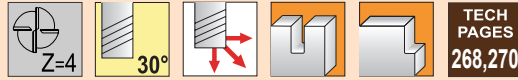


Series 630RA

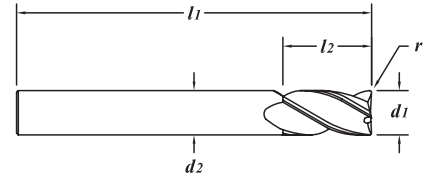
.1250" - .3125"
(3.175mm - 7.938mm)



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

Extra Length - Corner Radius TiAlN Coating

- Solid submicron grain carbide end mill - center cutting
- Extended reach
- For stronger corners and part radius
- Dry or semi-dry machining
- Can be modified with a neck within 48 hours
- Extremely versatile
- Uncoated - page 235
- Stub length - page 194
- Standard length - page 212



MATERIAL HARDNESS (Rc)

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EDP#	d_1 † Diameter		d_2 Shank Diameter	l_1 Overall Length	l_2 Flute Length	r Corner Radius	1-11	12-24	25-49	50-100	
	Decimal	Metric									
20107	.1250	1/8"	3.175	1/8"	3"	1"	.010"	26.38	25.23	24.09	22.94
20117	.1250	1/8"	3.175	1/8"	3"	1"	.015"	26.38	25.23	24.09	22.94
20127	.1250	1/8"	3.175	1/8"	3"	1"	.020"	26.38	25.23	24.09	22.94
20137	.1250	1/8"	3.175	1/8"	3"	1"	.030"	26.38	25.23	24.09	22.94
20147	.1250	1/8"	3.175	1/8"	3"	1"	.045"	26.38	25.23	24.09	22.94
20157	.1875	3/16"	4.763	3/16"	3"	1"	.010"	29.64	28.35	27.06	25.77
20167	.1875	3/16"	4.763	3/16"	3"	1"	.015"	29.64	28.35	27.06	25.77
20177	.1875	3/16"	4.763	3/16"	3"	1"	.020"	29.64	28.35	27.06	25.77
20187	.1875	3/16"	4.763	3/16"	3"	1"	.030"	29.64	28.35	27.06	25.77
20197	.1875	3/16"	4.763	3/16"	3"	1"	.045"	29.64	28.35	27.06	25.77
20207	.1875	3/16"	4.763	3/16"	3"	1"	.060"	29.64	28.35	27.06	25.77
20217	.1875	3/16"	4.763	3/16"	4"	1"	.010"	32.26	30.86	29.45	28.05
20227	.1875	3/16"	4.763	3/16"	4"	1"	.015"	32.26	30.86	29.45	28.05
20237	.1875	3/16"	4.763	3/16"	4"	1"	.020"	32.26	30.86	29.45	28.05
20247	.1875	3/16"	4.763	3/16"	4"	1"	.030"	32.26	30.86	29.45	28.05
20257	.1875	3/16"	4.763	3/16"	4"	1"	.045"	32.26	30.86	29.45	28.05
20267	.1875	3/16"	4.763	3/16"	4"	1"	.060"	32.26	30.86	29.45	28.05
20277	.2500	1/4"	6.350	1/4"	3"	1"	.010"	34.99	33.47	31.95	30.43
20287	.2500	1/4"	6.350	1/4"	3"	1"	.020"	34.99	33.47	31.95	30.43
20297	.2500	1/4"	6.350	1/4"	3"	1"	.030"	34.99	33.47	31.95	30.43
20307	.2500	1/4"	6.350	1/4"	3"	1"	.045"	34.99	33.47	31.95	30.43
20317	.2500	1/4"	6.350	1/4"	3"	1"	.060"	34.99	33.47	31.95	30.43
20327	.2500	1/4"	6.350	1/4"	4"	1"	.010"	37.47	35.84	34.21	32.58
20337	.2500	1/4"	6.350	1/4"	4"	1"	.020"	37.47	35.84	34.21	32.58
20347	.2500	1/4"	6.350	1/4"	4"	1"	.030"	37.47	35.84	34.21	32.58
20357	.2500	1/4"	6.350	1/4"	4"	1"	.045"	37.47	35.84	34.21	32.58
20367	.2500	1/4"	6.350	1/4"	4"	1"	.060"	37.47	35.84	34.21	32.58
20377	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.010"	49.37	47.22	45.08	42.93
20387	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.020"	49.37	47.22	45.08	42.93
20397	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.030"	49.37	47.22	45.08	42.93
20407	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.045"	49.37	47.22	45.08	42.93
20417	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.060"	49.37	47.22	45.08	42.93
20427	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.010"	51.03	48.81	46.59	44.37
20437	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.020"	51.03	48.81	46.59	44.37
20447	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.030"	51.03	48.81	46.59	44.37
20457	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.045"	51.03	48.81	46.59	44.37
20467	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.060"	51.03	48.81	46.59	44.37
20477	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.090"	51.03	48.81	46.59	44.37
20487	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.125"	51.03	48.81	46.59	44.37

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									
20497	.3750	3/8"	9.525	3/8"	4"	1"	.010"	55.36	52.95	50.55	48.14
20507	.3750	3/8"	9.525	3/8"	4"	1"	.020"	55.36	52.95	50.55	48.14
20517	.3750	3/8"	9.525	3/8"	4"	1"	.030"	55.36	52.95	50.55	48.14
20527	.3750	3/8"	9.525	3/8"	4"	1"	.045"	55.36	52.95	50.55	48.14
20537	.3750	3/8"	9.525	3/8"	4"	1"	.060"	55.36	52.95	50.55	48.14
20547	.3750	3/8"	9.525	3/8"	4"	1"	.090"	55.36	52.95	50.55	48.14
20557	.3750	3/8"	9.525	3/8"	4"	1"	.125"	55.36	52.95	50.55	48.14
20567	.3750	3/8"	9.525	3/8"	4"	2"	.010"	55.36	52.95	50.55	48.14
20577	.3750	3/8"	9.525	3/8"	4"	2"	.020"	55.36	52.95	50.55	48.14
20587	.3750	3/8"	9.525	3/8"	4"	2"	.030"	55.36	52.95	50.55	48.14
20597	.3750	3/8"	9.525	3/8"	4"	2"	.045"	55.36	52.95	50.55	48.14
20607	.3750	3/8"	9.525	3/8"	4"	2"	.060"	55.36	52.95	50.55	48.14
20617	.3750	3/8"	9.525	3/8"	4"	2"	.090"	55.36	52.95	50.55	48.14
20627	.3750	3/8"	9.525	3/8"	4"	2"	.125"	55.36	52.95	50.55	48.14
20637	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.010"	76.65	73.32	69.98	66.65
20647	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.020"	76.65	73.32	69.98	66.65
20657	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.030"	76.65	73.32	69.98	66.65
20667	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.045"	76.65	73.32	69.98	66.65
20677	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.060"	76.65	73.32	69.98	66.65
20687	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.090"	76.65	73.32	69.98	66.65
20697	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.125"	76.65	73.32	69.98	66.65
21157	.4375	7/16"	11.113	7/16"	4"	1"	.010"	74.04	70.82	67.60	64.38
21167	.4375	7/16"	11.113	7/16"	4"	1"	.015"	74.04	70.82	67.60	64.38
21177	.4375	7/16"	11.113	7/16"	4"	1"	.020"	74.04	70.82	67.60	64.38
21187	.4375	7/16"	11.113	7/16"	4"	1"	.030"	74.04	70.82	67.60	64.38
21227	.4375	7/16"	11.113	7/16"	4"	1"	.125"	74.04	70.82	67.60	64.38
20707	.5000	1/2"	12.700	1/2"	4"	1"	.015"	75.36	72.08	68.81	65.53
20717	.5000	1/2"	12.700	1/2"	4"	1"	.020"	75.36	72.08	68.81	65.53
20727	.5000	1/2"	12.700	1/2"	4"	1"	.030"	75.36	72.08	68.81	65.53
20737	.5000	1/2"	12.700	1/2"	4"	1"	.045"	75.36	72.08	68.81	65.53
20747	.5000	1/2"	12.700	1/2"	4"	1"	.060"	75.36	72.08	68.81	65.53
20757	.5000	1/2"	12.700	1/2"	4"	1"	.090"	75.36	72.08	68.81	65.53
20767	.5000	1/2"	12.700	1/2"	4"	1"	.125"	75.36	72.08	68.81	65.53
20777	.5000	1/2"	12.700	1/2"	4"	2"	.015"	75.36	72.08	68.81	65.53
20787	.5000	1/2"	12.700	1/2"	4"	2"	.020"	75.36	72.08	68.81	65.53
20797	.5000	1/2"	12.700	1/2"	4"	2"	.030"	75.36	72.08	68.81	65.53
20807	.5000	1/2"	12.700	1/2"	4"	2"	.045"	75.36	72.08	68.81	65.53
20817	.5000	1/2"	12.700	1/2"	4"	2"	.060"	75.36	72.08	68.81	65.53
20827	.5000	1/2"	12.700	1/2"	4"	2"	.090"	75.36	72.08	68.81	65.53
20837	.5000	1/2"	12.700	1/2"	4"	2"	.125"	75.36	72.08	68.81	65.53
20847	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.015"	106.57	101.94	97.30	92.67
20857	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.020"	106.57	101.94	97.30	92.67
20867	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.030"	106.57	101.94	97.30	92.67
20877	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.045"	106.57	101.94	97.30	92.67
20887	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.060"	106.57	101.94	97.30	92.67
20897	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.090"	106.57	101.94	97.30	92.67
20907	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.125"	106.57	101.94	97.30	92.67
20917	.6250	5/8"	15.875	5/8"	6"	2"	.010"	151.92	145.31	138.71	132.10
20927	.6250	5/8"	15.875	5/8"	6"	2"	.015"	151.92	145.31	138.71	132.10
20937	.6250	5/8"	15.875	5/8"	6"	2"	.020"	151.92	145.31	138.71	132.10
20947	.6250	5/8"	15.875	5/8"	6"	2"	.030"	151.92	145.31	138.71	132.10
20957	.6250	5/8"	15.875	5/8"	6"	2"	.045"	151.92	145.31	138.71	132.10
20967	.6250	5/8"	15.875	5/8"	6"	2"	.060"	151.92	145.31	138.71	132.10
20977	.6250	5/8"	15.875	5/8"	6"	2"	.090"	151.92	145.31	138.71	132.10
20987	.6250	5/8"	15.875	5/8"	6"	2"	.125"	151.92	145.31	138.71	132.10

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MATERIAL HARDNESS (Rc)

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continued →

Series 630RA (continued)

.7500" - 1.000"
(19.050mm - 25.400mm)

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
20997	.7500	3/4"	19.050	3/4"	6"	3"	.015"	239.88	229.45	219.02	208.59
21007	.7500	3/4"	19.050	3/4"	6"	3"	.020"	239.88	229.45	219.02	208.59
21017	.7500	3/4"	19.050	3/4"	6"	3"	.030"	239.88	229.45	219.02	208.59
21027	.7500	3/4"	19.050	3/4"	6"	3"	.045"	239.88	229.45	219.02	208.59
21037	.7500	3/4"	19.050	3/4"	6"	3"	.060"	239.88	229.45	219.02	208.59
21047	.7500	3/4"	19.050	3/4"	6"	3"	.090"	239.88	229.45	219.02	208.59
21057	.7500	3/4"	19.050	3/4"	6"	3"	.125"	239.88	229.45	219.02	208.59
21147	.7500	3/4"	19.050	3/4"	6"	3"	.250"	239.88	229.45	219.02	208.59
21067	1.000	1"	25.400	1"	6"	3"	.015"	398.85	381.51	364.17	346.83
21077	1.000	1"	25.400	1"	6"	3"	.020"	398.85	381.51	364.17	346.83
21087	1.000	1"	25.400	1"	6"	3"	.030"	398.85	381.51	364.17	346.83
21097	1.000	1"	25.400	1"	6"	3"	.045"	398.85	381.51	364.17	346.83
21107	1.000	1"	25.400	1"	6"	3"	.060"	398.85	381.51	364.17	346.83
21117	1.000	1"	25.400	1"	6"	3"	.090"	398.85	381.51	364.17	346.83
21127	1.000	1"	25.400	1"	6"	3"	.125"	398.85	381.51	364.17	346.83
21137	1.000	1"	25.400	1"	6"	3"	.250"	398.85	381.51	364.17	346.83

MATERIAL HARDNESS (Rc)

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