

TOLERANCES

$d1$	$+0.000" - .002" (+.000 - .050\text{mm})$
$d2$	$h6$
r	$+0.011" - .001" (+.025 - .025\text{mm})$


Series 630R

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

GENERAL PURPOSE
END MILLS

Extra Length - Corner Radius

Solid submicron grain carbide end mill - center cutting

Extended reach

For stronger corners and part radius

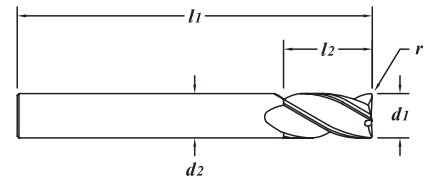
Can be modified with a neck within 48 hours

Extremely versatile

TiALN Coating - page 244

Stub length - page 210

Standard length - page 222



EDP#	$d1$ †		$d2$	$L1$	$L2$	r	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric	Shank Diameter	Overall Length	Flute Length	Corner Radius			
20100	.1250	1/8"	3.175	1/8"	3"	1"	.010"	24.15	23.10	22.05
20110	.1250	1/8"	3.175	1/8"	3"	1"	.015"	24.15	23.10	22.05
20120	.1250	1/8"	3.175	1/8"	3"	1"	.020"	24.15	23.10	22.05
20130	.1250	1/8"	3.175	1/8"	3"	1"	.030"	24.15	23.10	22.05
20140	.1250	1/8"	3.175	1/8"	3"	1"	.045"	24.15	23.10	22.05
20150	.1875	3/16"	4.763	3/16"	3"	1"	.010"	26.63	25.48	24.32
20160	.1875	3/16"	4.763	3/16"	3"	1"	.015"	26.63	25.48	24.32
20170	.1875	3/16"	4.763	3/16"	3"	1"	.020"	26.63	25.48	24.32
20180	.1875	3/16"	4.763	3/16"	3"	1"	.030"	26.63	25.48	24.32
20190	.1875	3/16"	4.763	3/16"	3"	1"	.045"	26.63	25.48	24.32
20200	.1875	3/16"	4.763	3/16"	3"	1"	.060"	26.63	25.48	24.32
20210	.1875	3/16"	4.763	3/16"	4"	1"	.010"	28.67	27.42	26.18
20220	.1875	3/16"	4.763	3/16"	4"	1"	.015"	28.67	27.42	26.18
20230	.1875	3/16"	4.763	3/16"	4"	1"	.020"	28.67	27.42	26.18
20240	.1875	3/16"	4.763	3/16"	4"	1"	.030"	28.67	27.42	26.18
20250	.1875	3/16"	4.763	3/16"	4"	1"	.045"	28.67	27.42	26.18
20260	.1875	3/16"	4.763	3/16"	4"	1"	.060"	28.67	27.42	26.18
20270	.2500	1/4"	6.350	1/4"	3"	1"	.010"	30.83	29.49	28.15
20280	.2500	1/4"	6.350	1/4"	3"	1"	.020"	30.83	29.49	28.15
20290	.2500	1/4"	6.350	1/4"	3"	1"	.030"	30.83	29.49	28.15
20300	.2500	1/4"	6.350	1/4"	3"	1"	.045"	30.83	29.49	28.15
20310	.2500	1/4"	6.350	1/4"	3"	1"	.060"	30.83	29.49	28.15
20320	.2500	1/4"	6.350	1/4"	4"	1"	.010"	32.43	31.02	29.61
20330	.2500	1/4"	6.350	1/4"	4"	1"	.020"	32.43	31.02	29.61
20340	.2500	1/4"	6.350	1/4"	4"	1"	.030"	32.43	31.02	29.61
20350	.2500	1/4"	6.350	1/4"	4"	1"	.045"	32.43	31.02	29.61
20360	.2500	1/4"	6.350	1/4"	4"	1"	.060"	32.43	31.02	29.61
20370	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.010"	42.17	40.34	38.50
20380	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.020"	42.17	40.34	38.50
20390	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.030"	42.17	40.34	38.50
20400	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.045"	42.17	40.34	38.50
20410	.2500	1/4"	6.350	1/4"	6"	1-1/2"	.060"	42.17	40.34	38.50
20420	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.010"	42.49	40.65	38.80
20430	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.020"	42.49	40.65	38.80
20440	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.030"	42.49	40.65	38.80
20450	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.045"	42.49	40.65	38.80
20460	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.060"	42.49	40.65	38.80
20470	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.090"	42.49	40.65	38.80
20480	.3125	5/16"	7.938	5/16"	4"	1-5/8"	.125"	42.49	40.65	38.80

continued →

Series 630R (continued)

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

EDP#	$d1^{\dagger}$			$d2$	$l1$	$l2$	r	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric	Shank Diameter	Overall Length	Flute Length	Corner Radius				
20490	.3750	3/8"	9.525	3/8"	4"	1"	.010"	47.01	44.97	42.92	40.88
20500	.3750	3/8"	9.525	3/8"	4"	1"	.020"	47.01	44.97	42.92	40.88
20510	.3750	3/8"	9.525	3/8"	4"	1"	.030"	47.01	44.97	42.92	40.88
20520	.3750	3/8"	9.525	3/8"	4"	1"	.045"	47.01	44.97	42.92	40.88
20530	.3750	3/8"	9.525	3/8"	4"	1"	.060"	47.01	44.97	42.92	40.88
20540	.3750	3/8"	9.525	3/8"	4"	1"	.090"	47.01	44.97	42.92	40.88
20550	.3750	3/8"	9.525	3/8"	4"	1"	.125"	47.01	44.97	42.92	40.88
20560	.3750	3/8"	9.525	3/8"	4"	2"	.010"	47.01	44.97	42.92	40.88
20570	.3750	3/8"	9.525	3/8"	4"	2"	.020"	47.01	44.97	42.92	40.88
20580	.3750	3/8"	9.525	3/8"	4"	2"	.030"	47.01	44.97	42.92	40.88
20590	.3750	3/8"	9.525	3/8"	4"	2"	.045"	47.01	44.97	42.92	40.88
20600	.3750	3/8"	9.525	3/8"	4"	2"	.060"	47.01	44.97	42.92	40.88
20610	.3750	3/8"	9.525	3/8"	4"	2"	.090"	47.01	44.97	42.92	40.88
20620	.3750	3/8"	9.525	3/8"	4"	2"	.125"	47.01	44.97	42.92	40.88
20630	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.010"	64.57	61.77	58.96	56.15
20640	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.020"	64.57	61.77	58.96	56.15
20650	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.030"	64.57	61.77	58.96	56.15
20660	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.045"	64.57	61.77	58.96	56.15
20670	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.060"	64.57	61.77	58.96	56.15
20680	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.090"	64.57	61.77	58.96	56.15
20690	.3750	3/8"	9.525	3/8"	6"	1-1/2"	.125"	64.57	61.77	58.96	56.15
20700	.5000	1/2"	12.700	1/2"	4"	1"	.015"	66.11	63.24	60.36	57.49
20710	.5000	1/2"	12.700	1/2"	4"	1"	.020"	66.11	63.24	60.36	57.49
20720	.5000	1/2"	12.700	1/2"	4"	1"	.030"	66.11	63.24	60.36	57.49
20730	.5000	1/2"	12.700	1/2"	4"	1"	.045"	66.11	63.24	60.36	57.49
20740	.5000	1/2"	12.700	1/2"	4"	1"	.060"	66.11	63.24	60.36	57.49
20750	.5000	1/2"	12.700	1/2"	4"	1"	.090"	66.11	63.24	60.36	57.49
20760	.5000	1/2"	12.700	1/2"	4"	1"	.125"	66.11	63.24	60.36	57.49
20770	.5000	1/2"	12.700	1/2"	4"	2"	.015"	66.11	63.24	60.36	57.49
20780	.5000	1/2"	12.700	1/2"	4"	2"	.020"	66.11	63.24	60.36	57.49
20790	.5000	1/2"	12.700	1/2"	4"	2"	.030"	66.11	63.24	60.36	57.49
20800	.5000	1/2"	12.700	1/2"	4"	2"	.045"	66.11	63.24	60.36	57.49
20810	.5000	1/2"	12.700	1/2"	4"	2"	.060"	66.11	63.24	60.36	57.49
20820	.5000	1/2"	12.700	1/2"	4"	2"	.090"	66.11	63.24	60.36	57.49
20830	.5000	1/2"	12.700	1/2"	4"	2"	.125"	66.11	63.24	60.36	57.49
20840	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.015"	93.64	89.57	85.50	81.43
20850	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.020"	93.64	89.57	85.50	81.43
20860	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.030"	93.64	89.57	85.50	81.43
20870	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.045"	93.64	89.57	85.50	81.43
20880	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.060"	93.64	89.57	85.50	81.43
20890	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.090"	93.64	89.57	85.50	81.43
20900	.5000	1/2"	12.700	1/2"	6"	1-1/2"	.125"	93.64	89.57	85.50	81.43
20910	.6250	5/8"	15.875	5/8"	6"	2"	.010"	137.70	131.71	125.73	119.74
20920	.6250	5/8"	15.875	5/8"	6"	2"	.015"	137.70	131.71	125.73	119.74
20930	.6250	5/8"	15.875	5/8"	6"	2"	.020"	137.70	131.71	125.73	119.74
20940	.6250	5/8"	15.875	5/8"	6"	2"	.030"	137.70	131.71	125.73	119.74
20950	.6250	5/8"	15.875	5/8"	6"	2"	.045"	137.70	131.71	125.73	119.74
20960	.6250	5/8"	15.875	5/8"	6"	2"	.060"	137.70	131.71	125.73	119.74
20970	.6250	5/8"	15.875	5/8"	6"	2"	.090"	137.70	131.71	125.73	119.74
20980	.6250	5/8"	15.875	5/8"	6"	2"	.125"	137.70	131.71	125.73	119.74

EDP#	$d1$ †			$d2$	$l1$	$l2$	r	1-11	12-24	25-49	50-100
	Decimal	Diameter	Metric								
20990	.7500	3/4"	19.050	3/4"	6"	3"	.015"	225.98	216.15	206.33	196.50
21000	.7500	3/4"	19.050	3/4"	6"	3"	.020"	225.98	216.15	206.33	196.50
21010	.7500	3/4"	19.050	3/4"	6"	3"	.030"	225.98	216.15	206.33	196.50
21020	.7500	3/4"	19.050	3/4"	6"	3"	.045"	225.98	216.15	206.33	196.50
21030	.7500	3/4"	19.050	3/4"	6"	3"	.060"	225.98	216.15	206.33	196.50
21040	.7500	3/4"	19.050	3/4"	6"	3"	.090"	225.98	216.15	206.33	196.50
21050	.7500	3/4"	19.050	3/4"	6"	3"	.125"	225.98	216.15	206.33	196.50
21140	.7500	3/4"	19.050	3/4"	6"	3"	.250"	225.98	216.15	206.33	196.50
21060	1.000	1"	25.400	1"	6"	3"	.015"	384.26	367.55	350.85	334.14
21070	1.000	1"	25.400	1"	6"	3"	.020"	384.26	367.55	350.85	334.14
21080	1.000	1"	25.400	1"	6"	3"	.030"	384.26	367.55	350.85	334.14
21090	1.000	1"	25.400	1"	6"	3"	.045"	384.26	367.55	350.85	334.14
21100	1.000	1"	25.400	1"	6"	3"	.060"	384.26	367.55	350.85	334.14
21110	1.000	1"	25.400	1"	6"	3"	.090"	384.26	367.55	350.85	334.14
21120	1.000	1"	25.400	1"	6"	3"	.125"	384.26	367.55	350.85	334.14
21130	1.000	1"	25.400	1"	6"	3"	.250"	384.26	367.55	350.85	334.14



End Mill Reconditioning

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MATERIAL HARDNESS (Rc)

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