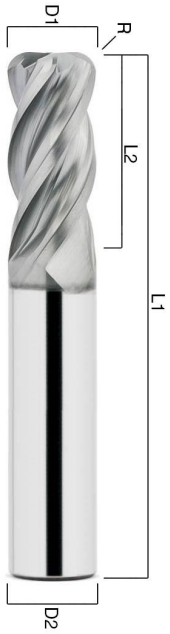
UNITED TOOL SUPPLY LTD.

X-Mill High Performance End Mills

DE BOER TOOL
CUTTING TOOL EXCELLENCE

STANDARD LENGTH

DIA	OAL	LOC	RAD	P/N	Price
1/8	1.5	.300	.008	DB-6010125R08	$12.97
3/16	2.0	.420	.010	DB-6010187R10	$17.31
1/4	2.5	.570	.010	DB-6010250R10	$21.50
5/16	2.5	.700	.015	DB-6010312R	$28.99
3/8	2.5	.830	.020	DB-6010375R20	$36.00
1/2	3.0	1.10	.020	DB-6010500R20	$57.57
1/2	3.5	1.32	.020	DB-6020500R20	$64.50
5/8	3.5	1.36	.025	DB-6010625R	$102.66
3/4	4.0	1.65	.030	DB-6010750R	$150.14



LONG REACH

DIA	OAL	LOC	RAD	P/N	Price
1/4	3.0	.350	.010	DB-6070250R	$21.50
5/16	4.0	.430	.015	DB-6070312R	$28.99
3/8	4.0	.550	.020	DB-6070375R	$36.00
1/2	4.0	.850	.020	DB-6070500R20	$57.57
5/8	6.0	.900	.025	DB-6070625R	$102.66
3/4	5.0	1.15	.030	DB-6070750R	$128.91

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DEBOERTOOL
CUTTING TOOL EXCELLENCE

X – Mill PAT. PENDING

Recommended Speed and Feed Rates

Work Piece Material		Cutting Speed SFM	1/4 RPM	1/4 IPM	5/16 RPM	5/16 IPM	3/8 RPM	3/8 IPM	1/2 RPM	1/2 IPM	5/8 RPM	5/8 IPM	3/4 RPM	3/4 IPM	1 RPM	1 IPM
Gray Cast Iron		500	7620	30.7	6050	29.0	5070	32.2	3300	33.0	3056	36.0	2547	34.8	1910	34.1
Soft Steels (1018 -1060)		550	8400	32.3	6680	32.5	5600	35.0	4185	40.8	3350	38.5	2775	37.7	2055	36.5
Alloy Steels	< 35Rc (4140 – 4340)	375	6110	38.50	4820	38.80	4015	39.80	3010	37.40	2450	34.80	2042	30.40	1560	24.10
Alloy Steels	> 35Rc (4140 – 4340 hardened)	300	4180	23.80	3385	26.20	2865	22.90	2180	24.70	1650	20.60	1374	17.60	1010	14.60
Tool Steels	< 36Rc (A2, D2, S7)	150	2720	15.10	2210	16.90	1810	14.40	1320	13.20	1020	13.40	895	11.20	670	9.40
Tool Steels	> 36Rc (A2, D2, S7 hardened)	300	5875	38.97	4867	38.61	3950	39.50	3005	35.15	2456	30.05	2025	30.00	1495	24.05
Die Steels < 37Rc (P20, H13)		250	3995	26.57	3315	26.35	2775	25.30	1985	25.80	1650	22.00	1375	20.25	1010	14.95
Stainless Steels	Easy to cut -303	300	5125	16.6	4130	14.0	3430	19.0	2555	21.0	2040	21.0	1690	20.8	1285	19.5
Stainless Steels	Moderately difficult to cut (304, Invar, Kovar)	255	4165	8.8	3305	9.0	2775	13.8	2100	16.8	1685	16.0	1370	15.5	1000	13.5
Stainless Steels	Difficult to cut (316L, 304L, 13-8 PH)	220	4000	9.1	3185	8.5	2670	13.4	1975	15.0	1580	14.5	1300	14.4	960	11.9
High Temperature Alloys (718 Inconel, A286, Haynes)		80	1205	2.5	960	2.6	800	2.7	605	3.3	475	3.0	380	3.1	295	2.7
Titanium Alloys (6Al-4V, 6-2222)		140	2615	6.9	2080	6.3	1730	9.3	1300	10.1	1015	9.7	865	8.9	630	9.2

• Parmeteres shown above are for maximum metal removal and maximum tool life. For more rigid setups (50 taper) increase above parameters by 10%, for weaker setups (40 taper) reduce above parameters by 10%

Recommended Chip Loads

Workpiece Material	Chip Load Per Tooth								
	1/8	3/16'	1/4	5/16'	3/8	1/2	5/8	3/4	1
Gray Cast Iron	0.0006	0.0008	0.0010	0.0012	0.0016	0.0025	0.0029	0.0034	0.0045
Soft Steels (>35HRc)	0.0006	0.0008	0.0010	0.0012	0.0016	0.0024	0.0024	0.0034	0.0029
Alloy Steels < 35Rc (4140-4340)	0.0006	0.0010	0.0016	0.0020	0.0025	0.0031	0.0036	0.0037	0.0039
Alloy Steels > 35Rc (4140-4340)	0.0004	0.0009	0.0014	0.0019	0.0020	0.0028	0.0031	0.0032	0.0036
Tool Steels < 36Rc (A2, D2, S7)	0.0004	0.0007	0.0014	0.0020	0.0020	0.0025	0.0033	0.0031	0.0035
Tool Steels > 36Rc (A2, D2, S7)	0.0003	0.0009	0.0017	0.0020	0.0025	0.0029	0.0031	0.0037	0.0040
Die Steels (P20, H13)	0.0005	0.0010	0.0017	0.0020	0.0023	0.0032	0.0033	0.0037	0.0037
Easy to cut stainless steels (303)	0.0006	0.0006	0.0008	0.0008	0.0014	0.0021	0.0026	0.0031	0.0038
Mod. Difficult to cut stainless Steels	0.0005	0.0005	0.0005	0.0007	0.0012	0.0020	0.0024	0.0028	0.0034
Difficult to cut Stainless Steels (316L)	0.0003	0.0004	0.0006	0.0007	0.0013	0.0019	0.0023	0.0028	0.0031
High Temperature alloys	0.0003	0.0004	0.0005	0.0007	0.0008	0.0014	0.0016	0.0020	0.0023
Titanium	0.0004	0.0005	0.0007	0.0008	0.0013	0.0019	0.0024	0.0026	0.0037

RPM = SFM x 3.82 / D
IPM = CPT x #Fl x RPM
CPT = IPM / RPM / #Fl
SFM = RPM / 3.82 x D