



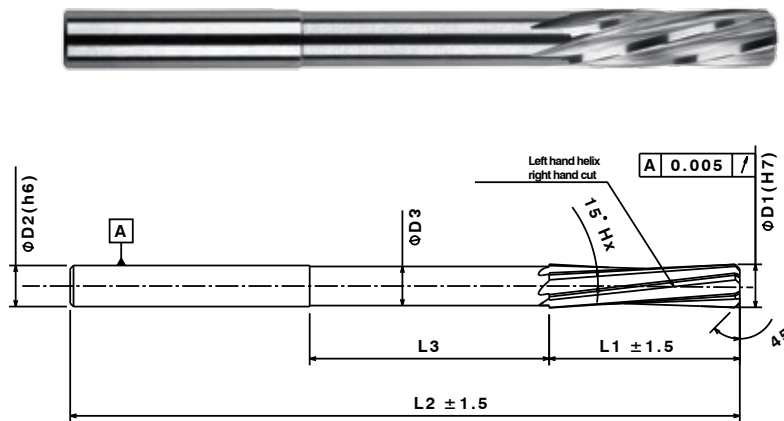
CARBIDE REAMER

About TMRT - Totem Multiflute Reaming Tools

- These reamers are designed for the highest metal removal rates from diameter 1.5mm–12mm as a standard
- All standard reamers are ground to an ISO H7 tolerance class hole to address most common applications.
- Special coatings and lead chamfer configurations enable high-speed machining of steel, stainless steel, cast iron, and non-ferrous materials at high speeds.

Features & Benefits

- Higher productivity and profitability
- Longer tool life with increased hole and surface quality
- Highest metal removal rate at higher speeds and feeds due to reaming-specific low cobalt grades and substrates.
- Intermediate diameters from 1.5mm - 20mm can be offered as per various lead chamfer configuration as a custom solution.
- All TMRT reamers are also offered with internal coolant supply.



P0-P6

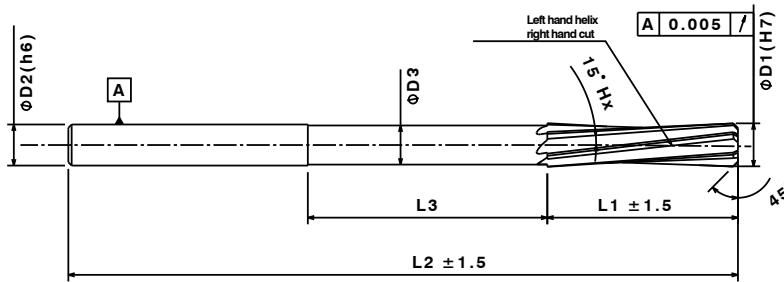
K1-K3

M1-M3

N1-N7

Unit : mm

ØD1	L1	L3	ØD3	L2	ØD2	z	SPIRAL FLUTE
mm	mm	mm	mm	mm	mm	mm	EDP No
1.5	16	16	1.4	57	3	4	FBK0508453
1.95	16	16	1.7	57	3	4	FBK0508442
1.96	16	16	1.7	57	3	4	FBK0508443
1.97	16	16	1.7	57	3	4	FBK0508444
1.98	16	16	1.7	57	3	4	FBK0508445
1.99	16	16	1.7	57	3	4	FBK0508446
2.0	16	16	1.8	57	3	4	FBK0508447
2.01	16	16	1.8	57	3	4	FBK0508448
2.02	16	16	1.8	57	3	4	FBK0508449
2.03	16	16	1.8	57	3	4	FBK0508450
2.04	16	16	1.8	57	3	4	FBK0508451
2.05	16	16	1.8	57	3	4	FBK0508452
2.95	16	16	2.7	65	3	4	FBK0508309
2.96	16	16	2.7	65	3	4	FBK0508310
2.97	16	16	2.7	65	3	4	FBK0508311
2.98	16	16	2.7	65	3	4	FBK0508312
2.99	16	16	2.7	65	3	4	FBK0508313
3.0	16	20	2.5	65	3	4	FBK0508314
3.01	16	20	2.51	65	3	4	FBK0508315
3.02	16	20	2.52	65	3	4	FBK0508316
3.03	16	20	2.53	65	3	4	FBK0508317
3.04	16	20	2.54	65	3	4	FBK0508318
3.05	16	20	2.55	65	3	4	FBK0508319
3.1	16	20	2.6	65	3	4	FBK0508320
3.2	16	20	2.7	65	3	4	FBK0508321
3.3	19	20	2.8	65	3	4	FBK0508322
3.35	19	20	2.85	65	3	4	FBK0508323
3.4	19	20	2.9	70	3	4	FBK0508324
3.45	19	20	2.95	70	3	4	FBK0508325
3.55	19	20	3.05	70	3	4	FBK0508326
3.6	19	20	3.1	70	3	4	FBK0508327
3.65	19	20	3.15	70	3	4	FBK0508328



P0-P6

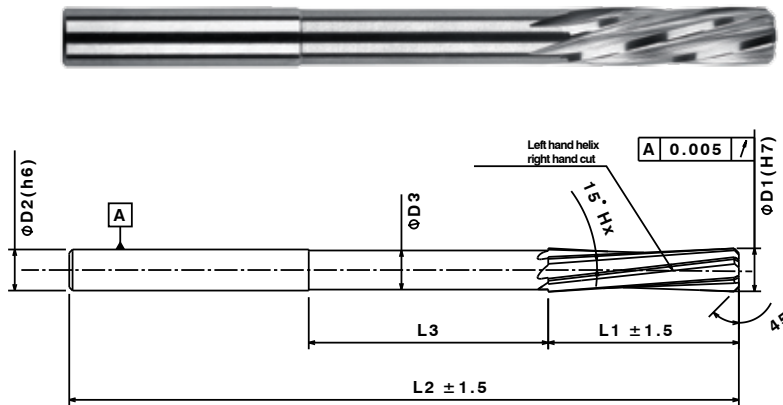
K1-K3

M1-M3

N1-N7

Unit : mm

ØD1	L1	L3	ØD3	L2	ØD2	z	SPIRAL FLUTE
mm	mm	mm	mm	mm	mm	mm	EDP No
3.7	19	25	3.2	70	4	4	FBK0508329
3.75	19	25	3.25	75	4	4	FBK0508330
3.8	19	25	3.3	75	4	4	FBK0508331
3.9	19	25	3.4	75	4	4	FBK0508332
3.95	19	25	3.45	75	4	4	FBK0508333
3.96	19	25	3.46	70	4	4	FBK0508334
3.97	19	25	3.47	70	4	4	FBK0508335
3.98	19	25	3.48	70	4	4	FBK0508336
3.99	19	25	3.49	70	4	4	FBK0508337
4.0	19	25	3.5	75	4	4	FBK0508338
4.01	19	25	3.51	70	4	4	FBK0508339
4.02	19	25	3.52	70	4	4	FBK0508340
4.03	19	25	3.53	70	4	4	FBK0508341
4.04	19	25	3.54	70	4	4	FBK0508342
4.05	19	25	3.55	75	4	4	FBK0508343
4.1	22	25	3.6	75	4	4	FBK0508344
4.15	22	25	3.65	75	4	4	FBK0508345
4.2	22	25	3.7	75	4	4	FBK0508346
4.25	22	25	3.75	80	4	4	FBK0508347
4.3	22	25	3.8	80	4	4	FBK0508348
4.35	22	25	3.85	80	4	4	FBK0508349
4.4	22	25	3.9	80	4	4	FBK0508350
4.45	22	25	3.95	80	4	4	FBK0508351
4.5	22	25	4	80	4	4	FBK0508352
4.55	22	25	4.05	80	4	4	FBK0508353
4.6	22	25	4.1	80	4	4	FBK0508354
4.65	22	25	4.15	80	5	6	FBK0508355
4.7	22	25	4.2	80	5	6	FBK0508356
4.74	7/8"	25	4.24	2-3/4"	5	6	FBK0508357
4.75	22	25	4.25	80	5	6	FBK0508358
4.8	22	29	4.3	86	5	6	FBK0508359
4.85	22	29	4.35	86	5	6	FBK0508360



P0-P6

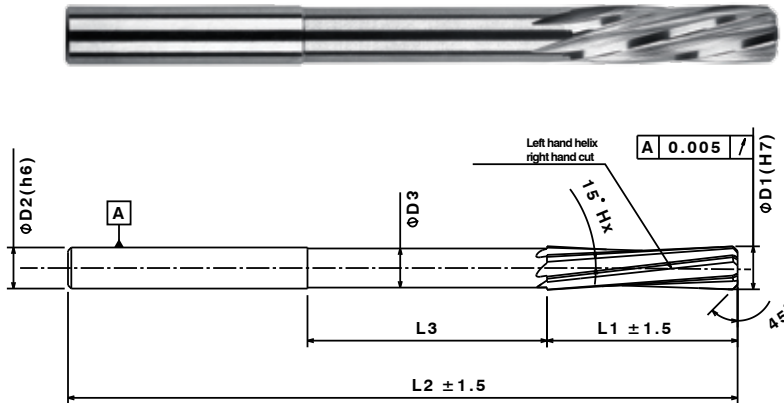
K1-K3

M1-M3

N1-N7

Unit : mm

ØD1	L1	L3	ØD3	L2	ØD2	z	SPIRAL FLUTE
mm	mm	mm	mm	mm	mm	mm	EDP No
4.9	25	29	4.4	85	5	6	FBK0508361
4.95	25	29	4.45	86	5	6	FBK0508362
4.96	25	29	4.46	86	5	6	FBK0508363
4.97	25	29	4.47	86	5	6	FBK0508364
4.99	25	29	4.49	86	5	6	FBK0508365
5.0	25	29	4.5	86	5	6	FBK0508366
5.01	25	29	4.51	86	5	6	FBK0508367
5.02	25	29	4.52	86	5	6	FBK0508368
5.03	25	29	4.53	86	5	6	FBK0508369
5.04	25	29	4.54	86	5	6	FBK0508370
5.05	25	29	4.55	86	5	6	FBK0508371
5.1	25	29	4.6	86	5	6	FBK0508372
5.15	25	29	4.65	86	5	6	FBK0508373
5.2	25	29	4.7	86	5	6	FBK0508374
5.25	25	29	4.75	86	5	6	FBK0508375
5.3	25	29	4.8	86	5	6	FBK0508376
5.35	25	29	4.85	86	5	6	FBK0508377
5.4	25	33	4.9	93	5	6	FBK0508378
5.45	25	33	4.95	93	5	6	FBK0508379
5.5	25	33	5	93	5	6	FBK0508380
5.55	25	33	5.05	93	5	6	FBK0508381
5.6	25	33	5.1	93	5	6	FBK0508382
5.65	25	33	5.15	93	6	6	FBK0508383
5.7	25	33	5.2	93	6	6	FBK0508384
5.75	25	33	5.25	93	6	6	FBK0508385
5.8	25	33	5.3	93	6	6	FBK0508386
5.85	25	33	5.35	93	6	6	FBK0508387
5.9	25	33	5.4	93	6	6	FBK0508388
5.95	25	33	5.45	93	6	6	FBK0508389
5.96	25	33	5.46	93	6	6	FBK0508390
5.97	25	33	5.47	93	6	6	FBK0508391
5.98	25	33	5.48	93	6	6	FBK0508392
5.99	25	33	5.49	93	6	6	FBK0508393



P0-P6

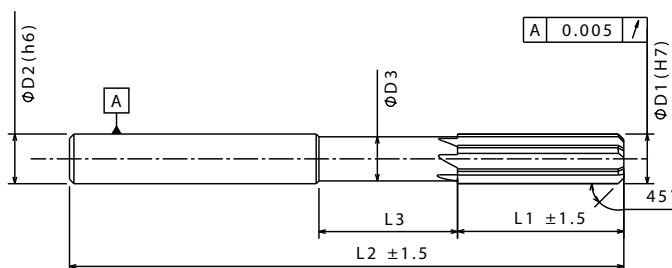
K1-K3

M1-M3

N1-N7

Unit : mm

ØD1	L1	L3	ØD3	L2	ØD2	z	SPIRAL FLUTE
mm	mm	mm	mm	mm	mm	mm	EDP No
6.0	25	33	5.5	93	6	6	FBK0508394
6.01	25	33	5.51	93	6	6	FBK0508395
6.02	25	33	5.52	93	6	6	FBK0508396
6.03	25	33	5.53	93	6	6	FBK0508397
6.04	25	33	5.54	93	6	6	FBK0508398
6.05	25	33	5.55	93	6	6	FBK0508399
6.06	25	33	5.56	93	6	6	FBK0508400
6.1	29	36	5.6	101	6	6	FBK0508401
6.13	29	36	5.63	101	6	6	FBK0508402
6.2	29	36	5.7	101	6	6	FBK0508403
6.25	29	36	5.75	101	6	6	FBK0508404
6.3	29	36	5.8	101	6	6	FBK0508405
6.4	29	36	5.9	101	6	6	FBK0508406
6.5	29	36	6	101	6	6	FBK0508407
6.95	29	36	6.45	101	6	6	FBK0508408
6.96	29	36	6.46	101	6	6	FBK0508409
6.97	29	36	6.47	101	6	6	FBK0508410
6.98	29	36	6.48	101	6	6	FBK0508411
6.99	29	36	6.49	101	6	6	FBK0508412
7.0	29	36	6.5	101	6	6	FBK0508413
7.98	32	40	7.48	117	8	6	FBK0508414
8.01	32	40	7.51	117	8	6	FBK0508415
8.03	32	40	7.53	117	8	6	FBK0508416
8.0	32	40	7.5	117	8	6	FBK0508417
8.5	32	40	8	117	8	6	FBK0508418
9.0	32	40	8.5	117	9	6	FBK0508419
9.5	32	40	9	117	9	6	FBK0508420
10.0	38	50	9.5	133	10	6	FBK0508421
10.5	38	50	10	133	10	6	FBK0508422
11.0	38	50	10.5	133	11	6	FBK0508423
11.5	38	50	11	133	11	6	FBK0508424
12.0	38	50	11.5	133	12	6	FBK0508425



P0-P6

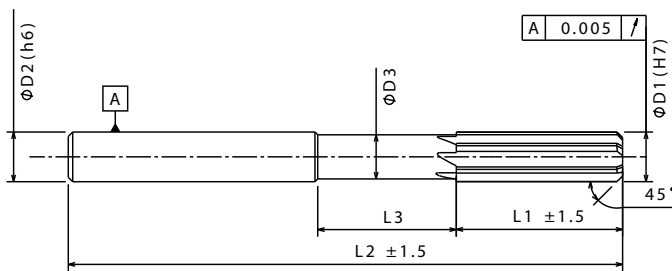
K1-K3

M1-M3

N1-N7

Unit : mm

ØD1	L1	L3	ØD3	L2	ØD2	z	STRAIGHT FLUTE
mm	mm	mm	mm	mm	mm	mm	EDP No
1.5	16	16	1.4	57	3	4	FBK0509075
1.95	16	16	1.7	57	3	4	FBK0509076
1.96	16	16	1.7	57	3	4	FBK0509077
1.97	16	16	1.7	57	3	4	FBK0509078
1.98	16	16	1.7	57	3	4	FBK0509079
1.99	16	16	1.7	57	3	4	FBK0509080
2.0	16	16	1.8	57	3	4	FBK0509081
2.01	16	16	1.8	57	3	4	FBK0509082
2.02	16	16	1.8	57	3	4	FBK0509083
2.03	16	16	1.8	57	3	4	FBK0509084
2.04	16	16	1.8	57	3	4	FBK0509085
2.05	16	16	1.8	57	3	4	FBK0509086
2.95	16	16	2.7	65	3	4	FBK0509087
2.96	16	16	2.7	65	3	4	FBK0509088
2.97	16	16	2.7	65	3	4	FBK0509089
2.98	16	16	2.7	65	3	4	FBK0509090
2.99	16	16	2.7	65	3	4	FBK0509091
3.0	16	20	2.5	65	3	4	FBK0509092
3.01	16	20	2.51	65	3	4	FBK0509093
3.02	16	20	2.52	65	3	4	FBK0509094
3.03	16	20	2.53	65	3	4	FBK0509095
3.04	16	20	2.54	65	3	4	FBK0509096
3.05	16	20	2.55	65	3	4	FBK0509097
3.1	16	20	2.6	65	3	4	FBK0509098
3.2	16	20	2.7	65	3	4	FBK0509099
3.3	19	20	2.8	65	3	4	FBK0509100
3.35	19	20	2.85	65	3	4	FBK0509101
3.4	19	20	2.9	70	3	4	FBK0509102
3.45	19	20	2.95	70	3	4	FBK0509103
3.55	19	20	3.05	70	3	4	FBK0509104
3.6	19	20	3.1	70	3	4	FBK0509105
3.65	19	20	3.15	70	3	4	FBK0509106



P0-P6

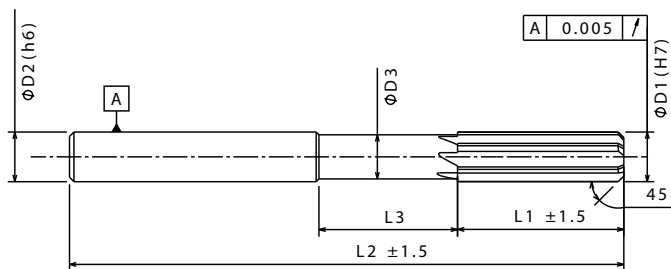
K1-K3

M1-M3

N1-N7

Unit : mm

ØD1	L1	L3	ØD3	L2	ØD2	z	STRAIGHT FLUTE
mm	mm	mm	mm	mm	mm	mm	EDP No
3.7	19	25	3.2	70	4	4	FBK0509107
3.75	19	25	3.25	75	4	4	FBK0509108
3.8	19	25	3.3	75	4	4	FBK0509109
3.9	19	25	3.4	75	4	4	FBK0509110
3.95	19	25	3.45	75	4	4	FBK0509111
3.96	19	25	3.46	70	4	4	FBK0509112
3.97	19	25	3.47	70	4	4	FBK0509113
3.98	19	25	3.48	70	4	4	FBK0509114
3.99	19	25	3.49	70	4	4	FBK0509115
4.0	19	25	3.5	75	4	4	FBK0509116
4.01	19	25	3.51	70	4	4	FBK0509117
4.02	19	25	3.52	70	4	4	FBK0509118
4.03	19	25	3.53	70	4	4	FBK0509119
4.04	19	25	3.54	70	4	4	FBK0509120
4.05	19	25	3.55	75	4	4	FBK0509121
4.1	22	25	3.6	75	4	4	FBK0509122
4.15	22	25	3.65	75	4	4	FBK0509123
4.2	22	25	3.7	75	4	4	FBK0509124
4.25	22	25	3.75	80	4	4	FBK0509125
4.3	22	25	3.8	80	4	4	FBK0509126
4.35	22	25	3.85	80	4	4	FBK0509127
4.4	22	25	3.9	80	4	4	FBK0509128
4.45	22	25	3.95	80	4	4	FBK0509129
4.5	22	25	4	80	4	4	FBK0509130
4.55	22	25	4.05	80	4	4	FBK0509131
4.6	22	25	4.1	80	4	4	FBK0509132
4.65	22	25	4.15	80	5	6	FBK0509133
4.7	22	25	4.2	80	5	6	FBK0509134
4.74	7/8"	25	4.24	2-3/4"	5	6	FBK0509135
4.75	22	25	4.25	80	5	6	FBK0509136
4.8	22	29	4.3	86	5	6	FBK0509137
4.85	22	29	4.35	86	5	6	FBK0509138



P0-P6

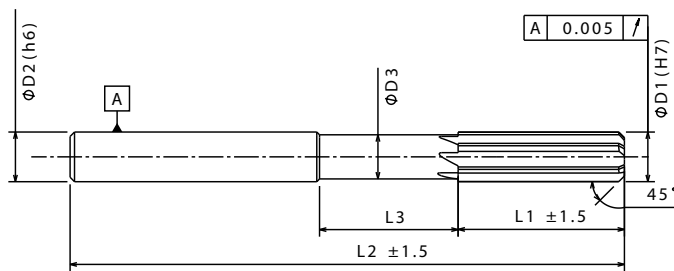
K1-K3

M1-M3

N1-N7

Unit : mm

ØD1	L1	L3	ØD3	L2	ØD2	z	STRAIGHT FLUTE
mm	mm	mm	mm	mm	mm	mm	EDP No
4.9	25	29	4.4	85	5	6	FBK0509139
4.95	25	29	4.45	86	5	6	FBK0509140
4.96	25	29	4.46	86	5	6	FBK0509141
4.97	25	29	4.47	86	5	6	FBK0509142
4.99	25	29	4.49	86	5	6	FBK0509143
5.0	25	29	4.5	86	5	6	FBK0509144
5.01	25	29	4.51	86	5	6	FBK0509145
5.02	25	29	4.52	86	5	6	FBK0509146
5.03	25	29	4.53	86	5	6	FBK0509147
5.04	25	29	4.54	86	5	6	FBK0509148
5.05	25	29	4.55	86	5	6	FBK0509149
5.1	25	29	4.6	86	5	6	FBK0509150
5.15	25	29	4.65	86	5	6	FBK0509151
5.2	25	29	4.7	86	5	6	FBK0509152
5.25	25	29	4.75	86	5	6	FBK0509153
5.3	25	29	4.8	86	5	6	FBK0509154
5.35	25	29	4.85	86	5	6	FBK0509155
5.4	25	33	4.9	93	5	6	FBK0509156
5.45	25	33	4.95	93	5	6	FBK0509157
5.5	25	33	5	93	5	6	FBK0509158
5.55	25	33	5.05	93	5	6	FBK0509159
5.6	25	33	5.1	93	5	6	FBK0509160
5.65	25	33	5.15	93	6	6	FBK0509161
5.7	25	33	5.2	93	6	6	FBK0509162
5.75	25	33	5.25	93	6	6	FBK0509163
5.8	25	33	5.3	93	6	6	FBK0509164
5.85	25	33	5.35	93	6	6	FBK0509165
5.9	25	33	5.4	93	6	6	FBK0509166
5.95	25	33	5.45	93	6	6	FBK0509167
5.96	25	33	5.46	93	6	6	FBK0509168
5.97	25	33	5.47	93	6	6	FBK0509169
5.98	25	33	5.48	93	6	6	FBK0509170
5.99	25	33	5.49	93	6	6	FBK0509171



P0-P6

K1-K3

M1-M3

N1-N7

Unit : mm

ØD1	L1	L3	ØD3	L2	ØD2	z	STRAIGHT FLUTE
mm	mm	mm	mm	mm	mm	mm	EDP No
6.0	25	33	5.5	93	6	6	FBK0509172
6.01	25	33	5.51	93	6	6	FBK0509173
6.02	25	33	5.52	93	6	6	FBK0509174
6.03	25	33	5.53	93	6	6	FBK0509175
6.04	25	33	5.54	93	6	6	FBK0509176
6.05	25	33	5.55	93	6	6	FBK0509177
6.06	25	33	5.56	93	6	6	FBK0509178
6.1	29	36	5.6	101	6	6	FBK0509179
6.13	29	36	5.63	101	6	6	FBK0509180
6.2	29	36	5.7	101	6	6	FBK0509181
6.25	29	36	5.75	101	6	6	FBK0509182
6.3	29	36	5.8	101	6	6	FBK0509183
6.4	29	36	5.9	101	6	6	FBK0509184
6.5	29	36	6	101	6	6	FBK0509185
6.95	29	36	6.45	101	6	6	FBK0509186
6.96	29	36	6.46	101	6	6	FBK0509187
6.97	29	36	6.47	101	6	6	FBK0509188
6.98	29	36	6.48	101	6	6	FBK0509189
6.99	29	36	6.49	101	6	6	FBK0509190
7.0	29	36	6.5	101	6	6	FBK0509191
7.98	32	40	7.48	117	8	6	FBK0509192
8.01	32	40	7.51	117	8	6	FBK0509193
8.03	32	40	7.53	117	8	6	FBK0509194
8.0	32	40	7.5	117	8	6	FBK0509195
8.5	32	40	8	117	8	6	FBK0509196
9.0	32	40	8.5	117	9	6	FBK0509197
9.5	32	40	9	117	9	6	FBK0509198
10.0	38	50	9.5	133	10	6	FBK0509199
10.5	38	50	10	133	10	6	FBK0509200
11.0	38	50	10.5	133	11	6	FBK0509201
11.5	38	50	11	133	11	6	FBK0509202
12.0	38	50	11.5	133	12	6	FBK0509203



Cutting parameters

Series TMRT- Reaming Metric

Workpiece Material Group		Cutting Speed Vc (m/min)		Recommended Feed/tooth (fz)									
				Diameter in mm									
		min	max	mm Range	1.50-4.00		4.01-7.00		7.01-9.00		9.01-12.00		
Steel	P	1	40	70	fz	0.04	0.08	0.05	0.10	0.05	0.12	0.05	0.15
		2	40	70	fz	0.04	0.08	0.05	0.10	0.05	0.12	0.05	0.15
		3	35	60	fz	0.04	0.08	0.05	0.10	0.05	0.12	0.05	0.15
		4	25	45	fz	0.04	0.08	0.05	0.10	0.05	0.12	0.05	0.15
		5	15	25	fz	0.03	0.06	0.04	0.08	0.04	0.10	0.04	0.12
		6	15	25	fz	0.03	0.06	0.04	0.08	0.04	0.10	0.04	0.12
Stainless Steels	M	1	8	15	fz	0.03	0.06	0.04	0.08	0.04	0.09	0.04	0.10
		2	8	15	fz	0.03	0.06	0.04	0.08	0.04	0.09	0.04	0.10
		3	8	15	fz	0.03	0.06	0.04	0.08	0.04	0.09	0.04	0.10
Cast Iron	K	1	35	60	fz	0.04	0.14	0.05	0.16	0.05	0.18	0.05	0.20
		2	25	50	fz	0.04	0.12	0.05	0.14	0.05	0.16	0.05	0.18
		3	20	45	fz	0.04	0.10	0.05	0.12	0.05	0.14	0.05	0.16
Non-Ferrous	N	1	110	195	fz	0.05	0.14	0.06	0.16	0.06	0.18	0.06	0.20
		2	110	195	fz	0.05	0.14	0.06	0.16	0.06	0.18	0.06	0.20
		3	110	195	fz	0.05	0.14	0.06	0.16	0.06	0.18	0.06	0.20
		4	110	195	fz	0.05	0.14	0.06	0.16	0.06	0.18	0.06	0.20
		5	105	180	fz	0.05	0.14	0.06	0.16	0.06	0.18	0.06	0.20
Special Alloys	S	1	8	15	fz	0.03	0.06	0.04	0.08	0.04	0.10	0.04	0.12
		2	8	15	fz	0.03	0.06	0.04	0.08	0.04	0.10	0.04	0.12
		3	15	30	fz	0.04	0.08	0.05	0.10	0.05	0.12	0.05	0.15
		4	15	30	fz	0.04	0.08	0.05	0.10	0.05	0.12	0.05	0.15

#RPM(N) = Vc(m/min) X 318.18/Tool Dia.

#Vf(mm/min) = RPM(N) X frev (mm/rev)

Series TMRT- Reaming Inch

Workpiece Material Group		Cutting Speed Vc (ft/min)		Recommended inch/tooth (IPT)									
				Diameter in inch									
		min	max	Inch Range	1.50-4.00		4.01-7.00		7.01-9.00		9.01-12.00		
Steel	P	1	131	230	fz	0.0016	0.0031	0.0020	0.0039	0.0020	0.0047	0.0020	0.0059
		2	131	230	fz	0.0016	0.0031	0.0020	0.0039	0.0020	0.0047	0.0020	0.0059
		3	115	197	fz	0.0016	0.0031	0.0020	0.0039	0.0020	0.0047	0.0020	0.0059
		4	82	148	fz	0.0016	0.0031	0.0020	0.0039	0.0020	0.0047	0.0020	0.0059
		5	49	82	fz	0.0012	0.0024	0.0016	0.0031	0.0016	0.0039	0.0016	0.0047
		6	49	82	fz	0.0012	0.0024	0.0016	0.0031	0.0016	0.0039	0.0016	0.0047
Stainless Steels	M	1	26	49	fz	0.0012	0.0024	0.0016	0.0031	0.0016	0.0035	0.0016	0.0039
		2	26	49	fz	0.0012	0.0024	0.0016	0.0031	0.0016	0.0035	0.0016	0.0039
		3	26	49	fz	0.0012	0.0024	0.0016	0.0031	0.0016	0.0035	0.0016	0.0039
Cast Iron	K	1	115	197	fz	0.0016	0.0055	0.0020	0.0063	0.0020	0.0071	0.0020	0.0079
		2	82	164	fz	0.0016	0.0047	0.0020	0.0055	0.0020	0.0063	0.0020	0.0071
		3	66	148	fz	0.0016	0.0039	0.0020	0.0047	0.0020	0.0055	0.0020	0.0063
Non-Ferrous	N	1	361	640	fz	0.0020	0.0055	0.0024	0.0063	0.0024	0.0071	0.0024	0.0079
		2	361	640	fz	0.0020	0.0055	0.0024	0.0063	0.0024	0.0071	0.0024	0.0079
		3	361	640	fz	0.0020	0.0055	0.0024	0.0063	0.0024	0.0071	0.0024	0.0079
		4	361	640	fz	0.0020	0.0055	0.0024	0.0063	0.0024	0.0071	0.0024	0.0079
		5	344	590	fz	0.0020	0.0055	0.0024	0.0063	0.0024	0.0071	0.0024	0.0079
Special Alloys	S	1	26	49	fz	0.0012	0.0024	0.0016	0.0031	0.0016	0.0039	0.0016	0.0047
		2	26	49	fz	0.0012	0.0024	0.0016	0.0031	0.0016	0.0039	0.0016	0.0047
		3	49	98	fz	0.0016	0.0031	0.0020	0.0039	0.0020	0.0047	0.0020	0.0059
		4	49	98	fz	0.0016	0.0031	0.0020	0.0039	0.0020	0.0047	0.0020	0.0059

#RPM (N) = Vc (SFM) X 3.82/Tool Dia.

#Vf (Inch/min) = RPM (N) x frev (inch/rev)

The technical data are based upon theoretical values and are only intended for planning purposes and may vary based on the application. Actual results will vary. No responsibility from Forbes and Company Limited or their distributors is assumed.

Drill tolerance

Details	Cutting Dia. "D1" Range	Dia. "D1" Tolerance H7 ANSI B4.2	Shank Dia. D2	Shank "D2" Tolerance h6 ANSI B4.2
15° LH	1.50-3.00	+0.004/+0.008	3.00	-0.006
	3.00-6.00	+0.005/+0.010	3.00-6.00	-0.008
	6.00-10.00	+0.006/+0.012	6.00-10.00	-0.009
	10.00-12.00	+0.008/+0.015	10.00-12.00	-0.011
0°	1.50-3.00	+0.004/+0.008	3.00	-0.006
	3.00-6.00	+0.005/+0.010	3.00-6.00	-0.008
	6.00-10.00	+0.006/+0.012	6.00-10.00	-0.009
	10.00-12.00	+0.008/+0.015	10.00-12.00	-0.011