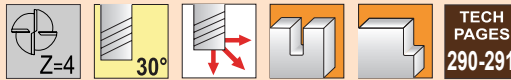


TOLERANCES

| | |
|------|----------------------------------|
| $d1$ | +0.00" -0.002" (+.000 - .050mm) |
| $d2$ | h6 |
| r | +0.001" -0.001" (+.025 - .025mm) |

Series 630R

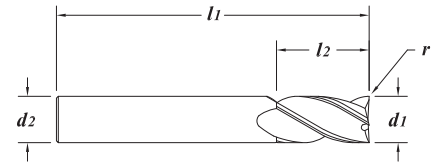
.1250" - .3125"
(3.175mm - 7.938mm)



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 256
- Stub length - page 222
- Standard length - page 234



| EDP# | $d1$ † Diameter | | $d2$ Shank Diameter | $l1$ Overall Length | $l2$ Flute Length | r Corner Radius | LIST PRICE | |
|-------|--------------------|--------|------------------------|------------------------|----------------------|----------------------|------------|-------|
| | Decimal | Metric | | | | | | |
| 20100 | .1250 | 1/8" | 3.175 | 1/8" | 3" | 1" | .010" | 22.89 |
| 20110 | .1250 | 1/8" | 3.175 | 1/8" | 3" | 1" | .015" | 22.89 |
| 20120 | .1250 | 1/8" | 3.175 | 1/8" | 3" | 1" | .020" | 22.89 |
| 20130 | .1250 | 1/8" | 3.175 | 1/8" | 3" | 1" | .030" | 22.89 |
| 20140 | .1250 | 1/8" | 3.175 | 1/8" | 3" | 1" | .045" | 22.89 |
| 20150 | .1875 | 3/16" | 4.763 | 3/16" | 3" | 1" | .010" | 25.24 |
| 20160 | .1875 | 3/16" | 4.763 | 3/16" | 3" | 1" | .015" | 25.24 |
| 20170 | .1875 | 3/16" | 4.763 | 3/16" | 3" | 1" | .020" | 25.24 |
| 20180 | .1875 | 3/16" | 4.763 | 3/16" | 3" | 1" | .030" | 25.24 |
| 20190 | .1875 | 3/16" | 4.763 | 3/16" | 3" | 1" | .045" | 25.24 |
| 20200 | .1875 | 3/16" | 4.763 | 3/16" | 3" | 1" | .060" | 25.24 |
| 20210 | .1875 | 3/16" | 4.763 | 3/16" | 4" | 1" | .010" | 27.17 |
| 20220 | .1875 | 3/16" | 4.763 | 3/16" | 4" | 1" | .015" | 27.17 |
| 20230 | .1875 | 3/16" | 4.763 | 3/16" | 4" | 1" | .020" | 27.17 |
| 20240 | .1875 | 3/16" | 4.763 | 3/16" | 4" | 1" | .030" | 27.17 |
| 20250 | .1875 | 3/16" | 4.763 | 3/16" | 4" | 1" | .045" | 27.17 |
| 20260 | .1875 | 3/16" | 4.763 | 3/16" | 4" | 1" | .060" | 27.17 |
| 20270 | .2500 | 1/4" | 6.350 | 1/4" | 3" | 1" | .010" | 29.22 |
| 20280 | .2500 | 1/4" | 6.350 | 1/4" | 3" | 1" | .020" | 29.22 |
| 20290 | .2500 | 1/4" | 6.350 | 1/4" | 3" | 1" | .030" | 29.22 |
| 20300 | .2500 | 1/4" | 6.350 | 1/4" | 3" | 1" | .045" | 29.22 |
| 20310 | .2500 | 1/4" | 6.350 | 1/4" | 3" | 1" | .060" | 29.22 |
| 20320 | .2500 | 1/4" | 6.350 | 1/4" | 4" | 1" | .010" | 30.74 |
| 20330 | .2500 | 1/4" | 6.350 | 1/4" | 4" | 1" | .020" | 30.74 |
| 20340 | .2500 | 1/4" | 6.350 | 1/4" | 4" | 1" | .030" | 30.74 |
| 20350 | .2500 | 1/4" | 6.350 | 1/4" | 4" | 1" | .045" | 30.74 |
| 20360 | .2500 | 1/4" | 6.350 | 1/4" | 4" | 1" | .060" | 30.74 |
| 20370 | .2500 | 1/4" | 6.350 | 1/4" | 6" | 1-1/2" | .010" | 39.97 |
| 20380 | .2500 | 1/4" | 6.350 | 1/4" | 6" | 1-1/2" | .020" | 39.97 |
| 20390 | .2500 | 1/4" | 6.350 | 1/4" | 6" | 1-1/2" | .030" | 39.97 |
| 20400 | .2500 | 1/4" | 6.350 | 1/4" | 6" | 1-1/2" | .045" | 39.97 |
| 20410 | .2500 | 1/4" | 6.350 | 1/4" | 6" | 1-1/2" | .060" | 39.97 |
| 20420 | .3125 | 5/16" | 7.938 | 5/16" | 4" | 1-5/8" | .010" | 40.28 |
| 20430 | .3125 | 5/16" | 7.938 | 5/16" | 4" | 1-5/8" | .020" | 40.28 |
| 20440 | .3125 | 5/16" | 7.938 | 5/16" | 4" | 1-5/8" | .030" | 40.28 |
| 20450 | .3125 | 5/16" | 7.938 | 5/16" | 4" | 1-5/8" | .045" | 40.28 |
| 20460 | .3125 | 5/16" | 7.938 | 5/16" | 4" | 1-5/8" | .060" | 40.28 |
| 20470 | .3125 | 5/16" | 7.938 | 5/16" | 4" | 1-5/8" | .090" | 40.28 |
| 20480 | .3125 | 5/16" | 7.938 | 5/16" | 4" | 1-5/8" | .125" | 40.28 |

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MATERIAL HARDNESS (Rc)

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continued →

Series 630R (continued)

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

| EDP# | $d1$ † Diameter | | $d2$ Shank Diameter | $l1$ Overall Length | $l2$ Flute Length | r Corner Radius | LIST PRICE | |
|-------|--------------------|--------|---------------------------|---------------------------|-------------------------|-------------------------|------------|--------|
| | Decimal | Metric | | | | | | |
| 20490 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 1" | .010" | 44.56 |
| 20500 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 1" | .020" | 44.56 |
| 20510 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 1" | .030" | 44.56 |
| 20520 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 1" | .045" | 44.56 |
| 20530 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 1" | .060" | 44.56 |
| 20540 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 1" | .090" | 44.56 |
| 20550 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 1" | .125" | 44.56 |
| 20560 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 2" | .010" | 44.56 |
| 20570 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 2" | .020" | 44.56 |
| 20580 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 2" | .030" | 44.56 |
| 20590 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 2" | .045" | 44.56 |
| 20600 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 2" | .060" | 44.56 |
| 20610 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 2" | .090" | 44.56 |
| 20620 | .3750 | 3/8" | 9.525 | 3/8" | 4" | 2" | .125" | 44.56 |
| 20630 | .3750 | 3/8" | 9.525 | 3/8" | 6" | 1-1/2" | .010" | 61.20 |
| 20640 | .3750 | 3/8" | 9.525 | 3/8" | 6" | 1-1/2" | .020" | 61.20 |
| 20650 | .3750 | 3/8" | 9.525 | 3/8" | 6" | 1-1/2" | .030" | 61.20 |
| 20660 | .3750 | 3/8" | 9.525 | 3/8" | 6" | 1-1/2" | .045" | 61.20 |
| 20670 | .3750 | 3/8" | 9.525 | 3/8" | 6" | 1-1/2" | .060" | 61.20 |
| 20680 | .3750 | 3/8" | 9.525 | 3/8" | 6" | 1-1/2" | .090" | 61.20 |
| 20690 | .3750 | 3/8" | 9.525 | 3/8" | 6" | 1-1/2" | .125" | 61.20 |
| 20700 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1" | .015" | 62.66 |
| 20710 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1" | .020" | 62.66 |
| 20720 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1" | .030" | 62.66 |
| 20730 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1" | .045" | 62.66 |
| 20740 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1" | .060" | 62.66 |
| 20750 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1" | .090" | 62.66 |
| 20760 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1" | .125" | 62.66 |
| 20770 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 2" | .015" | 62.66 |
| 20780 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 2" | .020" | 62.66 |
| 20790 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 2" | .030" | 62.66 |
| 20800 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 2" | .045" | 62.66 |
| 20810 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 2" | .060" | 62.66 |
| 20820 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 2" | .090" | 62.66 |
| 20830 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 2" | .125" | 62.66 |
| 20840 | .5000 | 1/2" | 12.700 | 1/2" | 6" | 1-1/2" | .015" | 88.76 |
| 20850 | .5000 | 1/2" | 12.700 | 1/2" | 6" | 1-1/2" | .020" | 88.76 |
| 20860 | .5000 | 1/2" | 12.700 | 1/2" | 6" | 1-1/2" | .030" | 88.76 |
| 20870 | .5000 | 1/2" | 12.700 | 1/2" | 6" | 1-1/2" | .045" | 88.76 |
| 20880 | .5000 | 1/2" | 12.700 | 1/2" | 6" | 1-1/2" | .060" | 88.76 |
| 20890 | .5000 | 1/2" | 12.700 | 1/2" | 6" | 1-1/2" | .090" | 88.76 |
| 20900 | .5000 | 1/2" | 12.700 | 1/2" | 6" | 1-1/2" | .125" | 88.76 |
| 20910 | .6250 | 5/8" | 15.875 | 5/8" | 6" | 2" | .010" | 130.52 |
| 20920 | .6250 | 5/8" | 15.875 | 5/8" | 6" | 2" | .015" | 130.52 |
| 20930 | .6250 | 5/8" | 15.875 | 5/8" | 6" | 2" | .020" | 130.52 |
| 20940 | .6250 | 5/8" | 15.875 | 5/8" | 6" | 2" | .030" | 130.52 |
| 20950 | .6250 | 5/8" | 15.875 | 5/8" | 6" | 2" | .045" | 130.52 |
| 20960 | .6250 | 5/8" | 15.875 | 5/8" | 6" | 2" | .060" | 130.52 |
| 20970 | .6250 | 5/8" | 15.875 | 5/8" | 6" | 2" | .090" | 130.52 |
| 20980 | .6250 | 5/8" | 15.875 | 5/8" | 6" | 2" | .125" | 130.52 |

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MATERIAL HARDNESS (Rc)

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| EDP# | $d1$ † Diameter | | $d2$ Shank Diameter | $l1$ Overall Length | $l2$ Flute Length | r Corner Radius | LIST PRICE | |
|-------|--------------------|--------|---------------------------|---------------------------|-------------------------|-------------------------|------------|--------|
| | Decimal | Metric | | | | | | |
| 20990 | .7500 | 3/4" | 19.050 | 3/4" | 6" | 3" | .015" | 214.19 |
| 21000 | .7500 | 3/4" | 19.050 | 3/4" | 6" | 3" | .020" | 214.19 |
| 21010 | .7500 | 3/4" | 19.050 | 3/4" | 6" | 3" | .030" | 214.19 |
| 21020 | .7500 | 3/4" | 19.050 | 3/4" | 6" | 3" | .045" | 214.19 |
| 21030 | .7500 | 3/4" | 19.050 | 3/4" | 6" | 3" | .060" | 214.19 |
| 21040 | .7500 | 3/4" | 19.050 | 3/4" | 6" | 3" | .090" | 214.19 |
| 21050 | .7500 | 3/4" | 19.050 | 3/4" | 6" | 3" | .125" | 214.19 |
| 21140 | .7500 | 3/4" | 19.050 | 3/4" | 6" | 3" | .250" | 214.19 |
| 21060 | 1.000 | 1" | 25.400 | 1" | 6" | 3" | .015" | 364.21 |
| 21070 | 1.000 | 1" | 25.400 | 1" | 6" | 3" | .020" | 364.21 |
| 21080 | 1.000 | 1" | 25.400 | 1" | 6" | 3" | .030" | 364.21 |
| 21090 | 1.000 | 1" | 25.400 | 1" | 6" | 3" | .045" | 364.21 |
| 21100 | 1.000 | 1" | 25.400 | 1" | 6" | 3" | .060" | 364.21 |
| 21110 | 1.000 | 1" | 25.400 | 1" | 6" | 3" | .090" | 364.21 |
| 21120 | 1.000 | 1" | 25.400 | 1" | 6" | 3" | .125" | 364.21 |
| 21130 | 1.000 | 1" | 25.400 | 1" | 6" | 3" | .250" | 364.21 |



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MATERIAL HARDNESS (Rc)

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