# 2 & 3 Flute Solid Carbide Spiral Plunge Router Bits

**CNC Operating Spindle Speed:** 18,000 RPM / **Depth of Cut:** 1 x Tool Diameter

**2 Flute**

| Diameter | Wood/Plywood | | | MDF/Laminate | | |
|---|---|---|---|---|---|---|
| | * Feed Rate | Chip Load Per Tooth | * Ramp Down | * Feed Rate | Chip Load Per Tooth | * Ramp Down |
| 1/64" | 35 | .0010" | 17.5 | 35 | .0010" | 17.5 |
| 1/32" | 35 | .0010" | 17.5 | 70 | .0020" | 35 |
| 3/64" | 40 | .0012" | 20 | 80 | .0023" | 40 |
| 1/16" | 70 | .0020" | 35 | 100 | .0031" | 50 |
| 1/16" | 70 | .0020" | 35 | 100 | .0031" | 50 |
| 3/32" | 80 | .0023" | 40 | 160 | .0046" | 80 |
| 7/64" | 80 | .0023" | 40 | 160 | .0046" | 80 |
| 1/8" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 1/8" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 1/8" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 1/8" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 5/32" | 70 | .0019" | 35 | 140 | .0039" | 70 |
| 3/16" | 80 | .0024" | 40 | 160 | .0047" | 80 |
| 3/16" | 80 | .0024" | 40 | 160 | .0047" | 80 |
| 7/32" | 100 | .0028" | 50 | 190 | .0055" | 95 |
| 1/4" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 1/4" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 1/4" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 1/4" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 1/4" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 1/4" | 60 | .0016" | 30 | 110 | .0031" | 55 |
| 9/32" | 170 | .0048" | 85 | 290 | .0081" | 145 |
| 9/32" | 170 | .0048" | 85 | 290 | .0081" | 145 |
| 5/16" | 190 | .0054" | 95 | 320 | .0090" | 160 |
| 5/16" | 190 | .0054" | 95 | 320 | .0090" | 160 |
| 5/16" | 190 | .0054" | 95 | 320 | .0090" | 160 |
| 3/8" | 230 | .0064" | 115 | 390 | .0108" | 195 |
| 3/8" | 230 | .0064" | 115 | 390 | .0108" | 195 |
| 3/8" | 230 | .0064" | 115 | 390 | .0108" | 195 |
| 3/8" | 230 | .0064" | 115 | 390 | .0108" | 195 |
| 3/8" | 230 | .0064" | 115 | 390 | .0108" | 195 |
| 3/8" | 230 | .0064" | 115 | 390 | .0108" | 195 |
| 7/16" | 270 | .0075" | 135 | 450 | .0125" | 225 |
| 1/2" | 200 | .0057" | 100 | 350 | .0096" | 175 |
| 1/2" | 200 | .0057" | 100 | 350 | .0096" | 175 |
| 1/2" | 200 | .0057" | 100 | 350 | .0096" | 175 |
| 1/2" | 200 | .0057" | 100 | 350 | .0096" | 175 |
| 1/2" | 200 | .0057" | 100 | 350 | .0096" | 175 |
| 5/8" | 250 | .0072" | 125 | 430 | .0120" | 215 |
| 5/8" | 250 | .0072" | 125 | 430 | .0120" | 215 |

**3 Flute**

| Diameter | Wood/Plywood | | | MDF/Laminate | | |
|---|---|---|---|---|---|---|
| 1/4" | 90 | .0016" | 45 | 160 | .0031" | 80 |
| 3/8" | 340 | .0064" | 170 | 600 | .0108" | 300 |
| 1/2" | 300 | .0057" | 150 | 500 | .0096" | 250 |
| 1/2" | 300 | .0057" | 150 | 500 | .0096" | 250 |

**Depth of Cut:**

1 x D Use recommended chip load

2 x D Reduce chip load by 25%

3 x D Reduce chip load by 50%

Simple Machining Calculations:

To find **RPM:**
(SFM x 3.82) / diameter of tool

To find **SFM:**
0.262 x diameter of tool x RPM

To find **Feed Rate IPM:**
RPM x # of flutes x chip load

To find **Chip Load:**
Feed Rate IPM / (RPM x # of Flutes)

To find **Ramp Down:**
Feed Rate / 2

**\* IPM:** Inches Per Minute

**† ⚠ WARNING:** Due to the extremely small diameters involved, bits are not guaranteed against breakage. Please excercise caution to the accurate calculations of all feed and speed rates.

**Disclaimer:** It is important to understand that these values are only recommendations.