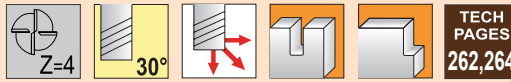


**TOLERANCES**

<i>d1</i>	+0.00" - .002" (+.000 - .050mm)
<i>d2</i>	h6
<i>r</i>	+0.01" - .001" (+.025 - .025mm)

**Series 630R**

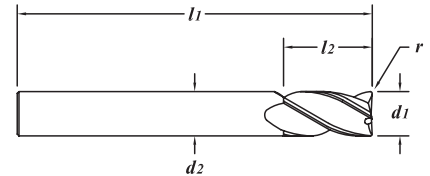
.1250" - .3125"  
(3.175mm - 7.938mm)



END MILLS

**Extra Length - Corner Radius**

- Solid submicron grain carbide end mill - center cutting
- Extended reach
- For stronger corners and part radius
- Can be modified with a neck within 48 hours
- Extremely versatile
- TiALN Coating - page 228
- Standard length - page 200



EDP#	<i>d1</i> †		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	<i>r</i> Corner Radius	1-11	12-24	25-49	50-100	
	Decimal	Diameter									Metric
20100	.1250	1/8"	3.175	1/8"	3"	1"	.010"	22.11	21.15	20.19	19.23
20110	.1250	1/8"	3.175	1/8"	3"	1"	.015"	22.11	21.15	20.19	19.23
20120	.1250	1/8"	3.175	1/8"	3"	1"	.020"	22.11	21.15	20.19	19.23
20130	.1250	1/8"	3.175	1/8"	3"	1"	.030"	22.11	21.15	20.19	19.23
20140	.1250	1/8"	3.175	1/8"	3"	1"	.045"	22.11	21.15	20.19	19.23
20150	.1875	3/16"	4.763	3/16"	3"	1"	.010"	24.39	23.33	22.27	21.21
20160	.1875	3/16"	4.763	3/16"	3"	1"	.015"	24.39	23.33	22.27	21.21
20170	.1875	3/16"	4.763	3/16"	3"	1"	.020"	24.39	23.33	22.27	21.21
20180	.1875	3/16"	4.763	3/16"	3"	1"	.030"	24.39	23.33	22.27	21.21
20190	.1875	3/16"	4.763	3/16"	3"	1"	.045"	24.39	23.33	22.27	21.21
20200	.1875	3/16"	4.763	3/16"	3"	1"	.060"	24.39	23.33	22.27	21.21
20210	.1875	3/16"	4.763	3/16"	4"	1"	.010"	26.25	25.11	23.97	22.83
20220	.1875	3/16"	4.763	3/16"	4"	1"	.015"	26.25	25.11	23.97	22.83
20230	.1875	3/16"	4.763	3/16"	4"	1"	.020"	26.25	25.11	23.97	22.83
20240	.1875	3/16"	4.763	3/16"	4"	1"	.030"	26.25	25.11	23.97	22.83
20250	.1875	3/16"	4.763	3/16"	4"	1"	.045"	26.25	25.11	23.97	22.83
20260	.1875	3/16"	4.763	3/16"	4"	1"	.060"	26.25	25.11	23.97	22.83
20270	.2500	1/4"	6.350	1/4"	3"	1"	.010"	28.23	27.01	25.78	24.55
20280	.2500	1/4"	6.350	1/4"	3"	1"	.020"	28.23	27.01	25.78	24.55
20290	.2500	1/4"	6.350	1/4"	3"	1"	.030"	28.23	27.01	25.78	24.55
20300	.2500	1/4"	6.350	1/4"	3"	1"	.045"	28.23	27.01	25.78	24.55
20310	.2500	1/4"	6.350	1/4"	3"	1"	.060"	28.23	27.01	25.78	24.55
20320	.2500	1/4"	6.350	1/4"	4"	1"	.010"	29.70	28.41	27.12	25.83
20330	.2500	1/4"	6.350	1/4"	4"	1"	.020"	29.70	28.41	27.12	25.83
20340	.2500	1/4"	6.350	1/4"	4"	1"	.030"	29.70	28.41	27.12	25.83
20350	.2500	1/4"	6.350	1/4"	4"	1"	.045"	29.70	28.41	27.12	25.83
20360	.2500	1/4"	6.350	1/4"	4"	1"	.060"	29.70	28.41	27.12	25.83
20370	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.010"	38.62	36.94	35.26	33.58
20380	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.020"	38.62	36.94	35.26	33.58
20390	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.030"	38.62	36.94	35.26	33.58
20400	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.045"	38.62	36.94	35.26	33.58
20410	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.060"	38.62	36.94	35.26	33.58
20420	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.010"	38.92	37.22	35.53	33.84
20430	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.020"	38.92	37.22	35.53	33.84
20440	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.030"	38.92	37.22	35.53	33.84
20450	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.045"	38.92	37.22	35.53	33.84
20460	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.060"	38.92	37.22	35.53	33.84
20470	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.090"	38.92	37.22	35.53	33.84
20480	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.125"	38.92	37.22	35.53	33.84

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MATERIAL HARDNESS (Rc)

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continued →

# Series 630R (continued)

.3750" - .6250"  
(9.525mm - 15.875mm)

END MILLS

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									
20490	.3750	3/8"	9.525	3/8"	4"	1"	.010"	43.06	41.18	39.31	37.44
20500	.3750	3/8"	9.525	3/8"	4"	1"	.020"	43.06	41.18	39.31	37.44
20510	.3750	3/8"	9.525	3/8"	4"	1"	.030"	43.06	41.18	39.31	37.44
20520	.3750	3/8"	9.525	3/8"	4"	1"	.045"	43.06	41.18	39.31	37.44
20530	.3750	3/8"	9.525	3/8"	4"	1"	.060"	43.06	41.18	39.31	37.44
20540	.3750	3/8"	9.525	3/8"	4"	1"	.090"	43.06	41.18	39.31	37.44
20550	.3750	3/8"	9.525	3/8"	4"	1"	.125"	43.06	41.18	39.31	37.44
20560	.3750	3/8"	9.525	3/8"	4"	2"	.010"	43.06	41.18	39.31	37.44
20570	.3750	3/8"	9.525	3/8"	4"	2"	.020"	43.06	41.18	39.31	37.44
20580	.3750	3/8"	9.525	3/8"	4"	2"	.030"	43.06	41.18	39.31	37.44
20590	.3750	3/8"	9.525	3/8"	4"	2"	.045"	43.06	41.18	39.31	37.44
20600	.3750	3/8"	9.525	3/8"	4"	2"	.060"	43.06	41.18	39.31	37.44
20610	.3750	3/8"	9.525	3/8"	4"	2"	.090"	43.06	41.18	39.31	37.44
20620	.3750	3/8"	9.525	3/8"	4"	2"	.125"	43.06	41.18	39.31	37.44
20630	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.010"	59.13	56.56	53.99	51.42
20640	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.020"	59.13	56.56	53.99	51.42
20650	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.030"	59.13	56.56	53.99	51.42
20660	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.045"	59.13	56.56	53.99	51.42
20670	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.060"	59.13	56.56	53.99	51.42
20680	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.090"	59.13	56.56	53.99	51.42
20690	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.125"	59.13	56.56	53.99	51.42
20700	.5000	1/2"	12.700	1/2"	4"	1"	.015"	60.55	57.92	55.28	52.65
20710	.5000	1/2"	12.700	1/2"	4"	1"	.020"	60.55	57.92	55.28	52.65
20720	.5000	1/2"	12.700	1/2"	4"	1"	.030"	60.55	57.92	55.28	52.65
20730	.5000	1/2"	12.700	1/2"	4"	1"	.045"	60.55	57.92	55.28	52.65
20740	.5000	1/2"	12.700	1/2"	4"	1"	.060"	60.55	57.92	55.28	52.65
20750	.5000	1/2"	12.700	1/2"	4"	1"	.090"	60.55	57.92	55.28	52.65
20760	.5000	1/2"	12.700	1/2"	4"	1"	.125"	60.55	57.92	55.28	52.65
20770	.5000	1/2"	12.700	1/2"	4"	2"	.015"	60.55	57.92	55.28	52.65
20780	.5000	1/2"	12.700	1/2"	4"	2"	.020"	60.55	57.92	55.28	52.65
20790	.5000	1/2"	12.700	1/2"	4"	2"	.030"	60.55	57.92	55.28	52.65
20800	.5000	1/2"	12.700	1/2"	4"	2"	.045"	60.55	57.92	55.28	52.65
20810	.5000	1/2"	12.700	1/2"	4"	2"	.060"	60.55	57.92	55.28	52.65
20820	.5000	1/2"	12.700	1/2"	4"	2"	.090"	60.55	57.92	55.28	52.65
20830	.5000	1/2"	12.700	1/2"	4"	2"	.125"	60.55	57.92	55.28	52.65
20840	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.015"	85.76	82.03	78.30	74.57
20850	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.020"	85.76	82.03	78.30	74.57
20860	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.030"	85.76	82.03	78.30	74.57
20870	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.045"	85.76	82.03	78.30	74.57
20880	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.060"	85.76	82.03	78.30	74.57
20890	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.090"	85.76	82.03	78.30	74.57
20900	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.125"	85.76	82.03	78.30	74.57
20910	.6250	5/8"	15.875	5/8"	6"	2"	.010"	126.10	120.62	115.13	109.65
20920	.6250	5/8"	15.875	5/8"	6"	2"	.015"	126.10	120.62	115.13	109.65
20930	.6250	5/8"	15.875	5/8"	6"	2"	.020"	126.10	120.62	115.13	109.65
20940	.6250	5/8"	15.875	5/8"	6"	2"	.030"	126.10	120.62	115.13	109.65
20950	.6250	5/8"	15.875	5/8"	6"	2"	.045"	126.10	120.62	115.13	109.65
20960	.6250	5/8"	15.875	5/8"	6"	2"	.060"	126.10	120.62	115.13	109.65
20970	.6250	5/8"	15.875	5/8"	6"	2"	.090"	126.10	120.62	115.13	109.65
20980	.6250	5/8"	15.875	5/8"	6"	2"	.125"	126.10	120.62	115.13	109.65

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MATERIAL HARDNESS (Rc)

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EDP#	$d1$ †		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length	$r$ Corner Radius	1-11	12-24	25-49	50-100	
	Decimal	Diameter									Metric
20990	.7500	3/4"	19.050	3/4"	6"	3"	.015"	206.93	197.93	188.94	179.94
21000	.7500	3/4"	19.050	3/4"	6"	3"	.020"	206.93	197.93	188.94	179.94
21010	.7500	3/4"	19.050	3/4"	6"	3"	.030"	206.93	197.93	188.94	179.94
21020	.7500	3/4"	19.050	3/4"	6"	3"	.045"	206.93	197.93	188.94	179.94
21030	.7500	3/4"	19.050	3/4"	6"	3"	.060"	206.93	197.93	188.94	179.94
21040	.7500	3/4"	19.050	3/4"	6"	3"	.090"	206.93	197.93	188.94	179.94
21050	.7500	3/4"	19.050	3/4"	6"	3"	.125"	206.93	197.93	188.94	179.94
21140	.7500	3/4"	19.050	3/4"	6"	3"	.250"	206.93	197.93	188.94	179.94
21060	1.000	1"	25.400	1"	6"	3"	.015"	351.89	336.59	321.29	305.99
21070	1.000	1"	25.400	1"	6"	3"	.020"	351.89	336.59	321.29	305.99
21080	1.000	1"	25.400	1"	6"	3"	.030"	351.89	336.59	321.29	305.99
21090	1.000	1"	25.400	1"	6"	3"	.045"	351.89	336.59	321.29	305.99
21100	1.000	1"	25.400	1"	6"	3"	.060"	351.89	336.59	321.29	305.99
21110	1.000	1"	25.400	1"	6"	3"	.090"	351.89	336.59	321.29	305.99
21120	1.000	1"	25.400	1"	6"	3"	.125"	351.89	336.59	321.29	305.99
21130	1.000	1"	25.400	1"	6"	3"	.250"	351.89	336.59	321.29	305.99



*End Mill Reconditioning*

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MATERIAL HARDNESS (Rc)

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