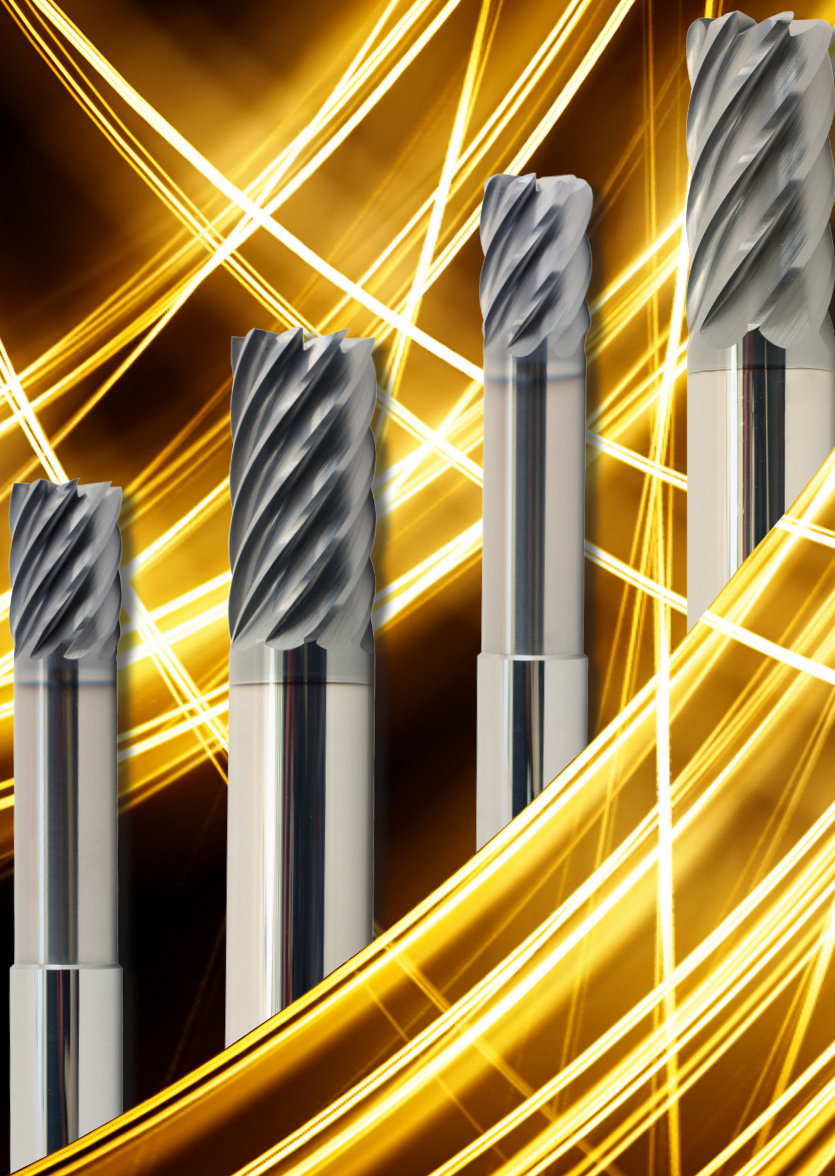


***NEW LINE!***  
**MULTI-FLUTE  
FINISHERS  
FOR TITANIUM**



**GARR TOOL<sup>®</sup>**

SUPPLEMENT 13.4

# Series TMS

.2362" - .5000"  
(6.000mm - 12.700mm)



**TOLERANCES**

$d1$	+0.000" - .002" (+.000mm - .050mm)
$d2$	h6

Recommended for Titanium and Steels under 40Rc

## Multi-Flute Finishing End Mill - Square End

AlCrN Coated

Solid submicron grain carbide end mill - non-center cutting

Engineered for Titanium

Multiple flutes for increased feed rates

Odd number of flutes to naturally break up harmonics

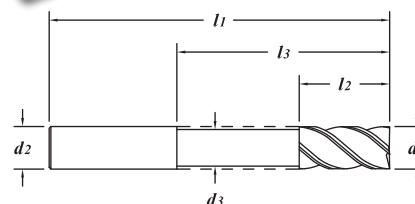
Edge treatment for increased tool life

Designed and tested for 2% Radial (ap) engagement

Can be used to finish most steels under 40Rc

Conventional grind for better finish cutting and less push off

Regrindable



70

35

MATERIAL HARDNESS (Rc)

0

EDP#	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$l3$ Reach Length	$d3$ Neck Diameter	Number Flutes	1-11	12-24	25-49	50-100
	Decimal	Metric										
98390	.2362	6.000	6.0	50	12	-	-	7	23.51	22.49	21.47	20.44
98392	.2362	6.000	6.0	65	19	-	-	7	26.50	25.35	24.20	23.04
98394	.2362	6.000	6.0	100	38	-	-	7	44.15	42.23	40.31	38.39
98396	.2362	6.000	6.0	100	10	60	5.4	7	47.43	45.37	43.31	41.24
98398	.2500	1/4"	6.350	1/4"	2"	3/8"	-	7	22.55	21.57	20.59	19.61
98400	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	-	7	25.58	24.47	23.36	22.24
98402	.2500	1/4"	6.350	1/4"	4"	1-1/2"	-	7	42.35	40.51	38.67	36.83
98404	.3125	5/16"	7.938	5/16"	2"	7/16"	-	7	33.48	32.02	30.57	29.11
98406	.3125	5/16"	7.938	5/16"	2-1/2"	13/16"	-	7	36.48	34.89	33.31	31.72
98408	.3125	5/16"	7.938	5/16"	4"	1-1/2"	-	7	57.80	55.29	52.77	50.26
98410	.3150	8.000	8.0	50	12	-	-	7	33.93	32.45	30.98	29.50
98412	.3150	8.000	8.0	65	22	-	-	7	37.80	36.16	34.51	32.87
98414	.3150	8.000	8.0	100	38	-	-	7	60.17	57.55	54.94	52.32
98416	.3150	8.000	8.0	100	12	60	7.4	7	63.45	60.69	57.93	55.17
98418	.3750	3/8"	9.525	3/8"	2"	1/2"	-	7	40.28	38.53	36.78	35.03
98420	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	-	7	43.04	41.17	39.30	37.43
98422	.3750	3/8"	9.525	3/8"	3"	1-1/4"	-	7	55.42	53.01	50.60	48.19
98424	.3750	3/8"	9.525	3/8"	4"	2"	-	7	62.11	59.41	56.71	54.01
98426	.3937	10.000	10.0	50	16	-	-	7	46.92	44.88	42.84	40.80
98428	.3937	10.000	10.0	70	22	-	-	7	51.62	49.38	47.13	44.89
98430	.3937	10.000	10.0	100	38	-	-	7	78.26	74.86	71.45	68.05
98432	.3937	10.000	10.0	100	50	-	-	7	78.26	74.86	71.45	68.05
98434	.3937	10.000	10.0	100	16	60	9.4	7	81.54	77.99	74.45	70.90
98436	.4724	12.000	12.0	75	26	-	-	9	67.05	64.13	61.22	58.30
98438	.4724	12.000	12.0	75	32	-	-	9	67.05	64.13	61.22	58.30
98440	.4724	12.000	12.0	100	42	-	-	9	92.01	88.01	84.01	80.01
98442	.4724	12.000	12.0	100	52	-	-	9	92.01	88.01	84.01	80.01
98444	.4724	12.000	12.0	150	19	105	11.4	9	129.71	124.07	118.43	112.79
98446	.5000	1/2"	12.700	1/2"	3"	1"	-	9	64.38	61.58	58.78	55.98
98448	.5000	1/2"	12.700	1/2"	3"	1-1/4"	-	9	64.38	61.58	58.78	55.98
98450	.5000	1/2"	12.700	1/2"	4"	5/8"	2-1/8"	9	90.39	86.46	82.53	78.60
98452	.5000	1/2"	12.700	1/2"	4"	1-1/2"	-	9	87.11	83.32	79.53	75.75
98454	.5000	1/2"	12.700	1/2"	4"	2-1/8"	-	9	87.11	83.32	79.53	75.75

EDP#	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$l3$ Reach Length	$d3$ Neck Diameter	Number Flutes	1-11	12-24	25-49	50-100	
	Decimal	Metric											
98456	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	-	-	9	132.57	126.81	121.04	115.28
98458	.6250	5/8"	15.875	5/8"	4"	1-5/8"	-	-	9	141.58	135.42	129.27	123.11
98460	.6250	5/8"	15.875	5/8"	6"	3-1/4"	-	-	9	194.81	186.34	177.87	169.40
98462	.6250	5/8"	15.875	5/8"	6"	3/4"	4-1/8"	.590"	9	198.09	189.48	180.86	172.25
98464	.6299		16.000	16.0	88	32	-	-	9	138.30	132.29	126.27	120.26
98466	.6299		16.000	16.0	100	42	-	-	9	147.63	141.21	134.79	128.37
98468	.6299		16.000	16.0	150	60	-	-	9	203.14	194.31	185.47	176.64
98470	.6299		16.000	16.0	150	80	-	-	9	203.14	194.31	185.47	176.64
98472	.6299		16.000	16.0	150	22	102	15.4	9	206.41	197.44	188.46	179.49
98474	.7500	3/4"	19.050	3/4"	4"	1-1/2"	-	-	11	196.80	188.24	179.69	171.13
98476	.7500	3/4"	19.050	3/4"	4"	1-5/8"	-	-	11	196.80	188.24	179.69	171.13
98478	.7500	3/4"	19.050	3/4"	5"	2-1/8"	-	-	11	264.17	252.68	241.20	229.71
98480	.7500	3/4"	19.050	3/4"	6"	3-1/4"	-	-	11	309.12	295.68	282.24	268.80
98482	.7500	3/4"	19.050	3/4"	6"	1"	4-1/8"	.720"	11	312.40	298.82	285.23	271.65
98484	.7874		20.000	20.0	100	26	-	-	11	255.66	244.54	233.43	222.31
98486	.7874		20.000	20.0	100	38	-	-	11	255.66	244.54	233.43	222.31
98488	.7874		20.000	20.0	150	60	-	-	11	322.00	308.00	294.00	280.00
98490	.7874		20.000	20.0	150	80	-	-	11	322.00	308.00	294.00	280.00
98492	.7874		20.000	20.0	150	26	102	19.4	11	325.28	311.14	296.99	282.85
98494	1.000	1"	25.400	1"	4"	1-1/2"	-	-	13	271.39	259.59	247.79	235.99
98496	1.000	1"	25.400	1"	5"	2-1/4"	-	-	13	363.26	347.47	331.67	315.88
98498	1.000	1"	25.400	1"	6"	3-1/4"	-	-	13	473.21	452.63	432.06	411.49
98500	1.000	1"	25.400	1"	7"	4-1/4"	-	-	13	636.32	608.65	580.99	553.32

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MATERIAL HARDNESS (Rc)

0



Series TMR

.4724"  
(12.000mm)



TOLERANCES

$d_1$	+0.000" - .002" (+.000mm - .050mm)
$d_2$	h6
$r$	+0.001" - .001" (+.025mm - .025mm)

Recommended for Titanium and Steels under 40Rc

Multi-Flute Finishing End Mill - Corner Radius  
AlCrN Coated

Solid submicron grain carbide end mill - non-center cutting

Engineered for Titanium

Multiple flutes for increased feed rates

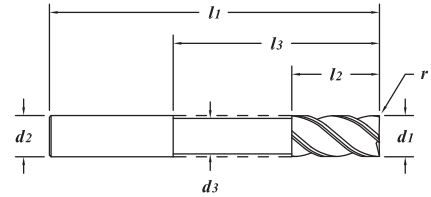
Odd number of flutes to naturally break up harmonics

Edge treatment for increased tool life

Designed and tested for 2% Radial (ap) engagement

Can be used to finish most steels under 40Rc

Conventional grind for better finish cutting and less push off  
Regrindable



MATERIAL HARDNESS (Rc)

70

35

0

EDP#	$d_1$ † Diameter		$d_2$ Shank Diameter	$l_1$ Overall Length	$l_2$ Flute Length	$r$ Corner Radius	$l_3$ Reach Length	$d_3$ Neck Diameter	Number Flutes	1-11	12-24	25-49	50-100
	Decimal	Metric											
98502	.4724	12.000	12.0	75	26	0.30	-	-	7	81.54	77.99	74.45	70.90
98504	.4724	12.000	12.0	75	26	0.50	-	-	7	81.54	77.99	74.45	70.90
98506	.4724	12.000	12.0	75	26	0.75	-	-	7	81.54	77.99	74.45	70.90
98508	.4724	12.000	12.0	75	26	1.00	-	-	7	81.54	77.99	74.45	70.90
98510	.4724	12.000	12.0	75	26	1.50	-	-	7	81.54	77.99	74.45	70.90
98512	.4724	12.000	12.0	75	26	2.00	-	-	7	81.54	77.99	74.45	70.90
98514	.4724	12.000	12.0	75	26	3.00	-	-	7	81.54	77.99	74.45	70.90
98516	.4724	12.000	12.0	75	26	4.00	-	-	7	81.54	77.99	74.45	70.90
98518	.4724	12.000	12.0	75	32	0.50	-	-	7	81.54	77.99	74.45	70.90
98520	.4724	12.000	12.0	75	32	0.75	-	-	7	81.54	77.99	74.45	70.90
98522	.4724	12.000	12.0	75	32	1.00	-	-	7	81.54	77.99	74.45	70.90
98524	.4724	12.000	12.0	75	32	1.50	-	-	7	81.54	77.99	74.45	70.90
98526	.4724	12.000	12.0	75	32	2.00	-	-	7	81.54	77.99	74.45	70.90
98528	.4724	12.000	12.0	75	32	3.00	-	-	7	81.54	77.99	74.45	70.90
98530	.4724	12.000	12.0	75	32	4.00	-	-	7	81.54	77.99	74.45	70.90
98532	.4724	12.000	12.0	100	42	0.50	-	-	7	96.59	92.39	88.19	83.99
98534	.4724	12.000	12.0	100	42	0.75	-	-	7	96.59	92.39	88.19	83.99
98536	.4724	12.000	12.0	100	42	1.00	-	-	7	96.59	92.39	88.19	83.99
98538	.4724	12.000	12.0	100	42	1.50	-	-	7	96.59	92.39	88.19	83.99
98540	.4724	12.000	12.0	100	42	2.00	-	-	7	96.59	92.39	88.19	83.99
98542	.4724	12.000	12.0	100	42	3.00	-	-	7	96.59	92.39	88.19	83.99
98544	.4724	12.000	12.0	100	42	4.00	-	-	7	96.59	92.39	88.19	83.99
98546	.4724	12.000	12.0	100	52	0.50	-	-	7	96.59	92.39	88.19	83.99
98548	.4724	12.000	12.0	100	52	0.75	-	-	7	96.59	92.39	88.19	83.99
98550	.4724	12.000	12.0	100	52	1.00	-	-	7	96.59	92.39	88.19	83.99
98552	.4724	12.000	12.0	100	52	1.50	-	-	7	96.59	92.39	88.19	83.99
98554	.4724	12.000	12.0	100	52	2.00	-	-	7	96.59	92.39	88.19	83.99
98556	.4724	12.000	12.0	100	52	3.00	-	-	7	96.59	92.39	88.19	83.99
98558	.4724	12.000	12.0	100	52	4.00	-	-	7	96.59	92.39	88.19	83.99
98560	.4724	12.000	12.0	150	19	0.50	105	11.4	7	134.01	128.18	122.36	116.53
98562	.4724	12.000	12.0	150	19	0.75	105	11.4	7	134.01	128.18	122.36	116.53
98564	.4724	12.000	12.0	150	19	1.00	105	11.4	7	134.01	128.18	122.36	116.53
98566	.4724	12.000	12.0	150	19	1.50	105	11.4	7	134.01	128.18	122.36	116.53
98568	.4724	12.000	12.0	150	19	2.00	105	11.4	7	134.01	128.18	122.36	116.53
98570	.4724	12.000	12.0	150	19	3.00	105	11.4	7	134.01	128.18	122.36	116.53
98572	.4724	12.000	12.0	150	19	4.00	105	11.4	7	134.01	128.18	122.36	116.53

# Series TMR (continued)

.5000" - .6250"  
(12.700mm - 15.875mm)

HIGH PERFORMANCE  
END MILLS

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MATERIAL HARDNESS (Rc)

0

EDP#	$d1^{\dagger}$			$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$r$ Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	Number Flutes	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric											
98574	.5000	1/2"	12.700	1/2"	3"	1"	.010"	-	-	7	78.22	74.82	71.42	68.02
98576	.5000	1/2"	12.700	1/2"	3"	1"	.020"	-	-	7	78.22	74.82	71.42	68.02
98578	.5000	1/2"	12.700	1/2"	3"	1"	.030"	-	-	7	78.22	74.82	71.42	68.02
98580	.5000	1/2"	12.700	1/2"	3"	1"	.060"	-	-	7	78.22	74.82	71.42	68.02
98582	.5000	1/2"	12.700	1/2"	3"	1"	.090"	-	-	7	78.22	74.82	71.42	68.02
98584	.5000	1/2"	12.700	1/2"	3"	1"	.120"	-	-	7	78.22	74.82	71.42	68.02
98586	.5000	1/2"	12.700	1/2"	3"	1"	.125"	-	-	7	78.22	74.82	71.42	68.02
98588	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.010"	-	-	7	78.22	74.82	71.42	68.02
98590	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.020"	-	-	7	78.22	74.82	71.42	68.02
98592	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.030"	-	-	7	78.22	74.82	71.42	68.02
98594	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.060"	-	-	7	78.22	74.82	71.42	68.02
98596	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.090"	-	-	7	78.22	74.82	71.42	68.02
98598	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.120"	-	-	7	78.22	74.82	71.42	68.02
98600	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.125"	-	-	7	78.22	74.82	71.42	68.02
98602	.5000	1/2"	12.700	1/2"	4"	5/8"	.010"	2-1/8"	.470"	7	95.71	91.55	87.39	83.23
98604	.5000	1/2"	12.700	1/2"	4"	5/8"	.020"	2-1/8"	.470"	7	95.71	91.55	87.39	83.23
98606	.5000	1/2"	12.700	1/2"	4"	5/8"	.030"	2-1/8"	.470"	7	95.71	91.55	87.39	83.23
98608	.5000	1/2"	12.700	1/2"	4"	5/8"	.060"	2-1/8"	.470"	7	95.71	91.55	87.39	83.23
98610	.5000	1/2"	12.700	1/2"	4"	5/8"	.120"	2-1/8"	.470"	7	95.71	91.55	87.39	83.23
98612	.5000	1/2"	12.700	1/2"	4"	5/8"	.125"	2-1/8"	.470"	7	95.71	91.55	87.39	83.23
98614	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.010"	-	-	7	92.44	88.42	84.40	80.38
98616	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.020"	-	-	7	92.44	88.42	84.40	80.38
98618	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.030"	-	-	7	92.44	88.42	84.40	80.38
98620	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.060"	-	-	7	92.44	88.42	84.40	80.38
98622	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.010"	-	-	7	92.44	88.42	84.40	80.38
98624	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.020"	-	-	7	92.44	88.42	84.40	80.38
98626	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.030"	-	-	7	92.44	88.42	84.40	80.38
98628	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.060"	-	-	7	92.44	88.42	84.40	80.38
98630	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.120"	-	-	7	92.44	88.42	84.40	80.38
98632	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.125"	-	-	7	92.44	88.42	84.40	80.38
98634	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.010"	-	-	7	138.99	132.95	126.90	120.86
98636	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.020"	-	-	7	138.99	132.95	126.90	120.86
98638	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.030"	-	-	7	138.99	132.95	126.90	120.86
98640	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.060"	-	-	7	138.99	132.95	126.90	120.86
98642	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.120"	-	-	7	138.99	132.95	126.90	120.86
98644	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.125"	-	-	7	138.99	132.95	126.90	120.86
98646	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.010"	-	-	7	151.08	144.51	137.94	131.37
98648	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.020"	-	-	7	151.08	144.51	137.94	131.37
98650	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.030"	-	-	7	151.08	144.51	137.94	131.37
98652	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.060"	-	-	7	151.08	144.51	137.94	131.37
98654	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.120"	-	-	7	151.08	144.51	137.94	131.37
98656	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.125"	-	-	7	151.08	144.51	137.94	131.37
98658	.6250	5/8"	15.875	5/8"	6"	3-1/4"	.010"	-	-	7	207.98	198.94	189.89	180.85
98660	.6250	5/8"	15.875	5/8"	6"	3-1/4"	.020"	-	-	7	207.98	198.94	189.89	180.85
98662	.6250	5/8"	15.875	5/8"	6"	3-1/4"	.030"	-	-	7	207.98	198.94	189.89	180.85
98664	.6250	5/8"	15.875	5/8"	6"	3-1/4"	.060"	-	-	7	207.98	198.94	189.89	180.85
98666	.6250	5/8"	15.875	5/8"	6"	3-1/4"	.120"	-	-	7	207.98	198.94	189.89	180.85
98668	.6250	5/8"	15.875	5/8"	6"	3-1/4"	.125"	-	-	7	207.98	198.94	189.89	180.85
98670	.6250	5/8"	15.875	5/8"	6"	3/4"	.010"	4-1/8"	.590"	7	211.27	202.08	192.90	183.71
98672	.6250	5/8"	15.875	5/8"	6"	3/4"	.020"	4-1/8"	.590"	7	211.27	202.08	192.90	183.71
98674	.6250	5/8"	15.875	5/8"	6"	3/4"	.030"	4-1/8"	.590"	7	211.27	202.08	192.90	183.71
98676	.6250	5/8"	15.875	5/8"	6"	3/4"	.060"	4-1/8"	.590"	7	211.27	202.08	192.90	183.71
98678	.6250	5/8"	15.875	5/8"	6"	3/4"	.120"	4-1/8"	.590"	7	211.27	202.08	192.90	183.71

continued →

# Series TMR (continued)

.6299" - .7500"  
(16.000mm - 19.050mm)

MATERIAL HARDNESS (Rc)

70  
35  
0

EDP#	$d1^\dagger$ Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$r$ Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	Number Flutes	1-11	12-24	25-49	50-100
	Decimal	Metric											
98680	.6299	16.000	16.0	88	32	0.50	-	-	7	145.03	138.72	132.42	126.11
98682	.6299	16.000	16.0	88	32	0.75	-	-	7	145.03	138.72	132.42	126.11
98684	.6299	16.000	16.0	88	32	1.00	-	-	7	145.03	138.72	132.42	126.11
98686	.6299	16.000	16.0	88	32	1.50	-	-	7	145.03	138.72	132.42	126.11
98688	.6299	16.000	16.0	88	32	2.00	-	-	7	145.03	138.72	132.42	126.11
98690	.6299	16.000	16.0	88	32	3.00	-	-	7	145.03	138.72	132.42	126.11
98692	.6299	16.000	16.0	88	32	4.00	-	-	7	145.03	138.72	132.42	126.11
98694	.6299	16.000	16.0	88	32	5.00	-	-	7	145.03	138.72	132.42	126.11
98696	.6299	16.000	16.0	100	42	0.50	-	-	7	154.23	147.52	140.82	134.11
98698	.6299	16.000	16.0	100	42	0.75	-	-	7	154.23	147.52	140.82	134.11
98700	.6299	16.000	16.0	100	42	1.00	-	-	7	154.23	147.52	140.82	134.11
98702	.6299	16.000	16.0	100	42	1.50	-	-	7	154.23	147.52	140.82	134.11
98704	.6299	16.000	16.0	100	42	2.00	-	-	7	154.23	147.52	140.82	134.11
98706	.6299	16.000	16.0	100	42	3.00	-	-	7	154.23	147.52	140.82	134.11
98708	.6299	16.000	16.0	100	42	4.00	-	-	7	154.23	147.52	140.82	134.11
98710	.6299	16.000	16.0	100	42	5.00	-	-	7	154.23	147.52	140.82	134.11
98712	.6299	16.000	16.0	150	60	0.50	-	-	7	216.29	206.89	197.48	188.08
98714	.6299	16.000	16.0	150	60	0.75	-	-	7	216.29	206.89	197.48	188.08
98716	.6299	16.000	16.0	150	60	1.00	-	-	7	216.29	206.89	197.48	188.08
98718	.6299	16.000	16.0	150	60	1.50	-	-	7	216.29	206.89	197.48	188.08
98720	.6299	16.000	16.0	150	60	2.00	-	-	7	216.29	206.89	197.48	188.08
98722	.6299	16.000	16.0	150	60	3.00	-	-	7	216.29	206.89	197.48	188.08
98724	.6299	16.000	16.0	150	60	4.00	-	-	7	216.29	206.89	197.48	188.08
98726	.6299	16.000	16.0	150	60	5.00	-	-	7	216.29	206.89	197.48	188.08
98728	.6299	16.000	16.0	150	80	0.50	-	-	7	216.29	206.89	197.48	188.08
98730	.6299	16.000	16.0	150	80	0.75	-	-	7	216.29	206.89	197.48	188.08
98732	.6299	16.000	16.0	150	80	1.00	-	-	7	216.29	206.89	197.48	188.08
98734	.6299	16.000	16.0	150	80	1.50	-	-	7	216.29	206.89	197.48	188.08
98736	.6299	16.000	16.0	150	80	2.00	-	-	7	216.29	206.89	197.48	188.08
98738	.6299	16.000	16.0	150	80	3.00	-	-	7	216.29	206.89	197.48	188.08
98740	.6299	16.000	16.0	150	80	4.00	-	-	7	216.29	206.89	197.48	188.08
98742	.6299	16.000	16.0	150	80	5.00	-	-	7	216.29	206.89	197.48	188.08
98744	.6299	16.000	16.0	150	22	0.50	102	15.4	7	219.57	210.02	200.48	190.93
98746	.6299	16.000	16.0	150	22	0.75	102	15.4	7	219.57	210.02	200.48	190.93
98748	.6299	16.000	16.0	150	22	1.00	102	15.4	7	219.57	210.02	200.48	190.93
98750	.6299	16.000	16.0	150	22	1.50	102	15.4	7	219.57	210.02	200.48	190.93
98752	.6299	16.000	16.0	150	22	2.00	102	15.4	7	219.57	210.02	200.48	190.93
98754	.6299	16.000	16.0	150	22	3.00	102	15.4	7	219.57	210.02	200.48	190.93
98756	.6299	16.000	16.0	150	22	4.00	102	15.4	7	219.57	210.02	200.48	190.93
98758	.6299	16.000	16.0	150	22	5.00	102	15.4	7	219.57	210.02	200.48	190.93
98760	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.010"	-	9	207.30	198.29	189.27	180.26
98762	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.020"	-	9	207.30	198.29	189.27	180.26
98764	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.030"	-	9	207.30	198.29	189.27	180.26
98766	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.060"	-	9	207.30	198.29	189.27	180.26
98768	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.120"	-	9	207.30	198.29	189.27	180.26
98770	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.190"	-	9	207.30	198.29	189.27	180.26
98772	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.250"	-	9	207.30	198.29	189.27	180.26
98774	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.010"	-	9	207.30	198.29	189.27	180.26
98776	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.020"	-	9	207.30	198.29	189.27	180.26
98778	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.030"	-	9	207.30	198.29	189.27	180.26
98780	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.060"	-	9	207.30	198.29	189.27	180.26
98782	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.120"	-	9	207.30	198.29	189.27	180.26
98784	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.190"	-	9	207.30	198.29	189.27	180.26
98786	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.250"	-	9	207.30	198.29	189.27	180.26

# Series TMR (continued)

.7500" - .7874"  
(19.050mm - 20.000mm)

HIGH PERFORMANCE  
END MILLS

70

35

MATERIAL HARDNESS (Rc)

0

EDP#	$d1^{\dagger}$ Diameter			$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$r$ Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	Number Flutes	1-11	12-24	25-49	50-100
	Decimal		Metric											
98788	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.010"	-	-	9	287.53	275.03	262.53	250.03
98790	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.020"	-	-	9	287.53	275.03	262.53	250.03
98792	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.030"	-	-	9	287.53	275.03	262.53	250.03
98794	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.060"	-	-	9	287.53	275.03	262.53	250.03
98796	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.120"	-	-	9	287.53	275.03	262.53	250.03
98798	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.190"	-	-	9	287.53	275.03	262.53	250.03
98800	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.250"	-	-	9	287.53	275.03	262.53	250.03
98802	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.010"	-	-	9	341.54	326.69	311.84	296.99
98804	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.020"	-	-	9	341.54	326.69	311.84	296.99
98806	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.030"	-	-	9	341.54	326.69	311.84	296.99
98808	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.060"	-	-	9	341.54	326.69	311.84	296.99
98810	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.120"	-	-	9	341.54	326.69	311.84	296.99
98812	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.190"	-	-	9	341.54	326.69	311.84	296.99
98814	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.250"	-	-	9	341.54	326.69	311.84	296.99
98816	.7500	3/4"	19.050	3/4"	6"	1"	.010"	4-1/8"	.720"	9	344.83	329.84	314.84	299.85
98818	.7500	3/4"	19.050	3/4"	6"	1"	.020"	4-1/8"	.720"	9	344.83	329.84	314.84	299.85
98820	.7500	3/4"	19.050	3/4"	6"	1"	.030"	4-1/8"	.720"	9	344.83	329.84	314.84	299.85
98822	.7500	3/4"	19.050	3/4"	6"	1"	.060"	4-1/8"	.720"	9	344.83	329.84	314.84	299.85
98824	.7500	3/4"	19.050	3/4"	6"	1"	.120"	4-1/8"	.720"	9	344.83	329.84	314.84	299.85
98826	.7500	3/4"	19.050	3/4"	6"	1"	.190"	4-1/8"	.720"	9	344.83	329.84	314.84	299.85
98828	.7500	3/4"	19.050	3/4"	6"	1"	.250"	4-1/8"	.720"	9	344.83	329.84	314.84	299.85
98830	.7874		20.000	20.0	100	26	0.50	-	-	9	282.11	269.84	257.58	245.31
98832	.7874		20.000	20.0	100	26	0.75	-	-	9	282.11	269.84	257.58	245.31
98834	.7874		20.000	20.0	100	26	1.00	-	-	9	282.11	269.84	257.58	245.31
98836	.7874		20.000	20.0	100	26	1.50	-	-	9	282.11	269.84	257.58	245.31
98838	.7874		20.000	20.0	100	26	2.00	-	-	9	282.11	269.84	257.58	245.31
98840	.7874		20.000	20.0	100	26	3.00	-	-	9	282.11	269.84	257.58	245.31
98842	.7874		20.000	20.0	100	26	4.00	-	-	9	282.11	269.84	257.58	245.31
98844	.7874		20.000	20.0	100	26	5.00	-	-	9	282.11	269.84	257.58	245.31
98846	.7874		20.000	20.0	100	26	6.00	-	-	9	282.11	269.84	257.58	245.31
98848	.7874		20.000	20.0	100	38	0.50	-	-	9	282.11	269.84	257.58	245.31
98850	.7874		20.000	20.0	100	38	0.75	-	-	9	282.11	269.84	257.58	245.31
98852	.7874		20.000	20.0	100	38	1.00	-	-	9	282.11	269.84	257.58	245.31
98854	.7874		20.000	20.0	100	38	1.50	-	-	9	282.11	269.84	257.58	245.31
98856	.7874		20.000	20.0	100	38	2.00	-	-	9	282.11	269.84	257.58	245.31
98858	.7874		20.000	20.0	100	38	3.00	-	-	9	282.11	269.84	257.58	245.31
98860	.7874		20.000	20.0	100	38	4.00	-	-	9	282.11	269.84	257.58	245.31
98862	.7874		20.000	20.0	100	38	5.00	-	-	9	282.11	269.84	257.58	245.31
98864	.7874		20.000	20.0	100	38	6.00	-	-	9	282.11	269.84	257.58	245.31
98866	.7874		20.000	20.0	150	60	0.50	-	-	9	346.78	331.70	316.62	301.55
98868	.7874		20.000	20.0	150	60	0.75	-	-	9	346.78	331.70	316.62	301.55
98870	.7874		20.000	20.0	150	60	1.00	-	-	9	346.78	331.70	316.62	301.55
98872	.7874		20.000	20.0	150	60	1.50	-	-	9	346.78	331.70	316.62	301.55
98874	.7874		20.000	20.0	150	60	2.00	-	-	9	346.78	331.70	316.62	301.55
98876	.7874		20.000	20.0	150	60	3.00	-	-	9	346.78	331.70	316.62	301.55
98878	.7874		20.000	20.0	150	60	4.00	-	-	9	346.78	331.70	316.62	301.55
98880	.7874		20.000	20.0	150	60	5.00	-	-	9	346.78	331.70	316.62	301.55
98882	.7874		20.000	20.0	150	60	6.00	-	-	9	346.78	331.70	316.62	301.55

continued →

# Series TMR (continued)

.7874" - 1.000"  
(20.000mm - 25.400mm)

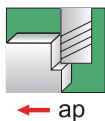
MATERIAL HARDNESS (Rc)  
70  
35  
0

EDP#	$d1^{\dagger}$ Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$r$ Corner Radius	$l3$ Reach Length	$d3$ Neck Diameter	Number Flutes	1-11	12-24	25-49	50-100	
	Decimal	Metric												
98884	.7874	20.000	20.0	150	80	0.50	-	-	9	346.78	331.70	316.62	301.55	
98886	.7874	20.000	20.0	150	80	0.75	-	-	9	346.78	331.70	316.62	301.55	
98888	.7874	20.000	20.0	150	80	1.00	-	-	9	346.78	331.70	316.62	301.55	
98890	.7874	20.000	20.0	150	80	1.50	-	-	9	346.78	331.70	316.62	301.55	
98892	.7874	20.000	20.0	150	80	2.00	-	-	9	346.78	331.70	316.62	301.55	
98894	.7874	20.000	20.0	150	80	3.00	-	-	9	346.78	331.70	316.62	301.55	
98896	.7874	20.000	20.0	150	80	4.00	-	-	9	346.78	331.70	316.62	301.55	
98898	.7874	20.000	20.0	150	80	5.00	-	-	9	346.78	331.70	316.62	301.55	
98900	.7874	20.000	20.0	150	80	6.00	-	-	9	346.78	331.70	316.62	301.55	
98902	.7874	20.000	20.0	150	26	0.50	102	19.4	9	350.06	334.84	319.62	304.40	
98904	.7874	20.000	20.0	150	26	0.75	102	19.4	9	350.06	334.84	319.62	304.40	
98906	.7874	20.000	20.0	150	26	1.00	102	19.4	9	350.06	334.84	319.62	304.40	
98908	.7874	20.000	20.0	150	26	1.50	102	19.4	9	350.06	334.84	319.62	304.40	
98910	.7874	20.000	20.0	150	26	2.00	102	19.4	9	350.06	334.84	319.62	304.40	
98912	.7874	20.000	20.0	150	26	3.00	102	19.4	9	350.06	334.84	319.62	304.40	
98914	.7874	20.000	20.0	150	26	4.00	102	19.4	9	350.06	334.84	319.62	304.40	
98916	.7874	20.000	20.0	150	26	5.00	102	19.4	9	350.06	334.84	319.62	304.40	
98918	.7874	20.000	20.0	150	26	6.00	102	19.4	9	350.06	334.84	319.62	304.40	
98920	1.000	1"	25.400	1"	4"	1-1/2"	.015"	-	-	11	326.67	312.47	298.26	284.06
98922	1.000	1"	25.400	1"	4"	1-1/2"	.030"	-	-	11	326.67	312.47	298.26	284.06
98924	1.000	1"	25.400	1"	4"	1-1/2"	.060"	-	-	11	326.67	312.47	298.26	284.06
98926	1.000	1"	25.400	1"	4"	1-1/2"	.090"	-	-	11	326.67	312.47	298.26	284.06
98928	1.000	1"	25.400	1"	4"	1-1/2"	.120"	-	-	11	326.67	312.47	298.26	284.06
98930	1.000	1"	25.400	1"	4"	1-1/2"	.190"	-	-	11	326.67	312.47	298.26	284.06
98932	1.000	1"	25.400	1"	4"	1-1/2"	.250"	-	-	11	326.67	312.47	298.26	284.06
98934	1.000	1"	25.400	1"	5"	2-1/4"	.015"	-	-	11	401.94	384.46	366.99	349.51
98936	1.000	1"	25.400	1"	5"	2-1/4"	.030"	-	-	11	401.94	384.46	366.99	349.51
98938	1.000	1"	25.400	1"	5"	2-1/4"	.060"	-	-	11	401.94	384.46	366.99	349.51
98940	1.000	1"	25.400	1"	5"	2-1/4"	.090"	-	-	11	401.94	384.46	366.99	349.51
98942	1.000	1"	25.400	1"	5"	2-1/4"	.120"	-	-	11	401.94	384.46	366.99	349.51
98944	1.000	1"	25.400	1"	5"	2-1/4"	.190"	-	-	11	401.94	384.46	366.99	349.51
98946	1.000	1"	25.400	1"	5"	2-1/4"	.250"	-	-	11	401.94	384.46	366.99	349.51
98948	1.000	1"	25.400	1"	6"	3-1/4"	.030"	-	-	11	524.23	501.44	478.64	455.85
98950	1.000	1"	25.400	1"	6"	3-1/4"	.060"	-	-	11	524.23	501.44	478.64	455.85
98952	1.000	1"	25.400	1"	6"	3-1/4"	.120"	-	-	11	524.23	501.44	478.64	455.85
98954	1.000	1"	25.400	1"	6"	3-1/4"	.190"	-	-	11	524.23	501.44	478.64	455.85
98956	1.000	1"	25.400	1"	6"	3-1/4"	.250"	-	-	11	524.23	501.44	478.64	455.85
98958	1.000	1"	25.400	1"	7"	4-1/4"	.030"	-	-	11	687.31	657.43	627.54	597.66
98960	1.000	1"	25.400	1"	7"	4-1/4"	.060"	-	-	11	687.31	657.43	627.54	597.66
98962	1.000	1"	25.400	1"	7"	4-1/4"	.120"	-	-	11	687.31	657.43	627.54	597.66
98964	1.000	1"	25.400	1"	7"	4-1/4"	.190"	-	-	11	687.31	657.43	627.54	597.66
98966	1.000	1"	25.400	1"	7"	4-1/4"	.250"	-	-	11	687.31	657.43	627.54	597.66

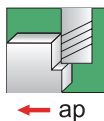


# GARR TOOL Chip Thinning Calculations for TMS and TMR End Mills

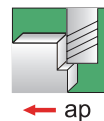
ap = 3%



ap = 2%



ap = 1%



3% Radial Engagement (.03 x d)	
Actual (CPT)	Programmed (CPT)
.0002"	.0005"
.0003"	.0010"
.0005"	.0015"
.0007"	.0020"
.0009"	.0025"
.0010"	.0030"
.0012"	.0035"
.0014"	.0040"
.0015"	.0045"
.0017"	.0050"
.0019"	.0055"
.0020"	.0060"
.0022"	.0065"
.0024"	.0070"
.0026"	.0075"
.0027"	.0080"
.0029"	.0085"
.0031"	.0090"
.0032"	.0095"
.0034"	.0100"
.0036"	.0105"
.0037"	.0110"
.0039"	.0115"
.0041"	.0120"
.0043"	.0125"
.0044"	.0130"
.0046"	.0135"
.0048"	.0140"
.0049"	.0145"
.0051"	.0150"
.0053"	.0155"
.0054"	.0160"
.0056"	.0165"
.0058"	.0170"
.0060"	.0175"
.0061"	.0180"
.0063"	.0185"
.0065"	.0190"
.0066"	.0195"
.0068"	.0200"

2% Radial Engagement (.02 x d)	
Actual (CPT)	Programmed (CPT)
.0001"	.0005"
.0003"	.0010"
.0004"	.0015"
.0006"	.0020"
.0007"	.0025"
.0008"	.0030"
.0010"	.0035"
.0011"	.0040"
.0013"	.0045"
.0014"	.0050"
.0015"	.0055"
.0017"	.0060"
.0018"	.0065"
.0020"	.0070"
.0021"	.0075"
.0022"	.0080"
.0024"	.0085"
.0025"	.0090"
.0027"	.0095"
.0028"	.0100"
.0029"	.0105"
.0031"	.0110"
.0032"	.0115"
.0034"	.0120"
.0035"	.0125"
.0036"	.0130"
.0038"	.0135"
.0039"	.0140"
.0041"	.0145"
.0042"	.0150"
.0043"	.0155"
.0045"	.0160"
.0046"	.0165"
.0048"	.0170"
.0049"	.0175"
.0050"	.0180"
.0052"	.0185"
.0053"	.0190"
.0055"	.0195"
.0056"	.0200"

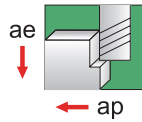
1% Radial Engagement (.01 x d)	
Actual (CPT)	Programmed (CPT)
.0001"	.0005"
.0002"	.0010"
.0003"	.0015"
.0004"	.0020"
.0005"	.0025"
.0006"	.0030"
.0007"	.0035"
.0008"	.0040"
.0009"	.0045"
.0010"	.0050"
.0011"	.0055"
.0012"	.0060"
.0013"	.0065"
.0014"	.0070"
.0015"	.0075"
.0016"	.0080"
.0017"	.0085"
.0018"	.0090"
.0019"	.0095"
.0020"	.0100"
.0021"	.0105"
.0022"	.0110"
.0023"	.0115"
.0024"	.0120"
.0025"	.0125"
.0026"	.0130"
.0027"	.0135"
.0028"	.0140"
.0029"	.0145"
.0030"	.0150"
.0031"	.0155"
.0032"	.0160"
.0033"	.0165"
.0034"	.0170"
.0035"	.0175"
.0036"	.0180"
.0037"	.0185"
.0038"	.0190"
.0039"	.0195"
.0040"	.0200"

NOTE - ABOVE ARE STARTING PARAMETERS ONLY. HIGHER RESULTS MAY BE ACHIEVED WITH OPTIMUM CONDITIONS.

# GARR TOOL Speeds and Feeds for TMS and TMR End Mills - Fractional

Material Type	SFM (Vc)	CHIPLOAD PER FLUTE (Fz) at 2% RADIAL ENGAGEMENT (USING PROGRAMMED CALCULATION - PG. 9)						
		1/4" (.2500)	5/16" (.3125)	3/8" (.3750)	1/2" (.5000)	5/8" (.6250)	3/4" (.7500)	1.0" (1.000)
<b>TITANIUM ALLOYS</b>								
6Al - 4V	250 - 400	.0020" - .0042"	.0030" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"	.0080" - .0143"
5553	150 - 250	.0015" - .0028"	.0018" - .0035"	.0025" - .0043"	.0030" - .0055"	.0035" - .0065"	.0042" - .0080"	.0052" - .0095"
<b>STAINLESS STEELS</b>								
Free Machining (303)	300 - 400	.0020" - .0042"	.0027" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"	.0080" - .0143"
Austenitic (304 / 304L)	225 - 350	.0017" - .0035"	.0025" - .0043"	.0030" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"
Martensitic (17-4 / 416)	200 - 250	.0015" - .0028"	.0018" - .0035"	.0025" - .0043"	.0030" - .0055"	.0035" - .0065"	.0042" - .0080"	.0052" - .0095"
<b>TOOL STEELS UNDER 40Rc</b>								
8620	250 - 400	.0017" - .0035"	.0025" - .0043"	.0030" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"
4140, D2 & S7	250 - 350	.0015" - .0028"	.0018" - .0035"	.0025" - .0043"	.0030" - .0055"	.0035" - .0065"	.0042" - .0080"	.0052" - .0095"
<b>CARBON STEELS</b>								
1000 Series, A36 & 12L14	300 - 500	.0020" - .0042"	.0027" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"	.0080" - .0143"
<b>CAST MATERIALS</b>								
Steel & Iron	250 - 350	.0020" - .0042"	.0027" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"	.0080" - .0143"
Aluminum	300 - 400	.0017" - .0035"	.0025" - .0043"	.0030" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"
<b>ALUMINUM</b>								
6061 - T6	300 - 500	.0020" - .0042"	.0027" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"	.0080" - .0143"
<b>COPPER &amp; BRASS ALLOYS</b>								
Short Chip	250 - 350	.0020" - .0042"	.0027" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"	.0080" - .0143"
Long Chip	175 - 300	.0017" - .0035"	.0025" - .0043"	.0030" - .0052"	.0035" - .0065"	.0043" - .0078"	.0052" - .0095"	.0065" - .0115"

## SFM / RPM Conversion



ap = 2%  
ae = full flute length

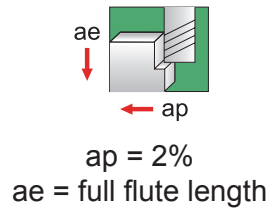
SFM (Vc)	DIAMETER (d)						
	.2500"	.3125"	.3750"	.5000"	.6250"	.7500"	1.000"
	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
	RPM (n)						
100	1528	1222	1019	764	611	509	382
125	1910	1528	1273	955	764	637	478
150	2292	1834	1528	1146	917	764	573
175	2674	2139	1783	1337	1070	891	669
200	3056	2445	2037	1528	1222	1019	764
250	3820	3056	2547	1910	1528	1273	955
300	4584	3667	3056	2292	1834	1528	1146
350	5348	4278	3565	2674	2139	1783	1337
400	6112	4890	4075	3056	2445	2037	1528
450	6876	5501	4584	3438	2750	2292	1719
500	7640	6112	5093	3820	3056	2547	1910
550	8404	6723	5603	4202	3362	2801	2101
600	9168	7334	6112	4584	3667	3056	2292

NOTE - ABOVE ARE STARTING PARAMETERS ONLY. HIGHER RESULTS MAY BE ACHIEVED WITH OPTIMUM CONDITIONS.

# GARR TOOL Speeds and Feeds for TMS and TMR End Mills - Metric

Material Type	SMM (Vc)	CHIPLOAD PER FLUTE (Fz) at 2% RADIAL ENGAGEMENT (USING PROGRAMMED CALCULATION - PG. 9)					
		6.0 (.2362)	8.0 (.3150)	10.0 (.3937)	12.0 (.4724)	16.0 (.6299)	20.0 (.7874)
<b>TITANIUM ALLOYS</b>							
6Al-4V	75 - 120	.050 - .105	.075 - .130	.090 - .165	.105 - .200	.130 - .240	.165 - .365
5553	45 - 75	.035 - .070	.045 - .090	.065 - .105	.075 - .140	.090 - .165	.105 - .200
<b>STAINLESS STEELS</b>							
Free Machining (303)	90 - 120	.050 - .105	.075 - .130	.090 - .165	.105 - .200	.130 - .240	.165 - .365
Austenitic (304 / 304L)	70 - 100	.040 - .090	.065 - .110	.075 - .130	.090 - .165	.110 - .200	.130 - .240
Martensitic (17-4 / 416)	60 - 75	.035 - .070	.045 - .090	.065 - .105	.075 - .140	.090 - .165	.105 - .200
<b>TOOL STEELS UNDER 40Rc</b>							
8620	80 - 120	.040 - .090	.065 - .110	.075 - .130	.090 - .165	.110 - .200	.130 - .240
4140, D2 & S7	75 - 110	.035 - .070	.045 - .090	.065 - .105	.075 - .140	.090 - .165	.105 - .200
<b>CARBON STEELS</b>							
1000 Series, A36 & 12L14	90 - 150	.050 - .105	.075 - .130	.090 - .165	.105 - .200	.130 - .240	.165 - .365
<b>CAST MATERIALS</b>							
Steel & Iron	75 - 110	.050 - .105	.075 - .130	.090 - .165	.105 - .200	.130 - .240	.165 - .365
Aluminum	90 - 120	.040 - .090	.065 - .110	.075 - .130	.090 - .165	.110 - .200	.130 - .240
<b>ALUMINUM</b>							
6061-T6	90 - 150	.050 - .105	.075 - .130	.090 - .165	.105 - .200	.130 - .240	.165 - .365
<b>COPPER &amp; BRASS ALLOYS</b>							
Short Chip	75 - 110	.050 - .105	.075 - .130	.090 - .165	.105 - .200	.130 - .240	.165 - .365
Long Chip	60 - 90	.040 - .090	.065 - .110	.075 - .130	.090 - .165	.110 - .200	.130 - .240

## SMM / RPM Conversion



SMM (Vc)	DIAMETER (d)					
	.2362"	.3150"	.3937"	.4724"	.6299"	.7874"
	6.0	8.0	10.0	12.0	16.0	20.0
	RPM (n)					
30	1592	1194	955	796	597	477
35	1857	1393	1114	928	696	557
40	2122	1592	1273	1061	796	637
45	2387	1790	1432	1194	895	716
50	2653	1989	1592	1326	995	796
55	2918	2188	1751	1459	1094	875
60	3183	2387	1910	1592	1194	955
65	3448	2586	2069	1724	1293	1035
70	3714	2785	2228	1857	1393	1114
75	3979	2984	2387	1989	1492	1194
80	4244	3183	2546	2122	1592	1273
85	4509	3382	2706	2255	1691	1353
90	4775	3581	2865	2387	1790	1432
95	5040	3780	3024	2520	1890	1512
100	5305	3979	3183	2653	1989	1592
120	6366	4775	3820	3183	2387	1910
150	7958	5968	4775	3979	2984	2387
175	9284	6963	5570	4642	3482	2785
200	10610	7958	6366	5305	3979	3183

**NOTE - ABOVE ARE STARTING PARAMETERS ONLY. HIGHER RESULTS MAY BE ACHIEVED WITH OPTIMUM CONDITIONS.**



**GARR TOOL®**

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