

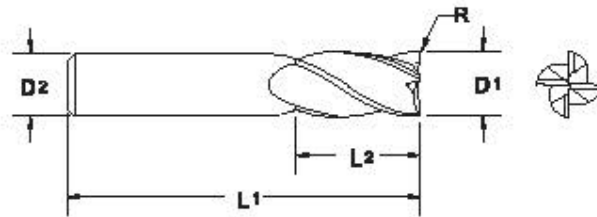
**TuffCut® GP
Series 111**

Z4



**4
Flute**

Designed for aggressive milling of most materials.



• Micro sizes available.

| Tool No. | EDP | Diameter | | | Shank | | OAL | | Flute Length | | Corner Radius | |
|----------|-------|----------|-----|---------|-------|-----|-------|----|--------------|-----|---------------|----|
| | | D1 | | | D2 | | L1 | | L2 | | R | |
| | | Inch | mm | Decimal | Inch | mm | Inch | mm | Inch | mm | Inch | mm |
| 11100500 | 51001 | | | .0050* | 1/8 | | 1-1/2 | | .015 | | | |
| 11100780 | 51003 | | 0.2 | .0078* | | 3.0 | | 38 | | 0.6 | | |
| 11101000 | 51005 | | | .0100* | 1/8 | | 1-1/2 | | .030 | | | |
| 11101180 | 51007 | | 0.3 | .0118* | | 3.0 | | 38 | | 0.9 | | |
| 11101500 | 51009 | | | .0150* | 1/8 | | 1-1/2 | | .045 | | | |
| 11101580 | 11011 | 1/64 | | .0156 | 1/8 | | 1-1/2 | | 1/32 | | | |
| 11101570 | 51013 | | 0.4 | .0157 | | 3.0 | | 38 | | 1.2 | | |
| 11101960 | 51015 | | 0.5 | .0196 | | 3.0 | | 38 | | 1.5 | | |
| 11102000 | 51017 | | | .0200 | 1/8 | | 1-1/2 | | .060 | | | |
| 11102360 | 51019 | | 0.6 | .0236 | | 3.0 | | 38 | | 1.8 | | |
| 11102500 | 51021 | | | .0250 | 1/8 | | 1-1/2 | | .075 | | | |
| 11102750 | 51023 | | 0.7 | .0275 | | 3.0 | | 38 | | 2.1 | | |
| 11103000 | 51025 | | | .0300 | 1/8 | | 1-1/2 | | .090 | | | |
| 11103120 | 11027 | 1/32 | | .0312 | 1/8 | | 1-1/2 | | 5/64 | | | |
| 11103150 | 51029 | | 0.8 | .0315 | | 3.0 | | 38 | | 2.4 | | |
| 11103500 | 51031 | | | .0350 | 1/8 | | 1-1/2 | | .105 | | | |
| 11103540 | 51033 | | 0.9 | .0354 | | 3.0 | | 38 | | 2.7 | | |
| 11103940 | 11035 | | 1.0 | .0394 | | 3.0 | | 38 | | 3.0 | | |
| 11104000 | 51039 | | | .0400 | 1/8 | | 1-1/2 | | .120 | | | |
| 11104330 | 51041 | | 1.1 | .0433 | | 3.0 | | 38 | | 3.3 | | |
| 11104500 | 51043 | | | .0450 | 1/8 | | 1-1/2 | | .135 | | | |
| 11104680 | 11045 | 3/64 | | .0468 | 1/8 | | 1-1/2 | | 7/64 | | | |
| 11104720 | 51047 | | 1.2 | .0472 | | 3.0 | | 38 | | 3.6 | | |
| 11105000 | 51049 | | | .0500 | 1/8 | | 1-1/2 | | .150 | | | |
| 11105120 | 51051 | | 1.3 | .0512 | | 3.0 | | 38 | | 3.9 | | |
| 11105500 | 51053 | | | .0550 | 1/8 | | 1-1/2 | | .165 | | | |
| 11105510 | 51055 | | 1.4 | .0551 | | 3.0 | | 38 | | 4.2 | | |
| 11105910 | 11057 | | 1.5 | .0591 | | 3.0 | | 38 | | 6.0 | | |
| 11105911 | 51057 | | 1.5 | .0591 | | 3.0 | | 38 | | 4.5 | | |
| 11106000 | 51061 | | | .0600 | 1/8 | | 1-1/2 | | .180 | | | |
| 11106250 | 11063 | 1/16 | | .0625 | 1/8 | | 1-1/2 | | 3/16 | | | |
| 11106300 | 51065 | | 1.6 | .0630 | | 3.0 | | 38 | | 4.8 | | |
| 11106500 | 51067 | | | .0650 | 1/8 | | 1-1/2 | | .195 | | | |
| 11106690 | 51069 | | 1.7 | .0669 | | 3.0 | | 38 | | 5.1 | | |

| Inch | |
|-----------------|-----------------|
| D1 | Tolerance |
| 1/64 | +0.001/-0.001 |
| 1/32 - 1/4 | +0.001/-0.002 |
| >1/4 - 1 | +0.001/-0.003 |
| D1 Micro Sizes* | |
| D1 | Tolerance |
| .005 - .100 | +0.0005/-0.0005 |

*Inch decimal size range .005 - .100 only.

| Metric (mm) | |
|----------------|---------------|
| D1 | Tolerance h10 |
| 0.20 - 0.50 | +0.001/-0.025 |
| 0.60 - 3.00 | +0.001/-0.040 |
| >3.00 - 6.00 | +0.001/-0.048 |
| >6.00 - 10.00 | +0.001/-0.058 |
| >10.00 - 18.00 | +0.001/-0.070 |
| >18.00 - 25.00 | +0.001/-0.084 |

| Inch | |
|---------|---------------|
| R | Tolerance |
| 1/8 - 1 | +0.002/-0.002 |

| Metric (mm) | |
|-------------|-------------|
| R | Tolerance |
| 3.0 - 25.0 | +0.05/-0.05 |

Series 111 coated tools on page 271.



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*End mills 0.015" (0.3mm) and smaller are for center cutting.