



| Series 131N<br>3D& 5D<br>Fractional                                | Hardness                    | Vc<br>(sfm) |            | Diameter (D <sub>1</sub> )<br>(inch) |        |        |        |        |        |        |
|--|-----------------------------|-------------|------------|--------------------------------------|--------|--------|--------|--------|--------|--------|
|  |                             |             |            | 1/8                                  | 3/16   | 1/4    | 3/8    | 1/2    | 5/8    | 3/4    |
| <b>ALUMINUM ALLOYS<br/>&lt; 12% SI<br/>6061, 2024, 7075</b>        | ≤ 150 Bhn<br>or<br>≤ 7 HRc  | 800         | RPM        | 24448                                | 16299  | 12224  | 8149   | 6112   | 4890   | 4075   |
|  |                             | (640-960)   | Fr         | 0.0055                               | 0.0083 | 0.0110 | 0.0166 | 0.0221 | 0.0276 | 0.0331 |
|  |                             |             | Feed (ipm) | 135                                  | 135    | 135    | 135    | 135    | 135    | 135    |
| <b>ALUMINUM ALLOYS<br/>&gt; 12% SI<br/>A356.0, 390.0, 319.0</b>    | ≤ 125 Bhn<br>or<br>≤ 77 HRb | 600         | RPM        | 18336                                | 12224  | 9168   | 6112   | 4584   | 3667   | 3056   |
|  |                             | (480-720)   | Fr         | 0.0055                               | 0.0082 | 0.0109 | 0.0164 | 0.0218 | 0.0273 | 0.0327 |
|  |                             |             | Feed (ipm) | 100                                  | 100    | 100    | 100    | 100    | 100    | 100    |
| <b>COPPER ALLOYS<br/>Alum Bronze, Muntz<br/>Brass, Navel Brass</b> | ≤ 175 Bhn<br>or<br>≤ 16 HRc | 550         | RPM        | 16808                                | 11205  | 8404   | 5603   | 4202   | 3362   | 2801   |
|  |                             | (440-660)   | Fr         | 0.0020                               | 0.0030 | 0.0040 | 0.0061 | 0.0081 | 0.0101 | 0.0121 |
|  |                             |             | Feed (ipm) | 34                                   | 34     | 34     | 34     | 34     | 34     | 34     |
| <b>PLASTICS<br/>Acrylic, PVC,<br/>Polypropylene</b>                |                             | 450         | RPM        | 13752                                | 9168   | 6876   | 4584   | 3438   | 2750   | 2292   |
|  |                             | (360-540)   | Fr         | 0.0025                               | 0.0037 | 0.0049 | 0.0074 | 0.0099 | 0.0124 | 0.0148 |
|  |                             |             | Feed (ipm) | 34                                   | 34     | 34     | 34     | 34     | 34     | 34     |

**Note:**

- Bhn (Brinell)    HRc (Rockwell C)    HRb (Rockwell B)
- rpm = Vc x 3.82 / D<sub>1</sub>
- ipm = Fr x RPM
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® for complete technical information ([www.kyocera-sgstool.com](http://www.kyocera-sgstool.com))

| Series 131N<br>3D& 5D<br>Metric | Hardness  | Vc<br>(m/min)               |               | Diameter (D <sub>1</sub> )<br>(mm) |       |       |       |       |       |       |      |
|---------------------------------|---|-----------------------------|---------------|------------------------------------|-------|-------|-------|-------|-------|-------|------|
|                                 |   |                             |               | 3                                  | 6     | 8     | 10    | 12    | 14    | 16    |      |
| N                               | ALUMINUM ALLOYS<br>< 12% SI<br>6061, 2024, 7075           | ≤ 150 Bhn<br>or<br>≤ 7 HRc  | 244           | RPM                                | 25851 | 12926 | 9694  | 7755  | 6463  | 5540  | 4847 |
|                                 |   | (195-293)                   | Fr            | 0.133                              | 0.265 | 0.354 | 0.442 | 0.531 | 0.619 | 0.708 |      |
|                                 |   |                             | Feed (mm/min) | 3430                               | 3430  | 3430  | 3430  | 3430  | 3430  | 3430  |      |
|                                 | ALUMINUM ALLOYS<br>> 12% SI<br>A356.0, 390.0, 319.0       | ≤ 125 Bhn<br>or<br>≤ 77 HRb | 183           | RPM                                | 19388 | 9694  | 7271  | 5816  | 4847  | 4155  | 3635 |
|                                 |   | (146-219)                   | Fr            | 0.131                              | 0.262 | 0.349 | 0.437 | 0.524 | 0.611 | 0.699 |      |
|                                 |   |                             | Feed (mm/min) | 2540                               | 2540  | 2540  | 2540  | 2540  | 2540  | 2540  |      |
|                                 | COPPER ALLOYS<br>Alum Bronze, Muntz<br>Brass, Naval Brass | ≤ 175 Bhn<br>or<br>≤ 16 HRc | 168           | RPM                                | 17773 | 8886  | 6665  | 5332  | 4443  | 3808  | 3332 |
|                                 |   | (134-201)                   | Fr            | 0.049                              | 0.097 | 0.130 | 0.162 | 0.194 | 0.227 | 0.259 |      |
|                                 |   |                             | Feed (mm/min) | 864                                | 864   | 864   | 864   | 864   | 864   | 864   |      |
|                                 | PLASTICS<br>Acrylic, PVC,<br>Polypropylene                | (110-165)                   | 137           | RPM                                | 14541 | 7271  | 5453  | 4362  | 3635  | 3116  | 2726 |
|                                 |   |                             | Fr            | 0.059                              | 0.119 | 0.158 | 0.198 | 0.238 | 0.277 | 0.317 |      |
|                                 |   |                             | Feed (mm/min) | 864                                | 864   | 864   | 864   | 864   | 864   | 864   |      |

**Note:**

- Bhn (Brinell)      HRc (Rockwell C)      HRb (Rockwell B)
- $rpm = (Vc \times 1000) / (D_1 \times 3.14)$
- $mm/min = Fr \times RPM$
- reduce speed and feed for materials harder than listed
- refer to the KYOCERA SGS Tool Wizard® for complete technical information ([www.kyocera-sgstool.com](http://www.kyocera-sgstool.com))