0.008	0.010	0.014	0.019	0.029	0.038	0.048	0.058	0.077	0.096	0.115
0.013	0.020	0.026	0.038	0.051	0.077	0.102	0.128	0.154	0.205	0.256	0.307
0.013	0.020	0.026	0.038	0.051	0.077	0.102	0.128	0.154	0.205	0.256	0.307
0.013	0.020	0.026	0.038	0.051	0.077	0.102	0.128	0.154	0.205	0.256	0.307
0.010	0.015	0.019	0.029	0.038	0.058	0.077	0.096	0.115	0.154	0.192	0.230
0.010	0.015	0.019	0.029	0.038	0.058	0.077	0.096	0.115	0.154	0.192	0.230
0.008	0.012	0.015	0.023	0.030	0.046	0.061	0.076	0.091	0.122	0.152	0.182
0.011	0.018	0.022	0.034	0.045	0.067	0.090	0.112	0.134	0.179	0.224	0.269
0.027	0.042	0.053	0.080	0.105	0.159	0.212	0.264	0.317	0.423	0.528	0.633
0.022	0.034	0.042	0.064	0.084	0.127	0.169	0.211	0.253	0.338	0.422	0.506
0.027	0.042	0.053	0.080	0.105	0.159	0.212	0.264	0.317	0.423	0.528	0.633
0.018	0.028	0.035	0.053	0.070	0.106	0.141	0.176	0.211	0.282	0.352	0.422
0.018	0.028	0.035	0.053	0.070	0.106	0.141	0.176	0.211	0.282	0.352	0.422

Feed per tooth **fz [mm]**

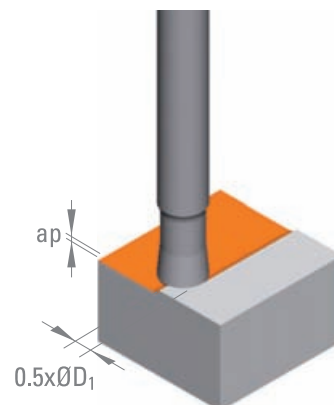
Ø D ₁ 0.50	Ø D ₁ 0.80	Ø D ₁ 1.00	Ø D ₁ 1.50	Ø D ₁ 2.00	Ø D ₁ 3.00	Ø D ₁ 4.00	Ø D ₁ 5.00	Ø D ₁ 6.00	Ø D ₁ 8.00	Ø D ₁ 10.00	Ø D ₁ 12.00
0.010	0.017	0.021	0.031	0.042	0.062	0.083	0.104	0.125	0.166	0.208	0.250
0.010	0.015	0.019	0.029	0.038	0.058	0.077	0.096	0.115	0.154	0.192	0.230
0.010	0.017	0.021	0.031	0.042	0.062	0.083	0.104	0.125	0.166	0.208	0.250
0.010	0.015	0.019	0.029	0.038	0.058	0.077	0.096	0.115	0.154	0.192	0.230
0.005	0.008	0.010	0.014	0.019	0.029	0.038	0.048	0.058	0.077	0.096	0.115
0.008	0.013	0.016	0.024	0.032	0.048	0.064	0.080	0.096	0.128	0.160	0.192
0.008	0.013	0.016	0.024	0.032	0.048	0.064	0.080	0.096	0.128	0.160	0.192
0.008	0.013	0.016	0.024	0.032	0.048	0.064	0.080	0.096	0.128	0.160	0.192
0.006	0.009	0.011	0.017	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134
0.005	0.008	0.010	0.016	0.021	0.031	0.042	0.052	0.062	0.083	0.104	0.125
0.006	0.009	0.011	0.017	0.022	0.034	0.045	0.056	0.067	0.090	0.112	0.134
0.007	0.011	0.014	0.020	0.027	0.041	0.054	0.068	0.082	0.109	0.136	0.163
0.012	0.020	0.025	0.037	0.050	0.074	0.100	0.125	0.150	0.199	0.250	0.300
0.010	0.017	0.021	0.031	0.042	0.062	0.083	0.104	0.125	0.166	0.208	0.250
0.012	0.020	0.025	0.037	0.050	0.074	0.100	0.125	0.150	0.199	0.250	0.300
0.010	0.017	0.021	0.031	0.042	0.062	0.083	0.104	0.125	0.166	0.208	0.250
0.010	0.017	0.021	0.031	0.042	0.062	0.083	0.104	0.125	0.166	0.208	0.250



CUTTING CONDITIONS

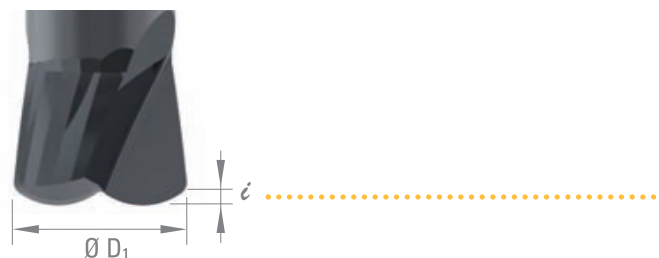
Face milling

Materials to be machined		XIDUR V _c [m/min]	a _p [mm]
P	Unalloyed steel / Low alloyed steel < 600 N/mm ²	250	<1x ϵ
P	Unalloyed steel / Low alloyed steel 600 – 1500 N/mm ²	200	<1x ϵ
P	Lead alloyed cutting steel	250	<1x ϵ
P	High alloyed steel 700 – 1500 N/mm ²	200	<1x ϵ
H	Hardened steel >50HRC	200	<0.8x ϵ
M	Stainless steel 400 – 700 N/mm ²	150	<0.8x ϵ
M	DUPLEX stainless steel > 800 N/mm ²	110	<0.8x ϵ
K	Grey cast iron / Nodular pearlitic iron < 250 HB	150	<1x ϵ
K	Alloyed cast iron / Nodular pearlitic iron > 250 HB	100	<1x ϵ
K	Nodular ferritic cast iron / Malleable cast iron	80	<1x ϵ
S	Special alloys / Heat resistant stainless steel	80	<0.5x ϵ
S	Titanium, titanium alloys	100	<0.5x ϵ
N	Copper alloys - easy to machine (brass - bronze)	350	<0.5x ϵ
N	Copper alloys - difficult to machine / Aluminium bronze	300	<1x ϵ
N	Aluminium alloys Si < 8%	400	<1x ϵ
N	Cast aluminium Si > 8%	300	<1x ϵ
N	Gold, silver	300	<1x ϵ



This tool doesn't have centre cutting edge

For face milling operation, the ϵ value is depending on the $\varnothing D_1$



Feed per tooth **fz [mm]**

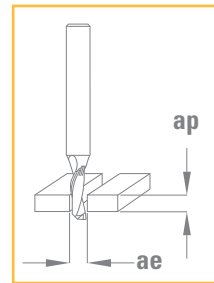
Ø D ₁ 0.50	Ø D ₁ 0.80	Ø D ₁ 1.00	Ø D ₁ 1.50	Ø D ₁ 2.00	Ø D ₁ 3.00	Ø D ₁ 4.00	Ø D ₁ 5.00	Ø D ₁ 6.00	Ø D ₁ 8.00	Ø D ₁ 10.00	Ø D ₁ 12.00
0.022	0.035	0.044	0.066	0.088	0.132	0.176	0.220	0.264	0.352	0.440	0.528
0.020	0.032	0.040	0.060	0.080	0.120	0.160	0.200	0.240	0.320	0.400	0.480
0.022	0.035	0.044	0.066	0.088	0.132	0.176	0.220	0.264	0.352	0.440	0.528
0.020	0.032	0.040	0.060	0.080	0.120	0.160	0.200	0.240	0.320	0.400	0.480
0.006	0.010	0.012	0.018	0.024	0.036	0.048	0.060	0.072	0.096	0.120	0.144
0.016	0.026	0.032	0.048	0.064	0.096	0.128	0.160	0.192	0.256	0.320	0.384
0.016	0.026	0.032	0.048	0.064	0.096	0.128	0.160	0.192	0.256	0.320	0.384
0.016	0.026	0.032	0.048	0.064	0.096	0.128	0.160	0.192	0.256	0.320	0.384
0.012	0.019	0.024	0.036	0.048	0.072	0.096	0.120	0.144	0.192	0.240	0.288
0.012	0.019	0.024	0.036	0.048	0.072	0.096	0.120	0.144	0.192	0.240	0.288
0.010	0.015	0.019	0.029	0.038	0.058	0.077	0.096	0.115	0.154	0.192	0.230
0.014	0.022	0.028	0.042	0.056	0.084	0.112	0.140	0.168	0.224	0.280	0.336
0.026	0.042	0.053	0.079	0.106	0.158	0.211	0.264	0.317	0.422	0.528	0.634
0.022	0.035	0.044	0.066	0.088	0.132	0.176	0.220	0.264	0.352	0.440	0.528
0.026	0.042	0.053	0.079	0.106	0.158	0.211	0.264	0.317	0.422	0.528	0.634
0.022	0.035	0.044	0.066	0.088	0.132	0.176	0.220	0.264	0.352	0.440	0.528
0.022	0.035	0.044	0.066	0.088	0.132	0.176	0.220	0.264	0.352	0.440	0.528
0.025	0.04	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50

ε value

Download the cutting conditions (pdf + xls) and the dxf profiles



CUTTING CONDITIONS



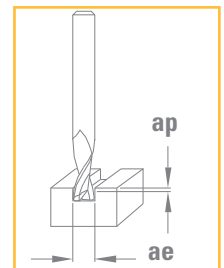
Materials to be machined

			CARBIDE	DLC		
			Vc [m/min]	Vc [m/min]	ap [mm]	ae [mm]
P	Lead alloyed cutting steel		80 100		$< 0.7 \times \text{ØD1}$	$1 \times \text{ØD1}$
N	Copper alloys - easy to machine (brass - bronze)		100 130	100 130	$< 1 \times \text{ØD1}$	$1 \times \text{ØD1}$
N	Aluminium alloys	Si < 8%	120 160	120 160	$< 1 \times \text{ØD1}$	$1 \times \text{ØD1}$
N	Cast aluminium	Si > 8%	100 130	100 130	$< 1 \times \text{ØD1}$	$1 \times \text{ØD1}$
N	Plastic		130 200	130 200	$< 1.5 \times \text{ØD1}$	$1 \times \text{ØD1}$

The plunging feed (Vfp) of an end mill Z = 1 (drilling) must be reduced by 40 to 80 % depending on the material to be machined.

DIXI 7552 - 7572 - 7582

CUTTING CONDITIONS



Materials to be machined

			CARBIDE	TiAlN	DICUT	DIAMANT		
			Vc [m/min]	Vc [m/min]	Vc [m/min]	Vc [m/min]	ap [mm]	ae [mm]
P	Unalloyed steel / Low alloyed steel	$< 600 \text{ N/mm}^2$	50 80				$< 1 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
P	Unalloyed steel / Low alloyed steel	$600 - 1500 \text{ N/mm}^2$		70 100			$< 0.5 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
P	High alloyed steel	$700 - 1500 \text{ N/mm}^2$		40 60			$< 0.5 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
K	Grey cast iron / Nodular pearlitic iron	$< 250 \text{ HB}$	100 170				$< 1 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
S	Titanium, titanium alloys		60 80				$< 1 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
N	Copper alloys - easy to machine (brass - bronze)		80 120				$< 1.5 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)				100 140		$< 1 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
N	Aluminium alloys	Si < 8%	150 200				$< 1.5 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
N	Cast aluminium	Si > 8%	100 200				$< 1 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
N	Graphite					200 300	$3 \times \text{ØD1}$	$< 0.30 \times \text{ØD1}$
N	Plastic		100 130				$< 2 \times \text{ØD1}$	$< 1 \times \text{ØD1}$
N	Gold, silver		90 130	100 140			$< 0.5 \times \text{ØD1}$	$< 1 \times \text{ØD1}$

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 2.00 - 2.50	$\emptyset D_1$ 2.50 - 3.00	$\emptyset D_1$ 3.00 - 4.00	$\emptyset D_1$ 4.00 - 5.00	$\emptyset D_1$ 5.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	
0.010 - 0.03	0.013 - 0.04	0.02 - 0.05	0.02 - 0.06	0.03 - 0.07	0.03 - 0.10	0.04 - 0.12	0.05 - 0.17	
0.014 - 0.04	0.018 - 0.05	0.02 - 0.06	0.03 - 0.08	0.04 - 0.09	0.04 - 0.12	0.06 - 0.15	0.07 - 0.21	
0.014 - 0.04	0.018 - 0.05	0.02 - 0.06	0.03 - 0.08	0.04 - 0.09	0.04 - 0.12	0.06 - 0.15	0.07 - 0.21	
0.014 - 0.04	0.018 - 0.05	0.02 - 0.06	0.03 - 0.08	0.04 - 0.09	0.04 - 0.12	0.06 - 0.15	0.07 - 0.21	
0.020 - 0.05	0.025 - 0.06	0.03 - 0.08	0.04 - 0.10	0.05 - 0.12	0.06 - 0.16	0.08 - 0.20	0.10 - 0.28	

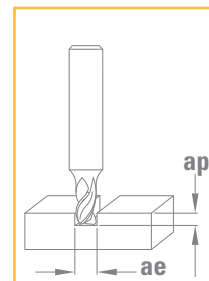
Feed per tooth

f_z [mm]

$\emptyset D_1$ 1.00 - 2.00	$\emptyset D_1$ 2.00 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 13.00	$\emptyset D_1$ 13.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.014 - 0.04	0.018 - 0.05	0.021 - 0.05	0.025 - 0.06	0.032 - 0.08	0.04 - 0.09	0.04 - 0.11	0.05 - 0.12	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.012 - 0.02	0.018 - 0.04	0.03 - 0.06	0.04 - 0.09	0.07 - 0.12	0.06 - 0.14	0.07 - 0.16	0.08 - 0.20	



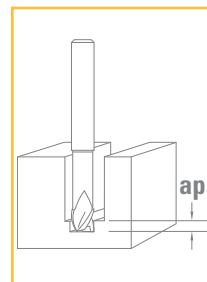
CUTTING CONDITIONS



Materials to be machined

Materials to be machined			XIDUR			ap [mm]	ae [mm]
			Vc [m/min]				
P	Unalloyed steel / Low alloyed steel	< 600 N/mm²	90	110		< 1.0 x ØD1	1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm²	70	90		< 0.6 x ØD1	1 x ØD1
P	Lead alloyed cutting steel		90	110		< 1.0 x ØD1	1 x ØD1
P	High alloyed steel	700 – 1500 N/mm²	40	55		< 0.3 x ØD1	1 x ØD1
M	Stainless steel	400 – 700 N/mm²	70	90		< 0.8 x ØD1	1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	90	110		< 0.7 x ØD1	1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	70	90		< 0.4 x ØD1	1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		90	110		< 0.4 x ØD1	1 x ØD1
S	Titanium, titanium alloys		40	60		< 0.3 x ØD1	1 x ØD1

CUTTING CONDITIONS



DIXI 7593 Z = 3-4

Aluminium

(Vc 400 - 600 m/min)

D ₁	Z	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	fz [mm]
6	3	400	21220	570	3	6	0.009
8	3	400	15920	570	4	8	0.012
10	3	400	12730	760	5	10	0.02
12	3	400	10610	760	6	12	0.024
16	3	400	7960	760	8	16	0.032
18	3	400	7070	760	9	18	0.036
20	4	400	6370	1020	10	20	0.04

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

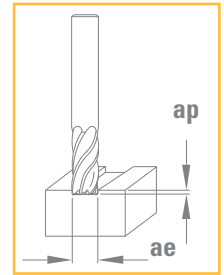
Feed per tooth

f_z [mm]

$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	
0.002 - 0.01	0.003 - 0.01	0.006 - 0.02	0.010 - 0.02	0.014 - 0.04	0.02 - 0.05	
0.002 - 0.01	0.002 - 0.01	0.005 - 0.01	0.008 - 0.02	0.011 - 0.03	0.02 - 0.04	
0.003 - 0.01	0.004 - 0.01	0.008 - 0.03	0.013 - 0.04	0.018 - 0.05	0.03 - 0.07	
0.002 - 0.01	0.002 - 0.01	0.005 - 0.01	0.008 - 0.02	0.011 - 0.03	0.02 - 0.04	
0.002 - 0.01	0.002 - 0.01	0.005 - 0.01	0.008 - 0.02	0.011 - 0.03	0.02 - 0.04	
0.002 - 0.01	0.003 - 0.01	0.006 - 0.02	0.010 - 0.02	0.014 - 0.04	0.02 - 0.05	
0.002 - 0.01	0.002 - 0.01	0.005 - 0.01	0.008 - 0.02	0.011 - 0.03	0.02 - 0.04	
0.002 - 0.01	0.003 - 0.01	0.006 - 0.02	0.010 - 0.02	0.014 - 0.04	0.02 - 0.05	
0.002 - 0.01	0.002 - 0.01	0.005 - 0.01	0.008 - 0.02	0.011 - 0.03	0.02 - 0.04	



CUTTING CONDITIONS - SLOTTING

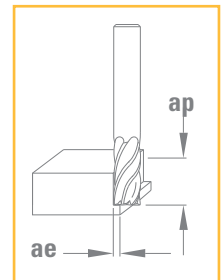


Materials to be machined

			DIXAL						ap [mm]	ae [mm]
			Vc [m/min]							
N	Copper alloys - easy to machine (brass - bronze)		150	250					< 1 x ØD1	1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)		100	180					< 0.7 x ØD1	1 x ØD1
N	Aluminium alloys	Si < 8%	400	550					< 1 x ØD1	1 x ØD1
N	Cast aluminium	Si > 8%	150	250					< 1 x ØD1	1 x ØD1
N	Gold, silver		200	300					< 1 x ØD1	1 x ØD1

**DIXI 7563-FC - 7565-FC ⇒ Vc +30%
fz +30%**

CUTTING CONDITIONS - ROUTING



Materials to be machined

			DIXAL						ap [mm]	ae [mm]
			Vc [m/min]							
N	Copper alloys - easy to machine (brass - bronze)		200	300					< 1.5 x ØD1	0.45 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)		150	200					< 1.5 x ØD1	0.3 x ØD1
N	Aluminium alloys	Si < 8%	450	650					< 1.5 x ØD1	0.45 x ØD1
N	Cast aluminium	Si > 8%	200	300					< 1.5 x ØD1	0.35 x ØD1
N	Gold, silver		250	350					< 1.5 x ØD1	0.45 x ØD1

**DIXI 7563-FC - 7565-FC ⇒ Vc +30%
fz +30%**

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth **f_z [mm]**

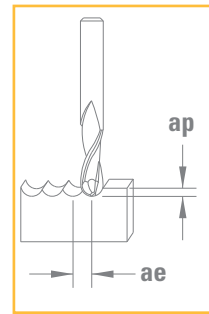
$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	
0.024 - 0.066	0.036 - 0.088	0.048 - 0.100	0.050 - 0.108	0.048 - 0.128	
0.019 - 0.053	0.029 - 0.070	0.038 - 0.080	0.040 - 0.086	0.038 - 0.102	
0.024 - 0.066	0.036 - 0.088	0.048 - 0.100	0.050 - 0.108	0.048 - 0.128	
0.020 - 0.056	0.031 - 0.075	0.041 - 0.085	0.043 - 0.092	0.041 - 0.109	
0.024 - 0.066	0.036 - 0.088	0.048 - 0.100	0.050 - 0.108	0.048 - 0.128	

Feed per tooth **f_z [mm]**

$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	
0.030 - 0.083	0.045 - 0.114	0.060 - 0.110	0.063 - 0.132	0.060 - 0.144	
0.024 - 0.066	0.036 - 0.092	0.048 - 0.088	0.050 - 0.106	0.048 - 0.115	
0.030 - 0.083	0.045 - 0.114	0.060 - 0.110	0.063 - 0.132	0.060 - 0.144	
0.026 - 0.070	0.038 - 0.097	0.051 - 0.094	0.053 - 0.112	0.051 - 0.122	
0.030 - 0.083	0.045 - 0.114	0.060 - 0.110	0.063 - 0.132	0.060 - 0.144	



CUTTING CONDITIONS



DIXI 7532 XIDUR Z = 2		Tool steel and cast iron			30-45 HRC	(Vc 400 - 500 m/min)	
D	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	Deff. [mm]	fz [mm]
0.2 - 1		90000	1800	0.02	0.05	0.28	0.01
1.5	400	84890	3400	0.04	0.06	0.48	0.02
2	400	63660	3820	0.05	0.09	0.62	0.03
3	400	42440	3400	0.07	0.13	1.08	0.04
4	400	31830	3180	0.09	0.15	1.20	0.05
5	400	25470	3570	0.15	0.25	1.71	0.07
6	400	21220	3400	0.20	0.30	2.15	0.08
8	400	15920	3180	0.25	0.35	2.78	0.10
10	400	12730	3820	0.30	0.50	3.41	0.15

DIXI 7532 XIDUR Z = 2		Tool steel and cast iron			45 - 55 HRC	(Vc 250 - 350 m/min)	
D	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	Deff. [mm]	fz [mm]
0.2 - 1	250	79580	1110	0.02	0.05	0.28	0.007
1.5	250	53050	2120	0.03	0.07	0.42	0.02
2	250	39790	2390	0.04	0.09	0.56	0.03
3	250	26530	2120	0.05	0.11	0.77	0.04
4	250	19890	1990	0.07	0.15	1.04	0.05
5	250	15920	1910	0.12	0.20	1.53	0.06
6	250	13260	1860	0.15	0.25	1.87	0.07
8	250	9950	1790	0.20	0.30	2.50	0.09
10	250	7960	1750	0.25	0.40	3.12	0.11

DIXI 7532 XIDUR Z = 2		Tool steel and cast iron			55 - 65 HRC	(Vc 100 - 200 m/min)	
D	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	Deff. [mm]	fz [mm]
0.2 - 1	130	41380	330	0.02	0.04	0.28	0.004
1.5	130	27590	390	0.03	0.05	0.42	0.007
2	130	20690	410	0.04	0.06	0.56	0.010
3	130	13790	410	0.05	0.07	0.77	0.015
4	130	10350	520	0.06	0.10	0.97	0.025
5	130	8280	500	0.08	0.16	1.25	0.030
6	130	6900	550	0.10	0.18	1.54	0.040
8	130	5170	520	0.15	0.20	2.17	0.050
10	130	4140	500	0.18	0.22	2.65	0.060

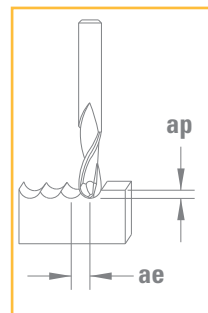
Microlubrication recommended, emulsion inadequate

The indicated **n** and **Vf** values should be considered as starting points. Depending on the quality of shape to be machined (precision and surface finish) these values can be increased or reduced.

If the recommended rpm cannot be obtained on the spindle, **Vf** must be reduced proportionally.

Down milling is recommended when possible.

CUTTING CONDITIONS



DIXI 7542 XIDUR Z = 2		Tool steel and cast iron		30-45 HRC		(Vc 400 - 500 m/min)	
D	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	Deff. [mm]	fz [mm]
1		90000	1800	0.02	0.05	0.28	0.01
1.5	320	67910	2720	0.04	0.06	0.48	0.02
2	320	50930	3060	0.05	0.09	0.62	0.03
3	320	33950	2720	0.07	0.13	1.08	0.04
4	320	25470	2550	0.09	0.15	1.20	0.05
5	320	20370	2850	0.15	0.25	1.71	0.07
6	320	16980	2720	0.20	0.30	2.15	0.08
8	320	12730	2550	0.25	0.35	2.78	0.10
10	320	10190	3060	0.30	0.50	3.41	0.15
12	320	8490	3400	0.40	0.60	4.31	0.20

DIXI 7542 XIDUR Z = 2		Tool steel and cast iron		45 - 55 HRC		(Vc 250 - 350 m/min)	
D	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	Deff. [mm]	fz [mm]
1	200	63660	890	0.02	0.05	0.28	0.007
1.5	200	42440	1700	0.03	0.07	0.42	0.020
2	200	31830	1910	0.04	0.09	0.56	0.030
3	200	21220	1700	0.05	0.11	0.77	0.040
4	200	15920	1590	0.07	0.15	1.04	0.050
5	200	12730	1530	0.12	0.20	1.53	0.060
6	200	10610	1490	0.15	0.25	1.87	0.070
8	200	7960	1430	0.20	0.30	2.50	0.090
10	200	6370	1400	0.25	0.40	3.12	0.110
12	200	5310	1380	0.30	0.50	3.75	0.130

DIXI 7542 XIDUR Z = 2		Tool steel and cast iron		55 - 65 HRC		(Vc 100 - 200 m/min)	
D	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	Deff. [mm]	fz [mm]
1	100	31830	250	0.02	0.04	0.28	0.004
1.5	100	21220	300	0.03	0.05	0.42	0.007
2	100	15920	320	0.04	0.06	0.56	0.010
3	100	10610	320	0.05	0.07	0.77	0.015
4	100	7960	400	0.06	0.10	0.97	0.025
5	100	6370	380	0.08	0.16	1.25	0.030
6	100	5310	420	0.10	0.18	1.54	0.040
8	100	3980	400	0.15	0.20	2.17	0.050
10	100	3180	380	0.18	0.22	2.65	0.060
12	100	2650	420	0.20	0.25	3.07	0.080

Microlubrication recommended, emulsion inadequate

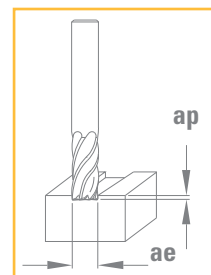
The indicated **n** and **Vf** values should be considered as starting points. Depending on the quality of shape to be machined (precision and surface finish) these values can be increased or reduced.

If the recommended rpm cannot be obtained on the spindle, **Vf** must be reduced proportionally.

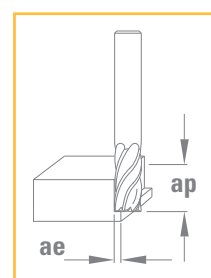
Down milling is recommended when possible.

CUTTING CONDITIONS

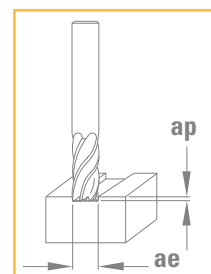
DIXI 7520 XIDUR Z = 3-12		Tool steel and cast iron			45 - 55 HRC (Vc 30 - 70 m/min)		
D ₁	Z	Vc (m/min)	n (min ⁻¹)	Vf (mm/min)	ap (mm)	ae (mm)	fz (mm)
0.4 - 0.9	3	30	-	-	0.03 x D ₁	1 x D ₁	0.001-0.002
1	4	40	12800	125	0.04	1.00	0.002
1.5	4	40	8500	125	0.05	1.50	0.0035
2	5	40	6300	125	0.07	2.00	0.004
3	5	40	4240	150	0.12	3.00	0.007
4	5	40	3180	160	0.15	4.00	0.010
6	6	40	2120	190	0.20	6.00	0.015
8	6	40	1590	190	0.25	8.00	0.020
10	6	40	1270	190	0.30	10.00	0.025
12	8	40	1060	210	0.40	12.00	0.025
16	10	40	800	240	0.60	16.00	0.030



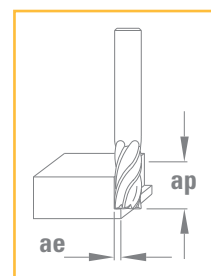
DIXI 7520 XIDUR Z = 3-12		Tool steel and cast iron			45 - 55 HRC (Vc 150 - 250 m/min)		
Ø	Z	Vc (m/min)	n (min ⁻¹)	Vf (mm/min)	ap (mm)	ae (mm)	fz (mm)
0.4 - 0.9	3	150	-	-	1 x D ₁	0.03 x D ₁	0.001-0.002
1	4	200	63700	640	1.00	0.04	0.002
1.5	4	200	42450	640	1.50	0.05	0.0035
2	5	200	32000	640	2.00	0.07	0.004
3	5	200	21300	750	3.00	0.12	0.007
4	5	200	15920	800	4.00	0.15	0.010
6	6	200	10610	950	6.00	0.20	0.015
8	6	200	7960	960	8.00	0.25	0.020
10	6	200	6370	960	10.00	0.30	0.025
12	8	200	5310	1060	12.00	0.40	0.025
16	10	200	3980	1190	16.00	0.60	0.030



DIXI 7520 XIDUR Z = 3-12		Tool steel and cast iron			55 - 65 HRC (Vc 12 - 40 m/min)		
Ø	Z	Vc (m/min)	n (min ⁻¹)	Vf (mm/min)	ap (mm)	ae (mm)	fz (mm)
0.4 - 0.9	3	12	-	-	0.03 x D ₁	1 x D ₁	0.001-0.002
1	4	15	4700	45	0.03	1.00	0.002
1.5	4	15	3180	45	0.03	1.50	0.0035
2	5	15	2300	45	0.04	2.00	0.004
3	5	15	1600	55	0.05	3.00	0.007
4	5	15	1190	60	0.06	4.00	0.010
6	6	15	800	70	0.09	6.00	0.015
8	6	15	600	70	0.12	8.00	0.020
10	6	15	480	70	0.15	10.00	0.025
12	8	15	400	80	0.18	12.00	0.025
16	10	15	300	90	0.20	16.00	0.030



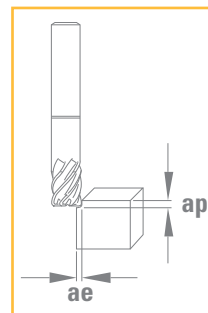
DIXI 7520 XIDUR Z = 3-12		Tool steel and cast iron			55 - 65 HRC (Vc 60 - 120 m/min)		
Ø	Z	Vc (m/min)	n (min ⁻¹)	Vf (mm/min)	ap (mm)	ae (mm)	fz (mm)
0.4 - 0.9	3	60	-	-	1 x D ₁	0.03 x D ₁	0.001-0.002
1	4	80	25500	250	1.00	0.03	0.002
1.5	4	80	17000	250	1.50	0.035	0.0035
2	5	80	12700	250	2.00	0.04	0.004
3	5	80	8500	290	3.00	0.05	0.007
4	5	80	6370	320	4.00	0.06	0.010
6	6	80	4240	380	6.00	0.09	0.015
8	6	80	3180	380	8.00	0.12	0.020
10	6	80	2550	380	10.00	0.15	0.025
12	8	80	2120	420	12.00	0.18	0.025
16	10	80	1590	480	16.00	0.20	0.030



Microlubrication recommended, emulsion inadequate



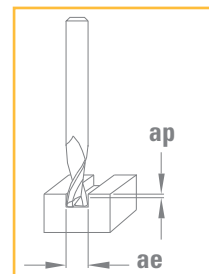
CUTTING CONDITIONS



DIXI 7070 XIDUR Z = 4-6		Tool steel and cast iron			30-45 HRC	(Vc 150 - 200 m/min)	
D ₁	Z	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	fz [mm]
3	4	150	15900	3800	0.20	0.80	0.06
4	4	150	11940	4300	0.25	0.85	0.09
5	4	150	9550	4580	0.30	0.90	0.12
6	4	150	7960	4460	0.35	1.00	0.14
8	6	150	5970	5730	0.40	1.10	0.16
10	6	150	4770	5150	0.45	1.30	0.18
12	6	150	3980	4780	0.50	1.50	0.20

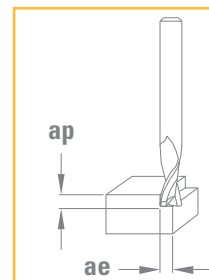
DIXI 7070 XIDUR Z = 4-6		Tool steel and cast iron			45 - 55 HRC	(Vc 130 - 170 m/min)	
D ₁	Z	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	fz [mm]
3	4	130	13700	2750	0.15	0.70	0.05
4	4	130	10350	3310	0.20	0.75	0.08
5	4	130	8280	3310	0.25	0.75	0.10
6	4	130	6900	3040	0.30	0.80	0.11
8	6	130	5170	3720	0.40	0.80	0.12
10	6	130	4140	3230	0.42	1.00	0.13
12	6	130	3450	2900	0.45	1.20	0.14

DIXI 7070 XIDUR Z = 4-6		Tool steel and cast iron			55 - 65 HRC	(Vc 100 - 130 m/min)	
D ₁	Z	Vc [m/min]	n [min ⁻¹]	Vf [mm/min]	ap [mm]	ae [mm]	fz [mm]
3	4	100	10600	500	0.08	0.20	0.010
4	4	100	7960	640	0.10	0.25	0.020
5	4	100	6370	890	0.12	0.28	0.035
6	4	100	5310	850	0.15	0.30	0.040
8	6	100	3980	1190	0.18	0.32	0.050
10	6	100	3180	1140	0.20	0.35	0.060
12	6	100	2650	1270	0.25	0.40	0.080

CUTTING CONDITIONS - SLOTTING

Materials to be machined

		DAC					ap [mm]	ae [mm]
		Vc [m/min]						
N	Copper alloys - easy to machine (brass - bronze)	150 250					< 1.5 x ØD1	1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	100 180					< 1.2 x ØD1	1 x ØD1
N	Aluminium alloys Si < 8%	400 550					< 1.5 x ØD1	1 x ØD1
N	Cast aluminium Si > 8%	150 250					< 1.5 x ØD1	1 x ØD1
N	Gold, silver	200 300					< 1.5 x ØD1	1 x ØD1

DIXI 7215-FC ⇒ Vc +30%
fz +30%

CUTTING CONDITIONS - ROUTING

Materials to be machined

		DAC					ap [mm]	ae [mm]
		Vc [m/min]						
N	Copper alloys - easy to machine (brass - bronze)	200 300					< 1.2 x ØD1	0.55 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	150 200					< 1.5 x ØD1	0.35 x ØD1
N	Aluminium alloys Si < 8%	450 650					< 1.5 x ØD1	0.55 x ØD1
N	Cast aluminium Si > 8%	200 300					< 1.5 x ØD1	0.45 x ØD1
N	Gold, silver	250 350					< 1 x ØD1	0.55 x ØD1

DIXI 7215-FC ⇒ Vc +30%
fz +30%

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth **f_z [mm]**

$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	
0.030 - 0.075	0.039 - 0.100	0.044 - 0.105	0.052 - 0.114	0.054 - 0.136	
0.024 - 0.060	0.031 - 0.080	0.035 - 0.084	0.042 - 0.091	0.043 - 0.109	
0.030 - 0.075	0.039 - 0.100	0.044 - 0.105	0.052 - 0.114	0.054 - 0.136	
0.026 - 0.064	0.033 - 0.085	0.037 - 0.089	0.044 - 0.097	0.046 - 0.116	
0.030 - 0.075	0.039 - 0.100	0.044 - 0.105	0.052 - 0.114	0.054 - 0.136	

Feed per tooth **f_z [mm]**

$\emptyset D_1$ 4.00 - 6.00	$\emptyset D_1$ 6.00 - 8.00	$\emptyset D_1$ 8.00 - 10.00	$\emptyset D_1$ 10.00 - 12.00	$\emptyset D_1$ 12.00 - 16.00	
0.038 - 0.094	0.049 - 0.130	0.055 - 0.110	0.065 - 0.132	0.068 - 0.144	
0.030 - 0.075	0.039 - 0.104	0.044 - 0.088	0.052 - 0.106	0.054 - 0.115	
0.038 - 0.094	0.049 - 0.130	0.055 - 0.110	0.065 - 0.132	0.068 - 0.144	
0.032 - 0.080	0.041 - 0.111	0.047 - 0.094	0.055 - 0.112	0.057 - 0.122	
0.038 - 0.094	0.049 - 0.130	0.055 - 0.110	0.065 - 0.132	0.068 - 0.144	





GRAVAGE

GRAVIEREN



ENGRAVING



INCISIONE



GRAVÍROZÁS



GRAVADO

SELECTION OF ENGRAVING TOOLS 216



1/2 ENGRAVING TOOLS 220



2/3 ENGRAVING TOOLS 221



3/4 ENGRAVING TOOLS 222



DIAMOND & PCD ENGRAVING TOOLS 223



HELICAL ENGRAVING TOOLS 224



SEMI-FINISHED ENGRAVING TOOLS 224



CHAMFERING & CORNER ROUNDING TOOLS 227



MULTIFUNCTION END MILLS 230



INFORMATION 231

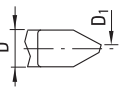


CUTTING CONDITIONS 232

SELECTION OF ENGRAVING TOOLS

✓ = item from stock

* = for non-ferrous material

		Page		 CARBIDE	 DLC*	 DINAC	 DIA	 PCD
FINISHED ENGRAVING TOOLS								
1/2 ENGRAVING TOOLS								
DIXI 7017		220	D = 3.00 - 4.00 D ₁ = 0.05-0.20	✓	✓*	✓		
2/3 ENGRAVING TOOLS								
DIXI 7027		221	D = 3.00 D ₁ = 0.05-0.15	✓		✓		
3/4 ENGRAVING TOOLS								
DIXI 7007		222	D = 3.00 D ₁ = 0.05-0.20 R 0.05 - R 0.20	✓		✓		
DIAMOND ENGRAVING TOOLS								
DIXI 70170 DIA		223	D = 6.00 D ₁ = 0.05-0.10				✓	
DIXI 70170 PCD		223	D = 6.00 D ₁ = 0.10-0.20					✓
HELICAL ENGRAVING TOOLS								
DIXI 7025		224	D = 3.00-4.00 D ₁ = 0.10-0.15	✓				
SEMI-FINISHED ENGRAVING TOOLS								
DIXI 7012		224	D = 3.00-8.00 D ₁ = 1.00-2.60	✓				
DIXI 7016		225	D = 2.00-8.00	✓				
DIXI 7020		225	D = 2.00-10.00	✓				
DIXI 7024		226	D = 3.00-6.00	✓				

○ good ⊙ excellent

Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Hardened cast iron 45-55 HRC	Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic
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⊙	○	○	○		⊙	○	○	⊙	○	⊙	⊙	○
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⊙	○	○	⊙				⊙	⊙	⊙	⊙		⊙
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○	⊙	⊙	⊙	○	○	⊙	⊙	○	⊙	○	○	○
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								⊙	⊙	⊙		⊙
								⊙	⊙	⊙	○	⊙

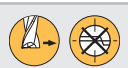
					⊙			⊙		⊙		
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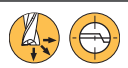
SELECTION OF CHAMFERING TOOLS

✓ = item from stock

CHAMFERING TOOLS

	Page						
DIXI 7623 Ø 0.80 - 12.00 	227		✓	✓			
DIXI 7625 	227		✓				
DIXI 76230 DIA Ø 0.10 - 0.30 	228					✓	
DIXI 7624 Ø 0.20 - 5.70 	228		✓				
DIXI 7656 R 0.10 - 1.00 	229		✓	✓			

MULTIFUNCTIONS END MILLS

DIXI 7632 Ø 0.10 - 12.00 	230		✓		✓		
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○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
⊙	○	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	○	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
								⊙	○	⊙		⊙
⊙	○	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	○	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
○	○	○	○		⊙		○	○	○	○		○

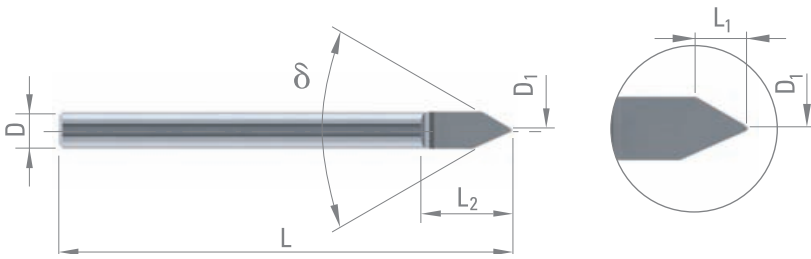


DIXI 7017

1/2 ENGRAVING TOOLS FINISHED STYLE

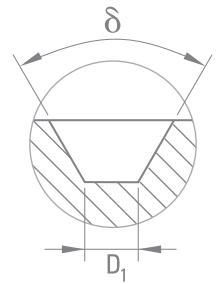


P. 232



Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Graphite	Plastic			

δ	L_1	L_2	D_{h6}	L	$D_1 \pm 0.01$	CARBIDE	DINAC	DLC*
30°	5.2	4	3	38	0.05	961336	962814	961337
					0.10	961338	962813	961339
					0.15	961340	962812	961342
					0.20	961341	962116	961343
50°	3.0	6	3	38	0.05	961326	961327	
					0.08	961328	961333	
					0.10	961329	961332	
					0.15	961330	961334	
60°	2.4	6	3	38	0.20	961331	961335	
					0.05	43536	959712	
					0.08	972400	972401	
					0.10	40939	959713	
60°	3.3	8	4	50	0.15	953721	960610	
					0.20	954292	960611	
					0.05	43537	959714	
					0.10	45813	959716	
90°	1.9	8	4	50	0.20	45814	959717	
					0.05	961246	961248	
120°	1.1	8	4	50	0.10	961247	961249	
					0.05	961322	961323	
					0.10	961324	961325	



* for non-ferrous material



Ordering examples

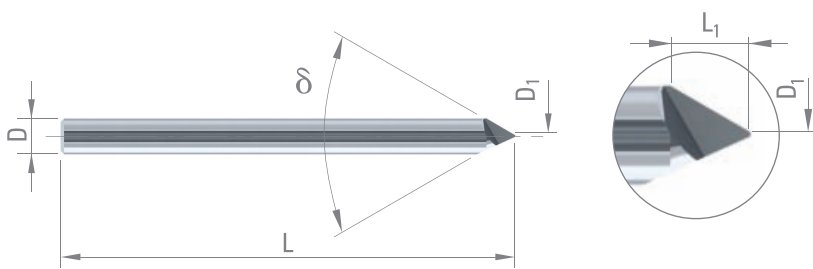
DIXI 7017 / 50° $D_1 = 0.10$ DINAC or Art. 961332 DIXI 7017 / 30° $D_1 = 0.05$ DLC or Art. 961337



2/3 ENGRAVING TOOLS FINISHED STYLE

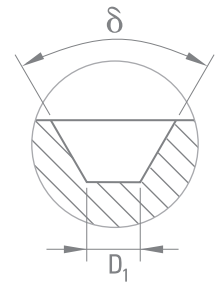


P. 232



Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Graphite	Plastic			

δ	L_1	D_{h5}	L	$D_1 \pm 0.008$	CARBIDE	DINAC
35°	4.6	3	38	0.05	326662	326682
				0.07	326663	326683
				0.08	326664	326684
				0.10	326665	326685
40°	3.9	3	38	0.05	326666	326686
				0.07	326667	326687
				0.08	326668	326688
				0.10	326669	326689
50°	3.1	3	38	0.15	326670	326690
				0.05	326671	326691
				0.07	326672	326692
				0.08	326673	326693
60°	2.5	3	38	0.10	326674	326694
				0.15	326675	326695
				0.05	326676	326696
				0.06	326677	326697
				0.07	326678	326698
				0.08	326679	326699
				0.10	326680	326700
				0.15	326681	326701



Ordering examples

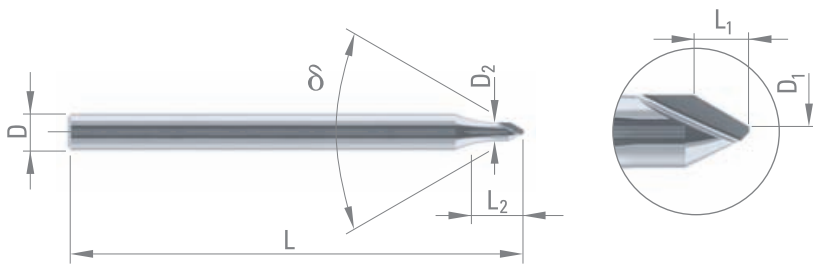
DIXI 7027 / 40° $D_1 = 0.08$ DINAC or Art. 326688 DIXI 7027 / 50° $D_1 = 0.07$ CARBIDE or Art. 326672



3/4 ENGRAVING TOOLS FINISHED STYLE

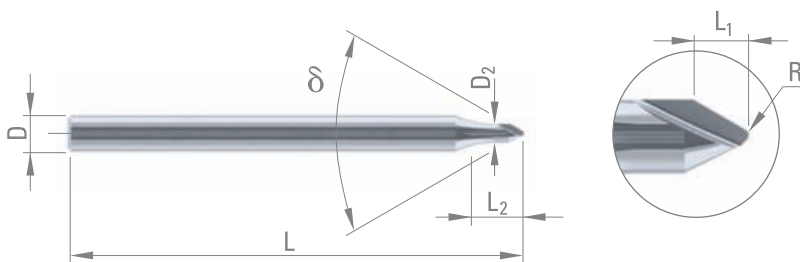
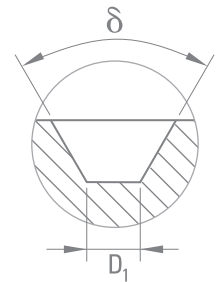


P. 232

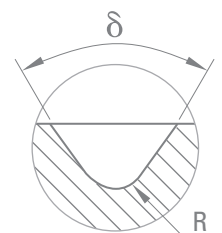


Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Cast iron 45-55 HRC
Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine
Alu	Graphite	Plastic		

δ	L_1	L_2	D_2	D_{h6}	L	$D_{1 \pm 0.01}$	CARBIDE	DINAC
30°	5.3	3.4	1.5	3	38	0.05	976370	976374
						0.08	976371	976375
						0.10	976372	976376
						0.15	976373	976377
35°	4.4	3.4	1.5	3	38	0.05	65846	959722
						0.08	961244	961245
						0.10	65848	959724
						0.15	65850	959725
40°	3.9	3.2	1.5	3	38	0.20	65852	959726
						0.05	961225	961238
						0.08	961242	961243
						0.10	961226	961239
50°	3.1	2.3	1.5	3	38	0.15	961227	961240
						0.20	961228	961241
						0.05	976258	976264
						0.08	976260	976265
60°	2.5	2.3	1.5	3	38	0.10	976261	976266
						0.15	976263	976267
						0.05	976361	976365
						0.08	976362	976366
						0.10	976363	976367
						0.15	976364	976368



δ	L_1	L_2	D_2	D_{h6}	L	$R_{\pm 0.01}$	CARBIDE	DINAC
35°	4.4	3.4	1.5	3	38	0.05	51736	959718
						0.10	51625	959719
						0.15	51734	959720
						0.20	51735	959721



Ordering examples

DIXI 7007 / 30° $D_1 = 0.08$ DINAC or Art. 976375

DIXI 7007 / 35° $R = 0.15$ CARBIDE or Art. 51734

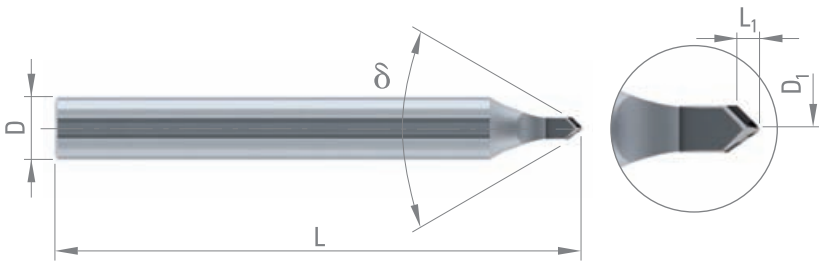


DIXI 70170 DIA

MONOCRISTALLINE DIAMOND ENGRAVING TOOLS

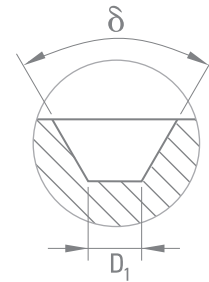


P. 408



Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic
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δ	L_1	D_{h5}	L	D_1	DIA
60°	1.40	6	50	0.05	302597
				0.10	302598
90°	0.80	6	50	0.05	302599
				0.10	302600

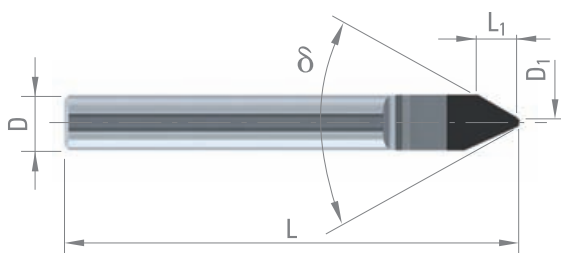


DIXI 70170 PCD

PCD ENGRAVING TOOLS

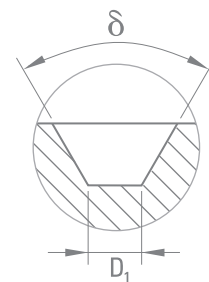


P. 408



Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Unsilited carbide Ceramics
Plastic	Carbon fibres			

δ	L_1	D_{h5}	L	D_1	PCD
60°	5	6	50	0.05	303081
				0.10	303082
90°	3	6	50	0.05	303083
				0.10	303084



Ordering examples

DIXI 70170 / 60° DIA $D_1 = 0.05$ or Art. 302597

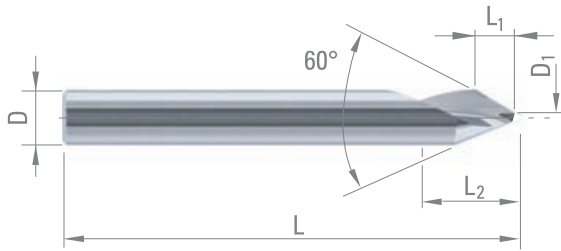
DIXI 70170 / 90° PCD $D_1 = 0.10$ or Art. 303083

DIXI 7025

SPIRAL ENGRAVING TOOLS, 60°
FINISHED STYLE



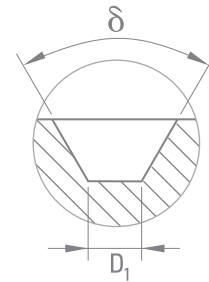
P. 233



Cast iron

Cu alloy
Silver
Gold

Al



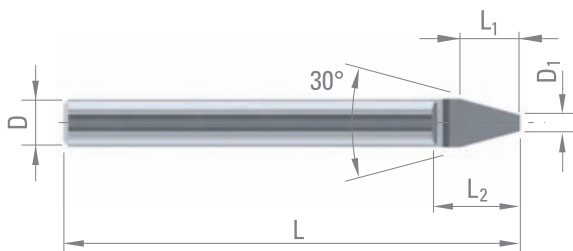
$D_{1\pm 0.02}$	L_1	L_2	D_{h5}	L	CARBIDE
0.10	2.5	9	3	38	43624
0.15	3.3	12	4	50	45812

DIXI 7012

1/2 ENGRAVING TOOLS, 30°
SEMI-FINISHED STYLE



P. 231



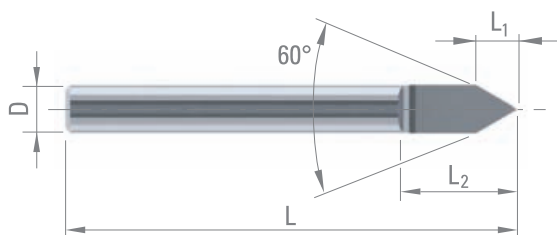
D_1	L_1	L_2	D_{h5}	L	CARBIDE	
* 1.00	3.7	4	3	38	35505	
* 1.30	5.0	5	4	50	35666	
* 2.00	7.5	8	6	57	35506	
* 2.60	10.1	10	8	63	35668	* not cutting

DIXI 7016

1/2 ENGRAVING TOOLS, 60°
SEMI-FINISHED STYLE



P. 231



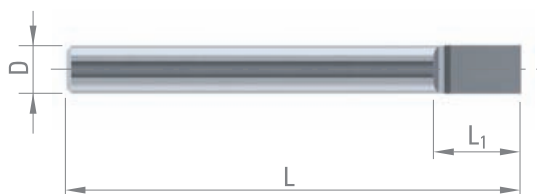
D_{h5}	L_1	L_2	L	CARBIDE
2	1.7	4	25	32852
3	2.6	6	38	23585
4	3.5	8	50	23586
5	4.3	10	50	35082
6	5.2	12	57	29726
8	6.9	14	63	29727

DIXI 7020

1/2 ENGRAVING TOOLS, 180°
SEMI-FINISHED STYLE



P. 231

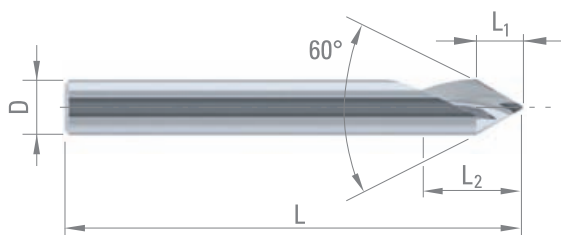


D_{h5}	L_1	L	CARBIDE
2	3	25	35671
3	4	38	35672
4	5	50	35673
5	6	50	35674
6	8	57	35675
8	10	63	35676
10	12	72	35677

SPIRAL ENGRAVING TOOLS, 60° SEMI-FINISHED STYLE



P. 231

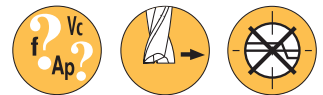


D_{h5}	L_1	L_2	L	CARBIDE
3	2.6	9	38	35678
4	3.5	12	50	35679
6	5.2	15	50	35680

DIXI 7623

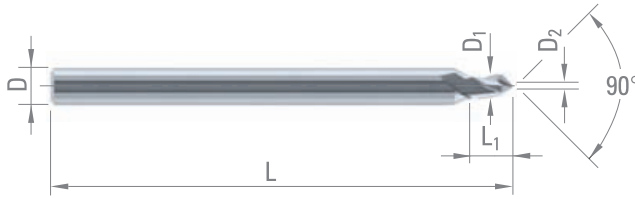
CHAMFERING TOOLS

Z = 3

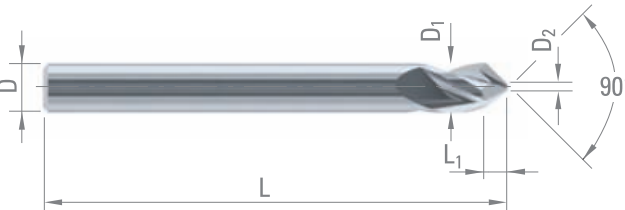


P. 234

$\emptyset 0.80 \leq \emptyset 4.00$



$\emptyset 5.00 \leq \emptyset 12.00$



$D_1 \text{ e8}$ $\emptyset < 2.00 - 0/-0.01$ $\emptyset < 3.00 - 0/-0.02$ $\emptyset < 5.00 - \text{e8}$	L_1	$D_2 \pm 0.05$	D_{h5}	L	CARBIDE	TiAlN
--	-------	----------------	----------	---	---------	-------

* 0.50	1.5	0.05	3	38	983778	
* 0.80	1.5	0.08	3	38	956868	956870
* 1.00	2.0	0.10	3	38	956867	956869
* 2.00	3.0	0.20	3	38	956865	956866
* 3.00	5.0	0.30	3	38	956861	956862
* 4.00	6.0	0.40	4	50	956863	956864

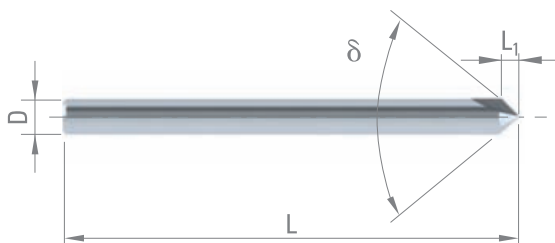
* cutting

$D_1 \text{ h5}$	L_1	$D_2 \pm 0.05$	D_{h5}	L	CARBIDE	TiAlN
5.00	2.25	0.50	5	50	49019	952294
6.00	2.7	0.60	6	57	49020	63603
8.00	3.6	0.80	8	63	49021	950927
10.00	4.5	1.00	10	72	49022	63604
12.00	5.4	1.20	12	73	49023	952295

DIXI 7625

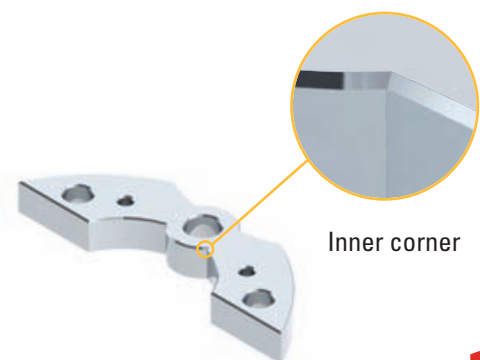
CHAMFERING TOOLS INNER CORNERS

Z = 3



δ	L_1	D_{h5}	L	CARBIDE
60°	2.6	3	38	310782
90°	1.5	3	38	306130
120°	0.9	3	38	312243

Steel + Pb	Low alloyed steel	Cast iron	Cu alloy Silver Gold	Cu alloy difficult to machine
Alu	Plastic			

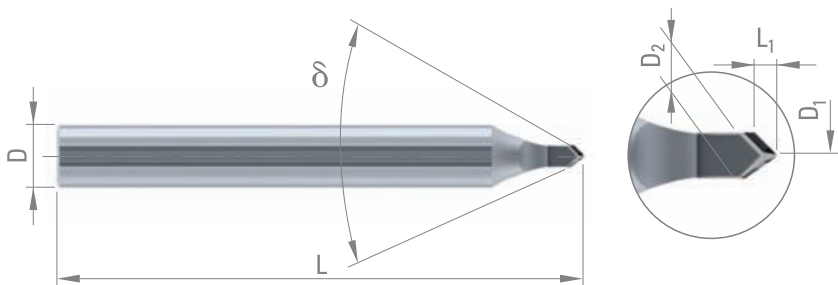
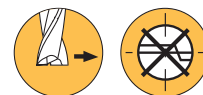


Inner corner

DIXI 76230 DIA

MONOCRISTALLINE DIAMOND CHAMFERING TOOLS

Z = 1



Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic
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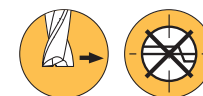
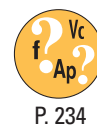
δ	L ₁	D ₂	D ₁	D _{h5}	L	DIA
30°	2.80	2	* 0.30	6	50	978382
60°	1.40	3	* 0.10	6	50	302596
	1.30	3	* 0.30	6	50	978381
90°	0.80	3	* 0.10	6	50	302595
	0.70	3	* 0.30	6	50	977871

* not cutting

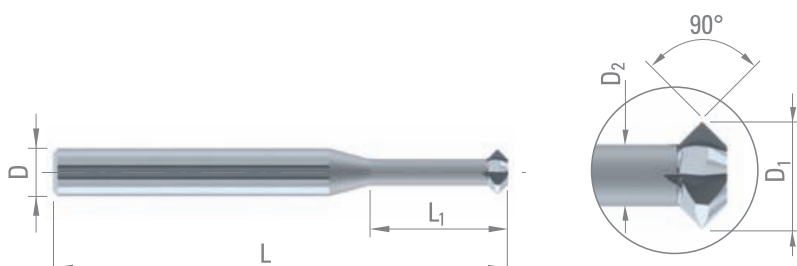
DIXI 7624

CHAMFERING TOOLS DOUBLE TAPER

Z = 1-4

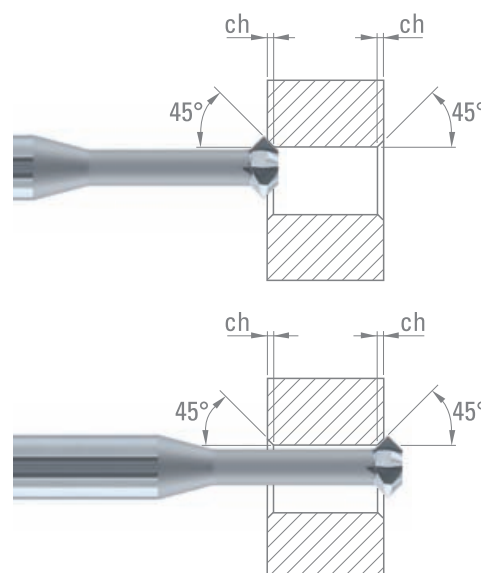


P. 234



Steel + Pb	Low alloyed steel	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	ch	D _{h5}	L	Z	CARBIDE
0.20	0.4	0.12	0.04	3	38	1	997990
0.25	0.5	0.15	0.05	3	38	1	997991
0.30	0.6	0.18	0.06	3	38	1	997992
0.40	0.8	0.24	0.08	3	38	1	997993
0.50	1.0	0.30	0.10	3	38	1	997994
0.60	1.2	0.36	0.12	3	38	3	997995
0.70	1.4	0.42	0.14	3	38	3	997996
0.80	1.6	0.48	0.16	3	38	3	997997
0.90	1.8	0.54	0.18	3	38	3	997998
1.00	2.0	0.60	0.20	3	38	3	997999
1.20	2.4	0.70	0.25	3	38	4	998000
1.30	2.6	0.70	0.30	3	38	4	998001
1.80	5.4	1.00	0.40	3	38	4	998002
2.80	8.4	1.60	0.60	3	38	4	998003
3.70	11.1	2.10	0.80	6	57	4	998004
5.70	17.1	3.30	1.20	6	57	4	998005

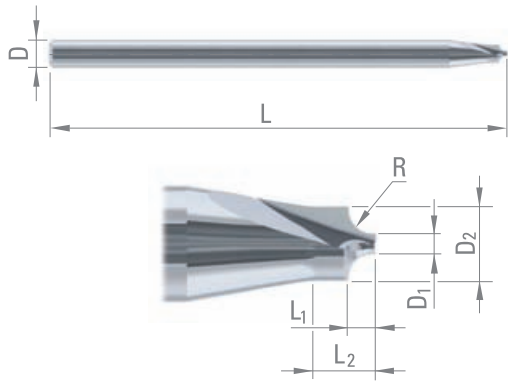


CORNER ROUNDING END MILLS

Z = 2



P. 234

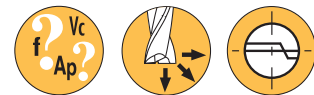


Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

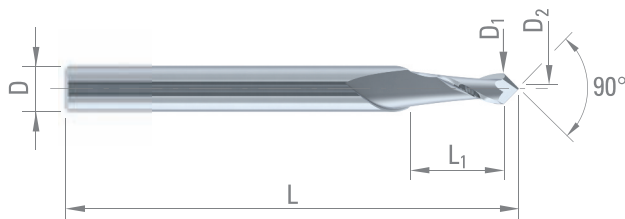
$R_{\pm 0.02}$	D_1	L_1	D_2	L_2	D_{h5}	L	CARBIDE	TiAIN
0.10	0.50	0.12	0.74	0.8	3	38	969577	969578
0.15	0.50	0.18	0.86	0.8	3	38	969586	969597
0.20	0.50	0.24	0.98	0.8	3	38	969587	969598
0.25	0.50	0.30	1.10	1.0	3	38	969588	969599
0.30	0.50	0.36	1.22	1.0	3	38	969589	969600
0.40	0.50	0.48	1.46	1.0	3	38	969590	969601
0.50	0.50	0.60	1.70	1.5	3	38	969591	969602
0.60	0.50	0.70	1.90	1.5	3	38	969592	969603
0.70	0.50	0.80	2.10	1.5	3	38	969593	969604
0.80	0.80	0.90	2.60	2.0	3	38	969594	969605
0.90	0.80	1.00	2.80	2.0	3	38	969595	969606
1.00	0.80	1.10	-	-	3	38	969596	969607

MULTIFUNCTION END MILLS

Z = 2

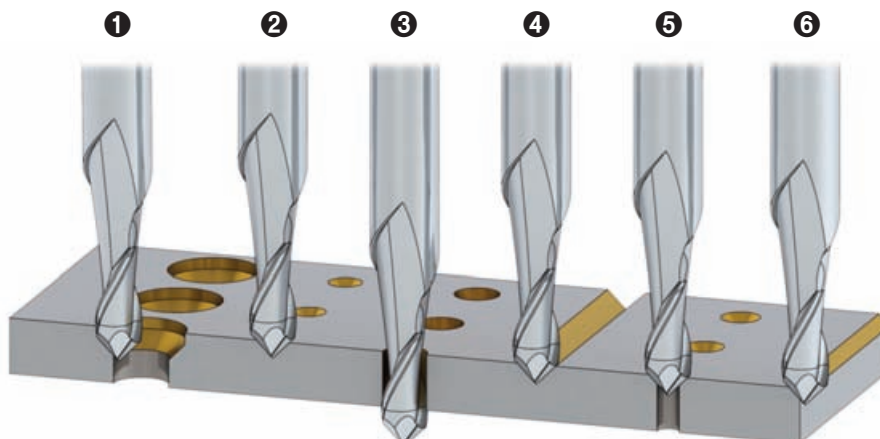


P. 236

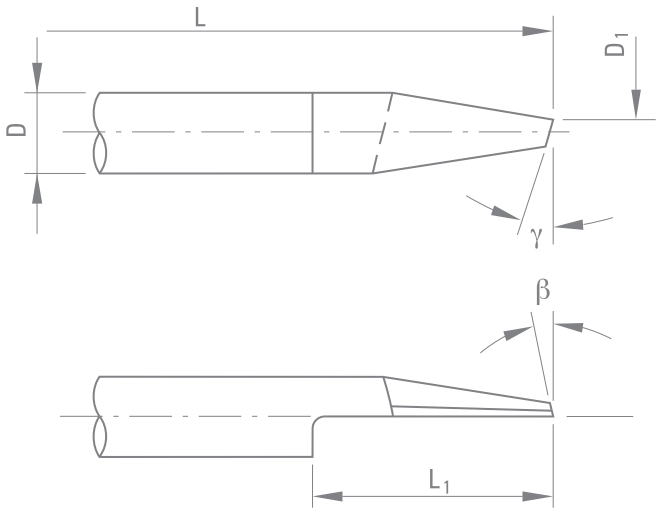


Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

D _{1 e8}	L ₁	D ₂	D _{h5}	L	CARBIDE CUTINOX	
0.10	0.2	0.01	3	38	333883	333907
0.20	0.4	0.02	3	38	333884	333908
0.30	0.6	0.03	3	38	333885	333909
0.40	0.8	0.04	3	38	333886	333910
0.50	1.0	0.05	3	38	333887	333911
0.60	1.2	0.06	3	38	333888	333912
0.70	1.4	0.07	3	38	333889	333913
0.80	1.6	0.08	3	38	333890	333914
0.90	1.8	0.09	3	38	333891	333915
1.00	2.0	0.10	3	38	333892	333916
1.10	2.2	0.11	3	38	333893	333917
1.20	2.4	0.12	3	38	333894	333918
1.30	2.6	0.13	3	38	333895	333919
1.40	2.8	0.14	3	38	333896	333920
1.50	3.0	0.15	3	38	333897	333921
2.00	4.0	0.20	3	38	333898	333922
2.50	5.0	0.25	3	38	333899	333923
3.00	6.0	0.30	4	50	333900	333924
4.00	8.0	0.40	5	50	333901	333925
5.00	10.0	0.50	6	50	333902	333926
6.00	12.0	0.60	8	60	333903	333927
8.00	16.0	0.80	10	70	333904	333928
10.00	18.0	1.00	12	70	333905	333929
12.00	20.0	1.20	12	70	333906	333930



- ① Counterbore
- ② Spotting
- ③ Drilling
- ④ Engraving
- ⑤ ⑥ Chamfering



Materials	β	γ
Tool steel	10°	3° - 5°
Steel	15°	3° - 5°
Stainless steel	15°	3° - 5°
Cast iron	15°	3° - 5°
Copper	20°	3° - 5°
Brass	15°	3° - 5°
Nickel-silver	15°	3° - 5°
Duralumin	20°	3° - 5°
Aluminium	20°	3° - 5°
Gold	15°	3° - 5°
Pure titanium	15°	3° - 5°
Celluloid	25°	3° - 5°
Plastic	20°	3° - 5°
Wood	25°	3° - 5°

Mainly used for engraving symbols and texts, these tools can also be used for machining contours (cutting of profiles) and for copying operations for moulds and dies.

FINISHED EXECUTIONS

On request, DIXI POLYTOOL will supply these tools ground according to the customer's specifications.

The grinding angles will correspond to the opposite table.

Please indicate D_1 and material to be machined when ordering.



CUTTING CONDITIONS

Materials to be machined

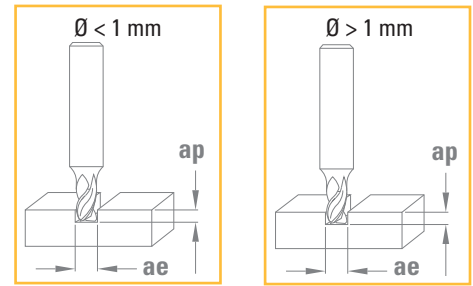
			CARBIDE	DINAC	Ø D ₁ 0.05 - 0.10		Ø D ₁ 0.15 - 0.40	
			n [rev/min]	n [rev/min]	Vf[mm/min]	ap[mm]	Vf[mm/min]	ap[mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	20 - 35'000	20 - 35'000	50 - 250	0.05 - 0.30	100 - 300	0.10 - 0.40
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²		20 - 35'000	50 - 200	0.05 - 0.25	80 - 250	0.10 - 0.35
P	Lead alloyed cutting steel			20 - 35'000	50 - 250	0.05 - 0.30	100 - 300	0.10 - 0.40
P	High alloyed steel	700 – 1500 N/mm ²		20 - 35'000	50 - 150	0.05 - 0.15	80 - 250	0.10 - 0.30
M	Stainless steel	400 – 700 N/mm ²		20 - 35'000	50 - 150	0.05 - 0.20	80 - 250	0.10 - 0.30
M	DUPLEX stainless steel	> 800 N/mm ²		20 - 35'000	50 - 150	0.05 - 0.15	80 - 250	0.10 - 0.30
H	Tool steel and cast iron	> 1500 N/mm ² (45 - 55 HRC)		20 - 35'000			80 - 250	0.02 - 0.05
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	20 - 35'000	20 - 35'000	50 - 250	0.05 - 0.30	100 - 300	0.10 - 0.40
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	20 - 35'000	20 - 35'000	50 - 200	0.05 - 0.25	80 - 250	0.10 - 0.35
K	Nodular ferritic cast iron / Malleable cast iron		20 - 35'000	20 - 35'000	50 - 200	0.05 - 0.25	80 - 250	0.10 - 0.35
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy		15 - 25'000			80 - 200	0.03 - 0.10
S	Titanium, titanium alloys		20 - 35'000	20 - 35'000	50 - 200	0.05 - 0.25	100 - 250	0.10 - 0.35
N	Copper alloys - easy to machine (brass - bronze)		20 - 35'000	20 - 35'000	50 - 300	0.05 - 0.30	150 - 450	0.10 - 0.40
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	20 - 35'000	20 - 35'000	50 - 200	0.05 - 0.30	100 - 300	0.10 - 0.45
N	Aluminium alloys	Si < 8%	20 - 35'000	20 - 35'000	50 - 300	0.05 - 0.30	150 - 450	0.10 - 0.45
N	Cast aluminium	Si > 8%	20 - 35'000	20 - 35'000	50 - 300	0.05 - 0.30	150 - 450	0.10 - 0.45
N	Graphite		20 - 35'000	20 - 35'000	50 - 300	0.05 - 0.30	150 - 450	0.10 - 0.45
N	Plastic		20 - 35'000	20 - 35'000	50 - 300	0.05 - 0.30	150 - 450	0.10 - 0.45
N	Gold, silver		20 - 35'000	20 - 35'000	50 - 300	0.05 - 0.30	150 - 450	0.10 - 0.45

CUTTING CONDITIONS

Materials to be machined

			CARBIDE	DINAC	Ø D ₁ 0.05 - 0.10		Ø D ₁ 0.15 - 0.50	
			n [tr/min]	n [tr/min]	Vf[mm/min]	ap[mm]	Vf[mm/min]	ap[mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	25 - 35'000		75 - 250	0.05 - 0.35	100 - 350	0.10 - 0.45
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²		25 - 35'000	60 - 250	0.05 - 0.30	80 - 300	0.10 - 0.40
P	Lead alloyed cutting steel		30 - 35'000		75 - 250	0.05 - 0.35	100 - 350	0.10 - 0.45
P	High alloyed steel	700 – 1500 N/mm ²		15 - 35'000	50 - 200	0.05 - 0.10	80 - 300	0.10 - 0.35
M	Stainless steel	400 – 700 N/mm ²		20 - 35'000	50 - 200	0.05 - 0.25	80 - 300	0.10 - 0.35
M	DUPLEX stainless steel	> 800 N/mm ²		15 - 35'000	50 - 200	0.05 - 0.20	80 - 300	0.10 - 0.35
H	Tool steel and cast iron	> 1500 N/mm ² (45 - 55 HRC)		20 - 35'000			80 - 250	0.02 - 0.07
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	25 - 35'000		50 - 300	0.05 - 0.35	100 - 350	0.10 - 0.45
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	15 - 35'000	15 - 35'000	50 - 250	0.05 - 0.30	80 - 300	0.10 - 0.40
K	Nodular ferritic cast iron / Malleable cast iron		15 - 35'000	15 - 35'000	50 - 250	0.05 - 0.30	80 - 300	0.10 - 0.40
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy		10 - 15'000			80 - 250	0.05 - 0.10
S	Titanium, titanium alloys		20 - 35'000		75 - 200	0.05 - 0.20	100 - 300	0.10 - 0.40
N	Copper alloys - easy to machine (brass - bronze)		30 - 35'000		75 - 300	0.05 - 0.20	150 - 450	0.20 - 0.30
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	20 - 35'000		75 - 350	0.05 - 0.15	150 - 300	0.10 - 0.20
N	Aluminium alloys	Si < 8%	25 - 35'000		75 - 300	0.05 - 0.30	150 - 450	0.15 - 0.50
N	Cast aluminium	Si > 8%	20 - 35'000		75 - 350	0.05 - 0.20	150 - 450	0.15 - 0.45
N	Graphite		20 - 35'000		75 - 350	0.05 - 0.20	150 - 450	0.15 - 0.40
N	Plastic		30 - 35'000		100 - 350	0.05 - 0.30	180 - 450	0.15 - 0.50
N	Gold, silver		25 - 35'000		75 - 350	0.05 - 0.20	150 - 450	0.15 - 0.40

CUTTING CONDITIONS



Materials to be machined

			CARBIDE		TiAlN		ap	ae	ap	ae
			Vc [m/min]		Vc [m/min]		[mm]	[mm]	[mm]	[mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	90	110	< 0.5 x ØD1	1 x ØD1	< 1 x ØD1	1 x ØD1
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	50	80	70	90	< 0.3 x ØD1	1 x ØD1	< 0.6 x ØD1	1 x ØD1
P	Lead alloyed cutting steel		70	100			< 0.5 x ØD1	1 x ØD1	< 1 x ØD1	1 x ØD1
P	High alloyed steel	700 – 1500 N/mm ²			40	70	< 0.2 x ØD1	1 x ØD1	< 0.5 x ØD1	1 x ØD1
M	Stainless steel	400 – 700 N/mm ²	40	60	70	90	< 0.5 x ØD1	1 x ØD1	< 0.8 x ØD1	1 x ØD1
M	DUPLEX stainless steel	> 800 N/mm ²			40	70	< 0.2 x ØD1	1 x ØD1	< 0.5 x ØD1	1 x ØD1
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	90	110	< 0.5 x ØD1	1 x ØD1	< 1 x ØD1	1 x ØD1
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	70	90	< 0.3 x ØD1	1 x ØD1	< 0.6 x ØD1	1 x ØD1
K	Nodular ferritic cast iron / Malleable cast iron		70	100	90	110	< 0.3 x ØD1	1 x ØD1	< 0.6 x ØD1	1 x ØD1
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25	35			< 0.4 x ØD1	1 x ØD1
S	Titanium, titanium alloys		30	45			< 0.3 x ØD1	1 x ØD1	< 0.5 x ØD1	1 x ØD1
N	Copper alloys - easy to machine (brass - bronze)		140	160			< 0.5 x ØD1	1 x ØD1	< 1 x ØD1	1 x ØD1
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120	140	170	190	< 0.3 x ØD1	1 x ØD1	< 0.7 x ØD1	1 x ØD1
N	Aluminium alloys	Si < 8%	180	260	230	340	< 0.6 x ØD1	1 x ØD1	< 1.2 x ØD1	1 x ØD1
N	Cast aluminium	Si > 8%	140	160	210	230	< 0.4 x ØD1	1 x ØD1	< 0.9 x ØD1	1 x ØD1
N	Graphite		140	160	200	220	< 0.6 x ØD1	1 x ØD1	< 0.9 x ØD1	1 x ØD1
N	Plastic		240	260	300	340	< 0.6 x ØD1	1 x ØD1	< 1.2 x ØD1	1 x ØD1
N	Gold, silver		140	160	200	220	< 0.6 x ØD1	1 x ØD1	< 0.9 x ØD1	1 x ØD1

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.30 - 1.00	$\emptyset D_1$ 1.00 - 1.50	$\emptyset D_1$ 1.50 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 7.00	$\emptyset D_1$ 7.00 - 10.00	$\emptyset D_1$ 10.00 - 14.00	$\emptyset D_1$ 14.00 - 16.00	$\emptyset D_1$ 16.00 - 20.00	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.14	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.11	0.05 - 0.11	0.06 - 0.12	0.07 - 0.13	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.005 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	
0.006 - 0.015	0.012 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.21	0.10 - 0.24	0.11 - 0.30	
0.006 - 0.015	0.005 - 0.020	0.016 - 0.04	0.02 - 0.06	0.03 - 0.09	0.04 - 0.12	0.05 - 0.14	0.07 - 0.16	0.08 - 0.20	



CUTTING CONDITIONS

Routing

Materials to be machined			CARBIDE		CUTINOX	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	40	60	60	75
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	30	50	40	60
P	Lead alloyed cutting steel		54	60	60	75
P	High alloyed steel	700 – 1500 N/mm ²	30	40	35	50
M	Stainless steel	400 – 700 N/mm ²	20	30	30	35
M	DUPLEX stainless steel	> 800 N/mm ²	20	25	25	30
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	45	60	60	75
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	28	40	35	50
K	Nodular ferritic cast iron / Malleable cast iron		28	40	35	50
S	Special alloys / Heat resistant stainless steel		20	24	25	30
S	Titanium, titanium alloys		32	48	40	60
N	Copper alloys - easy to machine (brass - bronze)		80	120	90	130
N	Copper alloys - difficult to machine / Aluminium bronze		50	80	60	90
N	Aluminium alloys	Si < 8%	80	150	90	160
N	Cast aluminium	Si > 8%	60	110	70	120
N	Plastic		100	200	110	220
N	Gold, silver		50	80	60	90

Routing

Materials to be machined			CARBIDE		CUTINOX	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	30	50	60	75
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	54	60	40	60
P	Lead alloyed cutting steel		30	40	60	75
P	High alloyed steel	700 – 1500 N/mm ²	20	30	35	50
M	Stainless steel	400 – 700 N/mm ²	20	25	30	35
M	DUPLEX stainless steel	> 800 N/mm ²	45	60	25	30
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	28	40	60	75
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	28	40	35	50
K	Nodular ferritic cast iron / Malleable cast iron		20	24	35	50
S	Special alloys / Heat resistant stainless steel		32	48	25	30
S	Titanium, titanium alloys		80	120	40	60
N	Copper alloys - easy to machine (brass - bronze)		50	80	90	130
N	Copper alloys - difficult to machine / Aluminium bronze		80	150	60	90
N	Aluminium alloys	Si < 8%	60	110	90	160
N	Cast aluminium	Si > 8%	100	200	70	120
N	Plastic		50	80	110	220
N	Gold, silver		80	150	60	90



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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.30 - 0.50	$\emptyset D_1$ 0.50 - 1.00	$\emptyset D_1$ 1.00 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 8.00	$\emptyset D_1$ 8.00 - 12.00	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.004	0.002 - 0.008	0.003 - 0.038	0.015 - 0.08	0.03 - 0.11	0.05 - 0.23	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.004 - 0.008	0.005 - 0.016	0.006 - 0.078	0.031 - 0.16	0.06 - 0.23	0.09 - 0.47	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.005 - 0.009	0.006 - 0.019	0.008 - 0.094	0.038 - 0.19	0.08 - 0.28	0.11 - 0.5	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	

Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.30 - 0.50	$\emptyset D_1$ 0.50 - 1.00	$\emptyset D_1$ 1.00 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 8.00	$\emptyset D_1$ 8.00 - 12.00	
0.002 - 0.003	0.002 - 0.006	0.003 - 0.031	0.013 - 0.06	0.03 - 0.09	0.04 - 0.19	
0.002 - 0.003	0.002 - 0.006	0.003 - 0.031	0.013 - 0.06	0.03 - 0.09	0.04 - 0.19	
0.002 - 0.003	0.002 - 0.006	0.003 - 0.031	0.013 - 0.06	0.03 - 0.09	0.04 - 0.19	
0.001 - 0.002	0.002 - 0.005	0.002 - 0.023	0.009 - 0.05	0.02 - 0.07	0.03 - 0.14	
0.001 - 0.002	0.002 - 0.005	0.002 - 0.023	0.009 - 0.05	0.02 - 0.07	0.03 - 0.14	
0.001 - 0.002	0.002 - 0.005	0.002 - 0.023	0.009 - 0.05	0.02 - 0.07	0.03 - 0.14	
0.002 - 0.003	0.002 - 0.006	0.003 - 0.031	0.013 - 0.06	0.03 - 0.09	0.04 - 0.19	
0.001 - 0.002	0.002 - 0.005	0.002 - 0.023	0.009 - 0.05	0.02 - 0.07	0.03 - 0.14	
0.001 - 0.002	0.002 - 0.005	0.002 - 0.023	0.009 - 0.05	0.02 - 0.07	0.03 - 0.14	
0.001 - 0.002	0.001 - 0.004	0.002 - 0.019	0.008 - 0.04	0.02 - 0.06	0.02 - 0.11	
0.001 - 0.002	0.002 - 0.005	0.002 - 0.023	0.009 - 0.05	0.02 - 0.07	0.03 - 0.14	
0.002 - 0.004	0.003 - 0.008	0.003 - 0.039	0.016 - 0.08	0.03 - 0.12	0.05 - 0.23	
0.002 - 0.003	0.002 - 0.006	0.003 - 0.031	0.013 - 0.06	0.03 - 0.09	0.04 - 0.19	
0.002 - 0.003	0.002 - 0.006	0.003 - 0.031	0.013 - 0.06	0.03 - 0.09	0.04 - 0.19	
0.002 - 0.003	0.002 - 0.006	0.003 - 0.031	0.013 - 0.06	0.03 - 0.09	0.04 - 0.19	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.003	0.002 - 0.006	0.003 - 0.031	0.013 - 0.06	0.03 - 0.09	0.04 - 0.19	



CUTTING CONDITIONS

Routing

Materials to be machined			CARBIDE		CUTINOX	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	30	50	60	75
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	54	60	40	60
P	Lead alloyed cutting steel		30	40	60	75
P	High alloyed steel	700 – 1500 N/mm ²	20	30	35	50
M	Stainless steel	400 – 700 N/mm ²	20	25	30	35
M	DUPLEX stainless steel	> 800 N/mm ²	45	60	25	30
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	28	40	60	75
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	28	40	35	50
K	Nodular ferritic cast iron / Malleable cast iron		20	24	35	50
S	Special alloys / Heat resistant stainless steel		32	48	25	30
S	Titanium, titanium alloys		80	120	40	60
N	Copper alloys - easy to machine (brass - bronze)		50	80	90	130
N	Copper alloys - difficult to machine / Aluminium bronze		80	150	60	90
N	Aluminium alloys	Si < 8%	60	110	90	160
N	Cast aluminium	Si > 8%	100	200	70	120
N	Plastic		50	80	110	220
N	Gold, silver		80	150	60	90

CUTTING CONDITIONS

Materials to be machined			CARBIDE n [rev/min]	ENGRAVING		ROUTING	
				Vf[mm/min]	ap[mm]	Vf[mm/min]	ap[mm]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	10 - 35'000	50 - 200	< 0.05	80 - 250	< 0.1
N	Copper alloys - easy to machine (brass - bronze)		10 - 35'000	50 - 250	< 0.08	100 - 280	< 0.15
N	Copper alloys - difficult to machine / Aluminium bronze		10 - 35'000	50 - 250	< 0.05	80 - 250	< 0.1
N	Aluminium alloys	Si < 8%	10 - 35'000	50 - 250	< 0.08	100 - 280	< 0.15
N	Gold, silver		10 - 35'000	50 - 250	< 0.08	100 - 280	< 0.15

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.30 - 0.50	$\emptyset D_1$ 0.50 - 1.00	$\emptyset D_1$ 1.00 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 8.00	$\emptyset D_1$ 8.00 - 12.00	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.002 - 0.004	0.002 - 0.008	0.003 - 0.038	0.015 - 0.08	0.03 - 0.11	0.05 - 0.23	
0.002 - 0.005	0.003 - 0.009	0.004 - 0.047	0.019 - 0.09	0.04 - 0.14	0.06 - 0.28	
0.004 - 0.008	0.005 - 0.016	0.006 - 0.078	0.031 - 0.16	0.06 - 0.23	0.09 - 0.47	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	
0.005 - 0.009	0.006 - 0.019	0.008 - 0.094	0.038 - 0.19	0.08 - 0.28	0.11 - 0.5	
0.003 - 0.006	0.004 - 0.013	0.005 - 0.063	0.025 - 0.13	0.05 - 0.19	0.08 - 0.38	





TRONÇONNAGE

ABTRENNEN

SLITTING

TRONCATURA

DARABOLÁS

TRONZADO

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SELECTION OF TOOLS

✓ = item from stock

SLITTING SAWS

		Page		☐ CARBIDE	☐ CUTINOX			
DIXI 1531 Ø 15 - 125		246	 	✓				
DIXI 1533 Ø 15 - 160		248	 	✓				
DIXI 1539 Ø 10 - 50		251		✓				
DIXI 1534 Ø 20 - 100		253	 	✓				
DIXI 1537 Ø 50 - 100		254	 		✓			
DIXI 1640 Ø 50 - 100		255		✓				

MILLING ARBORS

DIXI 2713 Ø 3 - 16		256						
DIXI 2714 Ø 5 - 16		256						

T-SLOT CUTTERS

DIXI 1525 Ø 2 - 30		257		✓	✓			
DIXI 1528 Ø 4 - 30		258		✓	✓			
DIXI 1527 Ø 4 - 16		259		✓	✓			

○ good ⊙ excellent

Steel +Pb	Low alloyed steel	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
⊙	⊙	⊙	○		⊙	⊙	⊙	○	○	○		○
○	○	○	○		⊙	○	○	○	○	○		○
○	○	○	○		⊙	○	○	○	○			
○	○	○	⊙		○	○	○	⊙	⊙	⊙		⊙
○	○	⊙	⊙			⊙	⊙	○	○	○		○
○	○	○	○		⊙	○	○	⊙	○	○		○

⊙	⊙	○	○		⊙	○	○	⊙	○	⊙		○
⊙	⊙	○	○		⊙	○	○	⊙	○	⊙		○
⊙	⊙	○	○		⊙	○	○	⊙	○	⊙		○



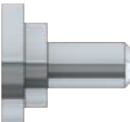
SELECTION OF SLITTING SAWS

✓ = item from stock

HOB CUTTERS

		Page		☐ CARBIDE				
DIXI 1675 Ø 6 - 24		260		✓				
DIXI 1680 Ø 6 - 24		260		✓				
DIXI 1685 Ø 6 - 24		261		✓				
DIXI 1690 Ø 10 - 12		262		✓				
DIXI 1674 Ø 6 - 24		262		✓				
DIXI 1672 Ø 4 - 6		261		✓				
DIXI 1673 Ø 4 - 6		261		✓				

SUPPORTING DISCS

DIXI 0700 DIXI 0710		263		✓				
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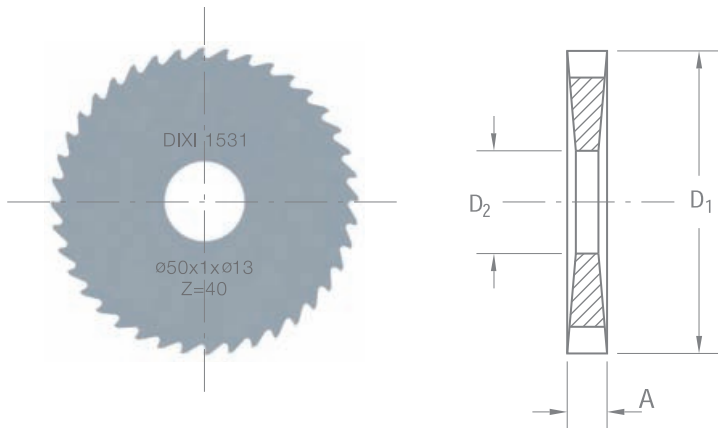
○ good ⊙ excellent

Steel +Pb	Low alloyed steel	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
⊙	⊙	○	○				○	⊙	○	⊙		
⊙	⊙	○	○				○	⊙	○	⊙		
⊙	⊙	○	○				○	⊙	○	⊙		
⊙	⊙	○	○				○	⊙	○	⊙		
⊙	⊙	○	○				○	⊙	○	⊙		
⊙	⊙	○	○				○	⊙	○	⊙		
⊙	⊙	○	○				○	⊙	○	⊙		

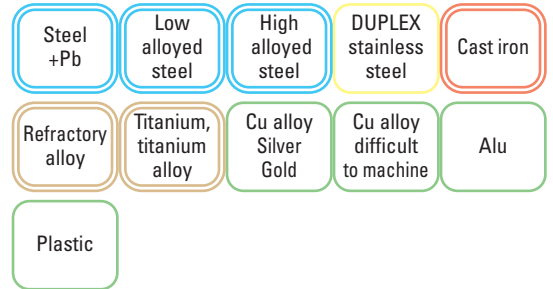


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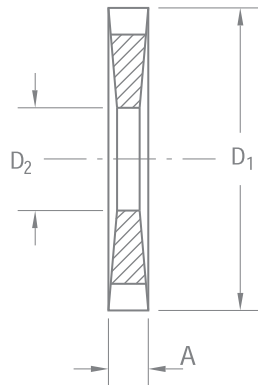
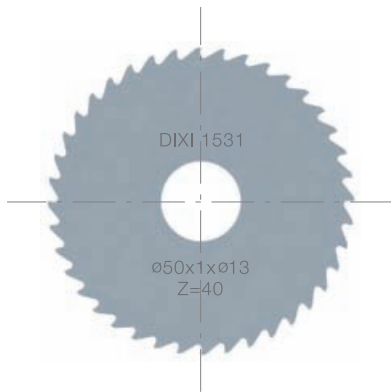
D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
15	0.20	5	32	37180
15	0.30	5	24	37182
15	0.40	5	24	35382
15	0.50	5	24	35383
15	0.60	5	20	601
15	0.70	5	20	603
15	0.80	5	20	2532
15	0.90	5	20	7707
15	1.00	5	20	602
15	1.20	5	16	38947
15	1.50	5	16	38948
15	1.60	5	16	42457
15	1.80	5	16	42536
15	2.00	5	16	38949
20	0.20	5	40	35384
20	0.30	5	32	35385
20	0.40	5	32	3281
20	0.50	5	24	31481
20	0.60	5	24	604
20	0.70	5	24	605
20	0.80	5	24	37080
20	0.90	5	20	3282
20	1.00	5	20	3283
20	1.20	5	20	2425
20	1.50	5	20	3287
20	1.60	5	20	3288
20	1.80	5	20	3290
20	2.00	5	16	42458
20	2.50	5	16	42459
25	0.30	8	40	37740
25	0.40	8	32	42461
25	0.50	8	32	42376
25	0.60	8	24	42377
25	0.70	8	24	42378
25	0.80	8	24	2479
25	0.90	8	24	42379
25	1.00	8	24	42380
25	1.20	8	24	42462
25	1.50	8	20	3299
25	1.60	8	20	3300
25	1.80	8	20	3301
25	2.00	8	20	3303
25	2.50	8	20	3305

D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
30	0.30	8	40	37845
30	0.40	8	40	37841
30	0.50	8	40	35386
30	0.60	8	32	30662
30	0.70	8	32	3309
30	0.80	8	32	41350
30	0.90	8	32	41351
30	1.00	8	32	36413
30	1.20	8	24	1327
30	1.50	8	24	3316
30	1.60	8	24	3317
30	1.80	8	24	3319
30	2.00	8	24	3321
30	2.50	8	20	42466
30	3.00	8	20	42467
30	4.00	8	20	42468
40	0.40	10	48	42470
40	0.50	10	40	2662
40	0.60	10	40	6348
40	0.70	10	40	17953
40	0.80	10	40	42471
40	0.90	10	32	38817
40	1.00	10	32	3034
40	1.20	10	32	3307
40	1.50	10	32	3326
40	1.60	10	32	3798
40	1.80	10	24	39499
40	2.00	10	24	42472
40	2.50	10	24	42473
40	3.00	10	24	42474
40	4.00	10	20	42475
50	0.40	13	48	26023
50	0.50	13	48	42477
50	0.60	13	48	42478
50	0.70	13	48	14681
50	0.80	13	40	3330
50	0.90	13	40	41064
50	1.00	13	40	8636
50	1.20	13	40	8637
50	1.40	13	32	3336
50	1.50	13	32	25731
50	1.60	13	32	3337
50	1.80	13	32	3657





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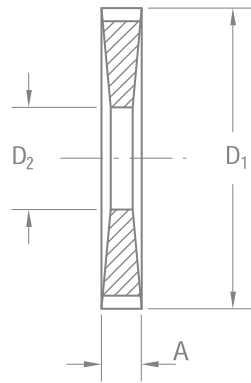
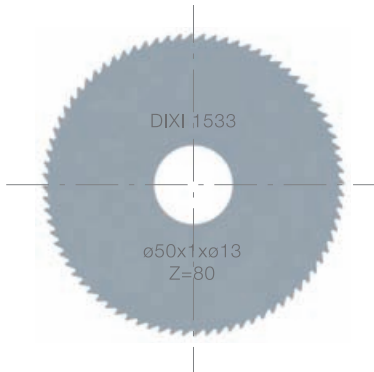


Steel +Pb	Low alloy steel	High alloy steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
50	2.00	13	32	2533
50	2.50	13	32	3339
50	3.00	13	32	42479
63	0.80	16	48	3342
63	0.90	16	48	49467
63	1.00	16	48	609
63	1.20	16	40	3658
63	1.50	16	40	3345
63	1.60	16	40	3346
63	1.80	16	40	3347
63	2.00	16	40	610
63	2.50	16	32	42483
63	3.00	16	32	611
80	0.80	22	64	6070
80	0.90	22	64	49665
80	1.00	22	48	3054
80	1.20	22	48	4016
80	1.50	22	48	3349
80	1.60	22	48	34808
80	1.80	22	40	22178
80	2.00	22	40	2807
80	2.50	22	40	42484
80	3.00	22	40	21847
100	1.00	22	64	38542
100	1.20	22	64	38543
100	1.50	22	48	35387
100	1.60	22	48	39146
100	1.80	22	48	38927
100	2.00	22	48	38928
100	2.50	22	48	36588
100	3.00	22	48	38713
125	1.00	22	80	42489
125	1.20	22	64	42490
125	1.50	22	64	38480
125	1.60	22	64	42492
125	1.80	22	64	42493
125	2.00	22	64	39005

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Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

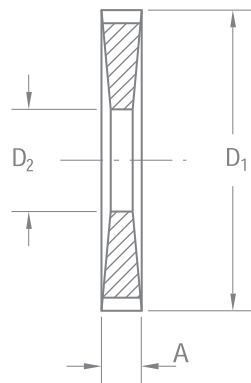
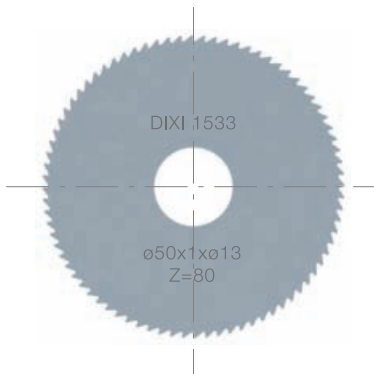
D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
15	0.20	5	64	36382
15	0.25	5	64	35635
15	0.30	5	48	3707
15	0.40	5	48	3708
15	0.50	5	48	613
15	0.60	5	40	5453
15	0.70	5	40	6183
15	0.80	5	40	3244
15	0.90	5	40	3245
15	1.00	5	40	614
15	1.10	5	32	43250
15	1.20	5	32	37174
15	1.50	5	32	40710
15	1.60	5	32	40711
15	1.70	5	32	40712
15	1.80	5	32	40713
15	2.00	5	32	37175
20	0.20	5	80	617
20	0.25	5	64	618
20	0.30	5	64	34590
20	0.40	5	64	1659
20	0.50	5	48	18560
20	0.60	5	48	36647
20	0.70	5	48	39659
20	0.80	5	48	627
20	0.90	5	48	623
20	1.00	5	40	35565
20	1.10	5	40	2689
20	1.20	5	40	38141
20	1.30	5	40	3407
20	1.40	5	40	3408
20	1.50	5	40	624
20	1.60	5	40	3010
20	1.80	5	40	23600
20	2.00	5	32	625
20	2.50	5	32	36690
20	3.00	5	32	626
25	0.20	8	80	1660
25	0.25	8	80	3249
25	0.30	8	80	2421
25	0.35	8	80	1688

D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
25	0.40	8	64	37661
25	0.50	8	64	14254
25	0.60	8	64	630
25	0.70	8	64	36365
25	0.80	8	48	632
25	0.90	8	48	633
25	1.00	8	48	634
25	1.10	8	48	2422
25	1.20	8	48	3250
25	1.30	8	48	3410
25	1.40	8	48	3412
25	1.50	8	40	35450
25	1.60	8	40	3413
25	1.80	8	40	3414
25	2.00	8	40	636
25	2.50	8	40	637
25	3.00	8	32	38971
25	4.00	8	32	3728
30	0.20	8	100	14689
30	0.25	8	100	4262
30	0.30	8	80	638
30	0.40	8	80	639
30	0.50	8	80	18429
30	0.60	8	64	18375
30	0.70	8	64	37731
30	0.80	8	64	35516
30	0.90	8	64	36052
30	1.00	8	64	2376
30	1.10	8	48	35420
30	1.20	8	48	36384
30	1.30	8	48	3417
30	1.40	8	48	2424
30	1.50	8	48	2924
30	1.60	8	48	3418
30	1.70	8	48	5948
30	1.80	8	48	6362
30	2.00	8	48	645
30	2.50	8	40	6361
30	3.00	8	40	3419
30	4.00	8	40	33482
30	5.00	8	32	35095





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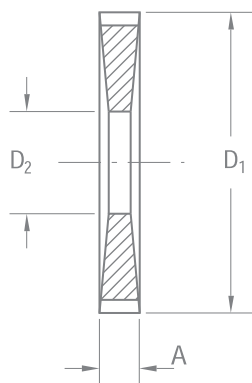
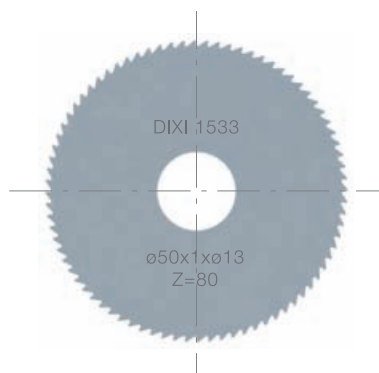
Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
40	0.20	10	128	24084
40	0.25	10	100	22049
40	0.30	10	100	35370
40	0.40	10	100	4690
40	0.50	10	80	648
40	0.60	10	80	677
40	0.70	10	80	649
40	0.80	10	80	35444
40	0.90	10	80	35369
40	1.00	10	64	653
40	1.10	10	64	3253
40	1.20	10	64	36049
40	1.30	10	64	43352
40	1.40	10	64	3422
40	1.50	10	64	36050
40	1.60	10	64	36051
40	1.70	10	64	6170
40	1.80	10	64	3424
40	2.00	10	48	656
40	2.50	10	48	36648
40	3.00	10	48	658
40	4.00	10	40	3737
40	5.00	10	40	35097
50	0.20	13	128	36385
50	0.25	13	128	3426
50	0.30	13	128	659
50	0.40	13	100	35234
50	0.50	13	100	31880
50	0.60	13	100	3030
50	0.70	13	100	2957
50	0.80	13	80	661
50	0.90	13	80	3255
50	1.00	13	80	662
50	1.10	13	80	1663
50	1.20	13	80	2536
50	1.30	13	80	3429
50	1.40	13	80	43114
50	1.50	13	64	37517
50	1.60	13	64	663
50	1.70	13	64	8001
50	1.80	13	64	36336
50	2.00	13	64	37806

D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
50	2.50	13	64	37732
50	3.00	13	48	35636
50	4.00	13	48	667
50	5.00	13	48	35109
63	0.30	16	128	5398
63	0.40	16	128	669
63	0.50	16	128	2969
63	0.60	16	100	2634
63	0.70	16	100	3207
63	0.80	16	100	36739
63	0.90	16	100	36386
63	1.00	16	100	671
63	1.20	16	80	35233
63	1.40	16	80	5093
63	1.50	16	80	2774
63	1.60	16	80	676
63	1.70	16	80	3432
63	1.80	16	80	3433
63	2.00	16	80	672
63	2.50	16	64	673
63	3.00	16	64	674
63	4.00	16	64	3748
63	5.00	16	48	31882
80	0.80	22	128	35817
80	0.90	22	128	46466
80	1.00	22	100	679
80	1.20	22	100	680
80	1.50	22	100	35721
80	1.60	22	100	19241
80	1.80	22	100	14115
80	2.00	22	80	17745
80	2.50	22	80	4030
80	3.00	22	80	684
80	4.00	22	80	21256
80	5.00	22	80	35122



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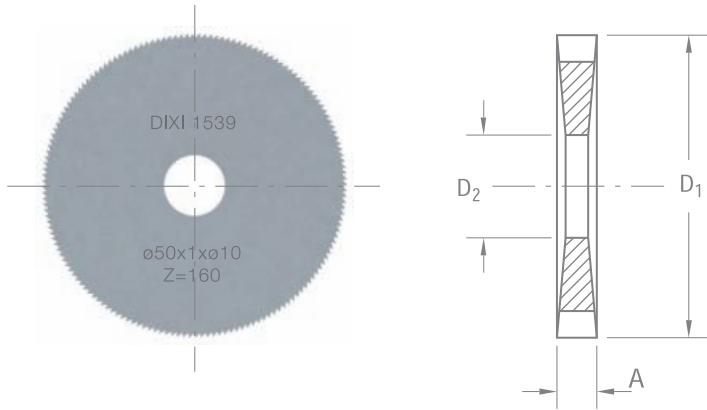
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Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
100	0.80	22	128	685
100	1.00	22	128	35816
100	1.20	22	128	38383
100	1.50	22	100	36363
100	1.60	22	100	3438
100	1.80	22	100	6057
100	2.00	22	100	36048
100	2.50	22	100	689
100	3.00	22	80	36364
100	4.00	22	80	35138
100	5.00	22	80	35136
125	1.00	22	160	30687
125	1.20	22	128	35141
125	1.50	22	128	34954
125	2.00	22	128	34827
125	3.00	22	100	35294
160	1.20	32	160	34523
160	1.50	32	160	35299

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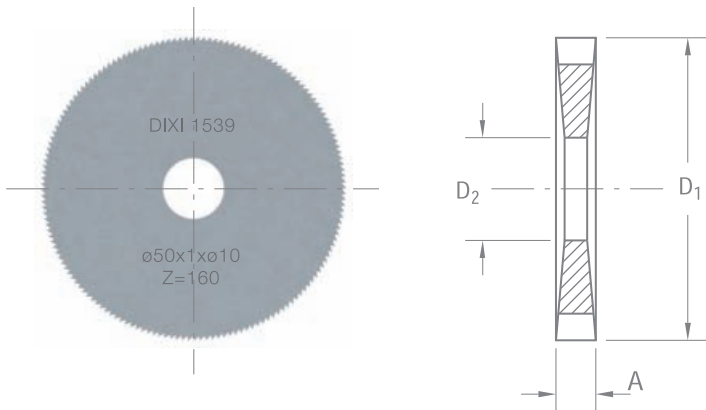
Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	

$D_1 \pm 0.03$	$A \pm 0.005$	$D_2 H_6$	Z	CARBIDE
10	0.10	3	60	964494
10	0.11	3	60	964499
10	0.12	3	60	964500
10	0.13	3	60	964501
10	0.14	3	60	964502
10	0.15	3	60	964503
10	0.16	3	60	964504
10	0.17	3	60	964505
10	0.18	3	60	964506
10	0.19	3	60	964507
10	0.20	3	60	964508
10	0.22	3	60	965568
10	0.24	3	60	963179
15	0.08	5	80	45005
15	0.10	5	80	40599
15	0.11	5	80	57238
15	0.12	5	80	23559
15	0.13	5	80	46325
15	0.14	5	80	38354
15	0.15	5	80	40588
15	0.16	5	80	28784
15	0.17	5	80	57240
15	0.18	5	80	27224
15	0.19	5	80	46858
15	0.20	5	80	19385
15	0.21	5	80	66021
15	0.22	5	80	60191
15	0.23	5	80	58358
15	0.24	5	80	950356
15	0.25	5	80	19823
15	0.30	5	80	26517
15	0.35	5	80	40299
15	0.40	5	80	19825
15	0.50	5	80	19826
15	0.60	5	80	40300
15	0.70	5	80	40301
15	0.80	5	80	40302
15	0.90	5	80	40303
15	1.00	5	80	26518
15	1.10	5	80	40304
15	1.20	5	80	40305
15	1.40	5	80	40306
15	1.50	5	80	33843

$D_1 \pm 0.03$	$A \pm 0.005$	$D_2 H_6$	Z	CARBIDE
20	0.12	5	100	40314
20	0.14	5	100	40307
20	0.15	5	100	43684
20	0.16	5	100	4913
20	0.18	5	100	16032
20	0.20	5	100	4914
20	0.25	5	100	28665
20	0.30	5	100	28340
20	0.35	5	100	40317
20	0.40	5	100	38355
20	0.50	5	100	35628
20	0.60	5	100	40320
20	0.70	5	100	40322
20	0.80	5	100	40324
20	0.90	5	100	40326
20	1.00	5	100	40328
20	1.10	5	100	40330
20	1.20	5	100	40332
20	1.40	5	100	40334
20	1.50	5	100	40336
20	0.12	6	100	40315
20	0.14	6	100	40308
20	0.16	6	100	40309
20	0.18	6	100	40310
20	0.20	6	100	40311
20	0.25	6	100	40312
20	0.30	6	100	40313
20	0.35	6	100	40316
20	0.40	6	100	40318
20	0.50	6	100	40319
20	0.60	6	100	40321
20	0.70	6	100	40323
20	0.80	6	100	40325
20	0.90	6	100	40327
20	1.00	6	100	40329
20	1.10	6	100	40331
20	1.20	6	100	40333
20	1.40	6	100	40335
20	1.50	6	100	40337



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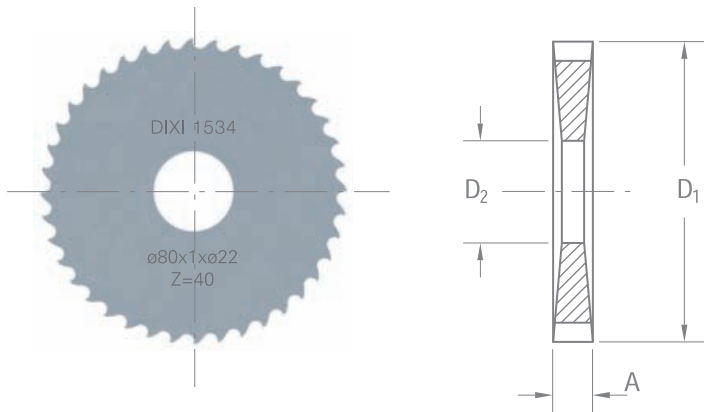
Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	

D_1 js10	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
25	0.20	6	120	3649
25	0.25	6	120	40339
25	0.30	6	120	40341
25	0.35	6	120	40343
25	0.40	6	120	40345
25	0.50	6	120	40347
25	0.60	6	120	40349
25	0.70	6	120	40351
25	0.80	6	120	40353
25	0.90	6	120	40355
25	1.00	6	120	40357
25	1.10	6	120	40359
25	1.20	6	120	40361
25	1.40	6	120	40363
25	1.50	6	120	40365
25	0.20	8	120	40338
25	0.25	8	120	40340
25	0.30	8	120	40342
25	0.35	8	120	40344
25	0.40	8	120	40346
25	0.50	8	120	40348
25	0.60	8	120	40350
25	0.70	8	120	40352
25	0.80	8	120	40354
25	0.90	8	120	40356
25	1.00	8	120	40358
25	1.10	8	120	40360
25	1.20	8	120	40362
25	1.40	8	120	40364
25	1.50	8	120	40366
30	0.30	8	128	40367
30	0.35	8	128	40368
30	0.40	8	128	40369
30	0.50	8	128	40370
30	0.60	8	128	40371
30	0.70	8	128	40372
30	0.80	8	128	40373
30	0.90	8	128	40374
30	1.00	8	128	40375
30	1.10	8	128	40376
30	1.20	8	128	40377
30	1.40	8	128	40378
30	1.50	8	128	40379

D_1 js10	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE
40	0.30	8	160	40393
40	0.35	8	160	40395
40	0.40	8	160	40397
40	0.50	8	160	40399
40	0.60	8	160	40401
40	0.70	8	160	40403
40	0.80	8	160	40405
40	0.90	8	160	40407
40	1.00	8	160	40409
40	1.20	8	160	40413
40	1.40	8	160	40415
40	1.50	8	160	40417
40	0.30	10	160	40394
40	0.35	10	160	40396
40	0.40	10	160	40398
40	0.50	10	160	40400
40	0.60	10	160	40402
40	0.70	10	160	40404
40	0.80	10	160	40406
40	0.90	10	160	40408
40	1.00	10	160	40410
40	1.10	10	160	40412
40	1.20	10	160	40414
40	1.50	10	160	40418
50	0.30	10	160	40445
50	0.40	10	160	40447
50	0.50	10	160	40448
50	0.60	10	160	40449
50	0.70	10	160	40450
50	0.80	10	160	40451
50	0.90	10	160	40452
50	1.00	10	160	40453
50	1.20	10	160	40455
50	1.50	10	160	40457

DIXI 1534

SLITTING SAWS HELLER PITCH TEETH



P. 268



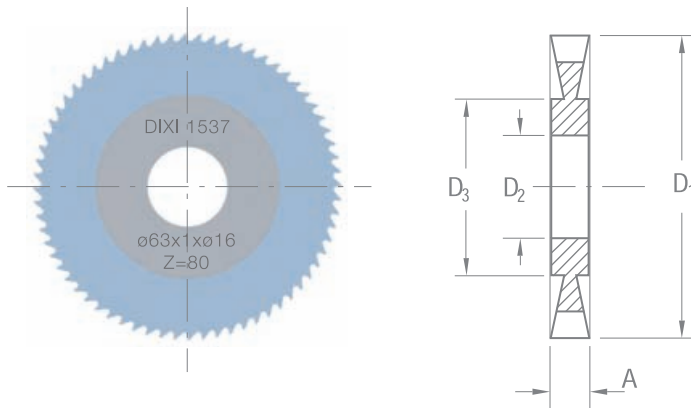
Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

D ₁ js12	A ±0.01	D ₂ H6	Z	CARBIDE
20	0.30	5	32	34869
20	0.50	5	24	29836
20	0.60	5	24	29541
20	0.70	5	24	29282
20	0.80	5	24	31598
20	1.00	5	20	39176
20	1.20	5	20	42582
20	1.50	5	20	31267
20	2.00	5	16	39550
25	0.30	8	40	29785
25	0.50	8	32	42427
25	0.60	8	32	42428
25	0.80	8	24	29542
25	0.90	8	24	42430
25	1.00	8	24	30411
25	1.30	8	24	42431
25	1.50	8	20	38204
30	0.30	8	40	42434
30	0.40	8	40	42435
30	0.50	8	40	28826
30	0.60	8	32	3308
30	0.80	8	32	38804
30	1.00	8	32	38806
30	1.20	8	24	36576
30	1.30	8	24	38114
30	1.50	8	24	36577
30	1.60	8	24	38756
30	2.00	8	24	35379
40	0.50	10	40	34152
40	0.80	10	40	29793
40	1.00	10	32	32137
40	2.00	10	24	35310
50	0.50	13	48	14901
50	0.80	13	40	29704
50	1.00	13	40	5111
50	1.50	13	40	39153
50	2.00	13	32	37281

D ₁ js12	A ±0.01	D ₂ H6	Z	CARBIDE
63	0.40	16	64	34999
63	0.50	16	64	2872
63	0.60	16	48	37364
63	0.80	16	48	29794
63	1.00	16	48	28979
63	1.30	16	40	40597
63	1.50	16	40	28990
63	1.60	16	40	41638
63	1.80	16	40	37787
63	2.00	16	40	28845
63	2.50	16	32	35380
63	3.00	16	32	28828
80	0.80	22	64	36043
80	1.00	22	48	29219
80	1.20	22	48	35967
80	1.50	22	48	18568
80	2.00	22	40	28829
100	0.80	22	64	35381
100	1.00	22	64	35429
100	1.20	22	64	35431
100	1.50	22	48	25267
100	1.60	22	48	25335
100	2.00	22	48	29408

DIXI 1537 CUTINOX

SLITTING SAWS FOR STAINLESS STEEL



P. 272

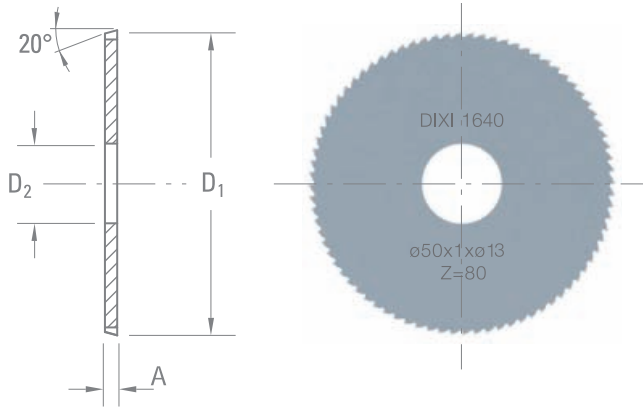


Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Refractory alloy
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu	Plastic

D_1 js12	$A_{\pm 0.01}$	D_3	D_2 H6	Z	CUTINOX
50	0.80	30	13	68	954330
50	1.00	30	13	68	954331
63	0.60	40	16	80	60407
63	0.80	40	16	80	60408
63	1.00	40	16	80	60409
80	0.60	50	22	100	60410
80	0.80	50	22	100	60411
80	1.00	50	22	100	60414
100	0.80	60	22	120	60412
100	1.00	60	22	120	60413

DIXI 1640 R + L

PARTING OFF SLITTING SAWS LEFT AND RIGHT HAND CUTTING

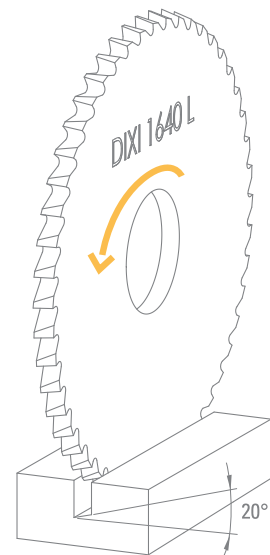


P. 268

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

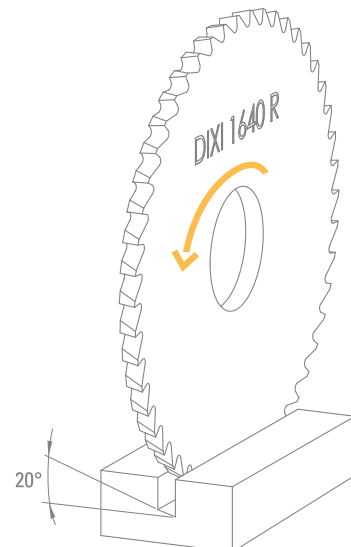
DIXI 1640 L

D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE	CUTINOX
50	0.50	13	100	977529	977548
50	0.80	13	80	977530	957215
50	1.00	13	80	977531	977549
63	0.50	16	128	977532	977552
63	0.80	16	100	954255	977553
63	1.00	16	100	977533	955787
80	0.80	22	128	975393	975569
80	1.00	22	100	977534	977554
100	0.80	22	100	977535	977555
100	1.00	22	100	977536	977556



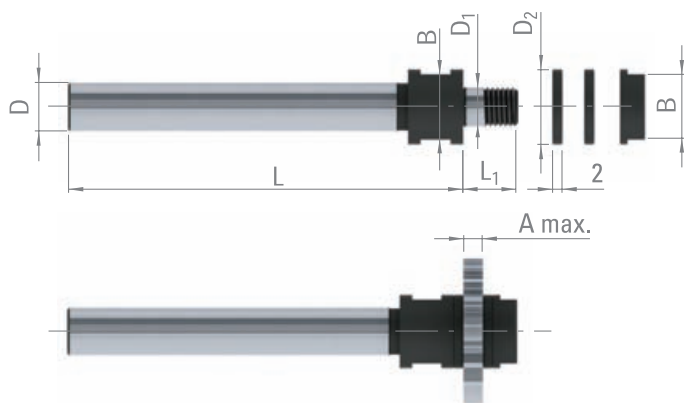
DIXI 1640 R

D_1 js12	$A_{\pm 0.01}$	D_2 H6	Z	CARBIDE	CUTINOX
50	0.50	13	100	977520	977537
50	0.80	13	80	977521	977538
50	1.00	13	80	59024	977539
63	0.50	16	128	977522	977540
63	0.80	16	100	977523	977541
63	1.00	16	100	977524	977542
80	0.80	22	128	977525	977543
80	1.00	22	100	977526	977544
100	0.80	22	100	977527	977545
100	1.00	22	100	977528	977547



DIXI 2713

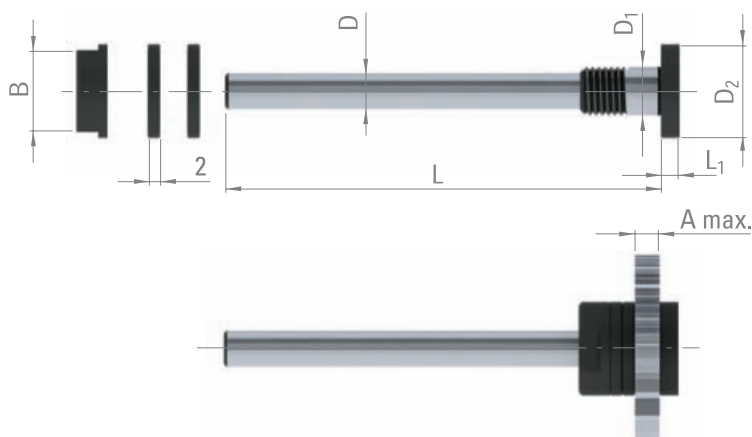
MILLING ARBORS WITH FRONT CLAMPING



$D_{1\ h6}$	D_{h6}	D_2	L	L_1	B	$A_{max.}$	Art.
3.00	5	5	60	7.0	4	3	968329
5.00	6	10	70	10.0	8	6	953911
5.00	10	10	80	10.0	8	6	953917
6.00	10	12	80	10.5	10	6	953918
8.00	10	15	80	10.0	13	6	954975
8.00	12	15	90	11.0	13	6	953919
10.00	10	18	80	10.5	15	6	954976
10.00	16	18	100	11.5	15	6	953920
13.00	16	22	110	12.0	19	6	953921
16.00	20	26	120	13.0	22	6	953922

DIXI 2714

MILLING ARBORS WITH REAR CLAMPING

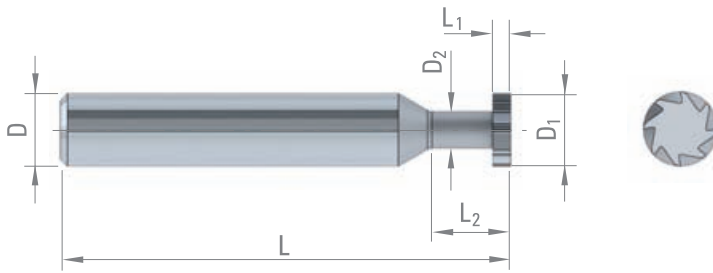


$D_{1\ h6}$	D_{h6}	D_2	L	L_1	B	$A_{max.}$	Art.
5.00	4	10	50	3.0	8	6	953923
6.00	5	12	60	3.0	10	6	953924
8.00	6	15	70	3.0	13	6	953925
8.00	7	15	80	3.0	13	6	953926
10.00	6	18	70	3.5	15	6	953927
10.00	8	18	90	3.5	15	6	953928
13.00	10	22	110	3.5	19	6	953929
16.00	12	26	120	3.5	22	6	953930

T-SLOT CUTTERS
STRAIGHT FLUTE



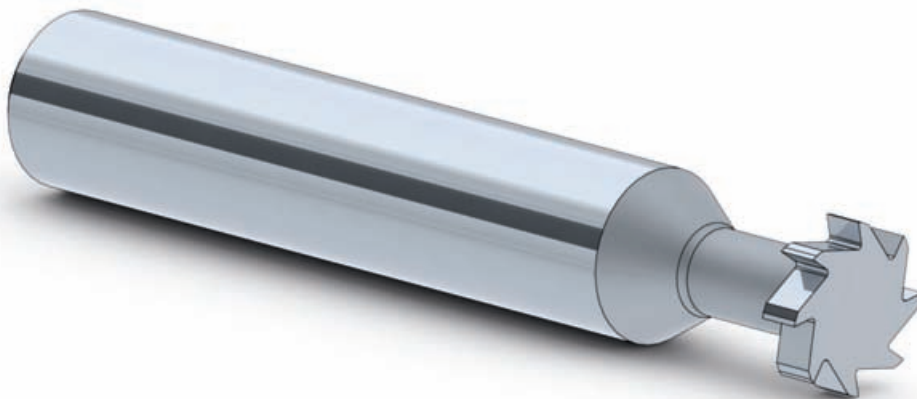
P. 274



Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

D ₁ Ø < 4.0 ±0.01 Ø ≥ 4.0 -0.05/-0.10	L ₁	D ₂ 0/-0.20	L ₂ ±0.2	D _{h5}	L	Z	CARBIDE	CUTINOX
2.0	0.2 - 1.0	1.0	3.0	4	42	3 - 6	□	■
3.0	0.2 - 1.5	1.5	3.5	4	42	3 - 6	□	■
4.0	0.2 - 1.5	2.5	6.0	4	42	3 - 6	□	■
5.0	0.5 - 1.5	3.0	6.0	5	42	3 - 6	□	■
6.0	0.5 - 2.5	3.5	7.0	6	42	4 - 8	□	■
8.0	0.5 - 3.0	4.0	9.0	8	50	5 - 10	□	■
10.0	0.5 - 4.0	5.0	9.0	10	50	5 - 12	□	■
12.0	0.5 - 3.5	5.0	11.5	6	50	6 - 16	□	■
12.0	0.5 - 4.0	6.0	14.0	10	50	6 - 16	□	■
15.0	0.5 - 5.0	8.0	14.0	10	60	8 - 18	□	■
16.0	0.5 - 2.9	8.0	14.0	10	60	8 - 20	□	■
16.0	3.0 - 6.0	8.0	14.0	10	60	8 - 20	□	■
18.0	0.5 - 2.9	8.0	14.0	10	60	10 - 24	□	■
18.0	3.0 - 6.0	8.0	14.0	10	60	10 - 24	□	■
20.0	0.5 - 2.9	8.0	11.0	10	60	10 - 24	□	■
20.0	3.0 - 6.0	8.0	14.0	10	60	10 - 24	□	■
25.0	0.5 - 3.9	8.0	13.0	10	60	10 - 32	□	■
25.0	4.0 - 8.0	8.0	18.0	10	60	10 - 32	□	■
30.0	0.5 - 3.9	8.0	13.0	10	60	10 - 36	□	■
30.0	4.0 - 8.0	8.0	18.0	10	60	10 - 36	□	■

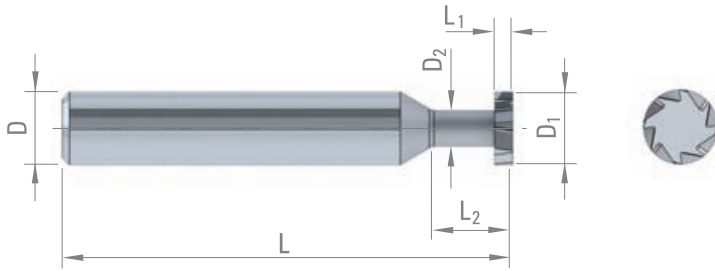
Half finished product, available from stock and adaptable to your needs.



T-SLOT CUTTERS
STAGGERED TOOTH



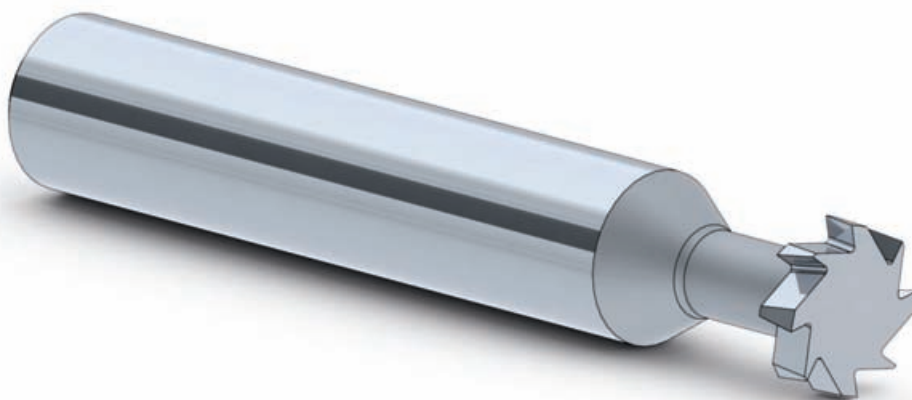
P. 274



Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

D ₁ Ø < 4.0 ±0.01 Ø ≥ 4.0 -0.05/-0.10	L ₁	D ₂ 0/-0.20	L ₂ ±0.2	D _{h5}	L	Z	CARBIDE	CUTINOX
4.0	0.5 - 3.0	2.5	6.0	4	42	4 - 6	□	■
5.0	0.5 - 3.0	3.0	6.0	5	42	4 - 6	□	■
6.0	0.5 - 3.0	3.5	7.0	6	42	4 - 6	□	■
8.0	1.0 - 4.0	4.0	9.0	8	50	4 - 8	□	■
10.0	1.0 - 4.0	5.0	9.0	10	50	6 - 10	□	■
12.0	0.5 - 3.5	5.0	11.5	6	50	6 - 10	□	■
12.0	1.0 - 5.0	6.0	14.0	10	50	6 - 10	□	■
15.0	1.5 - 6.0	8.0	14.0	10	60	8 - 14	□	■
16.0	1.5 - 3.9	8.0	14.0	10	60	8 - 14	□	■
16.0	4.0 - 6.0	8.0	14.0	10	60	8 - 14	□	■
18.0	1.5 - 3.9	8.0	14.0	10	60	10 - 16	□	■
18.0	4.0 - 6.0	8.0	14.0	10	60	10 - 16	□	■
20.0	1.5 - 3.9	8.0	11.0	10	60	10 - 18	□	■
20.0	4.0 - 6.0	8.0	14.0	10	60	10 - 18	□	■
25.0	1.5 - 4.9	8.0	13.0	10	60	10 - 24	□	■
25.0	5.0 - 10.0	8.0	18.0	10	60	14 - 24	□	■
30.0	1.5 - 4.9	8.0	13.0	10	60	18 - 28	□	■
30.0	5.0 - 10.0	8.0	18.0	10	60	18 - 28	□	■

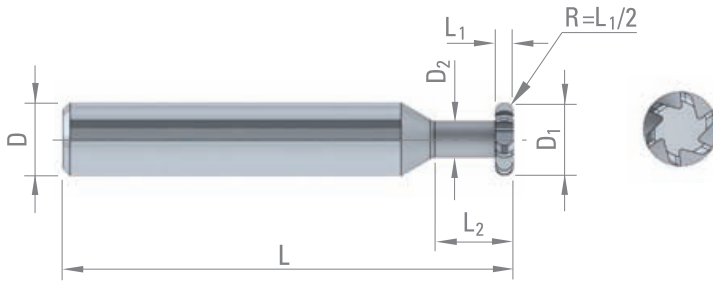
Half finished product, available from stock and adaptable to your needs.



T-SLOT CUTTERS
FULL RADIUS



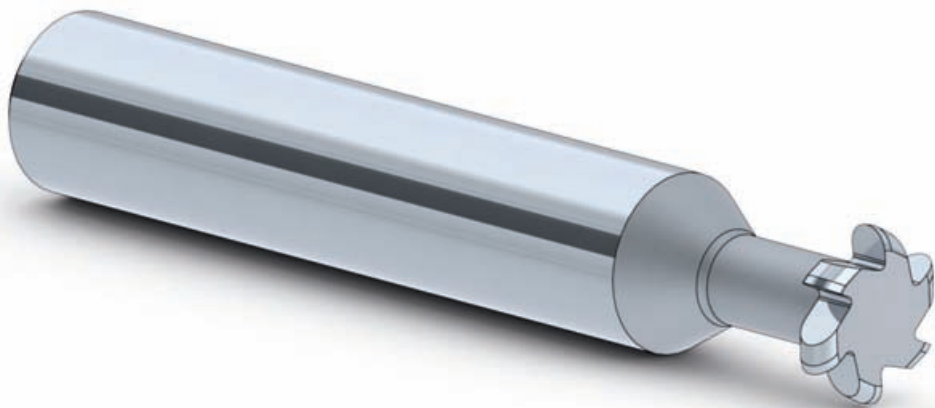
P. 274



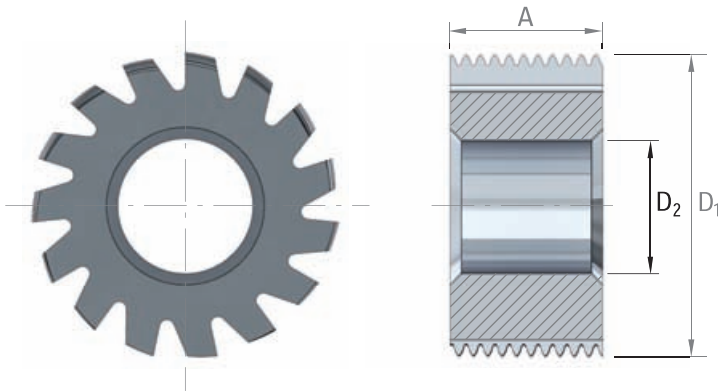
Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Plastic				

D ₁ Ø < 4.0 ±0.03 Ø ≥ 4.0 -0.05/-0.10	L ₁	D ₂ 0/-0.20	L ₂ ±0.2	D _{h5}	L	Z	CARBIDE	CUTINOX
4.0	0.4 - 1.5	1.5	6.0	4	42	4	□	■
6.0	0.5 - 2.0	3.5	7.0	6	42	6	□	■
8.0	1.0 - 3.0	4.0	9.0	8	50	6	□	■
10.0	1.0 - 4.0	5.0	9.0	10	50	8	□	■
12.0	0.5 - 3.5	5.0	11.5	6	50	10	□	■
12.0	1.0 - 5.0	6.0	14.0	10	50	10	□	■
16.0	1.0 - 6.0	8.0	14.0	10	60	12	□	■

Half finished product, available from stock and adaptable to your needs.



Other tooth shapes see page 275

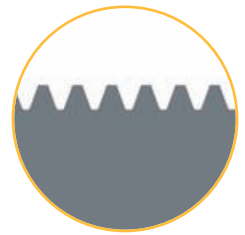
HOB CUTTERS
EPICYCLIC AND INVOLUTE PROFILE


Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine	Alu		

D ₁	A	D ₂ H3	Z	CARBIDE
6	4	3.5	12	
	5	3.5	12	
	6	3.5	12	
8	4	3.5	15	
	5	3.5	12	
	6	3.5	12	
10	4	3.5	15	
	5	3.5	12	
	6	3.5	12	
	6	4.5	12	
	6	4.5	15	
12	6	3.5	15	
	6	4.5	12	
	6	4.5	15	
	6	5.0	12	
	6	5.0	15	
	6	6.0	12	
	6	6.0	15	
	8	4.5	15	
	8	5.0	15	
	8	6.0	15	
16	10	8.0	12	
	6	8.0	12	
	6	8.0	15	
	8	8.0	12	
	8	8.0	15	
	10	8.0	12	
18	10	8.0	15	
	10	8.0	12	
	10	8.0	15	
	12	8.0	12	
	12	8.0	15	
	6	8.0	12	
	6	8.0	15	
	8	8.0	12	
24	8	8.0	15	
	10	8.0	12	
	10	8.0	15	
	12	8.0	12	
	12	8.0	15	
	16	8.0	12	
	16	8.0	15	
	16	10.0	12	

Module (m) = 0.04 - 1.00

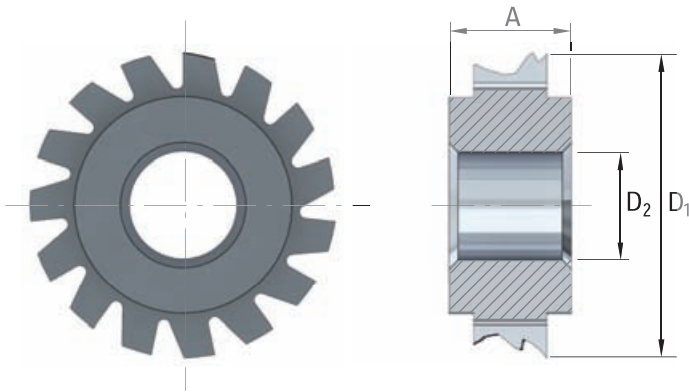
DIXI 1675
Epicyclic

DIXI 1680
Involute

Regrindable
logarithmic relief


Coatings on request

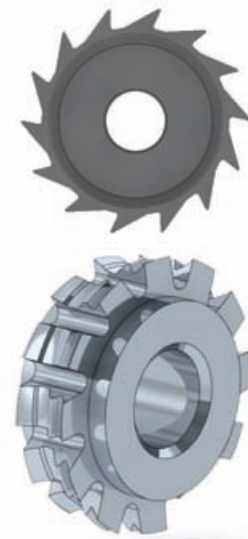
DIXI 1685 TOOLS ON REQUEST

HOB CUTTERS FOR INDEX



Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine	Alu		

D ₁	A	D ₂ H3	Z	CARBIDE
6	4	3.5	12	☐
6	5	3.5	12	☐
6	6	3.5	12	☐
8	5	3.5	12	☐
8	6	3.5	12	☐
10	5	3.5	12	☐
10	6	3.5	12	☐
10	6	4.5	12	☐
12	6	4.5	12	☐
12	6	5.0	12	☐
12	6	6.0	12	☐
16	6	8.0	12	☐
16	8	8.0	12	☐
16	10	8.0	12	☐
18	6	6.0	12	☐
18	8	8.0	12	☐
18	10	8.0	12	☐
24	6	8.0	12	☐
24	8	8.0	12	☐
24	10	8.0	12	☐
24	12	8.0	12	☐



Coatings on request

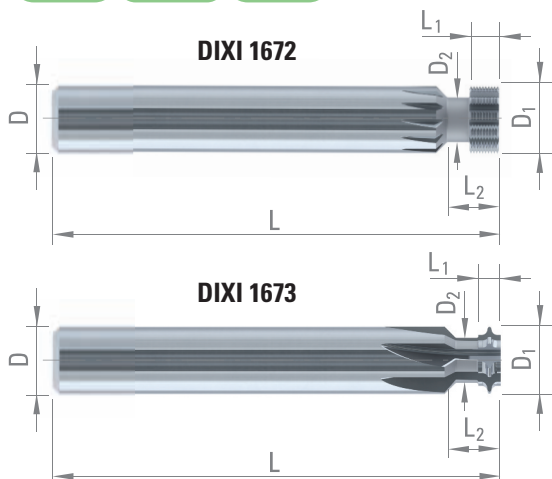
DIXI 1672 - 1673 TOOLS ON REQUEST

HOB CUTTERS

Steel +Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine	Alu		

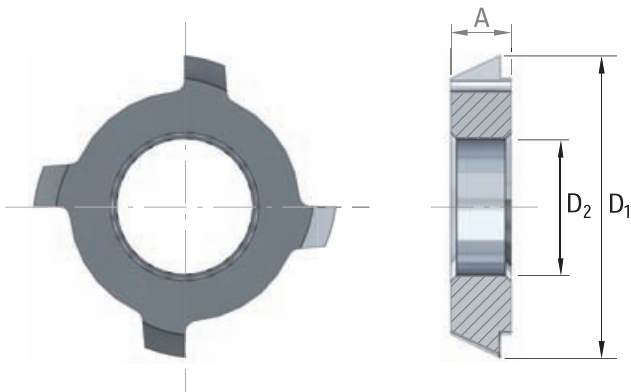
D ₁	L ₁	D ₂	L ₂	D _{h5}	L	Z	CARBIDE
4.0	4.0	2.4	4.0	4	40	6-10	☐
5.0	4.0	3.0	4.0	5	40	6-10	☐
5.0	4.0	4.0	4.0	6	40	6-10	☐
6.0	4.0	4.0	4.0	6	40	6-10	☐

D ₁	L ₁	D ₂	L ₂	D _{h5}	L	Z	CARBIDE
4.0	2.0	2.4	4.0	4	40	5	☐
5.0	2.0	3.0	4.0	5	40	6	☐
5.0	2.0	4.0	4.0	6	40	6	☐
6.0	2.0	4.0	4.0	6	40	6	☐



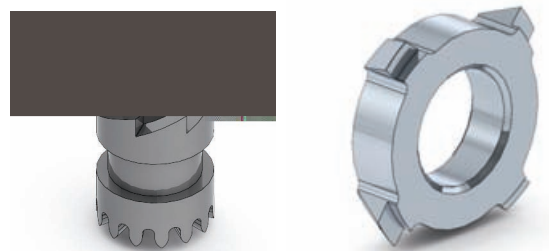
DIXI 1690 TOOLS ON REQUEST

HOB CUTTERS FRONTAL GEAR CUTTING



D_1	A	D_{2H3}	Z	CARBIDE
10	2	4.5	4	☐
10	2	4.5	5	☐
10	2	4.5	6	☐
12	2	4.5	2	☐
12	2	4.5	3	☐
12	2	4.5	4	☐
12	2	4.5	5	☐
12	2	4.5	6	☐

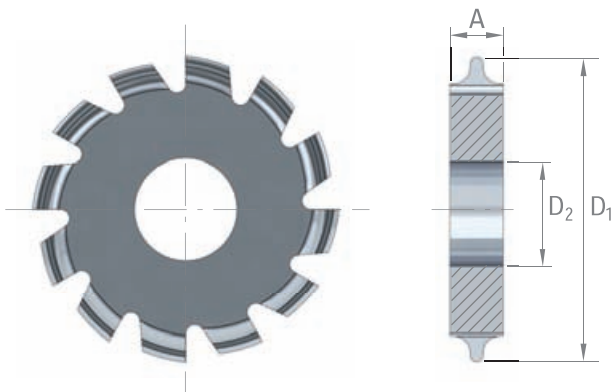
Module (m) = 0.03 - 1.00



Coatings on request

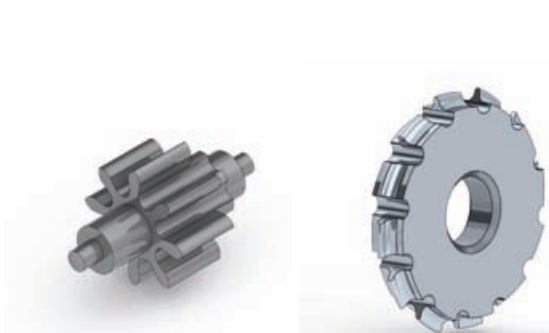
DIXI 1674 TOOLS ON REQUEST

MODULE CUTTERS TOOTH PER TOOTH CUTTING



D_1	A	D_{2H3}	Z	CARBIDE
6	4	3.5	12	☐
8	5	3.5	12	☐
8	6	3.5	12	☐
10	2	3.5	12	☐
10	2	4.5	12	☐
10	2	5.0	12	☐
10	5	3.5	12	☐
10	6	3.5	12	☐
12	2	3.5	12	☐
12	2	4.5	12	☐
12	6	5.0	12	☐
16	6	8.0	12	☐
18	6	8.0	12	☐
24	6	8.0	12	☐

Module (m) = 0.03 - 1.00



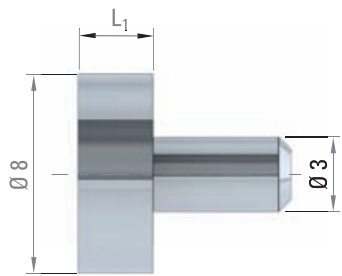
Coatings on request





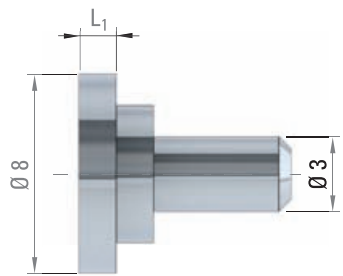
SUPPORTING DISCS

DIXI 0700-A



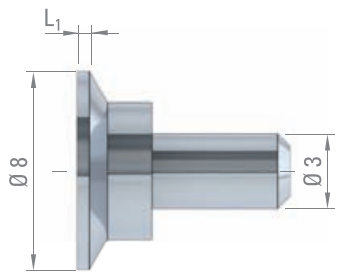
L₁ width from 3 to 5 mm
Until 8 slots

DIXI 0700-B



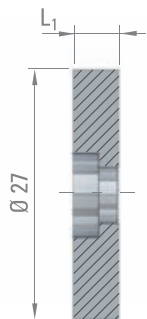
L₁ width from 1 to 2.99 mm
Until 8 slots

DIXI 0700-C



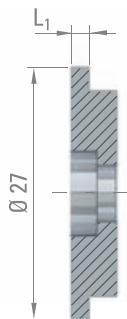
L₁ width from 0.05 to 0.99 mm
Until 8 slots

DIXI 0710-D



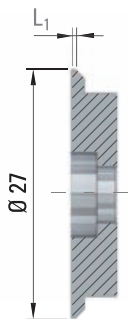
L₁ width 5 mm
Until 24 slots

DIXI 0710-E



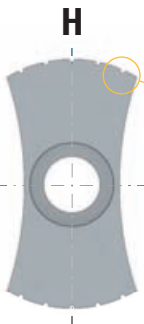
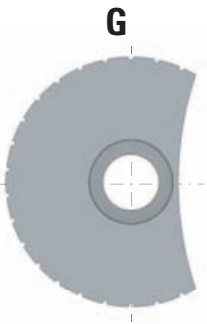
L₁ width from 1 to 4 mm
Until 24 slots

DIXI 0710-F

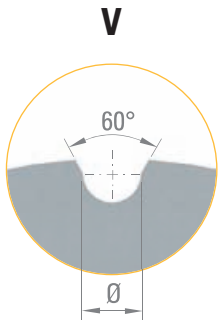
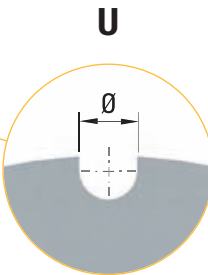


L₁ width from 0.05 to 0.99 mm
Until 24 slots

Special disc shapes for DIXI 0710



Slots shapes



To complete for order, please.

	Number of discs	DIXI ref.	Width L ₁	Disc shape G or H	Slot shape U or V	Slot Ø	Number of slots
Ex.	1	0710-E	1	G	U	0.20	3
					V	0.24	5





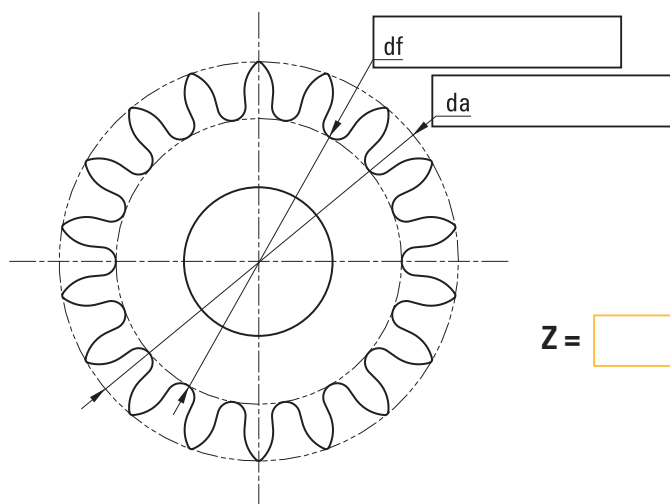
Norm

Plan

DXF

Material to be machined

Module (m)



DIXI 1675

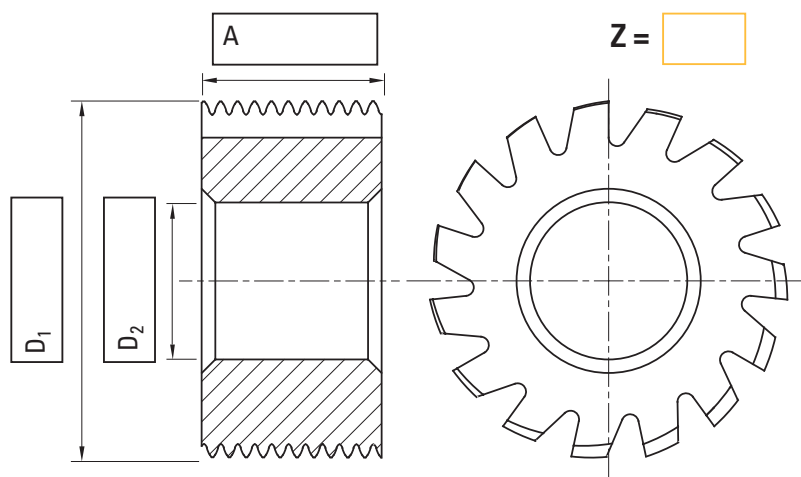
Helix angle (profile)

R ☐ L ☐

Number of profile

Coating

Quantity



DIXI 1672

$Z =$

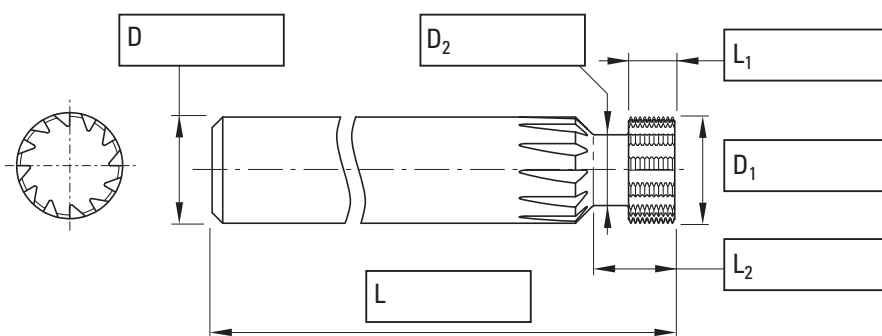
Helix angle (profile)

R ☐ L ☐

Number of profile

Coating

Quantity



Notice





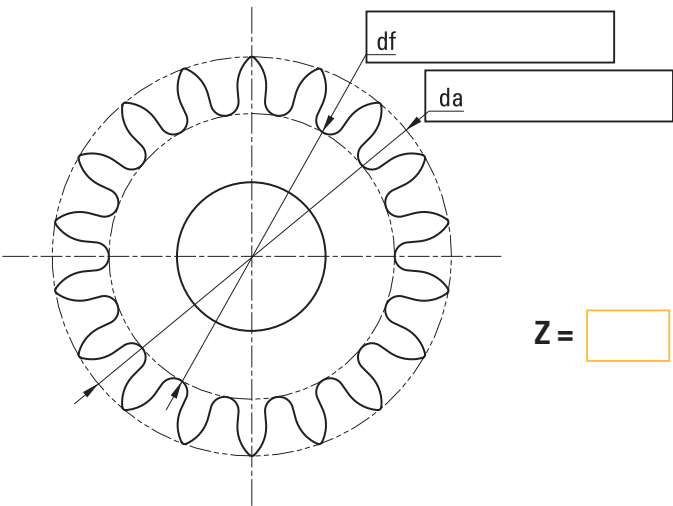
Norm _____

Plan _____

DXF _____

Material to be machined _____

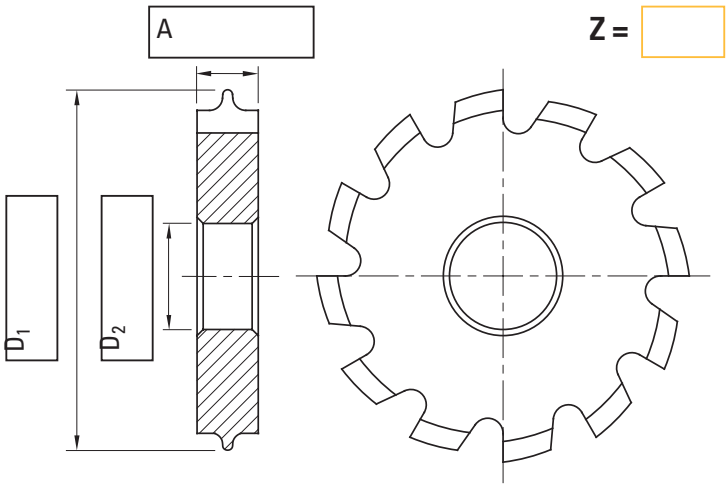
Module (m) _____



DIXI 1674

Coating _____

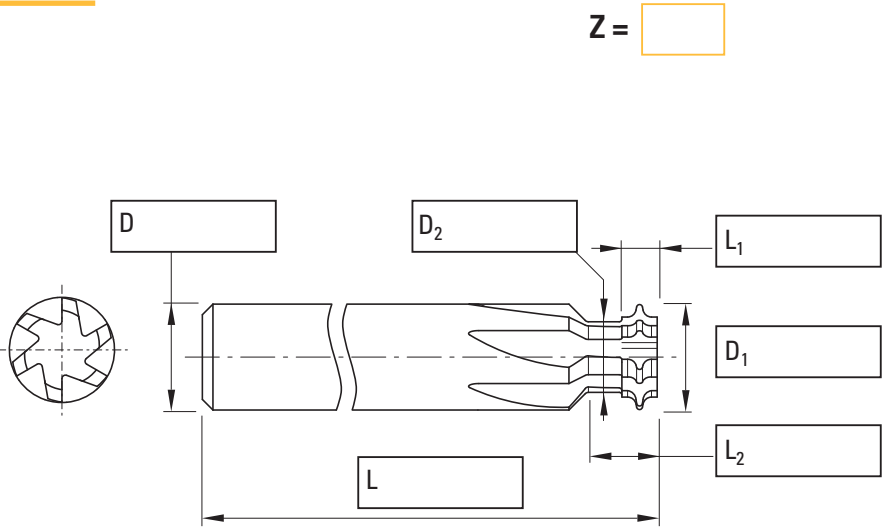
Quantity _____



DIXI 1673

Coating _____

Quantity _____



Notice _____

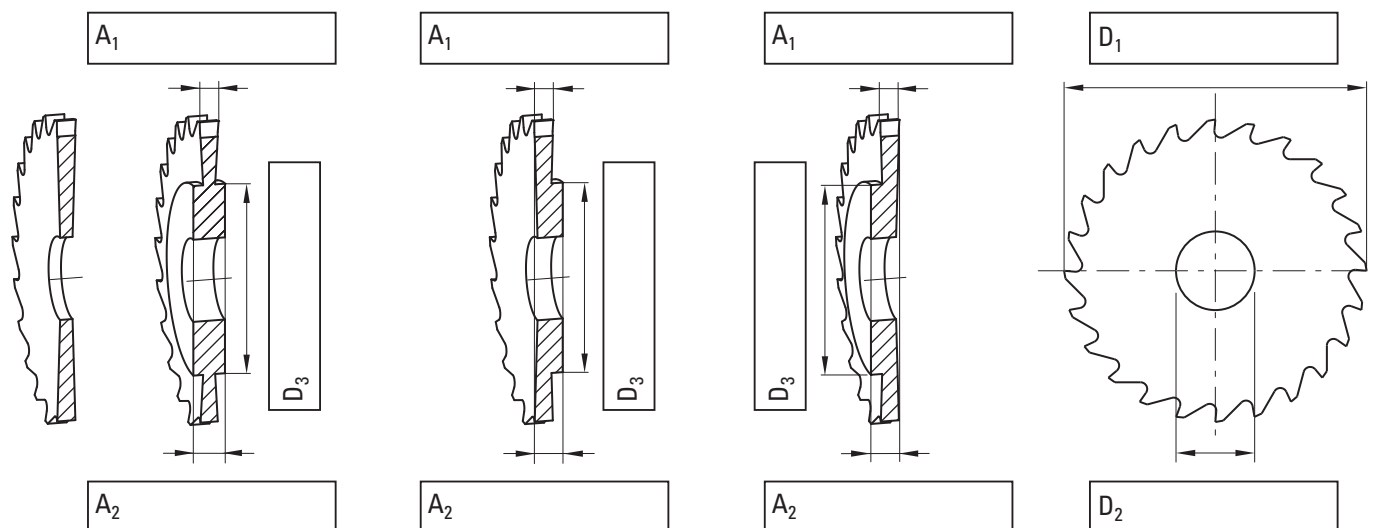




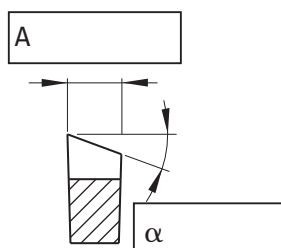
TOOLS ON REQUEST

Quantity

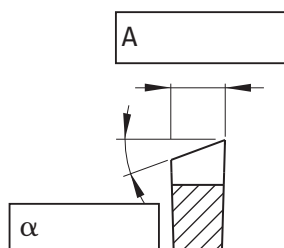
Material to be machined



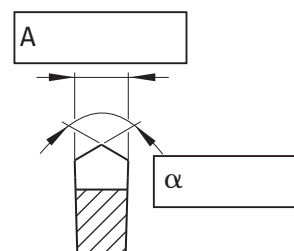
1640 L



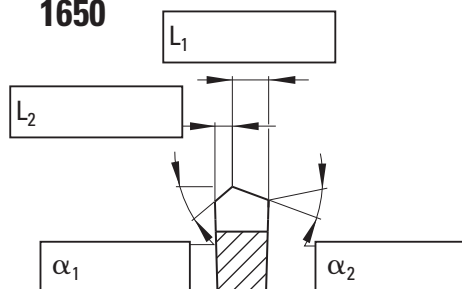
1640 R



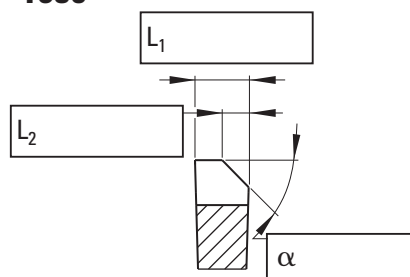
1643



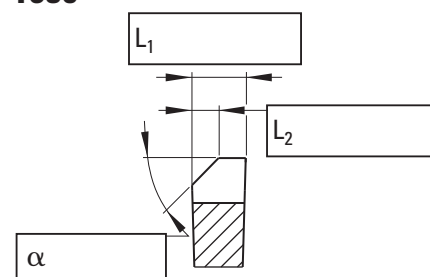
1650



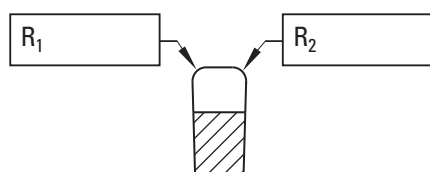
1650



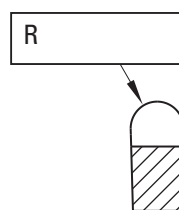
1650



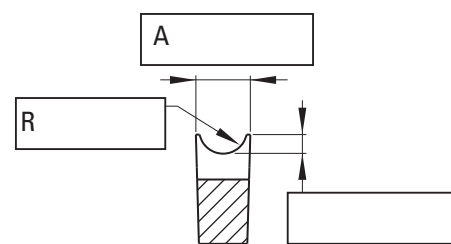
1650



1654



1650





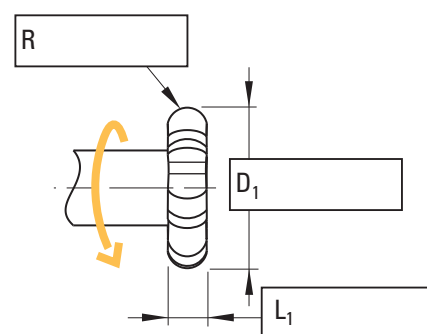
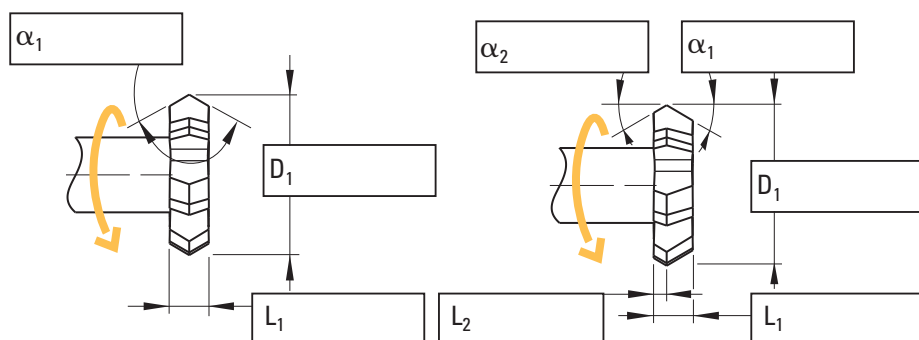
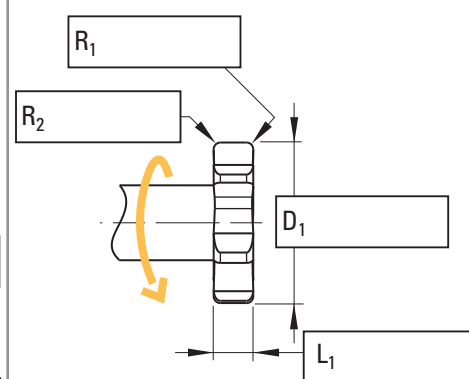
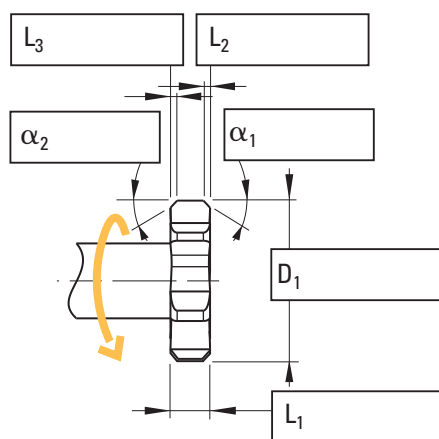
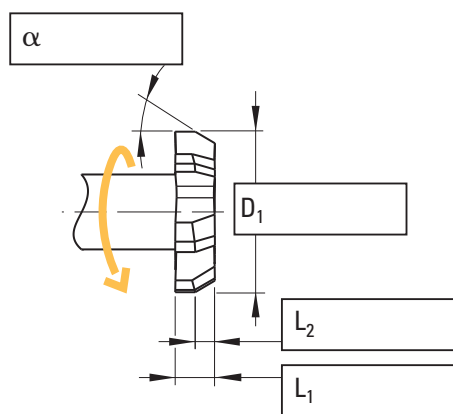
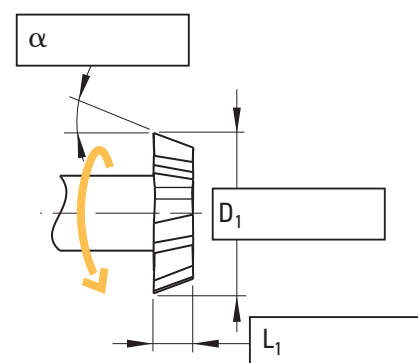
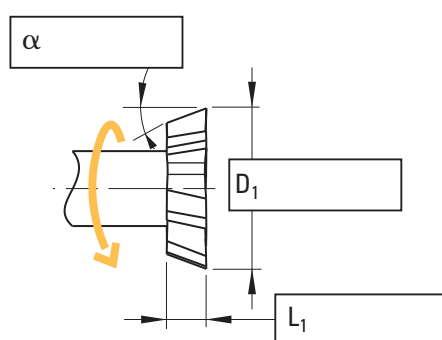
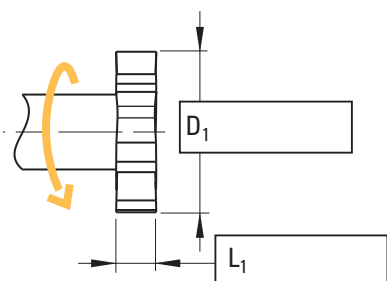
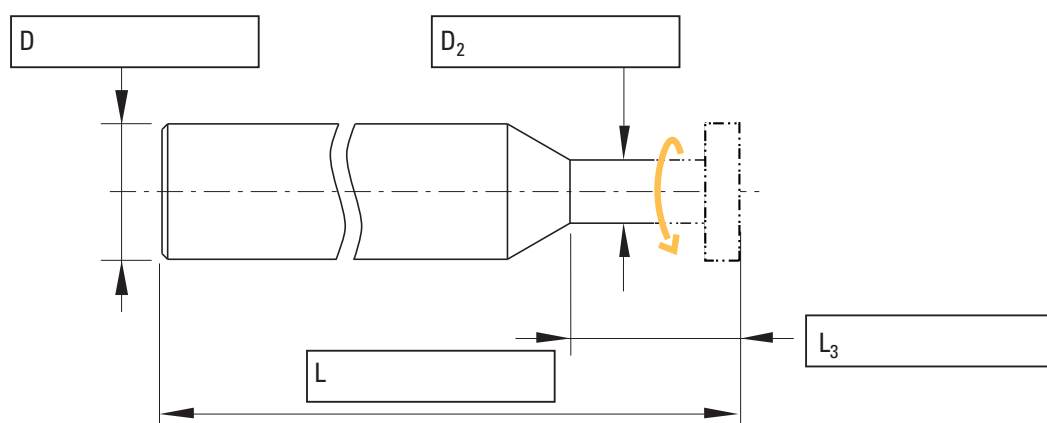
TOOLS ON REQUEST

T-SLOT CUTTERS

Z =

Quantity

Material to be machined



VISIT OUR E-QUOTATION ON WWW.DIXIPOLYTOOL.COM



CUTTING CONDITIONS

Material to be machined

CARBIDE

Vc [m/min]

P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	80	140
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	50	80
P	Lead alloyed cutting steel		120	160
P	High alloyed steel	700 – 1500 N/mm ²	50	80
M	Stainless steel	400 – 700 N/mm ²	80	120
M	DUPLEX stainless steel	> 800 N/mm ²	50	80
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	80	140
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	50	80
K	Nodular ferritic cast iron / Malleable cast iron		50	80
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	30
S	Titanium, titanium alloys		30	70
N	Copper alloys - easy to machine (brass - bronze)		200	450
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	150	300
N	Aluminium alloys	Si < 8%	200	500
N	Cast aluminium	Si > 8%	200	450
N	Plastic		130	200
N	Gold, silver		140	180

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 15 - 30	$\emptyset D_1$ 30 - 50	$\emptyset D_1$ 50 - 80	$\emptyset D_1$ 80 - 125	$\emptyset D_1$ 125 - 160
0.002 - 0.004	0.003 - 0.007	0.004 - 0.008	0.004 - 0.012	0.004 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.002 - 0.004	0.003 - 0.007	0.004 - 0.01	0.004 - 0.01	0.004 - 0.01
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.002 - 0.004	0.003 - 0.007	0.004 - 0.01	0.004 - 0.01	0.004 - 0.01
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012
0.001 - 0.004	0.002 - 0.005	0.002 - 0.008	0.003 - 0.012	0.003 - 0.012
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012
0.003 - 0.010	0.004 - 0.010	0.005 - 0.012	0.005 - 0.012	0.005 - 0.015
0.003 - 0.007	0.004 - 0.008	0.005 - 0.010	0.005 - 0.010	0.005 - 0.012



CUTTING CONDITIONS

Material to be machined

CARBIDE

Vc [m/min]

P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	80	140
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	50	80
P	Lead alloyed cutting steel		120	160
P	High alloyed steel	700 – 1500 N/mm ²	50	80
M	Stainless steel	400 – 700 N/mm ²	80	120
M	DUPLEX stainless steel	> 800 N/mm ²	50	80
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	80	140
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	50	80
K	Nodular ferritic cast iron / Malleable cast iron		50	80
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	30
S	Titanium, titanium alloys		30	70
N	Copper alloys - easy to machine (brass - bronze)		200	450
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	150	300

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 15 - 30	$\emptyset D_1$ 30 - 40	$\emptyset D_1$ 40 - 50	
0.0003 - 0.003	0.0003 - 0.003	0.0003 - 0.003	
0.0003 - 0.003	0.0003 - 0.003	0.0003 - 0.003	
0.0004 - 0.004	0.0004 - 0.004	0.0004 - 0.004	
0.0002 - 0.002	0.0002 - 0.002	0.0002 - 0.002	
0.0002 - 0.002	0.0002 - 0.002	0.0002 - 0.002	
0.0002 - 0.002	0.0002 - 0.002	0.0002 - 0.002	
0.0004 - 0.004	0.0004 - 0.004	0.0004 - 0.004	
0.0003 - 0.003	0.0003 - 0.003	0.0003 - 0.003	
0.0003 - 0.003	0.0003 - 0.003	0.0003 - 0.003	
0.0002 - 0.002	0.0002 - 0.002	0.0002 - 0.002	
0.0003 - 0.003	0.0003 - 0.003	0.0003 - 0.003	
0.0005 - 0.005	0.0005 - 0.005	0.0005 - 0.005	
0.0004 - 0.004	0.0004 - 0.004	0.0004 - 0.004	



CUTTING CONDITIONS

Material to be machined

CARBIDE

Vc [m/min]

P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	150	200
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	120	170
P	Lead alloyed cutting steel		150	200
P	High alloyed steel	700 – 1500 N/mm ²	100	150
M	Stainless steel	400 – 700 N/mm ²	180	150
M	DUPLEX stainless steel	> 800 N/mm ²	100	150
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	250	350
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	180	250
K	Nodular ferritic cast iron / Malleable cast iron		150	250
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	50	100
S	Titanium, titanium alloys		80	150
N	Copper alloys - easy to machine (brass - bronze)		250	400
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	180	300
N	Aluminium alloys	Si < 8%	250	400
N	Cast aluminium	Si > 8%	200	350
N	Plastic		100	250
N	Gold, silver		180	300

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 50	$\emptyset D_1$ 63	$\emptyset D_1$ 80	$\emptyset D_1$ 100	
0.002 - 0.008	0.002 - 0.008	0.002 - 0.008	0.002 - 0.008	
0.002 - 0.007	0.002 - 0.007	0.002 - 0.007	0.002 - 0.007	
0.002 - 0.009	0.002 - 0.009	0.002 - 0.009	0.002 - 0.009	
0.002 - 0.006	0.002 - 0.006	0.002 - 0.006	0.002 - 0.006	
0.002 - 0.006	0.002 - 0.006	0.002 - 0.006	0.002 - 0.006	
0.001 - 0.005	0.001 - 0.005	0.001 - 0.005	0.001 - 0.005	
0.003 - 0.009	0.003 - 0.009	0.003 - 0.009	0.003 - 0.009	
0.002 - 0.008	0.002 - 0.008	0.002 - 0.008	0.002 - 0.008	
0.002 - 0.008	0.002 - 0.008	0.002 - 0.008	0.002 - 0.008	
0.001 - 0.004	0.001 - 0.004	0.001 - 0.004	0.001 - 0.004	
0.002 - 0.008	0.002 - 0.008	0.002 - 0.008	0.002 - 0.008	
0.003 - 0.011	0.003 - 0.011	0.003 - 0.011	0.003 - 0.011	
0.003 - 0.010	0.003 - 0.010	0.003 - 0.010	0.003 - 0.010	
0.003 - 0.011	0.0033 - 0.011	0.003 - 0.011	0.003 - 0.011	
0.002 - 0.009	0.002 - 0.009	0.002 - 0.009	0.002 - 0.009	
0.003 - 0.010	0.004 - 0.010	0.005 - 0.012	0.005 - 0.012	
0.002 - 0.009	0.002 - 0.009	0.002 - 0.009	0.002 - 0.009	



CUTTING CONDITIONS

Materials to be machined

			CARBIDE	CUTINOX
			Vc [m/min]	Vc [m/min]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70 100	
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	70 90	
P	Lead alloyed cutting steel			70 100
P	High alloyed steel	700 – 1500 N/mm ²		40 70
M	Stainless steel	400 – 700 N/mm ²		60 90
M	DUPLEX stainless steel	> 800 N/mm ²		40 70
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70 100	90 110
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40 70	70 90
K	Nodular ferritic cast iron / Malleable cast iron		70 100	90 110
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy		25 35
S	Titanium, titanium alloys		30 45	
N	Copper alloys - easy to machine (brass - bronze)		140 160	
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120 140	170 190
N	Aluminium alloys	Si < 8%	180 260	230 340
N	Cast aluminium	Si > 8%	140 160	210 230
N	Plastic		240 260	300 340
N	Gold, silver		140 160	200 220

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times Z$$

Feed per tooth **fz [mm]**

Ø D ₁ 2.00 - 5.00	Ø D ₁ 5.00 - 8.00	Ø D ₁ 8.00 - 12.00	Ø D ₁ 12.00 - 15.00	Ø D ₁ 15.00 - 20.00	Ø D ₁ 20.00 - 25.00	Ø D ₁ 25.00 - 30.00	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	
0.003 - 0.007	0.005 - 0.011	0.007 - 0.015	0.010 - 0.019	0.015 - 0.028	0.020 - 0.040	0.030 - 0.060	



FILETAGE

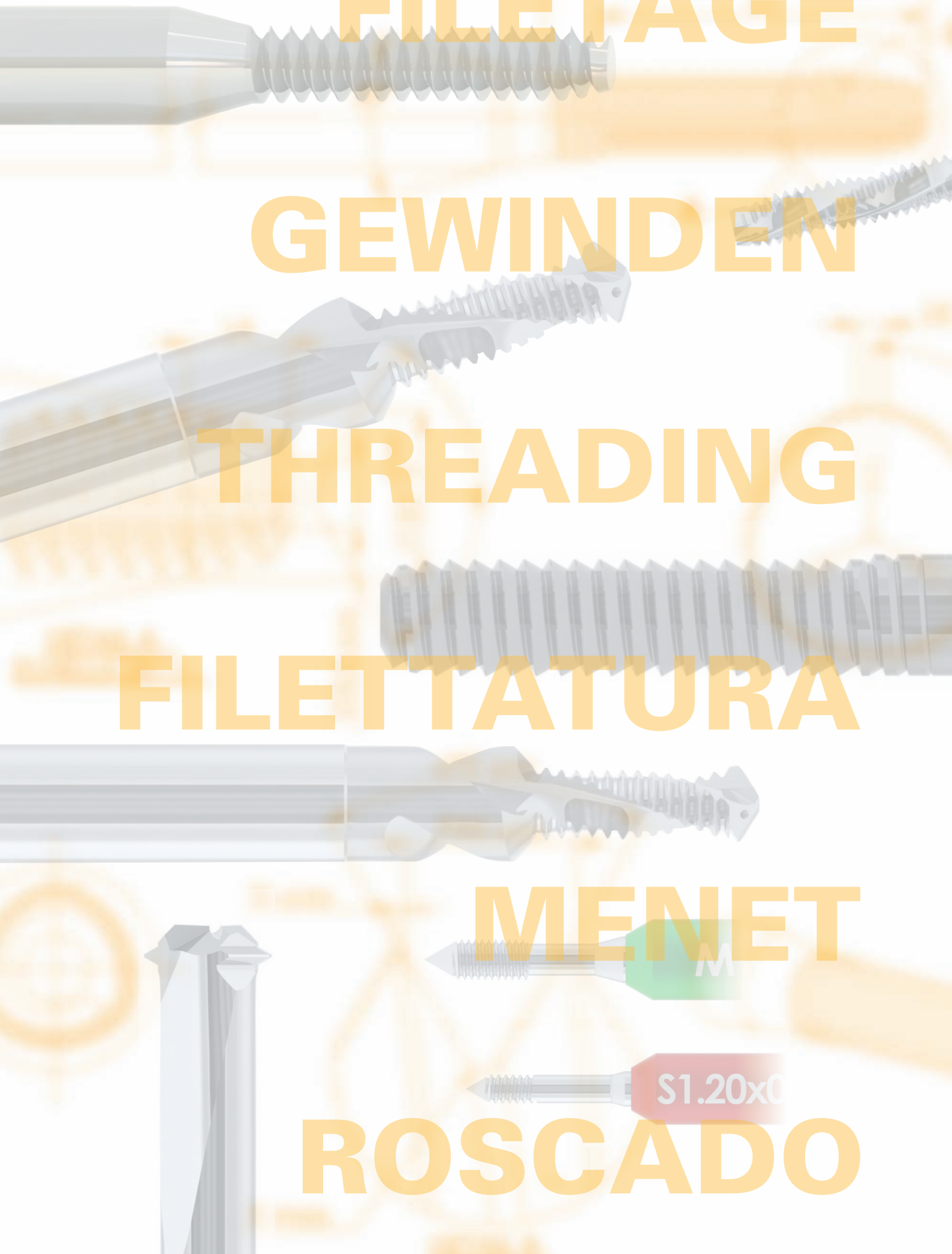
GEWINDEN

THREADING

FILETTATURA

MENET

ROSCADO



SELECTION OF THREADING TOOLS 278



MICRO CUTTING TAPS 286



MICRO THREAD FORMERS 289



WHIRLING TOOLS 291



DRILLING THREAD WHIRLERS 295



SELF LOCKING THREAD 297



HOB CUTTERS 300



THREAD MILLS 301



THREAD GAUGES 311



PLAIN GAUGES 313



SET OF THREAD GAUGES 314



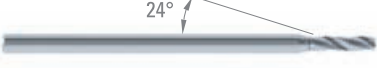
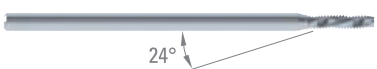
INFORMATION 315



CUTTING CONDITIONS 322

SELECTION OF THREADING TOOLS

✓ = item from stock

	Z	Page		☐ CARBIDE	☒ TiAIN	☒ CUTINOX	☒ DI-TOP	
MICRO CUTTING TAPS								
DIXI 1712 R S 0.30 - M 2.00	3	286	 NIHS 06 ISO 60°	✓				
DIXI 1712 L S 0.60 - S 1.00	3	286	 NIHS 06	✓				
DIXI 1713 S 0.40 - S 1.40	3	287	 NIHS 06	✓				
DIXI 1708 S 0.30 - S 1.40	3	287	 NIHS 06	✓			✓	
DIXI 1710 S 0.30 - S 1.40	3	288	 NIHS 06	✓				

MICRO THREAD FORMERS

DIXI 1715 S 0.40 - S 1.40 M 1.00 - M 2.20	-	289	 NIHS 06 ISO 60°				✓	
DIXI 1716 S 0.40 - S 1.40 M 1.00 - M 1.40	-	290	 NIHS 06 ISO 60°				✓	

WHIRLING TOOLS

DIXI 1739 S 0.30 - S 1.40 Partial profile	1	291	 NIHS 06	✓				
DIXI 1738 S 0.50 - M 3.00 Partial profile	3	292	 NIHS 06 ISO 60°	✓		✓		
DIXI 1730-D M 0.80 - M 10.00	3 - 6	293	 ISO 60°	✓	✓			
DIXI 1735-D UNF N°1 - UNC 1/2"	3 - 6	294	 UN 60°	✓	✓			

○ good ⊙ excellent

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Hardened cast iron 45-65 HRC	Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic
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		⊙	⊙			○	⊙					
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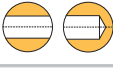
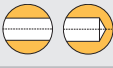
SELECTION OF THREADING TOOLS

✓ = item from stock

DRILLING THREAD WHIRLERS

	Z	Page		CARBIDE □	CUTINOX ■	DAC ■	DI-TOP ■
DIXI 1740 S 0.80 - M 10.00 	1 - 3	295	NIHS 06 ISO 60°	✓	✓		
DIXI 1742-TC M 5.00 - M 12.00 	2	296	ISO 60°			✓	
DIXI 1744-TC M 5.00 - M 12.00 	4	296	ISO 60°		✓		

SELF LOCKING THREAD

DIXI 1712-AF/BT S 0.70 - M 1.40 	3	297	DIXI NORM 	✓			
DIXI 1716-AF/BT S 0.70 - M 1.40 	-	297	DIXI NORM 				✓
DIXI 1738-AF/BT S 0.70 - M 3.00 Partial profile 	3	298	DIXI NORM 	✓			
DIXI 1740-AF/BT S 0.80 - M 3.00 	1 - 2	298	DIXI NORM 	✓			
DIXI 1718-AF/BT S 0.70 - M 3.00 	-	299	DIXI NORM 	✓			
DIXI 1719-AF/BT S 0.70 - M 3.00 	-	299	DIXI NORM 	✓			

HOB CUTTERS

DIXI 1660 S 0.40 - S 1.40 Fond plat 	94	300	NIHS 06	✓			
DIXI 1661 S 0.40 - S 1.40 Fond rayonné 	94	300	NIHS 06	✓			

○ good ⊙ excellent

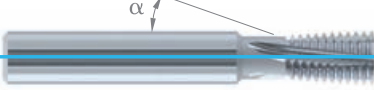
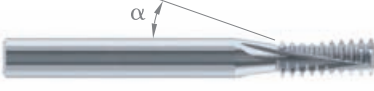
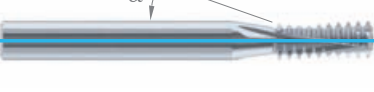
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Hardened cast iron > 45 HRC	Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Graphite	Plastic
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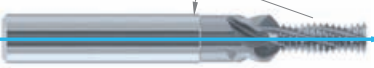
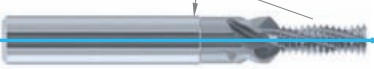
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SELECTION OF THREADING TOOLS

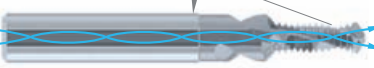
✓ = item from stock

THREAD MILLS	Z	Page			CARBIDE	TiAIN	CUTINOX		
					□	■	■		
DIXI 7910 M 1.4 - M 24.0 	2 - 4	301	ISO 60°		✓	✓			
DIXI 7908 M 2.0 - M 24.0 	3 - 6	302	ISO 60°		✓	✓			
DIXI 7913-TC M 10 - M 30 	3 - 4	303	ISO 60°		✓		✓		
DIXI 7920 UNC N°2 - UNC 3/4" 	2 - 4	304	UN 60°		✓	✓			
DIXI 7918 UNF N°2 - UNC 3/4" 	3 - 5	305	UN 60°		✓	✓			
DIXI 7923-TC UNJF N°10 - UNJF 1/2" 	3 - 4	306	UNJ 60°		✓				
DIXI 7940 G1/16" - G1" 	3 - 4	306	BSP 55°		✓				
DIXI 7946 R1/16" - R2-1/2" 	3 - 4	307	BSPT 55°		✓				
DIXI 7950 NPT 1/4" - NPT 2" 	3 - 4	307	NPT 60°		✓				
DIXI 7956 NPTF 1/16" - NPTF 2" 	3 - 4	308	NPTF 60°		✓				

THREAD MILLS WITH COUNTERSINK

DIXI 7915-TC M 4.0 - M 16.0 	3 - 4	308	ISO 60°		✓		✓		
DIXI 7925-TC UNC N°8 - UNC 5/8" 	3 - 4	309	UN 60°		✓		✓		

DRILLING THREAD MILLS WITH COUNTERSINK

DIXI 7985-HH M 4.0 - M 16.0 	2	310	ISO 60°		✓		✓		
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○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
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SELECTION OF THREADING TOOLS

✓ = item from stock

THREAD GAUGES

DIXI 1718-NT R+L

R S 0.30 - S 1.40

L S 0.50 - S 1.20

S1.40x0.30 NIHS NT GO



Z

Page

□ CARBIDE

-

311



✓

DIXI 1718-RT

S 0.30 - S 1.40

S1.40x0.30 NIHS RT GO



-

311



✓

DIXI 1719-NT/RT R+L

R S 0.30 - S 1.40

L S 0.50 - S 1.20

S1.40x0.30 NIHS NT/RT NOGO



-

311



✓

DIXI 1718-M

M 1.00 - M 3.00

M 3.00 x 0.50 6H GO



-

312



✓

DIXI 1719-M

M 1.00 - M 3.00

M 3.00 x 0.50 6H NO GO



-

312



✓

PLAIN GAUGES

DIXI 0418

S 0.30 - S 1.40

S1.00x0.25 H5/H6 GO



-

313



✓

DIXI 0419

S 0.30 - S 1.40

S1.00x0.25 H6 NO GO



-

313



✓

GAUGES SET



-

314



Steel + Pb	Low alloyed steel	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
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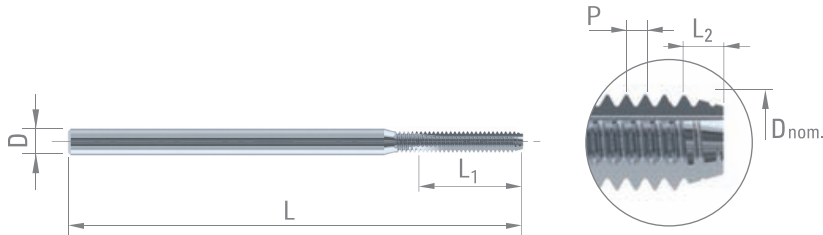
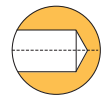
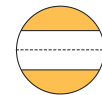
DIXI 1712

MICRO CUTTING TAPS

Z = 3



P. 316
P. 320



Steel
+ Pb

Cu alloy
Silver
Gold

D nom.	Pitch P	Drill. Ø brass (5H minor Ø)	Drill. Ø steel (6H minor Ø)	L ₁	L ₂	D _{h5}	L	NIHS-3G CARBIDE	NIHS-3G+ CARBIDE	ISO2-6H CARBIDE
S 0.30	0.08	0.23	0.24	1.0	0.25	1.5	30	62326		
S 0.35	0.09	0.27	0.28	1.5	0.27	1.5	30	965642		
S 0.40	0.10	0.32	0.33	2.0	0.30	1.5	30	62327	62328	
S 0.50	0.125	0.40	0.42	2.5	0.38	1.5	30	62329	62330	
S 0.60	0.15	0.48	0.50	3.0	0.45	1.5	30	62331	62332	
S 0.70	0.175	0.56	0.58	3.0	0.52	1.5	30	62334	62335	
S 0.80	0.20	0.64	0.66	3.5	0.60	1.5	30	62337	62338	
S 0.90	0.225	0.72	0.74	4.0	0.67	1.5	30	62342	62343	
S 1.00	0.25	0.80	0.82	4.0	0.76	1.5	30	62345	62346	
S 1.20	0.25	1.00	1.02	5.0	0.76	1.5	30	62348		
S 1.40	0.30	1.15	1.17	5.0	0.85	1.5	30	62351		
M 1.50	0.30	1.26	1.28	6.0	0.85	2.0	38			62353
M 2.00	0.40	1.65	1.68	11.0	1.00	2.5	43			62354

n Rotation speed [rev/min]

500 - 2500

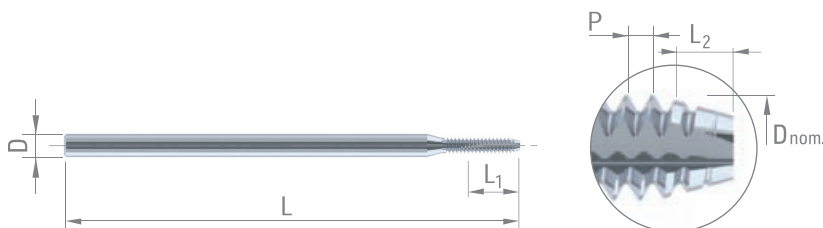
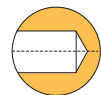
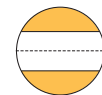
DIXI 1712 L

MICRO CUTTING TAPS LEFT HAND CUTTING

Z = 3



P. 316
P. 320



Steel
+ Pb

Cu alloy
Silver
Gold

D nom.	Pitch P	Drill. Ø brass (5h minor Ø)	Drill. Ø steel (6H minor Ø)	L ₁	L ₂	D _{h5}	L	NIHS-3G CARBIDE
S 0.60	0.15	0.49	0.51	4.0	0.45	1.5	30	969369
S 0.70	0.175	0.57	0.59	4.0	0.52	1.5	30	969370
S 0.80	0.20	0.65	0.67	4.0	0.60	1.5	30	969371
S 0.90	0.225	0.73	0.75	4.0	0.67	1.5	30	969372
S 1.00	0.25	0.81	0.83	4.0	0.75	1.5	30	969373

n Rotation speed [rev/min]

500 - 2500



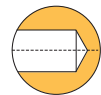
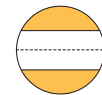
DIXI 1713

HIGH PERFORMANCE MICRO CUTTING TAPS

Z = 3



P. 316
P. 320

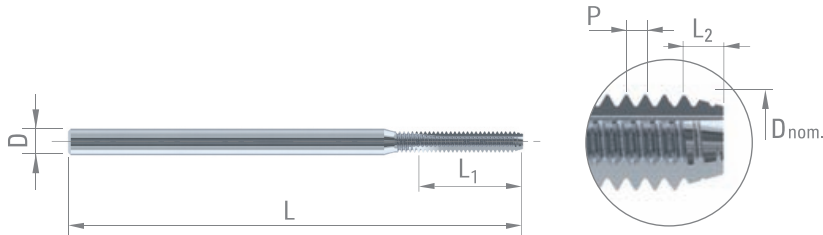


Steel
+ Pb

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al



D nom.	Pitch P	Drill. Ø brass (5H minor Ø)	Drill. Ø steel (6H minor Ø)	L ₁	L ₂	D _{h5}	L	NIHS-3G CARBIDE
S 0.40	0.10	0.33	0.34	2.5	0.30	2.0	30	969795
S 0.50	0.125	0.41	0.43	3.5	0.38	2.0	30	969474
S 0.60	0.15	0.49	0.51	4.0	0.45	2.0	30	969497
S 0.70	0.175	0.57	0.59	4.0	0.52	2.0	30	969498
S 0.80	0.20	0.65	0.67	4.0	0.60	2.0	30	969499
S 0.90	0.225	0.73	0.75	4.0	0.67	2.0	30	969500
S 1.00	0.25	0.81	0.83	4.0	0.76	2.0	30	969501
S 1.20	0.25	1.01	1.03	5.0	0.76	2.0	30	969502
S 1.40	0.30	1.16	1.18	5.0	0.85	2.0	30	969503

n Rotation speed [rev/min]

500 - 2500

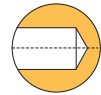
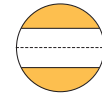
DIXI 1708

MICRO CUTTING TAPS RIGHT HAND SPIRAL RIGHT HAND CUTTING

Z = 3



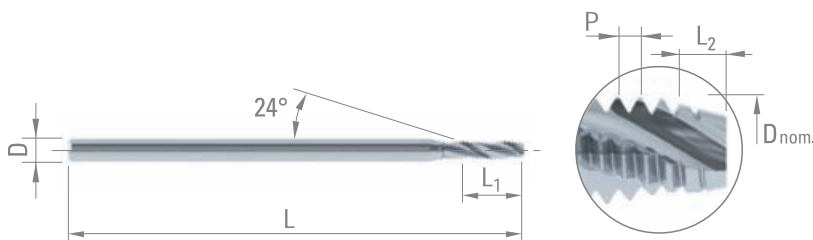
P. 316
P. 320



Lead
alloyed
steel

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine



D nom.	Pitch P	Drill. Ø brass (5H minor Ø)	Drill. Ø steel (6H minor Ø)	L ₁	L ₂	D _{h5}	L	NIHS-3G CARBIDE	NIHS-3G DI-TOP
S 0.30	0.08	0.23	0.24	1.0	0.25	1.5	30	986881	303483
S 0.35	0.09	0.27	0.28	1.5	0.27	1.5	30	986882	303484
S 0.40	0.10	0.32	0.33	2.5	0.30	1.5	30	986883	303485
S 0.50	0.125	0.40	0.42	3.5	0.38	1.5	30	984405	303486
S 0.60	0.15	0.48	0.50	4.0	0.45	1.5	30	983633	303487
S 0.70	0.175	0.56	0.58	4.0	0.52	1.5	30	986884	303488
S 0.80	0.20	0.64	0.66	4.0	0.60	1.5	30	986885	303489
S 0.90	0.225	0.72	0.74	4.0	0.67	1.5	30	986886	303490
S 1.00	0.25	0.80	0.82	4.0	0.76	1.5	30	986887	303491
S 1.20	0.25	1.00	1.02	5.0	0.76	1.5	30	986888	303492
S 1.40	0.30	1.15	1.17	5.0	0.85	1.5	30	986889	303493

n Rotation speed [rev/min]

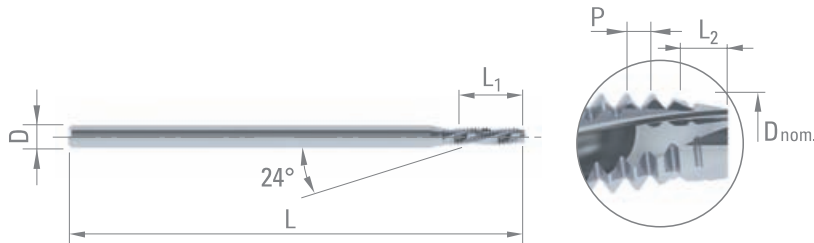
500 - 2500

MICRO CUTTING TAPS
LEFT HAND SPIRAL
RIGHT HAND CUTTING

Z = 3



P. 316
P. 320



Lead
alloyed
steel

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

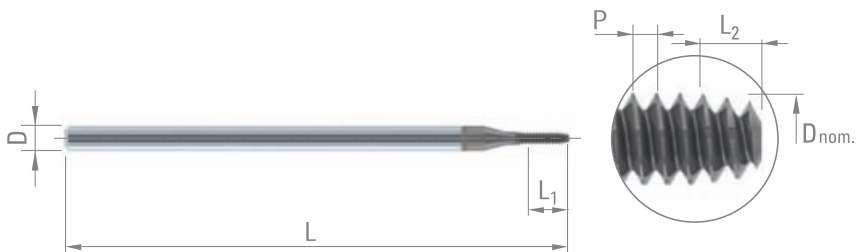
D nom.	Pitch P	Drill. Ø brass (5h minor Ø)	Drill. Ø steel (6H minor Ø)	L ₁	L ₂	D _{h5}	L	NIHS-3G CARBIDE
S 0.30	0.08	0.23	0.24	1.0	0.25	1.5	30	986890
S 0.35	0.09	0.27	0.28	1.5	0.27	1.5	30	986891
S 0.40	0.10	0.32	0.33	2.5	0.30	1.5	30	986892
S 0.50	0.125	0.40	0.42	3.5	0.38	1.5	30	986893
S 0.60	0.15	0.48	0.50	4.0	0.45	1.5	30	986894
S 0.70	0.175	0.56	0.58	4.0	0.52	1.5	30	986895
S 0.80	0.20	0.64	0.66	4.0	0.60	1.5	30	986896
S 0.90	0.225	0.72	0.74	4.0	0.67	1.5	30	986897
S 1.00	0.25	0.80	0.82	4.0	0.76	1.5	30	986898
S 1.20	0.25	1.00	1.02	5.0	0.76	1.5	30	986899
S 1.40	0.30	1.15	1.17	5.0	0.85	1.5	30	986900

n Rotation speed [rev/min]

500 - 2500

DIXI 1715 DI-TOP

MICRO THREAD FORMERS



P. 316
P. 320



Steel
+ Pb

Low
alloyed
steel

High
alloyed
steel

DUPLEX
stainless
steel

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al

D nom.	Pitch P	Drill. Ø brass	Drill. Ø steel	L ₁	L ₂	D _{h5}	L	NIHS-3GX DI-TOP
S 0.40	0.10	0.36 - 0.37	0.37 - 0.38	2.0	0.30	1.5	30	974654
S 0.50	0.125	0.45 - 0.46	0.46 - 0.47	2.0	0.37	1.5	30	972407
S 0.60	0.15	0.54 - 0.55	0.55 - 0.56	2.4	0.45	1.5	30	970899
S 0.70	0.175	0.62 - 0.63	0.63 - 0.64	2.8	0.52	1.5	30	970900
S 0.80	0.20	0.70 - 0.71	0.71 - 0.72	3.2	0.60	1.5	30	970901
S 0.90	0.225	0.81 - 0.82	0.82 - 0.83	3.6	0.67	1.5	30	970902
S 1.00	0.25	0.89 - 0.90	0.90 - 0.91	4.0	0.75	1.5	30	305793
S 1.20	0.20	1.11 - 1.12	1.12 - 1.13	4.8	0.60	1.5	30	305794
S 1.20	0.25	1.08 - 1.09	1.09 - 1.10	4.8	0.75	1.5	30	305795
S 1.40	0.20	1.30 - 1.32	1.32 - 1.33	5.6	0.60	1.5	30	305796
S 1.40	0.30	1.27 - 1.28	1.28 - 1.29	5.6	0.90	1.5	30	305797

D nom.	Pitch P	Drill. Ø brass	Drill. Ø steel	L ₁	L ₂	D _{h5}	L	4HX DI-TOP	5HX DI-TOP	6HX DI-TOP
M 1.00	0.25	0.89 - 0.90	0.90 - 0.91	4.0	0.75	1.5	30		970903	
M 1.20	0.20	1.11 - 1.12	1.12 - 1.13	4.8	0.60	1.5	30	978772		
M 1.20	0.25	1.09 - 1.10	1.10 - 1.11	4.8	0.75	1.5	30		970904	
M 1.40	0.20	1.31 - 1.32	1.32 - 1.33	5.6	0.60	1.5	30	973645		
M 1.40	0.30	1.27 - 1.28	1.28 - 1.29	5.6	0.90	1.5	38		970905	
M 1.50	0.30	1.37 - 1.38	1.38 - 1.39	6.0	0.90	2.0	38			971650
M 1.60	0.35	1.45 - 1.46	1.46 - 1.47	6.0	1.05	2.0	38			970906
M 1.80	0.20	1.71 - 1.72	1.72 - 1.73	7.0	0.60	2.0	38	975090		
M 2.00	0.20	1.91 - 1.92	1.92 - 1.93	8.0	0.60	2.5	43	976259		
M 2.00	0.40	1.83 - 1.84	1.83 - 1.84	8.0	1.20	2.5	43			970907
M 2.20	0.25	2.09 - 2.10	2.10 - 2.11	8.0	0.75	2.5	43		974959	

n Rotation speed [rev/min]

500 - 2500

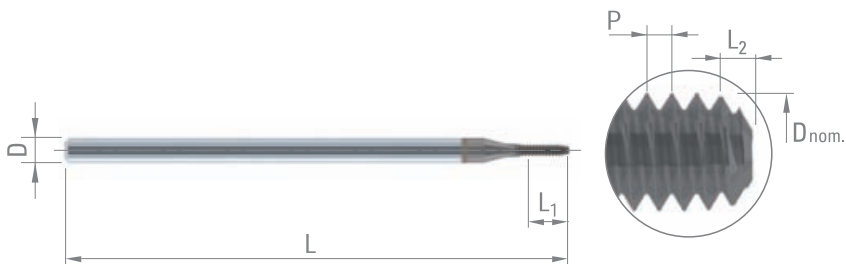


DIXI 1716 DI-TOP

MICRO THREAD FORMERS



P. 316
P. 320



Steel
+ Pb

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al

D nom.	Pitch P	Drill. Ø brass	Drill. Ø steel	L ₁	L ₂	D _{h5}	L	NIHS-3GX DI-TOP
S 0.40	0.10	0.36 - 0.37	0.37 - 0.38	1.6	0.20	1.5	30	992498
S 0.50	0.125	0.45 - 0.46	0.46 - 0.47	2.0	0.25	1.5	30	992509
S 0.60	0.15	0.54 - 0.55	0.55 - 0.56	2.4	0.30	1.5	30	992514
S 0.70	0.175	0.62 - 0.63	0.63 - 0.64	2.8	0.35	1.5	30	992515
S 0.80	0.20	0.70 - 0.71	0.71 - 0.72	3.2	0.40	1.5	30	992516
S 0.90	0.225	0.81 - 0.82	0.82 - 0.83	3.6	0.45	1.5	30	992517
S 1.00	0.25	0.89 - 0.90	0.90 - 0.91	4.0	0.50	1.5	30	305799
S 1.20	0.20	1.11 - 1.12	1.12 - 1.13	4.8	0.40	1.5	30	305800
S 1.20	0.25	1.08 - 1.09	1.09 - 1.10	4.8	0.50	1.5	30	305801
S 1.40	0.20	1.31 - 1.32	1.32 - 1.33	5.6	0.40	1.5	30	305802
S 1.40	0.30	1.27 - 1.28	1.28 - 1.29	5.6	0.60	1.5	30	305804

D nom.	Pitch P	Drill. Ø brass	Drill. Ø steel	L ₁	L ₂	D _{h5}	L	4HX DI-TOP	5HX DI-TOP
M 1.00	0.25	0.89 - 0.90	0.90 - 0.91	4.0	0.50	1.5	30		992518
M 1.20	0.20	1.11 - 1.12	1.12 - 1.13	4.8	0.40	1.5	30	992519	
M 1.20	0.25	1.08 - 1.09	1.09 - 1.10	4.8	0.50	1.5	30		992520
M 1.40	0.20	1.31 - 1.32	1.32 - 1.33	5.6	0.40	1.5	30	992521	
M 1.40	0.30	1.27 - 1.28	1.28 - 1.29	5.6	0.60	1.5	38		992522

n Rotation speed [rev/min]

500 - 2500



WHIRLING TOOLS PARTIAL PROFILE

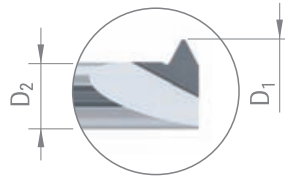
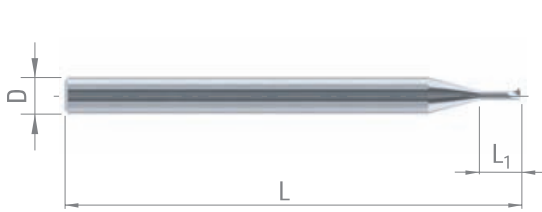
Z = 1



P. 320



P. 322



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic	

D nom.	Pitch	Drilling Ø	D ₁	L ₁	D ₂	D _{h5}	L	CARBIDE
S 0.30	0.08	0.23	0.21	0.70	0.12	3	38	961147
S 0.35	0.09	0.27	0.25	0.90	0.15	3	38	984299
S 0.40	0.10	0.32	0.29	0.90	0.18	3	38	961149
S 0.50	0.125	0.40	0.37	1.20	0.23	3	38	961163
S 0.60	0.15	0.48	0.44	1.50	0.27	3	38	961164
S 0.70	0.175	0.56	0.52	1.80	0.32	3	38	961165
S 0.80	0.20	0.64	0.59	2.00	0.36	3	38	961166
S 0.90	0.225	0.72	0.67	2.20	0.41	3	38	961167
S 1.00	0.25	0.80	0.74	2.40	0.46	3	38	961168
S 1.20	0.25	1.00	0.94	3.00	0.66	3	38	961169
S 1.40	0.30	1.15	1.08	3.30	0.74	3	38	961170



DIXI 1738

WHIRLING TOOLS PARTIAL PROFILE

Z = 3



P. 320



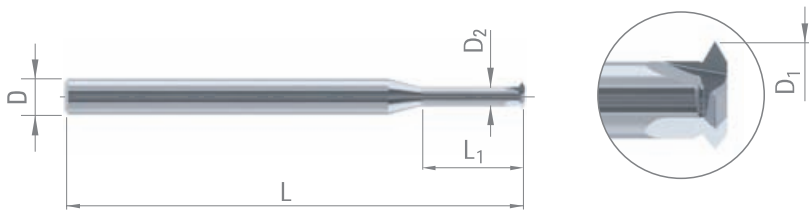
P. 322



NIHS
06



ISO
60°



High
alloyed
steel

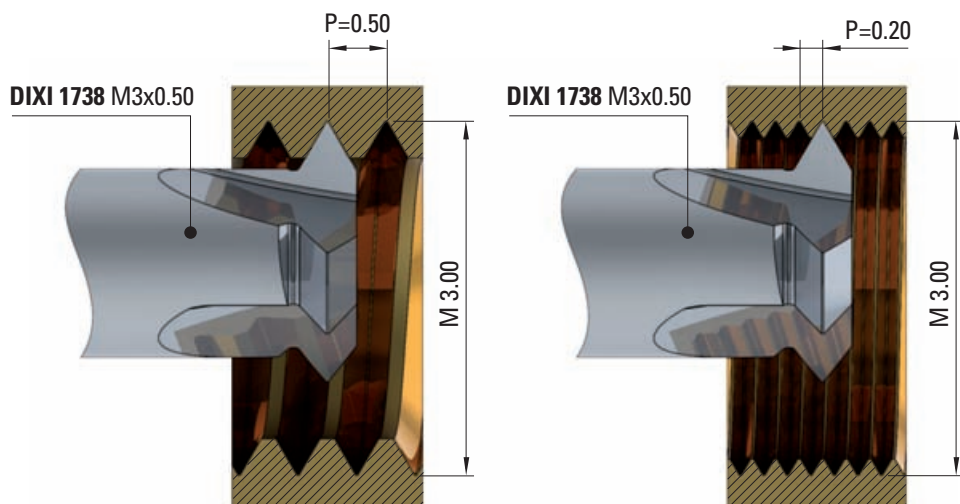
DUPLEX
stainless
steel

Refractory
alloy

Titanium,
titanium
alloy

D nom.	Pitch	ISO Drilling Ø	NIHS	D ₁	L ₁	D ₂	D _{h5}	L	CARBIDE CUTINOX	
S 0.50	0.125	0.40	0.37	0.85	0.23	3	38	306969	318544	
S 0.60	0.150	0.48	0.44	1.25	0.27	3	38	318623	318545	
S 0.70	0.175	0.56	0.52	1.80	0.31	3	38	984319	985156	
S 0.80	0.20	0.64	0.59	2.30	0.35	3	38	965997	966008	
S 0.90	0.225	0.72	0.67	2.50	0.38	3	38	965996	966007	
M 1.00	S 1.00	0.75	0.80	0.71	2.80	0.37	3	964485	966006	
M 1.20	S 1.20	0.95	1.00	0.91	3.40	0.57	3	965664	965943	
M 1.40	S 1.40	1.10	1.15	1.05	4.00	0.64	3	965988	965998	
M 1.40	0.20	1.22	1.15	4.00	0.77	3	38	965989	965999	
M 1.60	0.35	1.30	1.19	4.50	0.65	3	38	965990	966000	
M 1.80	0.35	1.50	1.39	5.10	0.71	3	38	965991	966001	
M 1.80	(0.20)	1.60	1.53	5.60	0.78	3	38	965992	966002	
M 2.00	0.40	1.65	1.67	6.20	0.88	3	38	965993	966003	
M 2.20	(0.25)	1.80	1.97	7.00	1.17	3	38	965994	966004	
M 2.20	(0.25)	1.95	2.40	8.40	1.60	3	38	965995	966005	
M 2.50	0.45	2.10								
M 2.50	(0.35)	2.15								
M 2.50	(0.25)	2.25								
M 2.50	(0.20)	2.30								
M 3.00	0.50	2.50								
M 3.00	(0.35)	2.65								
M 3.00	(0.25)	2.75								
M 3.00	(0.20)	2.80								

A single tool for many pitches (example, from 0.20 to 0.50)



DIXI 1730-D

WHIRLING TOOLS
FULL PROFILE

Z = 3-6



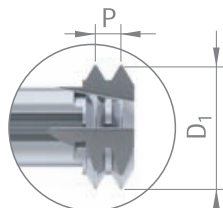
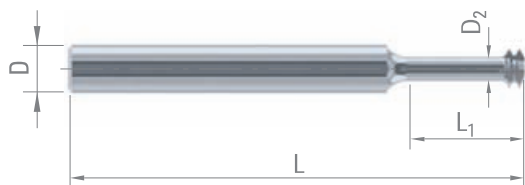
P. 320



P. 322



DIXI 1730-2D $L_1 = 2 \times D \text{ nom.}$
DIXI 1730-3D $L_1 = 3 \times D \text{ nom.}$



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Graphite	Plastic			

D nom.	Pitch P	D ₁	D ₂	D _{h5}	L	Z	L ₁	DIXI	CARBIDE	TiAIN
M 0.80	0.20	0.57	0.25	3	38	3	1.85	1730-2D	958853	960446
							2.60	1730-3D	961148	961176
M 0.90	0.225	0.64	0.29	3	38	3	2.10	1730-2D	953216	960117
							2.90	1730-3D	961150	961177
M 1.00	0.25	0.71	0.32	3	38	3	2.30	1730-2D	953217	960118
							3.20	1730-3D	961151	961178
M 1.20	0.25	0.91	0.51	3	38	3	2.80	1730-2D	953218	960450
							3.85	1730-3D	961152	961179
M 1.40	0.30	1.05	0.58	3	38	3	3.20	1730-2D	953219	960451
							4.50	1730-3D	961153	961180
M 1.60	0.35	1.19	0.64	3	38	3	3.70	1730-2D	953220	960453
							5.10	1730-3D	961154	961181
M 1.80	0.20	1.55	1.23	3	38	3	4.10	1730-2D	961128	961130
							5.80	1730-3D	961155	961182
M 1.80	0.35	1.39	0.84	3	38	3	4.10	1730-2D	953221	960454
							5.80	1730-3D	961156	961183
M 2.00	0.40	1.53	1.10	3	38	3	4.60	1730-2D	953222	960455
							6.40	1730-3D	961157	961184
M 2.20	0.20	1.94	1.63	3	38	3	5.10	1730-2D	961129	961132
							7.10	1730-3D	961158	961185
M 2.20	0.45	1.67	0.96	3	38	3	5.10	1730-2D	953223	960456
							7.10	1730-3D	961159	961186
M 2.50	0.25	2.18	1.79	3	38	3	5.80	1730-2D	960062	960459
							8.00	1730-3D	961160	961187
M 2.50	0.35	2.07	1.52	3	38	3	5.80	1730-2D	960063	960460
							8.00	1730-3D	961161	961188
M 2.50	0.45	1.97	1.26	3	38	3	5.80	1730-2D	953225	960461
							8.00	1730-3D	961162	961189
M 3.00	0.50	2.40	1.62	4	42	3	7.00	1730-2D	955698	960462
							9.60	1730-3D	961171	961190
M 4.00	0.70	3.17	2.07	4	42	3	9.30	1730-2D	955699	960463
							12.80	1730-3D	961172	961191
M 5.00	0.80	4.05	2.78	6	57	4	11.50	1730-2D	957925	960464
							16.00	1730-3D	961173	961192
M 6.00	1.00	4.81	3.23	6	57	4	13.80	1730-2D	957982	960465
							19.20	1730-3D	961174	961193
M 8.00	1.25	6.51	4.53	8	75	6	18.40	1730-2D	958039	960466
							25.60	1730-3D	961175	961194
M 10.00	1.50	7.90	5.53	8	75	6	23.00	1730-2D	958040	960467
							32.00	1730-3D	960883	961195



DIXI 1735-D

WHIRLING TOOLS
FULL PROFILE

Z = 3-6



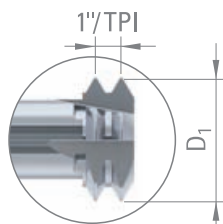
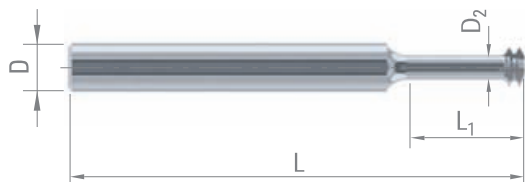
P. 320



P. 322



DIXI 1735-2D $L_1 = 2 \times D$ nom.
DIXI 1735-3D $L_1 = 3 \times D$ nom.



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu
Graphite	Plastic			

UNC	UNF	UNEF	UN	TPI	D ₁	D ₂	D _{h5}	L	Z	L ₁	DIXI	CARBIDE	TiAIN
	N°1			72	1.44	0.88	3	38	3	4.30 6.00	1735-2D 1735-3D	966664 966653	966833 966852
N°1	N°2			64	1.39	0.77	3	38	3	4.30 6.00	1735-2D 1735-3D	966663 966652	966834 966851
N°2	N°3			56	1.65	0.94	3	38	3	5.00 7.00	1735-2D 1735-3D	966662 966651	966835 966850
N°3	N°4			48	1.90	1.06	3	38	3	5.80 8.10	1735-2D 1735-3D	966661 966650	966836 966849
	N°5			44	2.49	1.58	3	38	3	7.30 10.20	1735-2D 1735-3D	966660 966649	966837 966848
N°4				40	2.11	1.11	4	42	3	6.60 9.10	1735-2D 1735-3D	966659 966648	966838 966847
N°5	N°6			40	2.43	1.43	4	42	3	7.30 10.20	1735-2D 1735-3D	966658 966647	966839 966846
	N°8			36	3.33	2.21	4	42	3	9.60 13.40	1735-2D 1735-3D	966657 966646	966841 966845
N°6				32	2.59	1.33	4	42	3	8.10 11.30	1735-2D 1735-3D	966656 966645	966840 966844
N°8	N°10	N°12		32	3.24	1.98	4	55	3	9.60 13.40	1735-2D 1735-3D	960205 961020	960628 961062
	N°12	7/16"	5/16"	28	4.41	2.97	6	63	3	12.60 17.60	1735-2D 1735-3D	966655 966644	966842 966643
	1/4"	7/16"	5/16"	28	5.26	3.82	6	63	4	14.60 20.30	1735-2D 1735-3D	966654 966641	966843 966642
N°10				24	3.60	1.93	4	55	3	11.10 15.50	1735-2D 1735-3D	960395 961052	960629 961063
N°12	5/16"			24	4.25	2.57	6	57	4	12.60 17.60	1735-2D 1735-3D	960396 961053	960630 961082
1/4"			5/16"	20	4.87	2.86	6	57	4	14.60 20.30	1735-2D 1735-3D	960397 961054	960631 961085
5/16"	9/16"			18	6.28	4.04	8	63	6	18.20 25.40	1735-2D 1735-3D	960398 961055	960635 961086
3/8"			7/16"	16	7.65	5.13	8	63	6	21.90 30.50	1735-2D 1735-3D	960399 961056	960636 961087
7/16"	7/8"			14	8.96	6.08	10	75	6	25.60 35.50	1735-2D 1735-3D	960400 961057	960637 961088
1/2"				13	10.37	7.27	12	75	6	29.20 40.60	1735-2D 1735-3D	960402 961058	960638 961060

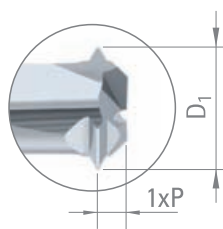
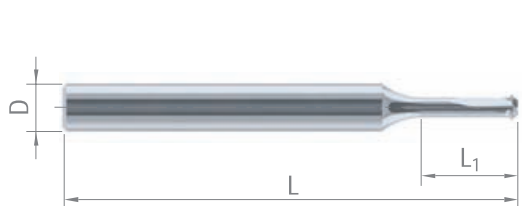




P. 320



P. 324

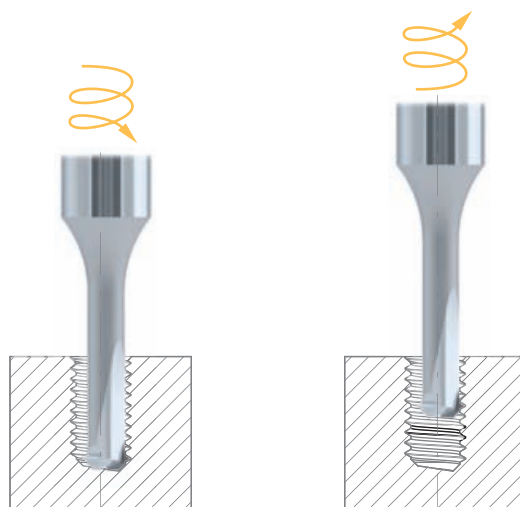


Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic			

D nom.	Pitch P	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	CUTINOX
S 0.80	0.20	0.60	2.4	3	38	1	977703	977716
S 0.90	0.225	0.66	2.7	3	38	1	977704	977717
M 1.00	0.20	0.80	3.0	3	38	1	985121	985134
M 1.00	0.25	0.73	3.0	3	38	1	977656	977698
M 1.20	0.20	1.00	3.6	3	38	1	985136	985143
M 1.20	0.25	0.92	3.6	3	38	1	977705	977718
M 1.40	0.20	1.20	4.2	3	38	1	985144	985145
M 1.40	0.30	1.05	4.2	3	38	1	977706	977719
M 1.60	0.35	1.21	4.8	3	38	1	977707	977720
M 2.00	0.40	1.55	6.0	3	38	2	977708	977721
M 2.50	0.45	2.00	7.5	3	38	2	977709	977722
M 3.00	0.50	2.44	9.0	6	57	2	977710	977723
M 4.00	0.70	3.20	12.0	6	57	2	977711	977724
M 5.00	0.80	4.00	15.0	6	57	2	977712	977725
M 6.00	1.00	4.85	18.0	6	57	3	977713	977726
M 8.00	1.25	6.50	24.0	8	75	3	977714	977727
M 10.00	1.50	7.90	30.0	8	75	3	977715	977728

Example for difficult to machine materials (titanium, stainless steel).

For easy to machine materials, step n° 2 is not necessary.



1

Approach X0 Y0 Z0.10
then angular plunging
on 2 axis (XZ)

2

Circular interpolation
on 1 rotation
(Ø of hole is chamfered)

DIXI 1742-TC DAC

DRILLING THREAD WHIRLERS
WITH THROUGH COOLANT

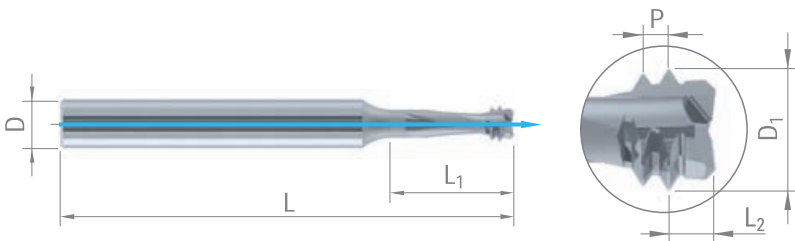
Z = 2



P. 320



P. 326



Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al

Graphite

Plastic

D nom.	Pitch P	D ₁	L ₁	L ₂	D _{h5}	L	DAC
M 5.00	0.80	4.00	12.5	1.50	8	60	303475
M 6.00	1.00	4.80	15.0	1.85	8	60	303476
M 8.00	1.25	6.40	20.0	2.30	8	75	303477
M 10.00	1.50	7.80	25.0	2.75	8	75	303478
M 12.00	1.75	9.50	30.0	3.10	10	100	308709

DIXI 1744-TC CUTINOX

DRILLING THREAD WHIRLERS
WITH THROUGH COOLANT

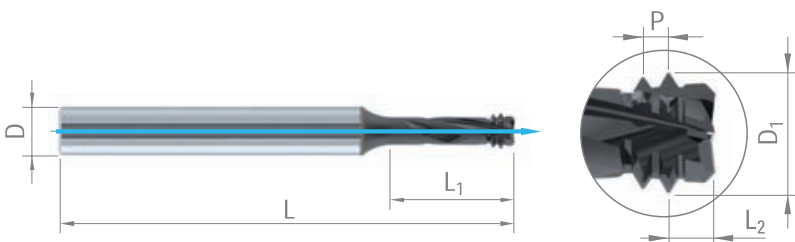
Z = 4



P. 320



P. 326



Steel
+ Pb

Low
alloyed
steel

High
alloyed
steel

DUPLEX
stainless
steel

Cast iron

Refractory
alloy

Titanium,
titanium
alloy

D nom.	Pitch P	D ₁	L ₁	L ₂	D _{h5}	L	CUTINOX
M 5.00	0.80	4.00	12.5	1.50	8	60	303479
M 6.00	1.00	4.80	15.0	1.85	8	60	303480
M 8.00	1.25	6.40	20.0	2.30	8	75	303481
M 10.00	1.50	7.80	25.0	2.75	8	75	303482
M 12.00	1.75	9.50	30.0	3.10	10	100	308710

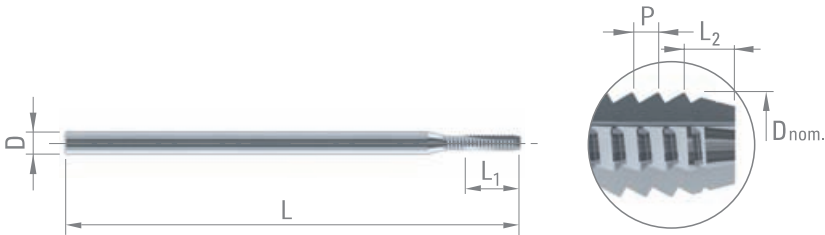
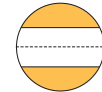
DIXI 1712-AF/BT

MICRO CUTTING TAPS SELF LOCKING PROFILE

Z = 3



P. 319



Steel
+ Pb

Cu alloy
Silver
Gold

D nom.	Pitch P	Drilling Ø	L ₁	L ₂	D _{h5}	L	CARBIDE
S 0.70	0.175	0.59	3.0	0.35	1.5	30	995574
S 0.80	0.20	0.68	3.5	0.40	1.5	30	995676
S 0.90	0.225	0.76	4.0	0.45	1.5	30	995677
M 1.00	0.25	0.84	4.0	0.50	1.5	30	995678
M 1.20	0.25	1.04	5.0	0.50	1.5	30	995679
M 1.40	0.30	1.21	5.0	0.60	1.5	30	995680

n Rotation speed [rev/min]

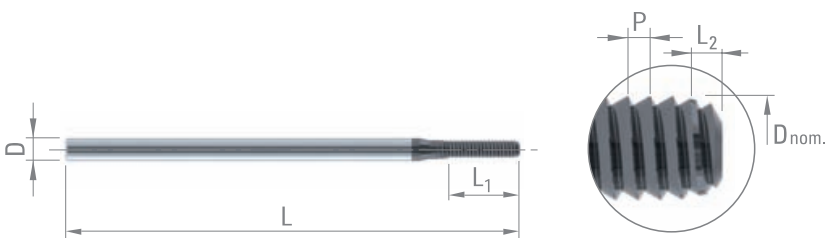
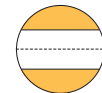
500 - 2500

DIXI 1716-AF/BT DI-TOP

THREAD FORMERS SELF LOCKING PROFILE



P. 319



Steel
+ Pb

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al

D nom.	Pitch P	Drilling Ø	L ₁	L ₂	D _{h5}	L	DI-TOP
S 0.70	0.175	0.65	2.8	0.35	1.5	30	995723
S 0.80	0.20	0.74	3.2	0.40	1.5	30	995745
S 0.90	0.225	0.83	3.6	0.45	1.5	30	995746
M 1.00	0.25	0.92	4.0	0.50	1.5	30	995747
M 1.20	0.25	1.12	4.8	0.50	1.5	30	995748
M 1.40	0.30	1.31	5.6	0.60	1.0	30	995749

n Rotation speed [rev/min]

500 - 2500

DIXI 1738-AF/BT

WHIRLING TOOLS SELF LOCKING PROFILE

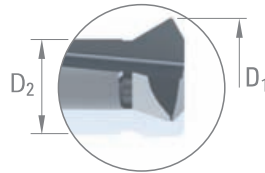
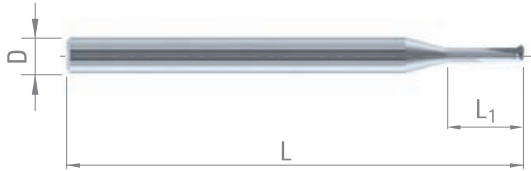
Z = 3



P. 319



P. 322



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Refractory alloy
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Alu	Plastic

D nom.	Pitch	Drilling Ø	D ₁	L ₁	D ₂	D _{h5}	L	CARBIDE
S 0.70	0.175	0.59	0.54	1.8	0.34	3	38	995725
S 0.80	0.20	0.68	0.62	2.3	0.39	3	38	995880
S 0.90	0.225	0.76	0.70	2.5	0.44	3	38	995881
M 1.00	0.25	0.84	0.80	2.8	0.51	3	38	995882
M 1.20	0.25	1.04	0.98	3.4	0.69	3	38	995883
M 1.40	0.30	1.21	1.12	4.0	0.77	3	38	995884
M 1.60	0.35	1.38	1.26	4.5	0.86	3	38	995885
M 2.00	0.40	1.75	1.60	5.6	1.14	3	38	995886
M 2.20	0.45	1.91	1.70	6.2	1.18	3	38	995887
M 3.00	0.50	2.68	2.40	8.4	1.82	3	38	995888

DIXI 1740-AF/BT

DRILLING THREAD WHIRLERS SELF LOCKING PROFILE

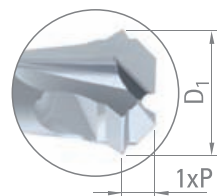
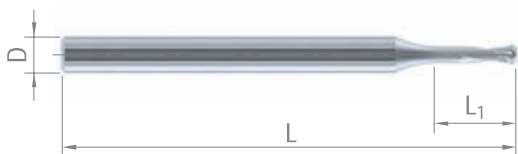
Z = 1-2



P. 319



P. 324



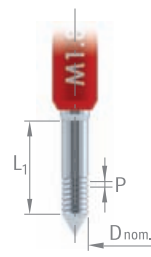
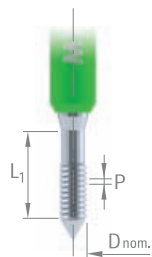
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Graphite	Plastic			

D nom.	Pitch P	D ₁	L ₁	D _{h5}	L	Z	CARBIDE
S 0.80	0.20	0.60	2.4	3	38	1	300295
S 0.90	0.225	0.66	2.7	3	38	1	300435
M 1.00	0.25	0.73	3.0	3	38	1	300436
M 1.20	0.25	0.92	3.6	3	38	1	300437
M 1.40	0.30	1.05	4.2	3	38	1	300438
M 1.60	0.35	1.21	4.8	3	38	1	300439
M 2.00	0.40	1.55	6.0	3	38	2	300440
M 2.20	0.45	1.70	6.6	3	38	2	300441
M 2.50	0.45	2.00	7.5	3	38	2	300444
M 3.00	0.50	2.44	9.0	6	57	2	300445



DIXI 1718-AF/BT - DIXI 1719-AF/BT

THREAD GAUGES
"GO" - **"NO GO"**
 SELF LOCKING PROFILE



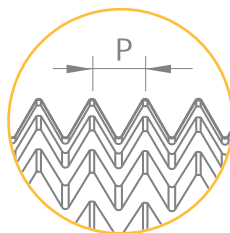
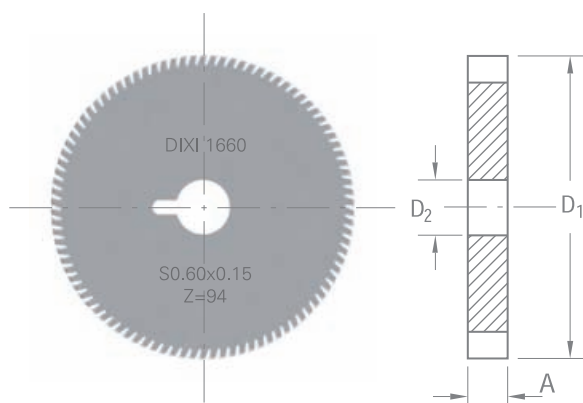
D nom.	Pitch P	L ₁	1718-AF/BT GO	1719-AF/BT NO GO
S 0.70	0.175	3.0	995572	995573
S 0.80	0.20	3.5	995615	995664
S 0.90	0.225	4.0	995616	995665
M 1.00	0.25	4.0	995617	995666
M 1.20	0.25	5.0	995619	995667
M 1.40	0.30	5.0	995620	995668
M 1.60	0.35	6.0	995621	995669
M 1.80	0.35	6.0	995622	995670
M 2.00	0.40	6.0	995623	995671
M 2.20	0.45	8.0	995624	995672
M 2.50	0.45	8.0	995631	995674
M 3.00	0.50	8.0	995626	995675



HOB CUTTERS FOR NIHS SCREWS

Z = 94

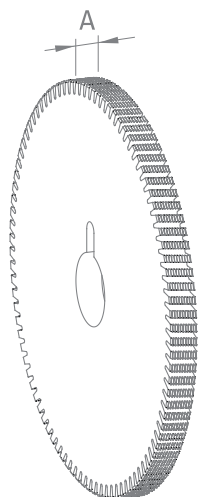
NIHS
06



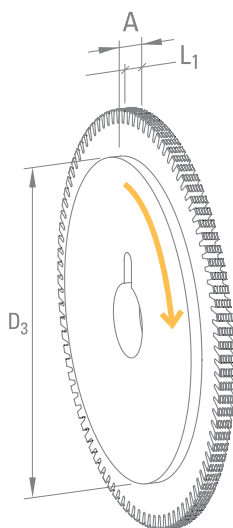
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Titanium, titanium alloy
Cu alloy Silver Gold	Cu alloy difficult to machine			

D nom.	Pitch P	$D_1 \pm 0.03$	$D_2 H_5$	D_3	Z	A	L_1	Ref.	Flat root DIXI 1660	Radius at root DIXI 1661
CARBIDE										
S0.40	0.100	45	8	35	94	3	1.00	B	301926	334510
							1.00	C	301927	327631
S0.50	0.125	45	8	35	94	3	1.10	B	301928	334511
							1.10	C	301929	334512
S0.60	0.150	45	8	35	94	3	1.35	B	301930	334513
							1.35	C	301305	334514
							3.00	A	301931	334515
							1.60	B	301932	334516
S0.70	0.175	45	8	35	94	3	1.60	C	301943	334517
							3.00	A	301945	334518
							1.80	B	301946	334519
S0.80	0.200	45	8	35	94	3	1.80	C	301947	334520
							3.00	A	301948	334521
							2.00	B	301949	334522
S0.90	0.225	45	8	35	94	3	2.00	C	301950	334523
							3.00	A	301951	334524
							3.00	A	301952	334525
S1.00	0.250	45	8	35	94	3	3.00	A	301952	334525
S1.40	0.300	45	8	35	94	3	3.00	A	301953	334526

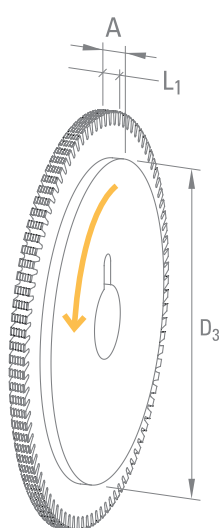
Ref. A



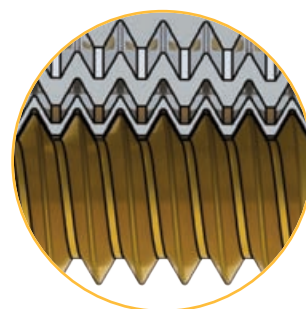
Ref. B



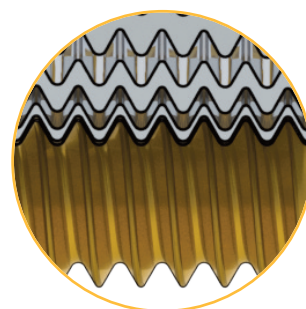
Ref. C



Flat
root
DIXI 1660



Radius
at root
DIXI 1661



DIXI 7910

STRAIGHT FLUTE THREAD MILLS

Z = 2-4



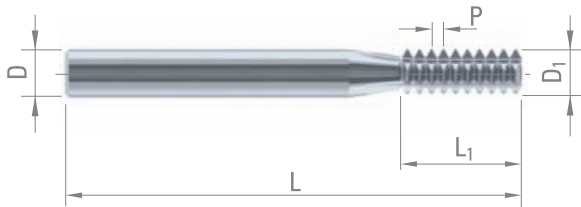
P. 320



P. 328



ISO
60°



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

D nom.	Pitch P	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	TiAIN
M 1.4	0.30	0.90	2.10	3	38	2	41565	56990
M 1.6	0.35	1.00	2.45	3	38	2	41566	56991
M 2.0	0.40	1.30	3.20	3	38	2	41568	56993
M 2.3	0.40	1.50	3.20	3	38	2	41569	56994
M 2.5	0.35	1.30	2.80	3	38	2	41567	56992
M 2.5	0.45	1.50	3.60	3	38	2	41570	56995
M 3.0	0.50	2.10	4.50	3	38	3	41571	56996
M 4.0	0.50	2.60	5.50	3	38	3	41572	56997
M 4.0	0.70	2.60	6.30	3	38	3	41573	56998
M 4.5	0.75	3.00	6.75	4	42	3	41574	56999
M 5.0	0.80	3.60	8.00	4	42	3	41576	57001
M 6.0	1.00	4.00	9.00	6	57	3	42578	55510
M 8.0	0.75	5.90	15.00	6	57	3	42577	57000
M 8.0	1.25	5.00	12.50	6	57	3	42579	57003
M 10.0	1.50	5.90	15.00	6	57	3	42580	57004
M 12.0	1.00	7.90	20.00	8	63	4	42554	57002
M 12.0	1.75	7.90	19.25	8	63	4	42590	57007
M 14.0	1.50	9.90	24.00	10	72	4	42561	57005
M 14.0	2.00	9.90	24.00	10	72	4	42591	57008
M 18.0	1.50	11.90	30.00	12	83	4	42589	57006
M 18.0	2.50	11.90	30.00	12	83	4	42593	57010
M 24.0	3.00	15.90	36.00	16	92	4	42594	

DIXI 7910 E = External

D nom.	Pitch P	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	TiAIN
M 3.0	0.50	5.90	15.00	6	57	3	42597	57013
M 4.5	0.75	7.90	19.50	8	63	4	42598	57014
M 6.0	1.00	9.90	24.00	10	72	4	41471	57015
M 10.0	1.50	11.90	30.00	12	83	4	41472	57016



HELICAL THREAD MILLS

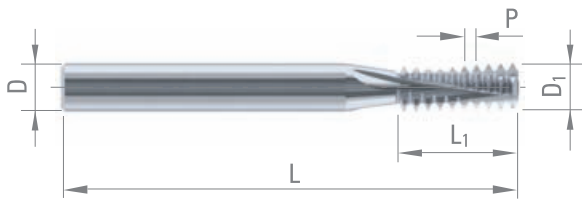
Z = 3-6



P. 320



P. 330

ISO
60°

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

D nom.	Pitch P	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	TiAIN
M 2.0	0.40	1.30	3.20	3	38	3	67417	952932
M 2.3	0.40	1.50	3.20	3	38	3	951593	952933
M 2.5	0.45	1.50	3.60	3	38	3	67419	952937
M 3.0	0.50	2.10	4.50	3	38	3	67420	952938
M 4.0	0.50	2.60	5.50	3	38	3	951594	952939
M 4.0	0.70	2.60	6.30	3	38	3	67452	952940
M 4.5	0.75	3.00	6.75	4	42	3	67453	952941
M 5.0	0.80	3.60	8.00	4	42	3	67454	952942
M 6.0	1.00	4.00	9.00	6	57	3	67455	952013
M 8.0	0.75	5.90	15.00	6	57	5	67461	952944
M 8.0	1.25	5.00	12.50	6	57	3	67274	952014
M 10.0	1.50	5.90	15.00	6	57	5	67456	952015
M 12.0	0.50	9.90	10.00	10	50	5	957036	957037
M 12.0	1.00	7.90	20.00	8	63	5	67462	952946
M 12.0	1.75	7.90	19.25	8	63	5	67457	952016
M 14.0	1.50	9.90	24.00	10	72	5	67463	952948
M 14.0	2.00	9.90	24.00	10	72	5	67459	952949
M 18.0	1.50	11.90	30.00	12	83	5	67464	952951
M 18.0	2.00	11.90	30.00	12	83	5	67465	952956
M 18.0	2.50	11.90	30.00	12	83	5	67458	952851
M 24.0	3.00	15.90	36.00	16	92	6	67460	952953

DIXI 7908 E = External

D nom.	Pitch P	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	TiAIN
M 3.0	0.50	5.90	15.00	6	57	5	67466	952943
M 4.5	0.75	7.90	19.50	8	63	5	67467	952945
M 6.0	1.00	9.90	24.00	10	72	5	67468	952947
M 10.0	1.50	11.90	30.00	12	83	5	67469	952950
M 14.0	2.00	11.90	30.00	12	83	5	67470	952952

DIXI 7913-TC

ISO THREAD MILLS, FINE PITCH
WITH THROUGH COOLANT

Z = 4-5



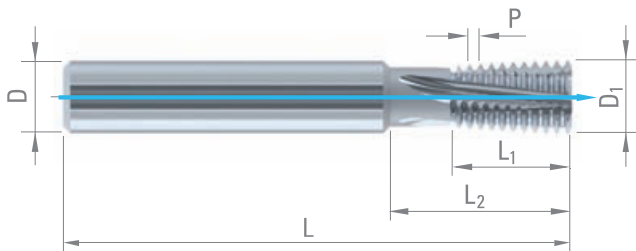
P. 320



P. 330

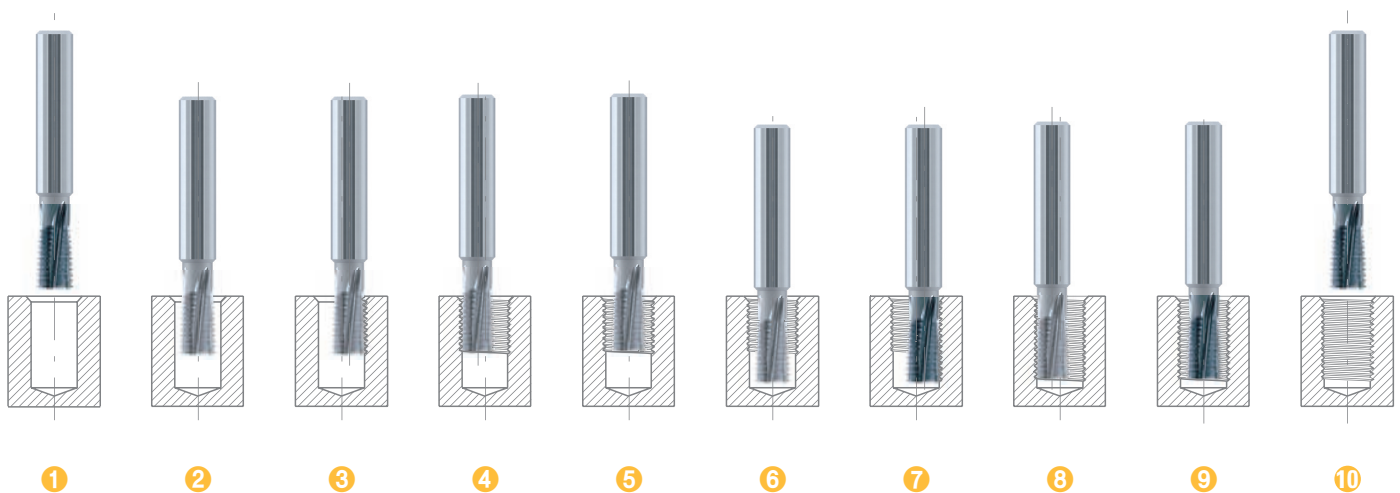


ISO
60°



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

Pitch P	D nom.	D ₁	L ₁	L ₂	D _{h5}	L	Z	CARBIDE	CUTINOX
0.50	M 10	7.95	16	-	8	64	4	303435	303455
	M 14	11.95	20	31	12	80	4	303436	303456
0.75	M 10	7.95	16	-	8	64	4	303437	303457
	M 12	9.95	16	25	10	70	4	303438	303458
	M 14	11.95	20	31	12	80	4	303439	303459
1.00	M 12	9.95	16	25	10	70	4	303440	303460
	M 16	11.95	20	31	12	80	4	303441	303461
	M 20	15.95	25	40	16	90	5	303442	303462
	M 24	19.95	33	50	20	105	5	303443	303463
1.25	M 14	9.95	16	25	10	70	4	303444	303464
	M 16	11.95	20	31	12	80	4	303445	303465
1.50	M 14	9.95	16	25	10	70	4	303446	303466
	M 16	11.95	20	31	12	80	4	303447	303467
	M 22	15.95	25	40	16	90	5	303448	303468
	M 26	19.95	33	50	20	105	5	303449	303469
2.00	M 16	11.95	20	31	12	80	4	303450	303470
	M 22	15.95	25	40	16	90	5	303451	303471
	M 27	19.95	33	50	20	105	5	303452	303472
2.50	M 22	15.95	25	40	16	90	5	303453	303473
	M 30	19.95	33	50	20	105	5	303454	303474



STRAIGHT FLUTE THREAD MILLS

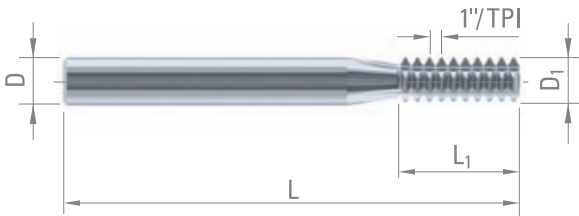
Z = 2-4



P. 320



P. 328



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

UNC	UNF	UNEF	UN	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	TiAIN
N°2	N°3			56	1.50	3.17	3	38	2	41581	953797
N°3	N°4			48	1.50	3.17	3	38	2	39808	953796
N°5	N°6			40	2.10	4.44	3	38	3	41582	953798
	N°8			36	3.00	6.35	4	42	3	39811	953799
N°8	N°10	N°12		32	3.00	6.35	4	42	3	41583	65997
		5/16"	7/16"	32	5.90	14.28	6	57	3	39813	953806
	N°12		5/16"	28	3.60	8.16	4	42	3	41584	64133
		7/16"	9/16"	28	7.90	19.95	8	63	4	39815	953812
N°12	5/16"			24	4.00	8.46	6	57	3	41585	953802
1/4"			5/16"	20	4.00	10.16	6	57	3	42599	953800
	1/2"	3/4"	9/16"	20	9.90	22.86	10	72	4	41475	953819
5/16"				18	5.00	12.70	6	57	3	41587	953803
	9/16"			18	9.90	23.98	10	72	4	41476	953817
3/8"			7/16"	16	5.90	14.28	6	57	3	42600	953804
			5/8"	16	11.90	28.57	12	83	4	42601	63605
7/16"				14	7.90	16.33	8	63	4	41478	953808
1/2"				13	7.90	19.53	8	63	4	39824	953807
9/16"			5/8"	12	9.90	23.28	10	72	4	39825	953815
	1"		1-1/16"	12	11.90	29.63	12	83	4	39826	63606
5/8"				11	9.90	23.09	10	72	4	39827	953814
3/4"				10	11.90	27.94	12	83	4	39828	953820

DIXI 7920 E = External

D nom.	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	TiAIN
UNC N°6	32	5.90	14.28	6	57	3	39850	953805
UNF N°12	28	7.90	19.95	8	63	4	39851	953810
UNC 1/4"	20	9.90	22.86	10	72	4	39852	953818
UNC 5/16"	18	9.90	23.98	10	72	4	39853	953816
UNC 3/8"	16	11.90	28.57	12	83	4	39854	953822



HELICAL THREAD MILLS

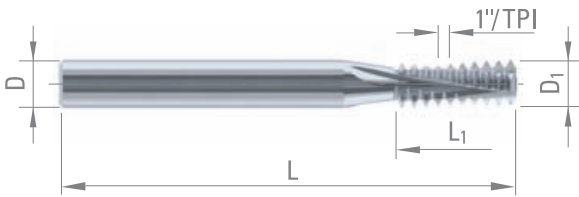
Z = 3-5



P. 320



P. 330



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

UNC	UNF	UNEF	UN	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	TiAIN
	N°2			64	1.50	3.17	3	38	3	951595	952964
N°2	N°3			56	1.50	3.17	3	38	3	67489	952963
N°3	N°4			48	1.50	3.17	3	38	3	67490	952962
	N°5			44	2.10	4.62	3	38	3	951482	952966
N°5	N°6			40	2.10	4.44	3	38	3	67491	952965
	N°8			36	3.00	6.35	4	42	3	67492	952968
N°8	N°10	N°12		32	3.00	6.35	4	42	3	67493	952967
		5/16"	7/16"	32	5.90	14.28	6	57	5	67497	952975
	N°12		5/16"	28	3.60	8.16	4	42	3	67494	952969
		7/16"	9/16"	28	7.90	19.95	8	63	5	67498	952979
N°12	5/16"	5/8"		24	4.00	8.46	6	57	3	67495	952971
1/4"			5/16"	20	4.00	10.16	6	57	3	67496	952970
	1/2"	3/4"	9/16"	20	9.90	22.86	10	72	5	67499	952985
5/16"				18	5.00	12.70	6	57	3	67500	952972
	9/16"			18	9.90	23.98	10	72	5	67501	952983
3/8"			7/16"	16	5.90	14.28	6	57	5	67502	952973
			5/8"	16	11.90	28.57	12	83	5	67503	952990
7/16"				14	7.90	16.33	8	63	5	67504	952977
1/2"				13	7.90	19.53	8	63	5	67505	952976
9/16"				12	9.90	23.28	10	72	5	67512	952981
	1"		1-1/16"	12	11.90	29.63	12	83	5	67506	952988
5/8"				11	9.90	23.09	10	72	5	951597	952980
3/4"				10	11.90	27.94	12	83	5	951667	952986

DIXI 7918 E = External

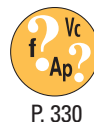
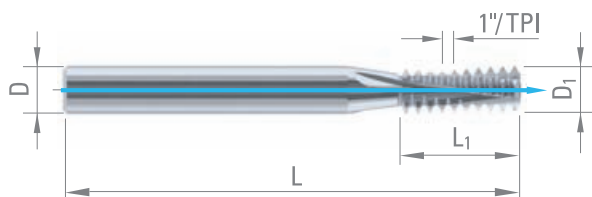
D nom.	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE	TiAIN
UNC N°6	32	5.90	14.28	6	57	5	67507	952974
UNF N°12	28	7.90	19.95	8	63	5	67508	952978
UNC 1/4"	20	9.90	22.86	10	72	5	67509	952984
UNC 5/16"	18	9.90	23.98	10	72	5	67510	952982
UNC 3/8"	16	11.90	28.57	12	83	5	67511	952989

DIXI 7923-TC

HELICAL THREAD MILLS WITH THROUGH COOLANT

Z = 3-4

$$L_1 = 2 \times \emptyset \text{ nom.}$$



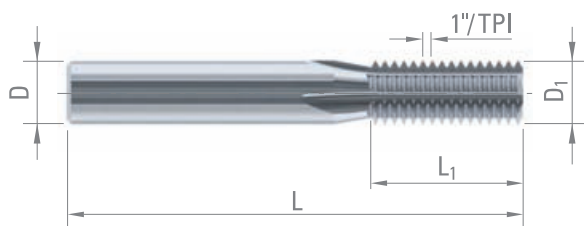
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

UNJF	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE
N°10	32	3.90	11.50	6	54	3	303381
1/4"	28	5.20	14.00	6	54	3	303382
5/16"	24	5.95	17.40	6	54	3	303383
3/8"	24	7.95	20.60	8	64	4	303384
7/16"	20	7.95	24.70	8	64	4	303385
1/2"	20	9.95	27.30	10	74	4	303386

DIXI 7940

STRAIGHT FLUTE THREAD MILLS

Z = 3-4



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

BSP	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE
G1/16" – G1/8"	28	5.90	14.51	6	57	3	42603
G1/4" – G3/8"	19	7.90	18.71	8	63	4	42604
G1/2" – G5/8" – G3/4" – G7/8"	14	11.90	29.02	12	83	4	42605
G1"	11	15.90	34.63	16	92	4	42606

For internal and external threading



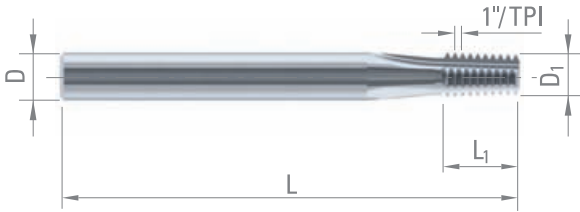
DIXI 7946

STRAIGHT FLUTE THREAD MILLS

Z = 3-4



P. 328



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

BSPT	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE
R1/16" – R1/8"	28	5.34	9.97	6	57	3	42607
R1/4" – R3/8"	19	7.07	14.70	8	63	4	42608
R1/2" – R5/8" – R3/4" – R7/8"	14	10.77	19.95	12	83	4	41590
R1" => R2-1/2"	11	14.32	27.70	16	92	4	42610

For internal and external threading

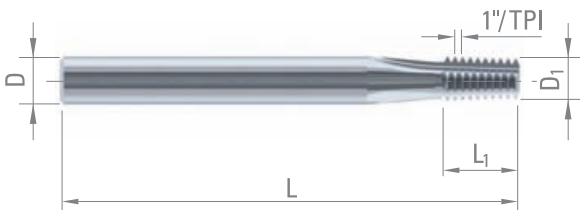
DIXI 7950

STRAIGHT FLUTE THREAD MILLS

Z = 3-4



P. 328



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

NPT	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE
1/4" – 3/8"	18	7.10	14.11	8	63	4	41592
1/2" – 3/4"	14	10.65	19.95	12	83	4	42611
1" – 1-1/4" – 1-1/2" – 2"	11.5	14.38	26.50	16	92	4	39792

For internal and external threading

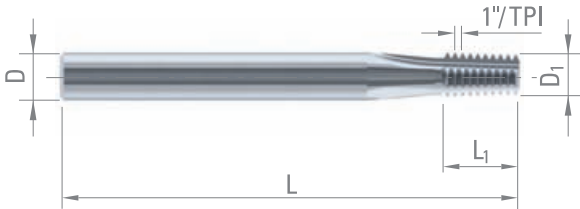
DIXI 7956

STRAIGHT FLUTE THREAD MILLS

Z = 3-4



P. 328



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

NPTF	TPI	D ₁	L ₁	D _{h5}	L	Z	CARBIDE
1/16" – 1/8"	27	5.37	9.40	6	57	3	39794
1/4" – 3/8"	18	7.10	14.11	8	63	4	39795
1/2" – 3/4"	14	10.65	19.95	12	83	4	39796
1" – 1-1/4" – 1-1/2" – 2"	11.5	14.38	26.50	16	92	4	41591

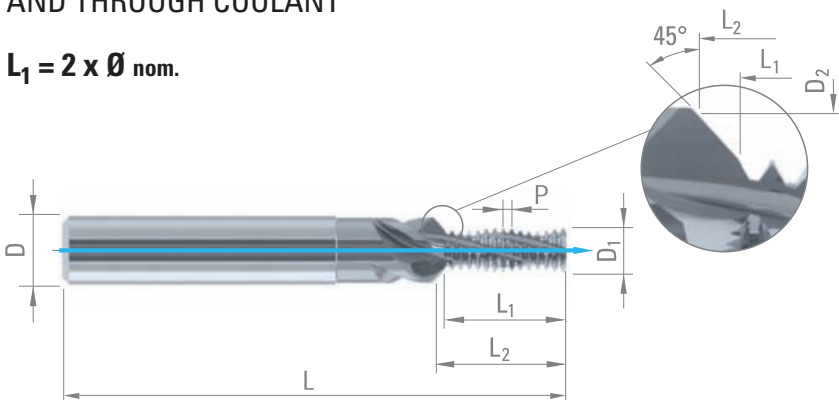
For internal and external threads

DIXI 7915-TC

THREAD MILLS WITH COUNTERSINK AND THROUGH COOLANT

Z = 3-4

$L_1 = 2 \times \varnothing \text{ nom.}$



P. 320



P. 330



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al	Plastic

D nom.	Pitch P	D ₁	D ₂	L ₁	L ₂	D _{h5}	L	Z	CARBIDE	CUTINOX
M 4.0	0.70	3.10	4.2	8.70	9.3	6	48	3	303387	303394
M 5.0	0.80	3.90	5.3	10.70	11.5	6	54	3	303388	303395
M 6.0	1.00	4.70	6.3	13.40	14.3	8	62	3	303389	303396
M 8.0	1.25	6.40	8.4	18.10	19.1	10	74	3	303390	303397
M 10.0	1.50	8.10	10.5	21.70	22.9	12	80	4	303391	303398
M 12.0	1.75	9.95	12.6	25.30	26.7	14	90	4	303392	303399
M 16.0	2.00	13.40	16.8	34.90	36.6	18	102	4	303393	303400

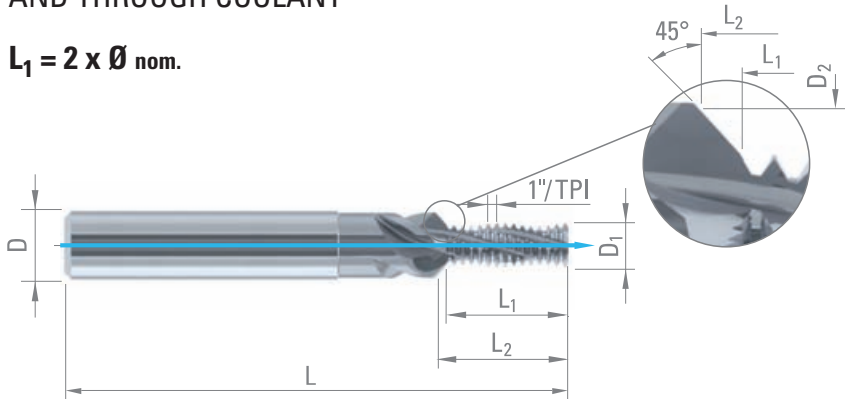


DIXI 7925-TC

THREAD MILLS WITH COUNTERSINK AND THROUGH COOLANT

$$L_1 = 2 \times \varnothing \text{ nom.}$$

Z = 3-4



P. 320



P. 330



Steel
+ Pb

Low
alloyed
steel

High
alloyed
steel

DUPLEX
stainless
steel

Cast iron

Titanium,
titanium
alloy

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al

Plastic

UNC	TPI	D ₁	D ₂	L ₁	L ₂	D _{h5}	L	Z	CARBIDE	CUTINOX
N°8	32	3.10	4.4	9.10	9.7	6	48	3	303401	303411
N°10	24	3.60	5.1	11.00	11.9	6	54	3	303402	303412
N°12	24	4.10	5.8	12.10	13.0	6	54	3	303403	303413
1/4"	20	4.80	6.7	14.50	15.6	8	62	3	303404	303414
5/16"	18	5.95	8.3	17.60	18.7	10	74	3	303405	303415
3/8"	16	7.50	10.0	21.40	22.6	12	80	4	303406	303416
7/16"	14	8.80	11.7	24.40	25.9	12	80	4	303407	303417
1/2"	13	10.30	13.3	28.20	29.8	14	90	4	303408	303418
9/16"	12	10.80	15.0	30.60	32.3	16	102	4	303409	303419
5/8"	11	11.90	16.7	35.70	37.6	18	102	4	303410	303420



1



2



3



4



5



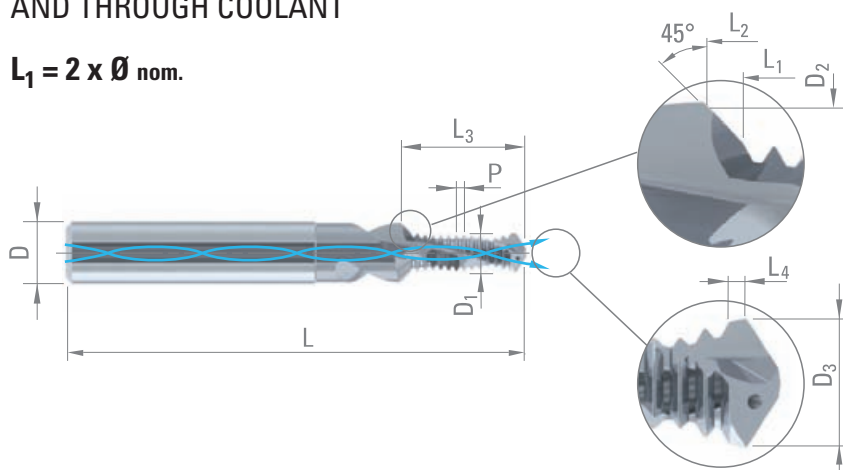
6

DIXI 7985-HH

DRILLING THREAD MILLS WITH COUNTERSINK AND THROUGH COOLANT

$$L_1 = 2 \times \varnothing \text{ nom.}$$

Z = 2



P. 320



P. 332



ISO
60°



Cast iron



Cu alloy
Silver
Gold

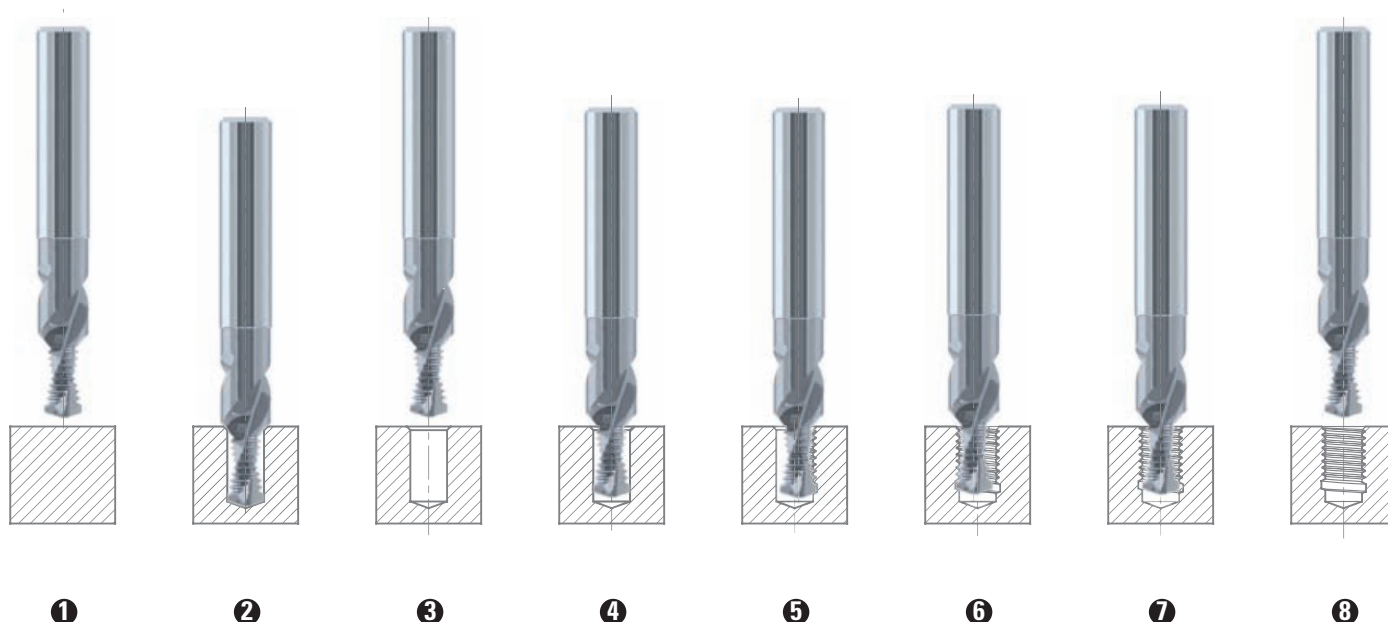


Cu alloy
difficult
to machine



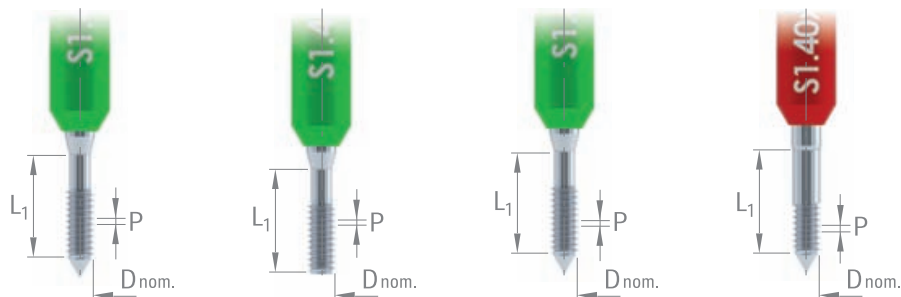
Al

D nom.	Pitch P	D ₁	D ₂	D ₃	L ₁	L ₂	L ₃	L ₄	D _{h5}	L	CARBIDE CUTINOX	
M 4.0	0.70	3.20	4.2	3.30	8.90	8.9	9.5	0.7	6	48	303421	303428
M 5.0	0.80	4.00	5.3	4.20	11.10	11.0	11.8	0.8	6	54	303422	303429
M 6.0	1.00	4.75	6.3	5.00	13.85	13.7	14.6	1.0	8	62	303423	303430
M 8.0	1.25	6.35	8.4	6.75	18.60	18.4	19.6	1.3	10	74	303424	303431
M 10.0	1.50	7.95	10.5	8.50	22.40	22.2	23.7	1.5	12	80	303425	303432
M 12.0	1.75	9.95	12.6	10.25	26.00	25.5	27.4	1.5	14	90	303426	303433
M 16.0	2.00	13.20	16.8	14.00	35.90	35.1	37.6	1.5	18	102	303427	303434



DIXI 1718-NT, -RT - DIXI 1719-NT/RT

THREAD GAUGES
"GO" - "NO GO"
RIGHT HAND THREADS



D nom.	Pitch P	L ₁	1718-NT 4H GO	1718-NT (blind hole) 4H GO	1718-RT 3G GO	1719-NT/RT 3G/4H NO GO
S 0.30	0.08	1.0	965295	978958	983114	965312
S 0.35	0.09	1.3	965296	978959	983468	965313
S 0.40	0.10	2.0	965297	978960	983115	965314
S 0.50	0.125	2.5	965298	978961	983116	965315
S 0.60	0.15	3.0	965299	978962	983117	965316
S 0.70	0.175	3.0	965300	978963	983236	965317
S 0.80	0.20	3.5	965301	978964	983118	965318
S 0.90	0.225	4.0	965302	978965	983119	965319
S 1.00	0.25	4.0	965303	978966	983120	965320
S 1.20	0.25	5.0	965304	978967	983121	965321
S 1.40	0.30	5.0	965305	978968	983122	965322

Each thread plug gauge is delivered with its pitch diameter measurement

DIXI 1718-NT L - DIXI 1719-NT/RT L

THREAD GAUGES
"GO" - "NO GO"
LEFT HAND THREADS



D nom.	Pitch P	L ₁	1718-NT L 4H GO	1719-NT/RT L 3G/4H NO GO
S 0.50	0.125	2.5	968369	968370
S 0.60	0.15	3.0	968345	968346
S 0.70	0.175	3.0	968344	968347
S 0.80	0.20	3.5	968343	968348
S 0.90	0.225	4.0	968925	968926
S 1.00	0.25	4.0	969395	969396
S 1.20	0.25	5.0	982638	982639

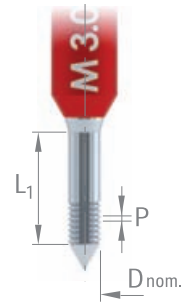
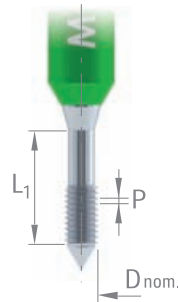
Each thread plug gauge is delivered with its pitch diameter measurement

DIXI 1718-M - DIXI 1719-M

THREAD GAUGES
"GO" - "NO GO"



P. 317



D nom.	Pitch P	L ₁	Tol.	1718-M GO	1719-M NO GO
M 1.00	0.25	5.0	5H	976633	976635
M 1.20	0.20	5.0	4H	305894	305900
M 1.20	0.20	5.0	5H	980934	980935
M 1.20	0.25	5.0	5H	976634	976636
M 1.40	0.20	5.0	4H	305895	305901
M 1.40	0.30	6.0	5H	976693	976710
M 1.50	0.30	6.0	6H	976694	976711
M 1.60	0.20	5.0	4H	305896	305902
M 1.60	0.20	5.0	5H	976695	976713
M 1.60	0.35	6.0	6H	975716	975717
M 1.80	0.20	5.0	4H	305897	305903
M 1.80	0.35	6.0	6H	976024	976026
M 2.00	0.20	5.0	4H	305898	305904
M 2.00	0.40	6.0	6H	976699	976716
M 2.20	0.20	5.0	4H	305899	305905
M 2.20	0.25	5.0	5H	976701	976718
M 2.20	0.45	8.0	6H	976702	976719
M 2.50	0.35	6.0	6H	303652	303653
M 2.50	0.45	8.0	6H	976704	976721
M 3.00	0.50	8.0	6H	976705	976722

Each thread plug gauge is delivered with its pitch diameter measurement



DIXI 0418 - DIXI 0419

"GO" - "NO GO" PLAIN GAUGES
FOR NIHS THREAD MINOR DIAMETER



P. 317



D nom.	Pitch	L ₁	0418 5H/6H GO (Brass / Steel)	0419 5H NO GO (Brass)	0419 6H NO GO (Steel)
S 0.30	0.08	2.0	308301	308307	-
S 0.35	0.09	2.0	308300	308306	-
S 0.40	0.10	3.5	308299	308305	308310
S 0.50	0.125	3.5	308298	308304	308309
S 0.60	0.15	3.5	308297	308302	308308
S 0.70	0.175	5.0	306719	306818	306824
S 0.80	0.20	5.0	306813	306819	306825
S 0.90	0.225	5.0	306814	306820	306826
S 1.00	0.25	5.0	306815	306821	306827
S 1.20	0.25	5.0	306816	306822	306828
S 1.40	0.30	5.0	306817	306823	306829

DIXI 1718 - SET

SET OF NIHS THREAD GAUGES



P. 317



Content	Art.	Content	Art.	Content	Art.
DIXI 1718-NT GO (S0.30-S1.40)	305989	DIXI 1718-RT GO (S0.30-S1.40)	305990	DIXI 1718-NT GO (S0.30-S1.40)	305991
DIXI 1719-NT/RT NO GO (S0.30-S1.40)		DIXI 1719-NT/RT NO GO (S0.30-S1.40)		DIXI 1718-RT GO (S0.30-S1.40)	
				DIXI 1719-NT/RT NO GO (S0.30-S1.40)	
Empty box (NIHS NT)	307437	Empty box (NIHS RT)	307438	Empty box (NIHS NT & RT)	307439

SET OF THREAD AND PLAIN GAUGES FOR THE FULL CHECKING OF NIHS THREADS



Content	Art.
DIXI 1718-NT GO (S0.30-S1.40)	308313
DIXI 1718-RT GO (S0.30-S1.40)	
DIXI 1719-NT/RT NO GO (S0.30-S1.40)	
DIXI 0418-H5/H6 GO (brass / steel) (S0.30-S1.40)	312619
DIXI 0419-H5 NO GO (brass) (S0.30-S1.40)	
DIXI 0419-H6 NO GO (steel) (S0.40-S1.40)	
Empty box	





Figure 1
DIXI 1718



Figure 2
DIXI 1719



Figure 3
DIXI 0418



Figure 4
DIXI 0419

Gauging internal threads must be done with both thread and plain gauges. Each of these gauges has its own function, way of use and result analysis.

Figure 1: GO thread gauge (DIXI 1718)

A **GO** thread gauge checks the minimum limit of the pitch diameter, taking into account pitch errors, errors in flank angles and deviations of form, which produce an apparent reduction of the pitch diameter of the workpiece.

In addition, it checks the minimum limit of the major diameter and also whether the length of straight flank is sufficient; i.e. that the rounding at the root of the profile does not encroach too far upon the flank of the thread.

The **GO** thread gauge, when screwed by hand without using excessive force, shall enter the whole length of the workpiece thread. If entry is not possible, the workpiece thread does not comply with the specification.

Wear of the **GO** thread gauge shall be monitored by re-measurement of the gauge at intervals of time according to the intensity of use.

Note: This gauge does not check the min or diameter of the workpiece thread.

Figure 2: NO GO thread gauge (DIXI 1719)

A **NO GO** thread gauge checks whether the actual pitch diameter exceeds the specified maximum size.

The **NO GO** thread gauge, when screwed by hand without using excessive force, may enter into both ends of the threaded part, but by not more than two turns of thread. If it can be screwed in by more than two turns of thread, the workpiece thread does not comply with the specification.

The **NO GO** thread gauge shall not pass completely through a workpiece with a length of thread of three threads or less.

It is recommended that the **NO GO** screw plug gauge be checked regularly for wear.

Note: This gauge does not check the minor diameter of the workpiece thread.

Figure 3: GO plain gauge (DIXI 0418)

A **GO** plain gauge checks the minimum limit of the minor diameter of the workpiece thread.

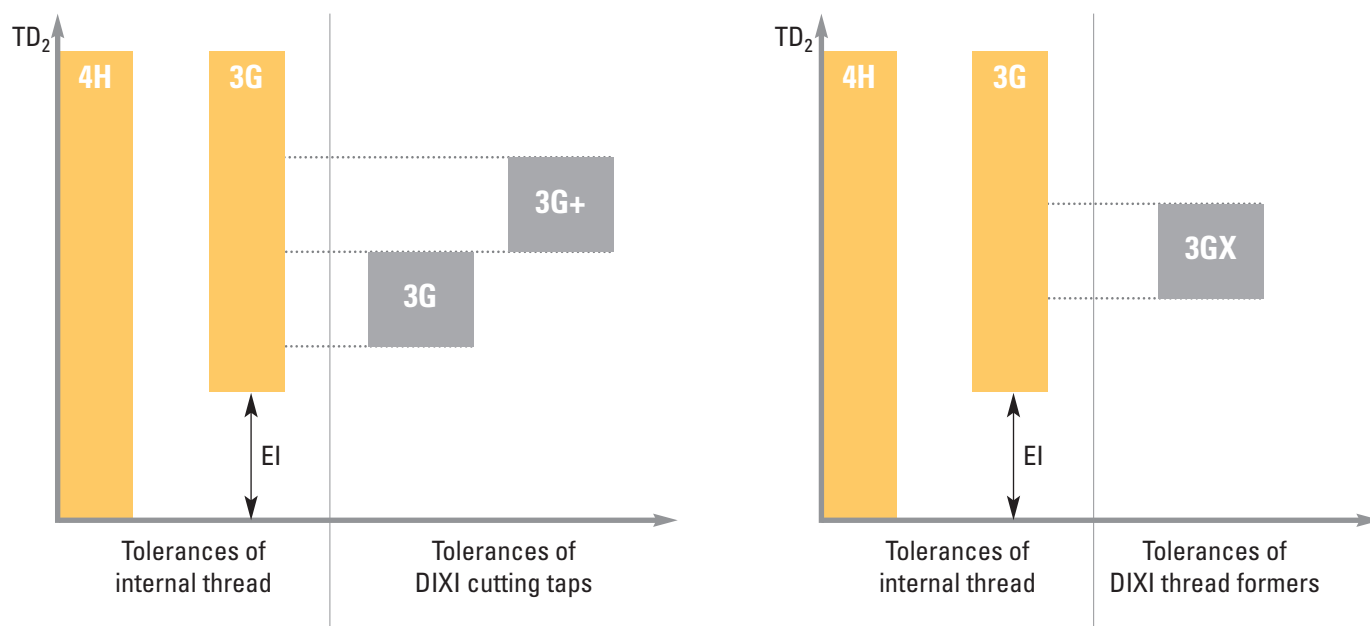
The **GO** plain gauge, when introduced by hand without using excessive force, shall pass through the workpiece thread.

Figure 4: NO GO plain gauge (DIXI 0419)

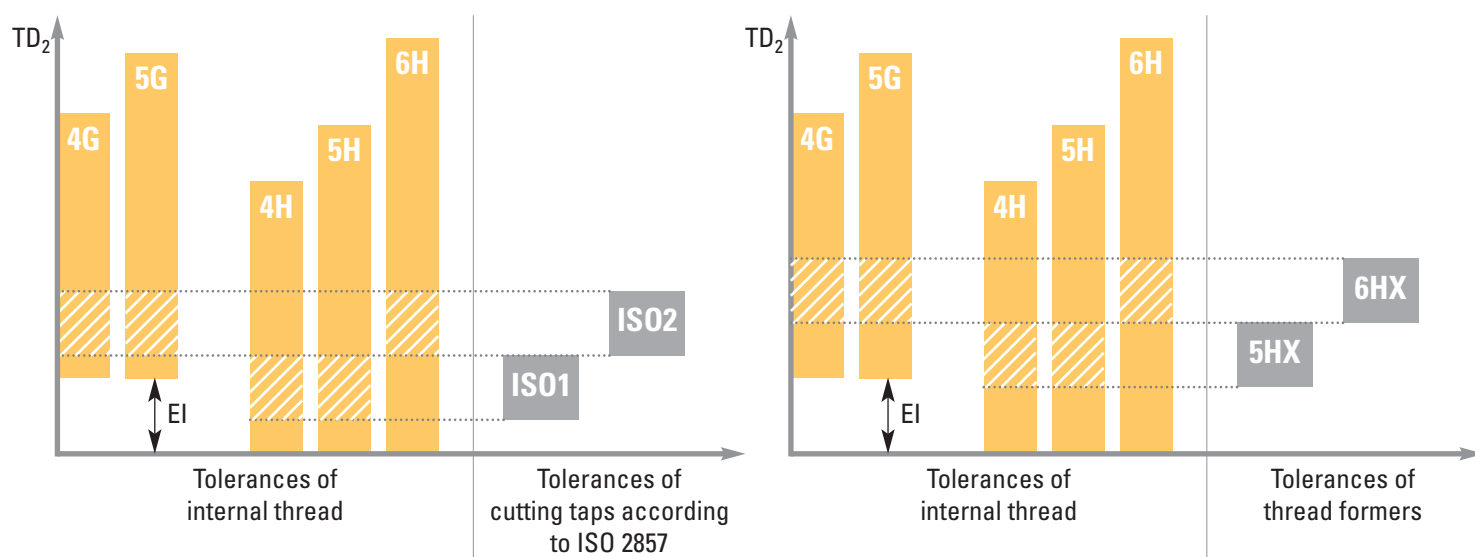
A **NO GO** plain gauge checks whether the actual minor diameter exceeds the specified maximum size.

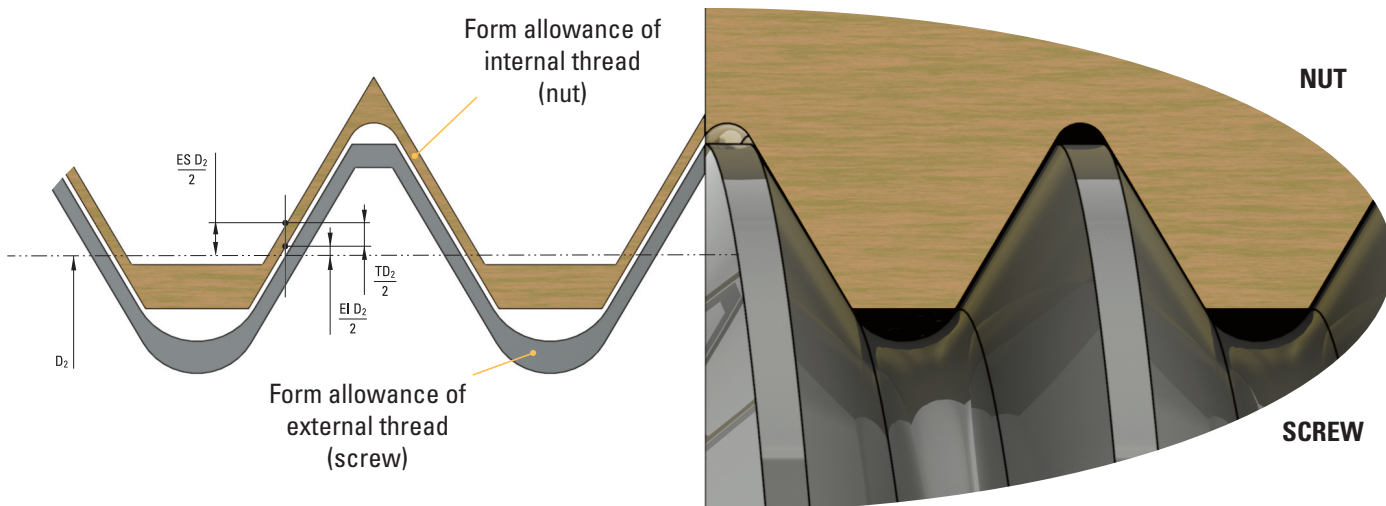
The **NO GO** plain gauge may enter into both ends of the workpiece thread but only in a zone which has a distance of not more than one pitch length from the start of the thread.

TOLERANCE ZONES OF PITCH DIAMETERS ON "S" MINIATURE THREADS (ISO 1501 / NIHS 06-10 / DIN 14)

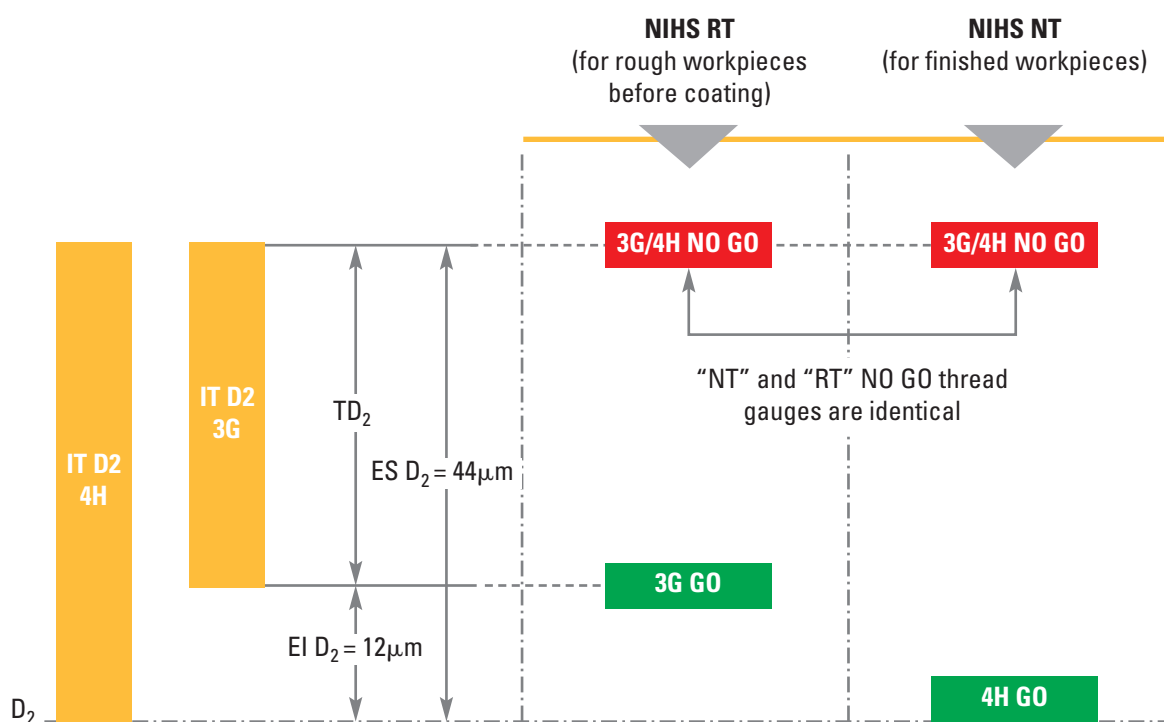


TOLERANCE ZONES OF PITCH DIAMETERS ON METRIC INTERNAL THREADS (ISO 965 / NIHS 06-06 / DIN 13)





D_2	Pitch diameter
$EI D_2$ deviation	Lower deviation of pitch diameter D_2 .
$ES D_2$ deviation	Upper deviation of pitch diameter D_2 .
TD_2 allowance	Pitch diameter (D_2) allowance. $TD_2 = ES D_2 - EI D_2$.
NIHS NT allowance criteria	NT is abbreviation of "Normal Tolerance". This criteria is used to control NIHS threads on finished workpieces (with or without coating). NIHS NT GO gauges are aimed to check NIHS 06-10 threads with 4H tolerance.
NIHS RT allowance criteria	RT is abbreviation of "Reduced Tolerance". This criteria is used to control NIHS threads on rough workpieces in production (before coating). NIHS RT GO gauges are aimed to check NIHS 06-10 threads with 4H tolerance.
NO GO thread gauge	NO GO thread gauges are identical (NT or RT allowance criteria). They are used to check rough workpieces (production stage) or finished workpieces (with or without coating). NIHS NT/RT NO GO gauges are aimed to check NIHS 06-10 threads with 3G or 4H tolerances.



GO and NO GO thread gauges tolerances - Example for a 0.25 mm pitch

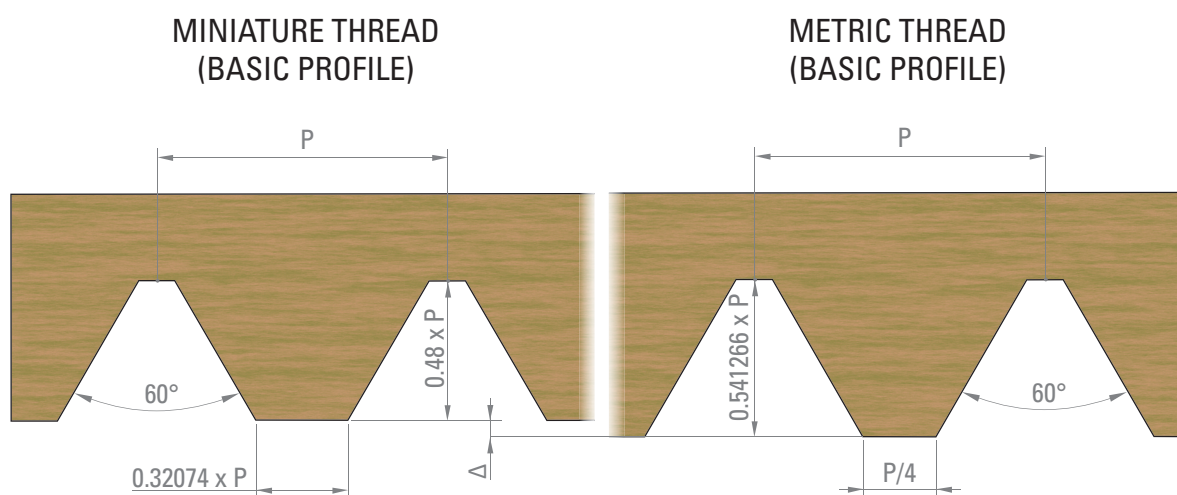
TECHNICAL ADVANTAGES OF CARBIDE GAUGES



All the gauges produced by DIXI Polytool are made of carbide.

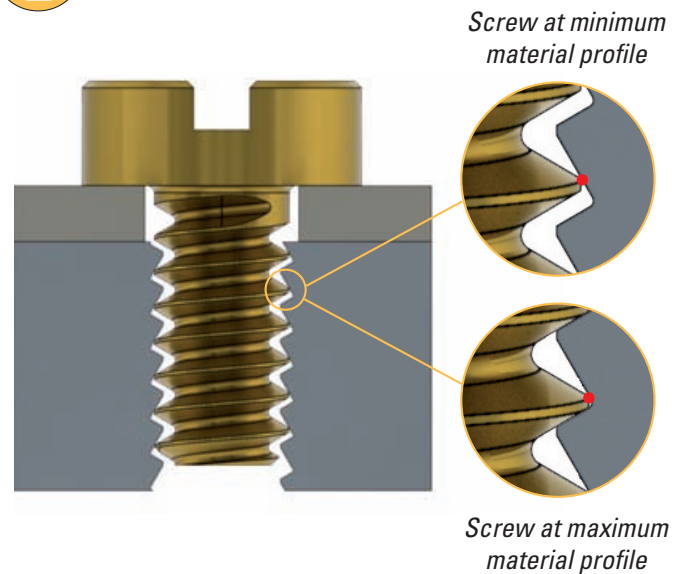
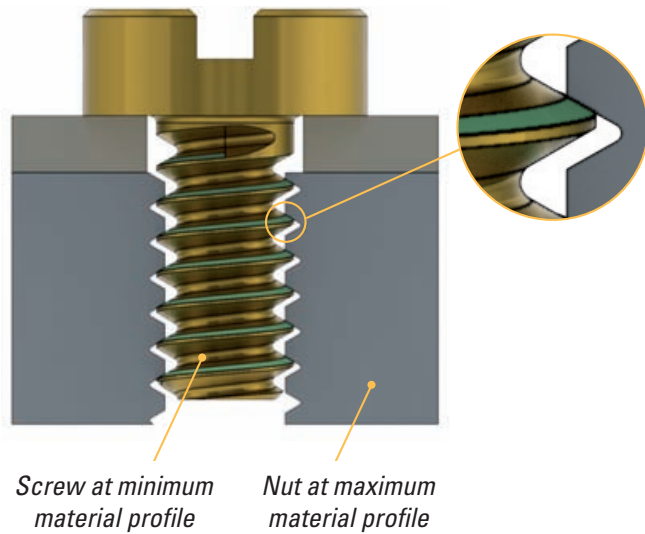
	STEEL	CARBIDE	
Wear resistance	☹️	😊	A steel gauge gets worn quicker and thus can be wrong.
Shape accuracy	☹️	😊	Grinding process allows higher levels of precision.
Dimensional stability	☹️	😊	Insignificant influence of ambient temperature on carbide.
Oxydation resistance	☹️	😊	A carbide gauge doesn't get rusted.
Yield strength	☹️	😊	A carbide gauge doesn't bend, steel gauges can. Deformation generates wrong gauges.

COMPARISON BETWEEN "S" AND "M" THREADS



	Miniature thread				Metric thread ISO
Standard	ISO 1501	NIHS 06-10 (Switzerland)	ASM B1.10M (USA)	DIN 14 (Germany)	ISO 965
Thread symbol	"S"		"UNM"	"M"	"M"
Designation example	S 0.60 x 0.15		UNM 0.60 x 0.15	M 0.60 x 0.15	M 6.00 x 1.00
Nominal Ø range	0.30mm to 1.40mm			0.30mm to 0.90mm	1.00mm to 355mm
Pitch range	0.08mm to 0.30mm			0.08mm to 0.225mm	0.20mm to 8.00mm

AF THREAD - TECHNICAL ADVANTAGES



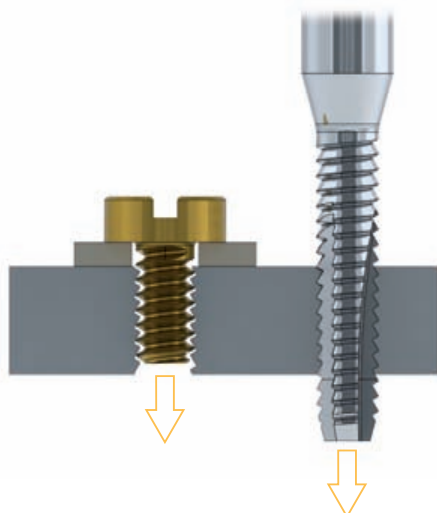
On a S1.00x0.25 assembly, there can be up to 0.05mm free space between the screw crest diameter and the nut root diameter. That clearance allows a freedom of movement that could cause vibration loosening. This phenomenon is accentuated by the narrow theoretical contact surface between the flanks of both screw and nut. In some cases, adhesives can be used to avoid vibration loosening. This solution is inappropriate for assemblies on which visual aspects are key (watch industry).

Whatever the screw size (minimum or maximum material profile), the contact line is guaranteed to be the same. Thus the manufacturing tolerances do not influence the assembly quality.

Thanks to AF thread profile, no need to use adhesive anymore.

PROFILE DIRECTION - MACHINING DIRECTION

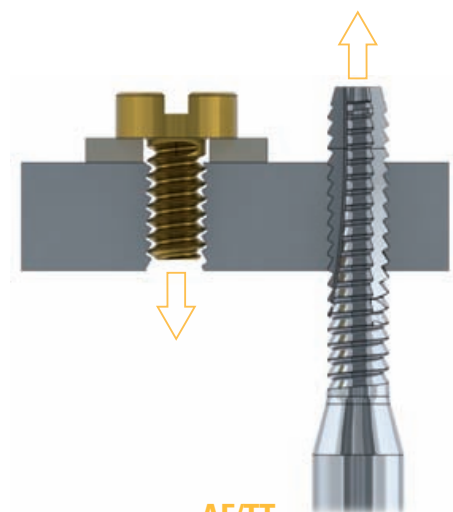
Unlike 60° thread, AF thread is made of an asymmetric profile. Depending on the tool machining direction, the cutting profile is reversed.



AF/BT

The tool and the screw have the same screwing direction.

Tools from stock



AF/TT

The tool and the screw have opposite screwing direction.

Tools on request



DRILLING Ø BEFORE TAPPING OR INTERNAL WHIRLING OPERATION

NIHS 06-10 (ISO 1501 / DIN 14)

Nominal Ø	Pitch	Brass (3G5)			Steel (3G6)		
		Minor Ø min.	Drilling Ø max.		Internal Ø min.	Drilling Ø max.	
S 0.30	0.08	0.223	0.240	0.23	-	-	-
S 0.35	0.09	0.264	0.286	0.275	-	-	-
S 0.40	0.10	0.304	0.330	0.32	0.304	0.342	0.34
S 0.45	0.10	0.354	0.380	0.37	0.354	0.392	0.39
S 0.50	0.125	0.380	0.415	0.40	0.380	0.435	0.42
S 0.55	0.125	0.430	0.465	0.45	0.430	0.485	0.47
S 0.60	0.15	0.456	0.502	0.48	0.456	0.522	0.50
S 0.70	0.175	0.532	0.585	0.56	0.532	0.605	0.58
S 0.80	0.20	0.608	0.665	0.64	0.608	0.685	0.66
S 0.90	0.225	0.684	0.745	0.72	0.684	0.765	0.74
S 1.00	0.25	0.760	0.825	0.80	0.760	0.845	0.82
S 1.10	0.25	0.860	0.925	0.90	0.860	0.945	0.92
S 1.20	0.25	0.960	1.025	1.00	0.960	1.045	1.02
S 1.30	0.30	1.012	1.085	1.05	1.012	1.105	1.07
S 1.40	0.30	1.112	1.185	1.15	1.112	1.205	1.17

ISO 965 (DIN 13)

Nominal Ø	Pitch	Tolerance	Minor Ø		Drilling Ø
			min.	max.	
M 0.8	0.20	-	0.608	0.685	0.65
M 0.9	0.225	-	0.684	0.765	0.70
M 1.0	0.25	5H	0.729	0.785	0.75
M 1.1	0.25	5H	0.829	0.885	0.85
M 1.2	0.25	5H	0.929	0.985	0.95
M 1.4	0.30	6H	1.075	1.142	1.10
M 1.6	0.35	6H	1.221	1.321	1.25
M 1.7	0.35	6H	1.321	1.421	1.35
M 1.8	0.35	6H	1.421	1.521	1.45
M 2.0	0.40	6H	1.567	1.679	1.60
M 2.2	0.45	6H	1.713	1.838	1.75
M 2.5	0.45	6H	2.013	2.138	2.05
M 3.0	0.50	6H	2.459	2.599	2.50
M 3.5	0.60	6H	2.850	3.010	2.90
M 4.0	0.70	6H	3.242	3.422	3.30
M 4.5	0.75	6H	3.688	3.878	3.70
M 5.0	0.80	6H	4.134	4.334	4.20
M 6.0	1.00	6H	4.917	5.153	5.00
M 7.0	1.00	6H	5.917	6.153	6.00
M 8.0	1.25	6H	6.647	6.912	6.80
M 9.0	1.25	6H	7.647	7.912	7.80
M 10.0	1.50	6H	8.376	8.676	8.50
M 11.0	1.50	6H	9.376	9.676	9.50
M 12.0	1.75	6H	10.106	10.441	10.20
M 14.0	2.00	6H	11.835	12.210	12.00
M 16.0	2.00	6H	13.835	14.210	14.00
M 18.0	2.50	6H	15.294	15.744	15.50
M 20.0	2.50	6H	17.294	17.744	17.50
M 22.0	2.50	6H	19.294	19.744	19.50
M 24.0	3.00	6H	20.752	21.252	21.00
M 27.0	3.00	6H	23.752	24.252	24.00

UNC (ANSI B1.1 / ISO 5854)

Nominal Ø	Pitch	Tolerance	Minor Ø		Drilling Ø
			min.	max.	
N°1	64	2B	1.425	1.582	1.50
N°2	56	2B	1.695	1.871	1.80
N°3	48	2B	1.941	2.146	2.00
N°4	40	2B	2.157	2.385	2.25
N°5	40	2B	2.487	2.697	2.60
N°6	32	2B	2.645	2.895	2.75
N°8	32	2B	3.302	3.530	3.50
N°10	24	2B	3.683	3.962	3.80
N°12	24	2B	4.344	4.597	4.50
1/4"	20	2B	4.979	5.257	5.10
5/16"	18	2B	6.401	6.731	6.50
3/8"	16	2B	7.798	8.153	7.90
7/16"	14	2B	9.144	9.550	9.30
1/2"	13	2B	10.592	11.023	10.70
9/16"	12	2B	11.989	12.446	12.30
5/8"	11	2B	13.386	13.868	13.50
3/4"	10	2B	16.307	16.840	16.50

UNF (ANSI B1.1 / ISO 5854)

Nominal Ø	Pitch	Tolerance	Minor Ø		Drilling Ø
			min.	max.	
N°1	72	2B	1.474	1.612	1.50
N°2	64	2B	1.756	1.912	1.80
N°3	56	2B	2.025	2.197	2.10
N°4	48	2B	2.271	2.458	2.35
N°5	44	2B	2.551	2.740	2.60
N°6	40	2B	2.820	3.022	2.90
N°8	36	2B	3.404	3.606	3.50
N°10	32	2B	3.963	4.165	4.05
N°12	28	2B	4.496	4.724	4.60
1/4"	28	2B	5.360	5.588	5.50
5/16"	24	2B	6.782	7.035	6.90
3/8"	24	2B	8.382	8.636	8.50
7/16"	20	2B	9.729	10.033	9.80
1/2"	20	2B	11.329	11.607	11.40
9/16"	18	2B	12.751	13.081	12.90
5/8"	18	2B	14.351	14.681	14.50
3/4"	16	2B	17.323	17.678	17.50
7/8"	14	2B	20.270	20.675	20.40

UN (ANSI B1.1 / ISO 5854)

Nominal Ø	Pitch	Tolerance	Minor Ø		Drilling Ø
			min.	max.	
5/16"	28	2B	6.955	7.169	7.10
5/16"	20	2B	6.563	6.855	6.70
3/8"	28	2B	8.543	8.756	8.60
3/8"	20	2B	8.150	8.442	8.30
7/16"	32	2B	10.253	10.441	10.30
7/16"	16	2B	9.394	9.752	9.60
1/2"	32	2B	11.841	12.029	11.90
1/2"	16	2B	10.981	11.340	11.20
9/16"	32	2B	13.428	13.616	13.50
9/16"	28	2B	13.305	13.519	13.40
9/16"	20	2B	12.913	13.205	13.10
9/16"	16	2B	12.569	12.927	12.70
5/8"	32	2B	15.016	15.204	15.10
5/8"	28	2B	14.893	15.106	15.00
5/8"	20	2B	14.500	14.792	14.60
5/8"	16	2B	14.156	14.515	14.30
5/8"	12	2B	13.584	14.043	13.80
11/16"	32	2B	16.603	16.791	16.70
11/16"	28	2B	16.480	16.694	16.60
11/16"	20	2B	16.088	16.380	16.20
11/16"	16	2B	15.744	16.102	15.90
11/16"	12	2B	15.171	15.631	15.40
3/4"	32	2B	18.191	18.379	18.30
3/4"	28	2B	18.068	18.281	18.20
3/4"	12	2B	16.759	17.218	17.00
13/16"	32	2B	19.778	19.966	19.90
13/16"	28	2B	19.655	19.869	19.80
13/16"	16	2B	18.919	19.277	19.10
13/16"	12	2B	18.346	18.806	18.60
7/8"	32	2B	21.366	21.554	21.50
7/8"	28	2B	21.243	21.456	21.30
7/8"	16	2B	20.506	20.865	20.70
7/8"	12	2B	19.934	20.393	20.20
15/16"	32	2B	22.953	23.141	23.00
15/16"	28	2B	22.830	23.044	22.90
15/16"	16	2B	22.094	22.452	22.30
15/16"	12	2B	21.521	21.981	21.80
1"	32	2B	24.541	24.729	24.60
1"	28	2B	24.418	24.631	24.50
1"	16	2B	23.681	24.040	23.90
1 1/16"	28	2B	26.005	26.219	26.10
1 1/16"	20	2B	25.613	25.905	25.80
1 1/16"	18	2B	25.460	25.783	25.60
1 1/16"	16	2B	25.269	25.627	25.40
1 1/16"	12	2B	24.696	25.156	24.90





DRILLING Ø BEFORE TAPPING OR INTERNAL WHIRLING OPERATION

UNEF (ANSI B1.1 / ISO 5854)

Nominal Ø	Pitch	Tolerance	Minor Ø min.	max.	Drilling Ø
N°12	32	2B	4.623	4.826	4.70
1/4"	32	2B	5.487	5.689	5.60
5/16"	32	2B	7.087	7.264	7.20
3/8"	32	2B	8.662	8.864	8.75
7/16"	28	2B	10.135	10.337	10.25
1/2"	28	2B	11.710	11.938	11.85
9/16"	24	2B	13.132	13.385	13.20
5/8"	24	2B	14.732	14.986	14.80
11/16"	24	2B	16.307	16.560	16.40
3/4"	20	2B	17.679	17.957	17.80

UNJF (ISO 3161)

Nominal Ø	Pitch	Tolerance	Minor Ø min.	max.	Drilling Ø
N°10	32	3B	4.054	4.255	4.10
1/4"	28	3B	5.466	5.662	5.55
5/16"	24	3B	6.906	7.109	7.00
3/8"	24	3B	8.494	8.679	8.60
7/16"	20	3B	9.876	10.084	10.00
1/2"	20	3B	11.463	11.661	11.55

BSP (ISO 228)

Nominal Ø	Pitch	Minor Ø min.	max.	Drilling Ø
G 1/16"	28	6.561	6.843	6.75
G 1/8"	28	8.566	8.848	8.75
G 1/4"	19	11.445	11.890	11.60
G 3/8"	19	14.950	15.395	15.20
G 1/2"	14	18.631	19.172	18.90
G 5/8"	14	20.587	21.128	20.90
G 3/4"	14	24.117	24.658	24.40
G 7/8"	14	27.877	28.418	28.20
hG 1"	11	30.291	30.931	30.70

COMBINATION OF NOMINAL DIAMETERS AND PITCHES ACCORDING ANSI B1.1 / ISO 5854 NORM

Ø nom.		80	72	64	56	48	44	40	36	32	28	24	20	18	16	14	13	12	11	10	TPI
inch	mm	0.318	0.353	0.397	0.454	0.529	0.577	0.635	0.706	0.794	0.907	1.058	1.270	1.411	1.588	1.814	1.954	2.117	2.309	2.54	mm
N°0	1.524	UNF																			
N°1	1.854		UNF	UNC																	
N°2	2.184			UNF	UNC																
N°3	2.515				UNF	UNC															
N°4	2.845					UNF		UNC													
N°5	3.175						UNF	UNC													
N°6	3.505							UNF		UNC											
N°8	4.166								UNF	UNC											
N°10	4.826									UNF		UNC									
N°12	5.486									UNEF	UNF	UNC									
1/4"	6.350									UNEF	UNF		UNC								
5/16"	7.938									UNEF	UN	UNF	UN	UNC							
3/8"	9.525									UNEF	UN	UNF	UN		UNC						
7/16"	11.113									UN	UNEF	UNF			UN	UNC					
1/2"	12.700									UN	UNEF		UNF		UN		UNC				
9/16"	14.288									UN	UN	UNEF	UN	UNF	UN			UNC			
5/8"	15.875									UN	UN	UNEF	UN	UNF				UN	UNC		
11/16"	17.463									UN	UN	UNEF	UN		UN			UN			
3/4"	19.050									UN	UN		UNEF		UNF			UN		UNC	
13/16"	20.638									UN	UN		UNEF		UN			UN			
7/8"	22.225									UN	UN		UNEF		UN	UNF		UN			
15/16"	23.813									UN	UN		UNEF		UN			UN			
1"	25.400									UN	UN		UNEF		UN			UNF			
1-1/16"	26.988										UN		UN	UN	UN			UN			



CUTTING CONDITIONS

MACHINING WITH A FIXED WORKPIECE

Materials to be machined			CARBIDE		TiAlN		CUTINOX
			Vc [m/min]		Vc [m/min]		Vc [m/min]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	65	80	90	130	
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70	100	
P	High alloyed steel	700 – 1500 N/mm ²			75	105	80 110
M	Stainless steel	400 – 700 N/mm ²	35	50	70	100	
M	DUPLEX stainless steel	> 800 N/mm ²			55	80	60 85
K	Tool steel and cast iron	> 1500 N/mm ² (50 - 65 HRC)	80	100	90	110	
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	65	80	75	90	
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	60	75	70	85	
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			25	50	30 55
S	Titanium, titanium alloys		50	90			
N	Copper alloys - easy to machine (brass - bronze)		80	200			
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe)	70	150			
N	Gold, silver	(Ampco)	80	200			

MACHINING ON A SWISS-TURNING MACHINE - Workpiece turns

Materials to be machined		CARBIDE	fz [mm] Pitch 0.20 - 0.25	fz [mm] Pitch 0.30 - 0.35	fz [mm] Pitch 0.40 - 0.50	fz [mm] Pitch 0.70 - 1.00
		Vc [m/min]				
P	Steel	50 - 100	0.002 - 0.004	0.002 - 0.004	0.003 - 0.006	0.005 - 0.013
M	Stainless steel	40 - 80	0.002 - 0.003	0.002 - 0.004	0.002 - 0.005	0.004 - 0.01
S	Titanium, titanium alloys	50 - 90	0.002 - 0.003	0.002 - 0.004	0.002 - 0.005	0.004 - 0.01
N	Copper alloys	60 - 150	0.002 - 0.005	0.002 - 0.006	0.003 - 0.007	0.005 - 0.013

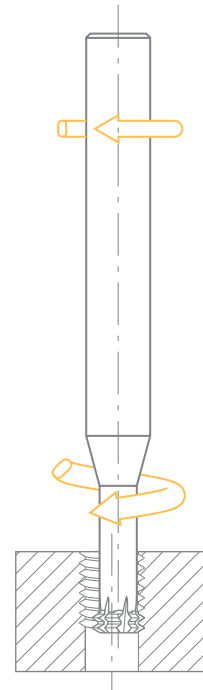
$$n \text{ [tr/min]} = \frac{V_c \text{ [m/min]} \times 1000}{\pi \times D_1 \text{ [mm]}}$$

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per tooth

f_z [mm]

$\emptyset D_1$ 0.20 - 0.60	$\emptyset D_1$ 0.60 - 1.20	$\emptyset D_1$ 1.20 - 2.00	$\emptyset D_1$ 2.00 - 3.00	$\emptyset D_1$ 3.00 - 5.00	$\emptyset D_1$ 5.00 - 8.00
0.001 - 0.006	0.004 - 0.016	0.010 - 0.026	0.017 - 0.04	0.03 - 0.06	0.04 - 0.10
0.001 - 0.006	0.004 - 0.015	0.009 - 0.024	0.015 - 0.04	0.02 - 0.06	0.04 - 0.09
0.001 - 0.005	0.003 - 0.013	0.008 - 0.022	0.014 - 0.03	0.02 - 0.05	0.03 - 0.08
0.001 - 0.005	0.003 - 0.013	0.008 - 0.022	0.014 - 0.03	0.02 - 0.05	0.03 - 0.08
0.001 - 0.004	0.003 - 0.011	0.007 - 0.018	0.011 - 0.03	0.02 - 0.04	0.03 - 0.06
0.002 - 0.011	0.007 - 0.026	0.017 - 0.044	0.028 - 0.07	0.04 - 0.10	0.07 - 0.16
0.002 - 0.008	0.005 - 0.020	0.013 - 0.033	0.021 - 0.05	0.03 - 0.08	0.05 - 0.12
0.002 - 0.008	0.005 - 0.020	0.013 - 0.033	0.021 - 0.05	0.03 - 0.08	0.05 - 0.12
0.001 - 0.003	0.002 - 0.007	0.004 - 0.011	0.007 - 0.02	0.01 - 0.03	0.02 - 0.04
0.001 - 0.007	0.004 - 0.017	0.011 - 0.028	0.018 - 0.04	0.03 - 0.07	0.04 - 0.10
0.002 - 0.011	0.007 - 0.026	0.017 - 0.044	0.028 - 0.07	0.04 - 0.10	0.07 - 0.16
0.001 - 0.007	0.004 - 0.017	0.011 - 0.028	0.018 - 0.04	0.03 - 0.07	0.04 - 0.10
0.002 - 0.008	0.005 - 0.020	0.013 - 0.033	0.021 - 0.05	0.03 - 0.08	0.05 - 0.12



Example for M2 x 0.40 in titanium, DIXI 1730 $\emptyset D_1 = 1.55$

① Tool rotation $n \text{ (min}^{-1}\text{)} = \frac{1000 \times V_c}{\pi \times \emptyset D_1}$

$$\frac{1000 \times 90}{(\pi \times 1.55)} \Rightarrow 19'000 \text{ min}^{-1}$$

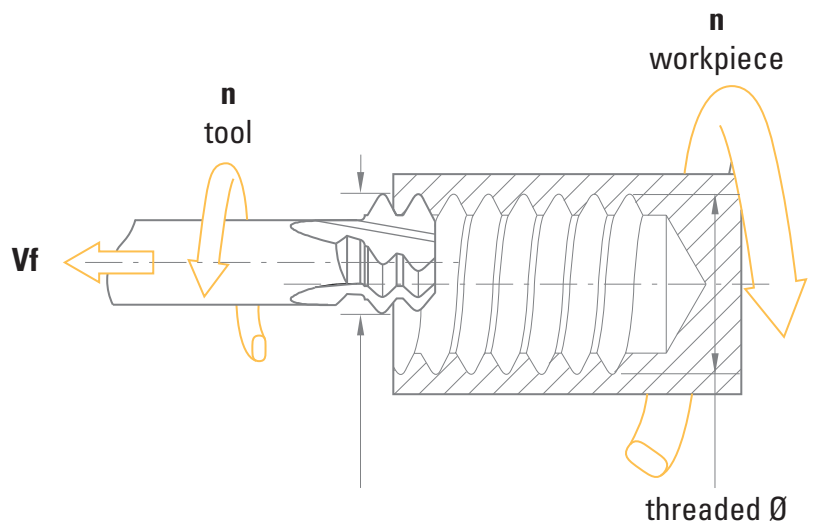
② Feed $V_f \text{ mm/min} = n \times f_z \times z$

$$19'000 \times 0.004 \times 3 = 223 \text{ mm/min}$$

③ Piece rotation $\text{min}^{-1} = \frac{V_f}{\text{threaded } \emptyset \times \pi}$

$$\frac{223}{M2 \times \pi} \Rightarrow 36 \text{ min}^{-1}$$

When necessary, convert in degrees $\text{nb}^\circ = \text{min}^{-1} \times 360^\circ \Rightarrow 36 \text{ min}^{-1} \times 360^\circ = 12960^\circ$



CUTTING CONDITIONS

Materials to be machined

			CARBIDE Vc [m/min]		CUTINOX Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	100	150	120	180
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	90	130	110	150
P	Lead alloyed cutting steel		100	180	120	200
P	High alloyed steel	700 – 1500 N/mm ²	40	70	50	80
M	Stainless steel	400 – 700 N/mm ²	50	80	60	110
M	DUPLEX stainless steel	> 800 N/mm ²	35	60	45	75
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	100	200	150	250
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	100	140	120	160
K	Nodular ferritic cast iron / Malleable cast iron		70	110	80	140
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	20	45	30	60
S	Titanium, titanium alloys		40	65	40	65
N	Copper alloys - easy to machine (brass - bronze)		100	200	100	200
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	80	150	80	150
N	Aluminium alloys	Si < 8%	100	250	100	250
N	Cast aluminium	Si > 8%	100	200	100	200
N	Graphite		100	200	100	200
N	Plastic		100	250	100	250
N	Gold, silver		100	200	100	200

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per tooth **fz [mm]**

Ø D ₁ 0.60 - 1.00	Ø D ₁ 1.00 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 3.00	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.00 - 6.00	Ø D ₁ 6.00 - 10.00	
0.004 - 0.013	0.006 - 0.020	0.009 - 0.026	0.012 - 0.039	0.011 - 0.044	0.022 - 0.054	0.031 - 0.070	
0.003 - 0.012	0.005 - 0.018	0.008 - 0.023	0.011 - 0.035	0.010 - 0.040	0.019 - 0.049	0.028 - 0.063	
0.004 - 0.016	0.007 - 0.023	0.011 - 0.031	0.014 - 0.047	0.014 - 0.053	0.026 - 0.065	0.037 - 0.084	
0.003 - 0.010	0.005 - 0.016	0.007 - 0.021	0.010 - 0.031	0.009 - 0.035	0.017 - 0.043	0.024 - 0.056	
0.003 - 0.010	0.005 - 0.016	0.007 - 0.021	0.010 - 0.031	0.009 - 0.035	0.017 - 0.043	0.024 - 0.056	
0.003 - 0.009	0.004 - 0.014	0.006 - 0.018	0.008 - 0.027	0.008 - 0.031	0.015 - 0.038	0.021 - 0.049	
0.005 - 0.016	0.008 - 0.024	0.011 - 0.033	0.015 - 0.049	0.014 - 0.055	0.027 - 0.068	0.038 - 0.088	
0.004 - 0.013	0.006 - 0.020	0.009 - 0.026	0.012 - 0.039	0.011 - 0.044	0.022 - 0.054	0.031 - 0.070	
0.004 - 0.013	0.006 - 0.020	0.009 - 0.026	0.012 - 0.039	0.011 - 0.044	0.022 - 0.054	0.031 - 0.070	
0.002 - 0.007	0.003 - 0.010	0.005 - 0.013	0.006 - 0.020	0.006 - 0.022	0.011 - 0.027	0.015 - 0.035	
0.004 - 0.013	0.006 - 0.020	0.009 - 0.026	0.012 - 0.039	0.011 - 0.044	0.022 - 0.054	0.031 - 0.070	
0.005 - 0.020	0.009 - 0.029	0.014 - 0.039	0.018 - 0.059	0.017 - 0.066	0.032 - 0.081	0.046 - 0.105	
0.005 - 0.017	0.008 - 0.025	0.012 - 0.034	0.016 - 0.051	0.015 - 0.057	0.028 - 0.070	0.040 - 0.091	
0.007 - 0.026	0.012 - 0.018	0.018 - 0.052	0.024 - 0.078	0.023 - 0.088	0.043 - 0.108	0.061 - 0.140	
0.005 - 0.020	0.009 - 0.014	0.014 - 0.039	0.018 - 0.059	0.017 - 0.066	0.032 - 0.081	0.046 - 0.105	
0.005 - 0.018	0.008 - 0.013	0.013 - 0.036	0.017 - 0.055	0.016 - 0.062	0.030 - 0.076	0.043 - 0.098	
0.005 - 0.018	0.008 - 0.013	0.013 - 0.036	0.017 - 0.055	0.016 - 0.062	0.030 - 0.076	0.043 - 0.098	
0.005 - 0.020	0.009 - 0.029	0.014 - 0.039	0.018 - 0.059	0.017 - 0.066	0.032 - 0.081	0.046 - 0.105	



DIXI 1742-TC

CUTTING CONDITIONS

Materials to be machined

			DAC	
			Vc [m/min]	
N	Copper alloys - easy to machine (brass - bronze)		200	
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	150	
N	Aluminium alloys	Si < 8%	250	
N	Cast aluminium	Si > 8%	200	
N	Graphite		200	
N	Plastic		250	
N	Gold, silver		200	

DIXI 1744-TC

CUTTING CONDITIONS

Materials to be machined

			CUTINOX	
			Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	150	
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	120	
P	Lead alloyed cutting steel		160	
P	High alloyed steel	700 – 1500 N/mm ²	70	
M	Stainless steel	400 – 700 N/mm ²	90	
M	DUPLEX stainless steel	> 800 N/mm ²	60	
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	200	
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	130	
K	Nodular ferritic cast iron / Malleable cast iron		110	
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy	50	
S	Titanium, titanium alloys		60	



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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed at tool centre

Vf [mm/min]

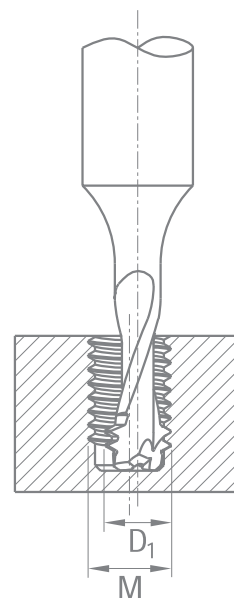
M5	M6	M8	M10	M12
1020	1275	1360	1360	1120
800	1000	1100	1100	990
1200	1500	1600	1600	1440
800	1000	1100	1100	990
800	1000	1100	1100	990
1200	1500	1600	1600	1440
800	1000	1100	1100	990

$$V_f \text{ tool centre} = V_f \times \left(1 - \frac{D_1}{M}\right)$$

Feed at tool centre

Vf [mm/min]

M5	M6	M8	M10	M12
800	600	500	500	450
600	500	350	350	300
1200	1000	800	800	700
450	400	250	250	200
500	450	350	350	280
400	300	200	200	150
1000	800	500	500	460
600	500	350	350	300
550	450	300	300	250
250	200	150	150	100
300	250	200	200	150



CUTTING CONDITIONS

Materials to be machined

			CARBIDE		TiALN	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	90	110
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²			70	90
P	Lead alloyed cutting steel		70	100	90	110
P	High alloyed steel	700 – 1500 N/mm ²			40	55
M	Stainless steel	400 – 700 N/mm ²	40	60	70	90
M	DUPLEX stainless steel	> 800 N/mm ²			40	55
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	90	110
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	70	90
K	Nodular ferritic cast iron / Malleable cast iron		70	100	90	110
S	Titanium, titanium alloys		30	45	40	60
N	Copper alloys - easy to machine (brass - bronze)		140	160	200	220
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120	140	170	190
N	Aluminium alloys	Si < 8%	180	260	230	340
N	Cast aluminium	Si > 8%	140	160	210	230
N	Plastic		240	260	300	340
N	Gold, silver		140	160	200	220

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per tooth **fz [mm]**

Ø D ₁ 0.90 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 2.50	Ø D ₁ 2.50 - 3.00	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.00 - 6.00	Ø D ₁ 6.00 - 8.00	Ø D ₁ 8.00 - 10.00	Ø D ₁ 10.00 - 12.00	Ø D ₁ 12.00 - 16.00
		0.008 - 0.02	0.010 - 0.02	0.012 - 0.03	0.016 - 0.04	0.024 - 0.06	0.03 - 0.07	0.04 - 0.08	0.05 - 0.11
		0.006 - 0.01	0.008 - 0.01	0.009 - 0.02	0.012 - 0.03	0.018 - 0.04	0.02 - 0.05	0.03 - 0.06	0.04 - 0.08
0.005 - 0.015	0.008 - 0.020	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.020 - 0.06	0.030 - 0.08	0.04 - 0.10	0.05 - 0.12	0.06 - 0.16
			0.008 - 0.01	0.009 - 0.02	0.012 - 0.03	0.018 - 0.04	0.02 - 0.05	0.03 - 0.06	0.04 - 0.08
		0.006 - 0.01	0.008 - 0.01	0.009 - 0.02	0.012 - 0.03	0.018 - 0.04	0.02 - 0.05	0.03 - 0.06	0.04 - 0.08
			0.008 - 0.01	0.009 - 0.02	0.012 - 0.03	0.018 - 0.04	0.02 - 0.05	0.03 - 0.06	0.04 - 0.08
		0.008 - 0.02	0.010 - 0.02	0.012 - 0.03	0.016 - 0.04	0.024 - 0.06	0.03 - 0.07	0.04 - 0.08	0.05 - 0.11
			0.008 - 0.01	0.009 - 0.02	0.012 - 0.03	0.018 - 0.04	0.02 - 0.05	0.03 - 0.06	0.04 - 0.08
	0.006 - 0.014	0.008 - 0.02	0.010 - 0.02	0.012 - 0.03	0.016 - 0.04	0.024 - 0.06	0.03 - 0.07	0.04 - 0.08	0.05 - 0.11
		0.006 - 0.01	0.008 - 0.01	0.009 - 0.02	0.012 - 0.03	0.018 - 0.04	0.02 - 0.05	0.03 - 0.06	0.04 - 0.08
0.005 - 0.015	0.008 - 0.020	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.020 - 0.06	0.030 - 0.08	0.04 - 0.10	0.05 - 0.12	0.06 - 0.16
0.003 - 0.008	0.005 - 0.010	0.006 - 0.01	0.008 - 0.01	0.009 - 0.02	0.012 - 0.03	0.018 - 0.04	0.02 - 0.05	0.03 - 0.06	0.04 - 0.08
0.005 - 0.015	0.008 - 0.020	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.020 - 0.06	0.030 - 0.08	0.04 - 0.10	0.05 - 0.12	0.06 - 0.16
0.005 - 0.015	0.008 - 0.020	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.020 - 0.06	0.030 - 0.08	0.04 - 0.10	0.05 - 0.12	0.06 - 0.16
0.006 - 0.023	0.011 - 0.030	0.014 - 0.04	0.018 - 0.04	0.021 - 0.06	0.028 - 0.09	0.042 - 0.12	0.06 - 0.15	0.07 - 0.18	0.08 - 0.24
0.005 - 0.015	0.008 - 0.020	0.010 - 0.03	0.013 - 0.03	0.015 - 0.04	0.020 - 0.06	0.030 - 0.08	0.04 - 0.10	0.05 - 0.12	0.06 - 0.16



CUTTING CONDITIONS

Materials to be machined

			CARBIDE		TiALN	
			Vc [m/min]		Vc [m/min]	
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	70	100	90	110
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	40	60	70	90
P	Lead alloyed cutting steel		70	100	90	110
P	High alloyed steel	700 – 1500 N/mm ²	40	60	70	90
M	Stainless steel	400 – 700 N/mm ²	30	45	40	55
M	DUPLEX stainless steel	> 800 N/mm ²	40	60	70	90
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	70	100	90	110
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	40	70	70	90
K	Nodular ferritic cast iron / Malleable cast iron		70	100	90	110
S	Titanium, titanium alloys		30	45	40	60
N	Copper alloys - easy to machine (brass - bronze)		140	160	200	220
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	120	140	170	190
N	Aluminium alloys	Si < 8%	180	260	230	270
N	Cast aluminium	Si > 8%	140	160	210	230
N	Plastic		240	260	300	340
N	Gold, silver		140	160	200	220

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per tooth **fz [mm]**

Ø D ₁ 0.90 - 1.50	Ø D ₁ 1.50 - 2.00	Ø D ₁ 2.00 - 2.50	Ø D ₁ 2.50 - 3.00	Ø D ₁ 3.00 - 4.00	Ø D ₁ 4.00 - 6.00	Ø D ₁ 6.00 - 8.00	Ø D ₁ 8.00 - 10.00	Ø D ₁ 10.00 - 12.00	Ø D ₁ 12.00 - 16.00
0.005 - 0.012	0.009 - 0.016	0.012 - 0.02	0.015 - 0.02	0.018 - 0.03	0.024 - 0.05	0.036 - 0.06	0.05 - 0.08	0.06 - 0.10	0.07 - 0.13
0.004 - 0.009	0.006 - 0.012	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.016 - 0.04	0.024 - 0.05	0.03 - 0.06	0.04 - 0.07	0.05 - 0.10
0.006 - 0.018	0.011 - 0.024	0.014 - 0.03	0.018 - 0.03	0.021 - 0.05	0.028 - 0.07	0.042 - 0.10	0.06 - 0.12	0.07 - 0.14	0.08 - 0.19
0.004 - 0.009	0.006 - 0.012	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.016 - 0.04	0.024 - 0.05	0.03 - 0.06	0.04 - 0.07	0.05 - 0.10
0.004 - 0.009	0.006 - 0.012	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.016 - 0.04	0.024 - 0.05	0.03 - 0.06	0.04 - 0.07	0.05 - 0.10
0.004 - 0.009	0.006 - 0.012	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.016 - 0.04	0.024 - 0.05	0.03 - 0.06	0.04 - 0.07	0.05 - 0.10
0.005 - 0.012	0.009 - 0.016	0.012 - 0.02	0.015 - 0.02	0.018 - 0.03	0.024 - 0.05	0.036 - 0.06	0.05 - 0.08	0.06 - 0.10	0.07 - 0.13
0.004 - 0.009	0.006 - 0.012	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.016 - 0.04	0.024 - 0.05	0.03 - 0.06	0.04 - 0.07	0.05 - 0.10
0.005 - 0.012	0.009 - 0.016	0.012 - 0.02	0.015 - 0.02	0.018 - 0.03	0.024 - 0.05	0.036 - 0.06	0.05 - 0.08	0.06 - 0.10	0.07 - 0.13
0.004 - 0.009	0.006 - 0.012	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.016 - 0.04	0.024 - 0.05	0.03 - 0.06	0.04 - 0.07	0.05 - 0.10
0.006 - 0.018	0.011 - 0.024	0.014 - 0.03	0.018 - 0.03	0.021 - 0.05	0.028 - 0.07	0.042 - 0.10	0.06 - 0.12	0.07 - 0.14	0.08 - 0.19
0.004 - 0.009	0.006 - 0.012	0.008 - 0.02	0.010 - 0.02	0.012 - 0.02	0.016 - 0.04	0.024 - 0.05	0.03 - 0.06	0.04 - 0.07	0.05 - 0.10
0.006 - 0.018	0.011 - 0.024	0.014 - 0.03	0.018 - 0.03	0.021 - 0.05	0.028 - 0.07	0.042 - 0.10	0.06 - 0.12	0.07 - 0.14	0.08 - 0.19
0.006 - 0.018	0.011 - 0.024	0.014 - 0.03	0.018 - 0.03	0.021 - 0.05	0.028 - 0.07	0.042 - 0.10	0.06 - 0.12	0.07 - 0.14	0.08 - 0.19
0.007 - 0.027	0.012 - 0.036	0.016 - 0.05	0.020 - 0.05	0.024 - 0.07	0.032 - 0.11	0.048 - 0.14	0.06 - 0.18	0.08 - 0.22	0.10 - 0.29
0.006 - 0.018	0.011 - 0.024	0.014 - 0.03	0.018 - 0.03	0.021 - 0.05	0.028 - 0.07	0.042 - 0.10	0.06 - 0.12	0.07 - 0.14	0.08 - 0.19



CUTTING CONDITIONS

Materials to be machined

			CARBIDE		CUTINOX	
			Vc [m/min]		Vc [m/min]	
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	80	140	100	200
N	Copper alloys - easy to machine (brass - bronze)		100	250	150	350
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	100	250	150	350
N	Aluminium alloys	Si < 8%	100	200	150	350
N	Cast aluminium	Si > 8%			150	350

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

DRILLING

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Feed per tooth (f)

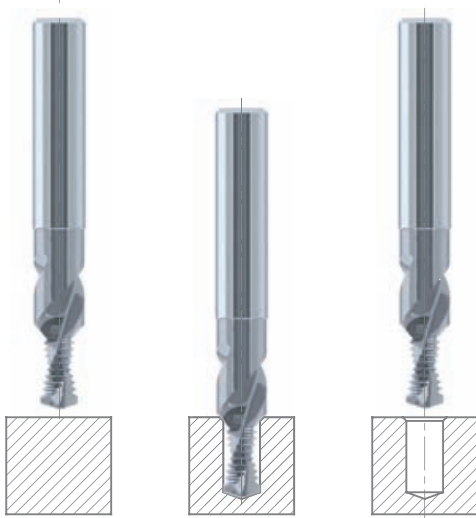
$\emptyset D_1$ 3.00 - 7.00	$\emptyset D_1$ 7.00 - 14.00		
0.08 - 0.24	0.18 - 0.40		
0.08 - 0.18	0.14 - 0.30		
0.14 - 0.28	0.18 - 0.40		
0.14 - 0.28	0.18 - 0.40		
0.14 - 0.28	0.18 - 0.40		

THREADING

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per tooth (fz)

$\emptyset D_1$ 3.00 - 7.00	$\emptyset D_1$ 7.00 - 14.00		
0.03 - 0.07	0.05 - 0.12		
0.04 - 0.07	0.06 - 0.15		
0.04 - 0.07	0.05 - 0.15		
0.03 - 0.07	0.06 - 0.15		
0.03 - 0.07	0.06 - 0.15		



1

2

3



4



5



6



7



8



ALÉSAGE

REIBEN

REAMING

ALESATURA

FURAT

ESCARIADO

SELECTION OF BORING TOOLS AND REAMERS 336



SOLID CARBIDE REAMERS 340



EXPANSIBLE REAMERS 355



REAMERS ON REQUEST 359



BORING AND CHAMFERING TOOLS 363



BORING TOOLS 365

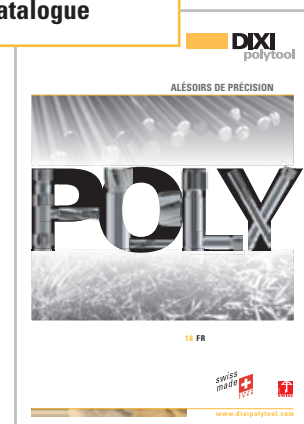


CUTTING CONDITIONS 369



TOOLS ON REQUEST 374

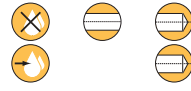
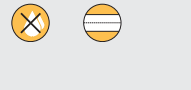
For other types of reamers, see the POLYTOOL catalogue



SELECTION OF BORING TOOLS AND REAMERS

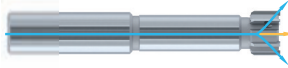
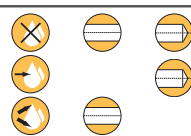
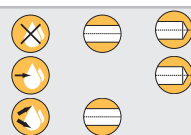
✓ = item from stock

CARBIDE REAMERS

	Z	Page		CARBIDE	TAIN	CERMET	Hole tolerance
POLY 4001 Ø 0.40 - 12.02  with through coolant > Ø 2.98	3 - 6	340		✓			IT 7
POLY 4005 Ø 2.97 - 6.50  with through coolant > Ø 2.98	4 - 6	347		✓			IT 7
POLY 4007 Ø 0.37 - 12.02 	3 - 6	348		✓			IT 7

REAMERS WITH CARBIDE OR CERMET INSERTS

Use CERMET in materials p. 372

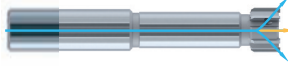
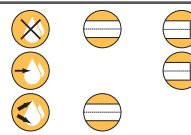
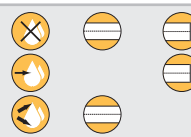
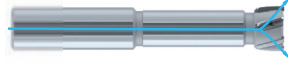
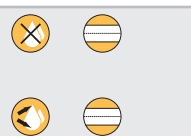
POLY 4361 Ø 6.00 - 24.00 	4 - 6	355		✓	✓	✓	IT 5 IT 6 IT 7
POLY 4371 Ø 6.00 - 24.00 	4 - 6	357		✓	✓	✓	IT 5 IT 6 IT 7

BORING TOOLS

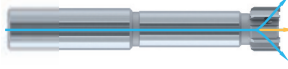
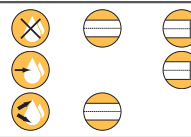
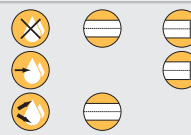
REAMERS ON REQUEST - CARBIDE OR CERMET INSERTS

SOLID REAMERS

Use CERMET in materials p. 372

POLY 4261 Ø 5.80 - 120.00 	4 - 6	359					IT 7
POLY 4271 Ø 5.80 - 120.00 	4 - 6	360					IT 7
POLY 4264 Ø 5.80 - 120.00 	4 - 6	359					IT 7
POLY 4274 Ø 5.80 - 120.00 	4 - 6	360					IT 7

EXPANSIBLE REAMERS

POLY 4361 Ø 5.80 - 55.00 	4 - 6	361					IT 5 IT 6 IT 7
POLY 4371 Ø 5.80 - 55.00 	4 - 6	362					IT 5 IT 6 IT 7

○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙

⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		
⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		

⊙	⊙	○	○	⊙	⊙	○	⊙	⊙	⊙	⊙		
⊙	⊙	○	○	⊙	⊙	○	⊙	⊙	⊙	⊙		
⊙	⊙	○	○	⊙	⊙	○	⊙	⊙	⊙	⊙		
⊙	⊙	○	○	⊙	⊙	○	⊙	⊙	⊙	⊙		

⊙	⊙	○	○	⊙	⊙	○	⊙	⊙	⊙	⊙		
⊙	⊙	○	○	⊙	⊙	○	⊙	⊙	⊙	⊙		

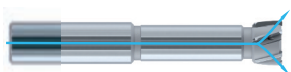


SELECTION OF BORING TOOLS AND REAMERS

✓ = item from stock

EXPANSIBLE REAMERS

POLY 4364
Ø 5.80 - 55.00



Z

Page

4 - 6

361



☐ CARBIDE

☒ TiAIN

☐ CERMET

Hole
tolerance

IT 5
IT 6
IT 7

POLY 4374
Ø 5.80 - 55.00



4 - 6

362



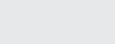
BORING AND CHAMFERING TOOLS

DIXI 2577
Ø 0.26 - 0.86



-

363



✓

DIXI 2567
Ø 0.20 - 1.00



-

364



✓

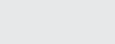
BORING TOOLS

DIXI 2578
Ø 0.30 - 1.00



-

365



✓

DIXI 2579
Ø 0.60 - 3.00



-

366



✓

DIXI 2580
Ø 0.50 - 20.00



-

367



✓

DIXI 2581
Ø 0.50 - 18.00



-

368



✓

BORING TOOLS HOLDER

DIXI 2764



-

365

○ good ⊙ excellent

Steel + Pb	Low alloyed steel	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
⊙	⊙	○	○	⊙	⊙	○	⊙	⊙	⊙	⊙		
⊙	⊙	○	○	⊙	⊙	○	⊙	⊙	⊙	⊙		
⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙
⊙	⊙	○	○		⊙	○	⊙	⊙	⊙	⊙		⊙



POLY 4001 - 4001-TC

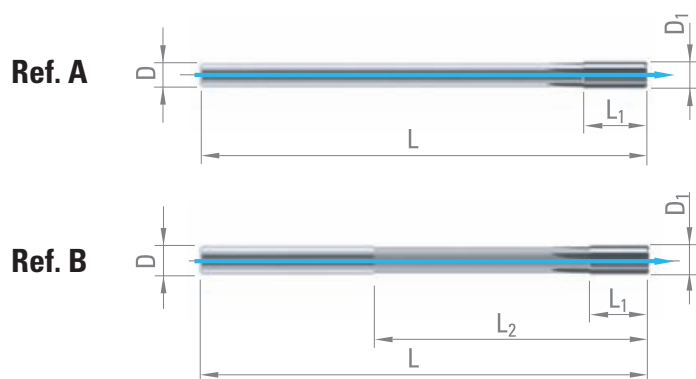
STRAIGHT FLUTE REAMERS IRREGULAR TEETH



P. 370



> Ø 2.98

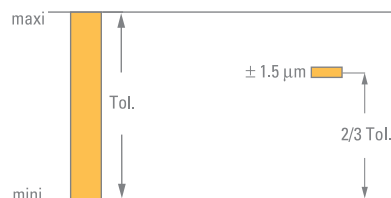


Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

D nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
0.40	(0.407)	3	5	3	38	3	B	959801
0.41	(0.417)	3	5	3	38	3	B	964623
0.42	(0.427)	3	5	3	38	3	B	959802
0.43	(0.437)	3	5	3	38	3	B	978100
0.44	(0.447)	3	5	3	38	3	B	959803
0.45	(0.457)	3	5	3	38	3	B	954360
0.46	(0.467)	3	5	3	38	3	B	959804
0.47	(0.477)	3	5	3	38	3	B	963057
0.48	(0.487)	3	5	3	38	3	B	959805
0.49	(0.497)	3	5	3	38	3	B	954359
0.50	(0.507)	3	5	3	38	3	B	959662
0.51	(0.517)	4	6	3	38	3	B	200007
0.52	(0.527)	4	6	3	38	3	B	200000
0.53	(0.537)	4	6	3	38	3	B	200004
0.54	(0.547)	4	6	3	38	3	B	200005
0.55	(0.557)	4	6	3	38	3	B	200001
0.56	(0.567)	4	6	3	38	3	B	966312
0.57	(0.577)	4	6	3	38	3	B	326970
0.58	(0.587)	4	6	3	38	3	B	200003
0.59	(0.597)	4	6	3	38	3	B	200006
0.60	(0.607)	4	6	3	38	3	B	200002
0.61	(0.617)	4	7	3	38	3	B	964889
0.62	(0.627)	4	7	3	38	3	B	200010
0.63	(0.637)	4	7	3	38	3	B	965815
0.64	(0.647)	4	7	3	38	3	B	200015
0.65	(0.657)	4	7	3	38	3	B	200008
0.66	(0.667)	4	7	3	38	3	B	200012
0.67	(0.677)	4	7	3	38	3	B	200013
0.68	(0.687)	4	7	3	38	3	B	200011
0.69	(0.697)	4	7	3	38	3	B	200014
0.70	(0.707)	4	7	3	38	3	B	200009
0.71	(0.717)	4	8	3	38	3	B	955902
0.72	(0.727)	4	8	3	38	3	B	200018
0.73	(0.737)	4	8	3	38	3	B	959571
0.74	(0.747)	4	8	3	38	3	B	200022
0.75	(0.757)	4	8	3	38	3	B	200016
0.76	(0.767)	4	8	3	38	3	B	961872
0.77	(0.777)	4	8	3	38	3	B	200020
0.78	(0.787)	4	8	3	38	3	B	200019
0.79	(0.797)	4	8	3	38	3	B	200021
0.80	(0.807)	4	8	3	38	3	B	200017

D nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
0.81	(0.817)	5	9	3	38	3	B	964624
0.82	(0.827)	5	9	3	38	3	B	200025
0.83	(0.837)	5	9	3	38	3	B	200029
0.84	(0.847)	5	9	3	38	3	B	200028
0.85	(0.857)	5	9	3	38	3	B	200023
0.86	(0.867)	5	9	3	38	3	B	200030
0.87	(0.877)	5	9	3	38	3	B	200031
0.88	(0.887)	5	9	3	38	3	B	200026
0.89	(0.897)	5	9	3	38	3	B	200027
0.90	(0.907)	5	9	3	38	3	B	200024
0.91	(0.917)	5	10	3	38	3	B	200039
0.92	(0.927)	5	10	3	38	3	B	200035
0.93	(0.937)	5	10	3	38	3	B	960023
0.94	(0.947)	5	10	3	38	3	B	963188
0.95	(0.957)	5	10	3	38	3	B	200034
0.96	(0.967)	5	10	3	38	3	B	200036
0.97	(0.977)	5	10	3	38	3	B	200037
0.98	(0.987)	5	10	3	38	3	B	200032
0.99	(0.997)	5	10	3	38	3	B	200033
1.00	(1.007)	5	10	3	38	3	B	200038
1.01	(1.017)	5	11	3	38	3	B	959800
1.02	(1.027)	5	11	3	38	3	B	200040
1.03	(1.037)	5	11	3	38	3	B	966908
1.04	(1.047)	5	11	3	38	3	B	962626
1.05	(1.057)	5	11	3	38	3	B	200041
1.06	(1.067)	5	11	3	38	3	B	966799
1.07	(1.077)	5	11	3	38	3	B	968047
1.08	(1.087)	5	11	3	38	3	B	200042
1.09	(1.097)	5	12	3	38	3	B	955685
1.10	(1.107)	5	12	3	38	3	B	200045
1.11	(1.117)	5	12	3	38	3	B	951529
1.12	(1.127)	5	12	3	38	3	B	951598
1.13	(1.137)	5	12	3	38	3	B	968503
1.14	(1.147)	5	12	3	38	3	B	968504
1.15	(1.157)	5	12	3	38	3	B	200043
1.16	(1.167)	5	12	3	38	3	B	967147
1.17	(1.177)	5	12	3	38	3	B	956647
1.18	(1.187)	5	12	3	38	3	B	67307
1.19	(1.197)	5	12	3	38	3	B	960753
1.20	(1.207)	5	12	3	38	3	B	200044
1.21	(1.217)	6	13	3	38	3	B	67308

All Ø with tolerance ±2µm available
through our express-service





P. 370



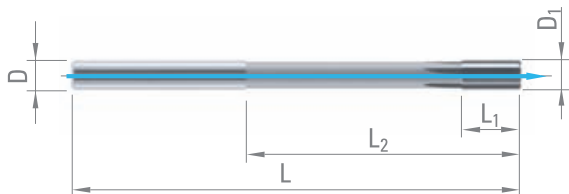
> Ø 2.98



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 nom. H7 D₁ ± 1.5µm L₁ L₂ D_{h5} L Z Ref. CARBIDE

1.22	(1.227)	6	13	3	38	3	B	968605
1.23	(1.237)	6	13	3	38	3	B	968606
1.24	(1.247)	6	13	3	38	3	B	968607
1.25	(1.257)	6	13	3	38	3	B	200046
1.26	(1.267)	6	13	3	38	3	B	968608
1.27	(1.277)	6	13	3	38	3	B	964024
1.28	(1.287)	6	13	3	38	3	B	200048
1.29	(1.297)	6	13	3	38	3	B	950915
1.30	(1.307)	6	13	3	38	3	B	200047
1.31	(1.317)	6	13	3	38	3	B	959472
1.32	(1.327)	6	13	3	38	3	B	961369
1.33	(1.337)	6	13	3	38	3	B	961963
1.34	(1.347)	6	13	3	38	3	B	326971
1.35	(1.357)	6	13	3	38	3	B	200049
1.36	(1.367)	6	13	3	38	3	B	968242
1.37	(1.377)	6	13	3	38	3	B	960591
1.38	(1.387)	6	13	3	38	3	B	966541
1.39	(1.397)	6	13	3	38	3	B	960202
1.40	(1.407)	6	13	3	38	3	B	200050
1.41	(1.417)	7	15	3	38	3	B	957425
1.42	(1.427)	7	15	3	38	3	B	955757
1.43	(1.437)	7	15	3	38	3	B	955746
1.44	(1.447)	7	15	3	38	3	B	961345
1.45	(1.457)	7	15	3	38	3	B	200053
1.46	(1.467)	7	15	3	38	3	B	66791
1.47	(1.477)	7	15	3	38	3	B	961456
1.48	(1.487)	7	15	3	38	3	B	200051
1.49	(1.497)	7	15	3	38	3	B	200052
1.50	(1.507)	7	15	3	38	3	B	200054
1.51	(1.517)	7	15	3	50	3	B	200104
1.52	(1.527)	7	15	3	50	3	B	200105
1.53	(1.537)	7	15	3	50	3	B	960836
1.54	(1.547)	7	15	3	50	3	B	63795
1.55	(1.557)	7	15	3	50	3	B	200125
1.56	(1.567)	7	15	3	50	3	B	973910
1.57	(1.577)	7	15	3	50	3	B	963006
1.58	(1.587)	7	15	3	50	3	B	961472
1.59	(1.597)	7	15	3	50	3	B	959620
1.60	(1.607)	7	15	3	50	3	B	200111
1.61	(1.617)	7	16	3	50	3	B	59391
1.62	(1.627)	7	16	3	50	3	B	955366
1.63	(1.637)	7	16	3	50	3	B	326972
1.64	(1.647)	7	16	3	50	3	B	326973
1.65	(1.657)	7	16	3	50	3	B	200124
1.66	(1.667)	7	16	3	50	3	B	991141
1.67	(1.677)	7	16	3	50	3	B	965451
1.68	(1.687)	7	16	3	50	3	B	326974

D nom. H7 D₁ ± 1.5µm L₁ L₂ D_{h5} L Z Ref. CARBIDE

1.69	(1.697)	7	16	3	50	3	B	952172
1.70	(1.707)	7	16	3	50	3	B	200126
1.71	(1.717)	7	17	3	50	3	B	66359
1.72	(1.727)	7	17	3	50	3	B	959573
1.73	(1.737)	7	17	3	50	3	B	326975
1.74	(1.747)	7	17	3	50	3	B	968498
1.75	(1.757)	7	17	3	50	3	B	200127
1.76	(1.767)	7	17	3	50	3	B	974605
1.77	(1.777)	7	17	3	50	3	B	961458
1.78	(1.787)	7	17	3	50	3	B	63459
1.79	(1.797)	7	17	3	50	3	B	200146
1.80	(1.807)	7	17	3	50	3	B	200112
1.81	(1.817)	8	17	3	50	3	B	962183
1.82	(1.827)	8	17	3	50	3	B	960953
1.83	(1.837)	8	17	3	50	3	B	951867
1.84	(1.847)	8	17	3	50	3	B	326976
1.85	(1.857)	8	17	3	50	3	B	200113
1.86	(1.867)	8	17	3	50	3	B	964274
1.87	(1.877)	8	17	3	50	3	B	326977
1.88	(1.887)	8	17	3	50	3	B	954731
1.89	(1.897)	8	17	3	50	3	B	200137
1.90	(1.907)	8	17	3	50	3	B	200114
1.91	(1.917)	8	18	3	50	3	B	982028
1.92	(1.927)	8	18	3	50	3	B	326978
1.93	(1.937)	8	18	3	50	3	B	326979
1.94	(1.947)	8	18	3	50	3	B	67301
1.95	(1.957)	8	18	3	50	3	B	200115
1.96	(1.967)	8	18	3	50	3	B	200145
1.97	(1.977)	8	18	3	50	3	B	200106
1.98	(1.987)	8	18	3	50	3	B	200107
1.99	(1.997)	8	18	3	50	3	B	200108
2.00	(2.007)	8	18	3	50	3	B	200102
2.01	(2.017)	8	18	3	50	3	B	200109
2.02	(2.027)	8	18	3	50	3	B	200110
2.03	(2.037)	8	18	3	50	3	B	63271
2.04	(2.047)	8	18	3	50	3	B	200147
2.05	(2.057)	8	18	3	50	3	B	200121
2.06	(2.067)	8	18	3	50	3	B	954744
2.07	(2.077)	8	18	3	50	3	B	63796
2.08	(2.087)	8	18	3	50	3	B	57717
2.09	(2.097)	8	18	3	50	3	B	957058
2.10	(2.107)	8	18	3	50	3	B	200144
2.11	(2.117)	8	18	3	50	3	B	952428
2.12	(2.127)	8	18	3	50	3	B	952429
2.13	(2.137)	8	18	3	50	3	B	967590
2.14	(2.147)	8	18	3	50	3	B	968815
2.15	(2.157)	8	18	3	50	3	B	200120





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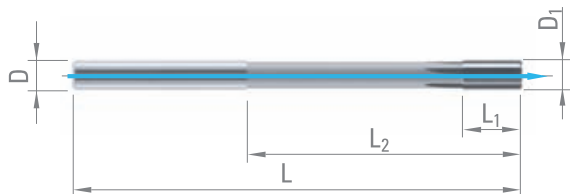
> Ø 2.98



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
2.16	(2.167)	8	18	3	50	3	B	968156
2.17	(2.177)	8	18	3	50	3	B	959096
2.18	(2.187)	8	18	3	50	3	B	968449
2.19	(2.197)	8	18	3	50	3	B	952213
2.20	(2.207)	8	18	3	50	3	B	200139
2.21	(2.217)	8	18	3	50	3	B	968816
2.22	(2.227)	8	18	3	50	3	B	953362
2.23	(2.237)	8	18	3	50	3	B	326980
2.24	(2.247)	8	18	3	50	3	B	326981
2.25	(2.257)	8	18	3	50	3	B	200119
2.26	(2.267)	8	18	3	50	3	B	326982
2.27	(2.277)	8	18	3	50	3	B	956015
2.28	(2.287)	8	18	3	50	3	B	326983
2.29	(2.297)	8	18	3	50	3	B	985826
2.30	(2.307)	8	18	3	50	3	B	200131
2.31	(2.317)	10	20	3	50	3	B	951944
2.32	(2.327)	10	20	3	50	3	B	200135
2.33	(2.337)	10	20	3	50	3	B	957326
2.34	(2.347)	10	20	3	50	3	B	956298
2.35	(2.357)	10	20	3	50	3	B	200130
2.36	(2.367)	10	20	3	50	3	B	955027
2.37	(2.377)	10	20	3	50	3	B	958068
2.38	(2.387)	10	20	3	50	3	B	962361
2.39	(2.397)	10	20	3	50	3	B	965907
2.40	(2.407)	10	20	3	50	3	B	200129
2.41	(2.417)	10	20	3	50	3	B	950038
2.42	(2.427)	10	20	3	50	3	B	950039
2.43	(2.437)	10	20	3	50	3	B	955020
2.44	(2.447)	10	20	3	50	3	B	962239
2.45	(2.457)	10	20	3	50	3	B	200128
2.46	(2.467)	10	20	3	50	3	B	326984
2.47	(2.477)	10	20	3	50	3	B	959535
2.48	(2.487)	10	20	3	50	3	B	200140
2.49	(2.497)	10	20	3	50	3	B	200141
2.50	(2.507)	10	20	3	50	3	B	200103
2.51	(2.517)	10	20	3	61	4	B	200142
2.52	(2.527)	10	20	3	61	4	B	200143
2.53	(2.537)	10	20	3	61	4	B	954733
2.54	(2.547)	10	20	3	61	4	B	955042
2.55	(2.557)	10	20	3	61	4	B	200118
2.56	(2.567)	10	20	3	61	4	B	326985
2.57	(2.577)	10	20	3	61	4	B	326986
2.58	(2.587)	10	20	3	61	4	B	958772
2.59	(2.597)	10	20	3	61	4	B	971141
2.60	(2.607)	10	20	3	61	4	B	200117
2.61	(2.617)	10	25	3	61	4	B	970909
2.62	(2.627)	10	25	3	61	4	B	952158

D nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
2.63	(2.637)	10	25	3	61	4	B	326987
2.64	(2.647)	10	25	3	61	4	B	962551
2.65	(2.657)	10	25	3	61	4	B	200116
2.66	(2.667)	10	25	3	61	4	B	954075
2.67	(2.677)	10	25	3	61	4	B	200136
2.68	(2.687)	10	25	3	61	4	B	954450
2.69	(2.697)	10	25	3	61	4	B	991586
2.70	(2.707)	10	25	3	61	4		200123
2.71	(2.717)	10	25	3	61	4	B	954783
2.72	(2.727)	10	25	3	61	4	B	326988
2.73	(2.737)	10	25	3	61	4	B	326989
2.74	(2.747)	10	25	3	61	4	B	969786
2.75	(2.757)	10	25	3	61	4	B	200122
2.76	(2.767)	10	25	3	61	4	B	326990
2.77	(2.777)	10	25	3	61	4	B	326991
2.78	(2.787)	10	25	3	61	4	B	954734
2.79	(2.797)	10	25	3	61	4	B	965219
2.80	(2.807)	10	25	3	61	4	B	200138
2.81	(2.817)	10	25	3	61	4	B	953881
2.82	(2.827)	10	25	3	61	4	B	960888
2.83	(2.837)	10	25	3	61	4	B	326992
2.84	(2.847)	10	25	3	61	4	B	326993
2.85	(2.857)	10	25	3	61	4	B	200132
2.86	(2.867)	10	25	3	61	4	B	326994
2.87	(2.877)	10	25	3	61	4	B	326995
2.88	(2.887)	10	25	3	61	4	B	326996
2.89	(2.897)	10	25	3	61	4	B	953937
2.90	(2.907)	10	25	3	61	4	B	200133
2.91	(2.917)	10	25	3	61	4	B	964090
2.92	(2.927)	10	25	3	61	4	B	66683
2.93	(2.937)	10	25	3	61	4	B	326997
2.94	(2.947)	10	25	3	61	4	B	326998
2.95	(2.957)	10	25	3	61	4	B	200134
2.96	(2.967)	10	25	3	61	4	B	961012
2.97	(2.977)	10	25	3	61	4	B	959664
2.98	(2.987)	10	25	3	70	6	B	321202
2.99	(2.997)	10	25	3	70	6	B	321203
3.00	(3.007)	10	25	3	70	6	B	321204
3.01	(3.018)	10	25	3	70	6	B	321205
3.02	(3.028)	10	25	3	70	6	B	321206
3.03	(3.038)	10	25	3	70	6	B	321207
3.04	(3.048)	10	25	3	70	6	B	321208
3.05	(3.058)	10	25	3	70	6	B	321209
3.06	(3.068)	10	25	3	70	6	B	321210
3.07	(3.078)	10	25	3	70	6	B	321211
3.08	(3.088)	10	25	3	70	6	B	321212
3.09	(3.098)	10	25	3	70	6	B	321213





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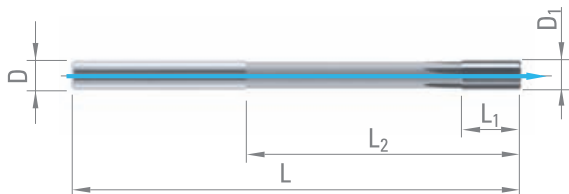
> Ø 2.98



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
3.10	(3.108)	10	-	3	70	6	A	321214
3.11	(3.118)	10	-	3	70	6	A	321215
3.12	(3.128)	10	-	3	70	6	A	321216
3.13	(3.138)	10	-	3	70	6	A	321217
3.14	(3.148)	10	-	3	70	6	A	321218
3.15	(3.158)	10	-	3	70	6	A	321219
3.16	(3.168)	10	-	3	70	6	A	321220
3.17	(3.178)	10	-	3	70	6	A	321221
3.18	(3.188)	10	-	3	70	6	A	321222
3.19	(3.198)	10	-	3	70	6	A	321223
3.20	(3.208)	10	-	3	70	6	A	321224
3.21	(3.218)	10	-	3	70	6	A	321225
3.22	(3.228)	10	-	3	70	6	A	321226
3.23	(3.238)	10	-	3	70	6	A	321227
3.24	(3.248)	10	-	3	70	6	A	321228
3.25	(3.258)	10	-	3	70	6	A	321229
3.26	(3.268)	10	-	3	70	6	A	321230
3.27	(3.278)	10	-	3	70	6	A	321231
3.28	(3.288)	10	-	3	70	6	A	321232
3.29	(3.298)	10	-	3	70	6	A	321233
3.30	(3.308)	10	-	3	70	6	A	321234
3.31	(3.318)	10	-	3	70	6	A	321235
3.32	(3.328)	10	-	3	70	6	A	321236
3.33	(3.338)	10	-	3	70	6	A	321237
3.34	(3.348)	10	-	3	70	6	A	321238
3.35	(3.358)	10	-	3	70	6	A	321239
3.36	(3.368)	10	-	3	70	6	A	321240
3.37	(3.378)	10	-	3	70	6	A	321241
3.38	(3.388)	10	-	3	70	6	A	321242
3.39	(3.398)	10	-	3	70	6	A	321243
3.40	(3.408)	10	-	3	70	6	A	321244
3.41	(3.418)	10	-	3	70	6	A	321245
3.42	(3.428)	10	-	3	70	6	A	321246
3.43	(3.438)	10	-	3	70	6	A	321247
3.44	(3.448)	10	-	3	70	6	A	321248
3.45	(3.458)	10	-	3	70	6	A	321249
3.46	(3.468)	10	-	3	70	6		321250
3.47	(3.478)	10	-	3	70	6	A	321251
3.48	(3.488)	10	-	3	70	6	A	321252
3.49	(3.498)	10	-	3	70	6	A	321253
3.50	(3.508)	10	-	3	70	6	A	321254
3.51	(3.518)	10	-	3	70	6	A	321255
3.52	(3.528)	10	-	3	70	6	A	321256
3.53	(3.538)	10	-	3	70	6	A	321257
3.54	(3.548)	10	-	3	70	6	A	321258
3.55	(3.558)	10	-	3	70	6	A	321259
3.56	(3.568)	10	-	3	70	6	A	321260

D nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
3.57	(3.578)	10	-	3	70	6	A	321261
3.58	(3.588)	10	-	3	70	6	A	321262
3.59	(3.598)	10	-	3	70	6	A	321263
3.60	(3.608)	10	-	3	70	6	A	321264
3.61	(3.618)	10	-	3	70	6	A	321265
3.62	(3.628)	10	-	3	70	6	A	321266
3.63	(3.638)	10	-	3	70	6	A	321267
3.64	(3.648)	10	-	3	70	6	A	321268
3.65	(3.658)	10	-	3	70	6	A	321269
3.66	(3.668)	10	-	3	70	6	A	321270
3.67	(3.678)	10	-	3	70	6	A	321271
3.68	(3.688)	10	-	3	70	6	A	321272
3.69	(3.698)	10	-	3	70	6	A	321273
3.70	(3.708)	10	-	3	70	6	A	321274
3.71	(3.718)	10	-	3	70	6	A	321275
3.72	(3.728)	10	-	3	70	6	A	321276
3.73	(3.738)	10	-	3	70	6	A	321277
3.74	(3.748)	10	-	3	70	6	A	321278
3.75	(3.758)	10	-	3	70	6	A	321279
3.76	(3.768)	10	-	3	70	6	A	321280
3.77	(3.778)	10	-	3	70	6	A	321281
3.78	(3.788)	10	-	3	70	6	A	321282
3.79	(3.798)	10	-	3	70	6	A	321283
3.80	(3.808)	10	-	3	70	6	A	321284
3.81	(3.818)	10	-	3	70	6	A	321285
3.82	(3.828)	10	-	3	70	6	A	321286
3.83	(3.838)	10	-	3	70	6	A	321287
3.84	(3.848)	10	-	3	70	6	A	321288
3.85	(3.858)	10	-	3	70	6	A	321289
3.86	(3.868)	10	-	3	70	6	A	321290
3.87	(3.878)	10	-	3	70	6	A	321291
3.88	(3.888)	10	-	3	70	6	A	321292
3.89	(3.898)	10	-	3	70	6	A	321293
3.90	(3.908)	10	-	3	70	6	A	321294
3.91	(3.918)	10	-	3	70	6	A	321295
3.92	(3.928)	10	-	3	70	6	A	321296
3.93	(3.938)	10	-	3	70	6	A	321297
3.94	(3.948)	10	-	3	70	6	A	321298
3.95	(3.958)	10	-	3	70	6	A	321299
3.96	(3.968)	10	-	3	70	6	A	321300
3.97	(3.978)	10	-	3	70	6	A	321301
3.98	(3.988)	10	-	3	70	6	A	321302
3.99	(3.998)	10	-	3	70	6	A	321303
4.00	(4.008)	10	-	3	70	6	A	321304
4.01	(4.018)	10	-	3	70	6	A	321305
4.02	(4.028)	10	-	3	70	6	A	321306
4.03	(4.038)	10	-	3	70	6	A	321307





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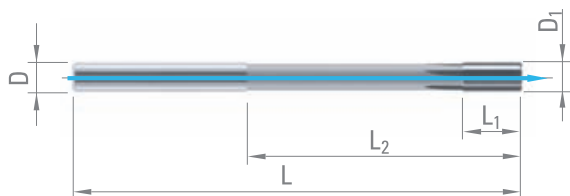
> Ø 2.98



Ref. A



Ref. B



D nom. H7 D₁ ± 1.5µm L₁ L₂ D_{h5} L Z Ref. CARBIDE

4.04	(4.048)	10	-	3	70	6	A	321308
4.05	(4.058)	10	-	3	70	6	A	321309
4.06	(4.068)	10	-	3	70	6	A	321310
4.07	(4.078)	10	-	3	70	6	A	321311
4.08	(4.088)	10	-	3	70	6	A	321312
4.09	(4.098)	10	-	3	70	6	A	321313
4.10	(4.108)	12	-	4	80	6	A	321314
4.11	(4.118)	12	-	4	80	6	A	321315
4.12	(4.128)	12	-	4	80	6	A	321316
4.13	(4.138)	12	-	4	80	6	A	321317
4.14	(4.148)	12	-	4	80	6	A	321318
4.15	(4.158)	12	-	4	80	6	A	321319
4.16	(4.168)	12	-	4	80	6	A	321320
4.17	(4.178)	12	-	4	80	6	A	321321
4.18	(4.188)	12	-	4	80	6	A	321322
4.19	(4.198)	12	-	4	80	6	A	321323
4.20	(4.208)	12	-	4	80	6	A	321324
4.21	(4.218)	12	-	4	80	6	A	321325
4.22	(4.228)	12	-	4	80	6	A	321326
4.23	(4.238)	12	-	4	80	6	A	321327
4.24	(4.248)	12	-	4	80	6	A	321328
4.25	(4.258)	12	-	4	80	6	A	321329
4.26	(4.268)	12	-	4	80	6	A	321330
4.27	(4.278)	12	-	4	80	6	A	321331
4.28	(4.288)	12	-	4	80	6	A	321332
4.29	(4.298)	12	-	4	80	6	A	321333
4.30	(4.308)	12	-	4	80	6	A	321334
4.31	(4.318)	12	-	4	80	6	A	321335
4.32	(4.328)	12	-	4	80	6	A	321336
4.33	(4.338)	12	-	4	80	6	A	321337
4.34	(4.348)	12	-	4	80	6	A	321338
4.35	(4.358)	12	-	4	80	6	A	321339
4.36	(4.368)	12	-	4	80	6	A	321340
4.37	(4.378)	12	-	4	80	6	A	321341
4.38	(4.388)	12	-	4	80	6	A	321342
4.39	(4.398)	12	-	4	80	6	A	321343
4.40	(4.408)	12	-	4	80	6	A	321344
4.41	(4.418)	12	-	4	80	6	A	321345
4.42	(4.428)	12	-	4	80	6	A	321346
4.43	(4.438)	12	-	4	80	6	A	321347
4.44	(4.448)	12	-	4	80	6	A	321348
4.45	(4.458)	12	-	4	80	6	A	321349
4.46	(4.468)	12	-	4	80	6	A	321350
4.47	(4.478)	12	-	4	80	6	A	321351
4.48	(4.488)	12	-	4	80	6	A	321352
4.49	(4.498)	12	-	4	80	6	A	321353
4.50	(4.508)	12	-	4	80	6	A	321354

D nom. H7 D₁ ± 1.5µm L₁ L₂ D_{h5} L Z Ref. CARBIDE

4.51	(4.518)	12	-	4	80	6	A	321355
4.52	(4.528)	12	-	4	80	6	A	321356
4.53	(4.538)	12	-	4	80	6	A	321357
4.54	(4.548)	12	-	4	80	6	A	321358
4.55	(4.558)	12	-	4	80	6	A	321359
4.56	(4.568)	12	-	4	80	6	A	321360
4.57	(4.578)	12	-	4	80	6	A	321361
4.58	(4.588)	12	-	4	80	6	A	321362
4.59	(4.598)	12	-	4	80	6	A	321363
4.60	(4.608)	12	-	4	80	6	A	321364
4.61	(4.618)	12	-	4	80	6	A	321365
4.62	(4.628)	12	-	4	80	6	A	321366
4.63	(4.638)	12	-	4	80	6	A	321367
4.64	(4.648)	12	-	4	80	6	A	321368
4.65	(4.658)	12	-	4	80	6	A	321369
4.66	(4.668)	12	-	4	80	6	A	321370
4.67	(4.678)	12	-	4	80	6	A	321371
4.68	(4.688)	12	-	4	80	6	A	321372
4.69	(4.698)	12	-	4	80	6	A	321373
4.70	(4.708)	12	-	4	80	6	A	321374
4.71	(4.718)	12	-	4	80	6	A	321375
4.72	(4.728)	12	-	4	80	6	A	321376
4.73	(4.738)	12	-	4	80	6	A	321377
4.74	(4.748)	12	-	4	80	6	A	321378
4.75	(4.758)	12	-	4	80	6	A	321379
4.76	(4.768)	12	-	4	80	6	A	321380
4.77	(4.778)	12	-	4	80	6	A	321381
4.78	(4.788)	12	-	4	80	6	A	321382
4.79	(4.798)	12	-	4	80	6	A	321383
4.80	(4.808)	12	-	4	80	6	A	321384
4.81	(4.818)	12	-	4	80	6	A	321385
4.82	(4.828)	12	-	4	80	6	A	321386
4.83	(4.838)	12	-	4	80	6	A	321387
4.84	(4.848)	12	-	4	80	6	A	321388
4.85	(4.858)	12	-	4	80	6	A	321389
4.86	(4.868)	12	-	4	80	6	A	321390
4.87	(4.878)	12	-	4	80	6	A	321391
4.88	(4.888)	12	-	4	80	6	A	321392
4.89	(4.898)	12	-	4	80	6	A	321393
4.90	(4.908)	12	-	4	80	6	A	321394
4.91	(4.918)	12	-	4	80	6	A	321395
4.92	(4.928)	12	-	4	80	6	A	321396
4.93	(4.938)	12	-	4	80	6	A	321397
4.94	(4.948)	12	-	4	80	6	A	321398
4.95	(4.958)	12	-	4	80	6	A	321399
4.96	(4.968)	12	-	4	80	6	A	321400
4.97	(4.978)	12	-	4	80	6	A	321401





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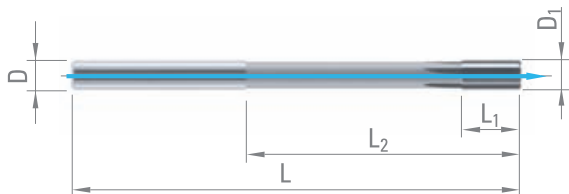
> Ø 2.98



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
4.98	(4.988)	12	-	4	80	6	A	321402
4.99	(4.998)	12	-	4	80	6	A	321403
5.00	(5.008)	12	-	4	80	6	A	321404
5.01	(5.018)	12	-	4	80	6	A	321405
5.02	(5.028)	12	-	4	80	6	A	321406
5.03	(5.038)	12	-	4	80	6	A	321407
5.04	(5.048)	12	-	4	80	6	A	321408
5.05	(5.058)	12	-	4	80	6	A	321409
5.06	(5.068)	12	-	4	80	6	A	321410
5.07	(5.078)	12	-	4	80	6	A	321411
5.08	(5.088)	12	-	4	80	6	A	321412
5.09	(5.098)	12	-	4	80	6	A	321413
5.10	(5.108)	12	-	4	80	6	A	321414
5.11	(5.118)	12	-	4	80	6	A	321415
5.12	(5.128)	12	-	4	80	6	A	321416
5.13	(5.138)	12	-	4	80	6	A	321417
5.14	(5.148)	12	-	4	80	6	A	321418
5.15	(5.158)	12	-	4	80	6	A	321419
5.16	(5.168)	12	-	4	80	6	A	321420
5.17	(5.178)	12	-	4	80	6	A	321421
5.18	(5.188)	12	-	4	80	6	A	321422
5.19	(5.198)	12	-	4	80	6	A	321423
5.20	(5.208)	12	-	4	80	6	A	321424
5.21	(5.218)	12	-	4	80	6	A	321425
5.22	(5.228)	12	-	4	80	6	A	321426
5.23	(5.238)	12	-	4	80	6	A	321427
5.24	(5.248)	12	-	4	80	6	A	321428
5.25	(5.258)	12	-	4	80	6	A	321429
5.26	(5.268)	12	-	4	80	6	A	321430
5.27	(5.278)	12	-	4	80	6	A	321431
5.28	(5.288)	12	-	4	80	6	A	321432
5.29	(5.298)	12	-	4	80	6	A	321433
5.30	(5.308)	12	-	4	80	6	A	321434
5.31	(5.318)	12	-	4	80	6	A	321435
5.32	(5.328)	12	-	4	80	6	A	321436
5.33	(5.338)	12	-	4	80	6	A	321437
5.34	(5.348)	12	-	4	80	6	A	321438
5.35	(5.358)	12	-	4	80	6	A	321439
5.36	(5.368)	12	-	4	80	6	A	321440
5.37	(5.378)	12	-	4	80	6	A	321441
5.38	(5.388)	12	-	4	80	6	A	321442
5.39	(5.398)	12	-	4	80	6	A	321443
5.40	(5.408)	12	-	4	80	6	A	321444
5.41	(5.418)	12	-	4	80	6	A	321445
5.42	(5.428)	12	-	4	80	6	A	321446
5.43	(5.438)	12	-	4	80	6	A	321447
5.44	(5.448)	12	-	4	80	6	A	321448

D nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
5.45	(5.458)	12	-	4	80	6	A	321449
5.46	(5.468)	12	-	4	80	6	A	321450
5.47	(5.478)	12	-	4	80	6	A	321451
5.48	(5.488)	12	-	4	80	6	A	321452
5.49	(5.498)	12	-	4	80	6	A	321453
5.50	(5.508)	12	-	4	80	6	A	321454
5.51	(5.518)	12	-	4	80	6	A	321455
5.52	(5.528)	12	-	4	80	6	A	321456
5.53	(5.538)	12	-	4	80	6	A	321457
5.54	(5.548)	12	-	4	80	6	A	321458
5.55	(5.558)	12	-	4	80	6	A	321459
5.56	(5.568)	12	-	4	80	6	A	321460
5.57	(5.578)	12	-	4	80	6	A	321461
5.58	(5.588)	12	-	4	80	6	A	321462
5.59	(5.598)	12	-	4	80	6	A	321463
5.60	(5.608)	12	-	4	80	6	A	321464
5.61	(5.618)	12	-	4	80	6	A	321465
5.62	(5.628)	12	-	4	80	6	A	321466
5.63	(5.638)	12	-	4	80	6	A	321467
5.64	(5.648)	12	-	4	80	6	A	321468
5.65	(5.658)	12	-	4	80	6	A	321469
5.66	(5.668)	12	-	4	80	6	A	321470
5.67	(5.678)	12	-	4	80	6	A	321471
5.68	(5.688)	12	-	4	80	6	A	321472
5.69	(5.698)	12	-	4	80	6	A	321473
5.70	(5.708)	12	-	4	80	6	A	321474
5.71	(5.718)	12	-	4	80	6	A	321475
5.72	(5.728)	12	-	4	80	6	A	321476
5.73	(5.738)	12	-	4	80	6	A	321477
5.74	(5.748)	12	-	4	80	6	A	321478
5.75	(5.758)	12	-	4	80	6	A	321479
5.76	(5.768)	12	-	4	80	6	A	321480
5.77	(5.778)	12	-	4	80	6	A	321481
5.78	(5.788)	12	-	4	80	6	A	321482
5.79	(5.798)	12	-	4	80	6	A	321483
5.80	(5.808)	12	-	4	80	6	A	321484
5.81	(5.818)	12	-	4	80	6	A	321485
5.82	(5.828)	12	-	4	80	6	A	321486
5.83	(5.838)	12	-	4	80	6	A	321487
5.84	(5.848)	12	-	4	80	6	A	321488
5.85	(5.858)	12	-	4	80	6	A	321489
5.86	(5.868)	12	-	4	80	6	A	321490
5.87	(5.878)	12	-	4	80	6	A	321491
5.88	(5.888)	12	-	4	80	6	A	321492
5.89	(5.898)	12	-	4	80	6	A	321493
5.90	(5.908)	12	-	4	80	6	A	321494
5.91	(5.918)	12	-	4	80	6	A	321495





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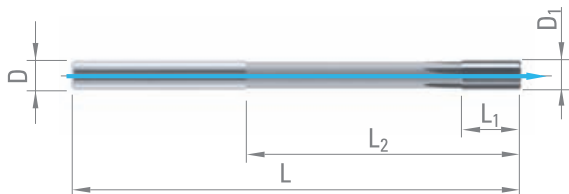
> Ø 2.98



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
5.92	(5.928)	12	-	4	80	6	A	321496
5.93	(5.938)	12	-	4	80	6	A	321497
5.94	(5.948)	12	-	4	80	6	A	321498
5.95	(5.958)	12	-	4	80	6	A	321499
5.96	(5.968)	12	-	4	80	6	A	321500
5.97	(5.978)	12	-	4	80	6	A	321501
5.98	(5.988)	12	-	4	80	6	A	321502
5.99	(5.998)	12	-	4	80	6	A	321503
6.00	(6.008)	12	-	4	80	6	A	321504
6.01	(6.020)	12	-	4	80	6	A	321505
6.02	(6.030)	12	-	4	80	6	A	321506
6.03	(6.040)	12	-	4	80	6	A	321507
6.04	(6.050)	12	-	4	80	6	A	321508
6.05	(6.060)	12	-	4	80	6	A	321509
6.06	(6.070)	12	-	4	80	6	A	321510
6.07	(6.080)	12	-	4	80	6	A	321511
6.08	(6.090)	12	-	4	80	6	A	321512
6.09	(6.100)	12	-	4	80	6	A	321513
6.10	(6.110)	12	-	4	80	6	A	321514
6.11	(6.120)	12	-	4	80	6	A	321515
6.12	(6.130)	12	-	4	80	6	A	321516
6.13	(6.140)	12	-	4	80	6	A	321517
6.14	(6.150)	12	-	4	80	6	A	321518
6.15	(6.160)	12	-	4	80	6	A	321519
6.16	(6.170)	12	-	4	80	6	A	321520
6.17	(6.180)	12	-	4	80	6	A	321521
6.18	(6.190)	12	-	4	80	6	A	321522
6.19	(6.200)	12	-	4	80	6	A	321523
6.20	(6.210)	16	-	6	101	6	A	341670
6.30	(6.310)	16	-	6	101	6	A	341680
6.35	(6.360)	16	-	6	101	6	A	341685
6.40	(6.410)	16	-	6	101	6	A	341690
6.48	(6.490)	16	-	6	101	6	A	341698
6.49	(6.500)	16	-	6	101	6	A	341699
6.50	(6.510)	16	-	6	101	6	A	341700
6.51	(6.520)	16	-	6	101	6	A	341701
6.52	(6.530)	16	-	6	101	6	A	341702
6.55	(6.560)	16	-	6	101	6	A	341705
6.60	(6.610)	16	-	6	101	6	A	341710
6.70	(6.710)	16	-	6	101	6	A	341720
6.80	(6.810)	16	-	6	101	6	A	341730
6.90	(6.910)	16	-	6	101	6	A	341740
7.00	(7.010)	16	-	6	101	6	A	341750
7.01	(7.020)	16	-	6	101	6	A	341751
7.02	(7.030)	16	-	6	101	6	A	341752
7.10	(7.110)	16	-	6	101	6	A	341760
7.20	(7.210)	16	-	6	101	6	A	341770

D nom. H7	D ₁ ± 1.5µm	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
7.30	(7.310)	16	-	6	101	6	A	341780
7.40	(7.410)	16	-	6	101	6	A	341790
7.50	(7.510)	16	-	6	101	6	A	341800
7.60	(7.610)	16	-	6	101	6	A	341810
7.70	(7.710)	16	-	6	101	6	A	341820
7.80	(7.810)	16	-	6	101	6	A	341830
7.90	(7.910)	16	-	6	101	6	A	341840
7.98	(7.990)	16	-	6	101	6	A	341848
7.99	(8.000)	16	-	6	101	6	A	341849
8.00	(8.010)	16	-	6	101	6	A	341850
8.01	(8.020)	16	-	6	101	6	A	341851
8.02	(8.030)	16	-	6	101	6	A	341852
8.05	(8.060)	16	-	6	101	6	A	341855
8.10	(8.110)	16	-	6	117	6	A	341860
8.20	(8.210)	16	-	6	117	6	A	341870
8.30	(8.310)	16	-	6	117	6	A	341880
8.40	(8.410)	16	-	6	117	6	A	341890
8.50	(8.510)	16	-	6	117	6	A	341900
8.70	(8.710)	16	-	6	117	6	A	341920
9.00	(9.010)	16	-	6	117	6	A	341950
9.30	(9.310)	16	-	6	117	6	A	341980
9.50	(9.510)	16	-	6	117	6	A	342000
9.70	(9.710)	16	-	6	117	6	A	342020
9.98	(9.990)	16	-	6	117	6	A	342048
9.99	(10.000)	16	-	6	117	6	A	342049
10.00	(10.010)	16	-	6	117	6	A	342050
10.01	(10.020)	16	-	6	117	6	A	342051
10.02	(10.032)	19	87	10	133	6	B	952322
10.04	(10.052)	19	87	10	133	6	B	962649
10.05	(10.062)	19	87	10	133	6	B	962568
10.10	(10.112)	19	87	10	133	6	B	952765
10.40	(10.412)	19	87	10	133	6	B	968160
10.50	(10.512)	19	87	10	133	6	B	952766
10.60	(10.612)	19	87	10	133	6	B	952767
11.00	(11.012)	19	96	12	142	6	B	952768
11.50	(11.512)	19	96	12	142	6	B	952769
11.80	(11.812)	19	96	12	142	6	B	952770
12.00	(12.012)	19	105	12	151	6	B	952771
12.02	(12.032)	19	105	12	151	6	B	952772

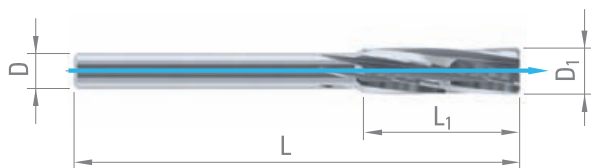
All Ø with tolerance ±2µm available through our express-service



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



P. 370

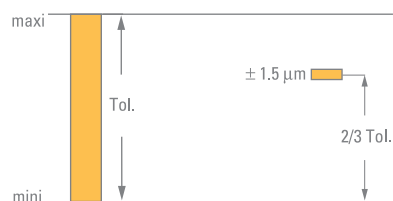


Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

D nom. H7	D ₁ ± 1.5µm	L ₁	D _{h5}	L	Z	CARBIDE
2.97	(2.977)	20	2.5	56	4	969074
2.99	(2.997)	20	2.5	56	4	969379
3.00	(3.007)	20	2.5	56	4	969382
3.01	(3.018)	20	2.5	56	4	969398
3.02	(3.028)	20	2.5	56	4	969399
3.05	(3.058)	20	2.5	56	4	969400
3.08	(3.088)	20	2.5	56	4	969401
3.10	(3.108)	20	2.5	56	4	969402
3.11	(3.118)	20	2.5	56	4	969403
3.15	(3.158)	20	2.5	56	4	969404
3.18	(3.188)	20	2.5	56	4	969405
3.20	(3.208)	20	2.5	56	4	969406
3.21	(3.218)	20	2.5	56	4	969407
3.25	(3.258)	20	2.5	56	4	969408
3.28	(3.288)	20	2.5	56	4	969409
3.30	(3.308)	20	2.5	56	4	969410
3.31	(3.318)	20	2.5	56	4	969411
3.35	(3.358)	20	2.5	56	4	969412
3.38	(3.388)	20	2.5	56	4	969413
3.40	(3.408)	20	2.5	56	4	969414
3.41	(3.418)	20	2.5	56	4	969415
3.45	(3.458)	20	2.5	56	4	969416
3.49	(3.498)	20	2.5	56	4	969417
3.50	(3.508)	20	3.0	56	4	969418
3.51	(3.518)	20	3.0	56	4	969421
3.55	(3.558)	20	3.0	56	4	969422
3.58	(3.588)	20	3.0	56	4	969423
3.60	(3.608)	20	3.0	56	4	969424
3.61	(3.618)	20	3.0	56	4	969425
3.65	(3.658)	20	3.0	56	4	969426
3.68	(3.688)	20	3.0	56	4	969427
3.70	(3.708)	20	3.0	56	4	969428
3.71	(3.718)	20	3.0	56	4	969429

D nom. H7	D ₁ ± 1.5µm	L ₁	D _{h5}	L	Z	CARBIDE
3.75	(3.758)	20	3.0	56	4	969430
3.78	(3.788)	20	3.0	56	4	969431
3.80	(3.808)	20	3.0	56	4	969432
3.85	(3.858)	20	3.0	56	4	969433
3.90	(3.908)	20	3.0	56	4	969434
3.95	(3.958)	20	3.0	56	4	969435
4.00	(4.008)	20	3.0	56	4	969436
4.04	(4.048)	22	3.5	63	6	993718
4.10	(4.108)	22	3.5	63	6	969437
4.20	(4.208)	22	3.5	63	6	969438
4.30	(4.308)	22	3.5	63	6	969439
4.40	(4.408)	22	3.5	63	6	969440
4.50	(4.508)	22	4.0	63	6	969441
4.60	(4.608)	22	4.0	63	6	969442
4.70	(4.708)	22	4.0	63	6	969443
4.80	(4.808)	22	4.0	63	6	969444
4.90	(4.908)	22	4.0	63	6	969445
5.00	(5.008)	22	4.0	63	6	969446
5.10	(5.108)	22	4.0	63	6	969447
5.20	(5.208)	22	4.0	63	6	969448
5.30	(5.308)	22	4.0	63	6	969449
5.40	(5.408)	22	4.0	63	6	969450
5.50	(5.508)	22	5.0	63	6	969451
5.60	(5.608)	22	5.0	63	6	969452
5.70	(5.708)	22	5.0	63	6	969453
5.80	(5.808)	22	5.0	63	6	969454
5.90	(5.908)	22	5.0	63	6	969455
6.00	(6.008)	22	5.0	63	6	969456
6.10	(6.110)	22	5.0	63	6	969457
6.20	(6.210)	22	5.0	63	6	969458
6.30	(6.310)	22	5.0	63	6	969459
6.40	(6.410)	22	5.0	63	6	969460
6.50	(6.510)	22	5.0	63	6	969461

All Ø with tolerance ±2µm available
through our express-service



POLY 4007 - 4007-TC

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



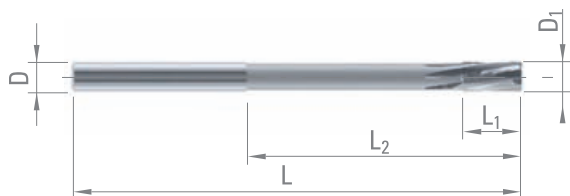
P. 370



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
0.37	3	5	3	38	3	B	983079
0.38	3	5	3	38	3	B	326999
0.39	3	5	3	38	3	B	969543
0.40	3	5	3	38	3	B	200716
0.41	3	5	3	38	3	B	963823
0.42	3	5	3	38	3	B	200717
0.43	3	5	3	38	3	B	327000
0.44	3	5	3	38	3	B	200718
0.45	3	5	3	38	3	B	965207
0.46	3	5	3	38	3	B	200719
0.47	3	5	3	38	3	B	327001
0.48	3	5	3	38	3	B	200720
0.49	3	5	3	38	3	B	963716
0.50	3	5	3	38	3	B	200746
0.51	4	6	3	38	3	B	200745
0.52	4	6	3	38	3	B	200738
0.53	4	6	3	38	3	B	200742
0.54	4	6	3	38	3	B	200743
0.55	4	6	3	38	3	B	200739
0.56	4	6	3	38	3	B	968834
0.57	4	6	3	38	3	B	973253
0.58	4	6	3	38	3	B	200741
0.59	4	6	3	38	3	B	200744
0.60	4	6	3	38	3	B	200740
0.61	4	7	3	38	3	B	964652
0.62	4	7	3	38	3	B	200750
0.63	4	7	3	38	3	B	327002
0.64	4	7	3	38	3	B	200755
0.65	4	7	3	38	3	B	200748
0.66	4	7	3	38	3	B	200752
0.67	4	7	3	38	3	B	200753
0.68	4	7	3	38	3	B	200751
0.69	4	7	3	38	3	B	200754
0.70	4	7	3	38	3	B	200749
0.71	4	8	3	38	3	B	965167
0.72	4	8	3	38	3	B	200758
0.73	4	8	3	38	3	B	327003
0.74	4	8	3	38	3	B	200762
0.75	4	8	3	38	3	B	200756
0.76	4	8	3	38	3	B	327004
0.77	4	8	3	38	3	B	200760
0.78	4	8	3	38	3	B	200759
0.79	4	8	3	38	3	B	200761
0.80	4	8	3	38	3	B	200757
0.81	5	9	3	38	3	B	965168

D _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
0.82	5	9	3	38	3	B	200765
0.83	5	9	3	38	3	B	200769
0.84	5	9	3	38	3	B	200768
0.85	5	9	3	38	3	B	200763
0.86	5	9	3	38	3	B	200770
0.87	5	9	3	38	3	B	200771
0.88	5	9	3	38	3	B	200766
0.89	5	9	3	38	3	B	200767
0.90	5	9	3	38	3	B	200764
0.91	5	10	3	38	3	B	200733
0.92	5	10	3	38	3	B	200729
0.93	5	10	3	38	3	B	327005
0.94	5	10	3	38	3	B	327006
0.95	5	10	3	38	3	B	200728
0.96	5	10	3	38	3	B	200730
0.97	5	10	3	38	3	B	200731
0.98	5	10	3	38	3	B	200726
0.99	5	10	3	38	3	B	200727
1.00	5	10	3	38	3	B	200732
1.01	5	11	3	38	3	B	200715
1.02	5	11	3	38	3	B	200772
1.03	5	11	3	38	3	B	967191
1.04	5	11	3	38	3	B	327007
1.05	5	11	3	38	3	B	200773
1.06	5	11	3	38	3	B	327008
1.07	5	11	3	38	3	B	327009
1.08	5	11	3	38	3	B	200774
1.09	5	11	3	38	3	B	965169
1.10	5	11	3	38	3	B	200777
1.11	5	12	3	38	3	B	327010
1.12	5	12	3	38	3	B	327011
1.13	5	12	3	38	3	B	327012
1.14	5	12	3	38	3	B	327013
1.15	5	12	3	38	3	B	200775
1.16	5	12	3	38	3	B	327014
1.17	5	12	3	38	3	B	327015
1.18	5	12	3	38	3	B	63965
1.19	5	12	3	38	3	B	327016
1.20	5	12	3	38	3	B	200776
1.21	6	13	3	38	3	B	965171
1.22	6	13	3	38	3	B	327017
1.23	6	13	3	38	3	B	327018
1.24	6	13	3	38	3	B	327019
1.25	6	13	3	38	3	B	200778
1.26	6	13	3	38	3	B	963588

All Ø with tolerance ±2µm available through our express-service

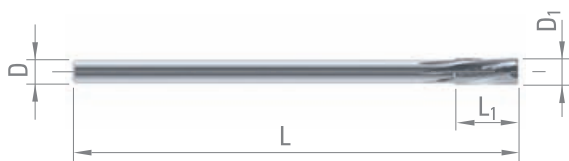




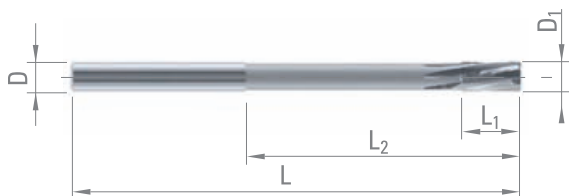
P. 370



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
1.27	6	13	3	38	3	B	972014
1.28	6	13	3	38	3	B	200780
1.29	6	13	3	38	3	B	327020
1.30	6	13	3	38	3	B	200779
1.31	6	13	3	38	3	B	967299
1.32	6	13	3	38	3	B	327021
1.33	6	13	3	38	3	B	327022
1.34	6	13	3	38	3	B	973390
1.35	6	13	3	38	3	B	200734
1.36	6	13	3	38	3	B	327023
1.37	6	13	3	38	3	B	327024
1.38	6	13	3	38	3	B	327025
1.39	6	13	3	38	3	B	327026
1.40	6	13	3	38	3	B	200735
1.41	7	15	3	38	3	B	327027
1.42	7	15	3	38	3	B	327028
1.43	7	15	3	38	3	B	327029
1.44	7	15	3	38	3	B	327030
1.45	7	15	3	38	3	B	200783
1.46	7	15	3	38	3	B	327031
1.47	7	15	3	38	3	B	327032
1.48	7	15	3	38	3	B	200781
1.49	7	15	3	38	3	B	200782
1.50	7	15	3	38	3	B	200784
1.51	7	15	3	50	3	B	200787
1.52	7	15	3	50	3	B	200788
1.53	7	15	3	50	3	B	327033
1.54	7	15	3	50	3	B	327034
1.55	7	15	3	50	3	B	200692
1.56	7	15	3	50	3	B	976176
1.57	7	15	3	50	3	B	964655
1.58	7	15	3	50	3	B	63966
1.59	7	15	3	50	3	B	965174
1.60	7	15	3	50	3	B	200794
1.61	7	16	3	50	3	B	965175
1.62	7	16	3	50	3	B	327035
1.63	7	16	3	50	3	B	327036
1.64	7	16	3	50	3	B	327037
1.65	7	16	3	50	3	B	200691
1.66	7	16	3	50	3	B	327038
1.67	7	16	3	50	3	B	327039
1.68	7	16	3	50	3	B	327040
1.69	7	16	3	50	3	B	965209
1.70	7	16	3	50	3	B	200693
1.71	7	17	3	50	3	B	327041
1.72	7	17	3	50	3	B	327042
1.73	7	17	3	50	3	B	327043

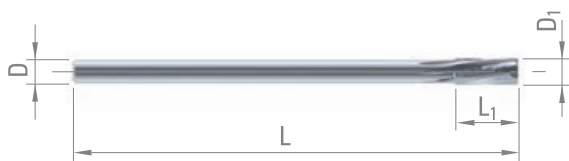
D _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
1.74	7	17	3	50	3	B	327044
1.75	7	17	3	50	3	B	200694
1.76	7	17	3	50	3	B	327045
1.77	7	17	3	50	3	B	327046
1.78	7	17	3	50	3	B	327047
1.79	7	17	3	50	3	B	200713
1.80	7	17	3	50	3	B	200795
1.81	8	17	3	50	3	B	327048
1.82	8	17	3	50	3	B	327049
1.83	8	17	3	50	3	B	971471
1.84	8	17	3	50	3	B	327050
1.85	8	17	3	50	3	B	200796
1.86	8	17	3	50	3	B	972720
1.87	8	17	3	50	3	B	964530
1.88	8	17	3	50	3	B	971918
1.89	8	17	3	50	3	B	200704
1.90	8	17	3	50	3	B	20079
1.91	8	18	3	50	3	B	965177
1.92	8	18	3	50	3	B	327051
1.93	8	18	3	50	3	B	327052
1.94	8	18	3	50	3	B	327053
1.95	8	18	3	50	3	B	200682
1.96	8	18	3	50	3	B	200712
1.97	8	18	3	50	3	B	200789
1.98	8	18	3	50	3	B	200790
1.99	8	18	3	50	3	B	200791
2.00	8	18	3	50	3	B	200785
2.01	8	18	3	50	3	B	200792
2.02	8	18	3	50	3	B	200793
2.03	8	18	3	50	3	B	327054
2.04	8	18	3	50	3	B	200714
2.05	8	18	3	50	3	B	200688
2.06	8	18	3	50	3	B	327055
2.07	8	18	3	50	3	B	327056
2.08	8	18	3	50	3	B	327057
2.09	8	18	3	50	3	B	968093
2.10	8	18	3	50	3	B	200711
2.11	8	18	3	50	3	B	327058
2.12	8	18	3	50	3	B	968735
2.13	8	18	3	50	3	B	327059
2.14	8	18	3	50	3	B	968737
2.15	8	18	3	50	3	B	200687
2.16	8	18	3	50	3	B	327060
2.17	8	18	3	50	3	B	327061
2.18	8	18	3	50	3	B	327062
2.19	8	18	3	50	3	B	967119
2.20	8	18	3	50	3	B	200706



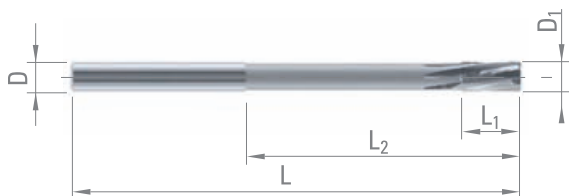
P. 370



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
2.21	8	18	3	50	3	B	327063
2.22	8	18	3	50	3	B	327064
2.23	8	18	3	50	3	B	327065
2.24	8	18	3	50	3	B	327066
2.25	8	18	3	50	3	B	200686
2.26	8	18	3	50	3	B	327067
2.27	8	18	3	50	3	B	327068
2.28	8	18	3	50	3	B	327069
2.29	8	18	3	50	3	B	327070
2.30	8	18	3	50	3	B	200698
2.31	10	20	3	50	3	B	327071
2.32	10	20	3	50	3	B	200702
2.33	10	20	3	50	3	B	327072
2.34	10	20	3	50	3	B	327073
2.35	10	20	3	50	3	B	200697
2.36	10	20	3	50	3	B	327074
2.37	10	20	3	50	3	B	327075
2.38	10	20	3	50	3	B	327076
2.39	10	20	3	50	3	B	327077
2.40	10	20	3	50	3	B	200696
2.41	10	20	3	50	3	B	972007
2.42	10	20	3	50	3	B	327078
2.43	10	20	3	50	3	B	327079
2.44	10	20	3	50	3	B	327080
2.45	10	20	3	50	3	B	200695
2.46	10	20	3	50	3	B	327081
2.47	10	20	3	50	3	B	327082
2.48	10	20	3	50	3	B	200707
2.49	10	20	3	50	3	B	200708
2.50	10	20	3	50	3	B	200786
2.51	10	20	3	61	4	B	200709
2.52	10	20	3	61	4	B	200710
2.53	10	20	3	61	4	B	327083
2.54	10	20	3	61	4	B	327084
2.55	10	20	3	61	4	B	200685
2.56	10	20	3	61	4	B	327085
2.57	10	20	3	61	4	B	327086
2.58	10	20	3	61	4	B	327087
2.59	10	20	3	61	4	B	327088
2.60	10	20	3	61	4	B	200684
2.61	10	25	3	61	4	B	327089
2.62	10	25	3	61	4	B	327090
2.63	10	25	3	61	4	B	327091
2.64	10	25	3	61	4	B	327092
2.65	10	25	3	61	4	B	200683
2.66	10	25	3	61	4	B	327093
2.67	10	25	3	61	4	B	200703

D _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
2.68	10	25	3	61	4	B	327094
2.69	10	25	3	61	4	B	327095
2.70	10	25	3	61	4	B	200690
2.71	10	25	3	61	4	B	327096
2.72	10	25	3	61	4	B	327097
2.73	10	25	3	61	4	B	327098
2.74	10	25	3	61	4	B	327099
2.75	10	25	3	61	4	B	200689
2.76	10	25	3	61	4	B	327100
2.77	10	25	3	61	4	B	327101
2.78	10	25	3	61	4	B	327102
2.79	10	25	3	61	4	B	327103
2.80	10	25	3	61	4	B	200705
2.81	10	25	3	61	4	B	327104
2.82	10	25	3	61	4	B	327105
2.83	10	25	3	61	4	B	327106
2.84	10	25	3	61	4	B	327107
2.85	10	25	3	61	4	B	200699
2.86	10	25	3	61	4	B	327108
2.87	10	25	3	61	4	B	327109
2.88	10	25	3	61	4	B	327110
2.89	10	25	3	61	4	B	327111
2.90	10	25	3	61	4	B	200700
2.91	10	25	3	61	4	B	327112
2.92	10	25	3	61	4	B	327113
2.93	10	25	3	61	4	B	327114
2.94	10	25	3	61	4	B	327115
2.95	10	25	3	61	4	B	200701
2.96	10	25	3	61	4	B	327116
2.97	10	25	3	61	4	B	200747
2.98	10	25	3	70	6	B	321524
2.99	10	25	3	70	6	B	321525
3.00	10	25	3	70	6	B	321526
3.01	10	25	3	70	6	B	321527
3.02	10	25	3	70	6	B	321528
3.03	10	25	3	70	6	B	321529
3.04	10	25	3	70	6	B	321530
3.05	10	25	3	70	6	B	321531
3.06	10	25	3	70	6	B	321532
3.07	10	25	3	70	6	B	321533
3.08	10	25	3	70	6	B	321534
3.09	10	25	3	70	6	B	321535
3.10	10	-	3	70	6	A	321536
3.11	10	-	3	70	6	A	321537
3.12	10	-	3	70	6	A	321538
3.13	10	-	3	70	6	A	321539
3.14	10	-	3	70	6	A	321540

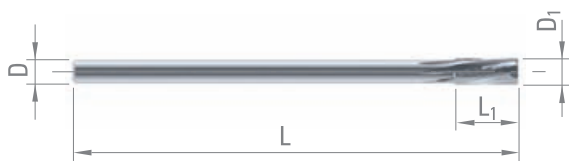




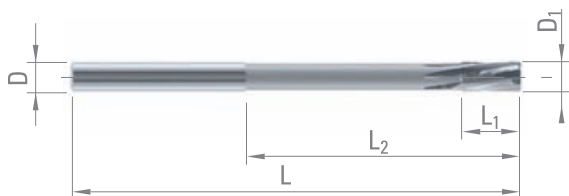
P. 370



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
3.15	10	-	3	70	6	A	321541
3.16	10	-	3	70	6	A	321542
3.17	10	-	3	70	6	A	321543
3.18	10	-	3	70	6	A	321544
3.19	10	-	3	70	6	A	321545
3.20	10	-	3	70	6	A	321546
3.21	10	-	3	70	6	A	321547
3.22	10	-	3	70	6	A	321548
3.23	10	-	3	70	6	A	321549
3.24	10	-	3	70	6	A	321550
3.25	10	-	3	70	6	A	321551
3.26	10	-	3	70	6	A	321552
3.27	10	-	3	70	6	A	321553
3.28	10	-	3	70	6	A	321554
3.29	10	-	3	70	6	A	321555
3.30	10	-	3	70	6	A	321556
3.31	10	-	3	70	6	A	321557
3.32	10	-	3	70	6	A	321558
3.33	10	-	3	70	6	A	321559
3.34	10	-	3	70	6	A	321560
3.35	10	-	3	70	6	A	321561
3.36	10	-	3	70	6	A	321562
3.37	10	-	3	70	6	A	321563
3.38	10	-	3	70	6	A	321564
3.39	10	-	3	70	6	A	321565
3.40	10	-	3	70	6	A	321566
3.41	10	-	3	70	6	A	321567
3.42	10	-	3	70	6	A	321568
3.43	10	-	3	70	6	A	321569
3.44	10	-	3	70	6	A	321570
3.45	10	-	3	70	6	A	321571
3.46	10	-	3	70	6	A	321572
3.47	10	-	3	70	6	A	321573
3.48	10	-	3	70	6	A	321574
3.49	10	-	3	70	6	A	321575
3.50	10	-	3	70	6	A	321576
3.51	10	-	3	70	6	A	321577
3.52	10	-	3	70	6	A	321578
3.53	10	-	3	70	6	A	321579
3.54	10	-	3	70	6	A	321580
3.55	10	-	3	70	6	A	321581
3.56	10	-	3	70	6	A	321582
3.57	10	-	3	70	6	A	321583
3.58	10	-	3	70	6	A	321584
3.59	10	-	3	70	6	A	321585
3.60	10	-	3	70	6	A	321586
3.61	10	-	3	70	6	A	321587

D _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
3.62	10	-	3	70	6	A	321588
3.63	10	-	3	70	6	A	321589
3.64	10	-	3	70	6	A	321590
3.65	10	-	3	70	6	A	321591
3.66	10	-	3	70	6	A	321592
3.67	10	-	3	70	6	A	321593
3.68	10	-	3	70	6	A	321594
3.69	10	-	3	70	6	A	321595
3.70	10	-	3	70	6	A	321596
3.71	10	-	3	70	6	A	321597
3.72	10	-	3	70	6	A	321598
3.73	10	-	3	70	6	A	321599
3.74	10	-	3	70	6	A	321600
3.75	10	-	3	70	6	A	321601
3.76	10	-	3	70	6	A	321602
3.77	10	-	3	70	6	A	321603
3.78	10	-	3	70	6	A	321604
3.79	10	-	3	70	6	A	321605
3.80	10	-	3	70	6	A	321606
3.81	10	-	3	70	6	A	321607
3.82	10	-	3	70	6	A	321608
3.83	10	-	3	70	6	A	321609
3.84	10	-	3	70	6	A	321610
3.85	10	-	3	70	6	A	321611
3.86	10	-	3	70	6	A	321612
3.87	10	-	3	70	6	A	321613
3.88	10	-	3	70	6	A	321614
3.89	10	-	3	70	6	A	321615
3.90	10	-	3	70	6	A	321616
3.91	10	-	3	70	6	A	321617
3.92	10	-	3	70	6	A	321618
3.93	10	-	3	70	6	A	321619
3.94	10	-	3	70	6	A	321620
3.95	10	-	3	70	6	A	321621
3.96	10	-	3	70	6	A	321622
3.97	10	-	3	70	6	A	321623
3.98	10	-	3	70	6	A	321624
3.99	10	-	3	70	6	A	321625
4.00	10	-	3	70	6	A	321626
4.01	10	-	3	70	6	A	321627
4.02	10	-	3	70	6	A	321628
4.03	10	-	3	70	6	A	321629
4.04	10	-	3	70	6	A	321630
4.05	10	-	3	70	6	A	321631
4.06	10	-	3	70	6	A	321632
4.07	10	-	3	70	6	A	321633
4.08	10	-	3	70	6	A	321634

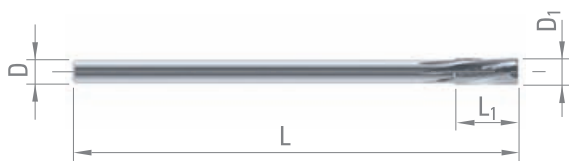




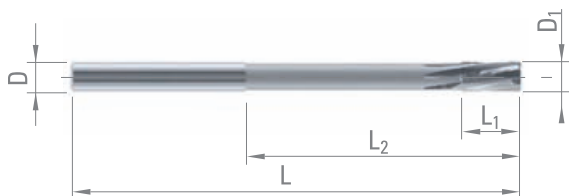
P. 370



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
4.09	10	-	3	70	6	A	321635
4.10	12	-	4	80	6	A	321636
4.11	12	-	4	80	6	A	321637
4.12	12	-	4	80	6	A	321638
4.13	12	-	4	80	6	A	321639
4.14	12	-	4	80	6	A	321640
4.15	12	-	4	80	6	A	321641
4.16	12	-	4	80	6	A	321642
4.17	12	-	4	80	6	A	321643
4.18	12	-	4	80	6	A	321644
4.19	12	-	4	80	6	A	321645
4.20	12	-	4	80	6	A	321646
4.21	12	-	4	80	6	A	321647
4.22	12	-	4	80	6	A	321648
4.23	12	-	4	80	6	A	321649
4.24	12	-	4	80	6	A	321650
4.25	12	-	4	80	6	A	321651
4.26	12	-	4	80	6	A	321652
4.27	12	-	4	80	6	A	321653
4.28	12	-	4	80	6	A	321654
4.29	12	-	4	80	6	A	321655
4.30	12	-	4	80	6	A	321656
4.31	12	-	4	80	6	A	321657
4.32	12	-	4	80	6	A	321658
4.33	12	-	4	80	6	A	321659
4.34	12	-	4	80	6	A	321660
4.35	12	-	4	80	6	A	321661
4.36	12	-	4	80	6	A	321662
4.37	12	-	4	80	6	A	321663
4.38	12	-	4	80	6	A	321664
4.39	12	-	4	80	6	A	321665
4.40	12	-	4	80	6	A	321666
4.41	12	-	4	80	6	A	321667
4.42	12	-	4	80	6	A	321668
4.43	12	-	4	80	6	A	321669
4.44	12	-	4	80	6	A	321670
4.45	12	-	4	80	6	A	321671
4.46	12	-	4	80	6	A	321672
4.47	12	-	4	80	6	A	321673
4.48	12	-	4	80	6	A	321674
4.49	12	-	4	80	6	A	321675
4.50	12	-	4	80	6	A	321676
4.51	12	-	4	80	6	A	321677
4.52	12	-	4	80	6	A	321678
4.53	12	-	4	80	6	A	321679
4.54	12	-	4	80	6	A	321680
4.55	12	-	4	80	6	A	321681

D _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
4.56	12	-	4	80	6	A	321682
4.57	12	-	4	80	6	A	321683
4.58	12	-	4	80	6	A	321684
4.59	12	-	4	80	6	A	321685
4.60	12	-	4	80	6	A	321686
4.61	12	-	4	80	6	A	321687
4.62	12	-	4	80	6	A	321688
4.63	12	-	4	80	6	A	321689
4.64	12	-	4	80	6	A	321690
4.65	12	-	4	80	6	A	321691
4.66	12	-	4	80	6	A	321692
4.67	12	-	4	80	6	A	321693
4.68	12	-	4	80	6	A	321694
4.69	12	-	4	80	6	A	321695
4.70	12	-	4	80	6	A	321696
4.71	12	-	4	80	6	A	321697
4.72	12	-	4	80	6	A	321698
4.73	12	-	4	80	6	A	321699
4.74	12	-	4	80	6	A	321700
4.75	12	-	4	80	6	A	321701
4.76	12	-	4	80	6	A	321702
4.77	12	-	4	80	6	A	321703
4.78	12	-	4	80	6	A	321704
4.79	12	-	4	80	6	A	321705
4.80	12	-	4	80	6	A	321706
4.81	12	-	4	80	6	A	321707
4.82	12	-	4	80	6	A	321708
4.83	12	-	4	80	6	A	321709
4.84	12	-	4	80	6	A	321710
4.85	12	-	4	80	6	A	321711
4.86	12	-	4	80	6	A	321712
4.87	12	-	4	80	6	A	321713
4.88	12	-	4	80	6	A	321714
4.89	12	-	4	80	6	A	321715
4.90	12	-	4	80	6	A	321716
4.91	12	-	4	80	6	A	321717
4.92	12	-	4	80	6	A	321718
4.93	12	-	4	80	6	A	321719
4.94	12	-	4	80	6	A	321720
4.95	12	-	4	80	6	A	321721
4.96	12	-	4	80	6	A	321722
4.97	12	-	4	80	6	A	321723
4.98	12	-	4	80	6	A	321724
4.99	12	-	4	80	6	A	321725
5.00	12	-	4	80	6	A	321726
5.01	12	-	4	80	6	A	321727
5.02	12	-	4	80	6	A	321728

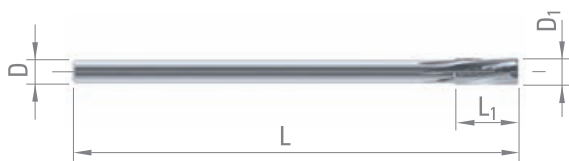




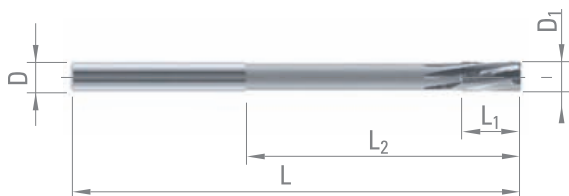
P. 370



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
5.03	12	-	4	80	6	A	321729
5.04	12	-	4	80	6	A	321730
5.05	12	-	4	80	6	A	321731
5.06	12	-	4	80	6	A	321732
5.07	12	-	4	80	6	A	321733
5.08	12	-	4	80	6	A	321734
5.09	12	-	4	80	6	A	321735
5.10	12	-	4	80	6	A	321736
5.11	12	-	4	80	6	A	321737
5.12	12	-	4	80	6	A	321738
5.13	12	-	4	80	6	A	321739
5.14	12	-	4	80	6	A	321740
5.15	12	-	4	80	6	A	321741
5.16	12	-	4	80	6	A	321742
5.17	12	-	4	80	6	A	321743
5.18	12	-	4	80	6	A	321744
5.19	12	-	4	80	6	A	321745
5.20	12	-	4	80	6	A	321746
5.21	12	-	4	80	6	A	321747
5.22	12	-	4	80	6	A	321748
5.23	12	-	4	80	6	A	321749
5.24	12	-	4	80	6	A	321750
5.25	12	-	4	80	6	A	321751
5.26	12	-	4	80	6	A	321752
5.27	12	-	4	80	6	A	321753
5.28	12	-	4	80	6	A	321754
5.29	12	-	4	80	6	A	321755
5.30	12	-	4	80	6	A	321756
5.31	12	-	4	80	6	A	321757
5.32	12	-	4	80	6	A	321758
5.33	12	-	4	80	6	A	321759
5.34	12	-	4	80	6	A	321760
5.35	12	-	4	80	6	A	321761
5.36	12	-	4	80	6	A	321762
5.37	12	-	4	80	6	A	321763
5.38	12	-	4	80	6	A	321764
5.39	12	-	4	80	6	A	321765
5.40	12	-	4	80	6	A	321766
5.41	12	-	4	80	6	A	321767
5.42	12	-	4	80	6	A	321768
5.43	12	-	4	80	6	A	321769
5.44	12	-	4	80	6	A	321770
5.45	12	-	4	80	6	A	321771
5.46	12	-	4	80	6	A	321772
5.47	12	-	4	80	6	A	321773
5.48	12	-	4	80	6	A	321774
5.49	12	-	4	80	6	A	321775

D _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
5.50	12	-	4	80	6	A	321776
5.51	12	-	4	80	6	A	321777
5.52	12	-	4	80	6	A	321778
5.53	12	-	4	80	6	A	321779
5.54	12	-	4	80	6	A	321780
5.55	12	-	4	80	6	A	321781
5.56	12	-	4	80	6	A	321782
5.57	12	-	4	80	6	A	321783
5.58	12	-	4	80	6	A	321784
5.59	12	-	4	80	6	A	321785
5.60	12	-	4	80	6	A	321786
5.61	12	-	4	80	6	A	321787
5.62	12	-	4	80	6	A	321788
5.63	12	-	4	80	6	A	321789
5.64	12	-	4	80	6	A	321790
5.65	12	-	4	80	6	A	321791
5.66	12	-	4	80	6	A	321792
5.67	12	-	4	80	6	A	321793
5.68	12	-	4	80	6	A	321794
5.69	12	-	4	80	6	A	321795
5.70	12	-	4	80	6	A	321796
5.71	12	-	4	80	6	A	321797
5.72	12	-	4	80	6	A	321798
5.73	12	-	4	80	6	A	321799
5.74	12	-	4	80	6	A	321800
5.75	12	-	4	80	6	A	321801
5.76	12	-	4	80	6	A	321802
5.77	12	-	4	80	6	A	321803
5.78	12	-	4	80	6	A	321804
5.79	12	-	4	80	6	A	321805
5.80	12	-	4	80	6	A	321806
5.81	12	-	4	80	6	A	321807
5.82	12	-	4	80	6	A	321808
5.83	12	-	4	80	6	A	321809
5.84	12	-	4	80	6	A	321810
5.85	12	-	4	80	6	A	321811
5.86	12	-	4	80	6	A	321812
5.87	12	-	4	80	6	A	321813
5.88	12	-	4	80	6	A	321814
5.89	12	-	4	80	6	A	321815
5.90	12	-	4	80	6	A	321816
5.91	12	-	4	80	6	A	321817
5.92	12	-	4	80	6	A	321818
5.93	12	-	4	80	6	A	321819
5.94	12	-	4	80	6	A	321820
5.95	12	-	4	80	6	A	321821
5.96	12	-	4	80	6	A	321822

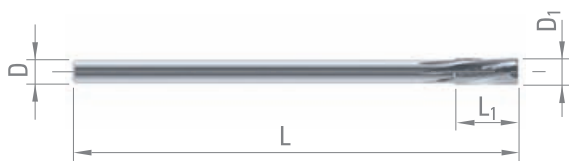




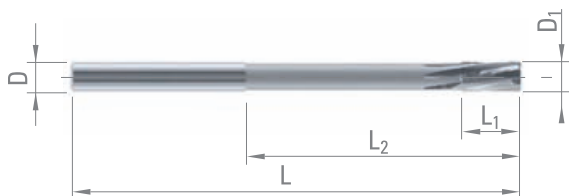
P. 370



Ref. A



Ref. B



Steel + Pb	Low alloyed steel	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 _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
5.97	12	-	4	80	6	A	321823
5.98	12	-	4	80	6	A	321824
5.99	12	-	4	80	6	A	321825
6.00	12	-	4	80	6	A	321826
6.01	12	-	4	80	6	A	321827
6.02	12	-	4	80	6	A	321828
6.03	12	-	4	80	6	A	321829
6.04	12	-	4	80	6	A	321830
6.05	12	-	4	80	6	A	321831
6.06	12	-	4	80	6	A	321832
6.07	12	-	4	80	6	A	321833
6.08	12	-	4	80	6	A	321834
6.09	12	-	4	80	6	A	321835
6.10	12	-	4	80	6	A	321836
6.11	12	-	4	80	6	A	321837
6.12	12	-	4	80	6	A	321838
6.13	12	-	4	80	6	A	321839
6.14	12	-	4	80	6	A	321840
6.15	12	-	4	80	6	A	321841
6.16	12	-	4	80	6	A	321842
6.17	12	-	4	80	6	A	321843
6.18	12	-	4	80	6	A	321844
6.19	12	-	4	80	6	A	321845
6.20	16	-	6	101	6	A	342052
6.30	16	-	6	101	6	A	342062
6.40	16	-	6	101	6	A	342072
6.50	16	-	6	101	6	A	342082
6.51	16	-	6	101	6	A	342083
6.52	16	-	6	101	6	A	342084
6.60	16	-	6	101	6	A	342092
6.70	16	-	6	101	6	A	342102
6.80	16	-	6	101	6	A	342112
6.90	16	-	6	101	6	A	342122
7.00	16	-	6	101	6	A	342132
7.01	16	-	6	101	6	A	342133
7.02	16	-	6	101	6	A	342134
7.10	16	-	6	101	6	A	342142
7.20	16	-	6	101	6	A	342152
7.30	16	-	6	101	6	A	342162
7.40	16	-	6	101	6	A	342172
7.50	16	-	6	101	6	A	342182
7.51	16	-	6	101	6	A	342183
7.52	16	-	6	101	6	A	342184
7.60	16	-	6	101	6	A	342192
7.70	16	-	6	101	6	A	342202
7.80	16	-	6	101	6	A	342212
7.90	16	-	6	101	6	A	342222

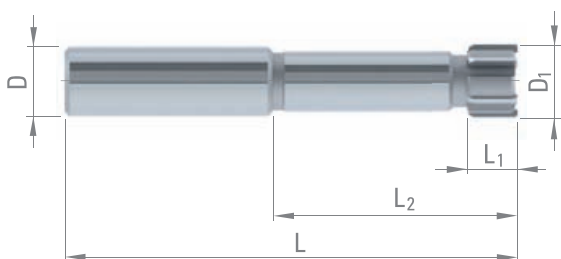
D _{10/+0.003}	L ₁	L ₂	D _{h5}	L	Z	Ref.	CARBIDE
7.98	16	-	6	101	6	A	342230
7.99	16	-	6	101	6	A	342231
8.00	16	-	6	101	6	A	342232
8.01	16	-	6	101	6	A	342233
8.02	16	-	6	101	6	A	342234
8.10	16	-	6	117	6	A	342242
8.20	16	-	6	117	6	A	342252
8.30	16	-	6	117	6	A	342262
8.40	16	-	6	117	6	A	342272
8.50	16	-	6	117	6	A	342282
8.51	16	-	6	117	6	A	342283
8.52	16	-	6	117	6	A	342284
8.70	16	-	6	117	6	A	342302
8.90	16	-	6	117	6	A	342322
9.00	16	-	6	117	6	A	342332
9.01	16	-	6	117	6	A	342333
9.02	16	-	6	117	6	A	342334
9.10	16	-	6	117	6	A	342342
9.50	16	-	6	117	6	A	342382
9.70	16	-	6	117	6	A	342402
10.00	16	-	6	117	6	A	342432
10.01	16	-	6	117	6	A	342433
10.02	19	87	10	133	6	B	200661
10.03	19	87	10	133	6	B	964048
10.10	19	87	10	133	6	B	200641
10.48	19	87	10	133	6	B	963732
10.49	19	87	10	133	6	B	963733
10.50	19	87	10	133	6	B	200642
10.51	19	87	10	133	6	B	963734
10.52	19	87	10	133	6	B	963735
10.60	19	87	10	133	6	B	200643
10.98	19	96	12	142	6	B	963736
10.99	19	96	12	142	6	B	963737
11.00	19	96	12	142	6	B	200644
11.01	19	96	12	142	6	B	963738
11.02	19	96	12	142	6	B	963739
11.48	19	96	12	142	6	B	963740
11.49	19	96	12	142	6	B	963741
11.50	19	96	12	142	6	B	200645
11.51	19	96	12	142	6	B	963742
11.52	19	96	12	142	6	B	963743
11.80	19	96	12	142	6	B	200646
11.98	19	105	12	151	6	B	963744
11.99	19	105	12	151	6	B	963745
12.00	19	105	12	151	6	B	200647
12.01	19	105	12	151	6	B	963746
12.02	19	105	12	151	6	B	200648



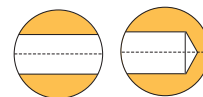
All Ø with tolerance $\pm 2\mu\text{m}$ available through our express-service

POLY 4361

EXPANSIBLE REAMERS



P. 372



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

POLY 4361



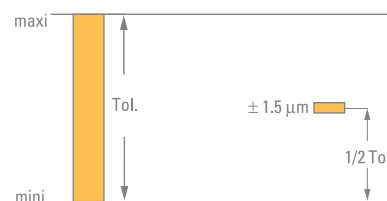
POLY 4361-TC



POLY 4361-FC



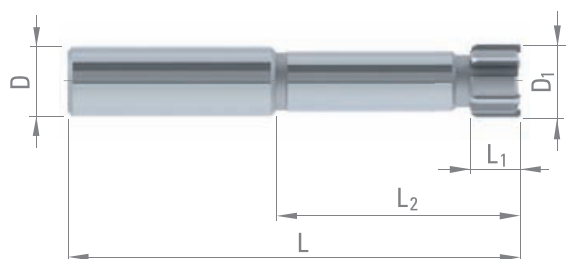
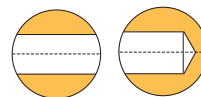
D nom. H7	D ₁ ± 1.5 μm	L	L ₁	L ₂	D _{h6}	Z	POLY	CARBIDE	TiAIN	CERMET
6.00 (6.006)		80	10	40	12	4	4361	61859	965576	963287
							4361-TC	61883	341107	964213
							4361-FC	326753	955517	955527
7.00 (7.007)		80	10	40	12	4	4361	63863	341096	341122
							4361-TC	341082	341108	964215
							4361-FC	977363	955518	955528
8.00 (7.007)		80	10	40	12	4	4361	61860	341097	61594
							4361-TC	61884	958621	62263
							4361-FC	966766	955519	955529
9.00 (7.007)		90	10	50	12	4	4361	954994	341098	341123
							4361-TC	974647	341109	61671
							4361-FC	969137	955520	955530
10.00 (10.007)		100	10	50	12	4	4361	61666	987470	971287
							4361-TC	61885	985270	305651
							4361-FC	970436	955521	955531
11.00 (11.009)		100	10	50	12	6	4361	953002	341099	341124
							4361-TC	341083	341110	952860
							4361-FC	341089	982623	957205
12.00 (12.009)		100	10	50	12	6	4361	61862	953717	956390
							4361-TC	61886	957400	61823
							4361-FC	961924	955522	955532
13.00 (13.009)		100	10	50	12	6	4361	953441	953899	341125
							4361-TC	951466	62899	951704
							4361-FC	956383	994806	341139
14.00 (14.009)		100	10	50	12	6	4361	61709	950932	341126
							4361-TC	61045	957939	64881
							4361-FC	965308	955523	955533
15.00 (15.009)		100	14	50	12	6	4361	952323	953408	66609
							4361-TC	955048	341111	62055
							4361-FC	964856	341118	961253
16.00 (16.009)		110	14	50	16	6	4361	61863	953900	990911
							4361-TC	61044	341112	60455
							4361-FC	959763	955524	955534



POLY 4361



P. 372



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

POLY 4361

POLY 4361-TC

POLY 4361-FC



D nom.
H7

D₁
± 1.5 μm

L

L₁

L₂

D_{h6}

Z

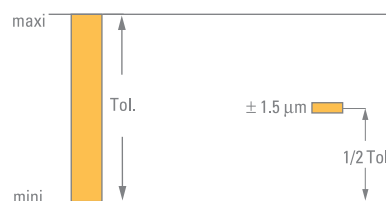
POLY

CARBIDE

TiAlN

CERMET

17.00 (17.010)	110	14	50	16	6	4361	67322	341100	341127
						4361-TC	320133	308083	341132
						4361-FC	341090	964572	959907
18.00 (18.010)	110	14	50	16	6	4361	61864	341101	965018
						4361-TC	61887	341113	341133
						4361-FC	964631	955525	955535
19.00 (19.010)	130	14	60	20	6	4361	971893	341102	341128
						4361-TC	341084	341114	341134
						4361-FC	341091	969769	985097
20.00 (20.010)	130	14	60	20	6	4361	61866	341103	965020
						4361-TC	61888	65708	341135
						4361-FC	965283	955526	955536
21.00 (21.010)	130	14	60	20	6	4361	959277	341104	341129
						4361-TC	341085	341115	341136
						4361-FC	983187	341119	959112
22.00 (22.010)	130	14	60	20	6	4361	61867	953901	965019
						4361-TC	341086	341116	341137
						4361-FC	341093	959097	965586
23.00 (23.010)	130	14	60	20	6	4361	956588	341105	341130
						4361-TC	341087	341117	341138
						4361-FC	341094	341120	341140
24.00 (24.010)	130	14	60	20	6	4361	61868	341106	341131
						4361-TC	341088	968505	969504
						4361-FC	341095	341121	962965

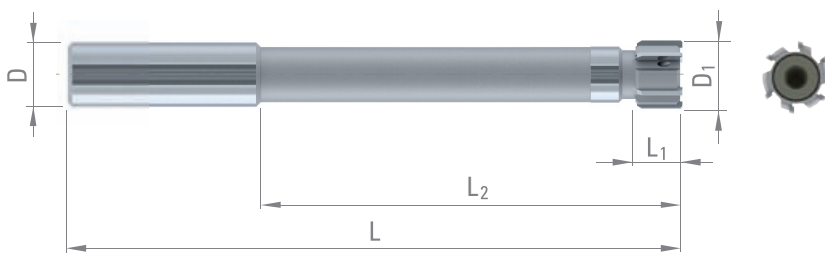
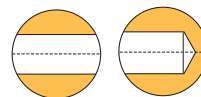


POLY 4371

EXPANSIBLE REAMERS



P. 372



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

POLY 4371



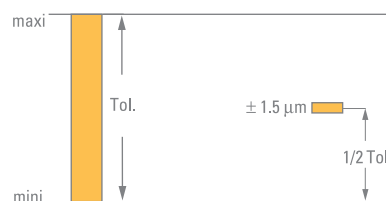
POLY 4371-TC



POLY 4371-FC



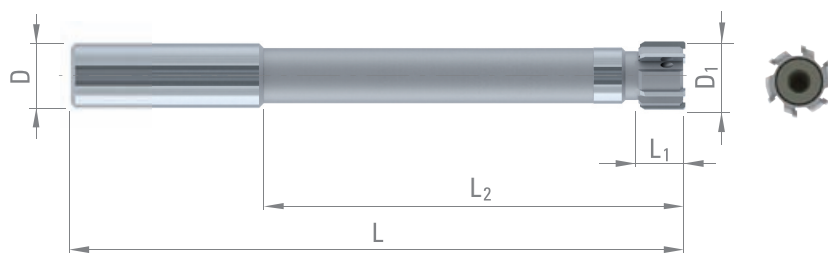
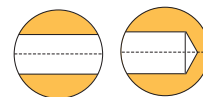
D nom. H7	D ₁ ± 1.5 μm	L	L ₁	L ₂	D _{h6}	Z	POLY	CARBIDE	TiAlN	CERMET
6.00 (6.006)		120	10	80	12	4	4371	61869	341156	341186
							4371-TC	958107	965969	341204
							4371-FC	976190	955537	955547
7.00 (7.007)		120	10	80	12	4	4371	950528	341157	341187
							4371-TC	968331	341166	341205
							4371-FC	956371	955538	955548
8.00 (8.007)		120	10	80	12	4	4371	61870	341158	341188
							4371-TC	341141	341167	967206
							4371-FC	973938	955539	955549
9.00 (9.007)		130	10	90	12	4	4371	954860	341159	341189
							4371-TC	950120	341168	341206
							4371-FC	976838	955540	955550
10.00 (10.007)		130	10	90	12	4	4371	61871	310374	341190
							4371-TC	341142	341169	341207
							4371-FC	962768	955541	955551
11.00 (11.009)		150	10	100	12	6	4371	972464	982208	341191
							4371-TC	341143	341170	341208
							4371-FC	312249	959071	341221
12.00 (12.009)		150	10	100	12	6	4371	61872	310375	341192
							4371-TC	962624	341171	341209
							4371-FC	986143	955542	955552
13.00 (13.009)		150	10	100	12	6	4371	952545	341160	341193
							4371-TC	341144	341172	341210
							4371-FC	972342	977697	341222
14.00 (14.009)		150	10	100	12	6	4371	61873	310950	965516
							4371-TC	341145	341173	341211
							4371-FC	964796	955543	955553
15.00 (15.009)		150	14	100	12	6	4371	64404	304409	341194
							4371-TC	341146	341174	341212
							4371-FC	965648	976749	341223
16.00 (16.009)		160	14	100	16	6	4371	61874	964387	341195
							4371-TC	977762	341175	341213
							4371-FC	982330	955544	955554



POLY 4371



P. 372



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al

POLY 4371

POLY 4371-TC

POLY 4371-FC



D nom.
H7

D₁
± 1.5 μm

L

L₁

L₂

D_{h6}

Z

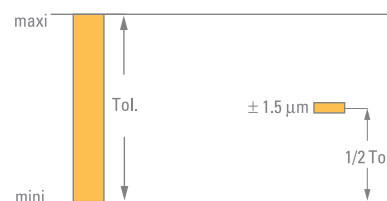
POLY

CARBIDE

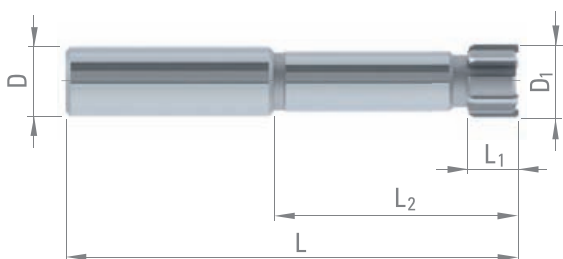
TiAlN

CERMET

17.00 (17.010)	160	14	100	16	6	4371	960993	59895	341196
						4371-TC	341147	341176	341214
						4371-FC	341152	341184	341224
18.00 (18.010)	160	14	100	16	6	4371	61875	310376	341197
						4371-TC	961483	341177	341215
						4371-FC	962767	955545	955555
19.00 (19.010)	190	14	120	20	6	4371	66588	341161	341198
						4371-TC	319972	341178	320656
						4371-FC	955676	967797	341225
20.00 (20.010)	190	14	120	20	6	4371	61876	341162	341199
						4371-TC	400483	341179	341216
						4371-FC	341153	955546	955556
21.00 (21.010)	190	14	120	20	6	4371	334784	341163	341200
						4371-TC	341148	341180	341217
						4371-FC	994332	310771	983957
22.00 (22.010)	190	14	120	20	6	4371	963583	964388	341201
						4371-TC	341149	341181	341218
						4371-FC	341154	965966	341226
23.00 (23.010)	190	14	120	20	6	4371	963174	341164	341202
						4371-TC	341150	341182	341219
						4371-FC	962757	310773	341227
24.00 (24.010)	190	14	120	20	6	4371	62827	341165	341203
						4371-TC	341151	341183	341220
						4371-FC	341155	341185	341228



SOLID REAMERS



P. 372

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Cast iron > 45 HRC
Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine
Al				

D ₁	L	L ₁	L ₂	D _{h6}	Z	CARBIDE	TiAIN	CERMET
5.80 - 7.60	80	10	40	12	4	☐	☒	☐
7.61 - 8.60	80	10	40	12	4	☐	☒	☐
8.61 - 9.60	90	10	50	12	4	☐	☒	☐
9.61 - 10.60	90	10	50	12	4	☐	☒	☐
10.61 - 14.60	100	10	50	12	6	☐	☒	☐
14.61 - 15.60	100	14	50	12	6	☐	☒	☐
15.61 - 18.60	110	14	50	16	6	☐	☒	☐
18.61 - 21.10	130	14	60	20	6	☐	☒	☐
21.11 - 25.10	130	14	60	20	6	☐	☒	☐
25.11 - 28.10	145	18	75	25	6	☐	☒	☐
28.11 - 33.10	145	18	75	25	6	☐	☒	☐
33.11 - 45.00	145	18	75	25	6	☐	☒	☐
45.00 - 120.00	160	18	90	32	8	☐	☒	☐

POLY 4261-TC



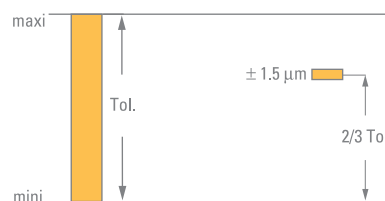
POLY 4261-FC



POLY 4264

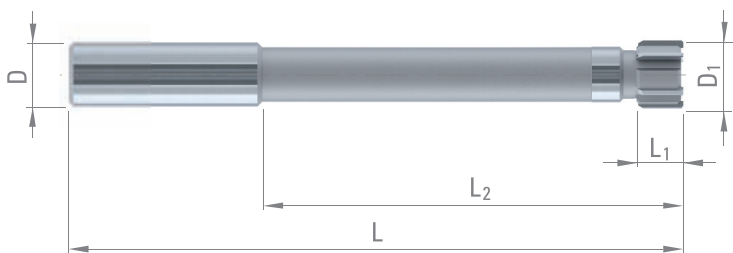


POLY 4264-FC



POLY 4271 - 4274 TOOLS ON REQUEST

SOLID REAMERS



P. 372

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Cast iron > 45 HRC
Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine
Al				

D ₁	L	L ₁	L ₂	D _{h6}	Z	CARBIDE	TiAIN	CERMET
5.80 - 7.60	120	10	80	12	4	☐	☒	☐
7.61 - 8.60	120	10	80	12	4	☐	☒	☐
8.61 - 9.60	120	10	90	12	4	☐	☒	☐
9.61 - 10.60	120	10	90	12	4	☐	☒	☐
10.61 - 14.60	150	10	100	12	6	☐	☒	☐
14.61 - 15.60	150	14	100	12	6	☐	☒	☐
15.61 - 18.60	160	14	100	16	6	☐	☒	☐
18.61 - 21.10	190	14	120	20	6	☐	☒	☐
21.11 - 25.10	190	14	120	20	6	☐	☒	☐
25.11 - 28.10	220	18	150	25	6	☐	☒	☐
28.11 - 33.10	220	18	150	25	6	☐	☒	☐
33.11 - 45.00	220	18	150	25	6	☐	☒	☐
45.00 - 120.00	250	18	180	32	8	☐	☒	☐

POLY 4271-TC



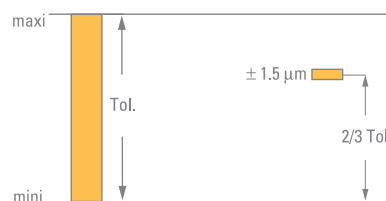
POLY 4271-FC



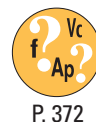
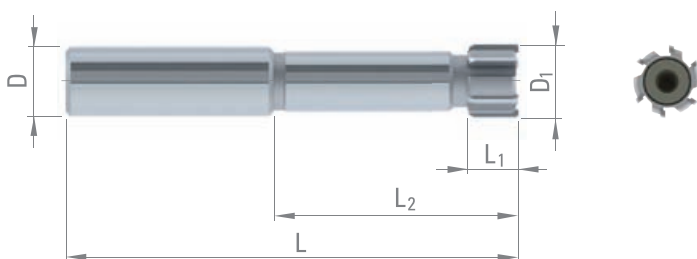
POLY 4274



POLY 4274-FC



EXPANSIBLE REAMERS



Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Cast iron > 45 HRC
Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine
Al				

D ₁	L	L ₁	L ₂	D _{h6}	Z	CARBIDE	TiAIN	CERMET
5.80 - 7.60	80	10	40	12	4	☐	☒	☐
7.61 - 8.60	80	10	40	12	4	☐	☒	☐
8.61 - 9.60	90	10	50	12	4	☐	☒	☐
9.61 - 10.60	90	10	50	12	4	☐	☒	☐
10.61 - 14.60	100	10	50	12	6	☐	☒	☐
14.61 - 15.60	100	14	50	12	6	☐	☒	☐
15.61 - 18.60	110	14	50	16	6	☐	☒	☐
18.61 - 21.10	130	14	60	20	6	☐	☒	☐
21.11 - 25.10	130	14	60	20	6	☐	☒	☐
25.11 - 28.10	145	18	75	25	6	☐	☒	☐
28.11 - 45.00	145	18	75	25	6	☐	☒	☐
45.00 - 55.00	160	18	90	32	8	☐	☒	☐

POLY 4361-TC



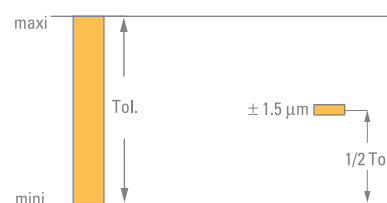
POLY 4361-FC



POLY 4364

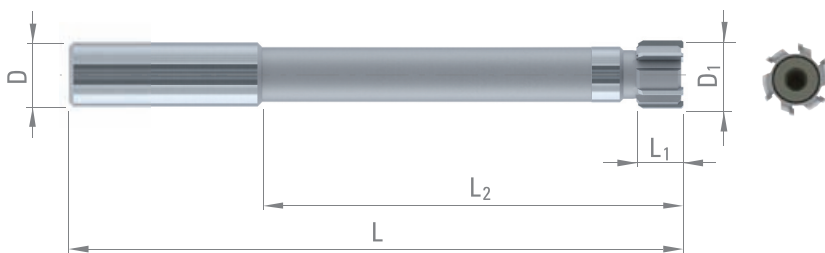


POLY 4364-FC



POLY 4371 - 4374 TOOLS ON REQUEST

EXPANSIBLE REAMERS



P. 372

Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Steel Cast iron > 45 HRC
Cast iron	Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine
Al				

D ₁	L	L ₁	L ₂	D _{h6}	Z	CARBIDE	TiAIN	CERMET
5.80 - 7.60	120	10	80	12	4	☐	☒	☐
7.61 - 8.60	120	10	80	12	4	☐	☒	☐
8.61 - 9.60	120	10	90	12	4	☐	☒	☐
9.61 - 10.60	120	10	90	12	4	☐	☒	☐
10.61 - 14.60	150	10	100	12	6	☐	☒	☐
14.61 - 15.60	150	14	100	12	6	☐	☒	☐
15.61 - 18.60	160	14	100	16	6	☐	☒	☐
18.61 - 21.10	190	14	120	20	6	☐	☒	☐
21.11 - 25.10	190	14	120	20	6	☐	☒	☐
25.11 - 28.10	220	18	150	25	6	☐	☒	☐
28.11 - 45.00	220	18	150	25	6	☐	☒	☐
45.00 - 55.00	250	18	180	32	8	☐	☒	☐

POLY 4371-TC



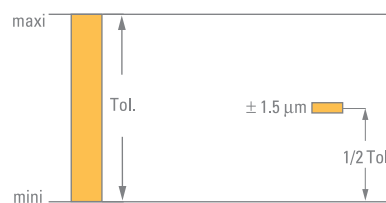
POLY 4371-FC



POLY 4374



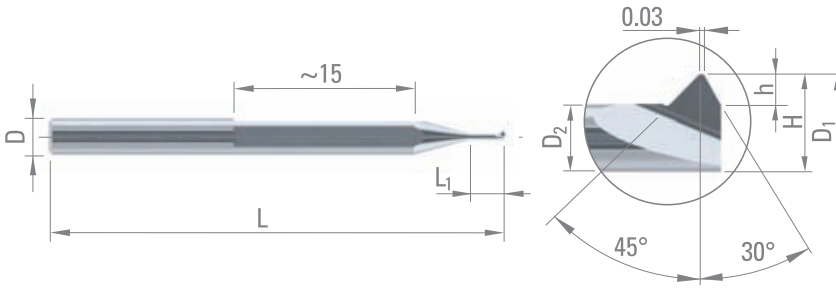
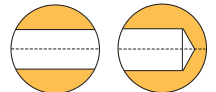
POLY 4374-FC



BORING AND CHAMFERING TOOLS



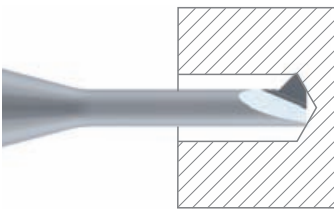
P. 369



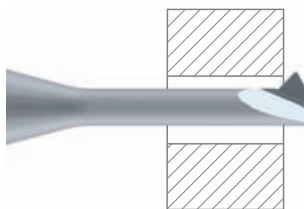
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

D_1	L_1	D_2	h	H	D_{h5}	L	for...	CARBIDE
0.26	0.84	0.14	0.06	0.20	3	46	S 0.30	968880
0.35	1.04	0.21	0.07	0.28	3	46	S 0.40	969086
0.44	1.35	0.28	0.08	0.36	3	46	S 0.50	969087
0.53	1.66	0.33	0.10	0.43	3	46	S 0.60	969088
0.66	2.04	0.36	0.15	0.51	3	46	S 0.70	969089
0.75	2.30	0.43	0.16	0.58	3	46	S 0.80	969090
0.86	2.72	0.46	0.20	0.66	3	46	S 0.90	969091

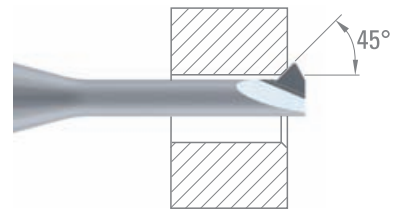
Blind hole reaming



Through hole reaming



Chamfering

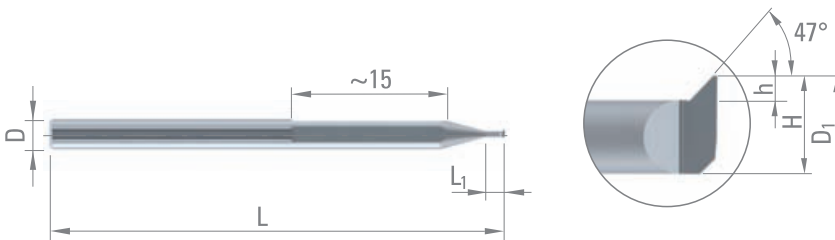
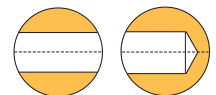


Tools holder p. 365

BORING AND CHAMFERING TOOLS



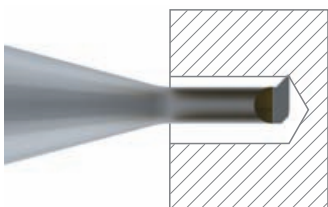
P. 369



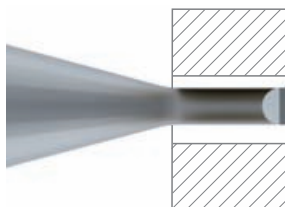
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

D_1	L_1	h	H	D_{h5}	L	CARBIDE
0.20	0.2 0.4	0.04	0.16	3	46	997972 997973
0.30	0.3 0.6	0.06	0.24	3	46	997974 997975
0.40	0.4 0.8	0.08	0.32	3	46	997976 997977
0.50	0.5 1.0	0.10	0.40	3	46	997978 997979
0.60	0.6 1.2	0.12	0.48	3	46	997980 997981
0.70	0.7 1.4	0.14	0.56	3	46	997982 997983
0.80	0.8 1.6	0.16	0.64	3	46	997984 997985
0.90	0.9 1.8	0.18	0.72	3	46	997986 997987
1.00	1.0 2.0	0.20	0.80	3	46	997988 997989

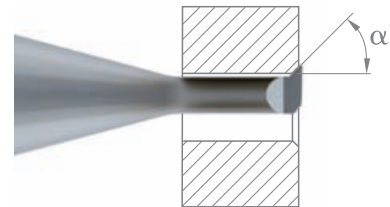
Blind hole reaming



Through hole reaming



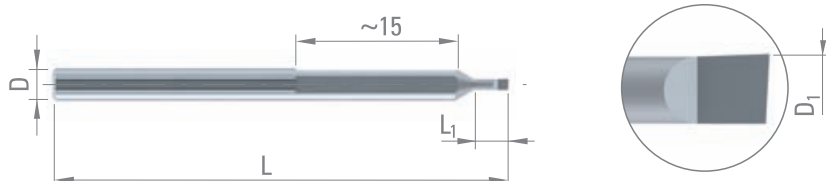
Chamfering



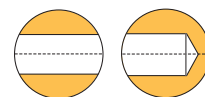
Tools holder p. 365

DIXI 2578

BORING TOOLS

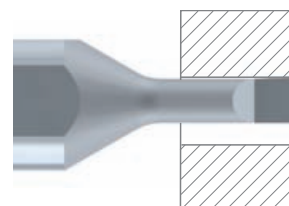
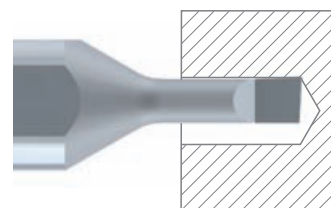


P. 369



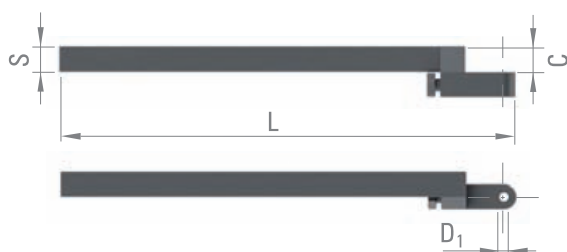
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

D ₁	L ₁	D _{h5}	L	CARBIDE
0.30	0.6	3	46	997948
	0.9			997949
	1.2			997950
0.40	0.8	3	46	997951
	1.2			997952
	1.6			997953
0.50	1.0	3	46	997954
	1.5			997955
	2.0			997956
0.60	1.2	3	46	997957
	1.8			997958
	2.4			997959
0.70	1.4	3	46	997960
	2.1			997961
	2.8			997962
0.80	1.6	3	46	997963
	2.4			997964
	3.6			997965
0.90	1.8	3	46	997966
	2.7			997967
	3.6			997968
1.00	2.0	3	46	997969
	3.0			997970
	4.0			997971



DIXI 2764

BORING TOOLS HOLDER



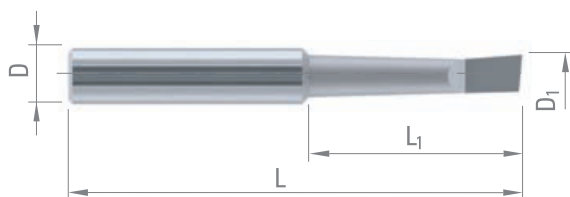
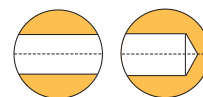
S	L	D ₁	C	Art.
7 x 7	146	3	7	305008
8 x 8	146	3	8	305009
10 x 10	150	3	10	305010



BORING TOOLS



P. 369



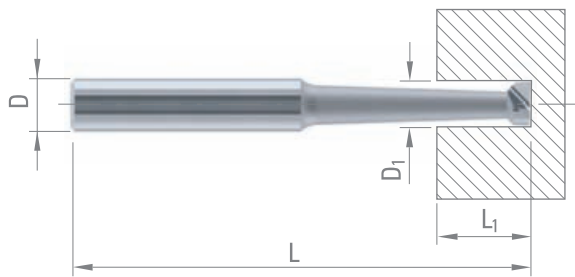
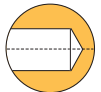
Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

D_1	L_1	D_{h5}	L	CARBIDE
0.60	3	4	25	53197
0.80	4	4	25	53198
1.00	5	4	25	53199
1.20	6	4	25	53200
1.50	8	4	32	53201
1.80	9	4	32	53202
2.00	10	4	32	53203
2.50	12	4	32	53204
3.00	15	4	32	53205

BORING TOOLS BLIND HOLE



P. 369

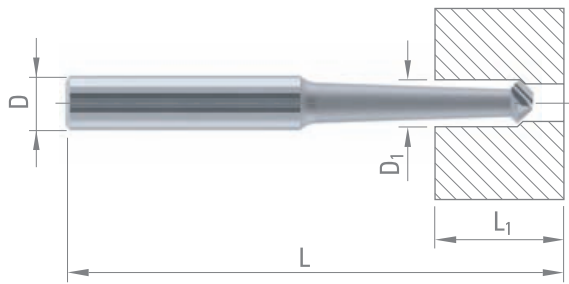


Steel + Pb	Low alloyed steel	High alloyed steel	DUPLEX stainless steel	Cast iron
Refractory alloy	Titanium, titanium alloy	Cu alloy Silver Gold	Cu alloy difficult to machine	Al
Plastic				

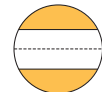
D ₁	L ₁	D _{h5}	L	CARBIDE
0.50	3	4	25	36091
0.80	4	4	25	36092
1.00	4	4	25	33855
1.20	6	4	25	33856
1.50	7	4	28	33857
1.70	7	4	28	33858
2.00	9	4	30	33859
2.20	9	4	30	33860
2.50	12	4	33	33861
3.00	14	4	35	33862
3.50	14	4	35	33863
4.00	17	4	38	33864
5.00	23	4	38	794
2.00	9	6	38	33865
2.50	12	6	40	33866
3.00	14	6	42	33867
4.00	17	6	45	33868
5.00	22	6	52	795
6.00	24	6	52	796
7.00	30	6	52	797
8.00	32	6	52	798
10.00	40	6	60	800
3.00	17	8	47	790
4.00	21	8	51	791
5.00	22	8	52	801
6.00	25	8	55	802
7.00	28	8	60	803
10.00	45	8	65	804
12.00	54	8	70	805
13.00	54	8	78	5603

D ₁	L ₁	D _{h5}	L	CARBIDE
3.00	17	10	45	792
4.00	21	10	49	793
5.00	22	10	50	806
6.00	25	10	54	807
7.00	28	10	56	808
9.00	32	10	65	809
10.00	32	10	65	810
12.00	45	10	70	811
13.00	55	10	80	812
15.00	75	10	100	813
18.00	75	10	100	814
8.00	30	12	70	815
10.00	40	12	80	816
13.00	60	12	90	817
15.00	70	12	100	818
18.00	70	12	100	819
13.00	60	16	115	820
15.00	60	16	115	821
18.00	75	16	115	822
20.00	75	16	115	824

BORING TOOLS THROUGH HOLE



P. 369



Steel + Pb	Low alloyed steel	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 _{h5}	L	CARBIDE
0.50	3	4	25	36093
0.80	4	4	25	36094
1.00	4	4	25	33869
1.20	6	4	25	33870
1.50	7	4	28	33871
1.70	7	4	28	33872
2.00	9	4	30	33873
2.20	9	4	30	33874
2.50	12	4	33	33875
3.00	14	4	35	33876
3.50	14	4	35	33877
4.00	17	4	38	33878
5.00	23	4	38	745
2.00	9	6	38	33879
2.50	12	6	40	33880
3.00	14	6	42	33881
4.00	17	6	45	33882
5.00	22	6	52	746
6.00	24	6	52	747
8.00	32	6	52	749
10.00	40	6	60	751
3.00	17	8	47	740
4.00	21	8	51	741
5.00	22	8	52	752
6.00	25	8	55	753
7.00	28	8	60	754
9.00	45	8	65	755
11.00	54	8	70	756
13.00	54	8	78	5661

D ₁	L ₁	D _{h5}	L	CARBIDE
3.00	17	10	45	742
4.00	21	10	49	743
5.00	22	10	50	757
6.00	25	10	54	758
7.00	28	10	56	759
9.00	32	10	65	760
10.00	32	10	65	761
12.00	45	10	70	762
13.00	55	10	80	763
15.00	75	10	100	764
18.00	75	10	100	765
8.00	30	12	70	766
10.00	40	12	80	767
13.00	60	12	90	768
15.00	70	12	100	769
18.00	70	12	100	770
20.00	80	12	110	825
13.00	60	16	115	771
15.00	60	16	115	772
18.00	75	16	115	773

CUTTING CONDITIONS

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

Materials to be machined

			Stationary tool V _c [m/min]	Rotating tool V _c [m/min]	Feed f [mm/tr]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	100 - 150	70 - 120	0.05 - 0.15
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	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/mm ²	30 - 70	20 - 50	0.03 - 0.10
M	Stainless steel	400 – 700 N/mm ²	60 - 80	40 - 60	0.04 - 0.10
M	DUPLEX stainless steel	> 800 N/mm ²	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

CUTTING CONDITIONS

Materials to be machined

			CARBIDE
			Vc [m/min]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	14
			16
			20
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	12
			14
			16
P	Lead alloyed cutting steel		25
			50
			70
P	High alloyed steel	700 – 1500 N/mm ²	8
			10
			12
M	Stainless steel	400 – 700 N/mm ²	10
			12
			16
M	DUPLEX stainless steel	> 800 N/mm ²	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

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

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	0.40	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
0.15

0.10
0.15
0.20

0.10
0.15
0.20

0.10
0.15
0.20

Reaming allowance Ø [mm]



CUTTING CONDITIONS

Materials to be machined

			CARBIDE	TiAIN	CERMET
			Vc [m/min]	Vc [m/min]	Vc [m/min]
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	6	60	100
			8	90	130
			10	120	150
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	6	60	80
			8	80	100
			10	100	120
P	Lead alloyed cutting steel		20	60	100
			40	80	130
			50	100	150
P	High alloyed steel	700 – 1500 N/mm ²	4	30	
			5	40	
			7	50	
M	Stainless steel	400 – 700 N/mm ²	5	30	
			6	40	
			8	50	
M	DUPLEX stainless steel	> 800 N/mm ²	4	10	
			5	20	
			6	30	
K	Grey cast iron	< 250 HB	12	90	
			15	120	
			18	140	
K	Alloyed grey cast iron	> 250 HB	10	50	
			12	60	
			15	80	
K	Nodular ferritic cast iron	< 600 HB	8	90	110
			12	120	140
			15	140	160
K	Nodular ferritic cast iron / pearlitic		6	90	110
			9	120	140
			12	140	160
K	Nodular pearlitic iron / Malleable cast iron	> 600 HB	10	90	100
			12	120	120
			15	140	140
K	Alloyed nodular cast iron		8	50	
			9	60	
			12	80	
K	Vermicular cast		8	50	
			9	60	
			12	80	
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy		10	
				15	
				20	
S	Titanium, titanium alloys		8		
			10		
			12		
N	Copper alloys - easy to machine (brass - bronze)		15	100	
			22	120	
			30	150	
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	12	60	
			16	80	
			20	100	
N	Aluminium alloys	Si < 8%	15		
			22		
			30		
N	Cast aluminium	Si > 8%	12		
			16		
			20		

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f \text{ [mm]}$$

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	
0.20	0.40	0.60	0.80	
0.30	0.50	0.70	0.90	
0.50	0.70	0.90	1.10	
0.20	0.40	0.60	0.80	
0.30	0.50	0.70	0.90	
0.50	0.70	0.90	1.10	
0.20	0.40	0.60	0.80	
0.30	0.50	0.70	0.90	
0.50	0.70	0.90	1.10	
0.15	0.25	0.35	0.45	
0.20	0.30	0.40	0.50	
0.30	0.40	0.50	0.60	
0.20	0.30	0.40	0.50	
0.30	0.40	0.50	0.60	
0.40	0.50	0.60	0.70	
0.20	0.30	0.40	0.50	
0.30	0.40	0.50	0.60	
0.40	0.50	0.60	0.70	
0.30	0.50	0.70	0.90	
0.40	0.60	0.80	1.00	
0.50	0.70	0.90	1.10	
0.20	0.40	0.60	0.80	
0.30	0.50	0.70	0.90	
0.50	0.70	0.90	1.10	
0.30	0.50	0.70	0.90	
0.40	0.60	0.80	1.00	
0.50	0.70	0.90	1.10	
0.20	0.40	0.60	0.80	
0.30	0.50	0.70	0.90	
0.40	0.60	0.80	1.00	
0.20	0.30	0.40	0.50	
0.30	0.40	0.50	0.60	
0.40	0.50	0.60	0.70	
0.20	0.30	0.40	0.50	
0.30	0.40	0.50	0.60	
0.40	0.50	0.60	0.70	
0.15	0.25	0.35	0.45	
0.20	0.30	0.40	0.50	
0.30	0.40	0.50	0.60	
0.20	0.30	0.40	0.50	
0.30	0.40	0.50	0.60	
0.40	0.50	0.60	0.70	
0.30	0.50	0.70	0.90	
0.40	0.60	0.80	1.00	
0.50	0.70	0.90	1.10	
0.20	0.40	0.60	0.80	
0.30	0.50	0.70	0.90	
0.40	0.60	0.80	1.00	
0.30	0.50	0.70	0.90	
0.40	0.60	0.80	1.00	
0.50	0.70	0.90	1.10	
0.30	0.50	0.70	0.90	
0.40	0.60	0.80	1.00	
0.50	0.70	0.90	1.10	

0.10
0.15
0.20

0.15
0.20
0.30

0.15
0.20
0.30

0.20
0.30
0.40

Reaming allowance Ø [mm]





TOOLS ON REQUEST

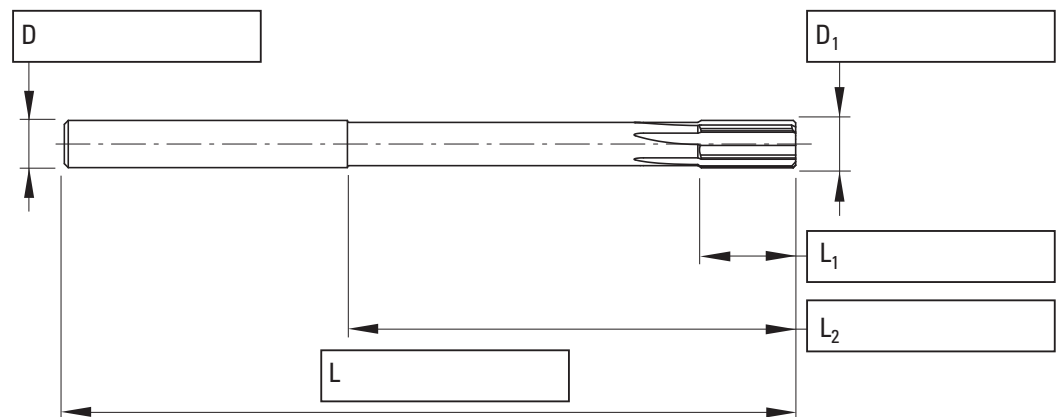
POLY 4001 SP

Z =

Quantity

Dimension and tolerance
of the hole to be machined

Material to be machined



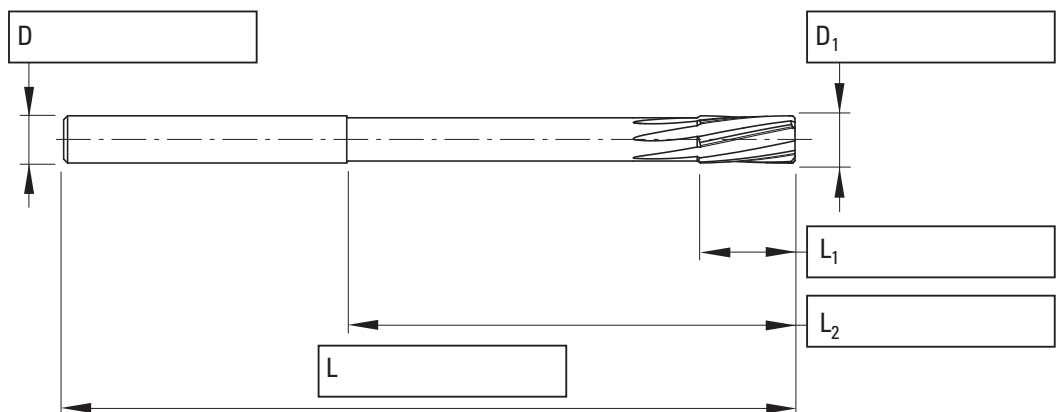
POLY 4007 SP

Z =

Quantity

Dimension and tolerance
of the hole to be machined

Material to be machined



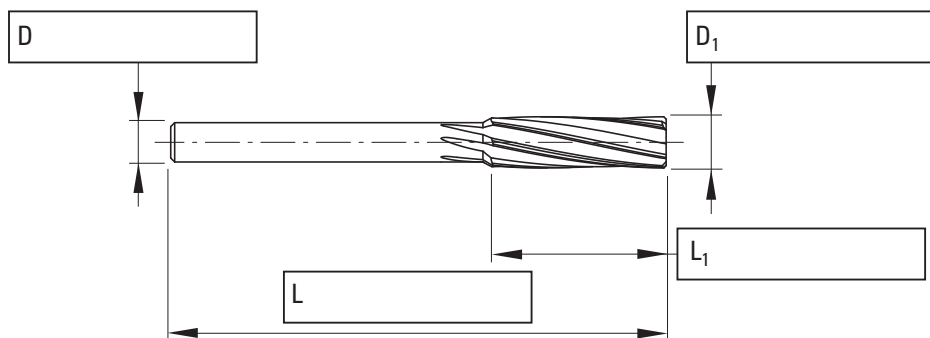
POLY 4005 SP

Z =

Quantity

Dimension and tolerance
of the hole to be machined

Material to be machined



VISIT OUR E-QUOTATION ON WWW.DIXIPOLYTOOL.COM





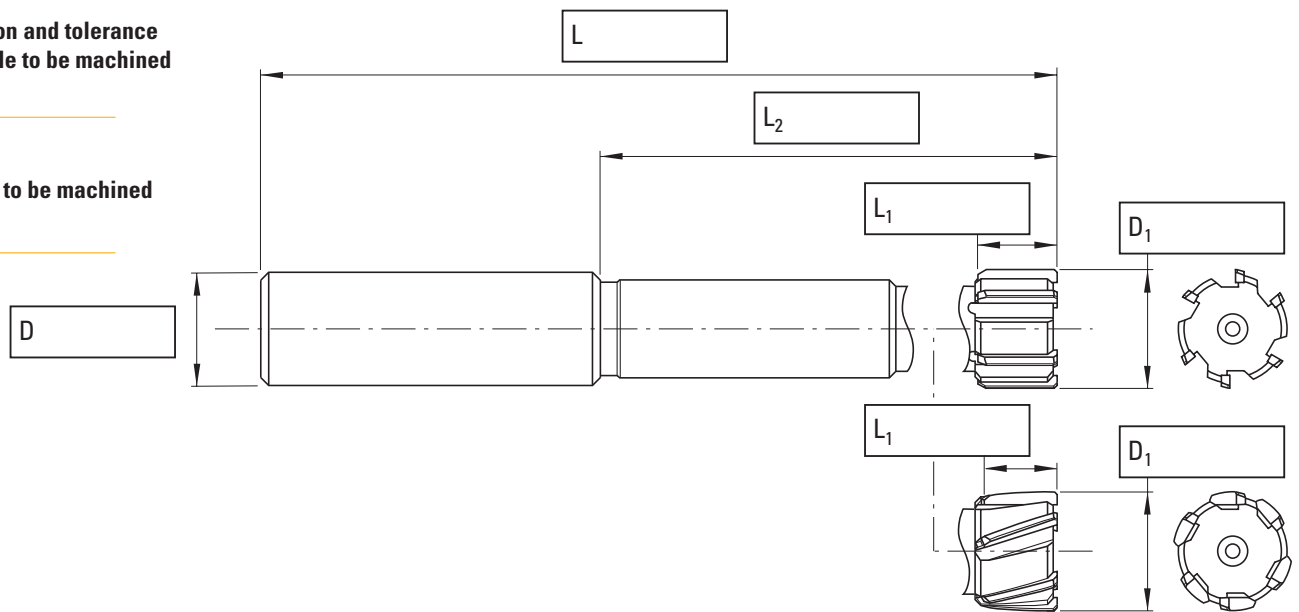
TOOLS ON REQUEST

REAMERS WITH INSERTS

Quantity

Dimension and tolerance
of the hole to be machined

Material to be machined



☐ Expansible

☐ Solid



D₁

Expansion

5.80 - 9.60

+10° = D₁ + 0.0025

9.61 - 21.10

+10° = D₁ + 0.0035

21.11 - 51.1

+10° = D₁ + 0.0050

Material to be machined

☐ HM

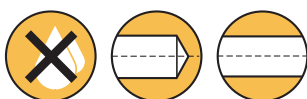
☐ HM + TiAlN

☐ CERMET

☐ Other: _____

Cooling

☐



☐



☐



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DIAMANT

DIAMANT

DIAMOND

DIAMANTE

GYÉMÁNT

DIAMANTE

SELECTION OF DIAMOND TOOLS 378



MILLING CUTTERS 384



CHAMFERING TOOLS 390



ENGRAVING TOOLS 391



SPECIAL MILLING TOOLS 392



FACE MILLING CUTTERS 394



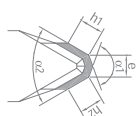
DRILLS 395



REAMERS 396



TURNING TOOLS 398



RANGE OF SPECIAL SHAPES 401



DIADIX® WHEEL DRESSERS 403



CUTTING CONDITIONS 406

SELECTION OF DIAMOND TOOLS

✓ = item from stock

MILLING CUTTERS	Z			PCD	CVD	DIA		
				●	■	◆		
DIXI 72420-SH Ø 2.00 - 20.00	1 - 2	384		 	✓	✓		
DIXI 70520-SH Ø 1.00 - 20.00	1 - 2	385		 	✓	✓		
DIXI 70600 PCD Ø 1.00 - 10.00	1	386		 	✓			
DIXI 70600 DIA Ø 3.00 - 6.00	1	386		 		✓		
DIXI 72310 DIA Ø 0.40 - 2.00	1	387		 		✓		
DIXI 72421 DIA Ø 6.00 - 12.00	1	388		 		✓		
DIXI 70320-SH Ø 2.00 - 20.00	1 - 2	389		 	✓			
DIXI 70320 DIA Ø 2.00 - 20.00	1	388		 		✓		

CHAMFERING TOOLS

DIXI 76230 DIA Ø 0.10 - 0.30		1	390	 			✓		
DIXI 76231 DIA		1	390	 			✓		

ENGRAVING TOOLS

DIXI 70170 DIA Ø 0.05 - 0.10		1	391	 			✓		
DIXI 70170 PCD Ø 0.10 - 0.20		1	391	 	✓				

○ good ⊙ excellent

Cu alloy Silver Gold	Cu alloy difficult to machine	Al 4 - 8% Si	Al 8 - 13% Si	Graphite	Unsintered carbide Ceramics	Plastic	Carbon fibres
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⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○			⊙		
⊙	⊙	⊙	○			⊙		
⊙	⊙	⊙	○			⊙		
⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○			⊙		

⊙	⊙	⊙	○			⊙		
⊙	⊙	⊙	○			⊙		

⊙	⊙	⊙	○			⊙		
⊙	⊙	⊙	○	○	○	⊙	○	



SELECTION OF DIAMOND TOOLS

✓ = item from stock

FACE MILLING CUTTERS

DIXI 81000
Ø 40 - 100



Z

Page

PCD



CVD



DIA



2

394



DIXI 80000
Ø 40 - 125



6 - 16

395



DRILLS

DIXI 11140



1

395

DIXI 11180



2

395

REAMERS

POLY 40010-TC
Ø 8.00 - 22.10



4

396



POLY 40010-FC
Ø 8.00 - 22.10



4

396



DIXI 25800



-

396



DIXI 25810



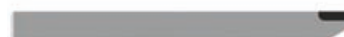
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396



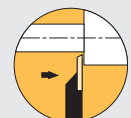
TURNING TOOLS

DIXI 20610



-

397



DIXI 20770



-

397



DIXI 26500 TR



-

398



✓

DIXI 26500 FT



-

398



✓



○ good ⊙ excellent

Cu alloy Silver Gold	Cu alloy difficult to machine	Al 4 - 8% Si	Al 8 - 13% Si	Graphite	Unsintered carbide Ceramics	Plastic	Carbon fibres
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⊙	⊙	⊙	○			⊙		
⊙	⊙	⊙	○					

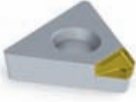
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⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	

⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	

SELECTION OF DIAMOND TOOLS

✓ = item from stock

			Z	Page		PCD ●	CVD ■	DIA ◆		
TURNING TOOLS										
DIXI 26500 AV			-	398		✓				
DIXI 26500 AR			-	398		✓				
DIXI 264X0			-	397						
DIADIX® WHEEL DRESSERS										
DIXI 1973			-	403						
DIXI 1978			-	404		✓	✓			

○ good ⊙ excellent

Cu alloy Silver Gold	Cu alloy difficult to machine	Al 4 - 8% Si	Al 8 - 13% Si	Graphite	Unsintered carbide Ceramics	Plastic	Carbon fibres
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⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	
⊙	⊙	⊙	○	○	○	⊙	○	



DIXI 72420 - 72420-SH

END MILLS, CENTRE CUTTING
AND THROUGH COOLANT

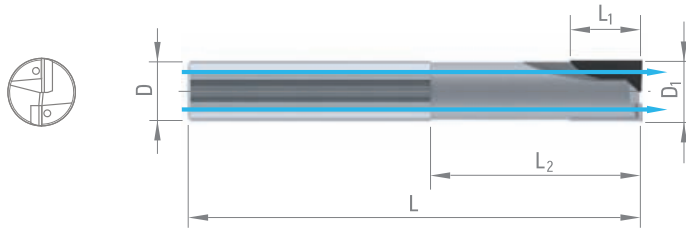
Z = 1-2



P. 406



$D_1 \geq \emptyset 6$



Cu alloy Silver Gold	Cu alloy difficult to machine	Al 4-8% Si	Al 8-13% Si	Graphite
Unsilited carbide Ceramics	Plastic	Carbon fibres		

D_{1h10}	L_1	L_2	D_{h5}	L	Z	PCD	CVD
1.00	2.0	-	6	42	1	979179	
1.50	3.0	-	6	42	1	977382	
2.00	3.0	6	6	42	1	66785	
2.00 >	3.0	20	6	75	1	970175	
3.00	4.0	6	6	42	1	67540	301958
3.00 >	4.0	6	6	42	2		305549
3.00 >	4.0	15	6	75	2	970176	
3.00 >	4.0	20	6	75	2	970177	
4.00	4.0	8	6	50	1	957593	
4.00 >	6.5	10	6	50	1	67541	
4.00 >	6.5	15	6	75	2	970178	301959
4.00 >	6.5	25	6	75	2	970179	
5.00	5.0	10	6	50	2	957595	
5.00 >	6.5	10	6	50	2	53153	
5.00 >	6.5	35	6	75	2	970166	301960
6.00	6.0	12	6	57	2	976391	301961
6.00 >	8.0	34	6	75	2	976392	
6.00 >	8.0	50	6	100	2	976393	
7.00	8.0	34	8	75	2	976394	301962
8.00	7.0	14	8	63	2	976395	301963
8.00 >	10.0	34	8	75	2	976396	
8.00 >	10.0	50	8	100	2	976397	
8.00 >	10.0	75	8	125	2	976398	
9.00	10.0	35	10	75	2	976399	
10.00	8.0	16	10	75	2	976410	301965
10.00 >	12.0	35	10	75	2	976411	
10.00 >	12.0	75	10	125	2	976412	
11.00	12.0	38	12	83	2	976413	
12.00	10.0	20	12	83	2	976414	301966
12.00 >	12.0	38	12	83	2	976415	
12.00 >	12.0	75	12	125	2	976416	
14.00	12.0	24	14	83	2	976417	338991
14.00 >	12.0	38	14	83	2	976418	
14.00 >	12.0	75	14	125	2	976419	
16.00	14.0	28	16	92	2	976420	338992
16.00 >	14.0	42	16	92	2	976421	
16.00 >	14.0	75	16	125	2	976422	
20.00	18.0	36	20	104	2	976423	
20.00 >	18.0	50	20	125	2	976424	



On request



DIXI 70520 - 70520-SH

END MILLS, CENTRE CUTTING
WITH CORNER RADIUS
AND THROUGH COOLANT

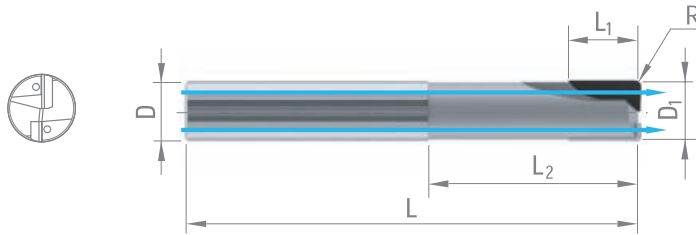
Z = 1-2



P. 406



$D_1 \geq \varnothing 6$



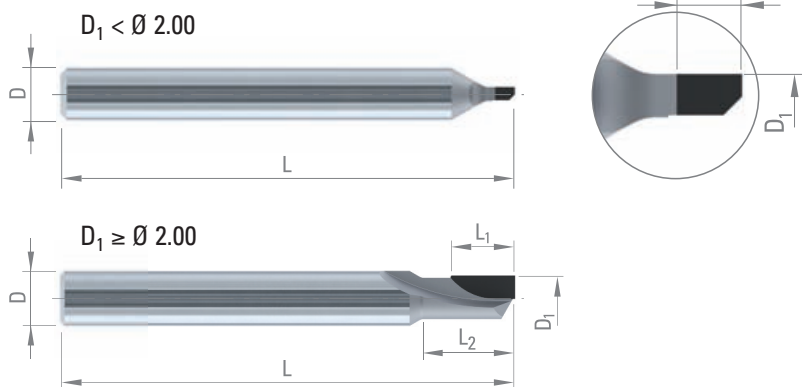
Cu alloy Silver Gold	Cu alloy difficult to machine	Al 4-8% Si	Al 8-13% Si	Graphite
Unsilited carbide Ceramics	Plastic	Carbon fibres		

D_{1h10}	L_1	L_2	D_{h5}	L	R	Z	PCD	CVD
1.00	2.0	-	6	42	0.1	1	984384	
2.00	3.0	6	6	42	0.1	1	967923	
2.00 >	3.0	6	6	42	0.2	1	973528	
3.00	4.0	15	6	75	0.1	2	987438	338995
3.00 >	4.0	15	6	75	0.3	2	305810	
4.00	4.0	8	6	50	0.1	1	967925	
4.00 >	6.5	10	6	50	0.5	2	971465	
4.00 >	6.5	15	6	75	0.1	2	305811	
4.00 >	6.5	15	6	75	0.5	2	302378	
5.00	5.0	10	6	50	0.1	2	305812	
5.00 >	5.0	10	6	50	0.5	2	975839	
6.00	6.0	12	6	57	0.1	2	967926	338996
6.00 >	6.0	12	6	57	0.5	2	968992	
6.00 >	8.0	34	6	75	0.1	2	995208	
6.00 >	8.0	34	6	75	0.5	2	974475	
6.00 >	8.0	34	6	75	1.0	2	974476	
8.00	7.0	14	8	63	0.1	2	967927	339000
8.00 >	10.0	34	8	75	0.5	2	974477	
8.00 >	10.0	34	8	75	1.0	2	974478	
10.00	12.0	35	10	75	0.1	2	953153	339001
10.00 >	12.0	35	10	75	0.5	2	974479	
10.00 >	12.0	35	10	75	1.0	2	974480	
10.00 >	12.0	75	10	125	0.5	2	974482	
10.00 >	12.0	75	10	125	1.0	2	974481	
12.00	10.0	20	12	83	0.1	2	984083	339004
12.00 >	12.0	38	12	83	0.5	2	974483	
12.00 >	12.0	38	12	83	1.0	2	974484	
12.00 >	12.0	75	12	125	0.5	2	974485	
12.00 >	12.0	75	12	125	1.0	2	974486	
14.00	12.0	24	14	83	0.1	2	305814	
14.00 >	12.0	24	14	83	0.5	2	305814	339012
14.00 >	12.0	24	14	83	1.0	2	305817	
16.00	14.0	28	16	92	0.1	2	993052	
16.00 >	14.0	42	16	92	0.5	2	305818	339014
16.00 >	14.0	42	16	92	1.0	2	305139	
20.00	18.0	36	20	104	0.1	2	987718	
20.00 >	18.0	36	20	104	0.5	2	305819	
20.00 >	18.0	36	20	104	1.0	2	305820	

DIXI 70600 PCD

SLOT DRILLS, CENTRE CUTTING
FOR FINISHING OPERATION

Z = 1



P. 406



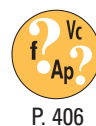
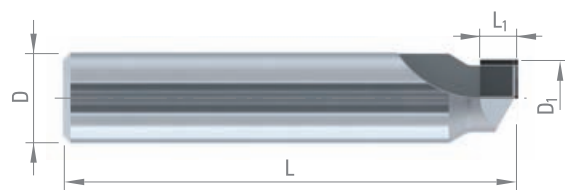
Cu alloy Silver Gold	Cu alloy difficult to machine	Al 4-8% Si	Al 8-13% Si	Graphite
Unstirred carbide Ceramics	Plastic	Carbon fibres		

$D_{1\ h10}$	L_1	L_2	D_{h5}	L	PCD
1.00	2.0	-	6	35	302387
2.00	3.0	-	6	35	302388
3.00	4.0	-	6	42	302389
4.00	6.5	-	6	42	302390
5.00	6.5	-	6	50	302391
6.00	8.0	12	6	50	302393
8.00	8.0	15	10	60	339191
10.00	8.0	20	10	75	339192

DIXI 70600 DIA

MONOCRISTALLINE DIAMOND
END MILLS, CENTRE CUTTING

Z = 1



P. 406



Cu alloy Silver Gold	Cu alloy difficult to machine	Al 4-8% Si	Alu 8-13% Si	Plastic
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D_1	L_1	D_{h5}	L	DIA
3.00	2.5	6	30	302394
4.00	2.5	6	30	302395
5.00	2.5	6	30	302396
6.00	2.5	6	30	302397

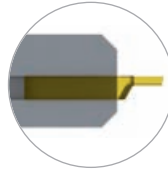
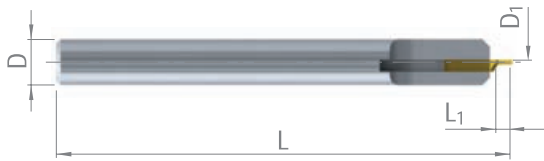
DIXI 72310 DIA

MONOCRISTALLINE DIAMOND MICRO END MILLS

Z = 1



P. 406



Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al
4-8%
Si

Alu
8-13%
Si

Plastic

D ₁	L ₁	D _{h5}	L	DIA
0.40	0.8	3	30	953424
0.50	1.0	3	30	953425
0.60	1.2	3	30	953426
0.70	1.4	3	30	953427
0.80	1.6	3	30	953428
0.90	1.8	3	30	953429
1.00	2.5	3	30	953430
1.10	2.5	3	30	953431
1.20	2.5	3	30	953432
1.30	2.5	3	30	953433
1.40	2.5	3	30	953434
1.50	2.5	3	30	953435
1.60	2.5	3	30	953436
1.70	2.5	3	30	953437
1.80	2.5	3	30	953438
1.90	2.5	3	30	953439
2.00	2.5	6	30	953440

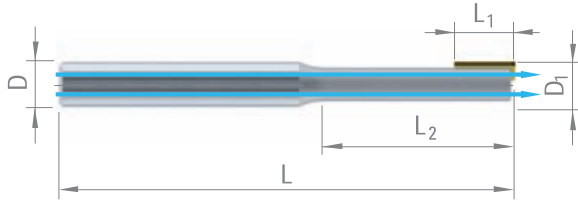
DIXI 72421-SH DIA

MONOCRISTALLINE DIAMOND END MILLS

Z = 1



P. 406



D ₁	L ₂	D _{h5}	L ₁	L	DIA Plastic	DIA
6.00	25	6	4	57	970120	341428
			6	57	970122	341429
			8	57	974360	341430
8.00	25	8	4	63	970126	341432
			6	63	970128	341434
			8	63	970129	341435
10.00	25	10	4	75	974317	341436
			6	75	974318	341437
			8	75	974319	341438
12.00	25	12	4	83	974321	341439
			6	83	974322	341440
			8	83	974323	341441

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al
4-8%
Si

Alu
8-13%
Si

Plastic

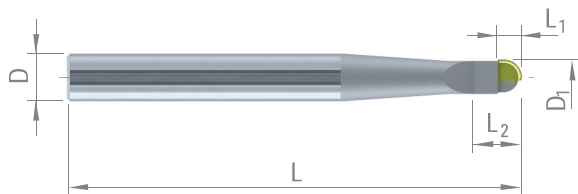
DIXI 70320 DIA

MONOCRISTALLINE DIAMOND BALL-NOSE END MILLS

Z = 1



P. 406



D ₁	L ₁	L ₂	D _{h5}	L	DIA
2.00	2.0	4	6	57	341443
3.00	2.0	4	6	75	341445
4.00	2.0	4	6	75	341447
6.00	2.0	4	6	75	341449
8.00	2.0	4	6	75	341450
10.00	2.0	4	6	75	341451

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al
4-8%
Si

Alu
8-13%
Si

Plastic



DIXI 70320-SH PCD

BALL-NOSE END MILLS WITH THROUGH COOLANT

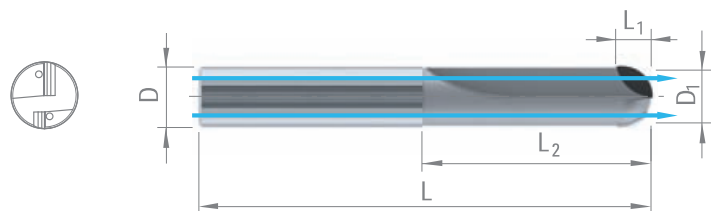
Z = 1-2



P. 406



> Ø 6



Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al
4-8%
Si

Alu
8-13%
Si

Graphite

Unsilited
carbide
Ceramics

Plastic

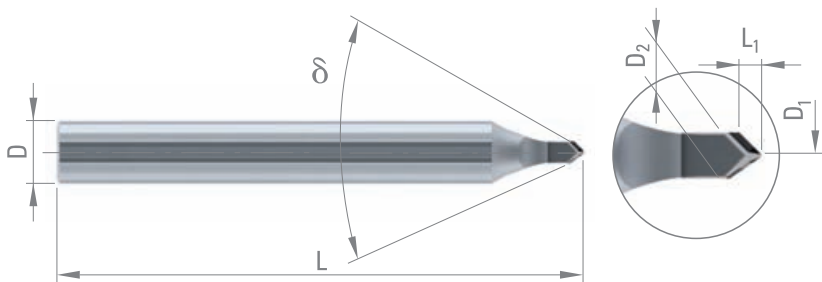
Carbon
fibres

$D_{1\ h10}$	L_1	D	L_2	L	Z	PCD
2.00	2.0	6	6.0	42	1	953442
			25.0	75	1	970874
3.00	2.5	6	6.0	42	1	953443
			25.0	75	1	970875
			25.0	75	2	970876
			8.0	50	1	959468
4.00	3.0	6	10.0	50	1	953444
			10.0	50	2	970877
			25.0	75	2	970878
			35.0	75	2	981585
			10.0	50	2	953445
5.00	4.0	6	25.0	75	2	970883
			12.0	57	2	976433
6.00	4.0	6	34.0	75	2	976434
			50.0	100	2	976435
			14.0	63	2	976436
8.00	5.0	8	34.0	75	2	976437
			75.0	125	2	976438
			16.0	72	2	976439
			35.0	75	2	976440
10.00	6.0	10	75.0	125	2	976441
			20.0	83	2	976442
12.00	7.0	12	38.0	83	2	976443
			75.0	125	2	976444
14.00	8.0	14	24.0	83	2	305821
16.00	9.0	16	28.0	92	2	300800
20.00	11.0	20	36.0	104	2	305822

DIXI 76230 DIA

MONOCRISTALLINE DIAMOND CHAMFERING TOOLS

Z = 1



δ	L_1	D_2	D_1	D_{h5}	L	DIA
30°	2.80	2	* 0.30	6	50	978382
60°	1.40	3	* 0.10	6	50	302596
	1.30	3	* 0.30	6	50	978381
90°	0.80	3	* 0.10	6	50	302595
	0.70	3	* 0.30	6	50	977871

* not cutting

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al
4-8%
Si

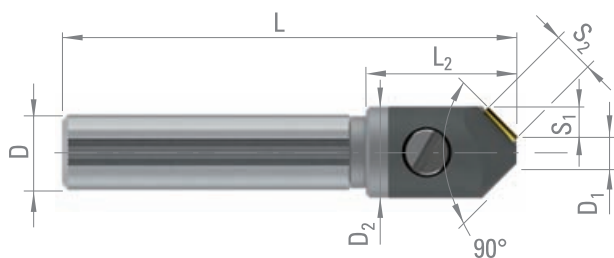
Al
8-13%
Si

Plastic

DIXI 76231 DIA

MONOCRISTALLINE DIAMOND CHAMFERING TOOLS

Z = 1



D_1	D_2	L_2	S_1	S_2	D_{h5}	L	DIA
4	10	-	3	4.10	10	60	974354
4	12	20	4	5.50	10	60	974355
4	14	20	5	7.00	10	60	974356
4	16	20	6	8.50	10	60	974357

Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

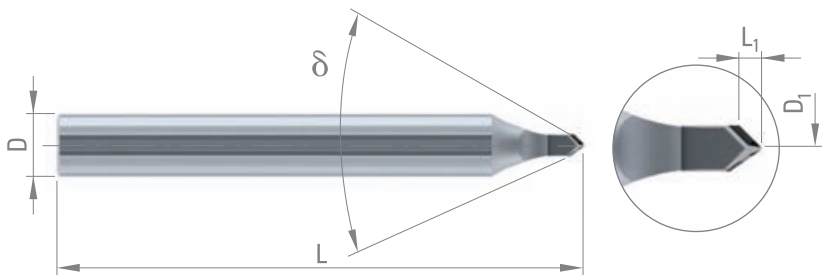
Al
4-8%
Si

Al
8-13%
Si

Plastic

DIXI 70170 DIA

MONOCRISTALLINE DIAMOND ENGRAVING TOOLS



δ	L_1	D_{h5}	L	D_1	DIA
60°	1.40	6	50	0.05	302597
				0.10	302598
90°	0.80	6	50	0.05	302599
				0.10	302600



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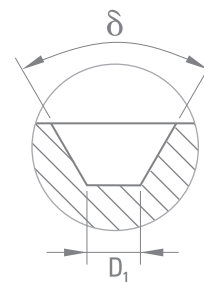
Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al
4-8%
Si

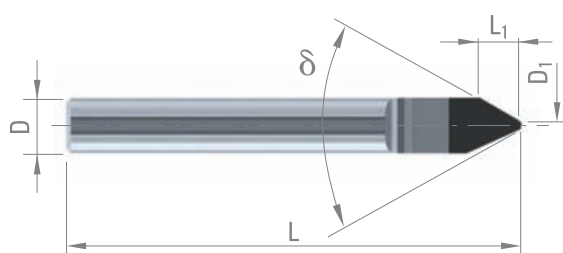
Alu
8-13%
Si

Plastic



DIXI 70170 PCD

PCD ENGRAVING TOOLS



P. 408



Cu alloy
Silver
Gold

Cu alloy
difficult
to machine

Al
4-8%
Si

Al
8-13%
Si

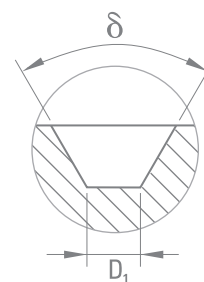
Graphite

Unstirred
carbide
Ceramics

Plastic

Carbon
fibres

δ	L_1	D_{h5}	L	D_1	PCD
60°	5	6	50	0.05	303081
				0.10	303082
90°	3	6	50	0.05	303083
				0.10	303084



TOOLS ON REQUEST

Cutting material

☐ PCD

☐ CVD

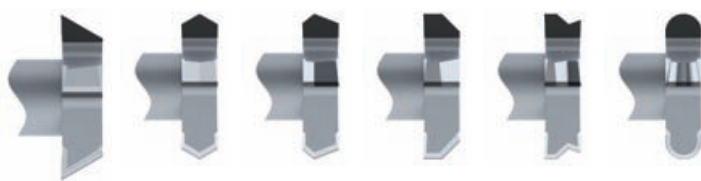
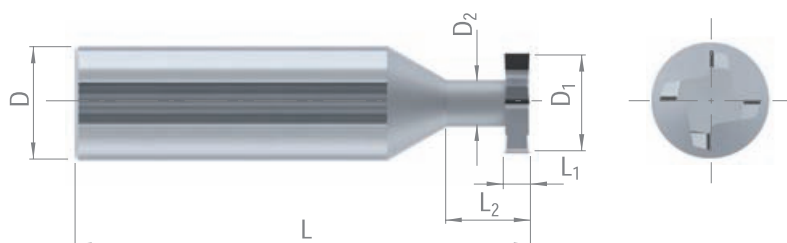
☐ DIA

Material to be machined:

DIXI 15150 TOOLS ON REQUEST

T-SLOT CUTTERS

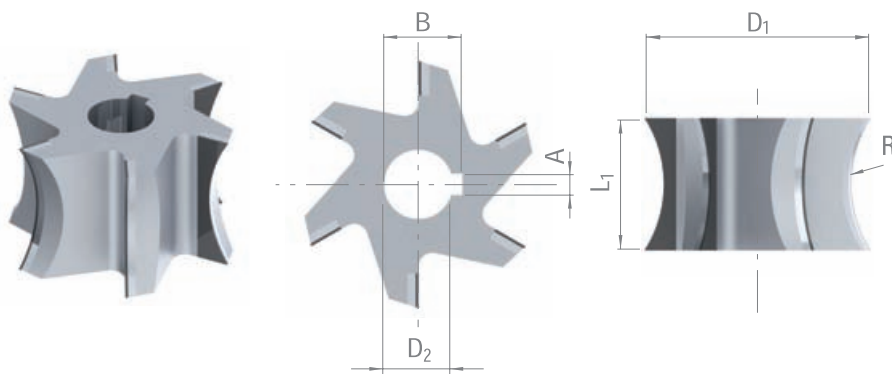
Z = _____
D = _____
D₁ = _____
D₂ = _____
L = _____
L₁ = _____
L₂ = _____
R = _____



DIXI 16560 TOOLS ON REQUEST

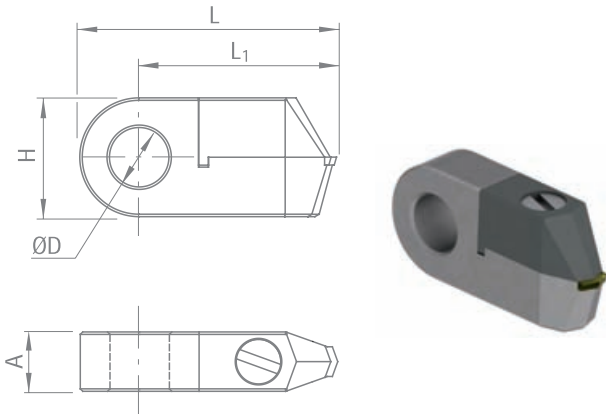
CONCAVE SLITTING SAWS

D₁ = _____
D₂ = _____
L₁ = _____
R = _____
A = _____
B = _____

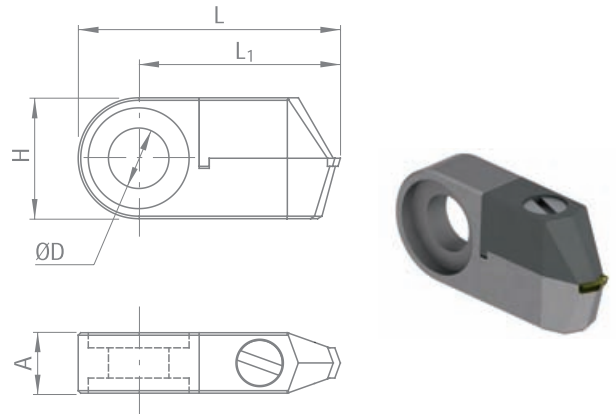


TURNING AND MILLING DIAMOND TOOLS

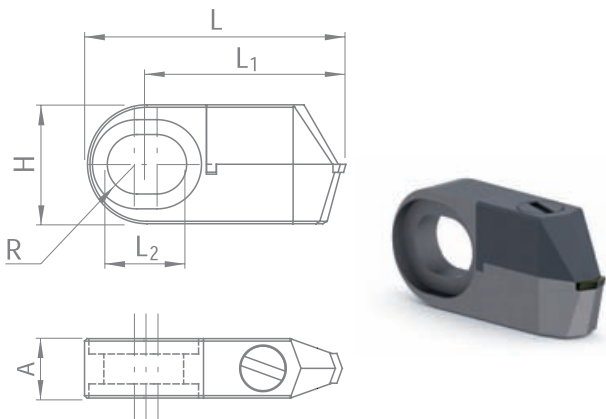
Ref. A



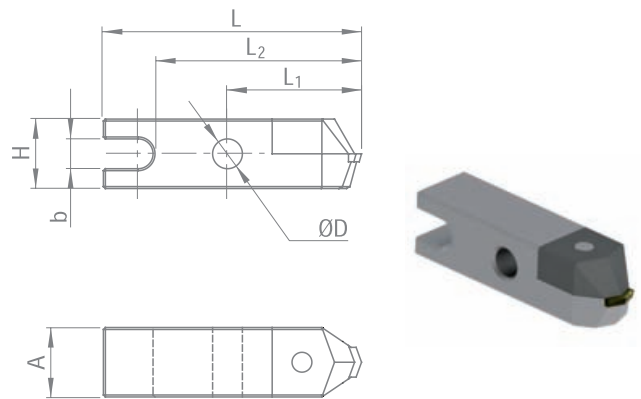
Ref. B



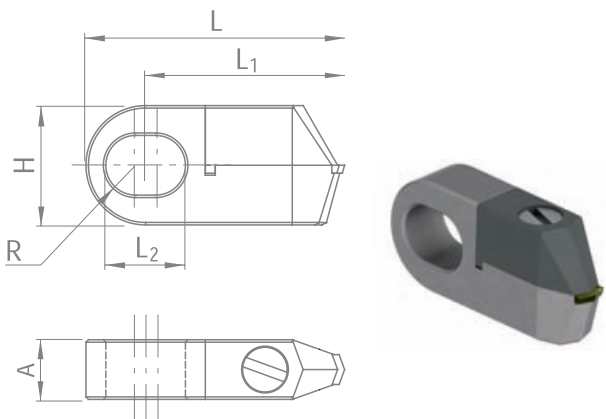
Ref. C



Ref. D



Ref. E



A large variety of diamond tools for turning and milling on request.

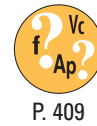
When ordering, please specify the cutting material (PCD - DIA - CVD)

and the material to be machined.

For a range of special shapes, see pages 401-402.

DIXI 81000

FACE MILLING HEAD FOR MIRROR FINISH



**Face milling head
with inclination setting**

D ₁	D	L	Art.
60	22	50	996583
85	27	55	962824
100	27	55	964272
125	40	58	994652



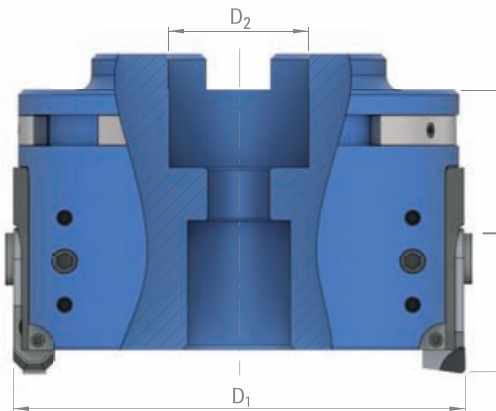
Face milling head

D ₁	D	L	Art.
40	16	55	970446
50	16	45	971872
60	22	40	962823



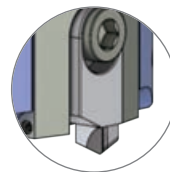
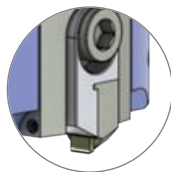
**Face milling head
with shank**

D ₁	D	L	Art.
40	12	55	964273



**Finishing insert
(monocrystalline diamond)**

Material to be machined	DIA
Plastic	968111
Aluminium / Copper	969556
Titanium	968526
Brass	969557



Roughing insert (PCD)

Material to be machined	PCD
Non ferrous materials	968117

DIXI 20370

CUTTING PINS Ø 8 x 31 FOR BERMAQ MACHINES

Ref. 1



Ref. 2



Ref. 3



Ref. 4



	Description	Material	Color	Art.
Ref. 1	Pin for roughing	PCD	black	968179
Ref. 2	Pin for finishing	PCD	red	968181
Ref. 3	Pin for satined surface	PCD	green	974193
Ref. 4	Pin for transparent surface finish	DIA	blue	968178



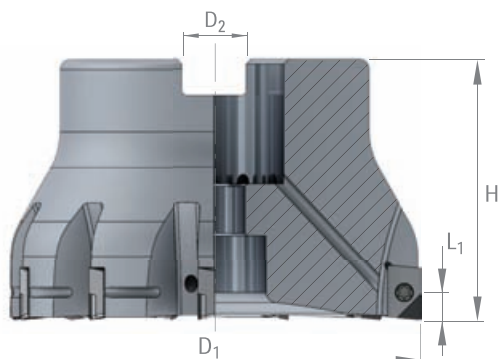
DIXI 80000

ADJUSTABLE HOLDER FOR ISO INSERTS
FOR FACE MILLING APPLICATION

Z = 6-16



P. 409



D ₁	L ₁	H	D ₂	Z	Weight [kg]	Art.
40.00	3.0	40	16	6	0.20	955446
50.00	3.0	40	22	7	0.35	955447
63.00	3.0	40	22	8	0.60	955448
80.00	3.0	50	27	11	1.20	955449
100.00	3.0	50	32	13	2.00	955451
125.00	3.0	50	32	16	2.20	955452

DIXI 2642 - 26420

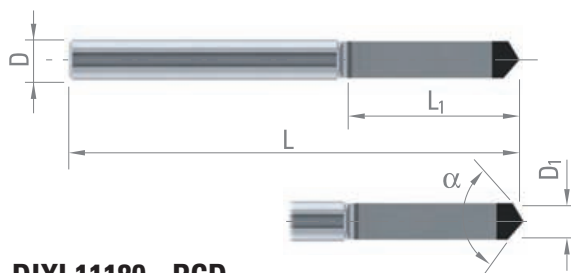
ISO INSERTS FOR DIXI 80000

Description	Art.
APTK 100305 PDER AK 10F poly	996517
APTK 100305 PDER-S AM5040 TiAlN coated	996516
APTK 100305 PDER-S AP20F TiAlN coated	996518
APTK 100305 PDER-U AP5020F TiAlN coated	996519
APTK 100305 PCD	955606

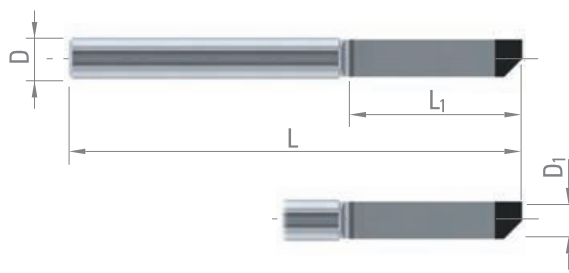
DIXI 11140 - 11180 TOOLS ON REQUEST

STRAIGHT FLUTE DRILLS

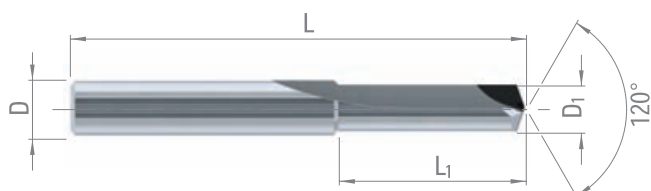
DIXI 11140 A - PCD



DIXI 11140 B - PCD



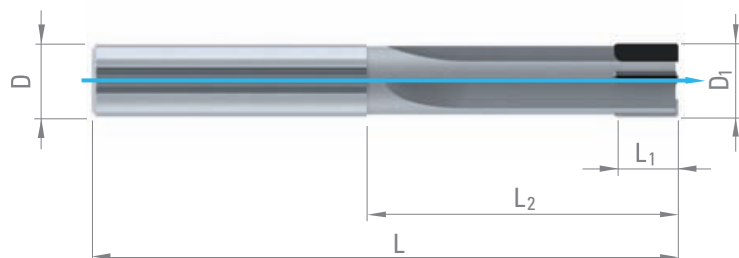
DIXI 11180 - PCD



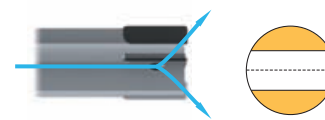
REAMERS



POLY 40010-TC



POLY 40010-FC



D ₁	L ₁	L ₂	D _{h5}	L	Z	PCD
8.000 - 9.100	7	34	8	64	4	●
9.102 - 10.100	7	44	10	80	4	●
10.101 - 11.100	7	44	10	80	4	●
11.101 - 12.300	7	63	12	108	4	●
12.300 - 13.100	7	63	12	108	4	●
13.101 - 14.500	7	58	16	108	4	●
14.501 - 16.100	7	58	16	108	4	●
16.101 - 18.100	7	58	16	108	4	●
18.101 - 20.500	7	58	20	108	4	●
20.501 - 22.100	7	58	20	108	4	●

DIXI 25800 - 25810 TOOLS ON REQUEST

BORING TOOLS

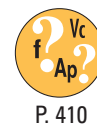
DIXI 25800



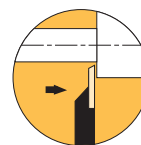
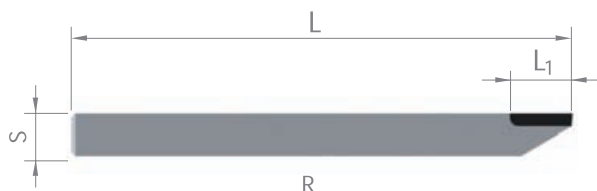
DIXI 25810



TURNING TOOLS



DIXI 20610



DIXI 20770



Available with cylindrical shank under references **DIXI 20611 / 20771**

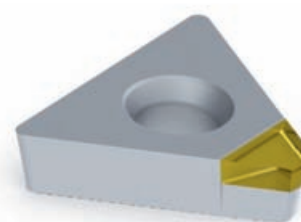
DIXI 264X0 TOOLS ON REQUEST

INSERTS AS PER DIN 4987/ISO 1832

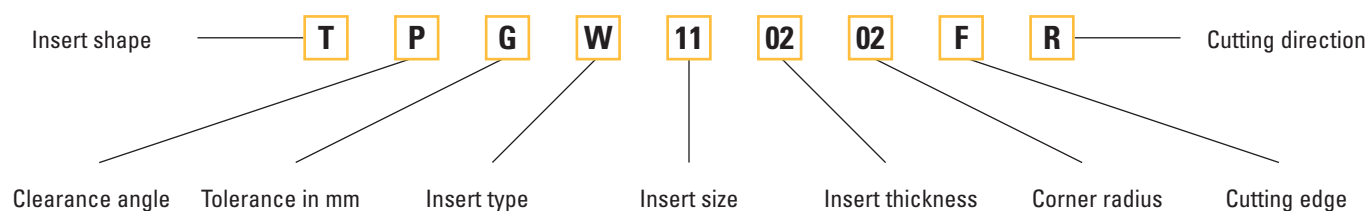
When ordering, please attach a sketch of the insert showing the diamond part. Please specify the ISO designation, the cutting material (PCD - DIA - CVD), the material to be machined.

Special ISO inserts available on request.

For a range of special shapes, see pages **401-402**.



Designation example (according to DIN 4987 / ISO 1832) DIXI 26400 TPGW 110202 FR



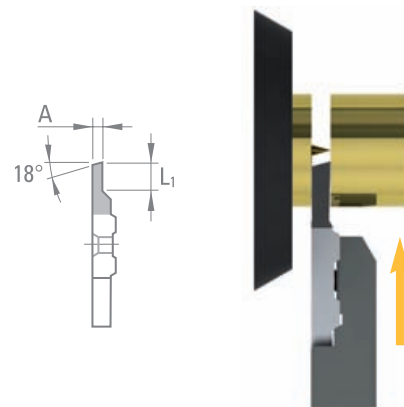
DIXI 26500 R

TURNING INSERTS RIGHT-HAND CUTTING

PARTING OFF

DIXI 26500 TR

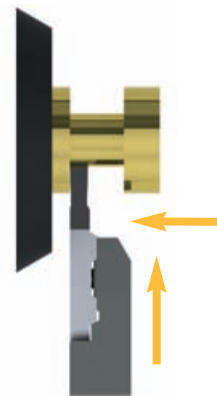
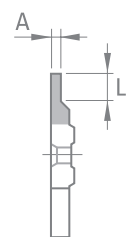
R	A	L ₁	PCD	PCD finishing
TR06R-0.8	0.8	3.0	976284	303109
TR06R-1.0	1.0	4.0	976286	303111
TR06R-1.2	1.2	5.0	976288	303113
TR06R-1.5	1.5	5.0	976290	303115
TR06R-1.8	1.8	6.0	976292	303117
TR06R-2.0	2.0	6.0	976294	303119



PLUNGING / TURNING

DIXI 26500 FT

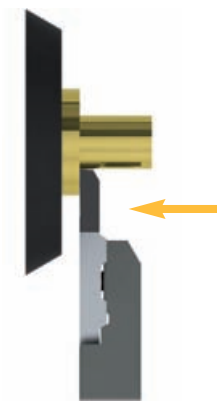
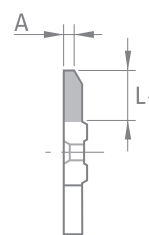
R	A	L ₁	PCD	PCD finishing
FT06R-2.0	2.0	4.0	976278	303103



FRONT TURNING

DIXI 26500 AV

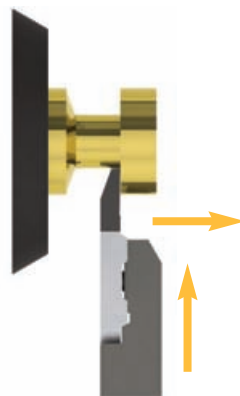
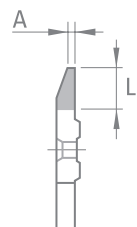
R	A	L ₁	PCD	PCD finishing
AV06R-1.5	1.5	5.0	976280	303105



BACK TURNING

DIXI 26500 AR

R	A	L ₁	PCD	PCD finishing
AR06R-1.0	1.0	5.0	976282	303107

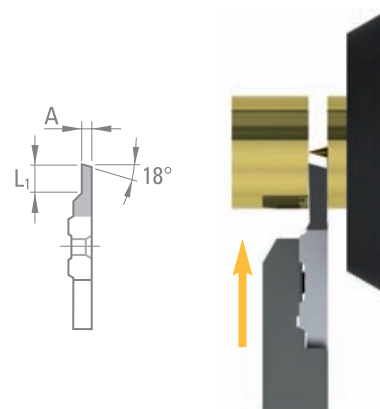


**TURNING INSERTS
LEFT-HAND CUTTING**
PARTING OFF
DIXI 26500 TR

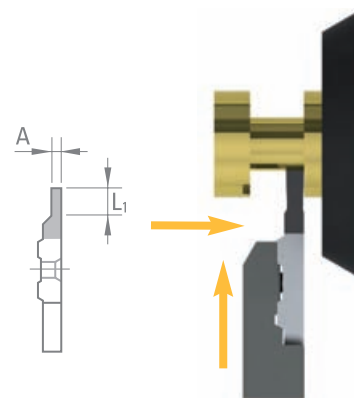
L	A	L ₁	PCD	PCD finishing
TR06L-0.8	0.8	3.0	976285	303110
TR06L-1.0	1.0	4.0	976287	303112
TR06L-1.2	1.2	5.0	976289	303114
TR06L-1.5	1.5	5.0	976291	303116
TR06L-1.8	1.8	6.0	976293	303118
TR06L-2.0	2.0	6.0	976295	303120



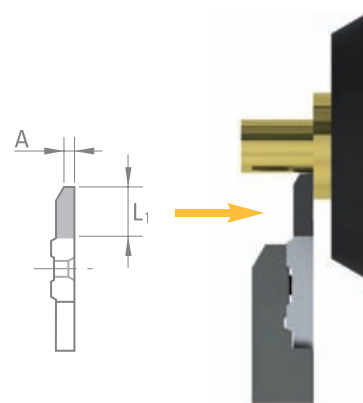
P. 410


PLUNGING / TURNING
DIXI 26500 FT

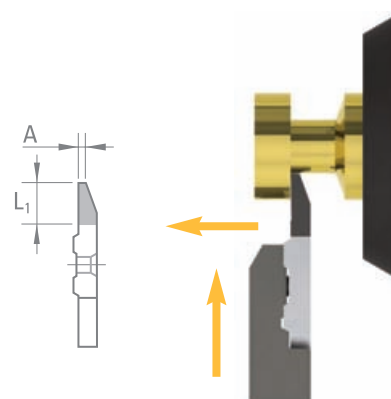
L	A	L ₁	PCD	PCD finishing
FT06L-2.0	2.0	4.0	976279	303104


FRONT TURNING
DIXI 26500 AV

L	A	L ₁	PCD	PCD finishing
AV06L-1.5	1.5	5.0	976281	303106


BACK TURNING
DIXI 26500 AR

L	A	L ₁	PCD	PCD finishing
AR06L-1.0	1.0	5.0	976283	303108



TOOL HOLDERS



R	S	Insert size	Art.
0606R-130	6	06	64940
0706R-130	7	06	64942
0806R-130	8	06	64944
1006R-130	10	06	64946
1206R-130	12	06	64948
1606R-130	16	06	64950



L	S	Insert size	Art.
0606L-130	6	06	64941
0706L-130	7	06	64943
0806L-130	8	06	64945
1006L-130	10	06	64947
1206L-130	12	06	64949
1606L-130	16	06	64959



Screw M2.50x6 Art. 66586



Torx 8 Art. 65785

RANGE OF SPECIAL SHAPES



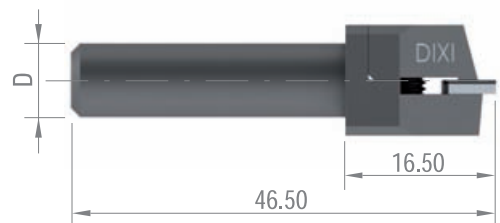
RANGE OF SPECIAL SHAPES



DIXI 1973

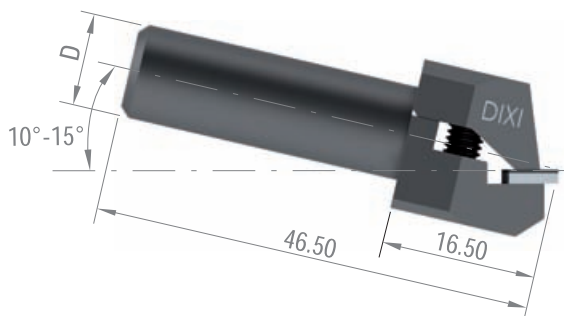
DIADIX® HOLDERS, DRESSING

Ref.	D	Art.
DIXI 1973.0823	8	19459
DIXI 1973.1023	10	18512
DIXI 1973.1223	12	19979

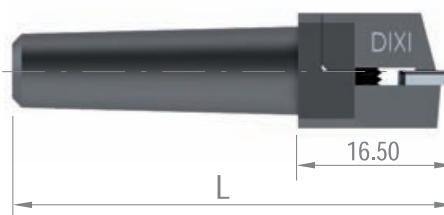


Ref.	D	Art.
DIXI 1973.1013	10	23707

This wheel-dresser compensates the 10° - 15° negative angle of the diamond-holder on certain machines, which enables the desired 0° dressing angle to be maintained.

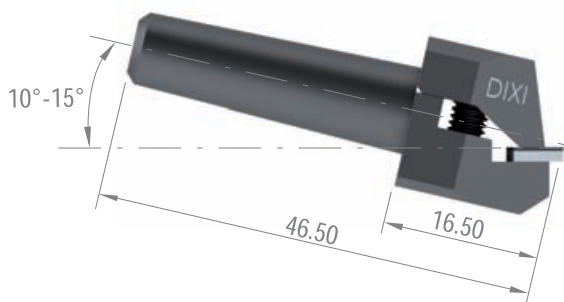


Ref.	Morse taper	L	Art.
DIXI 1973.0023	CM0	46.5	18737
DIXI 1973.0123	CM1	59.5	18514



Ref.	Morse taper	Art.
DIXI 1973.0013	CM0	23850
DIXI 1973.0113	CM1	23727

This wheel-dresser compensates the 10° - 15° negative angle of the diamond-holder on certain machines, which enables the desired 0° dressing angle to be maintained.



DIXI 1978

INSERTS FOR ROUGH WHEEL DRESSING



Ref.	PCD
DIXI 1978.360°	23829



Ref.	PCD
DIXI 1978.23	18814

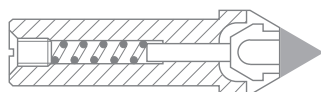
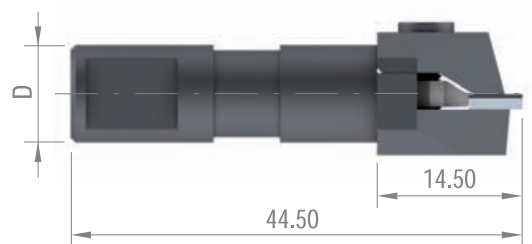
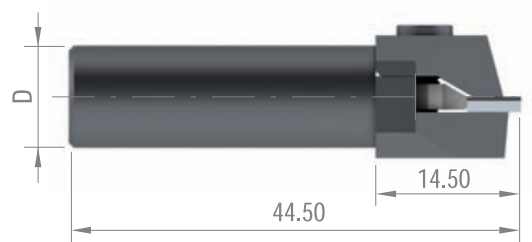
DIXI 1973

DIADIX® HOLDERS, PROFILING

Ref.	D	Art.
DIXI 1973.1025	10	24550

Ref.	D	Art.
DIXI 1973.0925-1	9.525 (3/8")	24549

Ref.	Morse taper	L	Art.
DIXI 1973.0125	CM1	36.5	26549
DIXI 1973.0125	CM1	58.5	24551



Tool holder for profile dressing
with automatic centering of the insert.

On request, DIXI can develop special holders
for various machines such as: Agathon,
Kellenberger, Studer, Tripet, Tschudin (HTT),
Voumard, etc...

DIXI 1978

INSERTS FOR PROFILING DEVICES



Ref.	PCD	CVD
DIXI 1978.2500	24623	973739

Ref.	R	PCD	CVD
DIXI 1978.2512	0.125	24624	973736
DIXI 1978.2520	0.200	24625	973732
DIXI 1978.2525	0.250	24626	973737
DIXI 1978.2550	0.500	24627	973738



DIADIX® WHEEL-DRESSERS

CHARACTERISTICS

Bonded to a tungsten carbide pin, the diamond layer enables a significant cost saving through the combination of the three cutting points and circular segment. The polycrystalline diamond retains its sharpness and efficiency until it has been completely used. The DIADIX® wheel-dresser breaks the crystals of the grinding wheel instead of planishing them, thereby revealing a greater number of cutting points on the grinding wheel.

ADVANTAGES

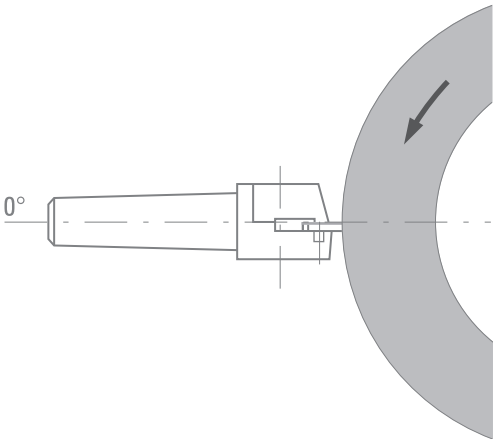
The grinding wheels redressed with a DIADIX® tool produce more work-pieces with a better finish and greater accuracy. The redressing intervals are longer, thus reducing down time. These advantages mean a significant improvement of productivity.

CONDITIONS OF USE

- Wheels:
- Aluminium oxide (Al2O3)
and in certain cases silicon carbide (SiC)
- Hardness:
- up to L, eventually M (see table)
- Structure:
- from 3 to 20, depending on the cases (see table)
- Grit size:
- 46 - 220
- Grinding machines
- planer type, internal and external
cylindrical type, from any manufacturer

I	1	J	1	K	1	L	1	M	1
I	2	J	2	K	2	L	2	M	2
I	3	J	3	K	3	L	3	M	3
I	4	J	4	K	4	L	4	M	4
I	5	J	5	K	5	L	5	M	5
I	6	J	6	K	6	L	6	M	6
I	7	J	7	K	7	L	7	M	7
I	8	J	8	K	8	L	8	M	8
I	9	J	9	K	9	L	9	M	9
I	10	J	10	K	10	L	10	M	10
	•		•		•		•		•
	•		•		•		•		•
	•		•		•		•		•

Light letters = Uncertain area
Heavy letters = Certain area



DIADIX® WHEEL-DRESSERS

WORKING CONDITIONS

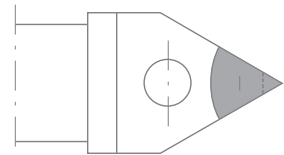
The wheel-dresser must be leveled with the wheel axis.

Dressing angle: 0°

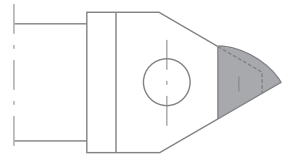
Feed rate: faster than with a single crystal natural diamond

Cutting depth: possible up to 0.50 mm

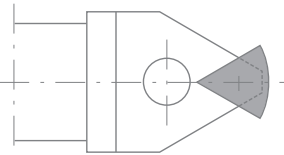
Coolant: necessary



Examples of insert positioning



For **roughing** operations.
The wheel becomes more efficient when using the appropriate feed.



For **finishing** operations.
In employing the whole or part of the insert's radius,
the grinding wheel gives an impeccable finish.



CUTTING CONDITIONS

Material to be machined

		DIA	
		Vc [m/min]	
N	Copper alloys - easy to machine (brass - bronze)	400	800
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	300	700
N	Aluminium alloys / Magnesium alloy	500	2000
N	Aluminium alloys Si < 3 - 8%	400	1800
N	Cast aluminium Si > 8 - 13%	400	1500
N	Plastic	500	1500
N	Gold, silver	200	750

DIXI 70600 - 70320 - 70520 - 72420 - 72421

CUTTING CONDITIONS

Material to be machined

		PCD		CVD		DIA	
		Vc [m/min]		Vc [m/min]		Vc [m/min]	
N	Copper alloys - easy to machine (brass - bronze)	200	1000	400	1200	400	800
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	100	1500	200	1700	300	700
N	Aluminium alloys / Magnesium alloy	700	3000	400	1200	500	2000
N	Aluminium alloys Si < 3 - 8%	300	3500	400	1200	400	1800
N	Cast aluminium Si > 8 - 13%	100	3000	200	900	400	1200
N	Graphite	200	1000	400	1200		
N	Unsintered carbide and ceramics	200	1000	400	1200		
N	Plastic	500	2000	400	1200	500	1500
N	Carbon fibres	1000	3000	400	1200		
N	Gold, silver	300	1000	400	1200	200	750

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

Feed per revolution **fz [mm]**

$\varnothing D_1$ 0.30 - 1.00	$\varnothing D_1$ 1.00 - 2.00	
0.0005 - 0.005	0.005 - 0.03	
0.0005 - 0.005	0.005 - 0.03	
0.0005 - 0.005	0.005 - 0.03	
0.0005 - 0.005	0.005 - 0.03	
0.0005 - 0.005	0.005 - 0.03	
0.0005 - 0.005	0.005 - 0.03	
0.0005 - 0.005	0.005 - 0.03	

	Roughing		Finishing		Finishing	
	PCD -CVD		PCD -CVD		DIA	
fz [mm]	ap [mm]	ae [mm]	ap [mm]	ae [mm]	ap + ae [mm]	
0.05 - 0.25	≤ 1 x D	≤ 1 x D	0.10 - 0.30	0.10 - 0.30	max. = 0.05	
0.05 - 0.20	≤ 0.6 x D	≤ 0.6 x D	0.10 - 0.30	0.10 - 0.30		
0.05 - 0.25	≤ 1 x D	≤ 1 x D	0.10 - 0.30	0.10 - 0.30		
0.05 - 0.20	≤ 1 x D	≤ 1 x D	0.10 - 0.30	0.10 - 0.40		
0.05 - 0.20	≤ 1 x D	≤ 1 x D	0.10 - 0.30	0.10 - 0.30		
0.05 - 0.20	≤ 1 x D	≤ 1 x D	0.10 - 0.30	0.10 - 0.30		
0.025 - 0.125	≤ 1 x D	≤ 1 x D	0.10 - 0.30	0.10 - 0.30		
0.05 - 0.30	≤ 1 x D	≤ 1 x D	0.10 - 0.30	0.10 - 0.30		
0.05 - 0.30	≤ 1 x D	≤ 1 x D	0.10 - 0.30	0.10 - 0.30		
0.05 - 0.25	≤ 0.6 x D	≤ 0.6 x D	0.10 - 0.30	0.10 - 0.30		



CUTTING CONDITIONS

Material to be machined

		CARBIDE n [rev/min]	Ø D ₁ 0.05 - 0.10		Ø D ₁ 0.15 - 0.40	
			Vf [mm/min]	ap [mm]	Vf [mm/min]	ap [mm]
N	Copper alloys - easy to machine (brass - bronze)	15'000 - 30'000	50 - 125	0.05 - 0.10	75 - 200	0.05 - 0.10
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	15'000 - 30'000	50 - 115	0.05 - 0.10	75 - 150	0.05 - 0.10
N	Aluminium alloys Si < 8%	15'000 - 30'000	50 - 125	0.05 - 0.10	75 - 200	0.05 - 0.10
N	Plastic	15'000 - 30'000	50 - 125	0.05 - 0.10	75 - 200	0.05 - 0.10
N	Gold, silver	15'000 - 30'000	50 - 125	0.05 - 0.10	75 - 200	0.05 - 0.10

Material to be machined

		CARBIDE n [rev/min]	Ø D ₁ 0.05 - 0.10		Ø D ₁ 0.15 - 0.40	
			Vf [mm/min]	ap [mm]	Vf [mm/min]	ap [mm]
N	Copper alloys - easy to machine (brass - bronze)	12'500 - 17'500	75 - 250	0.05 - 0.20	150 - 400	0.10 - 0.40
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	12'500 - 17'500	75 - 250	0.05 - 0.20	150 - 350	0.10 - 0.40
N	Aluminium alloys Si < 8%	12'500 - 17'500	75 - 250	0.05 - 0.20	150 - 400	0.10 - 0.40
N	Plastic	12'500 - 17'500	75 - 250	0.05 - 0.20	150 - 400	0.10 - 0.40
N	Gold, silver	12'500 - 17'500	75 - 250	0.05 - 0.20	150 - 400	0.10 - 0.40

CUTTING CONDITIONS

Material to be machined

			PCD	CVD	ap [mm]	fz [mm]
			Vc [m/min]	Vc [m/min]		
N	Copper alloys - easy to machine (brass - bronze)		< 3000	< 3000	0.10 - 3.50	0.05 - 0.25
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	< 3000	< 3000	0.10 - 3.50	0.05 - 0.25
N	Aluminium alloys / Magnesium alloy		< 7000	< 7000	0.10 - 3.50	0.05 - 0.25
N	Aluminium alloys	Si < 3 - 8%	< 6000	< 6000	0.10 - 3.50	0.05 - 0.25
N	Cast aluminium	Si > 8 - 13%	< 5000	< 5000	0.10 - 3.50	0.05 - 0.25

CUTTING CONDITIONS

Material to be machined

Material to be machined			PCD + DIA		ap [mm]	fz [mm]
			Vc [m/min]			
N	Copper alloys - easy to machine (brass - bronze)		400	800	< 2	0.02 - 0.2
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)	300	700	< 2	0.02 - 0.2
N	Aluminium alloys / Magnesium alloy		500	2000	< 2	0.02 - 0.2
N	Aluminium alloys	Si < 3 - 8%	400	1800	< 2	0.02 - 0.2
N	Cast aluminium	Si > 8 - 13%	400	1200	< 2	0.02 - 0.2
N	Plastic		500	1500	< 2	0.02 - 0.2
N	Gold, silver		200	750	< 2	0.02 - 0.2

CUTTING CONDITIONS

Material to be machined		PCD		CVD		DIA	
		Vc [m/min]		Vc [m/min]		Vc [m/min]	
N	Copper alloys - easy to machine (brass - bronze)	300	1000	300	1000	300	1000
N	Copper alloys - difficult to machine / Aluminium bronze (CuAlFe) (Ampco)	250	800	250	800	250	800
N	Aluminium alloys / Magnesium alloy	300	1000	300	1000	300	1000
N	Aluminium alloys Si < 3 - 8%	300	1000	300	1000	300	1000
N	Cast aluminium Si > 8 - 13%	250	800	250	800	250	800
N	Graphite	80	1500	80	1500		
N	Unsintered carbide and ceramics	100	800	100	800		
N	Plastic	100	600	100	600	100	600
N	Carbon fibres	100	600	100	600		
N	Gold, silver	300	1000	300	1000	300	1000

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

$$V_f \text{ [mm/min]} = n \text{ [tr/min]} \times f_z \text{ [mm]} \times z$$

PCD -CVD		DIA		
Depth of cut (mm)	Feed (mm/rev)	Depth of cut (mm)	Feed (mm/rev)	
< 10	0.05 - 0.50	< 0.05	0.05 - 0.50	
< 6	0.05 - 0.50	< 0.05	0.05 - 0.50	
< 10	0.05 - 0.50	< 0.05	0.05 - 0.50	
< 10	0.05 - 0.50	< 0.05	0.05 - 0.50	
< 6	0.05 - 0.50	< 0.05	0.05 - 0.50	
< 10	0.05 - 0.50			
< 5	0.05 - 0.20			
< 10	0.10 - 0.60	< 0.05	0.10 - 0.60	
< 3	0.05 - 0.60			
< 6	0.05 - 0.50	< 0.05	0.05 - 0.50	

USURE

VERSCHLEISS

WEAR PARTS

USURA

EGYÉB

DESGASTE





GROUND RODS

414



BALLS

416



INFORMATION

417



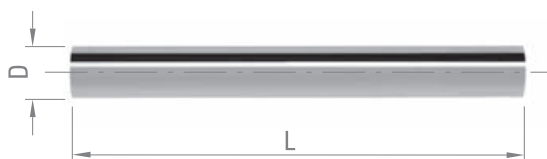
CARBIDE PLAIN GAUGES

418



PROBES

419

TUNGSTEN CARBIDE
GROUND RODS

D _{h5}	L		CARBIDE
0.30	30		201016
0.35	30		200825
0.40	30		200968
0.45	30		200851
0.50	30		200912
0.50	38		200917
0.55	30		200861
0.55	38		200869
0.60	30		201064
0.60	38		200976
0.65	30		200969
0.65	38		201069
0.70	30	✓	200913
0.70	38	✓	200918
0.75	30	✓	200970
0.75	38		200865
0.80	30	✓	200862
0.80	38	✓	200977
0.80	102		200950
0.85	30	✓	201065
0.85	38	✓	200978
0.90	30		200914
0.90	38	✓	200919
0.95	30	✓	200971
0.95	38	✓	201070
1.00	30	✓	201066
1.00	30		323054
1.00	32	✓	981529
1.00	38		200979
1.00	50		967589
1.00	102		200907
1.05	30		200972
1.05	38		200866
1.10	30		200915
1.10	38		200920
1.10	102		200902
1.15	30		200863
1.15	38		201071
1.20	30		200973
1.20	38		200980
1.20	102		200947
1.25	30		201067
1.25	38		201072
1.30	30	✓	200916
1.30	102		200949

D _{h5}	L		CARBIDE
1.40	102		201055
1.45	38		200982
1.50	30	✓	200975
1.50	30		323055
1.50	32	✓	981528
1.50	40		963071
1.50	102		200961
1.55	102		38577
1.60	102		201076
1.70	43		200884
1.70	102		201032
1.80	46		201050
1.80	102		200870
1.85	102		46203
1.90	46		200948
1.90	102		200852
2.00	25		201058
2.00	32		200988
2.00	38	✓	200986
2.00	38		323064
2.00	102		201057
2.10	102		200925
2.15	40		201013
2.20	53		200954
2.20	102		201077
2.30	53		200856
2.30	102		200871
2.35	102		47709
2.40	57		201075
2.40	102		200899
2.45	102		46772
2.50	32	✓	201078
2.50	43		323057
2.50	102		200906
2.60	57		200959
2.60	102		200991
2.65	102		38733
2.70	61		200987
2.70	102		200992
2.75	102		201096
2.80	102		200872
2.85	102		201015
2.90	61		200885
2.90	102		200926
2.95	102		201097

D _{h5}	L		CARBIDE
3.00	32	✓	962285
3.00	38		961825
3.00	38	✓	960503
3.00	46	✓	301757
3.00	50	✓	977075
3.00	61	✓	201011
3.00	102		200960
3.05	102		200824
3.10	65		201053
3.10	102		201079
3.15	102		201019
3.175	30	✓	303056
3.175	38	✓	201010
3.175	102		966109
3.20	65		200854
3.20	102		200993
3.25	65		971627
3.25	102		200956
3.30	65		200897
3.30	102		200927
3.35	102		200887
3.40	52		200836
3.40	70		200924
3.40	102		201080
3.45	52		200941
3.50	40		200859
3.50	52		201025
3.50	70		201060
3.50	102		200873
3.55	52		200837
3.60	52		201034
3.60	70		200908
3.60	102		200994
3.65	52		201103
3.70	52		200890
3.70	70		200964
3.70	102		200879
3.75	52		200838
3.80	55		201022
3.80	75		201040
3.80	102		201005
3.85	55		201044
3.90	55		201026
3.90	75		200818

D _{h5}	L		CARBIDE
3.90	102		200804
3.95	55		200835
4.00	35	✓	200938
4.00	38	✓	335046
4.00	42		201054
4.00	51	✓	332349
4.00	55		200833
4.00	62		201017
4.00	75		200817
4.00	102		200857
4.00	130		956629
4.05	55		200889
4.10	55		201024
4.10	75		201094
4.10	102		200874
4.15	55		201104
4.20	55		201085
4.20	75		200830
4.20	102		201098
4.25	55		201100
4.25	102		973861
4.30	58		201001
4.30	80		201062
4.30	102		200827
4.35	58		200939
4.40	58		201036
4.40	80		200904
4.40	102		201018
4.45	58		200831
4.50	58		200798
4.50	80		200900
4.50	102		200909
4.55	58		201027
4.60	58		200877
4.60	80		201059
4.60	102		200828
4.65	58		200839
4.70	58		201086
4.70	80		200901
4.70	102		201099
4.75	58		201020
4.80	62		200799
4.80	86		200819
4.80	102		201042
4.85	62		200840
4.90	62		200928
4.90	86		201041
4.90	102		200829
4.95	62		200891
5.00	62		201002
5.00	75		200996
5.00	86		200850
5.00	102		200962
5.10	62		200931
5.10	86		201012
5.10	102		200844
5.20	62		200800
5.20	86		200963
5.20	102		200952

D _{h5}	L		CARBIDE
5.30	62		201087
5.30	86		200858
5.30	102		200878
5.40	66		200942
5.40	93		200953
5.40	102		200955
5.50	66		200801
5.50	102		200848
5.60	66		201043
5.60	102		200932
5.70	66		201003
5.70	102		200802
5.80	66		201004
5.80	102		201088
5.90	66		200803
5.90	102		201037
6.00	32	✓	994215
6.00	42	✓	962222
6.00	50	✓	960544
6.00	55	✓	332354
6.00	57	✓	960545
6.00	66		10665
6.00	66	✓	200832
6.00	75		201082
6.00	81		975718
6.00	93		200883
6.00	102		200958
6.10	70		200898
6.10	102		200892
6.20	70		200911
6.20	102		201048
6.30	70		201051
6.30	102		200845
6.35	63		201056
6.35	76		200933
6.40	70		200967
6.40	102		201047
6.50	70		200943
6.50	102		200944
6.60	70		201081
6.60	102		201052
6.70	70		201063
6.70	102		201030
6.80	74		200997
6.80	109		966959
6.90	75		201061
6.90	109		200951
7.00	60		200805
7.00	75		200929
7.00	109		200895
7.20	75		200881
7.50	74		201031
7.50	109		200811
7.80	79		200806
8.00	63	✓	960546
8.00	75		200875
8.00	79		201007
8.00	102		200893
8.00	117		200934

D _{h5}	L		CARBIDE
8.50	79		200965
8.50	117		967426
8.80	84		201038
9.00	67		201008
9.00	84		200995
9.00	102		201046
9.00	125		200946
9.50	84		200826
9.50	125		201091
10.00	67	✓	335048
10.00	72		49215
10.00	73	✓	332053
10.00	75		201083
10.00	90		200807
10.00	102		200945
10.00	133		200812
10.20	89		968835
10.20	133		200808
10.50	89		200810
10.50	133		201009
11.00	75		200998
11.00	102		200849
11.50	102		201035
11.50	142		201092
12.00	74	✓	333502
12.00	84	✓	960550
12.00	102		200894
12.00	110		200905
12.00	151		201039
12.50	102		201090
12.50	151		200814
12.70	76		200999
13.00	75		201006
13.00	102		200876
13.00	151		200882
13.50	107		201028
14.00	75		200930
14.00	76	✓	960552
14.00	84	✓	960551
14.00	107		200888
14.00	152		201045
14.00	160		201093
15.00	75		200880
15.00	111		200935
16.00	83	✓	335049
16.00	92	✓	49217
16.00	102		201000
16.00	120		201105
16.00	152		201029
18.00	93	✓	960557
18.00	152		200843
20.00	105	✓	960558
20.00	130		200816
20.00	152		201106
25.00	105	✓	955903

POLISHED CARBIDE BALLS



[mm]	inches	CARBIDE
0.79375	1/32"	13962
0.800		11332
1.000		11333
1.19025	3/64"	12735
1.200		12739
1.500		11336
1.587	1/16"	13617
1.750		11337
2.000		11338
2.3815	3/32"	13963
2.500		11339
2.750		12786
2.77825	7/64"	12788
3.000		11340
3.175	1/8"	11328
3.200		12602
3.500		11341
3.9685	5/32"	13964
4.000		11342
4.500		11343
4.762	3/16"	13586
5.000		11344
5.500		12226

[mm]	inches	CARBIDE
5.5565	7/32"	13965
6.000		11345
6.350	1/4"	13957
6.500		10496
6.74675	17/64"	14603
7.000		11346
7.1435	9/32"	13966
7.500		11347
7.937	5/16"	13535
8.000		11348
8.500		13956
8.7315	11/32"	12920
9.000		11349
9.500		14062
9.525	3/8"	13959
10.000		11350
11.000		11351
11.112	7/16"	13536
11.906	15/32"	13854
12.000		12671
12.700	1/2"	13550
13.000		12672
13.493	17/32"	13967

[mm]	inches	CARBIDE
14.000		12673
14.287	9/16"	12985
15.000		11352
15.081	19/32"	13983
15.875	5/8"	13960
16.000		12674
16.6688	21/32"	22063
17.000		12675
17.462	11/16"	13961
18.000		12676
19.000		12677
19.050	3/4"	13958
19.843	25/32"	13007
20.000		12678
21.431	27/32"	28751
22.000		14179
22.225	7/8"	13825
23.000		13038
24.000		13012
25.000		13639
25.400	1"	13017
30.000		13024

DIXI 6961

POLISHED Al₂O₃ - SiC BALLS

[mm]	inches	CERAMIC
1.50		19035
2.50		31810
3.00		19036
3.175	1/8"	21267
4.00		19037

[mm]	inches	CERAMIC
4.50		15864
5.00		22280
8.00		28994
10.00		29401
12.00		37932

POLISHED RUBY / SAPPHIRE BALLS



[mm]	inches	RUBY
0.40		21366
0.53		36320
0.70		19603
0.7931	1/32"	23153
0.80		17774
1.00		13996
1.1906	3/64"	30249
1.20		29360
1.50		13997
1.587	1/16"	19626
1.75		21380
2.00		13998

[mm]	inches	RUBY
2.381	3/32"	19023
2.50		13091
3.00		14048
3.175	1/8"	16644
4.00		14063
5.00		14811
6.00		16320
6.35	1/4"	17706
6.50		18947
7.00		17211
8.00		15716

[mm]	inches	SAPPHIRE
0.25		21925
0.50		18037
0.60		24823
1.00		13859
1.50		19024
1.5875	1/16"	60423
2.00		15144
2.50		19025
3.00		13282
3.175	1/8"	17052
4.00		16962
7.143	9/32"	19026
9.00		29417

BALLS

PROPERTIES OF MATERIALS



	Tungsten carbide	Ruby / Sapphire	Ceramic	Silicon carbide
Compound	94 WC+6 Co	Al ₂ O ₃	Al ₂ O ₃	SiC
Specific weight	14.90	3.98	3.90	3.1
Hardness HV 50	1700	-	-	2500
Knoop hardness	-	1800/2200	2000	-
Modulus of elasticity E (kN/mm ²)	640	420	350	400
Compression resistance (kN/mm ²)	5.7	2.1	2.4	4.1
Tensile strength (kN/mm ²)	1.7	0.019	0.025	0.4
Softening point (°C)	600	1800	1725	1400
Melting or dissociation point (°C)	2600	2050	2050	1900
Thermic dilatation (10 ⁻⁶ /°C)	5	5.3-6.2	6.6	4.3
Specific heat (J/g/°C)	0.20	0.043	0.06	0.8
Porosity	porous	resistant	porous	porous
Resistance to acid attacks	relative	total	total	excellent
Resistance to alkaline attacks	relative	total	total	excellent

DIXI 0420 - DIXI 0421

CARBIDE PLAIN GAUGES

DIXI 0420 ($\pm 0.5\mu\text{m}$)



$D_1 \pm 0.0005$	L_1
0.100 - 0.199	1.5
0.200 - 0.299	2.0
0.300 - 0.499	3.5
0.500 - 1.499	5.0
1.500 - 1.950	6.0
1.951 - 3.499	8.0
3.500 - 3.999	10.0

Standard each 0.001mm
Available in 72h.

DIXI 0421 ($\pm 1.0\mu\text{m}$)



$D_1 \pm 0.001$	L_1
0.10 - 0.19	1.5
0.20 - 0.29	2.0
0.30 - 0.49	3.5
0.50 - 1.49	5.0
1.50 - 1.95	6.0
1.96 - 3.49	8.0
3.50 - 3.99	10.0

From stock each 0.01mm



Products available with an internal control protocol or made by an external laboratory

**PROTOCOLE DE CONTRÔLE
DIAMÈTRE DE TAMPON LISSE**

DIXI polytool

Certificat N° : N/C Page 1 sur 1
Date de mesure : 15.08.2016
Client : N/C
Objet : Tampon lisse
Article : 309161
Description : DIXI 0420 Ø 1.000 ± 0.5 μm L1 = 5 D = 3 L = 38 SP
Echantillon N° : Z299

Ø nominal (mm)	Tolérance inférieure (μm)	Tolérance supérieure (μm)	Ø mesuré (mm)	Ecart (mm)	Remarque
1.0000	-0.5	+0.5	1.0001	+0.0001	E1-a
1.0000	-0.5	+0.5	1.0002	+0.0002	E1-b
1.0000	-0.5	+0.5	0.9999	-0.0001	E1-c
1.0000	-0.5	+0.5	0.9998	-0.0002	E1-d
1.0000	-0.5	+0.5	1.0002	+0.0002	E1-e
1.0000	-0.5	+0.5	1.0001	+0.0001	E2-f

Instrument de mesure : Banc de mesure horizontal (inv. N° BM040)
Méthode de mesure : Entre touches plates
Instruction de contrôle N° : N/C
Incertitude de mesure : 0.4 μm
Température : 20 °C
Traçabilité : ISO 9001:2008

Résultat de la mesure : Opérationnel

Le Locle, le 15.08.2016
Date / Lieu
Opérateur

DIXI Polytool S.A.
ISO 9001:2008
ISO 14001:2004
Av. du Technicum 27
CH-2400 Le Locle
dixipoly@dixi.ch
Tél: +41 (0)22 932 54 44
Fax: +41 (0)22 933 89 16
www.dixipolytool.com

Contact us for any other set composition

SET 50 PIECES



SET 100 PIECES



PROBES & GAUGES



The materials used for DIXI probes are in accordance with their intended application and geometrical specifications:

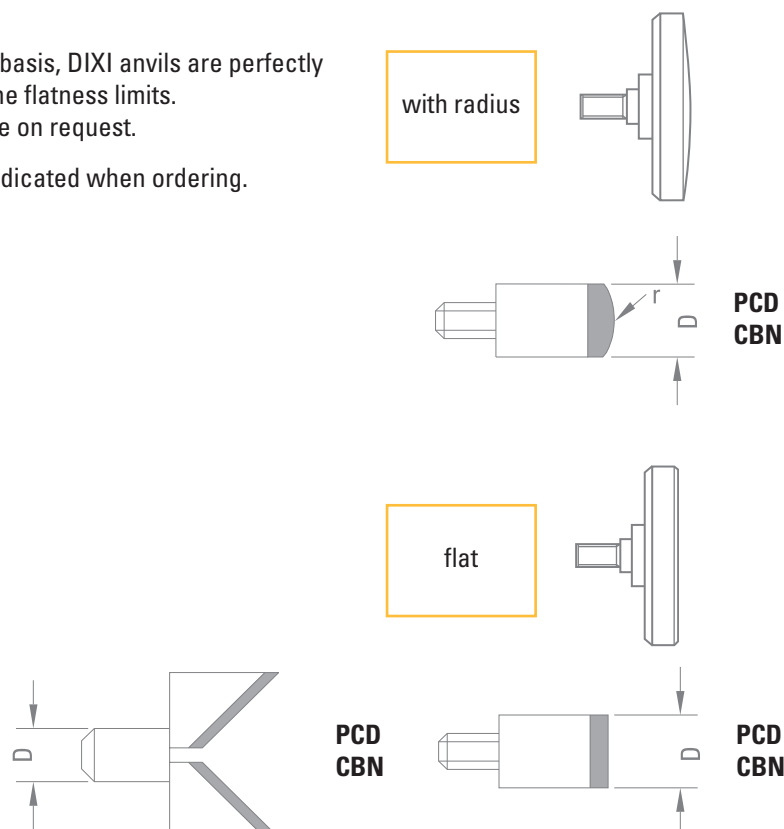
- Minimal inertia
- Minimal bending
- Wear and/or environment resistance
- Specific geometry
- Precision

Dimensions and materials must be indicated when ordering.

SOLID CARBIDE ANVILS

Absolutely necessary as a reference basis, DIXI anvils are perfectly polished and manufactured to very fine flatness limits. PCD and CBN anvils are also available on request.

Dimensions and diameters must be indicated when ordering.



INFORMATIONS

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PICTROGRAMS



How to use



Cutting conditions



All directions possible



Only contouring



Contouring and angular plunging



Contouring and plunging



DIN norms



ISO norms



DIXI norms



Parting off



Slotting



Different helix angles



Irregular teeth



With flat clamping



With chamfer



Chamfer



Radius



Sharp corner



Radius tolerance



Profile form tolerance



Web thinning



Centre cutting



Centre cutting for $\varnothing > \dots$



No centre cutting



No cooling



TC cooling



FC cooling



For a through hole



For a blind hole

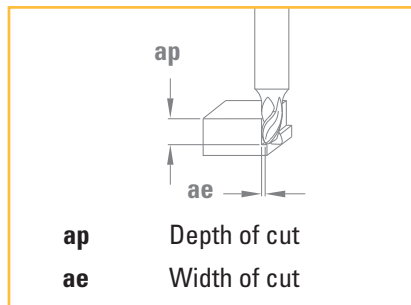
P M H K S N Materials groups

>1500 N/mm² Hardness of material

INFORMATION

Cutting material

		Carbide
PCD		Polycrystalline diamond
CVD		CVD Polycrystalline diamond
DIA		Monocrystalline diamond



Coatings

TiAlN		With TiAlN coating
DICUT		With DICUT coating
XIDUR		With XIDUR coating
C-TOP		With C-TOP coating
CUTINOX		With CUTINOX coating
DAC		With DAC coating
DIXAL		With DIXAL coating
DLC		With DLC coating
DIAMANT		With diamond coating
DINAC		With DINAC coating
DI-TOP		With DI-TOP coating

Z	Number of teeth
Vc	Cutting speed [m/min]
f	Feed / revolution [mm/rev.]
Vf	Feed in [mm/min]
n	Rotation speed [rpm]
Rm	Tensile strength [N/mm ²]
fz	Feed per tooth [mm]
R	Right-hand cutting
L	Left-hand cutting
P.	Page

COOLANT STYLES

	Symbol	Description	Typical use	Example
		-HH Helicoidal holes	Twist drills Twist mills	DIXI 1145-HH
		-SH Straight holes	Straight flute slot drills	DIXI 72420-SH
		-TC Through hole	Solid carbide reamers	POLY 4001-TC
		-FC Straight holes - radial outlet	End mills with flute coolant	DIXI 7563-FC
		-PH Peripheral holes	Micro-mills	DIXI 1738-PH
		-SC Slot coolant	Straight flute slot drills Solid carbide reamers	POLY 4005-SC

[μm]

[mm]	D10	E9	F7	F8	G7	G9	H6	H7	H8	H9	H10	H11	H12	H13	JS7	JS9	K6	K7	M6	M7	N7	N9	P7	P9
- 3	+ 60 + 20	+ 39 + 14	+ 16 + 6	+ 20 + 6	+ 12 + 2	+ 27 + 2	+ 6 + 0	+ 10 + 0	+ 14 + 0	+ 25 + 0	+ 40 + 0	+ 60 + 0	+ 100 + 0	+ 140 + 0	± 5	±12.5	0 - 6	0 - 10	2 - 8	2 - 12	4 - 14	4 - 29	6 - 16	6 - 31
3 > Ø ≥ 6	+ 78 + 30	+ 50 + 20	+ 22 + 10	+ 28 + 10	+ 16 + 4	+ 34 + 4	+ 8 + 0	+ 12 + 0	+ 18 + 0	+ 30 + 0	+ 48 + 0	+ 75 + 0	+ 120 + 0	+ 180 + 0	± 6	± 15	+ 2 - 6	+ 3 - 9	1 - 9	0 - 12	4 - 16	0 - 30	8 - 20	12 - 42
6 10	+ 98 + 40	+ 61 + 25	+ 28 + 13	+ 35 + 13	+ 20 + 5	+ 41 + 5	+ 9 + 0	+ 15 + 0	+ 22 + 0	+ 36 + 0	+ 58 + 0	+ 90 + 0	+ 150 + 0	+ 220 + 0	± 7.5	± 18	+ 2 - 7	+ 5 - 10	3 - 12	0 - 15	4 - 19	0 - 36	9 - 24	15 - 51
10 18	+ 120 + 50	+ 75 + 32	+ 34 + 16	+ 43 + 16	+ 24 + 6	+ 49 + 6	+ 11 + 0	+ 18 + 0	+ 27 + 0	+ 43 + 0	+ 70 + 0	+ 110 + 0	+ 180 + 0	+ 270 + 0	± 9	±21.5	+ 2 - 9	+ 6 - 12	4 - 15	0 - 18	5 - 23	0 - 43	11 - 29	18 - 61
18 30	+ 149 + 65	+ 92 + 40	+ 41 + 20	+ 53 + 20	+ 28 + 7	+ 59 + 7	+ 13 + 0	+ 21 + 0	+ 33 + 0	+ 52 + 0	+ 84 + 0	+ 130 + 0	+ 210 + 0	+ 330 + 0	±10.5	± 26	+ 2 - 11	+ 6 - 15	4 - 17	0 - 21	7 - 28	0 - 52	14 - 35	22 - 74
30 50	+ 180 + 80	+ 112 + 50	+ 50 + 25	+ 64 + 25	+ 34 + 9	+ 71 + 9	+ 16 + 0	+ 25 + 0	+ 39 + 0	+ 62 + 0	+ 100 + 0	+ 160 + 0	+ 250 + 0	+ 390 + 0	±12.5	± 31	+ 3 - 13	+ 7 - 18	4 - 20	0 - 25	8 - 33	0 - 62	17 - 42	26 - 88
50 80	+ 220 + 100	+ 134 + 60	+ 60 + 30	+ 76 + 30	+ 40 + 10		+ 19 + 0	+ 30 + 0	+ 46 + 0	+ 74 + 0	+ 120 + 0	+ 190 + 0	+ 300 + 0	+ 460 + 0	± 15	± 37	+ 4 - 15	+ 9 - 21	5 - 24	0 - 30	9 - 39	0 - 74	21 - 51	32 - 106
80 120	+ 260 + 120	+ 159 + 72	+ 71 + 36	+ 90 + 36	+ 47 + 12		+ 22 + 0	+ 35 + 0	+ 54 + 0	+ 87 + 0	+ 140 + 0	+ 220 + 0	+ 350 + 0	+ 540 + 0	±17.5	±43.5	+ 4 - 18	+ 10 - 15	6 - 28	0 - 35	10 - 45	0 - 87	24 - 59	37 - 124
120 180	+ 305 + 145	+ 185 + 85	+ 83 + 43	+ 106 + 43	+ 54 + 14		+ 25 + 0	+ 40 + 0	+ 63 + 0	+ 100 + 0	+ 160 + 0	+ 250 + 0	+ 400 + 0	+ 630 + 0	± 20	± 50	+ 4 - 21	+ 12 - 28	8 - 33	0 - 40	12 - 52	0 - 100	28 - 68	43 - 143
180 250	+ 355 + 170	+ 215 + 110	+ 96 + 50	+ 122 + 50	+ 61 + 15		+ 29 + 0	+ 46 + 0	+ 72 + 0	+ 115 + 0	+ 185 + 0	+ 290 + 0	+ 460 + 0	+ 720 + 0	± 23	±57.5	+ 5 - 24	+ 13 - 33	8 - 37	0 - 46	14 - 60	0 - 115	33 - 79	50 - 165
250 315	+ 400 + 190	+ 240 + 110	+ 108 + 56	+ 137 + 56	+ 69 + 17		+ 32 + 0	+ 52 + 0	+ 81 + 0	+ 130 + 0	+ 210 + 0	+ 320 + 0	+ 520 + 0	+ 810 + 0	± 26	± 65	+ 5 - 27	+ 16 - 36	9 - 41	0 - 52	14 - 66	0 - 130	36 - 88	56 - 186
315 400	+ 440 + 210	+ 265 + 125	+ 119 + 62	+ 151 + 62	+ 75 + 18		+ 36 + 0	+ 57 + 0	+ 89 + 0	+ 140 + 0	+ 230 + 0	+ 360 + 0	+ 570 + 0	+ 890 + 0	±28.5	± 70	+ 7 - 29	+ 17 - 40	10 - 46	0 - 57	16 - 73	0 - 140	41 - 98	62 - 202

[μm]

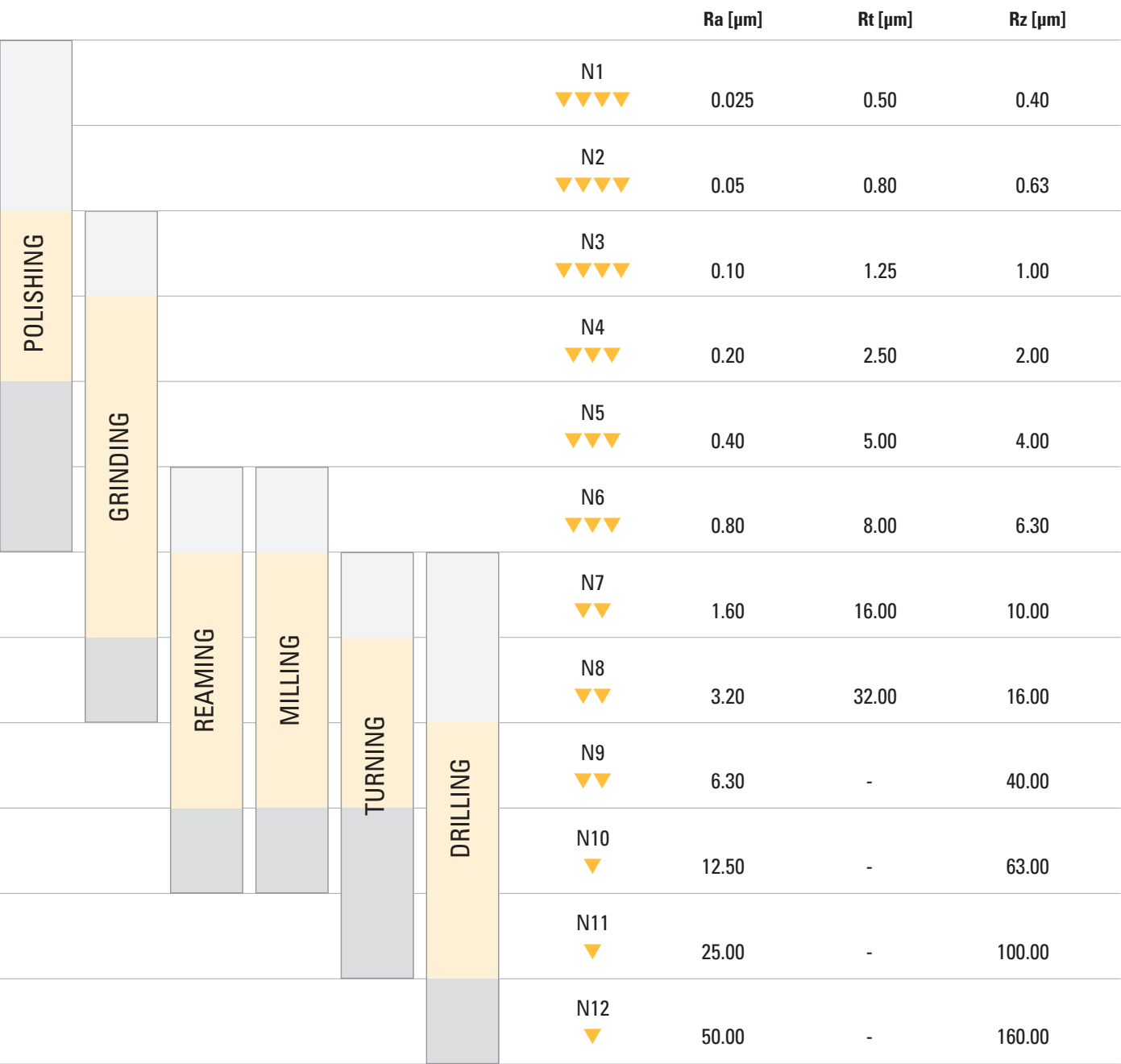
[mm]	d9	e8	f7	g6	h5	h6	h7	h8	h9	h10	h11	js5	js6	js12	js13	js14	k5	k6	m5	m6	n5	n6	p6
- 3	- 20 - 45	- 14 - 28	- 6 - 16	- 2 - 8	0 - 4	0 - 6	0 - 10	0 - 14	0 - 25	0 - 40	0 - 60	± 2	± 3	± 50	± 70	±125	+ 4 + 0	+ 6 + 0	+ 6 + 2	+ 8 + 2	+ 8 + 4	+ 10 + 4	+ 12 + 6
3 > Ø ≥ 6	- 30 - 60	- 20 - 38	- 10 - 22	- 4 - 12	0 - 5	0 - 8	0 - 12	0 - 18	0 - 30	0 - 48	0 - 75	± 2.5	± 4	± 60	± 90	±150	+ 6 + 1	+ 9 + 1	+ 9 + 4	+ 12 + 4	+ 13 + 8	+ 16 + 8	+ 20 + 12
6 10	- 40 - 76	- 25 - 47	- 13 - 28	- 5 - 14	0 - 6	0 - 9	0 - 15	0 - 22	0 - 36	0 - 58	0 - 90	± 3	± 4.5	± 75	± 110	±180	+ 7 + 1	+ 10 + 1	+ 12 + 6	+ 15 + 6	+ 16 + 10	+ 19 + 10	+ 24 + 15
10 18	- 50 - 93	- 32 - 59	- 16 - 34	- 6 - 17	0 - 8	0 - 11	0 - 18	0 - 27	0 - 43	0 - 70	0 - 110	± 4	± 5.5	± 90	± 135	±215	+ 9 + 1	+ 12 + 1	+ 15 + 7	+ 18 + 7	+ 20 + 12	+ 23 + 12	+ 29 + 18
18 30	- 65 - 117	- 40 - 73	- 20 - 41	- 7 - 20	0 - 9	0 - 13	0 - 21	0 - 33	0 - 52	0 - 84	0 - 130	± 4.5	± 6.5	± 105	± 165	±260	+ 11 + 2	+ 15 + 2	+ 17 + 8	+ 21 + 8	+ 24 + 15	+ 28 + 15	+ 35 + 22
30 50	- 80 - 142	- 50 - 89	- 25 - 50	- 9 - 25	0 - 11	0 - 16	0 - 25	0 - 39	0 - 62	0 - 100	0 - 160	± 5.5	± 8	± 125	± 195	±310	+ 13 + 2	+ 18 + 2	+ 20 + 9	+ 25 + 9	+ 28 + 17	+ 33 + 17	+ 42 + 26
50 80	- 100 - 174	- 60 - 106	- 30 - 60	- 10 - 29	0 - 13	0 - 19	0 - 30	0 - 46	0 - 74	0 - 120	0 - 190	± 6.5	± 9.5	± 150	± 230	±370	+ 15 + 2	+ 21 + 2	+ 24 + 11	+ 30 + 11	+ 33 + 20	+ 39 + 20	+ 51 + 32
80 120	- 120 - 207	- 72 - 126	- 36 - 71	- 12 - 34	0 - 15	0 - 22	0 - 35	0 - 54	0 - 87	0 - 140	0 - 220	± 7.5	± 11	± 175	± 270	±435	+ 18 + 3	+ 25 + 3	+ 28 + 13	+ 35 + 13	+ 38 + 23	+ 45 + 23	+ 59 + 37
120 180	- 145 - 245	- 85 - 148	- 43 - 83	- 14 - 39	0 - 18	0 - 25	0 - 40	0 - 63	0 - 100	0 - 160	0 - 250	± 9	±12.5	± 200	± 315	±500	+ 21 + 3	+ 28 + 3	+ 33 + 15	+ 40 + 15	+ 45 + 27	+ 52 + 27	+ 68 + 43
180 250	- 170 - 285	- 100 - 172	- 50 - 96	- 15 - 44	0 - 20	0 - 29	0 - 46	0 - 72	0 - 115	0 - 185	0 - 290	± 10	±14.5	± 230	± 360	±575	+ 24 + 4	+ 33 + 4	+ 37 + 17	+ 46 + 17	+ 51 + 31	+ 50 + 31	+ 79 + 50
250 315	- 190 - 320	- 110 - 191	- 56 - 108	- 17 - 49	0 - 23	0 - 32	0 - 52	0 - 81	0 - 130	0 - 210	0 - 320	±11.5	± 16	± 260	± 405	±650	+ 27 + 4	+ 36 + 4	+ 43 + 20	+ 52 + 20	+ 57 + 34	+ 66 + 34	+ 88 + 56
315 400	- 210 - 350	- 125 - 214	- 62 - 119	- 18 - 54	0 - 25	0 - 36	0 - 57	0 - 89	0 - 140	0 - 230	0 - 360	±12.5	± 18	± 285	± 445	±700	+ 29 + 4	+ 40 + 4	+ 46 + 21	+ 57 + 21	+ 62 + 37	+ 73 + 37	+ 98 + 62

HARDNESS CHART

Rm	Brinell	Vickers	Rockwell	
[N/mm²]	[HB]	[HV 30]	[HRB]	[HRC]
370	109	115	66.7	
385	114	120		
400	119	125		
415	124	130	71.2	
430	128	135	75	
450	133	140		
465	138	145	78.7	
480	143	150		
495	147	155		
510	152	160	81.7	
530	156	165	85	
545	162	170		
560	166	175	87.1	
575	171	180		
595	176	185		
610	181	190	89.5	
625	185	195	91.5	
640	190	200		
660	195	205	92.5	
675	199	210	93.5	
690	204	215	94	
705	209	220	95	
720	214	225	96	
740	219	230	96.7	
755	223	235	98.1	20.3
770	228	240		21.3
785	233	245		
800	238	250	99.5	22.2
820	242	255	101	23.1
835	247	260		24
850	252	265	102	24.8
865	257	270		25.6
880	261	275		26.4
900	266	280	104	27.1
915	271	285	105	27.8
930	276	290		28.5

Rm	Brinell	Vickers	Rockwell
[N/mm ²]	[HB]	[HV 30]	[HRC]
950	280	295	29.2
965	285	300	29.8
995	295	310	31
1030	304	320	32.2
1060	314	330	33.3
1095	323	340	34.4
1125	333	350	35.5
1155	342	360	36.6
1190	352	370	37.7
1220	361	380	38.8
1255	371	390	39.8
1290	380	400	40.8
1320	390	410	41.8
1350	399	420	42.7
1385	409	430	43.6
1420	418	440	44.5
1455	428	450	45.3
1485	437	460	46.1
1520	447	470	46.9
1555	456	480	47.7
1630	475	500	49.1
1700	494	520	50.5
1775	513	540	51.7
1845	532	560	53
1920	551	580	54.1
1995	570	600	55.2
2070	589	620	56.3
2145	608	640	57.3
		660	58.3
		680	58.3
		700	60.1
		720	61
		740	61.8
		760	62.5
		780	63.3
		800	64

ROUGHNESS CHART



Machining



MATERIAL GROUPS AND EXAMPLES

Groups		W.Nr.	DIN	AISI/ATSM	AFNOR	Commercial name	
P	Lead alloyed steel	Steel + Pb	1.0715 1.0718 1.0722 1.0727 1.0736 1.0737 1.4197	9 SMn 28 9 SMnPb 28 10 SPb 20 11SmPb30 9 SMn 36 9 SMnPb 36 X22CrNiMo13 1 1	1213 12 L 13 11 L 08 12L13 1215 12 L14 420F	S250Pb S 250 Pb 10 PbF 2 S250Pb S 300 S 300 Pb	4C27A FINEMAC
P	Unalloyed steel / Low alloyed < 600N/mm²	Steel < 600MPa	1.0201 1.0401 1.0402 1.0406	St36 C 15 C 22 C 25	1006 M 1015 M1020 (M) 1025	Fd 5 AF 37 C 12 AF 42 C 20 C 25	
P	Unalloyed steel / Low alloyed >600 N/mm²	Low alloyed steel	1.0473 1.0481 1.0501 1.0503 1.0511 1.0535 1.0562 1.0601 1.1121 1.0605 1.1133 1.1141 1.1151 1.1158 1.1181 1.1186 1.1191 1.1167 1.1203 1.1221 1.1248 1.1274 1.2067 1.2162 1.2311 1.251 1.2516 1.2542 1.255 1.2711 1.2718 1.2738 1.2744 1.2762 1.2826 1.2842 1.5415 1.5419 1.5637 1.5752 1.5919 1.6523 1.6582 1.6587 1.6657 1.7103 1.7147	19 Mn 6 17 Mn 4 C 35 C 45 C 40 C 55 StE 355 C 60 Ck 10 C 75 20 Mn 5 Ck 15 Ck 22 Ck 25 Ck 35 Ck 40 Ck 45 36 Mn 5 Ck 55 Ck 60 Ck 75 Ck 101 100 Cr 6 21 MnCr 5 40 CrMnMo 7 100 MnCrW 4 120 WV 4 45 WCrV 7 60 WCrV 7 54 NiCrMo V6 55 NiCr 10 40 CrMnNiMo 8 57 NiCrMoV 7 7 75 CrMoNiW 6 7 60 MnSiCr 4 90 MnCrV 8 15 Mo 3 22 Mo 4 10 Ni 14 15 NiCr 13 15 CrNi 6 21 NiCrMo 2 34 CrNiMo 6 17 CrNiMo 6 14 NiCrMo 13 4 67 SiCr 5 20 MnCr 5	A 537 Cl. 1 A 516 Gr. 70 1035 1045 1040 1055 A 633 Gr. C 1060 1010 1074 1022 1015 1020 1025 1035 1040 1045 1335 1055 1060 1074 1095 L1 L 3 ~ P 2 ~ P 20 O 1 S 1 S 1 ~ 6 F 5 ~ S 4 ~ O 2 A 204 Gr. A 4419 A 350-LF 3 3310 3115 8620 4337 9310 5115 5120	A 52 CP ; AP A 48 CP ; AP 1 C 35 1 C 45 1 C 40 1 C 55 FeE 355 KG N 1 C 60 XC 10 20 M 5 XC 12 2 C 22 2 C 25 2 C 35 2 C 40 2 C 45 35 M 5 2 C 55 2 C 60 XC 75 XC 100 Y 100 C 6 20 MC 5 40 CMD 8 90 MWCV 5 120 WV 10 55 WC 20 55 WCS 20 55 NCDV 6 55 NC 10 90 MCV 8 15 D 3 12 N 14 12 NC 15 16 NC 6 20 NCD 2 34 CrNiMo 8 18 NCD 6 16 NCD 13 16MC 4	V945 <





MATERIAL GROUPS AND EXAMPLES

Groups		W.Nr.	DIN	AISI/ATSM	AFNOR	Commercial name
M	Aust. stainless steel	1.4571 1.4162 1.4362 1.4410 1.4452 1.4462	X 6 CrNiMoTi 17 12 2 X2CrMnNiN22-5-2 X 2 CrNiN 23.4 G-X10CrNiMo 18 9 X8 CrMnMoN 23 21 1 X2CrNiMoN22 5 3	316 Ti	Z 6 CNDT 17-12 Z3CND22-05Az	Biodur 108
K	Grey cast iron	0.601 0.6015 0.602 0.6025 0.6030 0.6035 0.6040	GG 10 GG 15 GG 20 GG 25 GG 30 GG 35 GG40	A48-20 B A48-25 B A48-30 B A48-35 B A48-45 B A48-50 B A48-55 B	Ft 10 D Ft 15 D Ft 20 D Ft 25 D Ft 30 D Ft 35 D Ft 40 D	
K	Nodular ferritic cast iron	0.6652 0.6655 0.6656 0.6660 0.6661 0.6667 0.6680 0.7033 0.7040 0.7043	GGL-NiMn 13 7 GGL-NiCuCr 15 6 2 GGL-NiCuCr 15 6 3 GGL-NiCr 20 2 GGL-NiCr 20 3 GGL-NiSiCr 20 5 3 GGL-NiSiCr 30 5 5 GGG-35.3 GGG-40 GGG 40.3	A436 Type 1 A436 Type 1b A436 Type 2 A436 Type 2b A436 Type 4	L-NM 13 7 L-NUC 15 6 2 L-NUC 15 6 3 L-NC 20 2 L-NC 20 3 L-NSC 20 5 3 L-NSC 30 5 5	
K	Nodular pearlitic cast iron	0.7050 0.7060 0.7070 0.7080	GGG-50 GGG 60 GGG-70 GGG-80	65-45-12 80-55-06 100-70-03 120-90-02	FGS 500-7 FGS 600-3 FGS 700-2 FGS 800-2	
K	Alloyed cast iron (with graphite spheroidal austenitic)	0.7652 0.7659 0.7660 0.7661 0.7665 0.7670 0.7673 0.7676 0.7677 0.7679 0.7680 0.7683 0.7685 0.7688	GGG-NiMn 13 7 GGG-NiCrNb 20 2 GGG-NiCr 20 2 GGG-NiCr 20 3 GGG-NiSiCr 20 5 2 GGG-Ni 22 GGG-NiMn 23 4 GGG-NiCr 30 3 GGG-NiCr 30 1 GGG-NiSiCr 30 5 2 GGG-NiSiCr 30 5 5 GGG-Ni 35 GGG-NiCr 35 3 GGG-NiSiCr 35 5 2	A 439 Type D-2 A 439 Type D-2B A 439 Type D-2C A 571 Type D-2M A 439 Type D-3 A 439 Type D-3A A 439 Type D-4 A 439 Type D-5 A 439 Type D-5B	S-NM 13 7 S-NC 20 2 S-NC 20 3 S-NSC 20 5 2 S-N 22 S-NM 23 4 S-NC 30 3 S-NC 30 1 S-NSC 30 5 5 S-N 35 S-NC 35 3	
K	Malleable cast iron	0.8035 0.8038 0.8040 0.8045 0.8170 0.8135 0.8165	GTW-35-04 GTW-35-04 GTW-40-05 GTW-45-07 GTS-70-02 GTS-35-10 GTS-65-02	A220-80002 32510 70003	Mn700-2 MN 35-10 MP 60-3	
K	High alloyed cast iron	0.9610 0.9620 0.9625 0.9630 0.9635 0.9640 0.9645 0.9650 0.9655	G-X 300 NiMo 3 Mg G-X 260 NiCr 4 2 G-X 330 NiCr 4 2 G-X 300 CrNiSi 9 5 2 G-X 300 CrMo 15 3 G-X 300 CrMoNi 15 2 1 G-X 260 CrMoNi 20 2 1 G-X 260 Cr 27 G-X 300 CrMo 27 1			
S	Stainless and heat resistant stain	1.4718 1.4724 1.4731	X 45 CrSi 9 3 X 10 CrAl 13 X 40 CrSiMo 10 2	HNV 3	Z 45 CS 9 Z 10 C 13 Z 40 CSD 10	



MATERIAL GROUPS AND EXAMPLES

Groups		W.Nr.	DIN	AISI/ATSM	AFNOR	Commercial name	
S	Special alloys	1.4742	X 10 CrAl 18		Z 10 CAS 18	A286 MONEL K500	
		1.4762	X 10 CrAl 24	-446	Z 10 CAS 24		
		1.4828	X 15 CrNiSi 20 12	309	Z 15 CNS 20-12		
		1.4828 (2)	X18CrNiSi20-12		Z 17 CNS 20-12		
		1.4833	X 7 CrNi 23 14	309 S	Z 15 CN 24-13		
		1.4837	G-X 40 CrNiSi 25 12				
		1.4841	X 15 CrNiSi 25 20	314	Z 12 CNS 25-20		
		1.4845	X 12 CrNi 25 21	310 S	Z 8 CN 25-20		
		1.4848	G-X 40 CrNiSi 25 20	HK			
		1.4864	X 12 NiCrSi 36 16	330	Z 12 NCS 37-18		
		1.4865	G-X 40 NiCrSi 38 18				
		1.4871	X 53 CrMnNiN 21 9	EV 8	Z 52 CMN 21-09		
		1.4873	X 45 CrNiW 18 9		Z 35 CNWS 14-14		
		1.4876	X 10 NiCrAlTi 32 20	B 163	Z 8 NC 32-21		
		1.4878	X 12 CrNiTi 18 9	321	Z 6 CNT 18-12 (B)		
		1.4922	X 20 CrMoV 12 1		Z 20 CDV 12		
		1.4980	X 5 NiCrTi 26 5				
		2.4375	NiCu30Al	4676			
	S	Special alloys	2.4603	NiCr20TiAl	5390A	NC22FeD NC20TA	HASTELLOY G30 NIMONIC 80 A NICKEL 200 WASPALLOY INCONEL 617 INCONEL 718 INCONEL X470 INCONEL 600 INCONEL625 NIMONIC 90 MAR-M 421 UDIMET 700 UDIMET 720
			2.4631				
2.4066							
2.4654							
2.4663			NiFe35Cr14MoTi	5660	ZSNCDT42		
2.4668			NiCr19Fe19NbMo	5383	NC19eNB		
2.4669				N 07750			
2.4816			NiCr 15 Fe	AMS 5540	NC22FeDNB		
2.4856			NiCr22Mo9Nb	5666			
2.4969			NiCr 20 Co 18 Ti	5712, 5713 687 5583			
			NiCr16Co10WAlTi				
			NiCo15Cr15MoAlTi				
	NiCr19Fe19NbMo						
S	Co cobalt	Special alloys<<	CoCrW10TaZrB	670 F75		MAR-M 302 MAR M-509 HS 25 STELLITE 21 STELLITE 30 PHYNOX HAYNES 25	
			CoCr24Ni10WtaZrB				
			CoCr20W15Ni				
S	Titanium, titanium alloy	2.4964	CoCr20Ni16Mo7 CoCr20W15Ni	5537C	KC20WN		
		3.7025	Ti99.2	Grade1	T-A6V		
		3.7035	Ti99.4	Grade2			
		3.7055	Ti99.4	Grade3			
		3.7065		Grade4			
		3.7025 Pd					
		3.7035 Pd					
		3.7105		Grade12			
		3.7165	TiAl6V4	Grade5			
		3.7145.7	TiAl6Sn2Zr4Mo2Si				
3.7175	TiAl6V6Sn2						
N	Copper alloy - easy to machine	Cu alloy Silver Gold	2.0331	Cu Zn 36 Pb 1.5		Cu Zn 35 Pb 2	
			2.0331	Cu Zn 36 Pb 1.5			
			2.0332	Cu Zn 37 Pb 0.5			
			2.0371	Cu Zn 38 Pb 1.5		Cu Zn 38 Pb 2	
			2.0371	Cu Zn 38 Pb 1.5		Cu Zn 36 Pb 3	
			2.0375	Cu Zn 36 Pb 3		Cu Zn 39 Pb 2	
			2.0380	Cu Zn 39 Pb 2		Cu Zn 40 Pb 3	
			2.0401	Cu Zn 39 Pb 3		Cu Zn 39 Pb 2	
			2.0402	Cu Zn 40 Pb 2			

MATERIAL GROUPS AND EXAMPLES

	Groups	W.Nr.	DIN	AISI/ATSM	AFNOR	Commercial name
	Cu alloy Silver Gold	2.058 2.0740 2.0771 2.0771 2.0780 2.0790 2.1546 2.1016	Cu Zn 40 Mn Pb 1 Cu Ni 18 Zn 20 Cu Ni Zn 39 Cu Ni 7 Zn 39 Cu Ni 12 Zn 30 Pb 1 Cu Ni 18 Zn 19 Pb 1 Cu Te P CuSn4Pb4Zn4		Cu Ni 18 Zn 2 C 109	
N	Non alloyed copper, Copper alloy - difficult to machine	Cu alloy difficult to machine 2.0040 2.0060 2.0065 2.0321 2.0920 2.1247	OF-Cu E-Cu57 E-Cu58 CuZn37 Cu Al8 CuZn42 CuBe2 CuNi7.5Sn5Te			DECLAFOR 1015
N	Aluminium < 8% Si	Al < 8% Si 3.0205 3.0257 3.0515 3.3315 3.3525 3.3535 3.3537 3.3545 3.3547 3.3211 3.2315 3.1355 3.4335 3.4365	Al 99.5 E-AL AlMn1 AlMg1 AlMg2Mn0.3 AlMg3 AlMg2.7Mn AlMg4Mn AlMg4.5Mn AlMg1SiCu AlMgSi1 AlCuMg2 AlZn4.5Mg1 AlZnMgCu1.5	A5 1350 3103 5005 5251 5754 5454 5086 5083 6061 6082 2024 7020 7075		
N	Aluminium > 8% Si	Al > 8% Si 3.2373 3.2381 3.2581 3.2291	AlSi9Mg AlSi10Mg AlSi12CuFe AlSi20	A-S9G A-S10G A-S13G A-S20		

APPLICATION FIELDS OF COATINGS

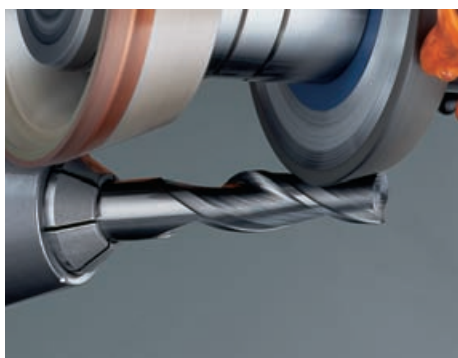
Material to be machined			TiAIN		DICUT		XIDUR		C-TOP	
			Hardness (HV0.05) 3'100	Temp. max 800°C	Hardness (HV0.05) 3'000	Temp. max 800°C	Hardness (HV0.05) 3'100	Temp. max 900°C	Hardness (HV0.05) 3'400	Temp. max 1'100°C
P	Unalloyed steel / Low alloyed steel	< 600 N/mm ²	○		○		○		◎	
P	Unalloyed steel / Low alloyed steel	600 – 1500 N/mm ²	○		○		○		◎	
P	Lead alloyed cutting steel		○		○					
P	High alloyed steel	700 – 1500 N/mm ²	○		○		○		◎	
H	Hardened steel >50HRC		○				◎		◎	
M	Stainless steel	400 – 700 N/mm ²	○		◎		○		◎	
M	DUPLEX stainless steel	> 800 N/mm ²	○		○		○		◎	
K	Grey cast iron / Nodular pearlitic iron	< 250 HB	○		○					
K	Alloyed cast iron / Nodular pearlitic iron	> 250 HB	○		○					
K	Nodular ferritic cast iron / Malleable cast iron		○		○					
S	Special alloys / Heat resistant stainless steel	Inconel Nimonic Hastelloy			○		◎		◎	
S	Titanium, titanium alloys								○	
N	Copper alloys - easy to machine (brass - bronze)									
N	Copper alloys - difficult to machine / Aluminium bronze	(CuAlFe) (Ampco)							○	
N	Aluminium alloys	Si < 8%								
N	Cast aluminium	Si > 8%								
N	Graphite									
N	Plastic									
N	CRFP									
N	Gold, silver								○	
N	Platinum									

✕ Inapplicable
 ○ Good
 ◎ Excellent

						Engraving				Tapping			
CUTINOX		DAC		DIXAL		DLC		DIAMOND		DINAC		DI-TOP	
Hardness (HV0.05) 3'200	Temp. max 1'000°C	Hardness (HV0.05) 1'900	Temp. max 700°C	Hardness (HV0.05) 2'100	Temp. max 550°C	Hardness (HV0.05) 4'800	Temp. max 500°C	Hardness (HV0.05) 10'000	Temp. max 500°C	Hardness (HV0.05) 3'250	Temp. max 450°C	Hardness (HV0.05) 3'200	Temp. max 450°C
⊙						x		x		⊙		⊙	
⊙						x		x		⊙			
○						x		x		⊙		⊙	
⊙						x		x		⊙			
						x		x					
⊙						x		x		⊙			
⊙						x		x		⊙			
						x		x		○			
						x		x		○			
						x		x		○			
○						x		x					
						○				○			
		○		○		⊙				○		⊙	
		○		○		⊙		○		○		⊙	
		⊙		⊙		⊙		○					
						○		⊙					
								⊙					
						○							
						○		⊙					
						○		○		○			
						○		⊙					

SERVICES

REGRINDING



DIXI Polytool offers its clients a complete regrounding service for all types of carbide, HSS, PCD and natural diamond tools.

The service is available for the DIXI range of tools as well as the assortments of the competition.

The regrounding is realized on 5 axes grinding machines, in order to guarantee perfect geometry and advanced methods are utilized in the controls department.

Rapid execution allows our clients to maintain flexible planning.

E-SHOP

Order our standard tools online.



1 Item(s)



Art.	Title	QTY	Price
37253	DIXI 1101 Carbure D1: 0.8, L1: 1.3, D: 3.15, L: 31.5, Z: 2	1	€27.76 
Subtotal			€27.76
Go to your basket			



SPECIAL TOOLS QUOTATION REQUEST

Use our online formular.

CREATE YOUR TOOL

Tool type:

Milling cutter

Tool geometry

Twoflute

Tool option

Flat end

With chatter

Yes

Material

Steel

Field marked with a cross (*) are obligatory. Unless specified, standard DIN tolerances will be used.

D1 *

10

D2 *

6

L (see according to DIN standard)

60

L1 *

30

W (width) *

16

A

100

Dh *

0.0

Z *

3

Material to be machined *

Unhardened steel / Low alloyed steel (to DIN 79000)

Send quotation request



www.dixipolytool.com



COMPANY PROFILE

DIXI POLYTOOL S.A.



DIXI POLYTOOL S.A. is specialized in the production of tungsten carbide and diamond cutting tools as well as precision reamers.

The company is based in Le Locle since 1946. In 2014, the premises have been completely renovated and enlarged.

With the introduction of the Lean Project, back in 2013, and the heavy investments in the production, our efforts are also focused on supporting our 250 co-workers.

Eager to guarantee the quality of its products while preserving the environment, DIXI POLYTOOL S.A. elaborated a system of certified management according the standards ISO 9001 and ISO 14001.

A daily commitment to be eco-friendly

For several years, DIXI POLYTOOL SA has decided to use only 100% recycled paper, natural colouring ink for our catalogues and flyers. Furthermore, we are proud to be a precursor by using green energy for the maintenance of the building and the production, since January 2015.

Our commitment for the sustainable development...



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