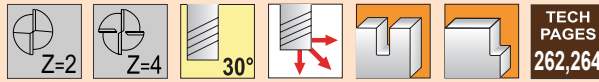


# Series 220R, 230R

.0625" - .5000"  
(1.588mm - 12.700mm)



TOLERANCES	
d1	+0.000" - .002" (+.000 - .050mm)
d2	h6
r	+0.001" - .001" (+.025 - .025mm)

## Standard Length - Corner Radius

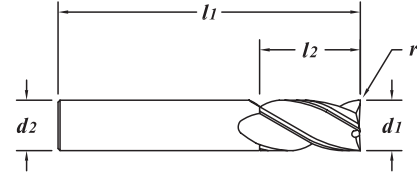
Solid submicron grain carbide end mill - center cutting

For stronger corners and part radius

Extremely versatile

TiALN Coating - page 202

Extended Length - page 225



MATERIAL HARDNESS (Rc) 70 35 0

(220R) 2 Flute EDP#	(230R) 4 Flute EDP#	d1 † Diameter		d2 Shank Diameter	l1 Overall Length	l2 Flute Length	r Corner Radius	1-11	12-24	25-49	50-100	
		Decimal	Metric									
79580	80580	.0625	1/16"	1.588	1/8"	1-1/2"	1/4"	.010"	12.27	11.74	11.20	10.67
79590	80590	.0625	1/16"	1.588	1/8"	1-1/2"	1/4"	.015"	12.27	11.74	11.20	10.67
79600	80600	.0938	3/32"	2.383	1/8"	1-1/2"	3/8"	.010"	11.73	11.22	10.71	10.20
79610	80610	.0938	3/32"	2.383	1/8"	1-1/2"	3/8"	.015"	11.73	11.22	10.71	10.20
79620	80620	.0938	3/32"	2.383	1/8"	1-1/2"	3/8"	.020"	11.73	11.22	10.71	10.20
79000	80000	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	.010"	10.65	10.19	9.72	9.26
79010	80010	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	.015"	10.65	10.19	9.72	9.26
79020	80020	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	.020"	10.65	10.19	9.72	9.26
79030	80030	.1250	1/8"	3.175	1/8"	1-1/2"	1/2"	.030"	10.65	10.19	9.72	9.26
79040	80040	.1875	3/16"	4.763	3/16"	2"	5/8"	.010"	14.03	13.42	12.81	12.20
79050	80050	.1875	3/16"	4.763	3/16"	2"	5/8"	.015"	14.03	13.42	12.81	12.20
79060	80060	.1875	3/16"	4.763	3/16"	2"	5/8"	.020"	14.03	13.42	12.81	12.20
79070	80070	.1875	3/16"	4.763	3/16"	2"	5/8"	.030"	14.03	13.42	12.81	12.20
-	80090	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.010"	17.42	16.67	15.91	15.15
79100	80100	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.015"	17.42	16.67	15.91	15.15
79110	80110	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.020"	17.42	16.67	15.91	15.15
79120	80120	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.030"	17.42	16.67	15.91	15.15
79130	80130	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.045"	17.42	16.67	15.91	15.15
79140	80140	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.060"	17.42	16.67	15.91	15.15
79160	80160	.3125	5/16"	7.938	5/16"	2-1/2"	7/8"	.015"	22.85	21.86	20.86	19.87
79170	80170	.3125	5/16"	7.938	5/16"	2-1/2"	7/8"	.020"	22.85	21.86	20.86	19.87
79180	80180	.3125	5/16"	7.938	5/16"	2-1/2"	7/8"	.030"	22.85	21.86	20.86	19.87
79190	80190	.3125	5/16"	7.938	5/16"	2-1/2"	7/8"	.045"	22.85	21.86	20.86	19.87
79200	80200	.3125	5/16"	7.938	5/16"	2-1/2"	7/8"	.060"	22.85	21.86	20.86	19.87
-	80220	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.010"	27.96	26.74	25.53	24.31
79230	80230	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.015"	27.96	26.74	25.53	24.31
79240	80240	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.020"	27.96	26.74	25.53	24.31
79250	80250	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.030"	27.96	26.74	25.53	24.31
79260	80260	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.045"	27.96	26.74	25.53	24.31
79270	80270	.3750	3/8"	9.525	3/8"	2-1/2"	7/8"	.060"	27.96	26.74	25.53	24.31
-	80290	.5000	1/2"	12.700	1/2"	3"	1"	.010"	52.05	49.79	47.52	45.26
79300	80300	.5000	1/2"	12.700	1/2"	3"	1"	.015"	52.05	49.79	47.52	45.26
79310	80310	.5000	1/2"	12.700	1/2"	3"	1"	.020"	52.05	49.79	47.52	45.26
79320	80320	.5000	1/2"	12.700	1/2"	3"	1"	.030"	52.05	49.79	47.52	45.26
79330	80330	.5000	1/2"	12.700	1/2"	3"	1"	.045"	52.05	49.79	47.52	45.26
79340	80340	.5000	1/2"	12.700	1/2"	3"	1"	.060"	52.05	49.79	47.52	45.26
79350	80350	.5000	1/2"	12.700	1/2"	3"	1"	.090"	52.05	49.79	47.52	45.26
79360	80360	.5000	1/2"	12.700	1/2"	3"	1"	.125"	52.05	49.79	47.52	45.26

(220R) 2 Flute EDP#	(230R) 4 Flute EDP#	$d1$ † Diameter		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$r$ Corner Radius	1-11	12-24	25-49	50-100	
		Decimal	Metric									
79370	80370	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.015"	84.18	80.52	76.86	73.20
79380	80380	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.020"	84.18	80.52	76.86	73.20
79390	80390	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.030"	84.18	80.52	76.86	73.20
79400	80400	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.045"	84.18	80.52	76.86	73.20
79410	80410	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.060"	84.18	80.52	76.86	73.20
79420	80420	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.090"	84.18	80.52	76.86	73.20
79440	80440	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.015"	123.88	118.49	113.11	107.72
79450	80450	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.020"	123.88	118.49	113.11	107.72
79460	80460	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.030"	123.88	118.49	113.11	107.72
79470	80470	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.045"	123.88	118.49	113.11	107.72
79480	80480	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.060"	123.88	118.49	113.11	107.72
79490	80490	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.090"	123.88	118.49	113.11	107.72
79500	80500	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.125"	123.88	118.49	113.11	107.72
79630	80630	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.250"	123.88	118.49	113.11	107.72
79510	80510	1.000	1"	25.400	1"	4"	1-1/2"	.015"	214.88	205.54	196.19	186.85
79520	80520	1.000	1"	25.400	1"	4"	1-1/2"	.020"	214.88	205.54	196.19	186.85
79530	80530	1.000	1"	25.400	1"	4"	1-1/2"	.030"	214.88	205.54	196.19	186.85
79540	80540	1.000	1"	25.400	1"	4"	1-1/2"	.045"	214.88	205.54	196.19	186.85
79550	80550	1.000	1"	25.400	1"	4"	1-1/2"	.060"	214.88	205.54	196.19	186.85
79560	80560	1.000	1"	25.400	1"	4"	1-1/2"	.090"	214.88	205.54	196.19	186.85
79570	80570	1.000	1"	25.400	1"	4"	1-1/2"	.125"	214.88	205.54	196.19	186.85
79640	80640	1.000	1"	25.400	1"	4"	1-1/2"	.250"	214.88	205.54	196.19	186.85

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MATERIAL HARDNESS (Rc)

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*Tool Reconditioning  
Prep Area*