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CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

INDEX



Variable Index End Mills

Operating Parameters for Series MSE-V-4* Variable Index End Mills

regular and stub length

side milling axial 1.5 x D • side milling radial .5 x D • slotting axial 1 x D

INCH SIZES	Speed		feed per tooth (inches)							
	sfm	5/32	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
easy to cut stainless steel (303)	340	0.0010	0.0012	0.0016	0.0020	0.0024	0.0026	0.0028	0.0028	0.0030
moderately difficult to cut stainless (304)	290	0.0008	0.0010	0.0014	0.0018	0.0020	0.0022	0.0024	0.0026	0.0028
difficult to cut stainless steels (316L)	240	0.0006	0.0010	0.0012	0.0016	0.0018	0.0020	0.0022	0.0024	0.0024
soft steels (1020)	600	0.0010	0.0012	0.0016	0.0024	0.0024	0.0028	0.0030	0.0031	0.0039
titanium alpha beta alloys (Ti6Al4V)	200	0.0005	0.0006	0.0008	0.0012	0.0012	0.0016	0.0018	0.0020	0.0028
gray cast iron (GG)	600	0.0010	0.0012	0.0016	0.0024	0.0024	0.0028	0.0030	0.0031	0.0039

long length

side milling axial 1.3 x D • side milling radial .2 - .3 x D • slotting axial .3 - .5 x D

INCH SIZES	Speed		feed per tooth (inches)							
	sfm	5/32	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
easy to cut stainless steel (303)	340	0.0009	0.0011	0.0014	0.0018	0.0022	0.0023	0.0025	0.0025	0.0027
moderately difficult to cut stainless (304)	290	0.0007	0.0009	0.0013	0.0016	0.0018	0.0020	0.0022	0.0023	0.0025
difficult to cut stainless steel (316L)	240	0.0005	0.0009	0.0011	0.0014	0.0016	0.0018	0.0020	0.0022	0.0022
soft steels (1020)	600	0.0009	0.0011	0.0014	0.0022	0.0022	0.0025	0.0027	0.0028	0.0035
titanium alpha beta alloys (Ti6Al4V)	200	0.0005	0.0005	0.0007	0.0011	0.0011	0.0014	0.0016	0.0018	0.0025
gray cast iron (GG)	600	0.0009	0.0011	0.0014	0.0022	0.0022	0.0025	0.0027	0.0028	0.0035

Operating Parameters for Series MSE-V2-5* Variable Index End Mills



side milling axial 1.5 x D • side milling radial 0.5 x D • slotting axial 1 x D

INCH SIZES material	speed		chip load per tooth (inches)						
	sfm	3/16	1/4	5/16	3/8	1/2	5/8	3/4	1
medium and high carbon steels >0.3% C	600-750	0.0015	0.0021	0.0023	0.0026	0.0028	0.0030	0.0031	0.0039
alloy steels and tool steels <330HB, <35HRc	600-700	0.0011	0.0017	0.0020	0.0023	0.0028	0.0030	0.0031	0.0039
alloy steels and tool steels 340-450 HB, 36-48 HRc	525-625	0.0010	0.0015	0.0016	0.0020	0.0028	0.0030	0.0031	0.0039
austenitic stainless steel 302, 303, 304	350-445	0.0011	0.0017	0.0020	0.0023	0.0022	0.0024	0.0026	0.0028
austenitic stainless steel 316, 316L	225-315	0.0009	0.0013	0.0016	0.0019	0.0020	0.0024	0.0024	0.0024
austenitic stainless steel duplex	190-230	0.0008	0.0010	0.0014	0.0015	0.0020	0.0024	0.0024	0.0024
cast iron, gray GG	520-660	0.0014	0.0022	0.0025	0.0030	0.0028	0.0030	0.0031	0.0039
ductile and maleable cast iron CGI < 80 KSI	430-660	0.0009	0.0013	0.0018	0.0019	0.0028	0.0030	0.0031	0.0039
nickel-based heat-resistant alloys	100-160	0.0004	0.0007	0.0011	0.0015	0.0016	0.0019	0.0023	0.0028
alpha-beta titanium alloys Ti6Al4V	195-240	0.0008	0.0010	0.0014	0.0015	0.0016	0.0018	0.0020	0.0028



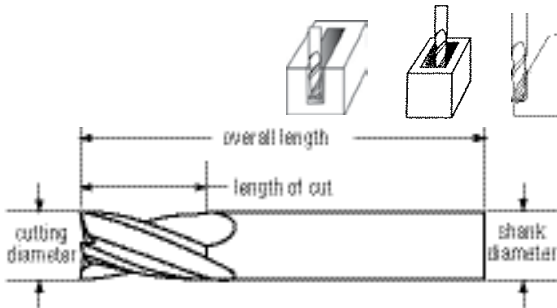
Variable Index End Mills for Ferrous Materials

Series MSE-V-4R

Applications |



Features |



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP Number	
fractional	decimal	metric						bright	TiAlN
1/8	.1250	3.18	1/8	1/4	1-1/2	4	0.000	B40165	B60165
1/8	.1250	3.18	1/8	1/4	1-1/2	4	0.010	B40140	B60140
1/8	.1250	3.18	1/8	3/8	1-1/2	4	0.000	B40166	B60166
1/8	.1250	3.18	1/8	3/8	1-1/2	4	0.010	B40141	B60141
1/8	.1250	3.18	1/8	1/2	1-1/2	4	0.000	B40231	B60231
1/8	.1250	3.18	1/8	1/2	1-1/2	4	0.010	B40232	B60232
3/16	.1875	4.76	3/16	3/8	2	4	0.000	B40167	B60167
3/16	.1875	4.76	3/16	3/8	2	4	0.010	B40142	B60142
3/16	.1875	4.76	3/16	7/16	2	4	0.000	B40168	B60168
3/16	.1875	4.76	3/16	7/16	2	4	0.010	B40143	B60143
3/16	.1875	4.76	3/16	3/4	2-1/2	4	0.000	B40169	B60169
3/16	.1875	4.76	3/16	3/4	2-1/2	4	0.010	B40170	B60170
1/4	.2500	6.35	1/4	1/2	2	4	0.000	B40171	B60171
1/4	.2500	6.35	1/4	1/2	2	4	0.020	B40144	B60144
1/4	.2500	6.35	1/4	3/4	2-1/2	4	0.000	B40172	B60172
1/4	.2500	6.35	1/4	3/4	2-1/2	4	0.020	B40145	B60145
1/4	.2500	6.35	1/4	3/4	2-1/2	4	0.040	-----	B60234
1/4	.2500	6.35	1/4	1-1/8	3	4	0.000	B40173	B60173
1/4	.2500	6.35	1/4	1-1/8	3	4	0.020	B40146	B60146
1/4	.2500	6.35	1/4	1-1/4	3	4	0.000	B40233	B60233
5/16	.3125	7.94	5/16	1/2	2	4	0.000	B40174	B60174
5/16	.3125	7.94	5/16	1/2	2	4	0.020	B40147	B60147
5/16	.3125	7.94	5/16	13/16	2-1/2	4	0.000	B40175	B60175
5/16	.3125	7.94	5/16	13/16	2-1/2	4	0.020	B40148	B60148
5/16	.3125	7.94	5/16	1-1/4	3	4	0.000	B40176	B60176
5/16	.3125	7.94	5/16	1-1/4	3	4	0.020	B40177	B60177
3/8	.3750	9.53	3/8	5/8	2	4	0.000	B40178	B60178
3/8	.3750	9.53	3/8	5/8	2	4	0.020	B40149	B60149
3/8	.3750	9.53	3/8	7/8	2-1/2	4	0.000	B40179	B60179
3/8	.3750	9.53	3/8	7/8	2-1/2	4	0.020	B40150	B60150
3/8	.3750	9.53	3/8	1-1/8	3	4	0.000	B40180	B60180
3/8	.3750	9.53	3/8	1-1/8	3	4	0.020	B40151	B60151
3/8	.3750	9.53	3/8	2	4	4	0.000	B40181	B60181
3/8	.3750	9.53	3/8	2	4	4	0.020	B40182	B60182
7/16	.4375	11.11	7/16	5/8	2-1/2	4	0.000	B40183	B60183
7/16	.4375	11.11	7/16	5/8	2-1/2	4	0.020	B40152	B60152
7/16	.4375	11.11	7/16	1	3	4	0.000	B40184	B60184
7/16	.4375	11.11	7/16	1	3	4	0.020	B40153	B60153
7/16	.4375	11.11	7/16	2	4	4	0.000	B40185	B60185
1/2	.5000	12.70	1/2	5/8	2-1/2	4	0.000	B40186	B60186
1/2	.5000	12.70	1/2	5/8	2-1/2	4	0.020	B40237	B60237

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CARBIDE END MILLS
CARBIDE DRILLS
CARBIDE THREAD MILLS
CARBIDE BURS
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Variable Index End Mills for Ferrous Materials

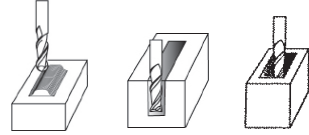
Series **MSE-V-4R** (continued)

	cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP Number		
	fractional	decimal	metric						bright	TiAlN	
CARBIDE END MILLS	1/2	.5000	12.70	1/2	5/8	2-1/2	4	0.030	B40154	B60154	
	1/2	.5000	12.70	1/2	1	3	4	0.000	B40187	B60187	
	1/2	.5000	12.70	1/2	1	3	4	0.030	B40155	B60155	
	1/2	.5000	12.70	1/2	1	3	4	0.060	B40188	B60188	
	1/2	.5000	12.70	1/2	1	3	4	0.090	B40189	B60189	
	1/2	.5000	12.70	1/2	1	3	4	0.125	B40190	B60190	
	1/2	.5000	12.70	1/2	1-1/4	3	4	0.000	B40191	B60191	
	1/2	.5000	12.70	1/2	1-1/4	3	4	0.020	B40238	B90238	
	1/2	.5000	12.70	1/2	1-1/4	3	4	0.020	-----	B60235	
	1/2	.5000	12.70	1/2	1-1/4	3	4	0.030	B40192	B60192	
	1/2	.5000	12.70	1/2	1-1/4	3	4	0.060	B40193	B60193	
	1/2	.5000	12.70	1/2	1-1/4	3	4	0.090	B40194	B60194	
	CARBIDE DRILLS	1/2	.5000	12.70	1/2	1-1/4	3	4	0.125	B40195	B60195
		1/2	.5000	12.70	1/2	2	4	4	0.000	B40196	B60196
		1/2	.5000	12.70	1/2	2	4	4	0.030	B40156	B60156
1/2		.5000	12.70	1/2	2	4	4	0.060	B40197	B60197	
1/2		.5000	12.70	1/2	2	4	4	0.090	B40198	B60198	
1/2		.5000	12.70	1/2	2	4	4	0.125	B40199	B60199	
5/8		.6250	15.88	5/8	3/4	3	4	0.000	B40200	B60200	
5/8		.6250	15.88	5/8	3/4	3	4	0.030	B40157	B60157	
5/8		.6250	15.88	5/8	1-1/4	3-1/2	4	0.000	B40201	B60201	
5/8		.6250	15.88	5/8	1-1/4	3-1/2	4	0.030	B40158	B60158	
5/8		.6250	15.88	5/8	1-1/4	3-1/2	4	0.060	B40202	B60202	
5/8		.6250	15.88	5/8	1-1/4	3-1/2	4	0.090	B40203	B60203	
5/8		.6250	15.88	5/8	1-1/4	3-1/2	4	0.125	B40204	B60204	
5/8		.6250	15.88	5/8	2-1/4	5	4	0.000	B40205	B60205	
5/8		.6250	15.88	5/8	2-1/4	5	4	0.030	B40159	B60159	
CARBIDE THREAD MILLS	5/8	.6250	15.88	5/8	2-1/4	5	4	0.060	B40206	B60206	
	5/8	.6250	15.88	5/8	2-1/4	5	4	0.090	B40207	B60207	
	5/8	.6250	15.88	5/8	2-1/4	5	4	0.125	B40208	B60208	
	3/4	.7500	19.05	3/4	7/8	3	4	0.030	-----	B60236	
	3/4	.7500	19.05	3/4	1	3	4	0.000	B40209	B60209	
	3/4	.7500	19.05	3/4	1	3	4	0.030	B40160	B60160	
	3/4	.7500	19.05	3/4	1-1/2	4	4	0.000	B40210	B60210	
	3/4	.7500	19.05	3/4	1-1/2	4	4	0.030	B40161	B60161	
	3/4	.7500	19.05	3/4	1-1/2	4	4	0.060	B40211	B60211	
	3/4	.7500	19.05	3/4	1-1/2	4	4	0.090	B40212	B60212	
	3/4	.7500	19.05	3/4	1-1/2	4	4	0.125	B40213	B60213	
	3/4	.7500	19.05	3/4	2-1/4	5	4	0.000	B40214	B60214	
	3/4	.7500	19.05	3/4	2-1/4	5	4	0.030	B40162	B60162	
	3/4	.7500	19.05	3/4	2-1/4	5	4	0.060	B40215	B60215	
	3/4	.7500	19.05	3/4	2-1/4	5	4	0.090	B40216	B60216	
CARBIDE BURS	3/4	.7500	19.05	3/4	2-1/4	5	4	0.125	B40217	B60217	
	1	1.0000	25.40	1	1-1/2	4	4	0.000	B40218	B60218	
	1	1.0000	25.40	1	1-1/2	4	4	0.030	B40163	B60163	
	1	1.0000	25.40	1	1-1/2	4	4	0.060	B40219	B60219	
	1	1.0000	25.40	1	1-1/2	4	4	0.090	B40220	B60220	
	1	1.0000	25.40	1	1-1/2	4	4	0.125	B40221	B60221	
	1	1.0000	25.40	1	2-1/4	5	4	0.000	B40222	B60222	
	1	1.0000	25.40	1	2-1/4	5	4	0.030	B40164	B60164	
	1	1.0000	25.40	1	2-1/4	5	4	0.060	B40223	B60223	
	1	1.0000	25.40	1	2-1/4	5	4	0.090	B40224	B60224	
	1	1.0000	25.40	1	2-1/4	5	4	0.125	B40225	B60225	
	1	1.0000	25.40	1	3	6	4	0.000	B40226	B60226	
	1	1.0000	25.40	1	3	6	4	0.030	B40227	B60227	
	1	1.0000	25.40	1	3	6	4	0.060	B40228	B60228	
	1	1.0000	25.40	1	3	6	4	0.090	B40229	B60229	
1	1.0000	25.40	1	3	6	4	0.125	B40230	B60230		

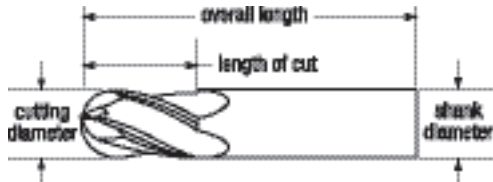
Variable Index End Mills for Ferrous Materials

Series MSE-V-4B

Applications |



Features |



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP Number	
fractional	decimal	metric					bright	TiAIN
1/8	.1250	3.18	1/8	3/8	1-1/2	4	B40308	B60308
3/16	.1875	4.76	3/16	7/16	2	4	B40309	B60309
1/4	.2500	6.35	1/4	3/4	2-1/2	4	B40310	B60310
5/16	.3125	7.94	5/16	13/16	2-1/2	4	B40311	B60311
3/8	.3750	9.53	3/8	7/8	2-1/2	4	B40312	B60312
7/16	.4375	11.11	7/16	1	3	4	B40313	B60313
1/2	.5000	12.70	1/2	5/8	2-1/2	4	-----	B70190
1/2	.5000	12.70	1/2	1	3	4	B40314	B60314
5/8	.6250	15.88	5/8	1-1/4	3-1/2	4	B40315	B60315
3/4	.7500	19.05	3/4	1-1/2	4	4	B40316	B60316
1	1.0000	25.40	1	2-1/4	5	4	B40317	B60317

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

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V2 Variable Index End Mills for Ferrous Materials

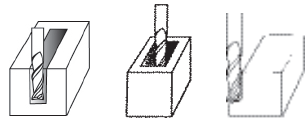
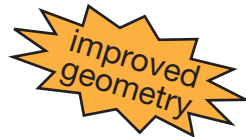
BASSETT™

Series **MSE-V2-5R**

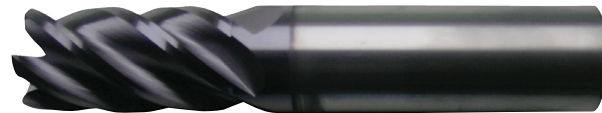
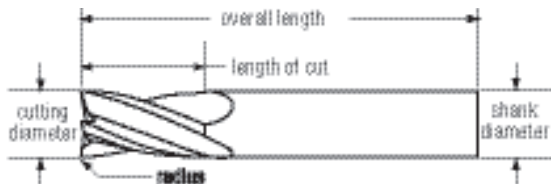
Applications



Features



- for slotting up to 1 x D
- minimized chatter from unequal flute spacing
- use one tool for roughing and finishing operations



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP Number	
fractional	decimal	metric						bright	TiAIN
3/16	.1875	4.76	3/16	3/8	2	5	0.000	B40410	B60410
3/16	.1875	4.76	3/16	3/8	2	5	0.010	B40411	B60411
3/16	.1875	4.76	3/16	7/16	2	5	0.000	B40434	B60434
3/16	.1875	4.76	3/16	7/16	2	5	0.010	B40412	B60412
3/16	.1875	4.76	3/16	3/4	2-1/2	5	0.000	B40435	B60435
3/16	.1875	4.76	3/16	3/4	2-1/2	5	0.010	B40436	B60436
1/4	.2500	6.35	1/4	1/2	2	5	0.000	B40437	B60437
6mm	.2362	6mm	6mm	13mm	50mm	5	.5mm	-----	B70199
1/4	.2500	6.35	1/4	1/2	2	5	0.020	B40413	B60413
1/4	.2500	6.35	1/4	3/4	2-1/2	5	0.000	B40438	B60438
1/4	.2500	6.35	1/4	3/4	2-1/2	5	0.020	B40414	B60414
1/4	.2500	6.35	1/4	1-1/8	3	5	0.010	B40439	B60439
1/4	.2500	6.35	1/4	1-1/8	3	5	0.020	B40415	B60415
1/4	.2500	6.35	1/4	1-1/4	3	5	0.000	B40440	B60440
5/16	.3125	7.94	5/16	1/2	2	5	0.000	B40441	B60441
5/16	.3125	7.94	5/16	1/2	2	5	0.020	B40416	B60416
5/16	.3125	7.94	5/16	13/16	2-1/2	5	0.000	B40442	B60442
5/16	.3125	7.94	5/16	13/16	2-1/2	5	0.020	B40417	B60417
5/16	.3125	7.94	5/16	1-1/4	3	5	0.000	B40443	B60443
5/16	.3125	7.94	5/16	1-1/4	3	5	0.020	B40444	B60444
3/8	.3750	9.53	3/8	1/2	2	5	0.030	B40320	B60320
3/8	.3750	9.53	3/8	5/8	2	5	0.000	B40445	B60445
3/8	.3750	9.53	3/8	5/8	2	5	0.020	B40418	B60418
3/8	.3750	9.53	3/8	7/8	2-1/2	5	0.000	B40446	B60446
3/8	.3750	9.53	3/8	7/8	2-1/2	5	0.020	B40419	B60419
3/8	.3750	9.53	3/8	1-1/8	3	5	0.000	B40447	B60447
3/8	.3750	9.53	3/8	1-1/8	3	5	0.020	B40420	B60420
3/8	.3750	9.53	3/8	2	4	5	0.000	B40448	B60448
3/8	.3750	9.53	3/8	2	4	5	0.000	B40449	B60449
7/16	.4375	11.11	7/16	5/8	2-1/2	5	0.000	B40450	B60450
7/16	.4375	11.11	7/16	5/8	2-1/2	5	0.020	B40421	B60421
7/16	.4375	11.11	7/16	1	3	5	0.000	B40451	B60451
7/16	.4375	11.11	7/16	1	3	5	0.020	B40422	B60422
7/16	.4375	11.11	7/16	2	4	5	0.000	B40452	B60452
1/2	.5000	12.70	1/2	5/8	2-1/2	5	0.000	B40453	B60453
1/2	.5000	12.70	1/2	5/8	2-1/2	5	0.030	B40423	B60423
1/2	.5000	12.70	1/2	1	3	5	0.000	B40454	B60454
1/2	.5000	12.70	1/2	1	3	5	0.020	B40321	B60321
1/2	.5000	12.70	1/2	1	3	5	0.030	B40424	B60424
1/2	.5000	12.70	1/2	1	3	5	0.030	B40322	B60322

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CARBIDE END MILLS

CARBIDE DRILLS

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V2 Variable Index End Mills for Ferrous Materials

Series MSE-V2-5R (continued)

cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP Number	
fractional	decimal	metric						bright	TiAIN
1/2	.5000	12.70	1/2	1	3	5	0.060	B40455	B60455
1/2	.5000	12.70	1/2	1	3	5	0.090	B40456	B60456
1/2	.5000	12.70	1/2	1	3	5	0.125	B40457	B60457
1/2	.5000	12.70	1/2	1-1/4	3	5	0.000	B40458	B60458
1/2	.5000	12.70	1/2	1-1/4	3	5	0.020	B40323	B60323
1/2	.5000	12.70	1/2	1-1/4	3	5	0.030	B40459	B60459
1/2	.5000	12.70	1/2	1-1/4	3	5	0.030	B40324	B60324
1/2	.5000	12.70	1/2	1-1/4	3	5	0.045	B40325	B60325
1/2	.5000	12.70	1/2	1-1/4	3	5	0.060	B40460	B60460
1/2	.5000	12.70	1/2	1-1/4	3	5	0.090	B40461	B60461
1/2	.5000	12.70	1/2	1-1/4	3	5	0.125	B40462	B60462
1/2	.5000	12.70	1/2	2	4	5	0.000	B40463	B60463
1/2	.5000	12.70	1/2	2	4	5	0.030	B40425	B60425
1/2	.5000	12.70	1/2	2	4	5	0.060	B40464	B60464
1/2	.5000	12.70	1/2	2	4	5	0.090	B40465	B60465
1/2	.5000	12.70	1/2	2	4	5	0.125	B40466	B60466
5/8	.6250	15.88	5/8	3/4	3	5	0.000	B40467	B60467
5/8	.6250	15.88	5/8	3/4	3	5	0.030	B40426	B60426
5/8	.6250	15.88	5/8	1-1/4	3-1/2	5	0.000	B40468	B60468
5/8	.6250	15.88	5/8	1-1/4	3-1/2	5	0.030	B40427	B60427
5/8	.6250	15.88	5/8	1-1/4	3-1/2	5	0.060	B40469	B60469
5/8	.6250	15.88	5/8	1-1/4	3-1/2	5	0.090	B40470	B60470
5/8	.6250	15.88	5/8	1-1/4	3-1/2	5	0.125	B40471	B60471
5/8	.6250	15.88	5/8	2-1/4	5	5	0.000	B40472	B60472
5/8	.6250	15.88	5/8	2-1/4	5	5	0.030	B40428	B60428
5/8	.6250	15.88	5/8	2-1/4	5	5	0.060	B40473	B60473
5/8	.6250	15.88	5/8	2-1/4	5	5	0.090	B40474	B60474
5/8	.6250	15.88	5/8	2-1/4	5	5	0.125	B40475	B60475
3/4	.7500	19.05	3/4	1	3	5	0.000	B40476	B60476
3/4	.7500	19.05	3/4	1	3	5	0.030	B40429	B60429
3/4	.7500	19.05	3/4	1	3	5	0.030	-----	B60498
3/4	.7500	19.05	3/4	1-1/2	4	5	0.000	B40477	B60477
3/4	.7500	19.05	3/4	1-1/2	4	5	0.030	B40430	B60430
3/4	.7500	19.05	3/4	1-1/2	4	5	0.060	B40478	B60478
3/4	.7500	19.05	3/4	1-1/2	4	5	0.090	B40479	B60479
3/4	.7500	19.05	3/4	1-1/2	4	5	0.125	B40480	B60480
3/4	.7500	19.05	3/4	2-1/4	5	5	0.000	B40481	B60481
3/4	.7500	19.05	3/4	2-1/4	5	5	0.030	B40431	B60431
3/4	.7500	19.05	3/4	2-1/4	5	5	0.060	B40482	B60482
3/4	.7500	19.05	3/4	2-1/4	5	5	0.090	B40483	B60483
3/4	.7500	19.05	3/4	2-1/4	5	5	0.125	B40484	B60484
1	1.0000	25.40	1	1-1/2	4	5	0.000	B40485	B60485
1	1.0000	25.40	1	1-1/2	4	5	0.030	B40432	B60432
1	1.0000	25.40	1	1-1/2	4	5	0.060	B40486	B60486
1	1.0000	25.40	1	1-1/2	4	5	0.090	B40487	B60487
1	1.0000	25.40	1	1-1/2	4	5	0.125	B40488	B60488
1	1.0000	25.40	1	2-1/4	5	5	0.000	B40489	B60489
1	1.0000	25.40	1	2-1/4	5	5	0.030	B40433	B60433
1	1.0000	25.40	1	2-1/4	5	5	0.060	B40490	B60490
1	1.0000	25.40	1	2-1/4	5	5	0.090	B40491	B60491
1	1.0000	25.40	1	2-1/4	5	5	0.125	B40492	B60492
1	1.0000	25.40	1	3	6	5	0.000	B40493	B60493
1	1.0000	25.40	1	3	6	5	0.030	B40494	B60494
1	1.0000	25.40	1	3	6	5	0.060	B40495	B60495
1	1.0000	25.40	1	3	6	5	0.090	B40496	B60496

CARBIDE END MILLS

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High-Performance End Mills for Steel

Operating Parameters: HPEM High-Performance End Mills for Steel

Material	Hardness		Surface Feet per Minute		Chip Load per Tooth		
	Brinell	HRC	Speed Range	SFM	1/32" - 1/4"	1/4" - 1/2"	1/2" - 1"
low alloy steels	<220 HB	<19	Low	600	.0005	.0010	.0020
			High	750	.0010	.0020	.0030
medium alloy steels O1 to O7, W1 to W3, M1 to M3, T1 to T5, A2 to A3, S1 to S7, P2 to P3	225-286	20-30	Low	600	.0003	.0005	.0010
			High	750	.0005	.0010	.0015
high alloy steels M4 to M7, T6 to T15, D2 to D7, A4 to A7, P4	294-371	31-40	Low	525	.0003	.0005	.0008
			High	625	.0005	.0010	.0015
stainless steels 200/300 series	135-275	<28	Low	250	.0005	.0010	.0020
			High	350	.0010	.0020	.0030
stainless steels 400/500 series	135-330	<35	Low	340	.0003	.0008	.0010
			High	400	.0005	.0010	.0015
nickel-based alloys	140-475	<32-50	Low	100	.0005	.0010	.0015
			High	160	.0010	.0015	.0040
titanium alloys	110-450	<48	Low	195	.0005	.0010	.0025
			High	240	.0010	.0030	.0050
inconel	140-475	<48	Low	100	.0005	.0010	.0015
			High	160	.0010	.0015	.0030
aluminum, low silicon	—	—	Low	800	.0030	.0040	.0060
			High	1600	.0040	.0060	.0080

Higher values for surface speed should be used for radial depths of cut less than 25% of the diameter. Lower values for surface speed should be used for radial depths of cut greater than 25% of the diameter. The above recommendations are for axial lengths of cut not to exceed 1 times the cutter diameter for profiling and .5 times the diameter for slotting. Recommended speeds above are for uncoated tools only and should be adjusted when using coated

tools. Generally, speeds can be increased by the following factors: TiCN-coated tools – 20-25% increase; TiAlN-coated tools – 40-50% increase. The above speeds are a recommended starting point only. If the tool is working well, without vibrations or significant noise, increase the SFM in 5-10% increments. Ultimate speeds will depend upon setup conditions. Higher or lower parameters may be required to achieve optimum conditions.

Series HPEM for stainless steels and exotic materials

Features and Benefits of HPEM End Mills

- Maximized strength due to increased cross-sectional area in the core and flute body.
- Combination of micrograin carbide substrate with high-performance coatings.
- Achieve 50% greater chip loads and 20% to 40% higher speeds than conventional end mills.

Applications for HPEM End Mills

- Designed for cutting applications involving excessive mechanical stress.
- Ideally suited for use in stainless steel and exotics such as hastalloy, waspalloy, and inconel.
- 3-flute square end for pocketing, slotting, or roughing.
- 3-flute ball nose gives enhanced surface finish in contour cutting and rapid chip removal in plunge cutting.
- 5-flute design for profiling and finishing applications.

Tolerances for Solid Carbide End Mills

Cutting Diameter:

1/32" through 1/4" +.000 –.002

17/64" through 1" +.000 –.003

Shank Diameter:

+.0000 –.0005

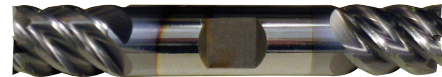
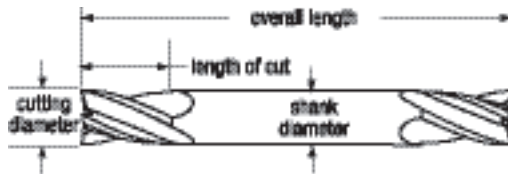
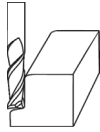
High-Performance End Mills For Steel

Series HPDEM-5 • Double End

Applications |



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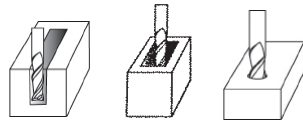
cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP Number		
fractional	decimal	metric					bright	TiCN	TiAlN
1/8	.1250	3.18	1/8	1/4	1 1/2	5	B05100	B05605	B66100
3/16	.1875	4.76	3/16	5/16	2	5	B05101	B05609	B66101
1/4	.2500	6.35	1/4	3/8	2 1/2	5	B05103	B05613	B66103
5/16	.3125	7.94	5/16	7/16	2 1/2	5	B05104	B05617	B66104
3/8	.3750	9.53	3/8	1/2	2 1/2	5	B05106	B05621	B66106
7/16	.4375	11.11	7/16	9/16	3	5	B05108	B05625	B66108
1/2	.5000	12.70	1/2	5/8	3	5	B05110	B05629	B66110



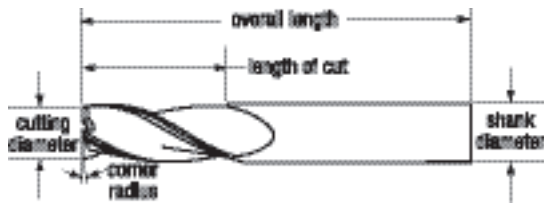
High-Performance End Mills For Steel

Series HPEM-3

Applications |



Features |



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP Number		
fractional	decimal	metric						bright	TiCN	TiAlN
1/8	.1250	3.18	1/8	1/4	1 1/2	3	0.010	B05305	B05005	B05105
1/8	.1250	3.18	1/8	1/2	1 1/2	3	0.010	B05340	B05040	B05140
5/32	.1562	3.97	3/16	5/16	1 1/2	3	0.010	B05307	B05007	B05107
5/32	.1562	3.97	3/16	9/16	2	3	0.010	B05342	B05042	B05142
3/16	.1875	4.76	3/16	5/16	2	3	0.010	B05309	B05009	B05109
3/16	.1875	4.76	3/16	5/8	2	3	0.010	B05344	B05044	B05144
7/32	.2188	5.56	1/4	1/2	2	3	0.020	B05311	B05011	B05111
7/32	.2188	5.56	1/4	3/4	2 1/2	3	0.020	B05346	B05046	B05146
1/4	.2500	6.35	1/4	3/8	2	3	0.020	B05313	B05013	B05113
1/4	.2500	6.35	1/4	3/4	2 1/2	3	0.020	B05348	B05048	B05148
9/32	.2812	7.14	5/16	7/16	2	3	0.020	B05315	B05015	B05115
9/32	.2812	7.14	5/16	13/16	2 1/2	3	0.020	B05350	B05050	B05150
5/16	.3125	7.94	5/16	7/16	2	3	0.020	B05317	B05017	B05117
5/16	.3125	7.94	5/16	13/16	2 1/2	3	0.020	B05352	B05052	B05152
11/32	.3438	8.73	3/8	1/2	2	3	0.020	B05319	B05019	B05119
11/32	.3438	8.73	3/8	7/8	2 1/2	3	0.020	B05354	B05054	B05154
3/8	.3750	9.53	3/8	1/2	2	3	0.020	B05321	B05021	B05121
3/8	.3750	9.53	3/8	7/8	2 1/2	3	0.020	B05356	B05056	B05156
13/32	.4062	10.32	7/16	9/16	2 1/2	3	0.020	B05323	B05023	B05123
13/32	.4062	10.32	7/16	1	2 1/2	3	0.020	B05358	B05058	B05158
7/16	.4375	11.11	7/16	9/16	2 1/2	3	0.020	B05325	B05025	B05125
7/16	.4375	11.11	7/16	1	2 1/2	3	0.020	B05360	B05060	B05160
15/32	.4688	11.91	1/2	5/8	2 1/2	3	0.020	B05327	B05027	B05127
15/32	.4688	11.91	1/2	1 1/4	3	3	0.020	B05362	B05062	B05162
1/2	.5000	12.70	1/2	5/8	2 1/2	3	0.030	B05329	B05029	B05129
1/2	.5000	12.70	1/2	1 1/4	3	3	0.030	B05364	B05064	B05164
5/8	.6250	15.88	5/8	3/4	3	3	0.030	B05331	B05031	B05131
5/8	.6250	15.88	5/8	1 5/8	4	3	0.030	B05366	B05066	B05166
3/4	.7500	19.05	3/4	7/8	3	3	0.030	B05332	B05032	B05133
3/4	.7500	19.05	3/4	1 5/8	4	3	0.030	B05367	B05067	B05168
1	1.0000	25.40	1	1 1/8	3	3	0.030	B05334	B05034	B05135
1	1.0000	25.40	1	2	4	3	0.030	B05369	B05069	B05170

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

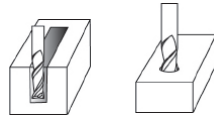
CARBIDE BURS

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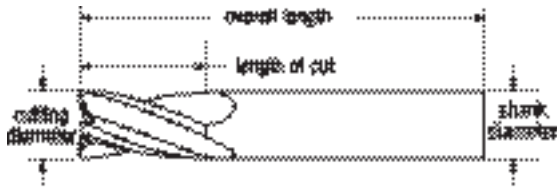
High-Performance End Mills For Steel

Series HPEM-5

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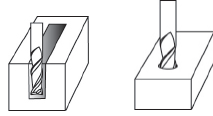
cutting diameter			shank diameter	length of cut	overall length	no. of flutes	bright	EDP Number		
fractional	decimal	metric						TiCN	TiAlN	
1/8	.1250	3.18	1/8	1/4	1 1/2	5	B05112	B05405	B05805	
1/8	.1250	3.18	1/8	1/2	1 1/2	5	B05141	B05440	B05840	
1/8	.1250	3.18	1/8	1/2	2	5	B05098	-----	B70175	
5/32	.1562	3.97	3/16	5/16	2	5	B05114	B05407	B05807	
5/32	.1562	3.97	3/16	9/16	2	5	B05143	B05442	B05842	
3/16	.1875	4.76	3/16	5/16	2	5	B05116	B05409	B05809	
3/16	.1875	4.76	3/16	9/16	2	5	B05145	B05444	B05844	
7/32	.2188	5.56	1/4	3/8	2	5	B05118	B05411	B05811	
7/32	.2188	5.56	1/4	3/4	2 1/2	5	B05147	B05446	B05846	
1/4	.2500	6.35	1/4	3/8	2	5	B05120	B05413	B05813	
1/4	.2500	6.35	1/4	3/4	2 1/2	5	B05149	B05448	B05848	
1/4	.2500	6.35	1/4	1 1/4	4	5	B05171	B05513	B05913	
9/32	.2812	7.14	5/16	7/16	2	5	B05122	B05415	B05815	
9/32	.2812	7.14	5/16	13/16	2 1/2	5	B05151	B05450	B05850	
5/16	.3125	7.94	5/16	7/16	2	5	B05124	B05417	B05817	
5/16	.3125	7.94	5/16	13/16	2 1/2	5	B05153	B05452	B05852	
5/16	.3125	7.94	5/16	1 1/4	4	5	B05173	B05517	B05917	
3/8	.3750	9.53	3/8	1/2	2	5	B05126	B05421	B05821	
3/8	.3750	9.53	3/8	7/8	2 1/2	5	B05155	B05456	B05856	
3/8	.3750	9.53	3/8	1 1/2	4	5	B05175	B05521	B05921	
7/16	.4375	11.11	7/16	9/16	2 1/2	5	B05128	B05425	B05825	
7/16	.4375	11.11	7/16	1	2 1/2	5	B05157	B05460	B05860	
7/16	.4375	11.11	7/16	2	4	5	B05177	B05525	B05925	
1/2	.5000	12.70	1/2	5/8	2 1/2	5	B05130	B05429	B05829	
1/2	.5000	12.70	1/2	1 1/4	3	5	B05159	B05464	B05864	
1/2	.5000	12.70	1/2	2	4	5	B05179	B05529	B05929	
9/16	.5625	14.29	9/16	1 1/2	3 1/2	5	B05161	B05465	B05865	
5/8	.6250	15.88	5/8	3/4	3	5	B05132	B05431	B05831	
5/8	.6250	15.88	5/8	1 5/8	4	5	B05163	B05466	B05866	
5/8	.6250	15.88	5/8	2 1/2	5	5	B05181	B05531	B05931	
3/4	.7500	19.05	3/4	7/8	3	5	B05134	B05432	B05832	
3/4	.7500	19.05	3/4	1 5/8	4	5	B05165	B05467	B05867	
3/4	.7500	19.05	3/4	3 1/4	6	5	B05183	B05532	B05932	
7/8	.8750	22.23	7/8	2	4	5	B05167	B05468	B05868	
1	1.0000	25.40	1	1 1/8	3	5	B05136	B05434	B05834	
1	1.0000	25.40	1	2	4	5	B05169	B05469	B05869	
1	1.0000	25.40	1	3 1/4	6	5	B05185	B05533	B05933	

Series HPEM-6

Applications |



Features |



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	bright	EDP Number	
fractional	decimal	metric						TiCN	TiAlN
3/16	.1875	4.76	3/16	5/8	2	6	-----	-----	B70180
1/4	.2500	6.35	1/4	3/4	2 1/2	6	B70186	-----	B70187
3/8	.375	9.52	3/8	7/8	2 1/2	6	-----	-----	B70181
1/2	.5000	12.70	1/2	1 1/4	3	6	B70185	-----	-----

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

INDEX

High-Performance End Mills for Aluminum

Operating Parameters: HPAM High-Performance End Mills for Aluminum

Type of Cut	Aluminum Alloys 6061-T6, 7075-T6, 440, 356, 380, C61300	Depth of Cut % of tool diameter	SFM (speed)	End Mill Diameter Chip Load per Tooth					
				1/4"	3/8"	1/2"	5/8"	3/4"	1"
shallow slotting	< 32 HRC	< 50%	1200 +	.0045	.0071	.0100	.0123	.0149	.0200
	> 32 HRC		600 +	.0036	.0057	.0080	.0098	.0119	.0160
deep slotting	< 32 HRC	75-100%	1200 +	.0036	.0057	.0080	.0098	.0119	.0160
	> 32 HRC		600 +	.0027	.0043	.0060	.0074	.0089	.0120
medium radial 1.0 x dia depth	< 32 HRC	30% x dia. radial	1200 +	.0045	.0071	.0100	.0123	.0149	.0200
	> 32 HRC		600 +	.0036	.0057	.0080	.0098	.0119	.0160
heavy radial 1.0 x dia depth	< 32 HRC	50% x dia. radial	1200 +	.0036	.0057	.0080	.0098	.0119	.016
medium radial 2.0 x dia depth	< 32 HRC	30% x dia. radial	1200 +	.0045	.0071	.0100	.0123	.0149	.0200
	> 32 HRC		600 +	.0036	.0057	.0080	.0098	.0119	.0160
heavy radial 2.0 x dia depth	< 32 HRC	50% x dia. radial	1200 +	.0036	.0057	.0080	.0098	.0119	.0160
finishing medium radial	< 32 HRC	< 25% of dia.	1200 +	.0045	.0071	.0100	.0123	.0149	.0200
	> 32 HRC		600 +	.0036	.0057	.0080	.0098	.0119	.0160
finishing light radial	< 32HRC	< 10% of dia.	1200 +	.0045	.00713	.0100	.01225	.01485	.0200
finishing	< 32 HRC	< .010 radial depth	1200 +	.0054	.0086	.0120	.0147	.0178	.0240
	> 32 HRC		600 +	.0045	.0071	.0100	.0123	.0149	.0200

This chart represents starting points based on a coated tool. Reduce rates up to 50% when using an uncoated tool.

These speed and feed rates are suggested as general guidelines. Machine type, horsepower, spindle speed limitations, toolholding and workholding devices all may impact a cutting tool's ability to perform properly. Greenfield Industries is not responsible for tool failure, part damage, or injury that may be caused by following these general recommendations..

Formulae

$$RPM = (SFM \times 3.82) / \text{tool diameter}$$

$$IPM = \text{number of flutes} \times RPM \times \text{chip load per tooth}$$

Series HPAM for aluminum and nonferrous materials

Features and Benefits of HPAM End Mills

- Delivers superior performance, providing increased tool life and improved part finish.
- Concentric margins stabilize the tool in the cut and reduce chatter at elevated speeds.
- Greater resistance to chipping with increased feed and speed rates over conventional carbide tools.
- Design incorporates rake enhancements in the flute for improved chip flow and higher feed rates at high and low spindle speeds.
- Tool design eliminates excess pressure that causes chip packing.

Applications for HPAM End Mills

- 2-flute square end offers excellent performance in roughing and finishing, in ramp cutting and in plunging.
- 2-flute ball nose designed for contouring aluminum, copper, and other non-ferrous materials.
- 3-flute square end gives superior surface finishes without sacrificing metal removal rates in high-speed slotting, profiling, and ramping.

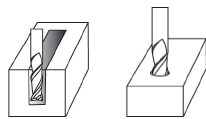


High-Performance End Mills for Aluminum

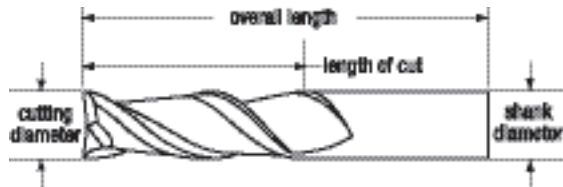
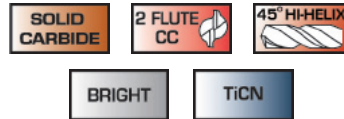
BASSETT™

Series HPAM-2 • square end

Applications |



Features |

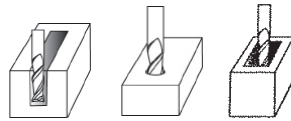


cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number	
fractional	decimal	metric					bright	TiCN
1/8	.1250	3.18	1/8	1/4	1 1/2	2	B04440	B06440
1/8	.1250	3.18	1/8	3/8	1 1/2	2	B04405	B06405
3/16	.1875	4.76	3/16	5/16	2	2	B04444	B06444
3/16	.1875	4.76	3/16	9/16	2	2	B04409	B06409
1/4	.2500	6.35	1/4	3/8	2 1/2	2	B04448	B06448
1/4	.2500	6.35	1/4	3/4	2 1/2	2	B04413	B06413
1/4	.2500	6.35	1/4	1 1/4	3	2	B04548	B06548
5/16	.3125	7.94	5/16	7/16	2 1/2	2	B04452	B06452
5/16	.3125	7.94	5/16	13/16	2 1/2	2	B04417	B06417
5/16	.3125	7.94	5/16	1 1/4	3 1/2	2	B04552	B06552
5/16	.3125	7.94	5/16	2 1/8	4	2	B04617	B06617
3/8	.3750	9.53	3/8	1/2	2 1/2	2	B04456	B06456
3/8	.3750	9.53	3/8	1	2 1/2	2	B04421	B06421
3/8	.3750	9.53	3/8	1 1/2	4	2	B04556	B06556
3/8	.3750	9.53	3/8	2 1/2	6	2	B04621	B06621
7/16	.4375	11.11	7/16	9/16	2 1/2	2	B04460	B06460
7/16	.4375	11.11	7/16	1	2 1/2	2	B04425	B06425
7/16	.4375	11.11	7/16	2	4	2	B04560	B06560
1/2	.5000	12.70	1/2	5/8	3	2	B04464	B06464
1/2	.5000	12.70	1/2	1 1/4	3	2	B04429	B06429
1/2	.5000	12.70	1/2	2	4	2	B04564	B06564
1/2	.5000	12.70	1/2	3 1/8	6	2	B04629	B06629
5/8	.6250	15.88	5/8	3/4	3 1/2	2	B04466	B06466
5/8	.6250	15.88	5/8	1 5/8	4	2	B04431	B06431
5/8	.6250	15.88	5/8	2 1/2	5	2	B04566	B06566
5/8	.6250	15.88	5/8	3 3/4	6	2	B04631	B06631
3/4	.7500	19.05	3/4	1	4	2	B04467	B06467
3/4	.7500	19.05	3/4	1 5/8	4	2	B04432	B06432
3/4	.7500	19.05	3/4	3 1/4	6	2	B04567	B06567
3/4	.7500	19.05	3/4	4	6 1/2	2	B04632	B06632
1	1.0000	25.40	1	1 1/4	5	2	B04469	B06469
1	1.0000	25.40	1	2	5	2	B04434	B06434
1	1.0000	25.40	1	3 1/4	6	2	B04569	B06569
1	1.0000	25.40	1	4 1/8	7	2	B04634	B06634

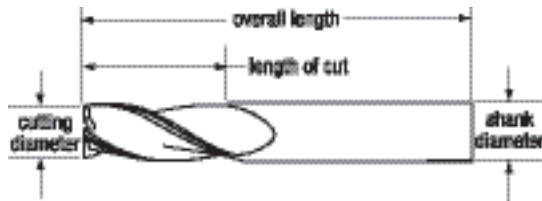
High-Performance End Mills for Aluminum

Series **HPAM-3** • square end

Applications |



Features |



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	bright	EDP number	
fractional	decimal	metric							TiCN
1/8	.1250	3.18	1/8	1/4	1 1/2	3	B04005	B06005	
1/8	.1250	3.18	1/8	3/8	1 1/2	3	B04040	B06040	
3/16	.1875	4.76	3/16	5/16	2	3	B04009	B06009	
3/16	.1875	4.76	3/16	9/16	2	3	B04044	B06044	
1/4	.2500	6.35	1/4	3/8	2	3	B04013	B06013	
1/4	.2500	6.35	1/4	5/8	2 1/2	3	B04048	B06048	
1/4	.2500	6.35	1/4	1 1/4	3	3	B04148	B06148	
5/16	.3125	7.94	5/16	7/16	2	3	B04017	B06017	
5/16	.3125	7.94	5/16	5/8	2 1/2	3	B04052	B06052	
5/16	.3125	7.94	5/16	1 1/4	3 1/2	3	B04152	B06152	
5/16	.3125	7.94	5/16	2 1/8	4	3	B04217	B06217	
3/8	.3750	9.53	3/8	1/2	2	3	B04021	B06021	
3/8	.3750	9.53	3/8	1	2 1/2	3	B04056	B06056	
3/8	.3750	9.53	3/8	1 1/2	3 1/2	3	B04156	B06156	
3/8	.3750	9.53	3/8	2 1/2	6	3	B04221	B06221	
7/16	.4375	11.11	7/16	9/16	2 1/2	3	B04025	B06025	
7/16	.4375	11.11	7/16	1 1/4	2 1/2	3	B04060	B06060	
7/16	.4375	11.11	7/16	2	4	3	B04160	B06160	
1/2	.5000	12.70	1/2	5/8	2 1/2	3	B04029	B06029	
1/2	.5000	12.70	1/2	1 1/4	3	3	B04064	B06064	
1/2	.5000	12.70	1/2	2	4	3	B04164	B06164	
1/2	.5000	12.70	1/2	3 1/8	6	3	B04229	B06229	
5/8	.6250	15.88	5/8	3/4	3	3	B04031	B06031	
5/8	.6250	15.88	5/8	1 5/8	4	3	B04066	B06066	
5/8	.6250	15.88	5/8	2 1/2	5	3	B04166	B06166	
5/8	.6250	15.88	5/8	3 3/4	6	3	B04231	B06231	
3/4	.7500	19.05	3/4	1	3	3	B04032	B06032	
3/4	.7500	19.05	3/4	1 5/8	4	3	B04067	B06067	
3/4	.7500	19.05	3/4	3 1/4	6	3	B04167	B06167	
1	1.0000	25.40	1	1 1/4	4	3	B04034	B06034	
1	1.0000	25.40	1	2	5	3	B04069	B06069	
1	1.0000	25.40	1	3 1/4	6	3	B04169	B06169	



High-Performance Roughers

Operating Parameters for High-Performance Roughers

CARBIDE END MILLS

Material	Hardness		Surface Feet per Minute			Chip Load per Tooth	
	Brinell	HRC	Uncoated	TiCN	TiAlN	1/4" to 1/2"	1/2" - 1"
low and plain carbon, alloy, and tool steels	<220 HB	<19	-	325 - 500	430 - 575	.0015 - .0030	.0030 - .0045
plain carbon, alloy and tool steels	225 - 286	20 - 30	-	215 - 375	350 - 430	.0015 - .0030	.0030 - .0045
	294 - 371	31 - 40	-	180 - 280	210 - 320	.0011 - .0021	.0021 - .0032
austenitic stainless steels 200 and 300 series	135 - 275	<28	-	215 - 440	250 - 500	.0010 - .0025	.0025 - .0040
ferritic, martensitic, 400/500 series and PH stainless steels	135 - 330	<35	-	190 - 375	225 - 430	.0015 - .0030	.0030 - .0045
aluminum, low silicon and other non-ferrous alloys	50 -150	600	2000	2400 - 2500	-	.0020 - .0038	.0038 - .0077
			600 - 2000	720 - 2500	-	.0018 - .0035	.0035 - .0071

CARBIDE DRILLS

Series **MRS** Rougher • multi-flute • center cutting • square end

Applications |

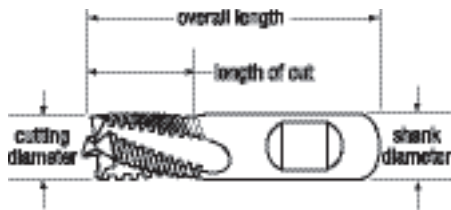


Features |



CARBIDE THREAD MILLS

CARBIDE BURS



INDEX

cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number		
fractional	decimal	metric					bright	TiCN	TiAlN
1/4	.2500	6.35	1/4	3/8	2	3	B03416	B03816	B66416
1/4	.2500	6.35	1/4	3/4	2 1/2	3	B03216	B03316	B66215
3/8	.3750	9.53	3/8	1/2	2	4	B03424	B03824	B66424
3/8	.3750	9.53	3/8	7/8	2 1/2	4	B03224	B03324	B66223
1/2	.5000	12.70	1/2	5/8	2 1/2	4	B03432	B03832	B66432
1/2	.5000	12.70	1/2	1	3	4	B03232	B03332	B66232
5/8	.6250	15.88	5/8	3/4	3	4	B03440	B03840	B66440
5/8	.6250	15.88	5/8	1-1/4	3 1/2	4	B03240	B03340	B66240
3/4	.7500	19.05	3/4	7/8	3 1/2	4	B03448	B03848	B66448
3/4	.7500	19.05	3/4	1-1/2	4	4	B03248	B03348	B66248
1	1.0000	25.40	1	1	3 1/2	4	B03464	B03864	B66464
1	1.0000	25.40	1	1-1/2	4	4	B03264	B03364	B66264

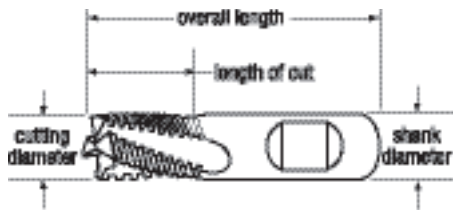
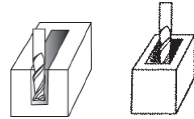
High-Performance Roughers

Series MRA Rougher • square end

Applications



Features



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number	
fractional	decimal	metric					bright	TiCN
1/4	.2500	6.35	1/4	3/8	2	3	B10117	B03117
1/4	.2500	6.35	1/4	3/4	2 1/2	3	B03016	B03116
3/8	.3750	9.53	3/8	1/2	2	3	B10118	B03118
3/8	.3750	9.53	3/8	7/8	2 1/2	3	B03024	B03124
1/2	.5000	12.70	1/2	5/8	2 1/2	3	B10119	B03119
1/2	.5000	12.70	1/2	1	3	3	B03032	B03132
1/2	.5000	12.70	1/2	2	4 1/2	3	B03532	B03632
5/8	.6250	15.88	5/8	3/4	3	3	B10120	B03120
5/8	.6250	15.88	5/8	1 1/4	3 1/2	3	B03040	B03140
5/8	.6250	15.88	5/8	2 1/4	5	3	B03540	B03640
3/4	.7500	19.05	3/4	1	3 1/2	3	B10121	B03121
3/4	.7500	19.05	3/4	1 1/2	4	3	B03048	B03148
3/4	.7500	19.05	3/4	2 1/4	5	3	B03548	B03648
1	1.0000	25.40	1	1 1/8	3 1/2	3	B10122	B03122
1	1.0000	25.40	1	1 1/2	4	3	B03064	B03164
1	1.0000	25.40	1	2 1/4	5	3	B03564	B03664



General-Purpose End Mills

Features and Benefits of General-Purpose End Mills

- 10% cobalt submicron grain carbide substrate.
- 30° right-hand spiral, right-hand cut helix designed for maximum chip clearance.
- 2-, 3-, and 4-flute configurations available.
- Square end and ball nose end geometries available.
- Multiple lengths in select styles and sizes.
- TiCN-coated tools available in most styles.

Applications for General-Purpose End Mills

- Use in general milling applications in medium to low-carbon steels, cast iron, non-ferrous light metals, and plastics.
- Double-end end mills economically increase productivity.
- 2-flute end mills are generally used for plunging, slotting, and heavy peripheral cuts.
- 3-flute end mills provide a compromise between the chip clearance of a 2-flute tool and the rigidity and wear resistance of a 4-flute tool; especially useful for many slotting operations.
- 4-flute end mills are most commonly used in profiling and in harder materials; stiffer construction results in minimal deflection. They also provide good surface finishes and wear-resistant characteristics for excellent size control.

Cutting Data for General-Purpose Solid Carbide End Mills

Material	Hardness		Surface Feet per Minute	Chip Load per Tooth										
	Brinell	HRc		1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	
low and plain carbon, alloy and tool steels	<220 HB	<19	Low	270	.0004	.0006	.0010	.0015	.0020	.0025	.0030	.0035	.0040	.0045
			High	360										
plain carbon, alloy, and tool steels	225-286	20-30	Low	180	.0004	.0006	.0010	.0015	.0020	.0025	.0030	.0035	.0040	.0045
			High	270										
			Low	135	.0003	.0004	.0007	.0011	.0014	.0018	.0021	.0025	.0028	.0032
			High	180										
austenitic stainless steels 200 and 300 series	135-275	<28	Low	180	.0002	.0004	.0006	.0010	.0015	.0020	.0025	.0030	.0035	.0040
			High	315										
ductile and malleable cast iron	120-320	<35	Low	160	.0003	.0004	.0007	.0011	.0014	.0018	.0021	.0025	.0028	.0032
			High	270										
cast iron (gray)	120-220	<18	Low	315	.0008	.0012	.0020	.0030	.0040	.0050	.0060	.0070	.0080	.0090
			High	450										
			Low	225	.0005	.0007	.0012	.0018	.0024	.0030	.0036	.0042	.0048	.0055
			High	315										
low-silicon aluminum & other non-ferrous alloys	50-150	—	Low	720	.0006	.0010	.0016	.0024	.0032	.0040	.0048	.0560	.0064	.0072
			High	900										
cobalt-based high-temperature alloys	150-425	<45	Low	30	.0004	.0006	.0010	.0015	.0020	.0025	.0030	.0035	.0040	.0045
			High	45										
nickel-based high-temperature alloys	140-300	<32	Low	45	.0002	.0004	.0006	.0009	.0012	.0015	.0018	.0021	.0024	.0027
			High	90										
			Low	40	.0002	.0004	.0006	.0009	.0012	.0015	.0018	.0021	.0024	.0027
			High	70										

Higher values for surface speed should be used for radial depths of cut less than 25% of the diameter. Lower values for surface speed should be used for radial depths of cut greater than 25% of the diameter. The above recommendations are for axial lengths of cut not to exceed 1 times the cutter diameter for profiling and .5 times the diameter for slotting.

Recommended speeds above are for uncoated tools only and should be adjusted when using coated tools. Generally, speeds can be increased by the following factors:

- TiCN-coated tools – 20-25% increase
- TiAlN-coated tools – 40-50% increase

The above speeds are a recommended starting point only. If the tool is working well, without vibrations or significant noise, increase the SFM in 5-10% increments. Ultimate speeds will depend upon setup conditions. Higher or lower parameters may be required to achieve optimum conditions.

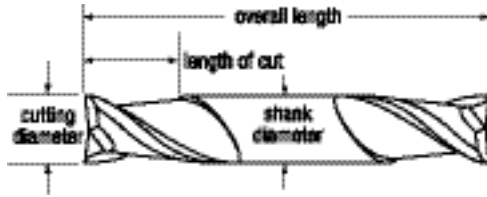
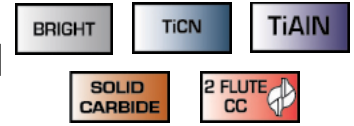
Double End General-Purpose

Series MDE-2

Applications |



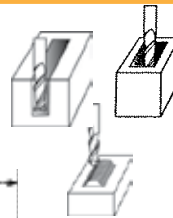
Features |



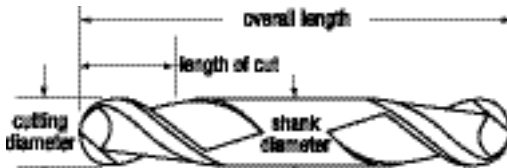
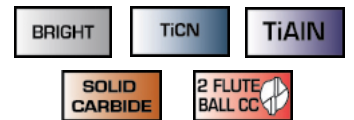
cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number		
fractional	decimal	metric					bright	TiCN	TiAlN
1/16	.0625	1.59	1/8	1/8	1 1/2	2	B52801	B01681	B00207
3/32	.0938	2.38	1/8	3/16	1 1/2	2	B52803	B01682	B00208
1/8	.1250	3.18	1/8	1/4	1 1/2	2	B52805W	B01683W	B00209
1/8	.1250	3.18	3/8	3/8	3	2	B52401	B01577	B00220
5/32	.1562	3.97	3/16	5/16	2	2	B52807	B01684	B00210
5/32	.1562	3.97	3/8	7/16	3	2	B52403	B01578	B00221
3/16	.1875	4.76	3/16	3/8	2	2	B52809	B01685	B00211
3/16	.1875	4.76	3/8	1/2	3	2	B52405	B01579	B11987
7/32	.2188	5.56	3/8	9/16	3 1/2	2	B52407	B01580	B00212
1/4	.2500	6.35	1/4	1/2	2 1/2	2	B52814	B01687	B00213
1/4	.2500	6.35	3/8	5/8	3 1/2	2	B52410	B01581	B00222
9/32	.2812	7.14	3/8	11/16	3 1/2	2	B52412	B01582	B00215
5/16	.3125	7.94	3/8	3/4	3 1/2	2	B52414	B01583	B00224
3/8	.3750	9.53	3/8	9/16	3	2	B52818	B01689	B40779
3/8	.3750	9.53	3/8	3/4	3 1/2	2	B52418	B01585	B00225
7/16	.4375	11.11	1/2	7/8	4	2	B52420	B01586	B00226
1/2	.5000	12.70	1/2	5/8	3	2	B52823	B01691	B00217
1/2	.5000	12.70	1/2	1	4	2	B52423	B01587	B00227

Series MDE-2-B

Applications |



Features |



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number		
fractional	decimal	metric					bright	TiCN	TiAlN
1/16	.0625	1.59	1/8	1/8	1 1/2	2	B52881	B01703	B69881
3/32	.0938	2.38	1/8	3/16	1 1/2	2	B52883	B01704	B69883
1/8	.1250	3.18	3/8	3/8	3	2	B52481	B01599	B69481
5/32	.1562	3.97	3/8	7/16	3	2	B52483	B01600	B69483
3/16	.1875	4.76	3/8	1/2	3	2	B52485	B01601	B69485
7/32	.2188	5.56	3/8	9/16	3 1/2	2	B52487	B01602	B69487
1/4	.2500	6.35	3/8	5/8	3 1/2	2	B52490	B01603	B69490
9/32	.2812	7.14	3/8	11/16	3 1/2	2	B52492	B01604	B69492
5/16	.3125	7.94	3/8	3/4	3 1/2	2	B52494	B01605	B69494
3/8	.3750	9.53	3/8	3/4	3 1/2	2	B52498	B01607	B69498
7/16	.4375	11.11	1/2	7/8	4	2	B52500	B01608	B69500
1/2	.5000	12.70	1/2	1	4	2	B52503	B01609	B69503



Double End General-Purpose

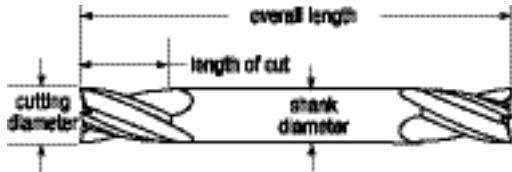
BASSETT™

Series MDE-4

Applications |



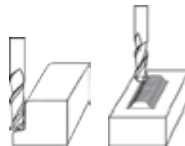
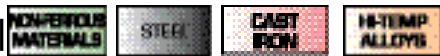
Features |



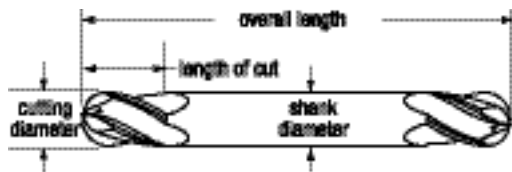
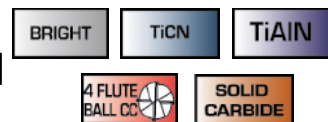
cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number		
fractional	decimal	metric					bright	TiCN	TiAlN
1/16	.0625	1.59	1/8	1/8	1 1/2	4	B52841	B01692	B00342
3/32	.0938	2.38	1/8	3/16	1 1/2	4	B52843	B01693	B69843
1/8	.1250	3.18	1/8	1/4	1 1/2	4	B52845W	B01694W	B69846
1/8	.1250	3.18	3/16	1/4	2	4	B52845	B01694	B69845
1/8	.1250	3.18	3/8	7/16	3	4	B52441	B01588	B11999
5/32	.1562	3.97	3/16	5/16	2	4	B52847	B01695	B00345
5/32	.1562	3.97	3/8	7/16	3	4	B52443	B01589	B69443
3/16	.1875	4.76	3/16	3/8	2	4	B52849	B01696	B00346
3/16	.1875	4.76	3/8	1/2	3	4	B52445	B01590	B12000
7/32	.2188	5.56	3/8	9/16	3 1/2	4	B52447	B01591	B69447
1/4	.2500	6.35	1/4	1/2	2 1/2	4	B52854	B01698	B00348
1/4	.2500	6.35	3/8	5/8	3 1/2	4	B52450	B01592	B00357
9/32	.2812	7.14	3/8	11/16	3 1/2	4	B52452	B01593	B69452
5/16	.3125	7.94	5/16	1/2	2 1/2	4	B52856	B01699	B00349
5/16	.3125	7.94	3/8	3/4	3 1/2	4	B52454	B01594	B00359
3/8	.3750	9.53	3/8	9/16	3	4	B52858	B01700	B40780
3/8	.3750	9.53	3/8	3/4	3 1/2	4	B52458	B01596	B00360
7/16	.4375	11.11	1/2	7/8	4	4	B52460	B01597	B69460
1/2	.5000	12.70	1/2	5/8	3	4	B52863	B01702	B00352
1/2	.5000	12.70	1/2	1	4	4	B52463	B01598	B00362

Series MDE-4B

Applications |



Features |

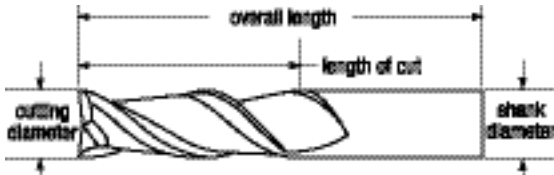
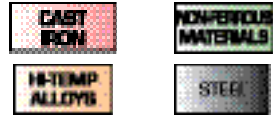


cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number		
fractional	decimal	metric					bright	TiCN	TiAlN
1/16	.0625	1.59	1/8	1/8	1 1/2	4	B52921	B01714	B69921
3/32	.0938	2.38	1/8	3/16	1 1/2	4	B52923	B01715	B69923
1/8	.1250	3.18	3/8	3/8	3	4	B52521	B01610	B69521
5/32	.1562	3.97	3/8	7/16	3	4	B52523	B01611	B69523
3/16	.1875	4.76	3/8	1/2	3	4	B52525	B01612	B69525
7/32	.2188	5.56	3/8	9/16	3 1/2	4	B52527	B01613	B69527
1/4	.2500	6.35	3/8	5/8	3 1/2	4	B52530	B01614	B69530
9/32	.2812	7.14	3/8	11/16	3 1/2	4	B52532	B01615	B69532
5/16	.3125	7.94	3/8	3/4	3 1/2	4	B52534	B01616	B69534
3/8	.3750	9.53	3/8	3/4	3 1/2	4	B52538	B01618	B69538
7/16	.4375	11.11	1/2	7/8	4	4	B52540	B01619	B69540
1/2	.5000	12.70	1/2	1	4	4	B52543	B01620	B69543

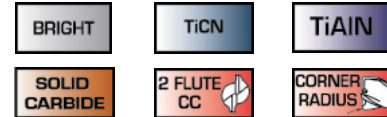
Single End General-Purpose

Series MSE-2

Applications |



Features |



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP number		
fractional	decimal	metric						bright	TiCN	TiAlN
1/32	.0312	0.79	1/8	1/8	1 1/2	2		B52601	B01621	B69601
3/64	.0469	1.19	1/8	1/8	1 1/2	2		B52602	B01622	B69602
1/16	.0625	1.59	1/8	1/8	1 1/2	2		B52604	B01623	B69604
1/16	.0625	1.59	1/8	3/4	1 1/2	2		B52001	B01441	B69001
5/64	.0781	1.98	1/8	3/4	1 1/2	2		B52002	B01442	B69002
3/32	.0938	2.38	1/8	3/4	1 1/2	2		B52606	B01624	B69606
3/32	.0938	2.38	1/8	3/8	1 1/2	2		B52004	B01443	B69004
7/64	.1094	2.78	1/8	3/8	1 1/2	2		B52005	B01444	B69005
1/8	.1250	3.18	1/8	1/4	1 1/2	2		B52608	B01625	B69608
1/8	.1250	3.18	1/8	1/2	1 1/2	2		B52007	B01445	B69007
1/8	.1250	3.18	1/8	1/2	1 1/2	2	0.010	B52060	B06800	B69060
1/8	.1250	3.18	1/8	3/4	2 1/4	2		B51200	B01329	B68200
1/8	.1250	3.18	1/8	1	3	2		B51400	B01318	B68400
9/64	.1406	3.57	3/16	9/16	2	2		B52008	B01446	B69008
5/32	.1562	3.97	3/16	9/16	2	2		B52010	B01447	B69010
11/64	.1719	4.37	3/16	5/8	2	2		B52011	B01448	B00059
3/16	.1875	4.76	3/16	5/16	2	2		B52612	B01627	B69602
3/16	.1875	4.76	3/16	5/8	2	2		B52013	B01449	B69013
3/16	.1875	4.76	3/16	5/8	2	2	0.010	B52061	B06801	B69061
3/16	.1875	4.76	3/16	3/4	2 1/2	2		B51202	B01330	B68202
3/16	.1875	4.76	3/16	1 1/8	3	2		B51402	B01386	B68402
13/64	.2031	5.16	1/4	5/8	2 1/2	2		B52014	B01450	B69014
7/32	.2188	5.56	1/4	5/8	2 1/2	2		B52016	B01451	B10575
15/64	.2344	5.95	1/4	3/4	2 1/2	2		B52017	B01452	B69017
6mm	.2362	6.00	6mm	25mm	75mm	2		B52019	----	B69112
1/4	.2500	6.35	1/4	1/2	2	2		B52617	B01629	B81577
1/4	.2500	6.35	1/4	3/4	2 1/2	2		B52020	B01453	B69020
1/4	.2500	6.35	1/4	3/4	2 1/2	2	0.020	B52062	B06802	B69062
1/4	.2500	6.35	1/4	3/4	2 1/2	2	0.030	B52063	B06803	B69063
1/4	.2500	6.35	1/4	1 1/8	3	2		B51204	B01331	B68204
1/4	.2500	6.35	1/4	1 1/2	4	2		B51404	B01319	B68404
1/4	.2500	6.35	1/4	1 1/2	6	2		B51405	B01388	B68405
17/64	.2656	6.75	5/16	3/4	2 1/2	2		B52021	B01454	B69021
9/32	.2812	7.14	5/16	3/4	2 1/2	2		B52023	B01455	B69023
5/16	.3125	7.94	5/16	1/2	2	2		B52619	B01630	B81578
5/16	.3125	7.94	5/16	13/16	2 1/2	2		B52026	B01457	B69026
5/16	.3125	7.94	5/16	13/16	2 1/2	2	0.020	B52065	B06805	B69065
5/16	.3125	7.94	5/16	13/16	2 1/2	2	0.030	B52066	B06806	B69066
5/16	.3125	7.94	5/16	1 1/8	3	2		B51206	B01333	B68206

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Single End General-Purpose

BASSETT™

Series **MSE-2** (continued)

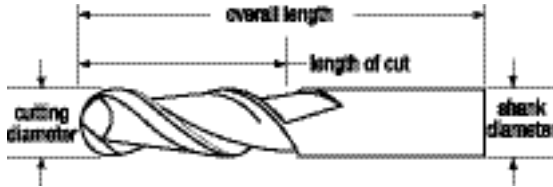
	cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	bright	EDP number		
	fractional	decimal	metric							TiCN	TiAlN	
CARBIDE END MILLS	5/16	.3125	7.94	5/16	1 5/8	4	2		B51406	B01389	B68406	
	3/8	.3750	9.53	3/8	5/8	2	2		B52621	B01631	B81579	
	3/8	.3750	9.53	3/8	1	2 1/2	2		B52032	B01461	B00062	
	3/8	.3750	9.53	3/8	1	2 1/2	2	0.020	B52068	B06808	B69068	
	3/8	.3750	9.53	3/8	1	2 1/2	2	0.030	B52069	B06809	B69069	
	3/8	.3750	9.53	3/8	1	2 1/2	2	0.040	B52070	B06810	B69070	
	3/8	.3750	9.53	3/8	1 1/8	3	2		B51208	B01334	B68208	
	3/8	.3750	9.53	3/8	1 3/4	4	2		B51408	B01320	B68408	
CARBIDE DRILLS	3/8	.3750	9.53	3/8	1 1/2	6	2		B51409	B01391	B68409	
	7/16	.4375	11.11	7/16	5/8	2 1/2	2		B52623	B01632	B69623	
	7/16	.4375	11.11	7/16	1	2 1/2	2		B52038	B01465	B69038	
	7/16	.4375	11.11	7/16	2	4	2		B51210	B01321	B68210	
	7/16	.4375	11.11	7/16	3	6	2		B51410	B01322	B68410	
	1/2	.5000	12.70	1/2	5/8	2 1/2	2		B52626	B01633	B81581	
	1/2	.5000	12.70	1/2	1	3	2		B52045	B01469	B69045	
	1/2	.5000	12.70	1/2	1	3	2	0.030	B52072	B06812	B69072	
CARBIDE THREAD MILLS	1/2	.5000	12.70	1/2	1	3	2	0.060	B52073	B06813	B69073	
	1/2	.5000	12.70	1/2	1	3	2	0.090	B52074	B06814	B69074	
	1/2	.5000	12.70	1/2	2	4	2		B51212	B01338	B68212	
	1/2	.5000	12.70	1/2	1 1/2	6	2		B51411	B01323	B68411	
	1/2	.5000	12.70	1/2	3	6	2		B51412	B01394	B68412	
	9/16	.5625	14.29	9/16	1 1/4	3	2		B52047	B01470	B69047	
	5/8	.6250	15.88	5/8	3/4	3	2		B52628	B01634	B69628	
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	2		B52049	B01471	B00064	
CARBIDE BURS	5/8	.6250	15.88	5/8	1 1/4	3 1/2	2	0.030	B52076	B06816	B69076	
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	2	0.060	B52077	B06817	B69077	
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	2	0.090	B52078	B06818	B69078	
	5/8	.6250	15.88	5/8	2 1/4	5	2		B51214	B01324	B68214	
	5/8	.6250	15.88	5/8	3	6	2		B51414	B01395	B68414	
	3/4	.7500	19.05	3/4	1	3	2		B52631	B01635	B81583	
	3/4	.7500	19.05	3/4	1 1/2	4	2		B52051	B01472	B00065	
	3/4	.7500	19.05	3/4	1 1/2	4	2	0.030	B52080	B06820	B69080	
INDEX	3/4	.7500	19.05	3/4	1 1/2	4	2	0.060	B52081	B06821	B69081	
	3/4	.7500	19.05	3/4	1 1/2	4	2	0.090	B52082	B06822	B69082	
	3/4	.7500	19.05	3/4	2 1/4	5	2		B51216	B61216	B68216	
	3/4	.7500	19.05	3/4	3	6	2		B51416	B01396	B68416	
	7/8	.8750	22.23	7/8	1 1/2	4	2		B52053	B01473	B69053	
	7/8	.8750	22.23	7/8	2 1/4	5	2		B51218	B01325	B68218	
	7/8	.8750	22.23	7/8	3	6	2		B51418	B01326	B68418	
	1	1.0000	25.40	1	1 1/2	4	2		B52057	B01474	B00067	
1	1.0000	25.40	1	1 1/2	4	2	0.030	B52084	B06824	B69084		
1	1.0000	25.40	1	1 1/2	4	2	0.060	B52085	B06825	B69085		
1	1.0000	25.40	1	1 1/2	4	2	0.090	B52086	B06826	B69086		
1	1.0000	25.40	1	2 1/4	5	2		B51220	B01327	B68220		
1	1.0000	25.40	1	3	6	2		B51420	B01398	B68420		



Single End General-Purpose

Series MSE-2B

Applications |



Features |



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	bright	EDP number		
fractional	decimal	metric						TiCN	TiAlN	
1/32	.0312	0.79	1/8	1/8	1 1/2	2	B52681	B01651	B69681	
3/64	.0469	1.19	1/8	1/8	1 1/2	2	B52682	B01652	B69682	
1/16	.0625	1.59	1/8	1/8	1 1/2	2	B52684	B01653	B69684	
1/16	.0625	1.59	1/8	3/4	1 1/2	2	B52201	B01509	B69201	
5/64	.0781	1.98	1/8	3/4	1 1/2	2	B52202	B01564	B69202	
3/32	.0938	2.38	1/8	3/8	1 1/2	2	B52204	B01511	B69204	
7/64	.1094	2.78	1/8	3/8	1 1/2	2	B52205	B01512	B69205	
1/8	.1250	3.18	1/8	1/4	1 1/2	2	B52688	B01655	B69688	
1/8	.1250	3.18	1/8	1/2	1 1/2	2	B52207	B01513	B69207	
1/8	.1250	3.18	1/8	3/4	2 1/4	2	B51300	B01360	B68300	
1/8	.1250	3.18	1/8	1	3	2	B51500	B01414	B68500	
9/64	.1406	3.57	3/16	9/16	2	2	B52208	B01566	B69208	
5/32	.1562	3.97	3/16	9/16	2	2	B52210	B01515	B69210	
11/64	.1719	4.37	3/16	5/8	2	2	B52211	B01516	B69211	
3/16	.1875	4.76	3/16	5/16	2	2	B52692	B01657	B69602	
3/16	.1875	4.76	3/16	5/8	2	2	B52213	B01517	B00236	
3/16	.1875	4.76	3/16	3/4	2 1/2	2	B51302	B01363	B68302	
3/16	.1875	4.76	3/16	1 1/8	3	2	B51502	B01415	B68502	
13/64	.2031	5.16	1/4	5/8	2 1/2	2	B52214	B01364	B69214	
7/32	.2188	5.56	1/4	5/8	2 1/2	2	B52216	B01568	B69216	
15/64	.2344	5.95	1/4	3/4	2 1/2	2	B52217	B01570	B69217	
1/4	.2500	6.35	1/4	1/2	2	2	B52697	B01659	B69697	
1/4	.2500	6.35	1/4	3/4	2 1/2	2	B52220	B01521	B69220	
1/4	.2500	6.35	1/4	1 1/8	3	2	B51304	B01359	B68304	
1/4	.2500	6.35	1/4	1 1/2	4	2	B51504	B01427	B68504	
1/4	.2500	6.35	1/4	1 1/2	6	2	B51505	B01416	B68505	
17/64	.2656	6.75	5/16	3/4	2 1/2	2	B52221	B01572	B69221	
9/32	.2812	7.14	5/16	3/4	2 1/2	2	B52223	B01575	B69223	
5/16	.3125	7.94	5/16	1/2	2	2	B52699	B01660	B69699	
5/16	.3125	7.94	5/16	13/16	2 1/2	2	B52226	B01525	B00241	
5/16	.3125	7.94	5/16	1 1/8	3	2	B51306	B01361	B68306	
5/16	.3125	7.94	5/16	1 5/8	4	2	B51506	B01417	B68506	
3/8	.3750	9.53	3/8	5/8	2	2	B52701	B01661	B69701	
3/8	.3750	9.53	3/8	1	2 1/2	2	B52232	B01529	B12014	
3/8	.3750	9.53	3/8	1 1/8	3	2	B51308	B01362	B68308	
3/8	.3750	9.53	3/8	1 3/4	4	2	B51508	B01418	B68508	
3/8	.3750	9.53	3/8	1 1/2	6	2	B51509	B01419	B68509	

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CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

INDEX



Single End General-Purpose

Series **MSE-2B** (continued)

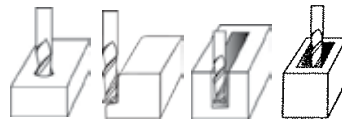
	cutting diameter			shank diameter	length of cut	overall length	no. of flutes	bright	EDP number	
	fractional	decimal	metric						TiCN	TiAIN
	7/16	.4375	11.11	7/16	5/8	2 1/2	2	B52703	B01662	B69703
	7/16	.4375	11.11	7/16	7/8	2 1/2	2	B52238	B01584	B12015
	7/16	.4375	11.11	7/16	2	4	2	B51310	B01365	B68310
	7/16	.4375	11.11	7/16	3	6	2	B51510	B01420	B68510
	1/2	.5000	12.70	1/2	5/8	2 1/2	2	B52706	B01663	B69706
	1/2	.5000	12.70	1/2	1	3	2	B52245	B01537	B00244
	1/2	.5000	12.70	1/2	2	4	2	B51312	B01367	B68312
	1/2	.5000	12.70	1/2	3	6	2	B51512	B01422	B68512
	1/2	.5000	12.70	1/2	1 1/2	6	2	B51511	B01366	B68511
	9/16	.5625	14.29	9/16	1 1/4	3	2	B52247	B01617	B69247
	5/8	.6250	15.88	5/8	3/4	3	2	B52708	B01664	B69708
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	2	B52249	B01539	B00246
	5/8	.6250	15.88	5/8	2 1/4	5	2	B51314	B01368	B68314
	5/8	.6250	15.88	5/8	3	6	2	B51514	B01423	B68514
	3/4	.7500	19.05	3/4	1	3	2	B52711	B01665	B69711
	3/4	.7500	19.05	3/4	1 1/2	4	2	B52251	B01540	B69251
	3/4	.7500	19.05	3/4	2 1/4	5	2	B51316	B01369	B68316
	3/4	.7500	19.05	3/4	3	6	2	B51516	B01424	B68516
	7/8	.8750	22.23	7/8	1 1/2	4	2	B52253	B01595	B69253
	7/8	.8750	22.23	7/8	2 1/4	5	2	B51318	B01370	B68318
	7/8	.8750	22.23	7/8	3	6	2	B51518	B01425	B68518
	1	1.0000	25.40	1	1 1/2	4	2	B52257	B01542	B00250
	1	1.0000	25.40	1	2 1/4	5	2	B51320	B01371	B68320
	1	1.0000	25.40	1	3	6	2	B51520	B01426	B68520



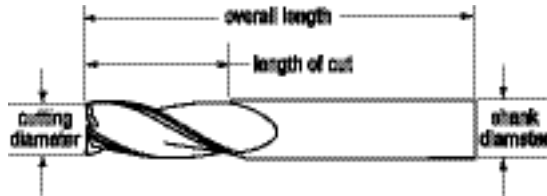
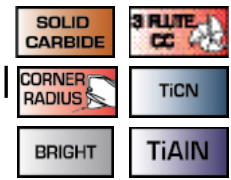
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cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP number		
fractional	decimal	metric						bright	TiCN	TiAlN
1/16	.0625	1.59	1/8	3/4	1 1/2	3		B27104	B37104	B67104
5/64	.0781	1.98	1/8	3/4	1 1/2	3		B27105	B37105	B67105
3/32	.0938	2.38	1/8	3/8	1 1/2	3		B27106	B37106	B67106
7/64	.1094	2.78	1/8	3/8	1 1/2	3		B27107	B37107	B67107
1/8	.1250	3.18	1/8	1/2	1 1/2	3		B27108	B37108	B67108
1/8	.1250	3.18	1/8	1/2	1 1/2	3	0.010	B27200	B37200	B67200
9/64	.1406	3.57	3/16	9/16	2	3		B27109	B37109	B67109
5/32	.1562	3.97	3/16	9/16	2	3		B27110	B37110	B67110
11/64	.1719	4.37	3/16	5/8	2	3		B27111	B37111	B67111
3/16	.1875	4.76	3/16	5/8	2	3		B27112	B37112	B67112
3/16	.1875	4.76	3/16	5/8	2	3	0.010	B27201	B37201	B67201
13/64	.2031	5.16	1/4	5/8	2 1/2	3		B27113	B37113	B67113
7/32	.2188	5.56	1/4	5/8	2 1/2	3		B27114	B37114	B67114
15/64	.2344	5.95	1/4	3/4	2 1/2	3		B27115	B37115	B67115
1/4	.2500	6.35	1/4	3/4	2 1/2	3		B27116	B11971	B67116
1/4	.2500	6.35	1/4	3/4	2 1/2	3	0.020	B27202	B37202	B67202
1/4	.2500	6.35	1/4	3/4	2 1/2	3	0.030	B27203	B37203	B67203
17/64	.2656	6.75	5/16	3/4	2 1/2	3		B27117	B37117	B67117
9/32	.2812	7.14	5/16	3/4	2 1/2	3		B27118	B37118	B67118
5/16	.3125	7.94	5/16	13/16	2 1/2	3		B27120	B11972	B67120
5/16	.3125	7.94	5/16	13/16	2 1/2	3	0.020	B27205	B37205	B67205
5/16	.3125	7.94	5/16	13/16	2 1/2	3	0.030	B27206	B37206	B67206
3/8	.3750	9.53	3/8	7/8	2 1/2	3		B27124	B11973	B67124
3/8	.3750	9.53	3/8	7/8	2 1/2	3	0.020	B27208	B37208	B67208
3/8	.3750	9.53	3/8	7/8	2 1/2	3	0.030	B27209	B37209	B67209
3/8	.3750	9.53	3/8	7/8	2 1/2	3	0.040	B27210	B37210	B67210
7/16	.4375	11.11	7/16	7/8	2 1/2	3		B27128	B11974	B67128
1/2	.5000	12.70	1/2	1	3	3		B27132	B11975	B67132
1/2	.5000	12.70	1/2	1	3	3	0.030	B27212	B37212	B67212
1/2	.5000	12.70	1/2	1	3	3	0.060	B27213	B37213	B67213
1/2	.5000	12.70	1/2	1	3	3	0.090	B27214	B37214	B67214
9/16	.5625	14.29	9/16	1 1/4	3	3		B27136	B37136	B67136
5/8	.6250	15.88	5/8	1 1/4	3 1/2	3		B27140	B11976	B67140
5/8	.6250	15.88	5/8	1 1/4	3 1/2	3	0.030	B27216	B37216	B67216
5/8	.6250	15.88	5/8	1 1/4	3 1/2	3	0.060	B27217	B37217	B67217
5/8	.6250	15.88	5/8	1 1/4	3 1/2	3	0.090	B27218	B37218	B67218
3/4	.7500	19.05	3/4	1 1/2	4	3		B27148	B11977	B67148
3/4	.7500	19.05	3/4	1 1/2	4	3	0.030	B27220	B37220	B67220
3/4	.7500	19.05	3/4	1 1/2	4	3	0.060	B27221	B37221	B67221
3/4	.7500	19.05	3/4	1 1/2	4	3	0.090	B27222	B37222	B67222
7/8	.8750	22.23	7/8	1 1/2	4	3		B27156	B11986	B67156
1	1.0000	25.40	1	1 1/2	4	3		B27164	B11978	B67164
1	1.0000	25.40	1	1 1/2	4	3	0.030	B27224	B37224	B67224
1	1.0000	25.40	1	1 1/2	4	3	0.060	B27225	B37225	B67225
1	1.0000	25.40	1	1 1/2	4	3	0.090	B27226	B37226	B67226

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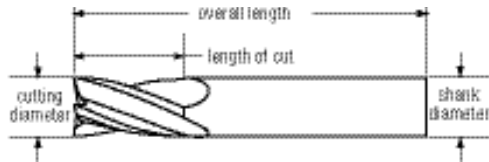
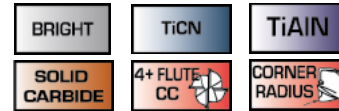
BASSETT™

Series **MSE-4**

Applications |



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cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP number		
fractional	decimal	metric						bright	TiCN	TiAlN
1/32	.0312	0.79	1/8	1/16	1 1/2	4	-----	-----	B69643	
1/32	.0312	0.79	1/8	1/8	1 1/2	4	B52641	B01636	B69641	
3/64	.0469	1.19	1/8	1/8	1 1/2	4	B52642	B01637	B69642	
1/16	.0625	1.59	1/8	1/8	1 1/2	4	B52644	B01638	B69644	
1/16	.0625	1.59	1/8	3/4	1 1/2	4	B52101	B01475	B69101	
1/16	.0625	1.59	1/8	1/4	1 1/2	4	0.010	B52645	-----	B69645
5/64	.0781	1.98	1/8	3/4	1 1/2	4	B52102	B01476	B69102	
3/32	.0938	2.38	1/8	3/4	1 1/2	4	B52646	B01639	B69646	
3/32	.0938	2.38	1/8	3/8	1 1/2	4	B52104	B01477	B69104	
3/32	.0938	2.38	1/8	3/8	1 1/2	4	0.010	B52106	-----	B69106
3/32	.0938	2.38	1/8	3/8	1 1/2	4	0.020	-----	-----	B69157
7/64	.1094	2.78	1/8	3/8	1 1/2	4	B52105	B01478	B69105	
1/8	.1250	3.18	1/8	1/4	1 1/2	4	B52648	B01640	B69648	
1/8	.1250	3.18	1/8	1/2	1 1/2	4	B52107	B01479	B69107	
1/8	.1250	3.18	1/8	1/2	1 1/2	4	0.010	B52160	B01750	B69160
1/8	.1250	3.18	1/8	1/2	1 1/2	4	0.015	-----	-----	B69158
1/8	.1250	3.18	1/8	1/2	1 1/2	4	0.020	B52095	-----	B62095
1/8	.1250	3.18	1/8	1/2	1 1/2	4	0.030	-----	-----	B69159
1/8	.1250	3.18	1/8	3/4	2 1/4	4	B51250	B01343	B68250	
1/8	.1250	3.18	1/8	1	3	4	B51450	B01399	B68450	
1/8	.1250	3.18	1/8	1	3	4	0.045	B52096	-----	B62096
9/64	.1406	3.57	3/16	9/16	2	4	B52108	B01480	B69108	
5/32	.1562	3.97	3/16	5/16	2	4	B52650	B01641	B69650	
5/32	.1562	3.97	3/16	9/16	2	4	B52110	B01481	B69110	
11/64	.1719	4.37	3/16	5/8	2	4	B52111	B01482	B69111	
3/16	.1875	4.76	3/16	3/4	2 1/2	4	B51252	B01344	B68252	
3/16	.1875	4.76	3/16	5/8	2	4	B52113	B01483	B69113	
3/16	.1875	4.76	3/16	5/8	2	4	0.010	B52162	B01751	B69162
3/16	.1875	4.76	3/16	5/8	2	4	0.015	B52087	-----	B62087
3/16	.1875	4.76	3/16	5/8	2	4	0.020	B52088	-----	B62088
3/16	.1875	4.76	3/16	5/8	2	4	0.030	B52089	-----	B62089
3/16	.1875	4.76	3/16	5/16	2	4	B52652	B01642	B69652	
3/16	.1875	4.76	3/16	1	3	4	B52090	-----	B62090	
3/16	.1875	4.76	3/16	1	3	4	0.045	-----	-----	B69163
3/16	.1875	4.76	3/16	1 1/8	3	4	B51452	B01400	B68452	
3/16	.1875	4.76	3/16	1	4	4	B51451	-----	B68451	
3/16	.1875	4.76	3/16	1	4	4	0.045	B52091	-----	B62091
13/64	.2031	5.16	1/4	5/8	2 1/2	4	B52114	B01484	B69114	
7/32	.2188	5.56	1/4	5/8	2 1/2	4	B52116	B01485	B69116	
15/64	.2344	5.95	1/4	3/4	2 1/2	4	B52117	B01486	B69117	
6mm	.2362	6.00	6mm	32mm	100mm	4	-----	-----	B69115	

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cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	bright	EDP number	
fractional	decimal	metric							TICN	TiAIN
1/4	.2500	6.35	1/4	1/2	2	4		B52657	B01644	B69657
1/4	.2500	6.35	1/4	3/4	2 1/2	4		B52120	B01487	B69120
1/4	.2500	6.35	1/4	3/4	2 1/2	4	0.010	B52092	-----	B62092
1/4	.2500	6.35	1/4	3/4	2 1/2	4	0.015	B52093	-----	B62093
1/4	.2500	6.35	1/4	3/4	2 1/2	4	0.020	B52164	B01752	B69164
1/4	.2500	6.35	1/4	3/4	2 1/2	4	0.030	B52165	B01753	B69165
1/4	.2500	6.35	1/4	3/4	2 1/2	4	0.040	-----	-----	B69119
1/4	.2500	6.35	1/4	3/4	2 1/2	4	0.045	-----	-----	B69122
1/4	.2500	6.35	1/4	3/4	2 1/2	4	0.060	B69118	-----	B62094
1/4	.2500	6.35	1/4	1 1/8	3	4		B51254	B01340	B68254
1/4	.2500	6.35	1/4	1 1/2	4	4		B51454	B01732	B68454
1/4	.2500	6.35	1/4	1 1/2	6	4		B51455	B01402	B68455
17/64	.2656	6.75	5/16	3/4	2 1/2	4		B52121	B01730	B69121
9/32	.2812	7.14	5/16	3/4	2 1/2	4		B52123	B01489	B69123
19/64	.2969	7.54	5/16	7/8	2 1/4	4		-----	-----	B69124
5/16	.3125	7.94	5/16	1/2	2	4		B52659	B01645	B81587
5/16	.3125	7.94	5/16	13/16	2 1/2	4		B52126	B01491	B69126
5/16	.3125	7.94	5/16	13/16	2 1/2	4	0.020	B52167	B01755	B69167
5/16	.3125	7.94	5/16	13/16	2 1/2	4	0.030	B52168	B01756	B69168
5/16	.3125	7.94	5/16	1	4	4		B52097	-----	B68457
5/16	.3125	7.94	5/16	1 1/8	3	4		B51256	B01347	B68256
5/16	.3125	7.94	5/16	1 5/8	4	4		B51456	B01403	B68456
11/32	.3438	8.73	3/8	7/8	2 1/2	4		-----	-----	B69129
3/8	.3750	9.53	3/8	5/8	2	4		B52661	B01646	B81588
3/8	.3750	9.53	3/8	1	2 1/2	4		B52132	B01495	B69132
3/8	.3750	9.53	3/8	1	2 1/2	4	0.010	-----	-----	B69130
3/8	.3750	9.53	3/8	1	2 1/2	4	0.015	-----	-----	B69131
3/8	.3750	9.53	3/8	1	2 1/2	4	0.020	B52170	B01758	B69170
3/8	.3750	9.53	3/8	1	2 1/2	4	0.030	B52171	B01759	B69171
3/8	.3750	9.53	3/8	1	2 1/2	4	0.040	B52172	B01760	B69172
3/8	.3750	9.53	3/8	1	2 1/2	4	0.045	-----	-----	B69133
3/8	.3750	9.53	3/8	1	2 1/2	4	0.060	-----	-----	B69134
3/8	.3750	9.53	3/8	1 1/8	3	4		B51258	B01348	B68258
3/8	.3750	9.53	3/8	1	4	4		-----	-----	B68472
3/8	.3750	9.53	3/8	1	4	4	0.020	-----	-----	B69136
3/8	.3750	9.53	3/8	1 3/4	4	4		B51458	B01733	B68458
3/8	.3750	9.53	3/8	1 1/2	6	4		B51459	B01405	B68459
13/32	.4062	10.32	7/16	7/8	2 3/4	4		B52098	-----	B62098
27/64	.4218	10.71	7/16	7/8	2 3/4	4		B52099	-----	B62099
7/16	.4375	11.11	7/16	5/8	2 1/2	4		B52663	B01647	B69663
7/16	.4375	11.11	7/16	1	2 1/2	4		B52138	B01499	B69138
7/16	.4375	11.11	7/16	2	4	4		B51260	B01341	B68260
7/16	.4375	11.11	7/16	3	6	4		B51460	B01734	B68460
1/2	.5000	12.70	1/2	5/8	2 1/2	4		B52666	B01648	B81590
1/2	.5000	12.70	1/2	1	3	4		B52145	B01503	B69145
1/2	.5000	12.70	1/2	1	3	4	0.015	-----	-----	B69143
1/2	.5000	12.70	1/2	1	3	4	0.020	-----	-----	B69144
1/2	.5000	12.70	1/2	1	3	4	0.030	B52173	B01762	B69173
1/2	.5000	12.70	1/2	1	3	4	0.040	-----	-----	B69146
1/2	.5000	12.70	1/2	1	3	4	0.060	B52174	B01763	B69174

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	cutting diameter			shank diameter	length of cut	overall length	no. of flutes	corner radius	EDP number		
	fractional	decimal	metric						bright	TiCN	TiAlN
	1/2	.5000	12.70	1/2	1	3	4	0.090	B52175	B01764	B69175
	1/2	.5000	12.70	1/2	1	3	4	0.125	B52185	-----	B62100
	1/2	.5000	12.70	1/2	2	4	4		B51262	B01352	B68262
	1/2	.5000	12.70	1/2	3	6	4		B51462	B01408	B68462
	1/2	.5000	12.70	1/2	1 1/2	6	4		B51461	B01407	B68461
	9/16	.5625	14.29	9/16	1 1/4	3	4		B52147	B01765	B69147
	5/8	.6250	15.88	5/8	3/4	3	4		B52668	B01649	B81591
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	4		B52149	B01505	B69149
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	4	0.030	B52176	B01766	B69176
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	4	0.060	B52177	B01767	B69177
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	4	0.090	B52178	B01768	B69178
	5/8	.6250	15.88	5/8	2 1/4	5	4		B51264	B01342	B68264
	5/8	.6250	15.88	5/8	3	6	4		B51464	B01409	B68464
	3/4	.7500	19.05	3/4	1	3	4		B52671	B01650	B81592
	3/4	.7500	19.05	3/4	1 1/2	4	4		B52151	B01506	B69151
	3/4	.7500	19.05	3/4	1 1/2	4	4	0.030	B52179	B01770	B69179
	3/4	.7500	19.05	3/4	1 1/2	4	4	0.060	B52180	B01771	B69180
	3/4	.7500	19.05	3/4	1 1/2	4	4	0.090	B52181	B01772	B69181
	3/4	.7500	19.05	3/4	2 1/4	5	4		B51266	B01351	B68266
	3/4	.7500	19.05	3/4	3	6	4		B51466	B01410	B68466
	7/8	.8750	22.23	7/8	1 1/2	4	4		B52153	B01507	B69153
	7/8	.8750	22.23	7/8	2 1/4	5	4		B51268	B01355	B68268
	7/8	.8750	22.23	7/8	3	6	4		B51468	B01735	B68468
	1	1.0000	25.40	1	1 1/2	4	4		B52157	B01508	B00046
	1	1.0000	25.40	1	1 1/2	4	4	0.030	B52182	B01774	B69182
	1	1.0000	25.40	1	1 1/2	4	4	0.060	B52183	B01775	B69183
	1	1.0000	25.40	1	1 1/2	4	4	0.090	B52184	B01776	B69184
	1	1.0000	25.40	1	2 1/4	5	4		B51270	B01356	B68270
	1	1.0000	25.40	1	3	6	4		B51470	B01412	B68470



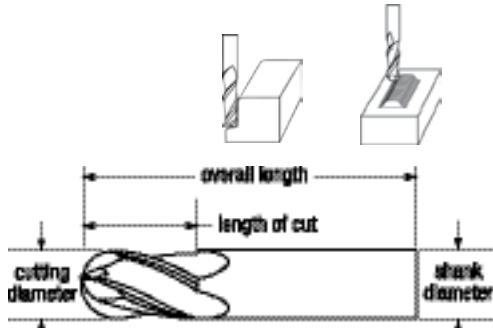
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Applications



Features



cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number		
fractional	decimal	metric					bright	TiCN	TiAIN
1/32	.0312	0.79	1/8	1/16	1 1/2	4	-----	-----	B69716
1/32	.0312	0.79	1/8	1/8	1 1/2	4	B52721	B01434	B69721
1/32	.0312	0.79	1/8	3/32	1 1/2	4	-----	-----	B69717
1mm	.0394	1mm	3mm	2mm	38mm	4	-----	-----	B69718
1mm	.0394	1mm	3mm	4mm	38mm	4	-----	-----	B69719
3/64	.0469	1.19	1/8	1/8	1 1/2	4	B52722	B01435	B69722
1.5mm	.0591	1mm	3mm	6mm	38mm	4	-----	-----	B69720
1/16	.0625	1.59	1/8	1/8	1 1/2	4	B52724	B01668	B69724
1/16	.0625	1.59	1/8	3/4	1 1/2	4	B52301	B01901	B69301
5/64	.0781	1.98	1/8	3/4	1 1/2	4	B52302	B01902	B69302
2mm	.0790	2mm	3mm	8mm	38mm	4	B52187	-----	B69303
3/32	.0938	2.38	1/8	3/8	1 1/2	4	B52304	B01904	B69304
3/32	.0938	2.38	1/16	3/8	1 1/2	4	-----	-----	B69306
7/64	.1094	2.78	1/8	3/8	1 1/2	4	B52305	B01905	B69305
1/8	.1250	3.18	1/8	1/4	1 1/2	4	B52728	B01670	B69728
1/8	.1250	3.18	1/8	1/2	1 1/2	4	B52307	B01547	B00018
1/8	.1250	3.18	1/8	5/8	2	4	-----	-----	B68499
1/8	.1250	3.18	1/8	3/4	2 1/4	4	B51350	B01374	B68350
1/8	.1250	3.18	1/8	1	3	4	B51550	B01850	B68550
9/64	.1406	3.57	3/16	9/16	2	4	B52308	B01908	B69308
5/32	.1562	3.97	3/16	5/16	2	4	-----	-----	B69309
5/32	.1562	3.97	3/16	9/16	2	4	B52310	B01549	B69310
11/64	.1719	4.37	3/16	5/8	2	4	B52311	B01911	B69311
3/16	.1875	4.76	3/16	5/16	2	4	B52732	B01672	B69732
3/16	.1875	4.76	3/16	5/8	2	4	B52313	B01551	B69313
3/16	.1875	4.76	3/16	3/4	2 1/2	4	B51352	B01377	B68352
3/16	.1875	4.76	3/16	1 1/8	3	4	B51552	B01852	B68552
13/64	.2031	5.16	1/4	5/8	2 1/2	4	B52314	B01914	B69314
7/32	.2188	5.56	1/4	5/8	2 1/2	4	B52316	B01553	B69316
15/64	.2344	5.95	1/4	3/4	2 1/2	4	B52317	B01917	B69317
1/4	.2500	6.35	1/4	1/2	2	4	B52737	B01674	B69737
1/4	.2500	6.35	1/4	3/4	2 1/2	4	B52320	B01555	B69320
1/4	.2500	6.35	1/4	1	4	4	-----	-----	B68503
1/4	.2500	6.35	1/4	1 1/8	3	4	B51354	B01373	B68354
1/4	.2500	6.35	1/4	1 1/2	4	4	B51554	B01854	B68554
1/4	.2500	6.35	1/4	1 1/2	6	4	B51555	B01430	B68555
17/64	.2656	6.75	5/16	3/4	2 1/2	4	B52321	B01921	B69321

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Single End General-Purpose

Series **MSE-4B** (continued)

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

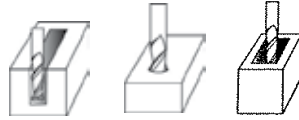
INDEX

	cutting diameter			shank diameter	length of cut	overall length	no. of flutes	bright	EDP number	
	fractional	decimal	metric						TiCN	TiAlN
	9/32	.2812	7.14	5/16	3/4	2 1/2	4	B52323	B01557	B69323
	5/16	.3125	7.94	5/16	1/2	2	4	B52739	B01675	B69739
	5/16	.3125	7.94	5/16	13/16	2 1/2	4	B52326	B01559	B69326
	5/16	.3125	7.94	5/16	1 1/8	3	4	B51356	B01375	B68356
	5/16	.3125	7.94	5/16	1 5/8	4	4	B51556	B01856	B68556
	23/64	.3594	9.13	3/8	7/8	2 1/2	4	-----	-----	B01857
	3/8	.3750	9.53	3/8	5/8	2	4	B52741	B01676	B69741
	3/8	.3750	9.53	3/8	1	2 1/2	4	B52332	B01563	B00025
	3/8	.3750	9.53	3/8	1 1/8	3	4	B51358	B01376	B68358
	3/8	.3750	9.53	3/8	1 1/2	6	4	B51559	B01433	B68559
	3/8	.3750	9.53	3/8	1 3/4	4	4	B51558	B01858	B68558
	25/64	.3906	9.92	7/16	7/8	2 3/4	4	B52188		B68574
	27/64	.4219	10.71	7/16	7/8	2 3/4	4	-----	-----	B68575
	7/16	.4375	11.11	7/16	5/8	2 1/2	4	B52743	B01439	B69743
	7/16	.4375	11.11	7/16	1	2 1/2	4	B52338	B01567	B35859
	7/16	.4375	11.11	7/16	2	4	4	B51360	B01378	B68360
	7/16	.4375	11.11	7/16	3	6	4	B51560	B01860	B68560
	31/64	.4844	12.30	1/2	1	3	4	-----	-----	B68563
	1/2	.5000	12.70	1/2	5/8	2 1/2	4	B52746	B01678	B69746
	1/2	.5000	12.70	1/2	1	3	4	B52345	B01571	B69345
	1/2	.5000	12.70	1/2	2	4	4	B51362	B01380	B68362
	1/2	.5000	12.70	1/2	1 1/2	6	4	B51561	B01431	B68561
	1/2	.5000	12.70	1/2	3	6	4	B51562	B01436	B68562
	9/16	.5625	14.29	9/16	1 1/4	3	4	B52347	B01947	B69347
	5/8	.6250	15.88	5/8	3/4	3	4	B52748	B01679	B69748
	5/8	.6250	15.88	5/8	1 1/4	3 1/2	4	B52349	B01573	B00028
	5/8	.6250	15.88	5/8	2 1/4	5	4	B51364	B01379	B68364
	5/8	.6250	15.88	5/8	3	6	4	B51564	B01437	B68564
	3/4	.7500	19.05	3/4	1	3	4	B52751	B01680	B69751
	3/4	.7500	19.05	3/4	1 1/2	4	4	B52351	B01574	B00030
	3/4	.7500	19.05	3/4	2 1/4	5	4	B51366	B01381	B68366
	3/4	.7500	19.05	3/4	3	6	4	B51566	B01438	B68566
	7/8	.8750	22.23	7/8	1 1/2	4	4	B52353	B01953	B69353
	7/8	.8750	22.23	7/8	2 1/4	5	4	B51368	B01382	B68368
	7/8	.8750	22.23	7/8	3	6	4	B51568	B01868	B68568
	1	1.0000	25.40	1	1 1/2	4	4	B52357	B01576	B00032
	1	1.0000	25.40	1	2 1/4	5	4	B51370	B01383	B68370
	1	1.0000	25.40	1	3	6	4	B51570	B01440	B68570

Single End General-Purpose

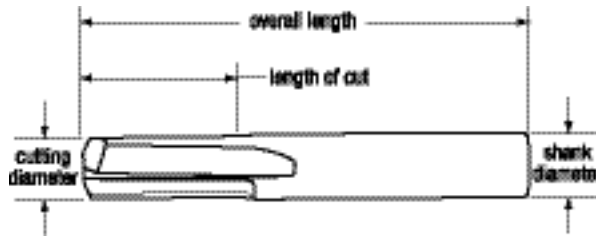
Series MEST-2 • straight flutes

Applications | **CAST IRON** **NON-FERROUS MATERIALS** **STEEL** **HI-TEMP ALLOYS**



Features | **SOLID CARBIDE** **2 FLUTE CC**

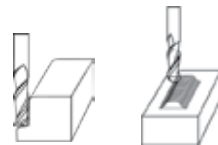
TiAIN **BRIGHT**



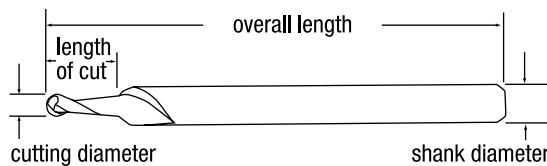
cutting diameter			shank diameter	length of cut	overall length	no. of flutes	EDP number	
fractional	decimal	metric					bright	TiAIN
1/16	.0625	1.59	1/8	3/16	1 1/2	2	B53201	B70201
1/8	.1250	3.18	1/8	1/2	1 1/2	2	B53203	B70203
3/16	.1875	4.76	3/16	5/8	2	2	B53205	B70205
1/4	.2500	6.35	1/4	3/4	2 1/2	2	B53207	B70207
5/16	.3125	7.94	5/16	13/16	2 1/2	2	B53210	B70210
3/8	.3750	9.53	3/8	7/8	2 1/2	2	B53212	B70212
1/2	.5000	12.70	1/2	1	3	2	B53215	B70215

Series MEG-2 Engraving Tool

Applications | **CAST IRON** **NON-FERROUS MATERIALS** **STEEL**



Features | **SOLID CARBIDE** **2 FLUTE BALL CC** **TiCN**



cutting diameter		shank diameter	length of cut	overall length	no. of flutes	EDP number
decimal	metric					TiCN
.021	0.53	1/8	.040	1 1/2	2	B10901
.025	0.64	1/8	.040	1 1/2	2	B10903
.030	0.76	1/8	.040	1 1/2	2	B10906



Chamfer Tools

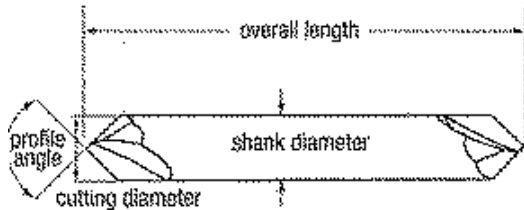
Series **MCH-2R Single End and MCH-2D Double End Chamfer Tool** • 60°, 82°, 90°, and 120° point

CARBIDE END MILLS

Applications |



Features |



CARBIDE DRILLS

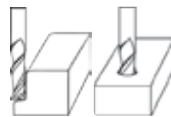
cutting diameter			shank diameter	overall length	no. of flutes	profile angle (°)	EDP number	
fractional	decimal	metric					single end	double end
1/8	.1250	3.18	1/8	1 1/2	2	82	B10013	
1/8	.1250	3.18	1/8	1 1/2	2	90	B10014	B10026
3/16	.1875	4.76	3/16	2	2	90	B10016	B10027
1/4	.2500	6.35	1/4	2 1/2	2	60	B10017	
1/4	.2500	6.35	1/4	2 1/2	2	82	B10018	
1/4	.2500	6.35	1/4	2 1/2	2	90	B10019	B10028
3/8	.3750	9.53	3/8	2 1/2	2	60	B10020	
3/8	.3750	9.53	3/8	2 1/2	2	82	B10021	
3/8	.3750	9.53	3/8	2 1/2	2	90	B10022	B10029
1/2	.5000	12.70	1/2	3	2	60	B10023	
1/2	.5000	12.70	1/2	3	2	82	B10024	
1/2	.5000	12.70	1/2	3	2	90	B10025	B10030
1/2	.5000	12.70	1/2	3	2	120	B10232	
3/4	.7500	19.05	3/4	4	2	90	B10233	B10231

CARBIDE THREAD MILLS

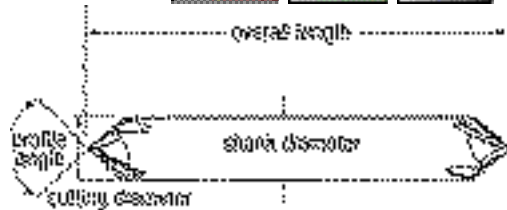
Series **MCH-4R Single End and MCH-4D Double End Chamfer Tool** • 60°, 82°, 90°, and 120° point

CARBIDE BURS

Applications |



Features |



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cutting diameter			shank diameter	overall length	no. of flutes	profile angle (°)	EDP number	
fractional	decimal	metric					single end	double end
1/4	.2500	6.35	1/4	2 1/2	4	60	B10219	
1/4	.2500	6.35	1/4	2 1/2	4	82	B10220	
1/4	.2500	6.35	1/4	2 1/2	4	90	B10221	B10228
3/8	.3750	9.53	3/8	2 1/2	4	60	B10222	
3/8	.3750	9.53	3/8	2 1/2	4	82	B10223	
3/8	.3750	9.53	3/8	2 1/2	4	90	B10224	B10229
1/2	.5000	12.70	1/2	3	4	60	B10225	
1/2	.5000	12.70	1/2	3	4	82	B10226	
1/2	.5000	12.70	1/2	3	4	90	B10227	B10230
1/2	.5000	12.70	1/2	3	4	120	B10235	
3/4	.7500	19.05	3/4	4	4	90	B10236	B10234