

#### TOLERANCES (inch)

##### ≤.1181 DIAMETER

DC = +.00008/+0.00047  
DCON = h<sub>6</sub>

##### >.1181-.2362 DIAMETER

DC = +.00016/+0.00063  
DCON = h<sub>6</sub>

##### >.2362-.3937 DIAMETER

DC = +.00024/+0.00083  
DCON = h<sub>6</sub>

##### >.3937-.7087 DIAMETER

DC = +.00028/+0.00098  
DCON = h<sub>6</sub>

##### >.7087-1.1811 DIAMETER

DC = +.00031/+0.00114  
DCON = h<sub>6</sub>

#### TOLERANCES (mm)

##### ≤3 DIAMETER

DC = +0.002/+0.012  
DCON = h<sub>6</sub>

##### >3-6 DIAMETER

DC = +0.004/+0.016  
DCON = h<sub>6</sub>

##### >6-10 DIAMETER

DC = +0.006/+0.021  
DCON = h<sub>6</sub>

##### >10-18 DIAMETER

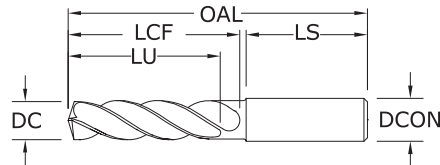
DC = +0.007/+0.025  
DCON = h<sub>6</sub>

##### >18-30 DIAMETER

DC = +0.008/+0.029  
DCON = h<sub>6</sub>

|                  |
|------------------|
| STEELS           |
| STAINLESS STEELS |
| CAST IRON        |
| HIGH TEMP ALLOYS |
| TITANIUM         |
| NON-FERROUS      |
| HARDENED STEELS  |

For patent  
information visit  
[www.ksptpatents.com](http://www.ksptpatents.com)



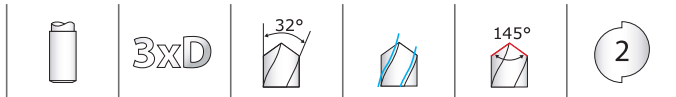
## 135 3xD

FRACTIONAL & METRIC SERIES

| inch & mm                 |                   |                  |                               |                           |                          |                        |                         |                       |  | EDP NO.                |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|--|------------------------|
| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS |  | TI-NAMITE-A<br>(AITIN) |
| 1/64                      | 0.0156            | 0.40             |                               | 1/8                       | 1-1/2                    | 1/8                    | 5/64                    | 1                     |  | 51752*                 |
| 1/32                      | 0.0312            | 0.79             |                               | 1/8                       | 1-1/2                    | 1/4                    | 3/16                    | 1                     |  | 51269*                 |
| 3/64                      | 0.0469            | 1.19             | 1/16-64                       | 1/8                       | 1-1/2                    | 3/8                    | 5/16                    | 1                     |  | 51270*                 |
| 1.25 mm                   | 0.0492            |                  |                               | 3.0                       | 38.0                     | 9.5                    | 8.0                     | 25.0                  |  | 64500*                 |
| 1.45 mm                   | 0.0571            |                  |                               | 3.0                       | 38.0                     | 9.5                    | 8.0                     | 25.0                  |  | 64501*                 |
| #53                       | 0.0595            | 1.51             |                               | 1/8                       | 1-1/2                    | 3/8                    | 5/16                    | 1                     |  | 64502*                 |
| 1/16                      | 0.0625            | 1.59             | 5/64-60                       | 1/8                       | 2                        | 7/16                   | 3/8                     | 1-1/4                 |  | 51271*                 |
| 1.6 mm                    | 0.0630            |                  |                               | 3.0                       | 50.0                     | 11.0                   | 9.0                     | 32.0                  |  | 64503*                 |
| 1.75 mm                   | 0.0689            |                  |                               | 3.0                       | 50.0                     | 11.0                   | 9.0                     | 32.0                  |  | 64504*                 |
| #50                       | 0.0700            | 1.78             |                               | 1/8                       | 2                        | 7/16                   | 3/8                     | 1-1/4                 |  | 64505*                 |
| 5/64                      | 0.0781            | 1.98             |                               | 1/8                       | 2                        | 1/2                    | 7/16                    | 1-1/4                 |  | 51272*                 |
| #47                       | 0.0785            | 1.99             |                               | 1/8                       | 2                        | 1/2                    | 7/16                    | 1-1/4                 |  | 64506*                 |
| 2.05 mm                   | 0.0807            |                  |                               | 3.0                       | 50.0                     | 12.0                   | 11.0                    | 32.0                  |  | 64507*                 |
| #46                       | 0.0810            | 2.06             |                               | 1/8                       | 2                        | 1/2                    | 7/16                    | 1-1/4                 |  | 64508*                 |
| #43                       | 0.0890            | 2.26             |                               | 1/8                       | 2                        | 1/2                    | 7/16                    | 1-1/4                 |  | 64509*                 |
| #42                       | 0.0935            | 2.37             |                               | 1/8                       | 2                        | 1/2                    | 7/16                    | 1-1/4                 |  | 64510*                 |
| 3/32                      | 0.0938            | 2.38             | 1/8-32                        | 1/8                       | 2                        | 1/2                    | 7/16                    | 1-1/4                 |  | 51273                  |
| #40                       | 0.0980            | 2.49             |                               | 1/8                       | 2                        | 9/16                   | 1/2                     | 1-1/4                 |  | 51274                  |
| 2.5 mm                    | 0.0984            |                  |                               | 3.0                       | 50.0                     | 14.0                   | 12.0                    | 32.0                  |  | 64511                  |
| #39                       | 0.0995            | 2.53             |                               | 1/8                       | 2                        | 9/16                   | 1/2                     | 1-1/4                 |  | 51753                  |
| #38                       | 0.1015            | 2.58             | 5-40                          | 1/8                       | 2                        | 9/16                   | 1/2                     | 1-1/4                 |  | 51754                  |
| #37                       | 0.1040            | 2.64             | 5-44                          | 1/8                       | 2                        | 9/16                   | 1/2                     | 1-1/4                 |  | 51755                  |
| #36                       | 0.1065            | 2.71             | 6-32                          | 1/8                       | 2                        | 9/16                   | 1/2                     | 1-1/4                 |  | 51756                  |
| 7/64                      | 0.1094            | 2.78             |                               | 1/8                       | 2                        | 5/8                    | 9/16                    | 1-1/4                 |  | 51275                  |
| #35                       | 0.1100            | 2.79             |                               | 1/8                       | 2                        | 5/8                    | 9/16                    | 1-1/4                 |  | 51276                  |
| #34                       | 0.1110            | 2.82             |                               | 1/8                       | 2                        | 5/8                    | 9/16                    | 1-1/4                 |  | 51277                  |
| #33                       | 0.1130            | 2.87             | 6-40                          | 1/8                       | 2                        | 5/8                    | 9/16                    | 1-1/4                 |  | 51757                  |
| 2.9 mm                    | 0.1142            |                  |                               | 3.0                       | 50.0                     | 16.0                   | 14.0                    | 32.0                  |  | 64512                  |
| #32                       | 0.1160            | 2.95             |                               | 1/8                       | 2                        | 5/8                    | 9/16                    | 1-1/4                 |  | 51758                  |
| 3.0 mm                    | 0.1181            |                  |                               | 6.0                       | 62.0                     | 20.0                   | 17.0                    | 36.0                  |  | 63155                  |
| #31                       | 0.1200            | 3.05             |                               | 1/8                       | 2                        | 5/8                    | 9/16                    | 1-1/4                 |  | 51759                  |
| 3.1 mm                    | 0.1220            |                  |                               | 6.0                       | 62.0                     | 20.0                   | 17.0                    | 36.0                  |  | 63741                  |
| 1/8                       | 0.1250            | 3.18             |                               | 1/4                       | 2-1/2                    | 3/4                    | 21/32                   | 1-7/16                |  | 51330                  |
| 3.2 mm                    | 0.1260            |                  | M3,5 X 0,35                   | 6.0                       | 62.0                     | 20.0                   | 17.0                    | 36.0                  |  | 63156                  |
| #30                       | 0.1285            | 3.26             |                               | 1/4                       | 2-1/2                    | 3/4                    | 21/32                   | 1-7/16                |  | 51278                  |
| 3.3 mm                    | 0.1299            |                  | M4 X 0,7                      | 6.0                       | 62.0                     | 20.0                   | 17.0                    | 36.0                  |  | 63157                  |
| 3.4 mm                    | 0.1339            |                  |                               | 6.0                       | 62.0                     | 20.0                   | 17.0                    | 36.0                  |  | 63158                  |
| #29                       | 0.1360            | 3.45             | 8-32,8-36                     | 1/4                       | 2-1/2                    | 3/4                    | 21/32                   | 1-7/16                |  | 51331                  |
| 3.5 mm                    | 0.1378            |                  | M4 X 0,5                      | 6.0                       | 62.0                     | 20.0                   | 17.0                    | 36.0                  |  | 63159                  |
| #28                       | 0.1405            | 3.57             | 8-40                          | 1/4                       | 2-1/2                    | 3/4                    | 21/32                   | 1-7/16                |  | 51760                  |
| 9/64                      | 0.1406            | 3.57             |                               | 1/4                       | 2-1/2                    | 3/4                    | 21/32                   | 1-7/16                |  | 51332                  |
| 3.6 mm                    | 0.1417            |                  | M4 X 0,35                     | 6.0                       | 62.0                     | 20.0                   | 17.0                    | 36.0                  |  | 63160                  |
| #27                       | 0.1440            | 3.66             |                               | 1/4                       | 2-1/2                    | 3/4                    | 21/32                   | 1-7/16                |  | 51761                  |
| 3.7 mm                    | 0.1457            |                  | M4,5 X 0,75                   | 6.0                       | 62.0                     | 20.0                   | 17.0                    | 36.0                  |  | 63161                  |
| #26                       | 0.1470            | 3.73             | 3/16-24                       | 1/4                       | 2-1/2                    | 3/4                    | 21/32                   | 1-7/16                |  | 51762                  |
| #25                       | 0.1495            | 3.80             | 10-24                         | 1/4                       | 2-5/8                    | 7/8                    | 23/32                   | 1-7/16                |  | 51333                  |
| 3.8 mm                    | 0.1496            |                  |                               | 6.0                       | 66.0                     | 24.0                   | 21.0                    | 36.0                  |  | 63742                  |
| #24                       | 0.1520            | 3.86             | 10-28                         | 1/4                       | 2-5/8                    | 7/8                    | 23/32                   | 1-7/16                |  | 51763                  |

\*Single Margin

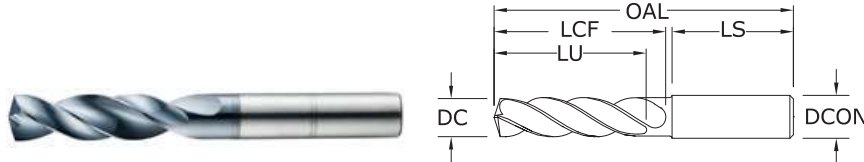
continued on next page



## 135 3xD

### FRACTIONAL & METRIC SERIES

- Double margin design improves accuracy and surface finish along with increased strength for aggressive drilling
- Specialized self-centering notched point eliminates the need for spot drilling decreasing thrust and deflection
- Engineered edge protection improves edge strength and reduces edge fatigue allowing for increased feed rates
- Recommended for materials ≤ 56 HRC (≤ 577 Bhn)



| CUTTING DIAMETER<br>DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE REFERENCE ONLY | inch & mm              |       | OVERALL LENGTH<br>OAL | FLUTE LENGTH<br>LCF | CLEARED LENGTH<br>LU | SHANK LENGTH<br>LS | EDP NO.<br>Ti-NAMITE-A (AITiN) |
|------------------------|----------------|---------------|-------------------------|------------------------|-------|-----------------------|---------------------|----------------------|--------------------|--------------------------------|
|                        |                |               |                         | SHANK DIAMETER<br>DCON |       |                       |                     |                      |                    |                                |
| 3,9 mm                 | 0.1535         |               |                         | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63743                          |
| #23                    | 0.1540         | 3.91          |                         | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51764                          |
| 5/32                   | 0.1562         | 3.97          |                         | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51334                          |
| #22                    | 0.1570         | 3.99          | 10-30                   | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51765                          |
| 4,0 mm                 | 0.1575         |               | M4,5 X 0,5              | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63162                          |
| #21                    | 0.1590         | 4.04          | 10-32                   | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51335                          |
| #20                    | 0.1610         | 4.09          | 13/64-24                | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51279                          |
| 4,1 mm                 | 0.1614         |               |                         | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63744                          |
| 4,2 mm                 | 0.1654         |               | M5 / M5 X 0,75          | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63163                          |
| #19                    | 0.1660         | 4.22          |                         | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51766                          |
| 4,3 mm                 | 0.1693         |               |                         | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63164                          |
| #18                    | 0.1695         | 4.31          |                         | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51767                          |
| 11/64                  | 0.1719         | 4.37          |                         | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51336                          |
| #17                    | 0.1730         | 4.39          |                         | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51768                          |
| 4,4 mm                 | 0.1732         |               |                         | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63745                          |
| #16                    | 0.1770         | 4.50          | 12-24                   | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51769                          |
| 4,5 mm                 | 0.1772         |               | M5 X 0,5                | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63165                          |
| #15                    | 0.1800         | 4.57          |                         | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51770                          |
| 4,6 mm                 | 0.1811         |               | 12-28                   | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63166                          |
| #14                    | 0.1820         | 4.62          |                         | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51771                          |
| #13                    | 0.1850         | 4.70          | 12-32                   | 1/4                    | 2-5/8 | 7/8                   | 23/32               | 1-7/16               |                    | 51772                          |
| 4,7 mm                 | 0.1850         |               |                         | 6,0                    | 66,0  | 24,0                  | 21,0                | 36,0                 |                    | 63746                          |
| 3/16                   | 0.1875         | 4.76          |                         | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51337                          |
| #12                    | 0.1890         | 4.80          | 7/32-32                 | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51773                          |
| 4,8 mm                 | 0.1890         |               |                         | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63167                          |
| #11                    | 0.1910         | 4.85          |                         | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51774                          |
| 4,9 mm                 | 0.1929         |               |                         | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63747                          |
| #10                    | 0.1935         | 4.91          | 14-20                   | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51775                          |
| #9                     | 0.1960         | 4.98          |                         | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51776                          |
| 5,0 mm                 | 0.1969         |               | M6 X 1                  | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63168                          |
| #8                     | 0.1990         | 5.05          |                         | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51777                          |
| 5,1 mm                 | 0.2008         |               |                         | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63748                          |
| #7                     | 0.2010         | 5.11          | 1/4-20                  | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51338                          |
| 13/64                  | 0.2031         | 5.16          |                         | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51339                          |
| #6                     | 0.2040         | 5.18          |                         | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51778                          |
| 5,2 mm                 | 0.2047         |               | M6 X 0,75               | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63749                          |
| #5                     | 0.2055         | 5.22          |                         | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51779                          |
| 5,25 mm                | 0.2067         |               |                         | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63169                          |
| 5,3 mm                 | 0.2087         |               |                         | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63170                          |
| #4                     | 0.2090         | 5.31          | 1/4-24                  | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51780                          |
| 5,4 mm                 | 0.2126         |               |                         | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63750                          |
| #3                     | 0.2130         | 5.41          | 1/4-28                  | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51340                          |
| 5,5 mm                 | 0.2165         |               | M6 X 0,5                | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63171                          |
| 7/32                   | 0.2188         | 5.56          | 1/4-32                  | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51341                          |
| 5,6 mm                 | 0.2205         |               |                         | 6,0                    | 66,0  | 28,0                  | 24,0                | 36,0                 |                    | 63751                          |
| #2                     | 0.2210         | 5.61          |                         | 1/4                    | 2-5/8 | 1                     | 53/64               | 1-7/16               |                    | 51781                          |

continued on next page

#### TOLERANCES (inch)

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|                  |
|------------------|
| STEELS           |
| STAINLESS STEELS |
| CAST IRON        |
| HIGH TEMP ALLOYS |
| TITANIUM         |
| NON-FERROUS      |
| HARDENED STEELS  |

For patent  
information visit  
[www.ksptpatents.com](http://www.ksptpatents.com)

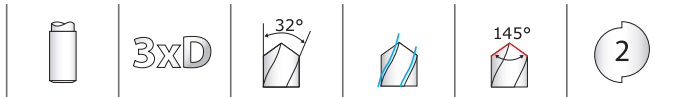
# 135 3xD

FRACTIONAL & METRIC SERIES

| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | inch & mm                     |                           | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS | EDP NO.<br>Ti-NAMITE-A<br>(AITiN) |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|-----------------------------------|
|                           |                   |                  | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON |                          |                        |                         |                       |                                   |
| 5,7 mm                    | 0.2244            |                  |                               | 6,0                       | 66,0                     | 28,0                   | 24,0                    | 36,0                  | 63752                             |
| #1                        | 0.2280            | 5.79             |                               | 1/4                       | 2-5/8                    | 1                      | 53/64                   | 1-7/16                | 51782                             |
| 5,8 mm                    | 0.2283            |                  |                               | 6,0                       | 66,0                     | 28,0                   | 24,0                    | 36,0                  | 63172                             |
| 5,9 mm                    | 0.2323            |                  |                               | 6,0                       | 66,0                     | 28,0                   | 24,0                    | 36,0                  | 63753                             |
| A                         | 0.2340            | 5.94             |                               | 1/4                       | 2-5/8                    | 1                      | 53/64                   | 1-7/16                | 51601                             |
| 15/64                     | 0.2344            | 5.95             |                               | 1/4                       | 2-5/8                    | 1                      | 53/64                   | 1-7/16                | 51342                             |
| 6,0 mm                    | 0.2362            | 6.00             | M7 X 1                        | 6,0                       | 66,0                     | 28,0                   | 24,0                    | 36,0                  | 63173                             |
| B                         | 0.2380            | 6.05             |                               | 1/4                       | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51602                             |
| 6,1 mm                    | 0.2402            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63754                             |
| C                         | 0.2420            | 6.15             |                               | 1/4                       | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51603                             |
| 6,2 mm                    | 0.2441            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63755                             |
| D                         | 0.2460            | 6.25             |                               | 1/4                       | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51604                             |
| 6,25 mm                   | 0.2461            |                  | M7 X 0,75                     | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63174                             |
| 6,3 mm                    | 0.2480            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63756                             |
| 1/4                       | 0.2500            | 6.35             |                               | 1/4                       | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51343                             |
| 6,4 mm                    | 0.2520            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63175                             |
| 6,5 mm                    | 0.2559            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63213                             |
| F                         | 0.2570            | 6.53             | 5/16-18                       | 5/16                      | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51344                             |
| 6,6 mm                    | 0.2598            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63757                             |
| G                         | 0.2610            | 6.63             |                               | 5/16                      | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51606                             |
| 6,7 mm                    | 0.2638            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63758                             |
| 17/64                     | 0.2656            | 6.75             | 5/16-20                       | 5/16                      | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51345                             |
| H                         | 0.2660            | 6.76             |                               | 5/16                      | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51607                             |
| 6,8 mm                    | 0.2677            |                  | M8 X 1,25                     | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63176                             |
| 6,9 mm                    | 0.2717            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63759                             |
| I                         | 0.2720            | 6.91             | 5/16-24                       | 5/16                      | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51346                             |
| 7,0 mm                    | 0.2756            |                  | M8 X 1                        | 8,0                       | 79,0                     | 34,0                   | 28,0                    | 36,0                  | 63177                             |
| J                         | 0.2770            | 7.04             |                               | 5/16                      | 3-1/8                    | 1-5/16                 | 1-3/64                  | 1-7/16                | 51608                             |
| 7,1 mm                    | 0.2795            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63760                             |
| K                         | 0.2810            | 7.14             |                               | 5/16                      | 3-1/8                    | 1-9/16                 | 1-3/16                  | 1-7/16                | 51609                             |
| 9/32                      | 0.2812            | 7.14             | 5/16-32                       | 5/16                      | 3-1/8                    | 1-9/16                 | 1-3/16                  | 1-7/16                | 51347                             |
| 7,2 mm                    | 0.2835            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63761                             |
| 7,25 mm                   | 0.2854            |                  | M8 X 0,75                     | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63178                             |
| 7,3 mm                    | 0.2874            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63762                             |
| L                         | 0.2900            | 7.37             |                               | 5/16                      | 3-1/8                    | 1-9/16                 | 1-3/16                  | 1-7/16                | 51610                             |
| 7,4 mm                    | 0.2913            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63763                             |
| M                         | 0.2950            | 7.49             |                               | 5/16                      | 3-1/8                    | 1-9/16                 | 1-3/16                  | 1-7/16                | 51611                             |
| 7,5 mm                    | 0.2953            |                  | M8 X 0,5                      | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63179                             |
| 19/64                     | 0.2969            | 7.54             |                               | 5/16                      | 3-1/8                    | 1-9/16                 | 1-3/16                  | 1-7/16                | 51348                             |
| 7,6 mm                    | 0.2992            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63764                             |
| N                         | 0.3020            | 7.67             |                               | 5/16                      | 3-1/8                    | 1-9/16                 | 1-3/16                  | 1-7/16                | 51612                             |
| 7,7 mm                    | 0.3031            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63765                             |
| 7,8 mm                    | 0.3071            |                  | M9 X 1,25                     | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63180                             |
| 7,9 mm                    | 0.3110            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63766                             |
| 5/16                      | 0.3125            | 7.94             | 3/8-16                        | 5/16                      | 3-1/8                    | 1-9/16                 | 1-3/16                  | 1-7/16                | 51349                             |
| 8,0 mm                    | 0.3150            |                  | M9 x 1                        | 8,0                       | 79,0                     | 41,0                   | 34,0                    | 36,0                  | 63181                             |
| O                         | 0.3160            | 8.03             |                               | 3/8                       | 3-1/2                    | 1-27/32                | 1-37/64                 | 1-9/16                | 51613                             |
| 8,1 mm                    | 0.3189            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 40,0                    | 40,0                  | 63767                             |
| 8,2 mm                    | 0.3228            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 40,0                    | 40,0                  | 63768                             |
| P                         | 0.3230            | 8.20             |                               | 3/8                       | 3-1/2                    | 1-27/32                | 1-37/64                 | 1-9/16                | 51614                             |
| 8,3 mm                    | 0.3268            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 40,0                    | 40,0                  | 63769                             |
| 21/64                     | 0.3281            | 8.33             | 3/8-20                        | 3/8                       | 3-1/2                    | 1-27/32                | 1-37/64                 | 1-9/16                | 51350                             |
| 8,4 mm                    | 0.3307            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 40,0                    | 40,0                  | 63182                             |
| Q                         | 0.3320            | 8.43             | 3/8-24                        | 3/8                       | 3-1/2                    | 1-27/32                | 1-37/64                 | 1-9/16                | 51351                             |
| 8,5 mm                    | 0.3346            |                  | M10 X 1,5                     | 10,0                      | 89,0                     | 47,0                   | 40,0                    | 40,0                  | 63183                             |
| 8,6 mm                    | 0.3386            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 40,0                    | 40,0                  | 63770                             |
| R                         | 0.3390            | 8.61             |                               | 3/8                       | 3-1/2                    | 1-27/32                | 1-37/64                 | 1-9/16                | 51615                             |
| 8,7 mm                    | 0.3425            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 40,0                    | 40,0                  | 63771                             |

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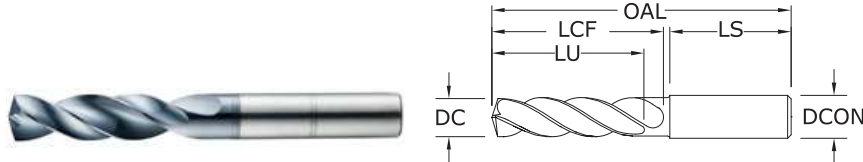
CONTINUED



## 135 3xD

### FRACTIONAL & METRIC SERIES

- Double margin design improves accuracy and surface finish along with increased strength for aggressive drilling
- Specialized self-centering notched point eliminates the need for spot drilling decreasing thrust and deflection
- Engineered edge protection improves edge strength and reduces edge fatigue allowing for increased feed rates
- Recommended for materials ≤ 56 HRC (≤ 577 Bhn)



| CUTTING DIAMETER DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE REFERENCE ONLY | inch & mm     |                     | OVERALL LENGTH OAL | FLUTE LENGTH LCF | CLEARED LENGTH LU | SHANK LENGTH LS | EDP NO. Ti-NAMITE-A (AITiN) |
|---------------------|----------------|---------------|-------------------------|---------------|---------------------|--------------------|------------------|-------------------|-----------------|-----------------------------|
|                     |                |               |                         | DIAMETER DCON | SHANK DIAMETER DCON |                    |                  |                   |                 |                             |
| 11/32               | 0.3438         | 8.73          | 3/8-32                  | 3/8           | 3-1/2               | 1-27/32            | 1-37/64          | 1-9/16            |                 | 51352                       |
| 8,8 mm              | 0.3465         |               | M10 X 1,25              | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63184                       |
| S                   | 0.3480         | 8.84          |                         | 3/8           | 3-1/2               | 1-27/32            | 1-37/64          | 1-9/16            |                 | 51616                       |
| 8,9 mm              | 0.3504         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63772                       |
| 9,0 mm              | 0.3543         |               | M10 X 1                 | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63185                       |
| T                   | 0.3580         | 9.09          |                         | 3/8           | 3-1/2               | 1-27/32            | 1-37/64          | 1-9/16            |                 | 51617                       |
| 9,1 mm              | 0.3583         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63773                       |
| 23/64               | 0.3594         | 9.13          |                         | 3/8           | 3-1/2               | 1-27/32            | 1-37/64          | 1-9/16            |                 | 51353                       |
| 9,2 mm              | 0.3622         |               | M10 X 0,75              | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63774                       |
| 9,25 mm             | 0.3642         | 9.25          |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63186                       |
| 9,3 mm              | 0.3661         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63775                       |
| U                   | 0.3680         | 9.35          | 7/16-14                 | 3/8           | 3-1/2               | 1-27/32            | 1-37/64          | 1-9/16            |                 | 51354                       |
| 9,4 mm              | 0.3701         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63776                       |
| 9,5 mm              | 0.3740         |               | M10 X 0,5               | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63187                       |
| 3/8                 | 0.3750         | 9.53          |                         | 3/8           | 3-1/2               | 1-27/32            | 1-37/64          | 1-9/16            |                 | 51355                       |
| V                   | 0.3770         | 9.58          |                         | 1/2           | 3-1/2               | 1-27/32            | 1-37/64          | 1-9/16            |                 | 51618                       |
| 9,6 mm              | 0.3780         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63777                       |
| 9,7 mm              | 0.3819         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63778                       |
| 9,8 mm              | 0.3858         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63779                       |
| W                   | 0.3860         |               | 1/2                     | 3-1/2         | 1-27/32             | 1-37/64            | 1-9/16           | 1-9/16            |                 | 51619                       |
| 9,9 mm              | 0.3898         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63780                       |
| 25/64               | 0.3906         | 9.92          | 7/16-20                 | 1/2           | 3-1/2               | 1-27/32            | 1-37/64          | 1-9/16            |                 | 51356                       |
| 10,0 mm             | 0.3937         |               |                         | 10,0          | 89,0                | 47,0               | 40,0             | 40,0              |                 | 63188                       |
| X                   | 0.3970         | 10.08         | 7/16-24                 | 1/2           | 4-1/16              | 2-3/16             | 1-51/64          | 1-49/64           |                 | 51620                       |
| 10,1 mm             | 0.3976         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63781                       |
| 10,2 mm             | 0.4016         |               | M12 X 1,75              | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63189                       |
| Y                   | 0.4040         | 10.26         | 7/16-28                 | 1/2           | 4-1/16              | 2-3/16             | 1-51/64          | 1-49/64           |                 | 51621                       |
| 10,3 mm             | 0.4055         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63782                       |
| 13/32               | 0.4062         | 10.32         |                         | 1/2           | 4-1/16              | 2-3/16             | 1-51/64          | 1-49/64           |                 | 51357                       |
| 10,4 mm             | 0.4094         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63783                       |
| Z                   | 0.4130         | 10.49         |                         | 1/2           | 4-1/16              | 2-3/16             | 1-51/64          | 1-49/64           |                 | 51622                       |
| 10,5 mm             | 0.4134         |               | M12 X 1,5               | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63190                       |
| 10,6 mm             | 0.4173         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63784                       |
| 10,7 mm             | 0.4213         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63785                       |
| 27/64               | 0.4219         | 10.72         | 1/2-13                  | 1/2           | 4-1/16              | 2-3/16             | 1-51/64          | 1-49/64           |                 | 51358                       |
| 10,8 mm             | 0.4252         |               | M12 X 1,25              | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63191                       |
| 10,9 mm             | 0.4291         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63786                       |
| 11,0 mm             | 0.4331         |               | M12 X 1                 | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63192                       |
| 11,1 mm             | 0.4370         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63787                       |
| 7/16                | 0.4375         | 11.11         | 1/4-18 NPT              | 1/2           | 4-1/16              | 2-3/16             | 1-51/64          | 1-49/64           |                 | 51359                       |
| 11,2 mm             | 0.4409         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63788                       |
| 11,25 mm            | 0.4429         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63193                       |
| 11,3 mm             | 0.4449         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63789                       |
| 11,4 mm             | 0.4488         |               |                         | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63790                       |
| 11,5 mm             | 0.4528         |               | M12 X 0,5               | 12,0          | 102,0               | 55,0               | 45,0             | 45,0              |                 | 63194                       |
| 29/64               | 0.4531         | 11.51         | 1/2-20                  | 1/2           | 4-1/16              | 2-3/16             | 1-51/64          | 1-49/64           |                 | 51360                       |

continued on next page

#### TOLERANCES (inch)

##### ≤.1181 DIAMETER

DC = +.00008/+.00047  
DCON = h<sub>6</sub>

##### >.1181-.2362 DIAMETER

DC = +.00016/+.00063  
DCON = h<sub>6</sub>

##### >.2362-.3937 DIAMETER

DC = +.00024/+.00083  
DCON = h<sub>6</sub>

##### >.3937-.7087 DIAMETER

DC = +.00028/+.00098  
DCON = h<sub>6</sub>

##### >.7087-1.1811 DIAMETER

DC = +.00031/+.00114  
DCON = h<sub>6</sub>

#### TOLERANCES (mm)

##### ≤3 DIAMETER

DC = +0.002/+0.012  
DCON = h<sub>6</sub>

##### >3-6 DIAMETER

DC = +0.004/+0.016  
DCON = h<sub>6</sub>

##### >6-10 DIAMETER

DC = +0.006/+0.021  
DCON = h<sub>6</sub>

##### >10-18 DIAMETER

DC = +0.007/+0.025  
DCON = h<sub>6</sub>

##### >18-30 DIAMETER

DC = +0.008/+0.029  
DCON = h<sub>6</sub>

|                  |
|------------------|
| STEELS           |
| STAINLESS STEELS |
| CAST IRON        |
| HIGH TEMP ALLOYS |
| TITANIUM         |
| NON-FERROUS      |
| HARDENED STEELS  |

For patent information visit  
[www.ksptpatents.com](http://www.ksptpatents.com)



# 135 3xD

FRACTIONAL & METRIC SERIES

| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | inch & mm                     |                           | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS | EDP NO.<br>Ti-NAMITE-A<br>(AITiN) |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|-----------------------------------|
|                           |                   |                  | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON |                          |                        |                         |                       |                                   |
| 11,6 mm                   | 0.4567            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 45,0                    | 45,0                  | 63791                             |
| 11,7 mm                   | 0.4606            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 45,0                    | 45,0                  | 63792                             |
| 11,8 mm                   | 0.4646            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 45,0                    | 45,0                  | 63793                             |
| 11,9 mm                   | 0.4685            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 45,0                    | 45,0                  | 63794                             |
| 15/32                     | 0.4688            | 11.91            | 1/2-28                        | 1/2                       | 4-1/16                   | 2-3/16                 | 1-51/64                 | 1-49/64               | 51361                             |
| 12,0 mm                   | 0.4724            |                  | M14 X 2                       | 12,0                      | 102,0                    | 55,0                   | 45,0                    | 45,0                  | 63195                             |
| 31/64                     | 0.4844            | 12.30            | 9/16-12                       | 1/2                       | 4-1/4                    | 2-5/16                 | 1-7/8                   | 1-49/64               | 51362                             |
| 12,5 mm                   | 0.4921            |                  | M14 X 1,5                     | 14,0                      | 107,0                    | 60,0                   | 49,0                    | 45,0                  | 63196                             |
| 1/2                       | 0.5000            | 12.70            |                               | 1/2                       | 4-1/4                    | 2-5/16                 | 1-7/8                   | 1-49/64               | 51363                             |
| 12,8 mm                   | 0.5039            |                  | M14 X 1,25                    | 14,0                      | 107,0                    | 60,0                   | 49,0                    | 45,0                  | 63197                             |
| 13,0 mm                   | 0.5118            |                  | M14 X 1                       | 14,0                      | 107,0                    | 60,0                   | 49,0                    | 45,0                  | 63198                             |
| 33/64                     | 0.5156            | 13.10            | 9/16-18                       | 5/8                       | 4-1/4                    | 2-5/16                 | 1-7/8                   | 1-49/64               | 51364                             |
| 17/32                     | 0.5312            | 13.49            | 5/8-11                        | 5/8                       | 4-1/4                    | 2-5/16                 | 1-7/8                   | 1-49/64               | 51365                             |
| 13,5 mm                   | 0.5315            |                  |                               | 14,0                      | 107,0                    | 60,0                   | 49,0                    | 45,0                  | 63199                             |
| 35/64                     | 0.5469            | 13.89            | 5/8-12                        | 5/8                       | 4-1/4                    | 2-5/16                 | 1-7/8                   | 1-49/64               | 51783                             |
| 14,0 mm                   | 0.5512            |                  | M16 X 2                       | 14,0                      | 107,0                    | 60,0                   | 49,0                    | 45,0                  | 63200                             |
| 9/16                      | 0.5625            | 14.29            |                               | 5/8                       | 4-9/16                   | 2-1/2                  | 2                       | 1-57/64               | 51366                             |
| 14,5 mm                   | 0.5709            |                  | M16 X 1,5                     | 16,0                      | 115,0                    | 65,0                   | 51,0                    | 48,0                  | 63201                             |
| 37/64                     | 0.5781            | 14.68            | 5/8-18                        | 5/8                       | 4-9/16                   | 2-1/2                  | 2                       | 1-57/64               | 51367                             |
| 15,0 mm                   | 0.5906            |                  | M16 X 1                       | 16,0                      | 115,0                    | 65,0                   | 51,0                    | 48,0                  | 63202                             |
| 19/32                     | 0.5938            | 15.08            | 11/16-11                      | 5/8                       | 4-9/16                   | 2-1/2                  | 2                       | 1-57/64               | 51784                             |
| 39/64                     | 0.6094            | 15.48            | 11/16-12                      | 5/8                       | 4-9/16                   | 2-1/2                  | 2                       | 1-57/64               | 51785                             |
| 15,5 mm                   | 0.6102            |                  | M18 X 2,5                     | 16,0                      | 115,0                    | 65,0                   | 51,0                    | 48,0                  | 63203                             |
| 5/8                       | 0.6250            | 15.88            | 11/16-16                      | 5/8                       | 4-9/16                   | 2-1/2                  | 2                       | 1-57/64               | 51368                             |
| 16,0 mm                   | 0.6299            |                  |                               | 16,0                      | 115,0                    | 65,0                   | 51,0                    | 48,0                  | 63204                             |
| 41/64                     | 0.6406            | 16.27            | 11/16-24                      | 3/4                       | 4-7/8                    | 2-3/4                  | 2-5/16                  | 1-57/64               | 51786                             |
| 16,5 mm                   | 0.6496            |                  | M18 X 1,5                     | 18,0                      | 123,0                    | 73,0                   | 58,0                    | 48,0                  | 63205                             |
| 21/32                     | 0.6562            | 16.67            | 3/4-10                        | 3/4                       | 4-7/8                    | 2-3/4                  | 2-5/16                  | 1-57/64               | 51369                             |
| 17,0 mm                   | 0.6693            |                  |                               | 18,0                      | 123,0                    | 73,0                   | 58,0                    | 48,0                  | 63206                             |
| 43/64                     | 0.6719            | 17.07            | 3/4-12                        | 3/4                       | 4-7/8                    | 2-3/4                  | 2-5/16                  | 1-57/64               | 51787                             |
| 11/16                     | 0.6875            | 17.46            | 3/4-16                        | 3/4                       | 4-7/8                    | 2-3/4                  | 2-5/16                  | 1-57/64               | 51370                             |
| 17,5 mm                   | 0.6890            |                  | M20 X 2,5                     | 18,0                      | 123,0                    | 73,0                   | 58,0                    | 48,0                  | 63207                             |
| 45/64                     | 0.7031            | 17.86            | 3/4-20, 1/2-14 NPT            | 3/4                       | 4-7/8                    | 2-3/4                  | 2-5/16                  | 1-57/64               | 51788                             |
| 18,0 mm                   | 0.7087            |                  |                               | 18,0                      | 123,0                    | 73,0                   | 58,0                    | 48,0                  | 63208                             |
| 23/32                     | 0.7188            | 18.26            |                               | 3/4                       | 4-7/8                    | 2-3/4                  | 2-5/16                  | 1-57/64               | 51789                             |
| 18,5 mm                   | 0.7283            |                  | M20 X 1,5                     | 20,0                      | 131,0                    | 79,0                   | 63,0                    | 50,0                  | 63209                             |
| 47/64                     | 0.7344            | 18.65            | 13/16-12                      | 3/4                       | 4-7/8                    | 2-3/4                  | 2-5/16                  | 1-57/64               | 51790                             |
| 19,0 mm                   | 0.7480            |                  |                               | 20,0                      | 131,0                    | 79,0                   | 63,0                    | 50,0                  | 63210                             |
| 3/4                       | 0.7500            | 19.05            | 13/16-16                      | 3/4                       | 5-1/4                    | 3-1/16                 | 2-7/16                  | 1-31/32               | 51371                             |
| 49/64                     | 0.7656            | 19.45            | 7/8-9                         | 7/8                       | 5-1/4                    | 3-1/16                 | 2-7/16                  | 1-31/32               | 51372                             |
| 19,5 mm                   | 0.7677            |                  | M22 X 2,5                     | 20,0                      | 131,0                    | 79,0                   | 63,0                    | 50,0                  | 63211                             |
| 25/32                     | 0.7812            | 19.84            |                               | 7/8                       | 6                        | 3-11/16                | 2-11/16                 | 2-1/8                 | 51791                             |
| 20,0 mm                   | 0.7874            |                  |                               | 20,0                      | 131,0                    | 79,0                   | 63,0                    | 50,0                  | 63212                             |
| 51/64                     | 0.7969            | 20.24            | 7/8-12                        | 7/8                       | 6                        | 3-11/16                | 2-11/16                 | 2-1/8                 | 51792                             |
| 20,5 mm                   | 0.8071            |                  |                               | 22,0                      | 150,0                    | 93,0                   | 73,0                    | 53,0                  | 64513                             |
| 13/16                     | 0.8125            | 20.64            | 7/8-14                        | 7/8                       | 6                        | 3-11/16                | 2-11/16                 | 2-1/8                 | 51373                             |
| 21,0 mm                   | 0.8268            |                  |                               | 22,0                      | 150,0                    | 93,0                   | 73,0                    | 53,0                  | 64514                             |
| 22,0 mm                   | 0.8661            |                  |                               | 22,0                      | 150,0                    | 93,0                   | 73,0                    | 53,0                  | 64515                             |
| 7/8                       | 0.8750            | 22.23            | 15/16-16, 1-8                 | 7/8                       | 6                        | 3-11/16                | 2-11/16                 | 2-1/8                 | 51374                             |
| 59/64                     | 0.9219            | 23.42            | 1-12                          | 1                         | 6                        | 3-11/16                | 2-11/16                 | 2-1/8                 | 51375                             |

CONTINUED

| Series<br>135 3D<br>Fractional |                                                                                           |                             |                  | DC • in    |        |        |        |        |        |        |        |
|--------------------------------|-------------------------------------------------------------------------------------------|-----------------------------|------------------|------------|--------|--------|--------|--------|--------|--------|--------|
| Hardness                       |                                                                                           | Vc<br>(sfm)                 |                  | 1/32       | 1/8    | 1/4    | 3/8    | 1/2    | 5/8    | 7/8    |        |
| P                              | CARBON STEELS<br>1018, 1040, 1080, 1090, 10L50,<br>1140, 1212, 12L15, 1525, 1536          | ≤ 175 Bhn<br>or<br>≤ 7 HRc  | 385<br>(308-462) | RPM        | 47062  | 11766  | 5883   | 3922   | 2941   | 2353   | 1681   |
|                                |                                                                                           |                             |                  | Fr         | 0.0010 | 0.0038 | 0.0076 | 0.0115 | 0.0153 | 0.0191 | 0.0268 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 45.0   | 45.0   | 45.0   | 45.0   | 45.0   | 45.0   | 45.0   |
|                                |                                                                                           | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 350<br>(280-420) | RPM        | 42784  | 10696  | 5348   | 3565   | 2674   | 2139   | 1528   |
|                                |                                                                                           |                             |                  | Fr         | 0.0009 | 0.0036 | 0.0071 | 0.0107 | 0.0142 | 0.0178 | 0.0249 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 38.0   | 38.0   | 38.0   | 38.0   | 38.0   | 38.0   | 38.0   |
|                                |                                                                                           | ≤ 425 Bhn<br>or<br>≤ 45 HRc | 200<br>(160-240) | RPM        | 24448  | 6112   | 3056   | 2037   | 1528   | 1222   | 873    |
|                                |                                                                                           |                             |                  | Fr         | 0.0007 | 0.0029 | 0.0059 | 0.0088 | 0.0118 | 0.0147 | 0.0206 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 18.0   | 18.0   | 18.0   | 18.0   | 18.0   | 18.0   | 18.0   |
|                                | ALLOY STEELS<br>4140, 4150, 4320, 5120, 5150,<br>8630, 86L20, 50100                       | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 300<br>(240-360) | RPM        | 36672  | 9168   | 4584   | 3056   | 2292   | 1834   | 1310   |
|                                |                                                                                           |                             |                  | Fr         | 0.0007 | 0.0029 | 0.0059 | 0.0088 | 0.0118 | 0.0147 | 0.0206 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 27.0   | 27.0   | 27.0   | 27.0   | 27.0   | 27.0   | 27.0   |
|                                |                                                                                           | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 185<br>(148-222) | RPM        | 22614  | 5654   | 2827   | 1885   | 1413   | 1131   | 808    |
|                                |                                                                                           |                             |                  | Fr         | 0.0006 | 0.0026 | 0.0051 | 0.0077 | 0.0103 | 0.0128 | 0.0180 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 14.5   | 14.5   | 14.5   | 14.5   | 14.5   | 14.5   | 14.5   |
|                                |                                                                                           | ≤ 450 Bhn<br>or<br>≤ 48 HRc | 130<br>(104-156) | RPM        | 15891  | 3973   | 1986   | 1324   | 993    | 795    | 568    |
|                                |                                                                                           |                             |                  | Fr         | 0.0004 | 0.0018 | 0.0035 | 0.0053 | 0.0070 | 0.0088 | 0.0123 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    | 7.0    |
| M                              | STAINLESS STEELS<br>(FREE MACHINING)<br>303, 416, 420F, 430F, 440F                        | ≤ 185 Bhn<br>or<br>≤ 9 HRc  | 275<br>(220-330) | RPM        | 33616  | 8404   | 4202   | 2801   | 2101   | 1681   | 1201   |
|                                |                                                                                           |                             |                  | Fr         | 0.0006 | 0.0026 | 0.0051 | 0.0077 | 0.0102 | 0.0128 | 0.0179 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 21.5   | 21.5   | 21.5   | 21.5   | 21.5   | 21.5   | 21.5   |
|                                |                                                                                           | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 170<br>(136-204) | RPM        | 20781  | 5195   | 2598   | 1732   | 1299   | 1039   | 742    |
|                                |                                                                                           |                             |                  | Fr         | 0.0005 | 0.0020 | 0.0040 | 0.0061 | 0.0081 | 0.0101 | 0.0141 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 10.5   | 10.5   | 10.5   | 10.5   | 10.5   | 10.5   | 10.5   |
|                                | STAINLESS STEELS<br>(DIFFICULT)<br>304, 316, 321, 13-8 PH,<br>15-5PH, 17-4 PH, Custom 450 | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 90<br>(72-108)   | RPM        | 11002  | 2750   | 1375   | 917    | 688    | 550    | 393    |
|                                |                                                                                           |                             |                  | Fr         | 0.0005 | 0.0020 | 0.0040 | 0.0060 | 0.0080 | 0.0100 | 0.0140 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 5.5    | 5.5    | 5.5    | 5.5    | 5.5    | 5.5    | 5.5    |
|                                |                                                                                           | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 65<br>(52-78)    | RPM        | 7946   | 1986   | 993    | 662    | 497    | 397    | 284    |
|                                |                                                                                           |                             |                  | Fr         | 0.0004 | 0.0018 | 0.0035 | 0.0053 | 0.0070 | 0.0088 | 0.0123 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    | 3.5    |
| K                              | CAST IRONS<br>Gray, Malleable,<br>Ductile                                                 | ≤ 220 Bhn<br>or<br>≤ 19 HRc | 320<br>(256-384) | RPM        | 39117  | 9779   | 4890   | 3260   | 2445   | 1956   | 1397   |
|                                |                                                                                           |                             |                  | Fr         | 0.0012 | 0.0046 | 0.0092 | 0.0138 | 0.0184 | 0.0230 | 0.0322 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 45.0   | 45.0   | 45.0   | 45.0   | 45.0   | 45.0   | 45.0   |
|                                |                                                                                           | ≤ 260 Bhn<br>or<br>≤ 26 HRc | 285<br>(228-342) | RPM        | 34838  | 8710   | 4355   | 2903   | 2177   | 1742   | 1244   |
|                                |                                                                                           |                             |                  | Fr         | 0.0011 | 0.0046 | 0.0092 | 0.0138 | 0.0184 | 0.0230 | 0.0321 |
|                                |                                                                                           |                             |                  | Feed (ipm) | 40.0   | 40.0   | 40.0   | 40.0   | 40.0   | 40.0   | 40.0   |

continued on next page

| Series<br>135 3D<br>Fractional |                                                                                                                 |                             |             | DC • in    |        |        |        |        |        |        |        |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------|-------------|------------|--------|--------|--------|--------|--------|--------|--------|
|                                |                                                                                                                 | Hardness                    | Vc<br>(sfm) | 1/32       | 1/8    | 1/4    | 3/8    | 1/2    | 5/8    | 7/8    |        |
| N                              | ALUMINUM ALLOYS<br>2017, 2024, 356,<br>6061, 7075                                                               | ≤ 80 Bhn<br>or<br>≤ 47 HRb  | 700         | RPM        | 85568  | 21392  | 10696  | 7131   | 5348   | 4278   | 3056   |
|                                |                                                                                                                 |                             | (560-840)   | Fr         | 0.0012 | 0.0049 | 0.0098 | 0.0147 | 0.0196 | 0.0245 | 0.0344 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 105.0  | 105.0  | 105.0  | 105.0  | 105.0  | 105.0  | 105.0  |
|                                |                                                                                                                 | ≤ 150 Bhn<br>or<br>≤ 7 HRc  | 600         | RPM        | 73344  | 18336  | 9168   | 6112   | 4584   | 3667   | 2619   |
|                                |                                                                                                                 |                             | (480-720)   | Fr         | 0.0012 | 0.0050 | 0.0099 | 0.0149 | 0.0199 | 0.0248 | 0.0347 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 91.0   | 91.0   | 91.0   | 91.0   | 91.0   | 91.0   | 91.0   |
|                                | COPPER ALLOYS<br>Alum Bronze, C110,<br>Muntz Brass                                                              | ≤ 140 Bhn<br>or<br>≤ 3 HRc  | 500         | RPM        | 61120  | 15280  | 7640   | 5093   | 3820   | 3056   | 2183   |
|                                |                                                                                                                 |                             | (400-600)   | Fr         | 0.0005 | 0.0020 | 0.0039 | 0.0059 | 0.0079 | 0.0098 | 0.0137 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 30.0   | 30.0   | 30.0   | 30.0   | 30.0   | 30.0   | 30.0   |
|                                |                                                                                                                 | ≤ 200 Bhn<br>or<br>≤ 23 HRc | 400         | RPM        | 48896  | 12224  | 6112   | 4075   | 3056   | 2445   | 1746   |
|                                |                                                                                                                 |                             | (320-480)   | Fr         | 0.0005 | 0.0020 | 0.0040 | 0.0060 | 0.0080 | 0.0100 | 0.0140 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 24.5   | 24.5   | 24.5   | 24.5   | 24.5   | 24.5   | 24.5   |
| S                              | SUPER ALLOYS<br>(NICKEL , COBALT,<br>IRON BASE)<br>Inconel 601, 617, 625, Incoloy,<br>Monel 400, Rene, Waspaloy | ≤ 300 Bhn<br>or<br>≤ 32 HRc | 55          | RPM        | 6723   | 1681   | 840    | 560    | 420    | 336    | 240    |
|                                |                                                                                                                 |                             | (44-66)     | Fr         | 0.0002 | 0.0008 | 0.0015 | 0.0023 | 0.0031 | 0.0039 | 0.0054 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 1.3    | 1.3    | 1.3    | 1.3    | 1.3    | 1.3    | 1.3    |
|                                |                                                                                                                 | ≤ 400 Bhn<br>or<br>≤ 43 HRc | 30          | RPM        | 3667   | 917    | 458    | 306    | 229    | 183    | 131    |
|                                |                                                                                                                 |                             | (24-36)     | Fr         | 0.0002 | 0.0007 | 0.0013 | 0.0020 | 0.0026 | 0.0033 | 0.0046 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    | 0.6    |
|                                | TITANIUM ALLOYS<br>Pure Titanium, Ti6Al4V,<br>Ti6Al2Sn4Zr2Mo,<br>Ti4Al4Mo2Sn0.5Si,<br>Ti-6Al4V                  | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 135         | RPM        | 16502  | 4126   | 2063   | 1375   | 1031   | 825    | 589    |
|                                |                                                                                                                 |                             | (108-162)   | Fr         | 0.0004 | 0.0018 | 0.0035 | 0.0053 | 0.0071 | 0.0088 | 0.0124 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 7.3    | 7.3    | 7.3    | 7.3    | 7.3    | 7.3    | 7.3    |
|                                |                                                                                                                 | ≤ 350 Bhn<br>or<br>≤ 38 HRc | 100         | RPM        | 12224  | 3056   | 1528   | 1019   | 764    | 611    | 437    |
|                                |                                                                                                                 |                             | (80-120)    | Fr         | 0.0004 | 0.0016 | 0.0033 | 0.0049 | 0.0065 | 0.0082 | 0.0115 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 5.0    | 5.0    | 5.0    | 5.0    | 5.0    | 5.0    | 5.0    |
| H                              | TOOL STEELS<br>A2, D2, H13, L2, M2,<br>P20, S7, T15, W2                                                         | ≤ 440 Bhn<br>or<br>≤ 47 HRc | 55          | RPM        | 6723   | 1681   | 840    | 560    | 420    | 336    | 240    |
|                                |                                                                                                                 |                             | (44-66)     | Fr         | 0.0003 | 0.0012 | 0.0024 | 0.0036 | 0.0048 | 0.0059 | 0.0083 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    | 2.0    |
|                                |                                                                                                                 | ≤ 200 Bhn<br>or<br>≤ 13 HRc | 130         | RPM        | 15891  | 3973   | 1986   | 1324   | 993    | 795    | 568    |
|                                |                                                                                                                 |                             | (104-156)   | Fr         | 0.0007 | 0.0026 | 0.0053 | 0.0079 | 0.0106 | 0.0132 | 0.0185 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 10.5   | 10.5   | 10.5   | 10.5   | 10.5   | 10.5   | 10.5   |
| H                              | TOOL STEELS<br>A2, D2, H13, L2, M2,<br>P20, S7, T15, W2                                                         | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 90          | RPM        | 11002  | 2750   | 1375   | 917    | 688    | 550    | 393    |
|                                |                                                                                                                 |                             | (72-108)    | Fr         | 0.0003 | 0.0012 | 0.0023 | 0.0035 | 0.0047 | 0.0058 | 0.0081 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 3.2    | 3.2    | 3.2    | 3.2    | 3.2    | 3.2    | 3.2    |
|                                |                                                                                                                 | ≤ 475 Bhn<br>or<br>≤ 50 HRc | 75          | RPM        | 9168   | 2292   | 1146   | 764    | 573    | 458    | 327    |
|                                |                                                                                                                 |                             | (60-90)     | Fr         | 0.0002 | 0.0008 | 0.0016 | 0.0024 | 0.0031 | 0.0039 | 0.0055 |
|                                |                                                                                                                 |                             |             | Feed (ipm) | 1.8    | 1.8    | 1.8    | 1.8    | 1.8    | 1.8    | 1.8    |

Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)

rpm = Vc x 3.82 / DC

ipm = Fr x rpm

reduce speed and feed for materials harder than listed

refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)

| Series<br>135 3D<br>Metric | Hardness                                                                                  | Vc<br>(m/min)               | DC • mm  |               |       |       |       |       |       |       |       |       |
|----------------------------|-------------------------------------------------------------------------------------------|-----------------------------|----------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                            |                                                                                           |                             | 1.5      | 3             | 6     | 8     | 10    | 12    | 16    | 20    |       |       |
| P                          | CARBON STEELS<br>1018, 1040, 1080, 1090, 10L50,<br>1140, 1212, 12L15, 1525, 1536          | ≤ 175 Bhn<br>or<br>≤ 7 HRc  | 117      | RPM           | 24882 | 12441 | 6220  | 4665  | 3732  | 3110  | 2333  | 1866  |
|                            |                                                                                           |                             | (94-141) | Fr            | 0.047 | 0.094 | 0.189 | 0.252 | 0.315 | 0.378 | 0.504 | 0.630 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 1175  | 1175  | 1175  | 1175  | 1175  | 1175  | 1175  | 1175  |
|                            |                                                                                           | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 107      | RPM           | 22620 | 11310 | 5655  | 4241  | 3393  | 2827  | 2121  | 1696  |
|                            |                                                                                           |                             | (85-128) | Fr            | 0.043 | 0.086 | 0.172 | 0.229 | 0.286 | 0.343 | 0.457 | 0.572 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 970   | 970   | 970   | 970   | 970   | 970   | 970   | 970   |
|                            |                                                                                           | ≤ 475 Bhn<br>or<br>≤ 45 HRc | 61       | RPM           | 12926 | 6463  | 3231  | 2424  | 1939  | 1616  | 1212  | 969   |
|                            |                                                                                           |                             | (49-73)  | Fr            | 0.036 | 0.071 | 0.142 | 0.190 | 0.237 | 0.285 | 0.380 | 0.475 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 460   | 460   | 460   | 460   | 460   | 460   | 460   | 460   |
|                            | ALLOY STEELS<br>4140, 4150, 4320, 5120, 5150,<br>8630, 86L20, 50100                       | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 91       | RPM           | 19388 | 9694  | 4847  | 3635  | 2908  | 2424  | 1818  | 1454  |
|                            |                                                                                           |                             | (73-110) | Fr            | 0.036 | 0.071 | 0.142 | 0.190 | 0.237 | 0.285 | 0.380 | 0.475 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 690   | 690   | 690   | 690   | 690   | 690   | 690   | 690   |
|                            |                                                                                           | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 56       | RPM           | 11956 | 5978  | 2989  | 2242  | 1793  | 1495  | 1121  | 897   |
|                            |                                                                                           |                             | (45-68)  | Fr            | 0.031 | 0.061 | 0.122 | 0.163 | 0.204 | 0.244 | 0.326 | 0.407 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 365   | 365   | 365   | 365   | 365   | 365   | 365   | 365   |
|                            |                                                                                           | ≤ 450 Bhn<br>or<br>≤ 48 HRc | 40       | RPM           | 8402  | 4201  | 2100  | 1575  | 1260  | 1050  | 788   | 630   |
|                            |                                                                                           |                             | (32-48)  | Fr            | 0.021 | 0.042 | 0.083 | 0.111 | 0.139 | 0.167 | 0.222 | 0.278 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 175   | 175   | 175   | 175   | 175   | 175   | 175   | 175   |
| M                          | STAINLESS STEELS<br>(FREE MACHINING)<br>303, 416, 420F, 430F, 440F                        | ≤ 185 Bhn<br>or<br>≤ 9 HRc  | 84       | RPM           | 17773 | 8886  | 4443  | 3332  | 2666  | 2222  | 1666  | 1333  |
|                            |                                                                                           |                             | (67-101) | Fr            | 0.031 | 0.061 | 0.123 | 0.164 | 0.204 | 0.245 | 0.327 | 0.409 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 545   | 545   | 545   | 545   | 545   | 545   | 545   | 545   |
|                            |                                                                                           | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 52       | RPM           | 10987 | 5493  | 2747  | 2060  | 1648  | 1373  | 1030  | 824   |
|                            |                                                                                           |                             | (41-62)  | Fr            | 0.024 | 0.047 | 0.095 | 0.126 | 0.158 | 0.189 | 0.252 | 0.316 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 260   | 260   | 260   | 260   | 260   | 260   | 260   | 260   |
|                            | STAINLESS STEELS<br>(DIFFICULT)<br>304, 316, 321, 13-8 PH,<br>15-5PH, 17-4 PH, Custom 450 | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 27       | RPM           | 5816  | 2908  | 1454  | 1091  | 872   | 727   | 545   | 436   |
|                            |                                                                                           |                             | (22-33)  | Fr            | 0.023 | 0.046 | 0.093 | 0.124 | 0.155 | 0.186 | 0.248 | 0.309 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 135   | 135   | 135   | 135   | 135   | 135   | 135   | 135   |
|                            |                                                                                           | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 20       | RPM           | 4201  | 2100  | 1050  | 788   | 630   | 525   | 394   | 315   |
|                            |                                                                                           |                             | (16-24)  | Fr            | 0.020 | 0.040 | 0.081 | 0.108 | 0.135 | 0.162 | 0.216 | 0.270 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 85    | 85    | 85    | 85    | 85    | 85    | 85    | 85    |
| K                          | CAST IRONS<br>Gray, Malleable,<br>Ductile                                                 | ≤ 220 Bhn<br>or<br>≤ 19 HRc | 98       | RPM           | 20681 | 10340 | 5170  | 3878  | 3102  | 2585  | 1939  | 1551  |
|                            |                                                                                           |                             | (78-117) | Fr            | 0.055 | 0.110 | 0.220 | 0.293 | 0.366 | 0.439 | 0.585 | 0.732 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 1135  | 1135  | 1135  | 1135  | 1135  | 1135  | 1135  | 1135  |
|                            |                                                                                           | ≤ 260 Bhn<br>or<br>≤ 26 HRc | 87       | RPM           | 18419 | 9209  | 4605  | 3454  | 2763  | 2302  | 1727  | 1381  |
|                            |                                                                                           |                             | (69-104) | Fr            | 0.055 | 0.110 | 0.219 | 0.292 | 0.366 | 0.439 | 0.585 | 0.731 |
|                            |                                                                                           |                             |          | Feed (mm/min) | 1010  | 1010  | 1010  | 1010  | 1010  | 1010  | 1010  | 1010  |

continued on next page

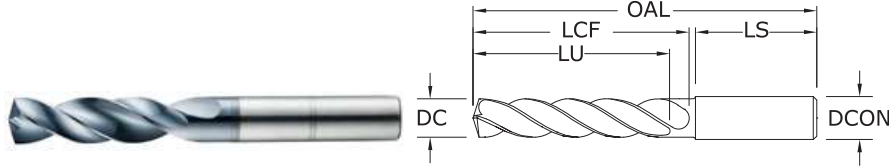
| Series<br>135 3D<br>Metric  |                                                                                                                 | Hardness                                                | Vc<br>(m/min)               | DC • mm       |               |       |       |       |       |       |       |       |       |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-----------------------------|---------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                             |                                                                                                                 |                                                         |                             | 1.5           | 3             | 6     | 8     | 10    | 12    | 16    | 20    |       |       |
| N                           | ALUMINUM ALLOYS<br>2017, 2024, 356,<br>6061, 7075                                                               | ≤ 80 Bhn<br>or<br>≤ 47 HRb                              | 213                         | RPM           | 45239         | 22620 | 11310 | 8482  | 6786  | 5655  | 4241  | 3393  |       |
|                             |                                                                                                                 |                                                         | (171-256)                   | Fr            | 0.059         | 0.119 | 0.238 | 0.317 | 0.396 | 0.476 | 0.634 | 0.793 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 2690          | 2690  | 2690  | 2690  | 2690  | 2690  | 2690  | 2690  |       |
|                             |                                                                                                                 | ≤ 150 Bhn<br>or<br>≤ 7 HRc                              | 183                         | RPM           | 38777         | 19388 | 9694  | 7271  | 5816  | 4847  | 3635  | 2908  |       |
|                             |                                                                                                                 |                                                         | (146-219)                   | Fr            | 0.060         | 0.120 | 0.240 | 0.320 | 0.400 | 0.480 | 0.640 | 0.799 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 2325          | 2325  | 2325  | 2325  | 2325  | 2325  | 2325  | 2325  |       |
|                             | COPPER ALLOYS<br>Alum Bronze, C110,<br>Muntz Brass                                                              | ≤ 140 Bhn<br>or<br>≤ 3 HRc                              | 152                         | RPM           | 32314         | 16157 | 8078  | 6059  | 4847  | 4039  | 3029  | 2424  |       |
|                             |                                                                                                                 |                                                         | (122-183)                   | Fr            | 0.024         | 0.048 | 0.096 | 0.128 | 0.160 | 0.192 | 0.256 | 0.320 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 776           | 776   | 776   | 776   | 776   | 776   | 776   | 776   |       |
|                             |                                                                                                                 | ≤ 200 Bhn<br>or<br>≤ 23 HRc                             | 122                         | RPM           | 25851         | 12926 | 6463  | 4847  | 3878  | 3231  | 2424  | 1939  |       |
|                             |                                                                                                                 |                                                         | (98-146)                    | Fr            | 0.024         | 0.049 | 0.097 | 0.130 | 0.162 | 0.195 | 0.260 | 0.325 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 630           | 630   | 630   | 630   | 630   | 630   | 630   | 630   |       |
| S                           | SUPER ALLOYS<br>(NICKEL , COBALT,<br>IRON BASE)<br>Inconel 601, 617, 625, Incoloy,<br>Monel 400, Rene, Waspaloy | ≤ 300 Bhn<br>or<br>≤ 32 HRc                             | 17                          | RPM           | 3555          | 1777  | 889   | 666   | 533   | 444   | 333   | 267   |       |
|                             |                                                                                                                 |                                                         | (13-20)                     | Fr            | 0.010         | 0.020 | 0.039 | 0.053 | 0.066 | 0.079 | 0.105 | 0.131 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 35            | 35    | 35    | 35    | 35    | 35    | 35    | 35    |       |
|                             |                                                                                                                 | ≤ 400 Bhn<br>or<br>≤ 43 HRc                             | 9                           | RPM           | 1939          | 969   | 485   | 364   | 291   | 242   | 182   | 145   |       |
|                             |                                                                                                                 |                                                         | (7-11)                      | Fr            | 0.008         | 0.015 | 0.031 | 0.041 | 0.052 | 0.062 | 0.083 | 0.103 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 15            | 15    | 15    | 15    | 15    | 15    | 15    | 15    |       |
|                             | TITANIUM ALLOYS<br>Pure Titanium, Ti6Al4V,<br>Ti6Al2Sn4Zr2Mo,<br>Ti4Al4Mo2Sn0.5Si,<br>Ti-6Al4V                  | ≤ 275 Bhn<br>or<br>≤ 28 HRc                             | 41                          | RPM           | 8725          | 4362  | 2181  | 1636  | 1309  | 1091  | 818   | 654   |       |
|                             |                                                                                                                 |                                                         | (33-49)                     | Fr            | 0.021         | 0.042 | 0.085 | 0.113 | 0.141 | 0.170 | 0.226 | 0.283 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 185           | 185   | 185   | 185   | 185   | 185   | 185   | 185   |       |
|                             |                                                                                                                 | ≤ 350 Bhn<br>or<br>≤ 38 HRc                             | 30                          | RPM           | 6463          | 3231  | 1616  | 1212  | 969   | 808   | 606   | 485   |       |
|                             |                                                                                                                 |                                                         | (24-37)                     | Fr            | 0.019         | 0.039 | 0.077 | 0.103 | 0.129 | 0.155 | 0.206 | 0.258 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 125           | 125   | 125   | 125   | 125   | 125   | 125   | 125   |       |
|                             | ≤ 440 Bhn<br>or<br>≤ 47 HRc                                                                                     | 17                                                      | RPM                         | 3555          | 1777          | 889   | 666   | 533   | 444   | 333   | 267   |       |       |
|                             |                                                                                                                 | (13-20)                                                 | Fr                          | 0.014         | 0.028         | 0.056 | 0.075 | 0.094 | 0.113 | 0.150 | 0.188 |       |       |
|                             |                                                                                                                 |                                                         | Feed (mm/min)               | 50            | 50            | 50    | 50    | 50    | 50    | 50    | 50    |       |       |
|                             | H                                                                                                               | TOOL STEELS<br>A2, D2, H13, L2, M2,<br>P20, S7, T15, W2 | ≤ 200 Bhn<br>or<br>≤ 13 HRc | 40            | RPM           | 8402  | 4201  | 2100  | 1575  | 1260  | 1050  | 788   | 630   |
|                             |                                                                                                                 |                                                         |                             | (32-48)       | Fr            | 0.032 | 0.063 | 0.126 | 0.168 | 0.210 | 0.252 | 0.336 | 0.421 |
|                             |                                                                                                                 |                                                         |                             |               | Feed (mm/min) | 265   | 265   | 265   | 265   | 265   | 265   | 265   | 265   |
| ≤ 375 Bhn<br>or<br>≤ 40 HRc |                                                                                                                 |                                                         | 27                          | RPM           | 5816          | 2908  | 1454  | 1091  | 872   | 727   | 545   | 436   |       |
|                             |                                                                                                                 |                                                         | (22-33)                     | Fr            | 0.014         | 0.028 | 0.055 | 0.073 | 0.092 | 0.110 | 0.147 | 0.183 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 80            | 80    | 80    | 80    | 80    | 80    | 80    | 80    |       |
| ≤ 475 Bhn<br>or<br>≤ 50 HRc |                                                                                                                 |                                                         | 23                          | RPM           | 4847          | 2424  | 1212  | 909   | 727   | 606   | 454   | 364   |       |
|                             |                                                                                                                 |                                                         | (18-27)                     | Fr            | 0.009         | 0.019 | 0.037 | 0.050 | 0.062 | 0.074 | 0.099 | 0.124 |       |
|                             |                                                                                                                 |                                                         |                             | Feed (mm/min) | 45            | 45    | 45    | 45    | 45    | 45    | 45    | 45    |       |

Bhn (Brinell)   HRc (Rockwell C)   HRb (Rockwell B)  
rpm = (Vc x 1000) / (DC x 3.14)  
mm/min = Fr x rpm  
reduce speed and feed for materials harder than listed  
refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)





5xD



## 135 5xD

### FRACTIONAL & METRIC SERIES

- Double margin design improves accuracy and surface finish along with increased strength for aggressive drilling
- Specialized self-centering notched point eliminates the need for spot drilling decreasing thrust and deflection
- Engineered edge protection improves edge strength and reduces edge fatigue allowing for increased feed rates
- Recommended for materials  $\leq 56$  HRC ( $\leq 577$  Bhn)

| inch & mm           |                |               |                         |                     |                    |                  |                   |                 | EDP NO.             |
|---------------------|----------------|---------------|-------------------------|---------------------|--------------------|------------------|-------------------|-----------------|---------------------|
| CUTTING DIAMETER DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE REFERENCE ONLY | SHANK DIAMETER DCON | OVERALL LENGTH OAL | FLUTE LENGTH LCF | CLEARED LENGTH LU | SHANK LENGTH LS | Ti-NAMITE-A (AITiN) |
| 1/64                | 0.0156         | 0.40          |                         | 1/8                 | 1 1/2              | 5/32             | 7/64              | 1               | 52300*              |
| 1/32                | 0.0312         | 0.79          |                         | 1/8                 | 1 1/2              | 5/16             | 7/32              | 1               | 52301*              |
| 3/64                | 0.0469         | 1.19          | 1/16-64                 | 1/8                 | 1 1/2              | 25/64            | 19/64             | 1               | 52302*              |
| 1,25 mm             | 0.0492         |               |                         | 3,0                 | 38,0               | 10,0             | 7,5               | 25,0            | 64520*              |
| 1,45 mm             | 0.0571         |               |                         | 3,0                 | 38,0               | 10,0             | 7,5               | 25,0            | 64521*              |
| #53                 | 0.0595         | 1.51          |                         | 1/8                 | 1-1/2              | 25/64            | 19/64             | 1               | 64522*              |
| 1/16                | 0.0625         | 1.59          | 5/64-60                 | 1/8                 | 2                  | 15/32            | 23/64             | 1-1/4           | 52303*              |
| 1,6 mm              | 0.0630         |               |                         | 3,0                 | 50,0               | 12,0             | 9,0               | 32,0            | 64523*              |
| 1,75 mm             | 0.0689         |               |                         | 3,0                 | 50,0               | 12,0             | 9,0               | 32,0            | 64524*              |
| #50                 | 0.0700         | 1.78          |                         | 1/8                 | 2                  | 15/32            | 23/64             | 1-1/4           | 64525*              |
| 5/64                | 0.0781         | 1.98          |                         | 1/8                 | 2                  | 35/64            | 27/64             | 1-1/4           | 52304*              |
| #47                 | 0.0785         | 1.99          |                         | 1/8                 | 2                  | 35/64            | 27/64             | 1-1/4           | 64526*              |
| 2,05 mm             | 0.0807         |               |                         | 3,0                 | 50,0               | 14,0             | 11,0              | 32,0            | 64527*              |
| #46                 | 0.0810         | 2.06          |                         | 1/8                 | 2                  | 35/64            | 27/64             | 1-1/4           | 64528*              |
| #43                 | 0.0890         | 2.26          |                         | 1/8                 | 2                  | 19/32            | 15/32             | 1-1/4           | 64529*              |
| #42                 | 0.0935         | 2.37          |                         | 1/8                 | 2                  | 5/8              | 1/2               | 1-1/4           | 64530*              |
| 3/32                | 0.0938         | 2.38          | 1/8-32                  | 1/8                 | 2                  | 5/8              | 1/2               | 1-1/4           | 52305               |
| #40                 | 0.0980         | 2.49          |                         | 1/8                 | 2                  | 43/64            | 17/32             | 1-1/4           | 52306               |
| 2,5 mm              | 0.0984         |               |                         | 3,0                 | 50,0               | 17,0             | 13,0              | 32,0            | 64531               |
| #39                 | 0.0995         | 2.53          |                         | 1/8                 | 2                  | 43/64            | 17/32             | 1-1/4           | 52307               |
| #38                 | 0.1015         | 2.58          | 5-40                    | 1/8                 | 2                  | 43/64            | 17/32             | 1-1/4           | 52308               |
| #37                 | 0.1040         | 2.64          | 5-44                    | 1/8                 | 2                  | 45/64            | 9/16              | 1-1/4           | 52309               |
| #36                 | 0.1065         | 2.71          | 6-32                    | 1/8                 | 2                  | 45/64            | 9/16              | 1-1/4           | 52310               |
| 7/64                | 0.1094         | 2.78          |                         | 1/8                 | 2                  | 3/4              | 19/32             | 1-1/4           | 52311               |
| #35                 | 0.1100         | 2.79          |                         | 1/8                 | 2                  | 3/4              | 19/32             | 1-1/4           | 52312               |
| #34                 | 0.1110         | 2.82          |                         | 1/8                 | 2                  | 3/4              | 19/32             | 1-1/4           | 52313               |
| #33                 | 0.1130         | 2.87          | 6-40                    | 1/8                 | 2                  | 3/4              | 19/32             | 1-1/4           | 52314               |
| 2,9 mm              | 0.1142         |               |                         | 3,0                 | 50,0               | 19,0             | 15,0              | 32,0            | 64532               |
| #32                 | 0.1160         | 2.95          |                         | 1/8                 | 2                  | 3/4              | 39/64             | 1-1/4           | 52315               |
| 3,0 mm              | 0.1181         |               |                         | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 64100               |
| #31                 | 0.1200         | 3.05          |                         | 1/8                 | 2                  | 3/4              | 39/64             | 1-1/4           | 52316               |
| 3,1 mm              | 0.1220         |               |                         | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 64101               |
| 1/8                 | 0.1250         | 3.18          |                         | 1/4                 | 3                  | 1                | 53/64             | 1-7/16          | 51580               |
| 3,2 mm              | 0.1260         |               | M3,5 X 0,35             | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 64102               |
| #30                 | 0.1285         | 3.26          |                         | 1/4                 | 3                  | 1                | 53/64             | 1-7/16          | 51581               |
| 3,3 mm              | 0.1299         |               | M4 X 0,7                | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 64103               |
| 3,4 mm              | 0.1339         |               | 8-32,8-36               | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 64104               |
| #29                 | 0.1360         | 3.45          |                         | 1/4                 | 3                  | 1                | 53/64             | 1-7/16          | 51582               |

\*Single Margin

continued on next page

#### TOLERANCES (inch)

##### ≤.1181 DIAMETER

DC =  $\pm 0.0008/\pm 0.0047$

DCON =  $h_6$

##### >.1181-.2362 DIAMETER

DC =  $\pm 0.0016/\pm 0.0063$

DCON =  $h_6$

##### >.2362-.3937 DIAMETER

DC =  $\pm 0.0024/\pm 0.0083$

DCON =  $h_6$

##### >.3937-.7087 DIAMETER

DC =  $\pm 0.0028/\pm 0.0098$

DCON =  $h_6$

##### >.7087-1.1811 DIAMETER

DC =  $\pm 0.0031/\pm 0.0114$

DCON =  $h_6$

#### TOLERANCES (mm)

##### ≤3 DIAMETER

DC =  $\pm 0.002/\pm 0.012$

DCON =  $h_6$

##### >3-6 DIAMETER

DC =  $\pm 0.004/\pm 0.016$

DCON =  $h_6$

##### >6-10 DIAMETER

DC =  $\pm 0.006/\pm 0.021$

DCON =  $h_6$

##### >10-18 DIAMETER

DC =  $\pm 0.007/\pm 0.025$

DCON =  $h_6$

##### >18-30 DIAMETER

DC =  $\pm 0.008/\pm 0.029$

DCON =  $h_6$

|                  |
|------------------|
| STEELS           |
| STAINLESS STEELS |
| CAST IRON        |
| HIGH TEMP ALLOYS |
| TITANIUM         |
| NON-FERROUS      |
| HARDENED STEELS  |

For patent information visit  
[www.ksptpatents.com](http://www.ksptpatents.com)

# 135 5xD

FRACTIONAL & METRIC SERIES

| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | inch & mm                     |                           |                          |                        |                         |                       | EDP NO. |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|---------|
|                           |                   |                  | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS |         |
| 3,5 mm                    | 0.1378            |                  |                               | 6,0                       | 66,0                     | 28,0                   | 23,0                    | 36,0                  | 64105   |
| #28                       | 0.1405            | 3.57             | 8-40                          | 1/4                       | 3                        | 1                      | 53/64                   | 1-7/16                | 52317   |
| 9/64                      | 0.1406            | 3.57             |                               | 1/4                       | 3                        | 1                      | 53/64                   | 1-7/16                | 51583   |
| 3,6 mm                    | 0.1417            |                  | M4 X 0,35                     | 6,0                       | 66,0                     | 28,0                   | 23,0                    | 36,0                  | 64106   |
| #27                       | 0.1440            | 3.66             |                               | 1/4                       | 3                        | 1                      | 53/64                   | 1-7/16                | 52318   |
| 3,7 mm                    | 0.1457            |                  | M4.5 X 0,75                   | 6,0                       | 66,0                     | 28,0                   | 23,0                    | 36,0                  | 64107   |
| #26                       | 0.1470            | 3.73             | 3/16-24                       | 1/4                       | 3                        | 1                      | 53/64                   | 1-7/16                | 52319   |
| #25                       | 0.1495            | 3.80             | 10-24                         | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 51584   |
| 3,8 mm                    | 0.1496            |                  |                               | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64108   |
| #24                       | 0.1520            | 3.86             | 10-28                         | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52321   |
| 3,9 mm                    | 0.1535            |                  |                               | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64109   |
| #23                       | 0.1540            | 3.91             |                               | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52322   |
| 5/32                      | 0.1562            | 3.97             |                               | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 51585   |
| #22                       | 0.1570            | 3.99             | 10-30                         | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52323   |
| 4,0 mm                    | 0.1575            |                  | M4,5 X 0,5                    | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64110   |
| #21                       | 0.1590            | 4.04             | 10-32                         | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 51586   |
| #20                       | 0.1610            | 4.09             | 13/64-24                      | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 51587   |
| 4,1 mm                    | 0.1614            |                  |                               | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64111   |
| 4,2 mm                    | 0.1654            |                  | M5 / M5 X 0,75                | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64112   |
| #19                       | 0.1660            | 4.22             |                               | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52324   |
| 4,3 mm                    | 0.1693            |                  |                               | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64113   |
| #18                       | 0.1695            | 4.31             |                               | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52325   |
| 11/64                     | 0.1719            | 4.37             |                               | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 51588   |
| #17                       | 0.1730            | 4.39             |                               | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52326   |
| 4,4 mm                    | 0.1732            |                  |                               | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64114   |
| 4,5 mm                    | 0.1772            |                  | M5 X 0,5                      | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64115   |
| #15                       | 0.1800            | 4.57             |                               | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52327   |
| 4,6 mm                    | 0.1811            |                  | 12-28                         | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64116   |
| #14                       | 0.1820            | 4.62             |                               | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52328   |
| #13                       | 0.1850            | 4.70             | 12-32                         | 1/4                       | 3-1/4                    | 1-1/4                  | 1-5/64                  | 1-7/16                | 52329   |
| 4,7 mm                    | 0.1850            |                  |                               | 6,0                       | 74,0                     | 36,0                   | 29,0                    | 36,0                  | 64117   |
| 3/16                      | 0.1875            | 4.76             |                               | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 51589   |
| #12                       | 0.1890            | 4.80             | 7/32-32                       | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 52330   |
| 4,8 mm                    | 0.1890            |                  |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 64118   |
| 4,9 mm                    | 0.1929            |                  |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 64119   |
| #10                       | 0.1935            | 4.91             | 14-20                         | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 52331   |
| #9                        | 0.1960            | 4.98             |                               | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 52332   |
| 5,0 mm                    | 0.1969            |                  | M6 X 1                        | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 64120   |
| #8                        | 0.1990            | 5.05             |                               | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 52333   |
| 5,1 mm                    | 0.2008            |                  |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 64121   |
| #7                        | 0.2010            | 5.11             | 1/4-20                        | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 51506   |
| 13/64                     | 0.2031            | 5.16             |                               | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 51507   |
| #6                        | 0.2040            | 5.18             |                               | 1/4                       | 3 1/4                    | 1 3/4                  | 1 37/64                 | 1 7/16                | 52334   |
| 5,2 mm                    | 0.2047            |                  | M6 X 0,75                     | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 64122   |
| #5                        | 0.2055            | 5.22             |                               | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 51590   |
| 5,25 mm                   | 0.2067            |                  |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 64123   |
| 5,3 mm                    | 0.2087            |                  |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 64124   |
| #4                        | 0.2090            | 5.31             | 1/4-24                        | 1/4                       | 3-1/4                    | 1-3/4                  | 1-37/64                 | 1-7/16                | 51508   |

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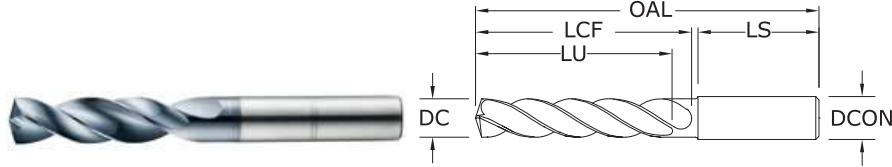
CONTINUED



5xD



2



## 135 5xD

### FRACTIONAL & METRIC SERIES

- Double margin design improves accuracy and surface finish along with increased strength for aggressive drilling
- Specialized self-centering notched point eliminates the need for spot drilling decreasing thrust and deflection
- Engineered edge protection improves edge strength and reduces edge fatigue allowing for increased feed rates
- Recommended for materials ≤ 56 HRC (≤ 577 Bhn)

| inch & mm           |                |               |                         |                     |                    |                  |                   |                 | EDP NO.             |
|---------------------|----------------|---------------|-------------------------|---------------------|--------------------|------------------|-------------------|-----------------|---------------------|
| CUTTING DIAMETER DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE REFERENCE ONLY | SHANK DIAMETER DCON | OVERALL LENGTH OAL | FLUTE LENGTH LCF | CLEARED LENGTH LU | SHANK LENGTH LS | Ti-NAMITE-A (AITiN) |
| 5,4 mm              | 0.2126         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 64125               |
| #3                  | 0.2130         | 5.41          | 1/4-28                  | 1/4                 | 3-1/4              | 1-3/4            | 1-37/64           | 1-7/16          | 51509               |
| 5,5 mm              | 0.2165         |               | M6 X 0,5                | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 64126               |
| 7/32                | 0.2188         | 5.56          | 1/4-32                  | 1/4                 | 3-1/4              | 1-3/4            | 1-37/64           | 1-7/16          | 51510               |
| 5,6 mm              | 0.2205         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 64127               |
| #2                  | 0.2210         | 5.61          |                         | 1/4                 | 3-1/4              | 1-3/4            | 1-37/64           | 1-7/16          | 52335               |
| 5,7 mm              | 0.2244         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 64128               |
| #1                  | 0.2280         | 5.79          |                         | 1/4                 | 3-1/4              | 1-3/4            | 1-37/64           | 1-7/16          | 52336               |
| 5,8 mm              | 0.2283         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 64129               |
| 5,9 mm              | 0.2323         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 64130               |
| A                   | 0.2340         | 5.94          |                         | 1/4                 | 3-1/4              | 1-3/4            | 1-37/64           | 1-7/16          | 52337               |
| 15/64               | 0.2344         | 5.95          |                         | 1/4                 | 3-1/4              | 1-3/4            | 1-37/64           | 1-7/16          | 51591               |
| 6,0 mm              | 0.2362         |               | M7 X 1                  | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 64131               |
| B                   | 0.2380         | 6.05          |                         | 1/4                 | 3 5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 52338               |
| 6,1 mm              | 0.2402         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64132               |
| C                   | 0.2420         | 6.15          |                         | 1/4                 | 3 5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 52339               |
| 6,2 mm              | 0.2441         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64133               |
| D                   | 0.2460         | 6.25          |                         | 1/4                 | 3 5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 52340               |
| 6,25 mm             | 0.2461         |               | M7 X 0,75               | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64134               |
| 6,3 mm              | 0.2480         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64135               |
| 1/4                 | 0.2500         | 6.35          |                         | 1/4                 | 3-5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 51511               |
| 6,4 mm              | 0.2520         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64136               |
| 6,5 mm              | 0.2559         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64137               |
| F                   | 0.2570         | 6.53          | 5/16-18                 | 5/16                | 3-5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 51512               |
| 6,6 mm              | 0.2598         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64138               |
| G                   | 0.2610         | 6.63          |                         | 5/16                | 3 5/8              | 2 5/64           | 1 51/64           | 1 7/16          | 52341               |
| 6,7 mm              | 0.2638         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64139               |
| 17/64               | 0.2656         | 6.75          | 5/16-20                 | 5/16                | 3-5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 51513               |
| H                   | 0.2660         | 6.76          |                         | 5/16                | 3-5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 52342               |
| 6,8 mm              | 0.2677         |               | M8 X 1,25               | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64140               |
| 6,9 mm              | 0.2717         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64141               |
| I                   | 0.2720         | 6.91          | 5/16-24                 | 5/16                | 3-5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 51514               |
| 7,0 mm              | 0.2756         |               | M8 X 1                  | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64142               |
| J                   | 0.2770         | 7.04          |                         | 5/16                | 3 5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 52343               |
| 7,1 mm              | 0.2795         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64143               |
| K                   | 0.2810         | 7.14          |                         | 5/16                | 3 5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 52344               |
| 9/32                | 0.2812         | 7.14          | 5/16-32                 | 5/16                | 3-5/8              | 2-5/64           | 1-51/64           | 1-7/16          | 51515               |
| 7,2 mm              | 0.2835         |               |                         | 8,0                 | 91,0               | 53,0             | 43,0              | 36,0            | 64144               |

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#### TOLERANCES (inch)

##### ≤.1181 DIAMETER

DC = +.00008/+.00047

DCON = h<sub>6</sub>

##### >.1181-.2362 DIAMETER

DC = +.00016/+.00063

DCON = h<sub>6</sub>

##### >.2362-.3937 DIAMETER

DC = +.00024/+.00083

DCON = h<sub>6</sub>

##### >.3937-.7087 DIAMETER

DC = +.00028/+.00098

DCON = h<sub>6</sub>

##### >.7087-1.1811 DIAMETER

DC = +.00031/+.00114

DCON = h<sub>6</sub>

#### TOLERANCES (mm)

##### ≤3 DIAMETER

DC = +0,002/+0,012

DCON = h<sub>6</sub>

##### >3-6 DIAMETER

DC = +0,004/+0,016

DCON = h<sub>6</sub>

##### >6-10 DIAMETER

DC = +0,006/+0,021

DCON = h<sub>6</sub>

##### >10-18 DIAMETER

DC = +0,007/+0,025

DCON = h<sub>6</sub>

##### >18-30 DIAMETER

DC = +0,008/+0,029

DCON = h<sub>6</sub>

|                  |
|------------------|
| STEELS           |
| STAINLESS STEELS |
| CAST IRON        |
| HIGH TEMP ALLOYS |
| TITANIUM         |
| NON-FERROUS      |
| HARDENED STEELS  |

For patent information visit  
[www.ksptpatents.com](http://www.ksptpatents.com)

# 135 5xD

FRACTIONAL & METRIC SERIES

| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | inch & mm                     |                           |                          |                        |                         |                       | EDP NO. |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|---------|
|                           |                   |                  | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS |         |
| 7,25 mm                   | 0.2854            |                  | M8 X 0,75                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64145   |
| 7,3 mm                    | 0.2874            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64146   |
| L                         | 0.2900            | 7.37             |                               | 5/16                      | 3-5/8                    | 2-5/64                 | 1-51/64                 | 1-7/16                | 52345   |
| 7,4 mm                    | 0.2913            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64147   |
| M                         | 0.2950            | 7.49             |                               | 5/16                      | 3-5/8                    | 2-5/64                 | 1-51/64                 | 1-7/16                | 52346   |
| 7,5 mm                    | 0.2953            |                  | M8 X 0,5                      | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64148   |
| 19/64                     | 0.2969            | 7.54             |                               | 5/16                      | 3-5/8                    | 2-5/64                 | 1-51/64                 | 1-7/16                | 51516   |
| 7,6 mm                    | 0.2992            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64149   |
| N                         | 0.3020            | 7.67             |                               | 5/16                      | 3-5/8                    | 2-5/64                 | 1-51/64                 | 1-7/16                | 52347   |
| 7,7 mm                    | 0.3031            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64150   |
| 7,8 mm                    | 0.3071            |                  | M9 X 1,25                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64151   |
| 7,9 mm                    | 0.3110            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64152   |
| 5/16                      | 0.3125            | 7.94             | 3/8-16                        | 5/16                      | 3-5/8                    | 2-5/64                 | 1-51/64                 | 1-7/16                | 51517   |
| 8,0 mm                    | 0.3150            |                  | M9 X 1                        | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 64153   |
| O                         | 0.3160            | 8.03             |                               | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 52348   |
| 8,1 mm                    | 0.3189            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64154   |
| 8,2 mm                    | 0.3228            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64155   |
| P                         | 0.3230            | 8.20             |                               | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51518   |
| 8,3 mm                    | 0.3268            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64156   |
| 21/64                     | 0.3281            | 8.33             | 3/8-20                        | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51519   |
| 8,4 mm                    | 0.3307            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64157   |
| Q                         | 0.3320            | 8.43             | 3/8-24                        | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51520   |
| 8,5 mm                    | 0.3346            |                  | M10 X 1,5                     | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64158   |
| 8,6 mm                    | 0.3386            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64159   |
| R                         | 0.3390            | 8.61             | 3/8-32                        | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 52349   |
| 8,7 mm                    | 0.3425            |                  | M10 X 1,25                    | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64160   |
| 11/32                     | 0.3438            | 8.73             |                               | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51521   |
| 8,8 mm                    | 0.3465            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64161   |
| S                         | 0.3480            | 8.84             |                               | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51522   |
| 8,9 mm                    | 0.3504            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64162   |
| 9,0 mm                    | 0.3543            |                  | M10 X 1                       | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64163   |
| T                         | 0.3580            | 9.09             |                               | 3/8                       | 4                        | 2 13/32                | 2 1/8                   | 1 9/16                | 52350   |
| 9,1 mm                    | 0.3583            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64164   |
| 23/64                     | 0.3594            | 9.13             |                               | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51523   |
| 9,2 mm                    | 0.3622            |                  | M10 X 0,75                    | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64165   |
| 9,25 mm                   | 0.3642            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64166   |
| 9,3 mm                    | 0.3661            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64167   |
| U                         | 0.3680            | 9.35             | 7/16-14                       | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51524   |
| 9,4 mm                    | 0.3701            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64168   |
| 9,5 mm                    | 0.3740            |                  | M10 X 0,5                     | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64169   |
| 3/8                       | 0.3750            | 9.53             |                               | 3/8                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51525   |
| V                         | 0.3770            | 9.58             |                               | 1/2                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 52351   |
| 9,6 mm                    | 0.3780            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64170   |
| 9,7 mm                    | 0.3819            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64171   |
| 9,8 mm                    | 0.3858            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64172   |
| W                         | 0.3860            | 9.80             |                               | 1/2                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51526   |
| 9,9 mm                    | 0.3898            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 64173   |
| 25/64                     | 0.3906            | 9.92             | 7/16-20                       | 1/2                       | 4                        | 2-13/32                | 2-1/8                   | 1-9/16                | 51527   |

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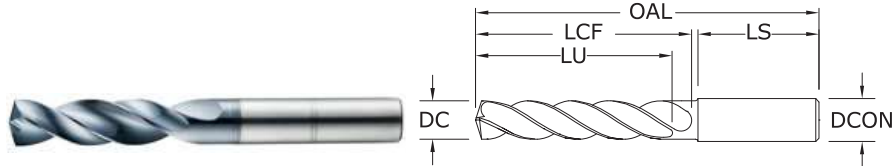
CONTINUED



5xD



2



## 135 5xD

### FRACTIONAL & METRIC SERIES

- Double margin design improves accuracy and surface finish along with increased strength for aggressive drilling
- Specialized self-centering notched point eliminates the need for spot drilling decreasing thrust and deflection
- Engineered edge protection improves edge strength and reduces edge fatigue allowing for increased feed rates
- Recommended for materials  $\leq 56$  HRC ( $\leq 577$  Bhn)

| inch & mm           |                |               |                         |                     |                    |                  |                   |                 | EDP NO.             |
|---------------------|----------------|---------------|-------------------------|---------------------|--------------------|------------------|-------------------|-----------------|---------------------|
| CUTTING DIAMETER DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE REFERENCE ONLY | SHANK DIAMETER DCON | OVERALL LENGTH OAL | FLUTE LENGTH LCF | CLEARED LENGTH LU | SHANK LENGTH LS | Ti-NAMITE-A (AITiN) |
| 10,0 mm             | 0.3937         |               |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 64174               |
| X                   | 0.3970         | 10.08         | 7/16-24                 | 1/2                 | 4-11/16            | 2-3/4            | 2-23/64           | 1-49/64         | 52352               |
| 10,1 mm             | 0.3976         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64175               |
| 10,2 mm             | 0.4016         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64176               |
| Y                   | 0.4040         | 10.26         | 7/16-28                 | 1/2                 | 4-11/16            | 2-3/4            | 2-23/64           | 1-49/64         | 52353               |
| 10,3 mm             | 0.4055         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64177               |
| 13/32               | 0.4062         | 10.32         |                         | 1/2                 | 4-11/16            | 2-3/4            | 2-23/64           | 1-49/64         | 51528               |
| 10,4 mm             | 0.4095         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64178               |
| Z                   | 0.4130         | 10.49         |                         | 1/2                 | 4-11/16            | 2-3/4            | 2-23/64           | 1-49/64         | 52354               |
| 10,5 mm             | 0.4134         |               | M12 X 1,5               | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64179               |
| 10,6 mm             | 0.4173         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64180               |
| 10,7 mm             | 0.4213         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64181               |
| 27/64               | 0.4219         | 10.72         | 1/2-13                  | 1/2                 | 4-11/16            | 2-3/4            | 2-23/64           | 1-49/64         | 51529               |
| 10,8 mm             | 0.4252         |               | M12 X 1,25              | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64182               |
| 10,9 mm             | 0.4291         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64183               |
| 11,0 mm             | 0.4331         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64184               |
| 11,1 mm             | 0.4370         |               | M12 X 1                 | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64185               |
| 7/16                | 0.4375         | 11.11         | 1/4-18 NPT              | 1/2                 | 4-11/16            | 2-3/4            | 2-23/64           | 1-49/64         | 51530               |
| 11,2 mm             | 0.4409         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64186               |
| 11,25 mm            | 0.4429         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64187               |
| 11,3 mm             | 0.4449         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64188               |
| 11,4 mm             | 0.4488         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64189               |
| 11,5 mm             | 0.4528         |               | M12 X 0,5               | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64190               |
| 29/64               | 0.4531         | 11.51         | 1/2-20                  | 1/2                 | 4-11/16            | 2-3/4            | 2-23/64           | 1-49/64         | 51531               |
| 11,6 mm             | 0.4567         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64191               |
| 11,7 mm             | 0.4606         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64192               |
| 11,8 mm             | 0.4646         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64193               |
| 11,9 mm             | 0.4685         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64194               |
| 15/32               | 0.4688         | 11.91         | 1/2-28                  | 1/2                 | 4-11/16            | 2-3/4            | 2-23/64           | 1-49/64         | 51532               |
| 12,0 mm             | 0.4724         |               | M14 X 2                 | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 64195               |
| 31/64               | 0.4844         | 12.30         | 9/16-12                 | 1/2                 | 4-7/8              | 3-1/32           | 2-19/32           | 1-49/64         | 51533               |
| 12,5 mm             | 0.4921         |               | M14 X 1,5               | 14,0                | 124,0              | 77,0             | 60,0              | 45,0            | 64196               |
| 1/2                 | 0.5000         | 12.70         |                         | 1/2                 | 4-7/8              | 3-1/32           | 2-19/32           | 1-49/64         | 51534               |
| 12,8 mm             | 0.5039         |               | M14 X 1,25              | 14,0                | 124,0              | 77,0             | 60,0              | 45,0            | 64197               |
| 13,0 mm             | 0.5118         |               | M14 X 1                 | 14,0                | 124,0              | 77,0             | 60,0              | 45,0            | 64198               |
| 33/64               | 0.5156         | 13.10         | 9/16-18                 | 5/8                 | 4-7/8              | 3-1/32           | 2-19/32           | 1-49/64         | 51535               |
| 17/32               | 0.5312         | 13.49         | 5/8-11                  | 5/8                 | 4-7/8              | 3-1/32           | 2-19/32           | 1-49/64         | 51536               |
| 13,5 mm             | 0.5315         |               |                         | 14,0                | 124,0              | 77,0             | 60,0              | 45,0            | 64199               |

continued on next page

#### TOLERANCES (inch)

##### ≤.1181 DIAMETER

DC = +.00008/+0.00047

DCON =  $h_6$

##### >.1181-.2362 DIAMETER

DC = +.00016/+0.00063

DCON =  $h_6$

##### >.2362-.3937 DIAMETER

DC = +.00024/+0.00083

DCON =  $h_6$

##### >.3937-.7087 DIAMETER

DC = +.00028/+0.00098

DCON =  $h_6$

##### >.7087-1.1811 DIAMETER

DC = +.00031/+0.00114

DCON =  $h_6$

#### TOLERANCES (mm)

##### ≤3 DIAMETER

DC = +0.002/+0.012

DCON =  $h_6$

##### >3-6 DIAMETER

DC = +0.004/+0.016

DCON =  $h_6$

##### >6-10 DIAMETER

DC = +0.006/+0.021

DCON =  $h_6$

##### >10-18 DIAMETER

DC = +0.007/+0.025

DCON =  $h_6$

##### >18-30 DIAMETER

DC = +0.008/+0.029

DCON =  $h_6$

|                  |
|------------------|
| STEELS           |
| STAINLESS STEELS |
| CAST IRON        |
| HIGH TEMP ALLOYS |
| TITANIUM         |
| NON-FERROUS      |
| HARDENED STEELS  |

For patent information visit  
[www.ksptpatents.com](http://www.ksptpatents.com)

# 135 5xD

FRACTIONAL & METRIC SERIES

| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | inch & mm                     |                           |                          |                        |                         |                       | EDP NO. |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|---------|
|                           |                   |                  | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS |         |
| 35/64                     | 0.5469            | 13.89            | 5/8-12                        | 5/8                       | 4-7/8                    | 3-1/32                 | 2-19/32                 | 1-49/64               | 51537   |
| 14,0 mm                   | 0.5512            |                  | M16 X 2                       | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 64200   |
| 9/16                      | 0.5625            | 14.29            |                               | 5/8                       | 5-1/4                    | 3-1/4                  | 2-3/4                   | 1-57/64               | 51538   |
| 14,5 mm                   | 0.5709            |                  | M16 X 1,5                     | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 64201   |
| 37/64                     | 0.5781            | 14.68            | 5/8-18                        | 5/8                       | 5-1/4                    | 3-1/4                  | 2-3/4                   | 1-57/64               | 51539   |
| 15,0 mm                   | 0.5906            |                  | M16 X 1                       | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 64202   |
| 19/32                     | 0.5938            | 15.08            | 11/16-11                      | 5/8                       | 5-1/4                    | 3-1/4                  | 2-3/4                   | 1-57/64               | 51592   |
| 39/64                     | 0.6094            | 15.48            | 11/16-12                      | 5/8                       | 5-1/4                    | 3-1/4                  | 2-3/4                   | 1-57/64               | 51593   |
| 15,5 mm                   | 0.6102            |                  | M18 X 2,5                     | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 64203   |
| 5/8                       | 0.6250            | 15.88            | 11/16-16                      | 5/8                       | 5-1/4                    | 3-1/4                  | 2-3/4                   | 1-57/64               | 51540   |
| 16,0 mm                   | 0.6299            |                  |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 64204   |
| 41/64                     | 0.6406            | 16.27            | 11/16-24                      | 3/4                       | 5-5/8                    | 3-5/8                  | 3-3/16                  | 1-57/64               | 51594   |
| 16,5 mm                   | 0.6496            |                  | M18 X 1,5                     | 18,0                      | 143,0                    | 93,0                   | 71,0                    | 48,0                  | 64205   |
| 21/32                     | 0.6562            | 16.67            | 3/4-10                        | 3/4                       | 5-5/8                    | 3-5/8                  | 3-3/16                  | 1-57/64               | 51541   |
| 17,0 mm                   | 0.6693            |                  |                               | 18,0                      | 143,0                    | 93,0                   | 71,0                    | 48,0                  | 64206   |
| 43/64                     | 0.6719            | 17.07            | 3/4-12                        | 3/4                       | 5-5/8                    | 3-5/8                  | 3-3/16                  | 1-57/64               | 51595   |
| 11/16                     | 0.6875            | 17.46            | 3/4-16                        | 3/4                       | 5-5/8                    | 3-5/8                  | 3-3/16                  | 1-57/64               | 51542   |
| 17,5 mm                   | 0.6890            |                  | M20 X 2,5                     | 18,0                      | 143,0                    | 93,0                   | 71,0                    | 48,0                  | 64207   |
| 45/64                     | 0.7031            | 17.86            | 3/4-20, 1/2-14 NPT            | 3/4                       | 5-5/8                    | 3-5/8                  | 3-3/16                  | 1-57/64               | 51543   |
| 18,0 mm                   | 0.7087            |                  |                               | 18,0                      | 143,0                    | 93,0                   | 71,0                    | 48,0                  | 64208   |
| 23/32                     | 0.7188            | 18.26            |                               | 3/4                       | 6                        | 4                      | 3-3/8                   | 1-31/32               | 51596   |
| 18,5 mm                   | 0.7283            |                  | M20 X 1,5                     | 20,0                      | 153,0                    | 101,0                  | 77,0                    | 50,0                  | 64209   |
| 47/64                     | 0.7344            | 18.65            | 13/16-12                      | 3/4                       | 6                        | 4                      | 3-3/8                   | 1-31/32               | 51544   |
| 19,0 mm                   | 0.7480            |                  |                               | 20,0                      | 153,0                    | 101,0                  | 77,0                    | 50,0                  | 64210   |
| 3/4                       | 0.7500            | 19.05            | 13/16-16                      | 3/4                       | 6                        | 4                      | 3-3/8                   | 1-31/32               | 51545   |
| 49/64                     | 0.7656            | 19.45            | 7/8-9                         | 7/8                       | 6                        | 4                      | 3-3/8                   | 1-31/32               | 52355   |
| 19,5 mm                   | 0.7677            |                  | M22 X 2,5                     | 20,0                      | 153,0                    | 101,0                  | 77,0                    | 50,0                  | 64211   |
| 25/32                     | 0.7812            | 19.84            |                               | 7/8                       | 6                        | 4                      | 3-3/8                   | 1-31/32               | 52356   |
| 20,0 mm                   | 0.7874            |                  |                               | 20,0                      | 153,0                    | 101,0                  | 77,0                    | 50,0                  | 64212   |
| 51/64                     | 0.7969            | 20.24            | 7/8-12                        | 7/8                       | 6                        | 4                      | 3-3/8                   | 1-31/32               | 52357   |
| 20,5 mm                   | 0.8071            |                  |                               | 22,0                      | 153,0                    | 101,0                  | 77,0                    | 50,0                  | 64533   |
| 13/16                     | 0.8125            | 20.64            | 7/8-14                        | 7/8                       | 6-1/2                    | 4-1/2                  | 3-7/8                   | 1-31/32               | 52358   |
| 21,0 mm                   | 0.8268            |                  |                               | 22,0                      | 153,0                    | 101,0                  | 77,0                    | 50,0                  | 64534   |
| 22,0 mm                   | 0.8661            |                  |                               | 22,0                      | 178,0                    | 127,0                  | 108,0                   | 50,0                  | 64535   |
| 7/8                       | 0.8750            | 22.23            | 15/16-16, 1-8                 | 7/8                       | 6-1/2                    | 4-1/2                  | 3-7/8                   | 1-31/32               | 52359   |
| 59/64                     | 0.9219            | 23.42            | 1-12                          | 1                         | 7                        | 5                      | 4-3/8                   | 2-1/8                 | 52360   |

CONTINUED



# FRACTIONAL Hi-PerCarb®

| Series<br>135 5D<br>Fractional |                                                                                           |                             |                  | DC • in     |        |        |        |        |        |        |        |
|--------------------------------|-------------------------------------------------------------------------------------------|-----------------------------|------------------|-------------|--------|--------|--------|--------|--------|--------|--------|
| Hardness                       |                                                                                           |                             |                  | Vc<br>(sfm) | 1/32   | 1/8    | 1/4    | 3/8    | 1/2    | 5/8    | 7/8    |
| P                              | CARBON STEELS<br>1018, 1040, 1080, 1090, 10L50,<br>1140, 1212, 12L15, 1525, 1536          | ≤ 175 Bhn<br>or<br>≤ 7 HRc  | 345<br>(276-414) | RPM         | 42173  | 10543  | 5272   | 3514   | 2636   | 2109   | 1506   |
|                                |                                                                                           |                             |                  | Fr          | 0.0010 | 0.0040 | 0.0080 | 0.0120 | 0.0159 | 0.0199 | 0.0279 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 42.0   | 42.0   | 42.0   | 42.0   | 42.0   | 42.0   | 42.0   |
|                                |                                                                                           | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 310<br>(248-372) | RPM         | 37894  | 9474   | 4737   | 3158   | 2368   | 1895   | 1353   |
|                                |                                                                                           |                             |                  | Fr          | 0.0009 | 0.0036 | 0.0072 | 0.0108 | 0.0144 | 0.0179 | 0.0251 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 34.0   | 34.0   | 34.0   | 34.0   | 34.0   | 34.0   | 34.0   |
|                                |                                                                                           | ≤ 425 Bhn<br>or<br>≤ 45 HRc | 180<br>(144-216) | RPM         | 22003  | 5501   | 2750   | 1834   | 1375   | 1100   | 786    |
|                                |                                                                                           |                             |                  | Fr          | 0.0007 | 0.0030 | 0.0060 | 0.0090 | 0.0120 | 0.0150 | 0.0210 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 16.5   | 16.5   | 16.5   | 16.5   | 16.5   | 16.5   | 16.5   |
|                                | ALLOY STEELS<br>4140, 4150, 4320, 5120,<br>5150, 8630, 86L20, 50100                       | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 270<br>(216-324) | RPM         | 33005  | 8251   | 4126   | 2750   | 2063   | 1650   | 1179   |
|                                |                                                                                           |                             |                  | Fr          | 0.0008 | 0.0030 | 0.0061 | 0.0091 | 0.0121 | 0.0151 | 0.0212 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 25.0   | 25.0   | 25.0   | 25.0   | 25.0   | 25.0   | 25.0   |
|                                |                                                                                           | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 165<br>(132-198) | RPM         | 20170  | 5042   | 2521   | 1681   | 1261   | 1008   | 720    |
|                                |                                                                                           |                             |                  | Fr          | 0.0006 | 0.0026 | 0.0052 | 0.0077 | 0.0103 | 0.0129 | 0.0180 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 13.0   | 13.0   | 13.0   | 13.0   | 13.0   | 13.0   | 13.0   |
|                                |                                                                                           | ≤ 450 Bhn<br>or<br>≤ 48 HRc | 115<br>(92-138)  | RPM         | 14058  | 3514   | 1757   | 1171   | 879    | 703    | 502    |
|                                |                                                                                           |                             |                  | Fr          | 0.0004 | 0.0018 | 0.0035 | 0.0053 | 0.0071 | 0.0088 | 0.0123 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 6.2    | 6.2    | 6.2    | 6.2    | 6.2    | 6.2    | 6.2    |
| M                              | STAINLESS STEELS<br>(FREE MACHINING)<br>303, 416, 420F, 430F, 440F                        | ≤ 185 Bhn<br>or<br>≤ 9 HRc  | 250<br>(200-300) | RPM         | 30560  | 7640   | 3820   | 2547   | 1910   | 1528   | 1091   |
|                                |                                                                                           |                             |                  | Fr          | 0.0006 | 0.0026 | 0.0051 | 0.0077 | 0.0102 | 0.0128 | 0.0179 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   | 19.5   |
|                                |                                                                                           | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 150<br>(120-180) | RPM         | 18336  | 4584   | 2292   | 1528   | 1146   | 917    | 655    |
|                                |                                                                                           |                             |                  | Fr          | 0.0005 | 0.0020 | 0.0039 | 0.0059 | 0.0079 | 0.0098 | 0.0137 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 9.0    | 9.0    | 9.0    | 9.0    | 9.0    | 9.0    | 9.0    |
|                                | STAINLESS STEELS<br>(DIFFICULT)<br>304, 316, 321, 13-8 PH,<br>15-5PH, 17-4 PH, Custom 450 | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 80<br>(64-96)    | RPM         | 9779   | 2445   | 1222   | 815    | 611    | 489    | 349    |
|                                |                                                                                           |                             |                  | Fr          | 0.0005 | 0.0020 | 0.0039 | 0.0059 | 0.0079 | 0.0098 | 0.0137 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 4.8    | 4.8    | 4.8    | 4.8    | 4.8    | 4.8    | 4.8    |
|                                |                                                                                           | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 55<br>(44-66)    | RPM         | 6723   | 1681   | 840    | 560    | 420    | 336    | 240    |
|                                |                                                                                           |                             |                  | Fr          | 0.0004 | 0.0018 | 0.0036 | 0.0054 | 0.0071 | 0.0089 | 0.0125 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 3.0    | 3.0    | 3.0    | 3.0    | 3.0    | 3.0    | 3.0    |
| K                              | CAST IRONS<br>Gray, Malleable, Ductile                                                    | ≤ 220 Bhn<br>or<br>≤ 19 HRc | 300<br>(240-360) | RPM         | 36672  | 9168   | 4584   | 3056   | 2292   | 1834   | 1310   |
|                                |                                                                                           |                             |                  | Fr          | 0.0011 | 0.0045 | 0.0089 | 0.0134 | 0.0179 | 0.0224 | 0.0313 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 41.0   | 41.0   | 41.0   | 41.0   | 41.0   | 41.0   | 41.0   |
|                                |                                                                                           | ≤ 260 Bhn<br>or<br>≤ 26 HRc | 265<br>(212-318) | RPM         | 32394  | 8098   | 4049   | 2699   | 2025   | 1620   | 1157   |
|                                |                                                                                           |                             |                  | Fr          | 0.0011 | 0.0046 | 0.0091 | 0.0137 | 0.0183 | 0.0228 | 0.0320 |
|                                |                                                                                           |                             |                  | Feed (ipm)  | 37.0   | 37.0   | 37.0   | 37.0   | 37.0   | 37.0   | 37.0   |

continued on next page

| Series<br>135 5D<br>Fractional |                                                                                                                 | Hardness                    | Vc<br>(sfm) | DC • in |        |        |        |        |        |        |        |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------|-------------|---------|--------|--------|--------|--------|--------|--------|--------|
|                                |                                                                                                                 |                             |             | 1/32    | 1/8    | 1/4    | 3/8    | 1/2    | 5/8    | 7/8    |        |
| N                              | ALUMINUM ALLOYS<br>2017, 2024, 356,<br>6061, 7075                                                               | ≤ 80 Bhn<br>or<br>≤ 47 HRb  | 635         | RPM     | 77622  | 19406  | 9703   | 6469   | 4851   | 3881   | 2772   |
|                                |                                                                                                                 |                             | (508-762)   | Fr      | 0.0012 | 0.0049 | 0.0099 | 0.0148 | 0.0198 | 0.0247 | 0.0346 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 96.0    | 96.0   | 96.0   | 96.0   | 96.0   | 96.0   | 96.0   |        |
|                                |                                                                                                                 | ≤ 150 Bhn<br>or<br>≤ 7 HRc  | 540         | RPM     | 66010  | 16502  | 8251   | 5501   | 4126   | 3300   | 2357   |
|                                |                                                                                                                 |                             | (432-648)   | Fr      | 0.0012 | 0.0050 | 0.0099 | 0.0149 | 0.0199 | 0.0248 | 0.0348 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 82.0    | 82.0   | 82.0   | 82.0   | 82.0   | 82.0   | 82.0   |        |
|                                | COPPER ALLOYS<br>Alum Bronze, C110,<br>Muntz Brass                                                              | ≤ 140 Bhn<br>or<br>≤ 3 HRc  | 450         | RPM     | 55008  | 13752  | 6876   | 4584   | 3438   | 2750   | 1965   |
|                                |                                                                                                                 |                             | (360-540)   | Fr      | 0.0005 | 0.0020 | 0.0040 | 0.0060 | 0.0080 | 0.0100 | 0.0140 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 27.5    | 27.5   | 27.5   | 27.5   | 27.5   | 27.5   | 27.5   |        |
|                                |                                                                                                                 | ≤ 200 Bhn<br>or<br>≤ 23 HRc | 360         | RPM     | 44006  | 11002  | 5501   | 3667   | 2750   | 2200   | 1572   |
|                                |                                                                                                                 |                             | (288-432)   | Fr      | 0.0005 | 0.0020 | 0.0040 | 0.0060 | 0.0080 | 0.0100 | 0.0140 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 22.0    | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   | 22.0   |        |
| S                              | SUPER ALLOYS<br>(Nickel , Cobalt,<br>Iron Base)<br>Inconel 601, 617, 625, Incoloy,<br>Monel 400, Rene, Waspaloy | ≤ 300 Bhn<br>or<br>≤ 32 HRc | 40          | RPM     | 4890   | 1222   | 611    | 407    | 306    | 244    | 175    |
|                                |                                                                                                                 |                             | (32-48)     | Fr      | 0.0002 | 0.0008 | 0.0016 | 0.0025 | 0.0033 | 0.0041 | 0.0057 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 1.0     | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    | 1.0    |        |
|                                |                                                                                                                 | ≤ 400 Bhn<br>or<br>≤ 43 HRc | 20          | RPM     | 2445   | 611    | 306    | 204    | 153    | 122    | 87     |
|                                |                                                                                                                 |                             | (16-24)     | Fr      | 0.0002 | 0.0007 | 0.0013 | 0.0020 | 0.0026 | 0.0033 | 0.0046 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 0.4     | 0.4    | 0.4    | 0.4    | 0.4    | 0.4    | 0.4    |        |
|                                | TITANIUM ALLOYS<br>Pure Titanium, Ti6Al4V,<br>Ti6Al2Sn4Zr2Mo,<br>Ti4Al4Mo2Sn0.5Si,<br>Ti-6Al4V                  | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 105         | RPM     | 12835  | 3209   | 1604   | 1070   | 802    | 642    | 458    |
|                                |                                                                                                                 |                             | (84-126)    | Fr      | 0.0005 | 0.0018 | 0.0036 | 0.0054 | 0.0072 | 0.0090 | 0.0127 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 5.8     | 5.8    | 5.8    | 5.8    | 5.8    | 5.8    | 5.8    |        |
|                                |                                                                                                                 | ≤ 350 Bhn<br>or<br>≤ 38 HRc | 80          | RPM     | 9779   | 2445   | 1222   | 815    | 611    | 489    | 349    |
|                                |                                                                                                                 |                             | (64-96)     | Fr      | 0.0004 | 0.0016 | 0.0032 | 0.0048 | 0.0064 | 0.0080 | 0.0112 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 3.9     | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    | 3.9    |        |
| ≤ 440 Bhn<br>or<br>≤ 47 HRc    | 42                                                                                                              | RPM                         | 5134        | 1284    | 642    | 428    | 321    | 257    | 183    |        |        |
|                                | (34-50)                                                                                                         | Fr                          | 0.0003      | 0.0012  | 0.0025 | 0.0037 | 0.0050 | 0.0062 | 0.0087 |        |        |
|                                | Feed (ipm)                                                                                                      | 1.6                         | 1.6         | 1.6     | 1.6    | 1.6    | 1.6    | 1.6    |        |        |        |
| H                              | TOOL STEELS<br>A2, D2, H13, L2, M2,<br>P20, S7, T15, W2                                                         | ≤ 200 Bhn<br>or<br>≤ 13 HRc | 120         | RPM     | 14669  | 3667   | 1834   | 1222   | 917    | 733    | 524    |
|                                |                                                                                                                 |                             | (96-144)    | Fr      | 0.0006 | 0.0026 | 0.0051 | 0.0077 | 0.0103 | 0.0128 | 0.0179 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 9.4     | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    | 9.4    |        |
|                                |                                                                                                                 | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 80          | RPM     | 9779   | 2445   | 1222   | 815    | 611    | 489    | 349    |
|                                |                                                                                                                 |                             | (64-96)     | Fr      | 0.0003 | 0.0012 | 0.0024 | 0.0036 | 0.0047 | 0.0059 | 0.0083 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 2.9     | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    | 2.9    |        |
|                                |                                                                                                                 | ≤ 475 Bhn<br>or<br>≤ 50 HRc | 70          | RPM     | 8557   | 2139   | 1070   | 713    | 535    | 428    | 306    |
|                                |                                                                                                                 |                             | (56-84)     | Fr      | 0.0002 | 0.0008 | 0.0016 | 0.0024 | 0.0032 | 0.0040 | 0.0056 |
|                                |                                                                                                                 |                             | Feed (ipm)  | 1.7     | 1.7    | 1.7    | 1.7    | 1.7    | 1.7    | 1.7    |        |

Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)

rpm = Vc x 3.82 / DC

ipm = Fr x rpm

reduce speed and feed for materials harder than listed

refer to the SGS Tool Wizard® for complete technical information ([www.kyocera-sgstool.com](http://www.kyocera-sgstool.com))

| Series<br>135M 5D<br>Metric |                                                                                           |                             |               | DC • mm |       |       |       |       |       |       |       |       |
|-----------------------------|-------------------------------------------------------------------------------------------|-----------------------------|---------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
|                             | Hardness                                                                                  | Vc<br>(m/min)               |               | 1.5     | 3     | 6     | 8     | 10    | 12    | 16    | 20    |       |
|                             |                                                                                           |                             |               |         |       |       |       |       |       |       |       |       |
| P                           | CARBON STEELS<br>1018, 1040, 1080, 1090, 10L50,<br>1140, 1212, 12L15, 1525, 1536          | ≤ 175 Bhn<br>or<br>≤ 7 HRc  | 105           | RPM     | 22297 | 11148 | 5574  | 4181  | 3344  | 2787  | 2090  | 1672  |
|                             |                                                                                           |                             | (84-126)      | Fr      | 0.048 | 0.095 | 0.190 | 0.254 | 0.317 | 0.380 | 0.507 | 0.634 |
|                             |                                                                                           |                             | Feed (mm/min) | 1060    | 1060  | 1060  | 1060  | 1060  | 1060  | 1060  | 1060  | 1060  |
|                             |                                                                                           | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 94            | RPM     | 20035 | 10017 | 5009  | 3756  | 3005  | 2504  | 1878  | 1503  |
|                             |                                                                                           |                             | (76-113)      | Fr      | 0.043 | 0.085 | 0.171 | 0.228 | 0.285 | 0.341 | 0.455 | 0.569 |
|                             |                                                                                           |                             | Feed (mm/min) | 855     | 855   | 855   | 855   | 855   | 855   | 855   | 855   | 855   |
|                             |                                                                                           | ≤ 425 Bhn<br>or<br>≤ 45 HRc | 55            | RPM     | 11633 | 5816  | 2908  | 2181  | 1745  | 1454  | 1091  | 872   |
|                             |                                                                                           |                             | (44-66)       | Fr      | 0.036 | 0.071 | 0.143 | 0.190 | 0.238 | 0.285 | 0.381 | 0.476 |
|                             |                                                                                           |                             | Feed (mm/min) | 415     | 415   | 415   | 415   | 415   | 415   | 415   | 415   | 415   |
|                             | ALLOY STEELS<br>4140, 4150, 4320, 5120,<br>5150, 8630, 86L20, 50100                       | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 82            | RPM     | 17449 | 8725  | 4362  | 3272  | 2617  | 2181  | 1636  | 1309  |
|                             |                                                                                           |                             | (66-99)       | Fr      | 0.036 | 0.072 | 0.143 | 0.191 | 0.239 | 0.287 | 0.382 | 0.478 |
|                             |                                                                                           |                             | Feed (mm/min) | 625     | 625   | 625   | 625   | 625   | 625   | 625   | 625   | 625   |
|                             |                                                                                           | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 50            | RPM     | 10664 | 5332  | 2666  | 1999  | 1600  | 1333  | 1000  | 800   |
|                             |                                                                                           |                             | (40-60)       | Fr      | 0.031 | 0.062 | 0.124 | 0.165 | 0.206 | 0.248 | 0.330 | 0.413 |
|                             |                                                                                           |                             | Feed (mm/min) | 330     | 330   | 330   | 330   | 330   | 330   | 330   | 330   | 330   |
|                             |                                                                                           | ≤ 450 Bhn<br>or<br>≤ 48 HRc | 35            | RPM     | 7432  | 3716  | 1858  | 1394  | 1115  | 929   | 697   | 557   |
|                             |                                                                                           |                             | (28-42)       | Fr      | 0.022 | 0.043 | 0.086 | 0.115 | 0.144 | 0.172 | 0.230 | 0.287 |
|                             |                                                                                           |                             | Feed (mm/min) | 160     | 160   | 160   | 160   | 160   | 160   | 160   | 160   | 160   |
| M                           | STAINLESS STEELS<br>(FREE MACHINING)<br>303, 416, 420F, 430F, 440F                        | ≤ 185 Bhn<br>or<br>≤ 9 HRc  | 76            | RPM     | 16157 | 8078  | 4039  | 3029  | 2424  | 2020  | 1515  | 1212  |
|                             |                                                                                           |                             | (61-91)       | Fr      | 0.031 | 0.061 | 0.123 | 0.163 | 0.204 | 0.245 | 0.327 | 0.408 |
|                             |                                                                                           |                             | Feed (mm/min) | 495     | 495   | 495   | 495   | 495   | 495   | 495   | 495   | 495   |
|                             |                                                                                           | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 46            | RPM     | 9694  | 4847  | 2424  | 1818  | 1454  | 1212  | 909   | 727   |
|                             |                                                                                           |                             | (37-55)       | Fr      | 0.024 | 0.047 | 0.095 | 0.127 | 0.158 | 0.190 | 0.253 | 0.316 |
|                             |                                                                                           |                             | Feed (mm/min) | 230     | 230   | 230   | 230   | 230   | 230   | 230   | 230   | 230   |
|                             | STAINLESS STEELS<br>(DIFFICULT)<br>304, 316, 321, 13-8 PH,<br>15-5PH, 17-4 PH, Custom 450 | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 24            | RPM     | 5170  | 2585  | 1293  | 969   | 776   | 646   | 485   | 388   |
|                             |                                                                                           |                             | (20-29)       | Fr      | 0.023 | 0.046 | 0.093 | 0.124 | 0.155 | 0.186 | 0.248 | 0.309 |
|                             |                                                                                           |                             | Feed (mm/min) | 120     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
|                             |                                                                                           | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 17            | RPM     | 3555  | 1777  | 889   | 666   | 533   | 444   | 333   | 267   |
|                             |                                                                                           |                             | (13-20)       | Fr      | 0.021 | 0.042 | 0.084 | 0.113 | 0.141 | 0.169 | 0.225 | 0.281 |
|                             |                                                                                           |                             | Feed (mm/min) | 75      | 75    | 75    | 75    | 75    | 75    | 75    | 75    | 75    |
| K                           | CAST IRONS<br>Gray, Malleable, Ductile                                                    | ≤ 220 Bhn<br>or<br>≤ 19 HRc | 91            | RPM     | 19388 | 9694  | 4847  | 3635  | 2908  | 2424  | 1818  | 1454  |
|                             |                                                                                           |                             | (73-110)      | Fr      | 0.054 | 0.108 | 0.217 | 0.289 | 0.361 | 0.433 | 0.578 | 0.722 |
|                             |                                                                                           |                             | Feed (mm/min) | 1050    | 1050  | 1050  | 1050  | 1050  | 1050  | 1050  | 1050  | 1050  |
|                             |                                                                                           | ≤ 260 Bhn<br>or<br>≤ 26 HRc | 81            | RPM     | 17126 | 8563  | 4282  | 3211  | 2569  | 2141  | 1606  | 1284  |
|                             |                                                                                           |                             | (65-97)       | Fr      | 0.055 | 0.109 | 0.218 | 0.291 | 0.364 | 0.437 | 0.582 | 0.728 |
|                             |                                                                                           |                             | Feed (mm/min) | 935     | 935   | 935   | 935   | 935   | 935   | 935   | 935   | 935   |

continued on next page

| Series<br>135M 5D<br>Metric |                                                                                                                 | Hardness                    | Vc<br>(m/min) |               | DC • mm |       |       |       |       |       |       |       |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------|---------------|---------------|---------|-------|-------|-------|-------|-------|-------|-------|
|                             |                                                                                                                 |                             |               |               | 1.5     | 3     | 6     | 8     | 10    | 12    | 16    | 20    |
| N                           | ALUMINUM ALLOYS<br>2017, 2024, 356,<br>6061, 7075                                                               | ≤ 80 Bhn<br>or<br>≤ 47 HRb  | 194           | RPM           | 41039   | 20519 | 10260 | 7695  | 6156  | 5130  | 3847  | 3078  |
|                             |                                                                                                                 |                             | (155-232)     | Fr            | 0.059   | 0.118 | 0.237 | 0.316 | 0.395 | 0.474 | 0.632 | 0.790 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 2430    | 2430  | 2430  | 2430  | 2430  | 2430  | 2430  | 2430  |
|                             |                                                                                                                 | ≤ 150 Bhn<br>or<br>≤ 7 HRc  | 165           | RPM           | 34899   | 17449 | 8725  | 6544  | 5235  | 4362  | 3272  | 2617  |
|                             |                                                                                                                 |                             | (132-198)     | Fr            | 0.059   | 0.118 | 0.237 | 0.316 | 0.394 | 0.473 | 0.631 | 0.789 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 2065    | 2065  | 2065  | 2065  | 2065  | 2065  | 2065  | 2065  |
|                             | Copper Alloys<br>Alum Bronze, C110,<br>Muntz Brass                                                              | ≤ 140 Bhn<br>or<br>≤ 3 HRc  | 137           | RPM           | 29082   | 14541 | 7271  | 5453  | 4362  | 3635  | 2726  | 2181  |
|                             |                                                                                                                 |                             | (110-165)     | Fr            | 0.027   | 0.053 | 0.107 | 0.142 | 0.178 | 0.213 | 0.284 | 0.355 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 775     | 775   | 775   | 775   | 775   | 775   | 775   | 775   |
|                             |                                                                                                                 | ≤ 200 Bhn<br>or<br>≤ 23 HRc | 110           | RPM           | 23266   | 11633 | 5816  | 4362  | 3490  | 2908  | 2181  | 1745  |
|                             |                                                                                                                 |                             | (88-132)      | Fr            | 0.027   | 0.054 | 0.108 | 0.144 | 0.181 | 0.217 | 0.289 | 0.361 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 630     | 630   | 630   | 630   | 630   | 630   | 630   | 630   |
| S                           | SUPER ALLOYS<br>(Nickel , Cobalt,<br>Iron Base)<br>Inconel 601, 617, 625, Incoloy,<br>Monel 400, Rene, Waspaloy | ≤ 300 Bhn<br>or<br>≤ 32 HRc | 12            | RPM           | 2585    | 1293  | 646   | 485   | 388   | 323   | 242   | 194   |
|                             |                                                                                                                 |                             | (10-15)       | Fr            | 0.010   | 0.019 | 0.039 | 0.052 | 0.064 | 0.077 | 0.103 | 0.129 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 25      | 25    | 25    | 25    | 25    | 25    | 25    | 25    |
|                             |                                                                                                                 | ≤ 400 Bhn<br>or<br>≤ 43 HRc | 6             | RPM           | 1293    | 646   | 323   | 242   | 194   | 162   | 121   | 97    |
|                             |                                                                                                                 |                             | (5-7)         | Fr            | 0.007   | 0.014 | 0.028 | 0.037 | 0.046 | 0.056 | 0.074 | 0.093 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 9       | 9     | 9     | 9     | 9     | 9     | 9     | 9     |
|                             | TITANIUM ALLOYS<br>Pure Titanium, Ti6Al4V,<br>Ti6Al2Sn4Zr2Mo,<br>Ti4Al4Mo2Sn0.5Si,<br>Ti-6Al4V                  | ≤ 275 Bhn<br>or<br>≤ 28 HRc | 32            | RPM           | 6786    | 3393  | 1696  | 1272  | 1018  | 848   | 636   | 509   |
|                             |                                                                                                                 |                             | (26-38)       | Fr            | 0.021   | 0.043 | 0.085 | 0.114 | 0.142 | 0.171 | 0.228 | 0.285 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 145     | 145   | 145   | 145   | 145   | 145   | 145   | 145   |
|                             |                                                                                                                 | ≤ 350 Bhn<br>or<br>≤ 38 HRc | 24            | RPM           | 5170    | 2585  | 1293  | 969   | 776   | 646   | 485   | 388   |
|                             |                                                                                                                 |                             | (20-29)       | Fr            | 0.019   | 0.039 | 0.077 | 0.103 | 0.129 | 0.155 | 0.206 | 0.258 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 100     | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| H                           | TOOL STEELS<br>A2, D2, H13, L2, M2,<br>P20, S7, T15, W2                                                         | ≤ 200 Bhn<br>or<br>≤ 13 HRc | 37            | RPM           | 7755    | 3878  | 1939  | 1454  | 1163  | 969   | 727   | 582   |
|                             |                                                                                                                 |                             | (29-44)       | Fr            | 0.031   | 0.062 | 0.124 | 0.165 | 0.206 | 0.248 | 0.330 | 0.413 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 240     | 240   | 240   | 240   | 240   | 240   | 240   | 240   |
|                             |                                                                                                                 | ≤ 375 Bhn<br>or<br>≤ 40 HRc | 24            | RPM           | 5170    | 2585  | 1293  | 969   | 776   | 646   | 485   | 388   |
|                             |                                                                                                                 |                             | (20-29)       | Fr            | 0.015   | 0.029 | 0.058 | 0.077 | 0.097 | 0.116 | 0.155 | 0.193 |
|                             |                                                                                                                 |                             |               | Feed (mm/min) | 75      | 75    | 75    | 75    | 75    | 75    | 75    | 75    |
| ≤ 475 Bhn<br>or<br>≤ 50 HRc | 21                                                                                                              | RPM                         | 4524          | 2262          | 1131    | 848   | 679   | 565   | 424   | 339   |       |       |
|                             | (17-26)                                                                                                         | Fr                          | 0.010         | 0.020         | 0.040   | 0.053 | 0.066 | 0.080 | 0.106 | 0.133 |       |       |
|                             |                                                                                                                 | Feed (mm/min)               | 45            | 45            | 45      | 45    | 45    | 45    | 45    | 45    |       |       |

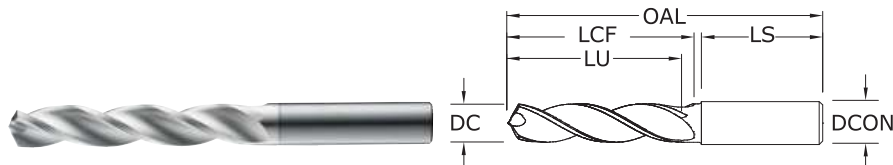
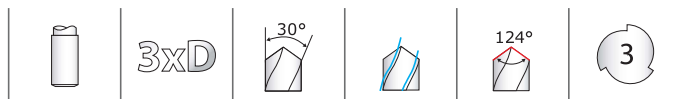
Bhn (Brinell) HRc (Rockwell C) HRb (Rockwell B)

rpm = (Vc x 1000) / (DC x 3.14)

mm/min = Fr x rpm

reduce speed and feed for materials harder than listed

refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgstool.com)



## 131N 3xD

### FRACTIONAL & METRIC SERIES

- Triple margin design improves hole stability and size control while providing superior finish, roundness and cylindricity
- Self-stabilizing pyramid point design stabilizes the drill on contact with the workpiece
- Open flute structure efficiently transports chips while maintaining strength at high feed rates
- Sculpted gash allows chips to easily flow away from the drill center
- Recommended for materials  $\leq 175$  Bhn ( $\leq 16$  HRC)

| inch & mm        |                |               |                         |                     |                    |                  |                   |                 |  | EDP NO.  |                                 |
|------------------|----------------|---------------|-------------------------|---------------------|--------------------|------------------|-------------------|-----------------|--|----------|---------------------------------|
| CUTTING DIAMETER | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE REFERENCE ONLY | SHANK DIAMETER DCON | OVERALL LENGTH OAL | FLUTE LENGTH LCF | CLEARED LENGTH LU | SHANK LENGTH LS |  | UNCOATED | Ti-NAMITE-B (TiB <sub>2</sub> ) |
| 3,0 mm           | 0.1181         |               |                         | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 64600    | 67600                           |
| 3,1 mm           | 0.1220         |               |                         | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 64601    | 67601                           |
| 1/8              | 0.1250         | 3.18          |                         | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 54600    | 54700                           |
| 3,2 mm           | 0.1260         |               | M3,5 X 0,35             | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 64602    | 67602                           |
| 3,3 mm           | 0.1299         |               | M4 X 0,7                | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 64603    | 67603                           |
| 3,4 mm           | 0.1339         |               |                         | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 64604    | 67604                           |
| #29              | 0.1360         | 3.45          | 8-32, 8-36              | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 54601    | 54701                           |
| 3,5 mm           | 0.1378         |               | M4 X 0,5                | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 64605    | 67605                           |
| 9/64             | 0.1406         | 3.57          |                         | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 54602    | 54702                           |
| 3,6 mm           | 0.1417         |               | M4 X 0,35               | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 64606    | 67606                           |
| 3,7 mm           | 0.1457         |               | M4,5 X 0,75             | 6,0                 | 62,0               | 20,0             | 14,0              | 36,0            |  | 64607    | 67607                           |
| 3,8 mm           | 0.1496         |               | 10-24                   | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64608    | 67608                           |
| 3,9 mm           | 0.1535         |               |                         | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64609    | 67609                           |
| 5/32             | 0.1562         | 3.97          |                         | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 54603    | 54703                           |
| 4,0 mm           | 0.1575         |               | M4,5 X 0,5              | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64610    | 67610                           |
| #21              | 0.1590         | 4.04          | 10-32                   | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 54604    | 54704                           |
| 4,1 mm           | 0.1614         |               |                         | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64611    | 67611                           |
| 4,2 mm           | 0.1654         |               | M5 / M5 X 0,75          | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64612    | 67612                           |
| 4,3 mm           | 0.1693         |               |                         | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64613    | 67613                           |
| 11/64            | 0.1719         | 4.37          |                         | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 54605    | 54705                           |
| 4,4 mm           | 0.1732         |               | 12-24                   | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64614    | 67614                           |
| 4,5 mm           | 0.1772         |               | M5 X 0,5                | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64615    | 67615                           |
| 4,6 mm           | 0.1811         |               | 12-28                   | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64616    | 67616                           |
| 4,7 mm           | 0.1850         |               | 12-32                   | 6,0                 | 66,0               | 24,0             | 17,0              | 36,0            |  | 64617    | 67617                           |
| 3/16             | 0.1875         | 4.76          |                         | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 54606    | 54706                           |
| 4,8 mm           | 0.1890         |               | 7/32-32                 | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64618    | 67618                           |
| 4,9 mm           | 0.1929         |               |                         | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64619    | 67619                           |
| 5,0 mm           | 0.1969         |               | M6 X 1                  | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64620    | 67620                           |
| 5,1 mm           | 0.2008         |               | 1/4-20                  | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64621    | 67621                           |
| 13/64            | 0.2031         | 5.16          |                         | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 54607    | 54707                           |
| 5,2 mm           | 0.2047         |               | M6 X 0,75               | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64622    | 67622                           |
| 5,3 mm           | 0.2087         |               |                         | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64623    | 67623                           |
| 5,4 mm           | 0.2126         |               |                         | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64624    | 67624                           |
| 5,5 mm           | 0.2165         |               | M6 X 0,5                | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64625    | 67625                           |
| 7/32             | 0.2188         | 5.56          | 1/4-32                  | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 54608    | 54708                           |
| 5,6 mm           | 0.2205         |               |                         | 6,0                 | 66,0               | 28,0             | 20,0              | 36,0            |  | 64626    | 67626                           |

continued on next page

### TOLERANCES (inch)

#### ≤.1181 DIAMETER

DC =  $\pm 0.0008/\pm 0.0047$

DCON =  $h_6$

#### >.1181-.2362 DIAMETER

DC =  $\pm 0.0016/\pm 0.0063$

DCON =  $h_6$

#### >.2362-.3937 DIAMETER

DC =  $\pm 0.0024/\pm 0.0083$

DCON =  $h_6$

#### >.3937-.7087 DIAMETER

DC =  $\pm 0.0028/\pm 0.0098$

DCON =  $h_6$

#### >.7087-1.1811 DIAMETER

DC =  $\pm 0.0031/\pm 0.0114$

DCON =  $h_6$

### TOLERANCES (mm)

#### ≤3 DIAMETER

DC =  $\pm 0.002/\pm 0.012$

DCON =  $h_6$

#### >3-6 DIAMETER

DC =  $\pm 0.004/\pm 0.016$

DCON =  $h_6$

#### >6-10 DIAMETER

DC =  $\pm 0.006/\pm 0.021$

DCON =  $h_6$

#### >10-18 DIAMETER

DC =  $\pm 0.007/\pm 0.025$

DCON =  $h_6$

NON-FERROUS

PLASTICS/COMPOSITES

For patent information visit  
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# 131N 3xD

FRACTIONAL & METRIC SERIES

| inch & mm                 |                   |                  |                               |                           |                          |                        |                         |                       | EDP NO.  |                                    |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|----------|------------------------------------|
| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS | UNCOATED | Ti-NAMITE-B<br>(TiB <sub>2</sub> ) |
| 5,7 mm                    | 0.2244            |                  |                               | 6,0                       | 66,0                     | 28,0                   | 20,0                    | 36,0                  | 64627    | 67627                              |
| 5,8 mm                    | 0.2283            |                  |                               | 6,0                       | 66,0                     | 28,0                   | 20,0                    | 36,0                  | 64628    | 67628                              |
| 5,9 mm                    | 0.2323            |                  |                               | 6,0                       | 66,0                     | 28,0                   | 20,0                    | 36,0                  | 64629    | 67629                              |
| 15/64                     | 0.2344            | 5.95             |                               | 6,0                       | 66,0                     | 28,0                   | 20,0                    | 36,0                  | 54609    | 54709                              |
| 6,0 mm                    | 0.2362            |                  | M7 X 1                        | 6,0                       | 66,0                     | 28,0                   | 20,0                    | 36,0                  | 64630    | 67630                              |
| 6,1 mm                    | 0.2402            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64631    | 67631                              |
| 6,2 mm                    | 0.2441            |                  | M7 X 0,75                     | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64632    | 67632                              |
| 6,3 mm                    | 0.2480            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64633    | 67633                              |
| 1/4                       | 0.2500            | 6.35             |                               | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 54610    | 54710                              |
| 6,4 mm                    | 0.2520            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64634    | 67634                              |
| 6,5 mm                    | 0.2559            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64635    | 67635                              |
| F                         | 0.2570            | 6.53             | 5/16-18                       | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 54611    | 54711                              |
| 6,6 mm                    | 0.2598            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64636    | 67636                              |
| 6,7 mm                    | 0.2638            |                  |                               | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64637    | 67637                              |
| 17/64                     | 0.2656            | 6.75             | 5/16-20                       | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 54612    | 54712                              |
| 6,8 mm                    | 0.2677            |                  | M8 X 1,25                     | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64638    | 67638                              |
| 6,9 mm                    | 0.2717            |                  | 5/16-24                       | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64639    | 67639                              |
| 7,0 mm                    | 0.2756            |                  | M8 X 1                        | 8,0                       | 79,0                     | 34,0                   | 24,0                    | 36,0                  | 64640    | 67640                              |
| 7,1 mm                    | 0.2795            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64641    | 67641                              |
| 9/32                      | 0.2812            | 7.14             | 5/16-32                       | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 54613    | 54713                              |
| 7,2 mm                    | 0.2835            |                  | M8 X 0,75                     | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64642    | 67642                              |
| 7,3 mm                    | 0.2874            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64643    | 67643                              |
| 7,4 mm                    | 0.2913            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64644    | 67644                              |
| 7,5 mm                    | 0.2953            |                  | M8 X 0,5                      | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64645    | 67645                              |
| 19/64                     | 0.2969            | 7.54             |                               | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 54614    | 54714                              |
| 7,6 mm                    | 0.2992            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64646    | 67646                              |
| 7,7 mm                    | 0.3031            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64647    | 67647                              |
| 7,8 mm                    | 0.3071            |                  | M9 X 1,25                     | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64648    | 67648                              |
| 7,9 mm                    | 0.3110            |                  |                               | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64649    | 67649                              |
| 5/16                      | 0.3125            | 7.94             | 3/8-16                        | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 54615    | 54715                              |
| 8,0 mm                    | 0.3150            |                  | M9 X 1                        | 8,0                       | 79,0                     | 41,0                   | 29,0                    | 36,0                  | 64650    | 67650                              |
| 8,1 mm                    | 0.3189            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64651    | 67651                              |
| 8,2 mm                    | 0.3228            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64652    | 67652                              |
| 8,3 mm                    | 0.3268            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64653    | 67653                              |
| 21/64                     | 0.3281            | 8.33             | 3/8-20                        | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 54616    | 54716                              |
| 8,4 mm                    | 0.3307            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64654    | 67654                              |
| Q                         | 0.3320            | 8.43             | 3/8-24                        | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 54617    | 54717                              |
| 8,5 mm                    | 0.3346            |                  | M10 X 1,5                     | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64655    | 67655                              |
| 8,6 mm                    | 0.3386            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64656    | 67656                              |
| 8,7 mm                    | 0.3425            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64657    | 67657                              |
| 11/32                     | 0.3438            | 8.73             | 3/8-32                        | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 54618    | 54718                              |
| 8,8 mm                    | 0.3465            |                  | M10 X 1,25                    | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64658    | 67658                              |
| 8,9 mm                    | 0.3504            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64659    | 67659                              |
| 9,0 mm                    | 0.3543            |                  | M10 X 1                       | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64660    | 67660                              |
| 9,1 mm                    | 0.3583            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 64661    | 67661                              |
| 23/64                     | 0.3594            | 9.13             |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  | 54619    | 54719                              |

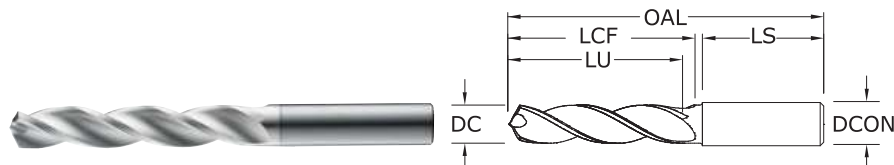
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3xD



## 131N 3xD

FRACTIONAL & METRIC SERIES

- Triple margin design improves hole stability and size control while providing superior finish, roundness and cylindricity
- Self-stabilizing pyramid point design stabilizes the drill on contact with the workpiece
- Open flute structure efficiently transports chips while maintaining strength at high feed rates
- Sculpted gash allows chips to easily flow away from the drill center
- Recommended for materials  $\leq 175$  Bhn ( $\leq 16$  HRC)

| inch & mm              |                   |                  |                               |                           |                          |                        |                         |                       |  | EDP NO.  |                                    |
|------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|--|----------|------------------------------------|
| CUTTING DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS |  | UNCOATED | Ti-NAMITE-B<br>(TiB <sub>2</sub> ) |
| 9,2 mm                 | 0.3622            |                  | M10 X 0,75                    | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64662    | 67662                              |
| 9,3 mm                 | 0.3661            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64663    | 67663                              |
| U                      | 0.3680            | 9.35             | 7/16-14                       | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 54620    | 54720                              |
| 9,4 mm                 | 0.3701            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64664    | 67664                              |
| 9,5 mm                 | 0.3740            |                  | M11 / M10 X 0,5               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64665    | 67665                              |
| 3/8                    | 0.3750            | 9.53             |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 54621    | 54721                              |
| 9,6 mm                 | 0.3780            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64666    | 67666                              |
| 9,7 mm                 | 0.3819            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64667    | 67667                              |
| 9,8 mm                 | 0.3858            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64668    | 67668                              |
| 9,9 mm                 | 0.3898            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64669    | 67669                              |
| 25/64                  | 0.3906            | 9.92             | 7/16-20                       | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 54622    | 54722                              |
| 10,0 mm                | 0.3937            |                  |                               | 10,0                      | 89,0                     | 47,0                   | 35,0                    | 40,0                  |  | 64670    | 67670                              |
| 10,1 mm                | 0.3976            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64671    | 67671                              |
| 10,2 mm                | 0.4016            |                  | M12 X 1,75                    | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64672    | 67672                              |
| 10,3 mm                | 0.4055            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64673    | 67673                              |
| 13/32                  | 0.4062            | 10.32            |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 54623    | 54723                              |
| 10,4 mm                | 0.4094            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64674    | 67674                              |
| 10,5 mm                | 0.4134            |                  | M12 X 1,5                     | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64675    | 67675                              |
| 10,6 mm                | 0.4173            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64676    | 67676                              |
| 10,7 mm                | 0.4213            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64677    | 67677                              |
| 27/64                  | 0.4219            | 10.72            | 1/2-13                        | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 54624    | 54724                              |
| 10,8 mm                | 0.4252            |                  | M12 X 1,25                    | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64678    | 67678                              |
| 10,9 mm                | 0.4291            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64679    | 67679                              |
| 11,0 mm                | 0.4331            |                  | M12 X 1                       | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64680    | 67680                              |
| 11,1 mm                | 0.4370            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64681    | 67681                              |
| 7/16                   | 0.4375            | 11.11            | 1/4-18NPT                     | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 54625    | 54725                              |
| 11,2 mm                | 0.4409            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64682    | 67682                              |
| 11,3 mm                | 0.4449            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64683    | 67683                              |
| 11,4 mm                | 0.4488            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64684    | 67684                              |
| 11,5 mm                | 0.4528            |                  | M12 X 0,5                     | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64685    | 67685                              |
| 11,6 mm                | 0.4567            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64686    | 67686                              |
| 11,7 mm                | 0.4606            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64687    | 67687                              |
| 11,8 mm                | 0.4646            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64688    | 67688                              |
| 11,9 mm                | 0.4685            |                  |                               | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64689    | 67689                              |
| 15/32                  | 0.4688            | 11.91            | 1/2-28                        | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 54626    | 54726                              |
| 12,0 mm                | 0.4724            |                  | M14 X 2                       | 12,0                      | 102,0                    | 55,0                   | 40,0                    | 45,0                  |  | 64690    | 67690                              |

continued on next page

### TOLERANCES (inch)

$\leq .1181$  DIAMETER

DC =  $+0.0008/+0.0047$

DCON =  $h_6$

$>.1181-.2362$  DIAMETER

DC =  $+0.0016/+0.0063$

DCON =  $h_6$

$>.2362-.3937$  DIAMETER

DC =  $+0.0024/+0.0083$

DCON =  $h_6$

$>.3937-.7087$  DIAMETER

DC =  $+0.0028/+0.0098$

DCON =  $h_6$

$>.7087-1.1811$  DIAMETER

DC =  $+0.0031/+0.0114$

DCON =  $h_6$

### TOLERANCES (mm)

$\leq 3$  DIAMETER

DC =  $+0.002/+0.012$

DCON =  $h_6$

$>3-6$  DIAMETER

DC =  $+0.004/+0.016$

DCON =  $h_6$

$>6-10$  DIAMETER

DC =  $+0.006/+0.021$

DCON =  $h_6$

$>10-18$  DIAMETER

DC =  $+0.007/+0.025$

DCON =  $h_6$

NON-FERROUS

PLASTICS/COMPOSITES

For patent  
information visit  
[www.ksptpatents.com](http://www.ksptpatents.com)

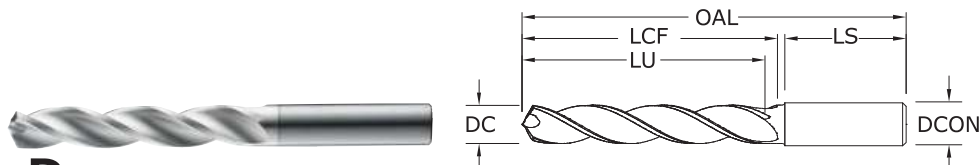
**131N 3xD**  
FRACTIONAL & METRIC SERIES

| inch & mm                 |                   |                  |                               |                           |                          |                        |                         |                       |  | EDP NO.  |                                    |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|--|----------|------------------------------------|
| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS |  | UNCOATED | Ti-NAMITE-B<br>(TiB <sub>2</sub> ) |
| 31/64                     | 0.4844            | 12.30            | 9/16-12                       | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 54627    | 54727                              |
| 12,5 mm                   | 0.4921            |                  | M14 X 1,5                     | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 64691    | 67691                              |
| 1/2                       | 0.5000            | 12.70            |                               | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 54628    | 54728                              |
| 12,8 mm                   | 0.5039            |                  | M14 X 1,25                    | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 64692    | 67692                              |
| 13,0 mm                   | 0.5118            |                  | M14 X 1                       | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 64693    | 67693                              |
| 33/64                     | 0.5156            | 13.10            | 9/16-18                       | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 54629    | 54729                              |
| 13,5 mm                   | 0.5315            |                  | 5/8-11                        | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 64694    | 67694                              |
| 13,8 mm                   | 0.5433            |                  |                               | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 64695    | 67695                              |
| 14,0 mm                   | 0.5512            |                  | M16 X 2                       | 14,0                      | 107,0                    | 60,0                   | 43,0                    | 45,0                  |  | 64696    | 67696                              |
| 9/16                      | 0.5625            | 14.29            |                               | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 54630    | 54730                              |
| 14,5 mm                   | 0.5709            |                  | M16 X 1,5                     | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 64697    | 67697                              |
| 37/64                     | 0.5781            | 14.68            | 5/8-18                        | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 54631    | 54731                              |
| 14,8 mm                   | 0.5827            |                  |                               | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 64698    | 67698                              |
| 15,0 mm                   | 0.5906            |                  | M16 X 1                       | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 64699    | 67699                              |
| 15,5 mm                   | 0.6102            |                  | M18 X 2,5                     | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 64700    | 67700                              |
| 15,8 mm                   | 0.6220            |                  |                               | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 64701    | 67701                              |
| 5/8                       | 0.6250            | 15.88            | 11/16-16                      | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 54632    | 54732                              |
| 16,0 mm                   | 0.6299            |                  |                               | 16,0                      | 115,0                    | 65,0                   | 45,0                    | 48,0                  |  | 64702    | 67702                              |
| 21/32                     | 0.6562            | 16.67            | 3/4-10                        | 18,0                      | 123,0                    | 73,0                   | 51,0                    | 48,0                  |  | 54633    | 54733                              |
| 11/16                     | 0.6875            | 17.46            | 3/4-16                        | 18,0                      | 123,0                    | 73,0                   | 51,0                    | 48,0                  |  | 54634    | 54734                              |
| 3/4                       | 0.7500            | 19.05            | 13/16-16                      | 20,0                      | 131,0                    | 79,0                   | 55,0                    | 50,0                  |  | 54635    | 54735                              |

CONTINUED



5xD



## 131N 5xD

FRACTIONAL & METRIC SERIES

- Triple margin design improves hole stability and size control while providing superior finish, roundness and cylindricity
- Self-stabilizing pyramid point design stabilizes the drill on contact with the workpiece
- Open flute structure efficiently transports chips while maintaining strength at high feed rates
- Sculpted gash allows chips to easily flow away from the drill center
- Recommended for materials  $\leq 175$  Bhn ( $\leq 16$  HRC)

| inch & mm              |                |               |                            |                        |                       |                     |                      |                    |  | EDP NO.  |                                 |
|------------------------|----------------|---------------|----------------------------|------------------------|-----------------------|---------------------|----------------------|--------------------|--|----------|---------------------------------|
| CUTTING DIAMETER<br>DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE<br>REFERENCE ONLY | SHANK DIAMETER<br>DCON | OVERALL LENGTH<br>OAL | FLUTE LENGTH<br>LCF | CLEARED LENGTH<br>LU | SHANK LENGTH<br>LS |  | UNCOATED | Ti-NAMITE-B (TiB <sub>2</sub> ) |
| 3,0 mm                 | 0.1181         |               |                            | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 65000    | 64800                           |
| 3,1 mm                 | 0.1220         |               |                            | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 65001    | 64801                           |
| 1/8                    | 0.1250         | 3.18          |                            | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 55000    | 54800                           |
| 3,2 mm                 | 0.1260         |               | M3,5 X 0,35                | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 65002    | 64802                           |
| 3,3 mm                 | 0.1299         |               | M4 X 0,7                   | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 65003    | 64803                           |
| 3,4 mm                 | 0.1339         |               |                            | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 65004    | 64804                           |
| #29                    | 0.1360         | 3.45          | 8-32,8-36                  | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 55001    | 54801                           |
| 3,5 mm                 | 0.1378         |               | M4 X 0,5                   | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 65005    | 64805                           |
| 9/64                   | 0.1406         | 3.57          |                            | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 55002    | 54802                           |
| 3,6 mm                 | 0.1417         |               | M4 X 0,35                  | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 65006    | 64806                           |
| 3,7 mm                 | 0.1457         |               | M4,5 X 0,75                | 6,0                    | 66,0                  | 28,0                | 23,0                 | 36,0               |  | 65007    | 64807                           |
| 3,8 mm                 | 0.1496         |               | 10-24                      | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65008    | 64808                           |
| 3,9 mm                 | 0.1535         |               |                            | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65009    | 64809                           |
| 5/32                   | 0.1562         | 3.97          |                            | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 55003    | 54803                           |
| 4,0 mm                 | 0.1575         |               | M4,5 X 0,5                 | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65010    | 64810                           |
| #21                    | 0.1590         | 4.04          | 10-32                      | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 55004    | 54804                           |
| 4,1 mm                 | 0.1614         |               |                            | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65011    | 64811                           |
| 4,2 mm                 | 0.1654         |               | M5 / M5 X 0,75             | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65012    | 64812                           |
| 4,3 mm                 | 0.1693         |               |                            | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65013    | 64813                           |
| 11/64                  | 0.1719         | 4.37          |                            | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 55005    | 54805                           |
| 4,4 mm                 | 0.1732         |               | 12-24                      | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65014    | 64814                           |
| 4,5 mm                 | 0.1772         |               | M5 X 0,5                   | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65015    | 64815                           |
| 4,6 mm                 | 0.1811         |               | 12-28                      | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65016    | 64816                           |
| 4,7 mm                 | 0.1850         |               | 12-32                      | 6,0                    | 74,0                  | 36,0                | 29,0                 | 36,0               |  | 65017    | 64817                           |
| 3/16                   | 0.1875         | 4.76          |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 55006    | 54806                           |
| 4,8 mm                 | 0.1890         |               | 7/32-32                    | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65018    | 64818                           |
| 4,9 mm                 | 0.1929         |               |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65019    | 64819                           |
| 5,0 mm                 | 0.1969         |               | M6 X 1                     | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65020    | 64820                           |
| 5,1 mm                 | 0.2008         |               | 1/4-20                     | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65021    | 64821                           |
| 13/64                  | 0.2031         | 5.16          |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 55007    | 54807                           |
| 5,2 mm                 | 0.2047         |               | M6 X 0,75                  | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65022    | 64822                           |
| 5,3 mm                 | 0.2087         |               |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65023    | 64823                           |
| 5,4 mm                 | 0.2126         |               |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65024    | 64824                           |
| 5,5 mm                 | 0.2165         |               | M6 X 0,5                   | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65025    | 64825                           |
| 7/32                   | 0.2188         | 5.56          | 1/4-32                     | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 55008    | 54808                           |
| 5,6 mm                 | 0.2205         |               |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65026    | 64826                           |
| 5,7 mm                 | 0.2244         |               |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65027    | 64827                           |
| 5,8 mm                 | 0.2283         |               |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65028    | 64828                           |
| 5,9 mm                 | 0.2323         |               |                            | 6,0                    | 82,0                  | 44,0                | 35,0                 | 36,0               |  | 65029    | 64829                           |

continued on next page

### TOLERANCES (inch)

#### ≤.1181 DIAMETER

DC =  $\pm 0.0008/\pm 0.0047$

DCON =  $h_6$

#### >.1181-.2362 DIAMETER

DC =  $\pm 0.0016/\pm 0.0063$

DCON =  $h_6$

#### >.2362-.3937 DIAMETER

DC =  $\pm 0.0024/\pm 0.0083$

DCON =  $h_6$

#### >.3937-.7087 DIAMETER

DC =  $\pm 0.0028/\pm 0.0098$

DCON =  $h_6$

#### >.7087-1.1811 DIAMETER

DC =  $\pm 0.0031/\pm 0.0114$

DCON =  $h_6$

### TOLERANCES (mm)

#### ≤3 DIAMETER

DC =  $\pm 0.002/\pm 0.012$

DCON =  $h_6$

#### >3-6 DIAMETER

DC =  $\pm 0.004/\pm 0.016$

DCON =  $h_6$

#### >6-10 DIAMETER

DC =  $\pm 0.006/\pm 0.021$

DCON =  $h_6$

#### >10-18 DIAMETER

DC =  $\pm 0.007/\pm 0.025$

DCON =  $h_6$

NON-FERROUS

PLASTICS/COMPOSITES

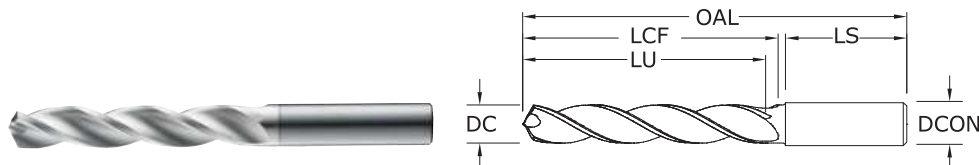
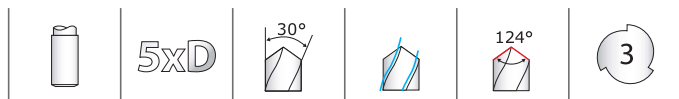
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**131N 5xD**  
FRACTIONAL & METRIC SERIES

| inch & mm                 |                   |                  |                               |                           |                          |                        |                         |                       | EDP NO.  |                                    |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|----------|------------------------------------|
| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS | UNCOATED | Ti-NAMITE-B<br>(TiB <sub>2</sub> ) |
| 15/64                     | 0.2344            | 5.95             |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 55009    | 54809                              |
| 6,0 mm                    | 0.2362            |                  | M7 X 1                        | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 65030    | 64830                              |
| 6,1 mm                    | 0.2402            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65031    | 64831                              |
| 6,2 mm                    | 0.2441            |                  | M7 X 0,75                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65032    | 64832                              |
| 6,3 mm                    | 0.2480            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65033    | 64833                              |
| 1/4                       | 0.2500            | 6.35             |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55010    | 54810                              |
| 6,4 mm                    | 0.2520            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65034    | 64834                              |
| 6,5 mm                    | 0.2559            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65035    | 64835                              |
| F                         | 0.2570            | 6.53             | 5/16-18                       | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55011    | 54811                              |
| 6,6 mm                    | 0.2598            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65036    | 64836                              |
| 6,7 mm                    | 0.2638            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65037    | 64837                              |
| 17/64                     | 0.2656            | 6.75             | 5/16-20                       | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55012    | 54812                              |
| 6,8 mm                    | 0.2677            |                  | M8 X 1,25                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65038    | 64838                              |
| 6,9 mm                    | 0.2717            |                  | 5/16-24                       | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65039    | 64839                              |
| 7,0 mm                    | 0.2756            |                  | M8 X 1                        | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65040    | 64840                              |
| 7,1 mm                    | 0.2795            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65041    | 64841                              |
| 9/32                      | 0.2812            | 7.14             | 5/16-32                       | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55013    | 54813                              |
| 7,2 mm                    | 0.2835            |                  | M8 X 0,75                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65042    | 64842                              |
| 7,3 mm                    | 0.2874            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65043    | 64843                              |
| 7,4 mm                    | 0.2913            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65044    | 64844                              |
| 7,5 mm                    | 0.2953            |                  | M8 X 0,5                      | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65045    | 64845                              |
| 19/64                     | 0.2969            | 7.54             |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55014    | 54814                              |
| 7,6 mm                    | 0.2992            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65046    | 64846                              |
| 7,7 mm                    | 0.3031            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65047    | 64847                              |
| 7,8 mm                    | 0.3071            |                  | M9 X 1,25                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65048    | 64848                              |
| 7,9 mm                    | 0.3110            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65049    | 64849                              |
| 5/16                      | 0.3125            | 7.94             | 3/8-16                        | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55015    | 54815                              |
| 8,0 mm                    | 0.3150            |                  | M9 X 1                        | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65050    | 64850                              |
| 8,1 mm                    | 0.3189            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65051    | 64851                              |
| 8,2 mm                    | 0.3228            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65052    | 64852                              |
| 8,3 mm                    | 0.3268            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65053    | 64853                              |
| 21/64                     | 0.3281            | 8.33             | 3/8-20                        | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55016    | 54816                              |
| 8,4 mm                    | 0.3307            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65054    | 64854                              |
| Q                         | 0.3320            | 8.43             | 3/8-24                        | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55017    | 54817                              |
| 8,5 mm                    | 0.3346            |                  | M10 X 1,5                     | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65055    | 64855                              |
| 8,6 mm                    | 0.3386            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65056    | 64856                              |
| 8,7 mm                    | 0.3425            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65057    | 64857                              |
| 11/32                     | 0.3438            | 8.73             | 3/8-32                        | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55018    | 54818                              |
| 8,8 mm                    | 0.3465            |                  | M10 X 1,25                    | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65058    | 64858                              |
| 8,9 mm                    | 0.3504            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65059    | 64859                              |
| 9,0 mm                    | 0.3543            |                  | M10 X 1                       | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65060    | 64860                              |
| 9,1 mm                    | 0.3583            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65061    | 64861                              |
| 23/64                     | 0.3594            | 9.13             |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55019    | 54819                              |
| 9,2 mm                    | 0.3622            |                  | M10 X 0,75                    | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65062    | 64862                              |
| 9,3 mm                    | 0.3661            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65063    | 64863                              |
| U                         | 0.3680            | 9.35             | 7/16-14                       | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55020    | 54820                              |

*continued on next page*

**CONTINUED**



## 131N 5xD

### FRACTIONAL & METRIC SERIES

- Triple margin design improves hole stability and size control while providing superior finish, roundness and cylindricity
- Self-stabilizing pyramid point design stabilizes the drill on contact with the workpiece
- Open flute structure efficiently transports chips while maintaining strength at high feed rates
- Sculpted gash allows chips to easily flow away from the drill center
- Recommended for materials  $\leq 175$  Bhn ( $\leq 16$  HRC)

| inch & mm              |                |               |                            |                        |                       |                     |                      |                    |  | EDP NO.  |                                 |
|------------------------|----------------|---------------|----------------------------|------------------------|-----------------------|---------------------|----------------------|--------------------|--|----------|---------------------------------|
| CUTTING DIAMETER<br>DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE<br>REFERENCE ONLY | SHANK DIAMETER<br>DCON | OVERALL LENGTH<br>OAL | FLUTE LENGTH<br>LCF | CLEARED LENGTH<br>LU | SHANK LENGTH<br>LS |  | UNCOATED | Ti-NAMITE-B (TiB <sub>2</sub> ) |
| 9,4 mm                 | 0.3701         |               |                            | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 65064    | 64864                           |
| 9,5 mm                 | 0.3740         |               | M11 / M10 X 0,5            | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 65065    | 64865                           |
| 3/8                    | 0.3750         | 9.53          |                            | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 55021    | 54821                           |
| 9,6 mm                 | 0.3780         |               |                            | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 65066    | 64866                           |
| 9,7 mm                 | 0.3819         |               |                            | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 65067    | 64867                           |
| 9,8 mm                 | 0.3858         |               |                            | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 65068    | 64868                           |
| 9,9 mm                 | 0.3898         |               |                            | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 65069    | 64869                           |
| 25/64                  | 0.3906         | 9.92          | 7/16-20                    | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 55022    | 54822                           |
| 10,0 mm                | 0.3937         |               |                            | 10,0                   | 103,0                 | 61,0                | 49,0                 | 40,0               |  | 65070    | 64870                           |
| 10,1 mm                | 0.3976         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65071    | 64871                           |
| 10,2 mm                | 0.4016         |               | M12 X 1,75                 | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65072    | 64872                           |
| 10,3 mm                | 0.4055         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65073    | 64873                           |
| 13/32                  | 0.4062         | 10.32         |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 55023    | 54823                           |
| 10,4 mm                | 0.4094         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65074    | 64874                           |
| 10,5 mm                | 0.4134         |               | M12 X 1,5                  | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65075    | 64875                           |
| 10,6 mm                | 0.4173         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65076    | 64876                           |
| 10,7 mm                | 0.4213         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65077    | 64877                           |
| 27/64                  | 0.4219         | 10.72         | 1/2-13                     | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 55024    | 54824                           |
| 10,8 mm                | 0.4252         |               | M12 X 1,25                 | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65078    | 64878                           |
| 10,9 mm                | 0.4291         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65079    | 64879                           |
| 11,0 mm                | 0.4331         |               | M12 X 1                    | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65080    | 64880                           |
| 11,1 mm                | 0.4370         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65081    | 64881                           |
| 7/16                   | 0.4375         | 11.11         | 1/4-18NPT                  | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 55025    | 54825                           |
| 11,2 mm                | 0.4409         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65082    | 64882                           |
| 11,3 mm                | 0.4449         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65083    | 64883                           |
| 11,4 mm                | 0.4488         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65084    | 64884                           |
| 11,5 mm                | 0.4528         |               | M12 X 0,5                  | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65085    | 64885                           |
| 11,6 mm                | 0.4567         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65086    | 64886                           |
| 11,7 mm                | 0.4606         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65087    | 64887                           |
| 11,8 mm                | 0.4646         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65088    | 64888                           |
| 11,9 mm                | 0.4685         |               |                            | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65089    | 64889                           |
| 15/32                  | 0.4688         | 11.91         | 1/2-28                     | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 55026    | 54826                           |
| 12,0 mm                | 0.4724         |               | M14 X 2                    | 12,0                   | 118,0                 | 71,0                | 56,0                 | 45,0               |  | 65090    | 64890                           |
| 31/64                  | 0.4844         | 12.30         | 9/16-12                    | 14,0                   | 124,0                 | 77,0                | 60,0                 | 45,0               |  | 55027    | 54827                           |

continued on next page

### TOLERANCES (inch)

#### ≤.1181 DIAMETER

DC =  $\pm 0.0008/\pm 0.0047$

DCON =  $h_6$

#### >.1181-.2362 DIAMETER

DC =  $\pm 0.0016/\pm 0.0063$

DCON =  $h_6$

#### >.2362-.3937 DIAMETER

DC =  $\pm 0.0024/\pm 0.0083$

DCON =  $h_6$

#### >.3937-.7087 DIAMETER

DC =  $\pm 0.0028/\pm 0.0098$

DCON =  $h_6$

#### >.7087-1.1811 DIAMETER

DC =  $\pm 0.0031/\pm 0.0114$

DCON =  $h_6$

### TOLERANCES (mm)

#### ≤3 DIAMETER

DC =  $\pm 0.002/\pm 0.012$

DCON =  $h_6$

#### >3-6 DIAMETER

DC =  $\pm 0.004/\pm 0.016$

DCON =  $h_6$

#### >6-10 DIAMETER

DC =  $\pm 0.006/\pm 0.021$

DCON =  $h_6$

#### >10-18 DIAMETER

DC =  $\pm 0.007/\pm 0.025$

DCON =  $h_6$

NON-FERROUS

PLASTICS/COMPOSITES

For patent  
information visit  
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**131N 5xD**  
FRACTIONAL & METRIC SERIES

| inch & mm                 |                   |                  |                               |                           |                          |                        |                         |                       | EDP NO.  |                                    |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|----------|------------------------------------|
| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS | UNCOATED | Ti-NAMITE-B<br>(TiB <sub>2</sub> ) |
| 12,5 mm                   | 0.4921            |                  | M14 X 1,5                     | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65091    | 64891                              |
| 1/2                       | 0.5000            | 12.70            |                               | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 55028    | 54828                              |
| 12,8 mm                   | 0.5039            |                  | M14 X 1,25                    | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65092    | 64892                              |
| 13,0 mm                   | 0.5118            |                  | M14 X 1                       | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65093    | 64893                              |
| 33/64                     | 0.5156            | 13.10            | 9/16-18                       | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 55029    | 54829                              |
| 13,5 mm                   | 0.5315            |                  | 5/8-11                        | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65094    | 64894                              |
| 13,8 mm                   | 0.5433            |                  |                               | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65095    | 64895                              |
| 14,0 mm                   | 0.5512            |                  | M16 X 2                       | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65096    | 64896                              |
| 9/16                      | 0.5625            | 14.29            |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 55030    | 54830                              |
| 14,5 mm                   | 0.5709            |                  | M16 X 1,5                     | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65097    | 64897                              |
| 37/64                     | 0.5781            | 14.68            | 5/8-18                        | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 55031    | 54831                              |
| 14,8 mm                   | 0.5827            |                  |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65098    | 64898                              |
| 15,0 mm                   | 0.5906            |                  | M16 X 1                       | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65099    | 64899                              |
| 15,5 mm                   | 0.6102            |                  | M18 X 2,5                     | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65100    | 64900                              |
| 15,8 mm                   | 0.6220            |                  |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65101    | 64901                              |
| 5/8                       | 0.6250            | 15.88            | 11/16-16                      | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 55032    | 54832                              |
| 16,0 mm                   | 0.6299            |                  |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65102    | 64902                              |
| 21/32                     | 0.6562            | 16.67            | 3/4-10                        | 18,0                      | 143,0                    | 93,0                   | 71,0                    | 48,0                  | 55033    | 54833                              |
| 11/16                     | 0.6875            | 17.46            | 3/4-16                        | 18,0                      | 143,0                    | 93,0                   | 71,0                    | 48,0                  | 55034    | 54834                              |
| 3/4                       | 0.7500            | 19.05            | 13/16-16                      | 20,0                      | 153,0                    | 101,0                  | 77,0                    | 50,0                  | 55035    | 54835                              |

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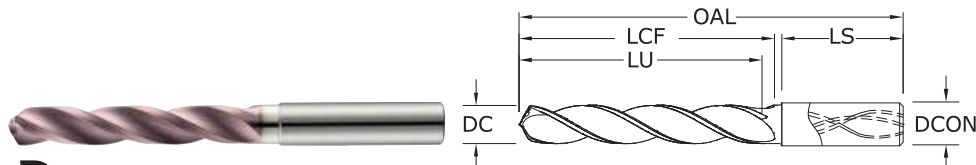
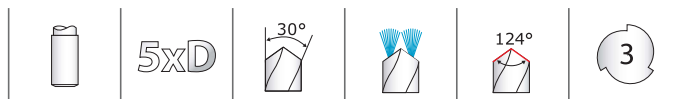


| Series 131N<br>3D & 5D<br>Fractional |                                                           |                             |           | DC • in    |        |        |        |        |        |        |        |
|--------------------------------------|-----------------------------------------------------------|-----------------------------|-----------|------------|--------|--------|--------|--------|--------|--------|--------|
| Hardness                             |                                                           | Vc<br>(sfm)                 |           | 1/8        | 3/16   | 1/4    | 3/8    | 1/2    | 5/8    | 3/4    |        |
| N                                    | ALUMINUM ALLOYS<br>< 12% SI<br>6061, 2024, 7075           | ≤ 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    |
|                                      | ALUMINUM ALLOYS<br>> 12% SI<br>A356.0, 390.0, 319.0       | ≤ 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    |
|                                      | COPPER ALLOYS<br>Alum Bronze, Muntz<br>Brass, Navel Brass | ≤ 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     |
|                                      | PLASTICS<br>Acrylic, PVC,<br>Polypropylene                |                             | 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     |

Bhn (Brinell)      HRc (Rockwell C)      HRb (Rockwell B)  
 $\text{rpm} = \text{Vc} \times 3.82 / \text{DC}$   
 $\text{ipm} = \text{Fr} \times \text{rpm}$   
 reduce speed and feed for materials harder than listed  
 refer to the SGS Tool Wizard® for complete technical information ([www.kyocera-sgstool.com](http://www.kyocera-sgstool.com))

| Series 131N<br>3D & 5D<br>Metric           |                                                           |               | DC • mm       |       |       |       |       |       |       |       |
|--------------------------------------------|-----------------------------------------------------------|---------------|---------------|-------|-------|-------|-------|-------|-------|-------|
| Hardness                                   | Vc<br>(m/min)                                             |               | 3             | 6     | 8     | 10    | 12    | 14    | 16    |       |
| N                                          | ALUMINUM ALLOYS<br>< 12% SI<br>6061, 2024, 7075           | 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       | 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, Navel Brass | 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 | 137                                                       | RPM           | 14541         | 7271  | 5453  | 4362  | 3635  | 3116  | 2726  |       |
|                                            | (110-165)                                                 | 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   |       |

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



## 141K 5xD

### FRACTIONAL & METRIC SERIES

- Triple margin design improves hole stability and size control while providing superior finish, roundness and cylindricity
- Self-stabilizing pyramid point design stabilizes the drill on contact with the workpiece
- Open flute structure efficiently transports chips while maintaining strength at high feed rates
- Sculpted gash allows chips to easily flow away from the drill center
- Recommended for materials ≤ 400 Bhn (≤ 43 HRC)

| inch & mm           |                |               |                         |                     |                    |                  |                   |                 | EDP NO.          |
|---------------------|----------------|---------------|-------------------------|---------------------|--------------------|------------------|-------------------|-----------------|------------------|
| CUTTING DIAMETER DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE REFERENCE ONLY | SHANK DIAMETER DCON | OVERALL LENGTH OAL | FLUTE LENGTH LCF | CLEARED LENGTH LU | SHANK LENGTH LS | Ti-NAMITE-M (TM) |
| 3,0 mm              | 0.1181         |               |                         | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 65160            |
| 3,1 mm              | 0.1220         |               |                         | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 65161            |
| 1/8                 | 0.1250         | 3.18          |                         | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 55160            |
| 3,2 mm              | 0.1260         |               | M3,5 X 0,35             | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 65162            |
| 3,3 mm              | 0.1299         |               | M4 X 0,7                | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 65163            |
| 3,4 mm              | 0.1339         |               |                         | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 65164            |
| #29                 | 0.1360         | 3.45          | 8-32,8-36               | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 55161            |
| 3,5 mm              | 0.1378         |               | M4 X 0,5                | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 65165            |
| 9/64                | 0.1406         | 3.57          |                         | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 55162            |
| 3,6 mm              | 0.1417         |               | M4 X 0,35               | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 65166            |
| 3,7 mm              | 0.1457         |               | M4,5 X 0,75             | 6,0                 | 66,0               | 28,0             | 23,0              | 36,0            | 65167            |
| 3,8 mm              | 0.1496         |               | 10-24                   | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65168            |
| 3,9 mm              | 0.1535         |               |                         | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65169            |
| 5/32                | 0.1562         | 3.97          |                         | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 55163            |
| 4,0 mm              | 0.1575         |               | M4,5 X 0,5              | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65170            |
| #21                 | 0.1590         | 4.04          | 10-32                   | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 55164            |
| 4,1 mm              | 0.1614         |               |                         | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65171            |
| 4,2 mm              | 0.1654         |               | M5 / M5 x 0,75          | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65172            |
| 4,3 mm              | 0.1693         |               |                         | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65173            |
| 11/64               | 0.1719         | 4.37          |                         | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 55165            |
| 4,4 mm              | 0.1732         |               | 12-24                   | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65174            |
| 4,5 mm              | 0.1772         |               | M5 X 0,5                | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65175            |
| 4,6 mm              | 0.1811         |               | 12-28                   | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65176            |
| 4,7 mm              | 0.1850         |               | 12-32                   | 6,0                 | 74,0               | 36,0             | 29,0              | 36,0            | 65177            |
| 3/16                | 0.1875         | 4.76          |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 55166            |
| 4,8 mm              | 0.1890         |               | 7/32-32                 | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65178            |
| 4,9 mm              | 0.1929         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65179            |
| 5,0 mm              | 0.1969         |               | M6 X 1                  | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65180            |
| 5,1 mm              | 0.2008         |               | 1/4-20                  | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65181            |
| 13/64               | 0.2031         | 5.16          |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 55167            |
| 5,2 mm              | 0.2047         |               | M6 X 0,75               | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65182            |
| 5,3 mm              | 0.2087         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65183            |
| 5,4 mm              | 0.2126         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65184            |
| 5,5 mm              | 0.2165         |               | M6 X 0,5                | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65185            |
| 7/32                | 0.2188         | 5.56          | 1/4-32                  | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 55168            |
| 5,6 mm              | 0.2205         |               |                         | 6,0                 | 82,0               | 44,0             | 35,0              | 36,0            | 65186            |

continued on next page

### TOLERANCES (inch)

#### ≤.1181 DIAMETER

DC = +.00008/+0.00047

DCON = h<sub>6</sub>

#### >.1181-.2362 DIAMETER

DC = +.00016/+0.00063

DCON = h<sub>6</sub>

#### >.2362-.3937 DIAMETER

DC = +.00024/+0.00083

DCON = h<sub>6</sub>

#### >.3937-.7087 DIAMETER

DC = +.00028/+0.00098

DCON = h<sub>6</sub>

#### >.7087-1.1811 DIAMETER

DC = +.00031/+0.00114

DCON = h<sub>6</sub>

### TOLERANCES (mm)

#### ≤3 DIAMETER

DC = +0,002/+0,012

DCON = h<sub>6</sub>

#### >3-6 DIAMETER

DC = +0,004/+0,016

DCON = h<sub>6</sub>

#### >6-10 DIAMETER

DC = +0,006/+0,021

DCON = h<sub>6</sub>

#### >10-18 DIAMETER

DC = +0,007/+0,025

DCON = h<sub>6</sub>

CAST IRON

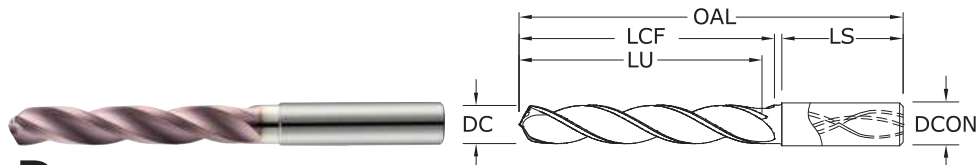
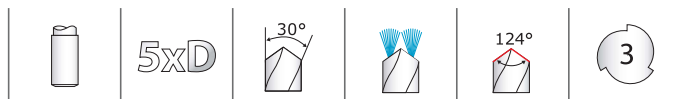
For patent information visit  
[www.ksptpatents.com](http://www.ksptpatents.com)

**141K 5xD**  
FRACTIONAL & METRIC SERIES

| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | inch & mm                     |                           |                          |                        |                         |                       | EDP NO.<br>Ti-NAMITE-M<br>(TM) |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|--------------------------------|
|                           |                   |                  | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS |                                |
| 5,7 mm                    | 0.2244            |                  |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 65187                          |
| 5,8 mm                    | 0.2283            |                  |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 65188                          |
| 5,9 mm                    | 0.2323            |                  |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 65189                          |
| 15/64                     | 0.2344            | 5.95             |                               | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 55169                          |
| 6,0 mm                    | 0.2362            |                  | M7 X 1                        | 6,0                       | 82,0                     | 44,0                   | 35,0                    | 36,0                  | 65190                          |
| 6,1 mm                    | 0.2402            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65191                          |
| 6,2 mm                    | 0.2441            |                  | M7 X 0,75                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65192                          |
| 6,3 mm                    | 0.2480            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65193                          |
| 1/4                       | 0.2500            | 6.35             |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55170                          |
| 6,4 mm                    | 0.2520            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65194                          |
| 6,5 mm                    | 0.2559            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65195                          |
| F                         | 0.2570            | 6.53             | 5/16-18                       | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55171                          |
| 6,6 mm                    | 0.2598            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65196                          |
| 6,7 mm                    | 0.2638            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65197                          |
| 17/64                     | 0.2656            | 6.75             | 5/16-20                       | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55172                          |
| 6,8 mm                    | 0.2677            |                  | M8 X 1,25                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65198                          |
| 6,9 mm                    | 0.2717            |                  | 5/16-24                       | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65199                          |
| 7,0 mm                    | 0.2756            |                  | M8 X 1                        | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65200                          |
| 7,1 mm                    | 0.2795            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65201                          |
| 9/32                      | 0.2812            | 7.14             | 5/16-32                       | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55173                          |
| 7,2 mm                    | 0.2835            |                  | M8 X 0,75                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65202                          |
| 7,3 mm                    | 0.2874            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65203                          |
| 7,4 mm                    | 0.2913            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65204                          |
| 7,5 mm                    | 0.2953            |                  | M8 X 0,5                      | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65205                          |
| 19/64                     | 0.2969            | 7.54             |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55174                          |
| 7,6 mm                    | 0.2992            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65206                          |
| 7,7 mm                    | 0.3031            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65207                          |
| 7,8 mm                    | 0.3071            |                  | M9 X 1,25                     | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65208                          |
| 7,9 mm                    | 0.3110            |                  |                               | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65209                          |
| 5/16                      | 0.3125            | 7.94             | 3/8-16                        | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 55175                          |
| 8,0 mm                    | 0.3150            |                  | M9 X 1                        | 8,0                       | 91,0                     | 53,0                   | 43,0                    | 36,0                  | 65210                          |
| 8,1 mm                    | 0.3189            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65211                          |
| 8,2 mm                    | 0.3228            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65212                          |
| 8,3 mm                    | 0.3268            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65213                          |
| 21/64                     | 0.3281            | 8.33             | 3/8-20                        | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55176                          |
| 8,4 mm                    | 0.3307            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65214                          |
| Q                         | 0.3320            | 8.43             | 3/8-24                        | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55177                          |
| 8,5 mm                    | 0.3346            |                  | M10 X 1,5                     | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65215                          |
| 8,6 mm                    | 0.3386            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65216                          |
| 8,7 mm                    | 0.3425            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65217                          |
| 11/32                     | 0.3438            | 8.73             | 3/8-32                        | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55178                          |
| 8,8 mm                    | 0.3465            |                  | M10 X 1,25                    | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65218                          |
| 8,9 mm                    | 0.3504            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65219                          |
| 9,0 mm                    | 0.3543            |                  | M10 X 1                       | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65220                          |
| 9,1 mm                    | 0.3583            |                  |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 65221                          |
| 23/64                     | 0.3594            | 9.13             |                               | 10,0                      | 103,0                    | 61,0                   | 49,0                    | 40,0                  | 55179                          |

continued on next page

CONTINUED



## 141K 5xD

### FRACTIONAL & METRIC SERIES

- Triple margin design improves hole stability and size control while providing superior finish, roundness and cylindricity
- Self-stabilizing pyramid point design stabilizes the drill on contact with the workpiece
- Open flute structure efficiently transports chips while maintaining strength at high feed rates
- Sculpted gash allows chips to easily flow away from the drill center
- Recommended for materials  $\leq 400$  Bhn ( $\leq 43$  HRC)

| inch & mm           |                |               |                         |                     |                    |                  |                   |                 | EDP NO.          |
|---------------------|----------------|---------------|-------------------------|---------------------|--------------------|------------------|-------------------|-----------------|------------------|
| CUTTING DIAMETER DC | DECIMAL EQUIV. | METRIC EQUIV. | TAP SIZE REFERENCE ONLY | SHANK DIAMETER DCON | OVERALL LENGTH OAL | FLUTE LENGTH LCF | CLEARED LENGTH LU | SHANK LENGTH LS | Ti-NAMITE-M (TM) |
| 9,2 mm              | 0.3622         |               | M10 X 0,75              | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65222            |
| 9,3 mm              | 0.3661         |               |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65223            |
| U                   | 0.3680         | 9.35          | 7/16-14                 | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 55180            |
| 9,4 mm              | 0.3701         |               |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65224            |
| 9,5 mm              | 0.3740         |               | M11 / M10 X 0,5         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65225            |
| 3/8                 | 0.3750         | 9.53          |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 55181            |
| 9,6 mm              | 0.3780         |               |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65226            |
| 9,7 mm              | 0.3819         |               |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65227            |
| 9,8 mm              | 0.3858         |               |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65228            |
| 9,9 mm              | 0.3898         |               |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65229            |
| 25/64               | 0.3906         | 9.92          | 7/16-20                 | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 55182            |
| 10,0 mm             | 0.3937         |               |                         | 10,0                | 103,0              | 61,0             | 49,0              | 40,0            | 65230            |
| 10,1 mm             | 0.3976         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65231            |
| 10,2 mm             | 0.4016         |               | M12 X 1,75              | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65232            |
| 10,3 mm             | 0.4055         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65233            |
| 13/32               | 0.4062         | 10.32         |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 55183            |
| 10,4 mm             | 0.4094         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65234            |
| 10,5 mm             | 0.4134         |               | M12 X 1,5               | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65235            |
| 10,6 mm             | 0.4173         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65236            |
| 10,7 mm             | 0.4213         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65237            |
| 27/64               | 0.4219         | 10.72         | 1/2-13                  | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 55184            |
| 10,8 mm             | 0.4252         |               | M12 X 1,25              | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65238            |
| 10,9 mm             | 0.4291         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65239            |
| 11,0 mm             | 0.4331         |               | M12 X 1                 | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65240            |
| 11,1 mm             | 0.4370         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65241            |
| 7/16                | 0.4375         | 11.11         | 1/4-18NPT               | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 55185            |
| 11,2 mm             | 0.4409         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65242            |
| 11,3 mm             | 0.4449         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65243            |
| 11,4 mm             | 0.4488         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65244            |
| 11,5 mm             | 0.4528         |               | M12 X 0,5               | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65245            |
| 11,6 mm             | 0.4567         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65246            |
| 11,7 mm             | 0.4606         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65247            |
| 11,8 mm             | 0.4646         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65248            |
| 11,9 mm             | 0.4685         |               |                         | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 65249            |
| 15/32               | 0.4688         | 11.91         | 1/2-28                  | 12,0                | 118,0              | 71,0             | 56,0              | 45,0            | 55186            |

continued on next page

### TOLERANCES (inch)

#### $\leq 1181$ DIAMETER

DC =  $+0.0008/+0.0047$

DCON =  $h_6$

#### $> 1181 - .2362$ DIAMETER

DC =  $+0.0016/+0.0063$

DCON =  $h_6$

#### $> .2362 - .3937$ DIAMETER

DC =  $+0.0024/+0.0083$

DCON =  $h_6$

#### $> .3937 - .7087$ DIAMETER

DC =  $+0.0028/+0.0098$

DCON =  $h_6$

#### $> .7087 - 1.1811$ DIAMETER

DC =  $+0.0031/+0.0114$

DCON =  $h_6$

### TOLERANCES (mm)

#### $\leq 3$ DIAMETER

DC =  $+0.002/+0.012$

DCON =  $h_6$

#### $> 3 - 6$ DIAMETER

DC =  $+0.004/+0.016$

DCON =  $h_6$

#### $> 6 - 10$ DIAMETER

DC =  $+0.006/+0.021$

DCON =  $h_6$

#### $> 10 - 18$ DIAMETER

DC =  $+0.007/+0.025$

DCON =  $h_6$

CAST IRON

For patent information visit  
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# 141K 5xD

FRACTIONAL & METRIC SERIES

| CUTTING<br>DIAMETER<br>DC | DECIMAL<br>EQUIV. | METRIC<br>EQUIV. | inch & mm                     |                           |                          |                        |                         |                       | EDP NO. |
|---------------------------|-------------------|------------------|-------------------------------|---------------------------|--------------------------|------------------------|-------------------------|-----------------------|---------|
|                           |                   |                  | TAP SIZE<br>REFERENCE<br>ONLY | SHANK<br>DIAMETER<br>DCON | OVERALL<br>LENGTH<br>OAL | FLUTE<br>LENGTH<br>LCF | CLEARED<br>LENGTH<br>LU | SHANK<br>LENGTH<br>LS |         |
| 12,0 mm                   | 0.4724            |                  | M14 X 2                       | 12,0                      | 118,0                    | 71,0                   | 56,0                    | 45,0                  | 65250   |
| 31/64                     | 0.4844            | 12.30            | 9/16-12                       | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 55187   |
| 12,5 mm                   | 0.4921            |                  | M14 X 1,5                     | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65251   |
| 1/2                       | 0.5000            | 12.70            |                               | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 55188   |
| 12,8 mm                   | 0.5039            |                  | M14 X 1,25                    | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65252   |
| 13,0 mm                   | 0.5118            |                  | M14 X 1                       | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65253   |
| 33/64                     | 0.5156            | 13.10            | 9/16-18                       | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 55189   |
| 13,5 mm                   | 0.5315            |                  | 5/8-11                        | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65254   |
| 13,8 mm                   | 0.5433            |                  |                               | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65255   |
| 14,0 mm                   | 0.5512            |                  | M16 X 2                       | 14,0                      | 124,0                    | 77,0                   | 60,0                    | 45,0                  | 65256   |
| 9/16                      | 0.5625            | 14.29            |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 55190   |
| 14,5 mm                   | 0.5709            |                  | M16 X 1,5                     | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65257   |
| 37/64                     | 0.5781            | 14.68            | 5/8-18                        | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 55191   |
| 14,8 mm                   | 0.5827            |                  |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65258   |
| 15,0 mm                   | 0.5906            |                  | M16 X 1                       | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65259   |
| 15,5 mm                   | 0.6102            |                  | M18 X 2,5                     | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65260   |
| 15,8 mm                   | 0.6220            |                  |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65261   |
| 5/8                       | 0.6250            | 15.88            | 11/16-16                      | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 55192   |
| 16,0 mm                   | 0.6299            |                  |                               | 16,0                      | 133,0                    | 83,0                   | 63,0                    | 48,0                  | 65262   |
| 21/32                     | 0.6562            | 16.67            | 3/4-10                        | 18,0                      | 143,0                    | 93,0                   | 71,0                    | 48,0                  | 55193   |
| 11/16                     | 0.6875            | 17.46            | 3/4-16                        | 18,0                      | 143,0                    | 93,0                   | 71,0                    | 48,0                  | 55194   |
| 3/4                       | 0.7500            | 19.05            | 13/16-16                      | 20,0                      | 153,0                    | 101,0                  | 77,0                    | 50,0                  | 55195   |

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| Series<br>141K 5D<br>Fractional | Hardness                                                                             | Vc<br>(sfm)                              |     | DC • in    |        |        |        |        |        |        |        |
|---------------------------------|--------------------------------------------------------------------------------------|------------------------------------------|-----|------------|--------|--------|--------|--------|--------|--------|--------|
|                                 |                                                                                      |                                          |     | 1/8        | 3/16   | 1/4    | 3/8    | 1/2    | 5/8    | 3/4    |        |
| K                               | GRAY CAST IRON<br>FERRITIC<br>ASTM A48: CLASS 20<br>SAE J431C: GRADE 1800            | ≤ 150 Bhn<br>or<br>≤ 80 HRb<br>(360-540) | 450 | RPM        | 13752  | 9168   | 6876   | 4584   | 3438   | 2750   | 2292   |
|                                 |                                                                                      |                                          |     | Fr         | 0.0049 | 0.0074 | 0.0099 | 0.0148 | 0.0198 | 0.0247 | 0.0297 |
|                                 |                                                                                      |                                          |     | Feed (ipm) | 68     | 68     | 68     | 68     | 68     | 68     | 68     |
|                                 | GRAY CAST IRON<br>PEARLITIC<br>ASTM A48: CLASS 30, 35, 40<br>SAE J431C: GRADE 3000   | ≤ 220 Bhn<br>or<br>≤ 19 HRc<br>(300-450) | 375 | RPM        | 11460  | 7640   | 5730   | 3820   | 2865   | 2292   | 1910   |
|                                 |                                                                                      |                                          |     | Fr         | 0.0039 | 0.0059 | 0.0079 | 0.0118 | 0.0157 | 0.0196 | 0.0236 |
|                                 |                                                                                      |                                          |     | Feed (ipm) | 45     | 45     | 45     | 45     | 45     | 45     | 45     |
|                                 | COMPACTED<br>GRAPHITE IRON                                                           | ≤ 250 Bhn<br>or<br>≤ 25 HRc<br>(260-390) | 325 | RPM        | 9932   | 6621   | 4966   | 3311   | 2483   | 1986   | 1655   |
|                                 |                                                                                      |                                          |     | Fr         | 0.0039 | 0.0059 | 0.0079 | 0.0118 | 0.0157 | 0.0196 | 0.0236 |
|                                 |                                                                                      |                                          |     | Feed (ipm) | 39     | 39     | 39     | 39     | 39     | 39     | 39     |
|                                 | MALLEABLE CAST IRON<br>FERRITIC<br>ASTM A220: GRADE 40010<br>SAE J158: GRADE M4504   | ≤ 160 Bhn<br>or<br>≤ 3 HRc<br>(360-540)  | 450 | RPM        | 13752  | 9168   | 6876   | 4584   | 3438   | 2750   | 2292   |
|                                 |                                                                                      |                                          |     | Fr         | 0.0049 | 0.0074 | 0.0099 | 0.0148 | 0.0198 | 0.0247 | 0.0297 |
|                                 |                                                                                      |                                          |     | Feed (ipm) | 68     | 68     | 68     | 68     | 68     | 68     | 68     |
|                                 | MALLEABLE CAST IRON<br>MARTENSITE<br>ASTM A220: GRADE 90001<br>SAE J158: GRADE M8501 | ≤ 320 Bhn<br>or<br>≤ 34 HRc<br>(200-300) | 250 | RPM        | 7640   | 5093   | 3820   | 2547   | 1910   | 1528   | 1273   |
|                                 |                                                                                      |                                          |     | Fr         | 0.0031 | 0.0047 | 0.0063 | 0.0094 | 0.0126 | 0.0157 | 0.0188 |
|                                 |                                                                                      |                                          |     | Feed (ipm) | 24     | 24     | 24     | 24     | 24     | 24     | 24     |

Bhn (Brinell)      HRc (Rockwell C)      HRb (Rockwell B)  
 $\text{rpm} = \text{Vc} \times 3.82 / \text{DC}$   
 $\text{ipm} = \text{Fr} \times \text{rpm}$   
 reduce speed and feed for materials harder than listed  
 refer to the SGS Tool Wizard® for complete technical information ([www.kyocera-sgstool.com](http://www.kyocera-sgstool.com))

| Series<br>141K 5D<br>Metric | Hardness                                                                             | Vc<br>(m/min)               | DC • mm       |       |       |       |       |       |       |       |      |
|-----------------------------|--------------------------------------------------------------------------------------|-----------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|------|
|                             |                                                                                      |                             | 3             | 6     | 8     | 10    | 12    | 14    | 16    |       |      |
| K                           | GRAY CAST IRON<br>FERRITIC<br>ASTM A48: CLASS 20<br>SAE J431C: GRADE 1800            | ≤ 150 Bhn<br>or<br>≤ 80 HRb | 137           | RPM   | 14541 | 7271  | 5453  | 4362  | 3635  | 3116  | 2726 |
|                             |                                                                                      | (110-165)                   | Fr            | 0.119 | 0.237 | 0.316 | 0.395 | 0.475 | 0.554 | 0.633 |      |
|                             |                                                                                      |                             | Feed (mm/min) | 1725  | 1725  | 1725  | 1725  | 1725  | 1725  | 1725  |      |
|                             | GRAY CAST IRON<br>PEARLITIC<br>ASTM A48: CLASS 30, 35, 40<br>SAE J431C: GRADE 3000   | ≤ 220 Bhn<br>or<br>≤ 19 HRc | 114           | RPM   | 12118 | 6059  | 4544  | 3635  | 3029  | 2597  | 2272 |
|                             |                                                                                      | (91-137)                    | Fr            | 0.094 | 0.189 | 0.252 | 0.315 | 0.378 | 0.441 | 0.504 |      |
|                             |                                                                                      |                             | Feed (mm/min) | 1145  | 1145  | 1145  | 1145  | 1145  | 1145  | 1145  |      |
|                             | COMPACTED<br>GRAPHITE IRON                                                           | ≤ 250 Bhn<br>or<br>≤ 25 HRc | 99            | RPM   | 10502 | 5251  | 3938  | 3151  | 2626  | 2250  | 1969 |
|                             |                                                                                      | (79-119)                    | Fr            | 0.094 | 0.189 | 0.251 | 0.314 | 0.377 | 0.440 | 0.503 |      |
|                             |                                                                                      |                             | Feed (mm/min) | 990   | 990   | 990   | 990   | 990   | 990   | 990   |      |
|                             | MALLEABLE CAST IRON<br>FERRITIC<br>ASTM A220: GRADE 40010<br>SAE J158: GRADE M4504   | ≤ 160 Bhn<br>or<br>≤ 3 HRc  | 137           | RPM   | 14541 | 7271  | 5453  | 4362  | 3635  | 3116  | 2726 |
|                             |                                                                                      | (110-165)                   | Fr            | 0.119 | 0.237 | 0.316 | 0.395 | 0.475 | 0.554 | 0.633 |      |
|                             |                                                                                      |                             | Feed (mm/min) | 1725  | 1725  | 1725  | 1725  | 1725  | 1725  | 1725  |      |
|                             | MALLEABLE CAST IRON<br>MARTENSITE<br>ASTM A220: GRADE 90001<br>SAE J158: GRADE M8501 | ≤ 320 Bhn<br>or<br>≤ 34 HRc | 76            | RPM   | 8078  | 4039  | 3029  | 2424  | 2020  | 1731  | 1515 |
|                             |                                                                                      | (61-91)                     | Fr            | 0.076 | 0.151 | 0.201 | 0.252 | 0.302 | 0.352 | 0.403 |      |
|                             |                                                                                      |                             | Feed (mm/min) | 610   | 610   | 610   | 610   | 610   | 610   | 610   |      |

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