



# RAD-6

MRX High Efficiency  
Radius Cutter

- **Positive Round Insert**  
with 6 usable edges
- **Lower Cutting Forces**  
with Kyocera's helical  
cutting edge design
- **R4, R5, R6 and R8**  
radius sizes available

**NEW** **RAD-6** (MRX)  
Modular Head



**NEW** **KYO-CAT**  
Taper Adapters  
CAT-40 & CAT-50 for  
endmills and facemills



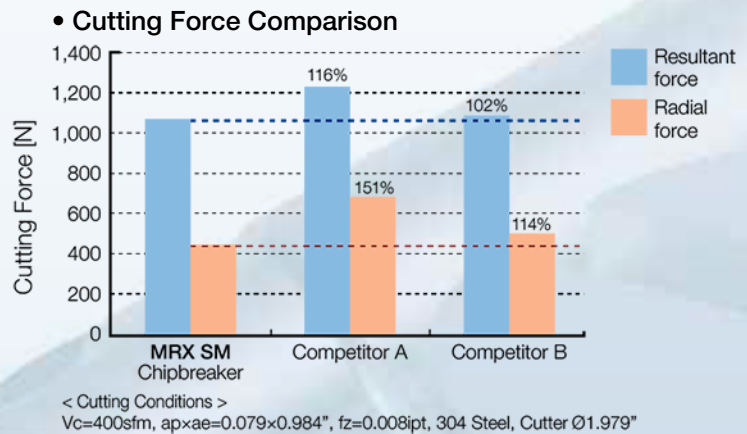
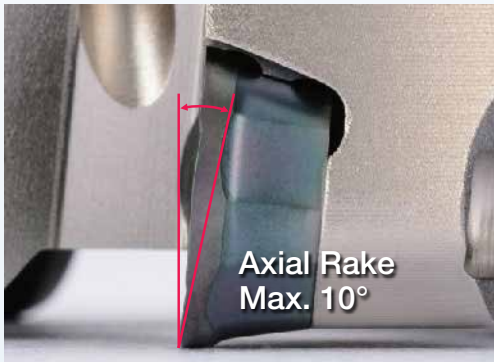


# RAD-6

*The MRX Radius Cutter  
Lowers Cutting Costs and  
Increases Efficiency!*

## Advantages

### Low Cutting Forces with Kyocera's Helical Cutting Edge Design



### Flat Lock Structure to Hold Insert Firmly in Place

Prevents insert rotation during machining to provide stable cutting

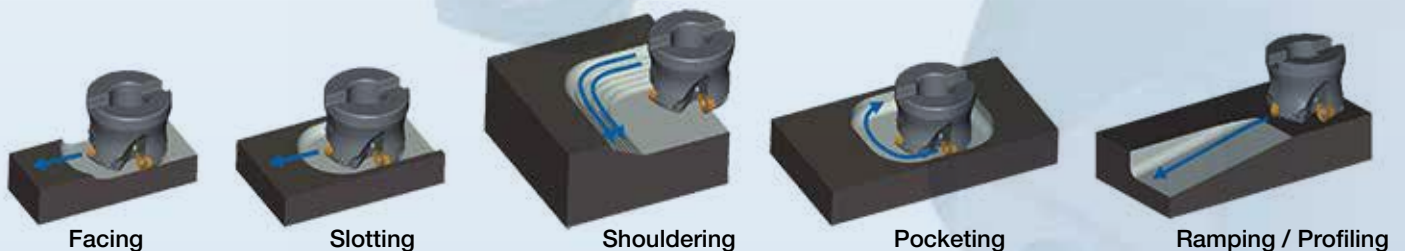
#### Flat Lock Structure

Wide flat binding face

- Receives even cutting forces
- Prevents insert rotation



### Wide Application Range



Longer tool life with a wide lineup including  
4 grades and 3 chipbreakers!

Available for steel, stainless steel, and heat resistant alloys

| Workpiece                                       |  | Applicable Insert Grade | Applicable Chipbreaker          |
|---|--|-------------------------|---------------------------------|
| <b>P</b> Carbon Steel / Alloy Steel / Die Steel |  | <b>PR1525</b>           | <b>GM / SM / GH</b> Chipbreaker |
| <b>K</b> Gray Cast Iron / Nodular Cast Iron     |  | <b>PR1510</b>           | <b>GH / GM</b> Chipbreaker      |
| <b>S</b> Ni-base Heat Resistant Alloy           | <b>M</b> Martensitic Stainless Steel   | <b>CA6535</b>           | <b>SM / GM</b> Chipbreaker      |
| <b>S</b> Titanium Alloy                         | <b>M</b> Austenitic Stainless Steel<br><b>M</b> Precipitation Hardened Stainless Steel | <b>PR1535</b>           | <b>SM / GM</b> Chipbreaker      |

For Chipbreaker Selection & Recommended Cutting Conditions **P9**

### New Grades for Difficult-to-cut Material

- Stable cutting prevents insert fracturing
- Good for high efficiency machining



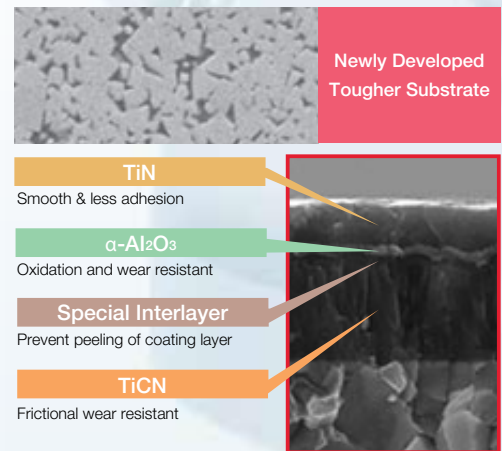
**CA6535**

- For Ni-base heat resistant alloy and martensitic stainless steel
- High heat resistance and wear resistance with CVD coating
- Improved stability due to thin film coating technology

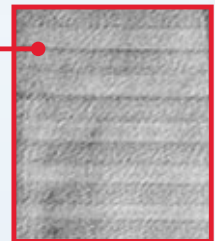


**PR1535**

- For titanium alloy and precipitation hardened stainless steel
- Improved stability due to thin film coating technology
- Stabilized milling operation and long tool life with Kyocera's MEGACOAT NANO coating technology

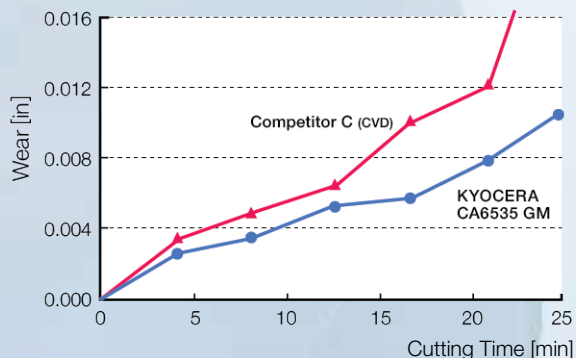


**MEGACOAT NANO**  
Layer Structure



### Tool Life Comparison

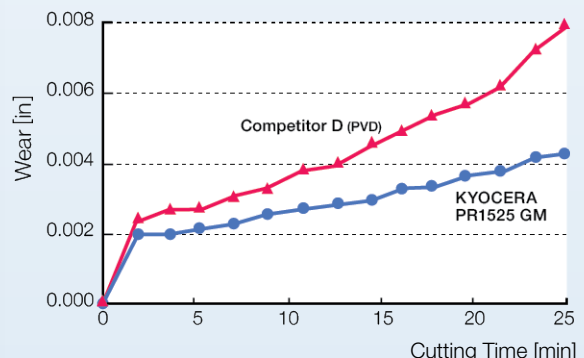
- Ni-base Heat Resistant Alloy



< Cutting Conditions > Vc=175sfm, apxae=0.039"x0.787", fz=0.006ipt, WET

1st recommendation GM chipbreaker

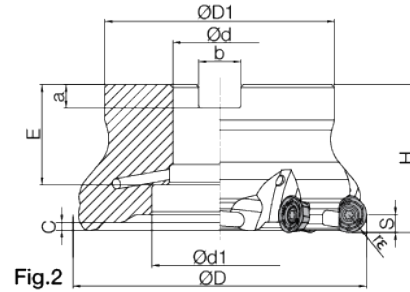
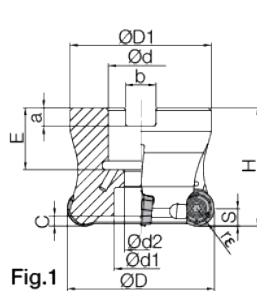
- Alloy Tool Steel (38-42HRC)



< Cutting Conditions > Vc=400sfm, apxae=0.079"x0.984", fz=0.014ipt, DRY

1st recommendation GM chipbreaker

# MRX Face Mill (with coolant hole)



## MRX Face Mill (inch)

| Part Number     | Stock | No. of Inserts | rε          | Dimensions (inch) |       |       |       |       |       |       |       |       |       |       | Rake Angle |       | Coolant Hole | Drawing | Weight (kg) | Max. Revolution (min <sup>-1</sup> ) |
|-----------------|-------|----------------|-------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|-------|--------------|---------|-------------|--------------------------------------|
|                 |       |                |             | ØD                | ØD1   | Ød    | Ød1   | Ød2   | H     | E     | a     | b     | C     | S     | A.R. (MAX) | R.R.  |              |         |             |                                      |
| MRX 1500R-10-5T | ■     | 5              | 0.197 (5mm) | 1.500             | 1.400 | 0.500 | 0.433 | 0.276 | 1.575 | 0.709 | 0.156 | 0.250 | 0.114 | 0.197 | +10°       | -5.5° | ✓            | Fig.1   | 0.2         | 20,000                               |
| 2000R-10-6T*    | ●     | 6              |             | 2.000             | 1.750 | 0.750 | 0.669 | 0.433 | 1.575 | 0.750 | 0.187 | 0.313 | 0.114 | 0.197 | +10°       | -5.5° | ✓            | Fig.1   | 0.3         | 17,500                               |
| 2500R-10-7T     | ■     | 7              |             | 2.500             | 1.750 | 0.750 | 0.669 | 0.433 | 1.575 | 0.750 | 0.187 | 0.313 | 0.114 | 0.197 | +10°       | -5.5° | ✓            | Fig.1   | 0.5         | 15,000                               |
| MRX 1500R-12-4T | ■     | 4              | 0.236 (6mm) | 1.500             | 1.400 | 0.500 | 0.394 | 0.276 | 1.575 | 0.709 | 0.156 | 0.250 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.1   | 0.2         | 21,000                               |
| 2000R-12-4T     | ■     | 4              |             | 2.000             | 1.750 | 0.750 | 0.669 | 0.433 | 1.575 | 0.750 | 0.187 | 0.313 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.1   | 0.3         | 18,000                               |
| 2000R-12-5T*    | ●     | 5              |             | 2.000             | 1.750 | 0.750 | 0.669 | 0.433 | 1.575 | 0.750 | 0.187 | 0.313 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.1   | 0.3         | 18,000                               |
| 2500R-12-5T     | ■     | 5              | 0.236 (6mm) | 2.500             | 1.750 | 0.750 | 0.669 | 0.433 | 1.575 | 0.750 | 0.187 | 0.313 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.1   | 0.4         | 15,500                               |
| 2500R-12-6T     | ■     | 6              |             | 2.500             | 1.750 | 0.750 | 0.669 | 0.433 | 1.575 | 0.750 | 0.187 | 0.313 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.1   | 0.4         | 15,500                               |
| 3000R-12-6T*    | ●     | 6              |             | 3.000             | 2.250 | 1.000 | 0.866 | 0.551 | 1.969 | 1.063 | 0.236 | 0.382 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.1   | 0.8         | 13,500                               |
| 3000R-12-7T     | ■     | 7              | 0.236 (6mm) | 3.000             | 2.250 | 1.000 | 0.866 | 0.551 | 1.969 | 1.063 | 0.236 | 0.382 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.1   | 0.8         | 13,500                               |
| 4000R-12-7T     | ■     | 7              |             | 4.000             | 3.540 | 1.500 | 2.047 | -     | 1.969 | 1.142 | 0.394 | 0.626 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.2   | 1.7         | 12,000                               |
| 4000R-12-9T     | ■     | 9              |             | 4.000             | 3.540 | 1.500 | 2.047 | -     | 1.969 | 1.142 | 0.394 | 0.626 | 0.134 | 0.236 | +10°       | -5.5° | ✓            | Fig.2   | 1.6         | 12,000                               |
| MRX 2500R-16-4T | ■     | 4              | 0.315 (8mm) | 2.500             | 1.750 | 0.750 | 0.669 | 0.433 | 1.575 | 0.750 | 0.187 | 0.313 | 0.173 | 0.315 | +10°       | -5.5° | ✓            | Fig.1   | 0.4         | 13,500                               |
| 2500R-16-5T*    | ●     | 5              |             | 2.500             | 1.750 | 0.750 | 0.669 | 0.433 | 1.575 | 0.750 | 0.187 | 0.313 | 0.173 | 0.315 | +10°       | -5.5° | ✓            | Fig.1   | 0.4         | 13,500                               |
| 3000R-16-5T     | ■     | 5              |             | 3.000             | 2.250 | 1.000 | 0.866 | 0.551 | 1.969 | 1.063 | 0.236 | 0.382 | 0.173 | 0.315 | +10°       | -5.5° | ✓            | Fig.1   | 0.8         | 11,500                               |
| 3000R-16-6T*    | ●     | 6              | 0.315 (8mm) | 3.000             | 2.250 | 1.000 | 0.866 | 0.551 | 1.969 | 1.063 | 0.236 | 0.382 | 0.173 | 0.315 | +10°       | -5.5° | ✓            | Fig.1   | 0.8         | 11,500                               |
| 4000R-16-6T     | ■     | 6              |             | 4.000             | 3.540 | 1.500 | 2.047 | -     | 1.969 | 1.142 | 0.394 | 0.626 | 0.173 | 0.315 | +10°       | -5.5° | ✓            | Fig.2   | 1.6         | 10,000                               |
| 4000R-16-7T*    | ●     | 7              |             | 4.000             | 3.540 | 1.500 | 2.047 | -     | 1.969 | 1.142 | 0.394 | 0.626 | 0.173 | 0.315 | +10°       | -5.5° | ✓            | Fig.2   | 1.6         | 10,000                               |
| 5000R-16-6T     | ■     | 6              | 0.315 (8mm) | 5.000             | 3.540 | 1.500 | 2.047 | -     | 2.480 | 1.496 | 0.394 | 0.626 | 0.173 | 0.315 | +10°       | -5.5° | ✓            | Fig.2   | 2.9         | 9,000                                |
| 5000R-16-8T     | ■     | 8              |             | 5.000             | 3.540 | 1.500 | 2.047 | -     | 2.480 | 1.496 | 0.394 | 0.626 | 0.173 | 0.315 | +10°       | -5.5° | ✓            | Fig.2   | 2.8         | 9,000                                |

\*: Available as part of a discounted kit.

● : Standard Stock ■ : Made to Order (Call for Availability)

See 2014 Milling Kit Sale Brochure (U.S. Prices)

See 2014 Milling Kit Sale Brochure (Canadian Prices)

## MRX Face Mill Spare Parts and Applicable Inserts (inch & metric)

| Part Number     | Spare Parts  |             |            |                     |                  | Applicable Inserts<br>P8   |
|-----------------|--------------|-------------|------------|---------------------|------------------|--|
|                 | Insert Screw | DTPM Wrench | TTP Wrench | Anti-seize Compound | Arbor Bolt       |  |
| MRX 1500R-10... | SB-3070TRP   | DTPM-10     | -          | MP-1                | HH1/4-0.75       | RPMT10T3M0ER-GM<br>RPGT10T3M0ER-GM<br>RPGT10T3M0ER-SM<br>RPMT10T3M0EN-GH |
| 040R-10...      |              |             |            |                     | (metric) HH8X25  |  |
| 2000R-10...     |              |             |            |                     | HH3/8-1.25       |  |
| 050R-10...      |              |             |            |                     | (metric) HH10X30 |  |
| 2500R-10...     |              |             |            |                     | HH3/8-1.25       |  |
| 063R-10...      |              |             |            |                     | (metric) HH10X30 |  |
| MRX 1500R-12... | SB-4090TRP   | DTPM-15     | -          | MP-1                | HH1/4-0.75       | RPMT1204M0ER-GM<br>RPGT1204M0ER-GM<br>RPGT1204M0ER-SM<br>RPMT1204M0EN-GH |
| 040R-12...      |              |             |            |                     | (metric) HH8X25  |  |
| 2000R-12...     |              |             |            |                     | HH3/8-1.25       |  |
| 050R-12...      |              |             |            |                     | (metric) HH10X30 |  |
| 2500R-12...     |              |             |            |                     | HH3/8-1.25       |  |
| 063R-12...      |              |             |            |                     | (metric) HH10X30 |  |
| 3000R-12...     |              |             |            |                     | HH1/2-1.25       |  |
| 080R-12...      |              |             |            |                     | (metric) HH12X35 |  |
| 100R-12...      |              |             |            |                     | -                |  |
| MRX 2500R-16... | SB-50120TRP  | -           | TTP-20     | MP-1                | HH3/8-1.25       | RPMT1605M0ER-GM<br>RPGT1605M0ER-GM<br>RPGT1605M0ER-SM<br>RPMT1605M0EN-GH |
| 063R-16...      |              |             |            |                     | (metric) HH10X30 |  |
| 3000R-16...     |              |             |            |                     | HH1/2-1.25       |  |
| 080R-16...      |              |             |            |                     | (metric) HH12X35 |  |
| 4000R-16...     |              |             |            |                     | -                |  |
| 100R-16...      |              |             |            |                     | -                |  |
| 5000R-16...     |              |             |            |                     | -                |  |
| 125R-16...      | -            |             |            |                     |                  |  |

• **Caution with Max. Revolution**  
When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

• **Coat Anti-seize Compound (MP-1)** thinly on portion of taper and thread when insert is fixed

※1... Not compatible with conventional RPMT10T3M0 inserts (without ER-.. or EN-..)

※2... Not compatible with conventional RPMT1204M0 or RPMT1204M0-H inserts (without ER-.. or EN-..)

※3... Not compatible with conventional RPMT1605M0-H inserts



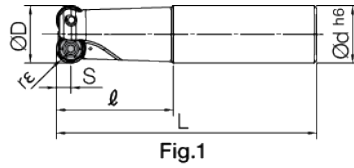
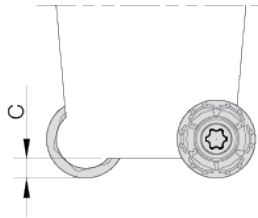


Fig.1

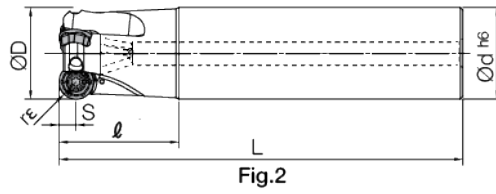


Fig.2

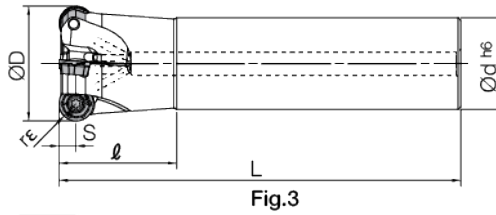


Fig.3

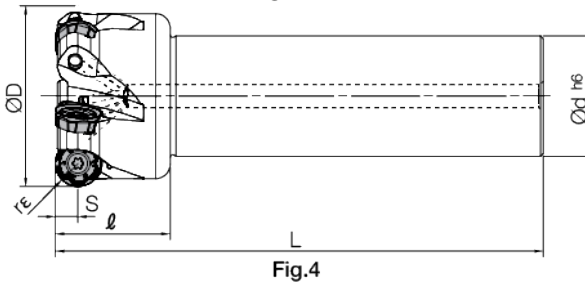


Fig.4

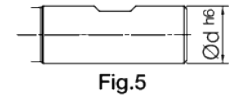


Fig.5

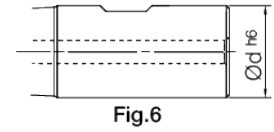


Fig.6

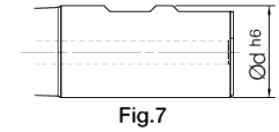


Fig.7

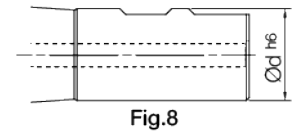


Fig.8

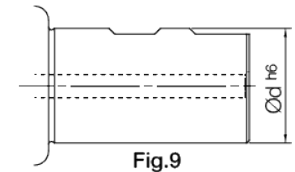


Fig.9

MRX Endmill (inch)

| Shank             | Part Number    | Stock                 | No. of Inserts | Dimensions (inch) |             |             |       |        |       |       | Rake Angle |       | Coolant Hole | Drawing | Max. Revolution (min <sup>-1</sup> ) |        |
|-------------------|----------------|-----------------------|----------------|-------------------|-------------|-------------|-------|--------|-------|-------|------------|-------|--------------|---------|--------------------------------------|--------|
|                   |                |                       |                | re                | ØD          | Ød          | L     | l      | C     | S     | A.R. (MAX) | R.R.  |              |         |                                      |        |
| Weldon            | Standard Shank | MRX 0625-W625-08-2T*  | ●              | 2                 | 0.157 (4mm) | 0.625       | 0.625 | 4.331  | 2.386 | 0.094 | 0.157      | +3°   | -6.5°        | ✗       | Fig.5                                | 38,000 |
|                   |                | 0750-W750-08-2T*      | ●              | 2                 |             | 0.750       | 0.750 | 4.724  | 2.654 | 0.094 | 0.157      | +10°  | -5.5°        | ✓       | Fig.6                                | 32,000 |
|                   |                | 1000-W100-08-4T*      | ●              | 4                 |             | 1.000       | 1.000 | 4.724  | 2.406 | 0.094 | 0.157      | +10°  | -5.5°        | ✓       | Fig.7                                | 28,000 |
|                   |                | MRX 1000-W100-10-3T   | ●              | 3                 | 0.197 (5mm) | 1.000       | 1.000 | 4.724  | 2.409 | 0.114 | 0.197      | +10°  | -5.5°        | ✓       | Fig.7                                | 28,000 |
|                   |                | 1250-W125-10-4T       | ■              | 4                 |             | 1.250       | 1.250 | 5.512  | 3.197 | 0.114 | 0.197      | +10°  | -5.5°        | ✓       | Fig.7                                | 22,500 |
|                   |                | MRX 1250-W125-12-3T   | ■              | 3                 |             | 1.250       | 1.250 | 5.512  | 3.189 | 0.134 | 0.236      | +10°  | -5.5°        | ✓       | Fig.7                                | 24,500 |
|                   |                | 1500-W125-12-4T*      | ●              | 4                 | 0.236 (6mm) | 1.500       | 1.250 | 5.512  | 1.575 | 0.134 | 0.236      | +10°  | -5.5°        | ✓       | Fig.8                                | 21,000 |
|                   |                | 2000-W150-12-5T       | ■              | 5                 |             | 2.000       | 1.500 | 6.693  | 1.575 | 0.134 | 0.236      | +10°  | -5.5°        | ✓       | Fig.8                                | 18,000 |
|                   |                | MRX 1500-W125-16-2T*  | ●              | 2                 |             | 1.500       | 1.250 | 5.512  | 1.575 | 0.173 | 0.315      | +10°  | -5.5°        | ✓       | Fig.8                                | 18,000 |
|                   |                | 2000-W150-16-4T*      | ●              | 4                 | 0.315 (8mm) | 2.000       | 1.500 | 6.693  | 1.575 | 0.173 | 0.315      | +10°  | -5.5°        | ✓       | Fig.8                                | 15,500 |
|                   |                | 2500-W150-16-5T       | ■              | 5                 |             | 2.500       | 1.500 | 6.693  | 1.575 | 0.173 | 0.315      | +10°  | -5.5°        | ✓       | Fig.9                                | 13,500 |
|                   |                | MRX 0625-S625-08-2T-6 | ■              | 2                 |             | 0.157 (4mm) | 0.625 | 0.625  | 6.000 | 3.150 | 0.094      | 0.157 | +3°          | -6.5°   | ✗                                    | Fig.1  |
| 0750-S750-08-2T-7 | ■              | 2                     | 0.750          | 0.750             | 7.000       |             | 3.150 | 0.094  | 0.157 | +10°  | -5.5°      | ✓     | Fig.2        | 32,000  |                                      |        |
| 1000-S100-08-4T-7 | ■              | 4                     | 1.000          | 1.000             | 7.000       |             | 3.150 | 0.094  | 0.157 | +10°  | -5.5°      | ✓     | Fig.2        | 28,000  |                                      |        |
| Cylindrical       | Standard Shank | MRX 1000-S100-10-2T-7 | ■              | 2                 | 0.197 (5mm) | 1.000       | 1.000 | 7.000  | 3.150 | 0.114 | 0.197      | +10°  | -5.5°        | ✓       | Fig.2                                | 28,000 |
|                   |                | 1250-S125-12-4T-8     | ■              | 4                 |             | 1.250       | 1.250 | 8.000  | 3.150 | 0.114 | 0.197      | +10°  | -5.5°        | ✓       | Fig.2                                | 22,500 |
|                   |                | MRX 1250-S125-12-2T-8 | ■              | 2                 |             | 1.250       | 1.250 | 8.000  | 3.150 | 0.134 | 0.236      | +10°  | -5.5°        | ✓       | Fig.2                                | 24,500 |
|                   |                | 1500-S125-12-4T-8     | ■              | 4                 | 0.236 (6mm) | 1.500       | 1.250 | 8.000  | 1.575 | 0.134 | 0.236      | +10°  | -5.5°        | ✓       | Fig.3                                | 21,000 |
|                   |                | 2000-S150-12-4T12     | ■              | 4                 |             | 2.000       | 1.500 | 12.000 | 1.575 | 0.134 | 0.236      | +10°  | -5.5°        | ✓       | Fig.3                                | 18,000 |
|                   |                | MRX 1500-S125-16-2T-8 | ■              | 2                 |             | 1.500       | 1.250 | 8.000  | 1.575 | 0.173 | 0.315      | +10°  | -5.5°        | ✓       | Fig.3                                | 18,000 |
|                   |                | 2000-S150-16-4T12     | ■              | 4                 | 0.315 (8mm) | 2.000       | 1.500 | 12.000 | 1.575 | 0.173 | 0.315      | +10°  | -5.5°        | ✓       | Fig.3                                | 15,500 |
|                   |                | 2500-S150-16-4T12     | ■              | 4                 |             | 2.500       | 1.500 | 12.000 | 1.575 | 0.173 | 0.315      | +10°  | -5.5°        | ✓       | Fig.4                                | 13,500 |

\*: Available as part of a discounted kit.

● : Standard Stock ■ : Made to Order (Call for Availability)

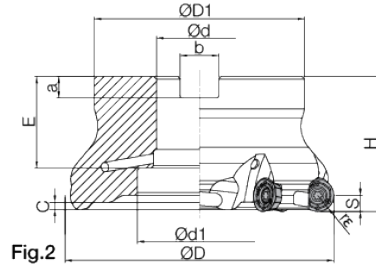
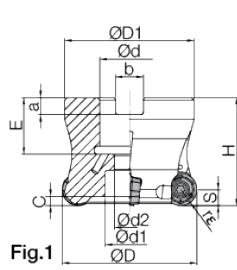
See 2014 Milling Kit Sale Brochure (U.S. Prices)

Endmill Spare Parts and Applicable Inserts P8

See 2014 Milling Kit Sale Brochure (Canadian Prices)

Recommended Cutting Conditions P9

# MRX Face Mill & Modular Endmill (with coolant hole)

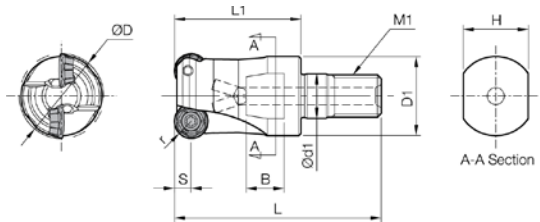


| Bore Dia.   | Part Number      | Stock | No. of Inserts | Dimensions (mm) |     |     |       |      |     |    |    |     |      |     |   | Rake Angle |       | Coolant Hole | Drawing | Weight (kg) | Max. Revolution (min <sup>-1</sup> ) |
|-------------|------------------|-------|----------------|-----------------|-----|-----|-------|------|-----|----|----|-----|------|-----|---|------------|-------|--------------|---------|-------------|--------------------------------------|
|             |                  |       |                | rE              | ØD  | ØD1 | Ød    | Ød1  | Ød2 | H  | E  | a   | b    | C   | S | A.R. (MAX) | R.R.  |              |         |             |                                      |
| Inch Spec   | MRX 080R-12-6T   | ○     | 6              | 6               | 80  | 70  | 25.4  | 20   | 13  | 50 | 27 | 6   | 9.5  | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 1.2         | 13,500                               |
|             | 080R-12-8T       | ○     | 8              | 6               | 80  | 70  | 25.4  | 20   | 13  | 50 | 27 | 6   | 9.5  | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 1.1         | 13,500                               |
|             | 100R-12-7T       | ○     | 7              | 6               | 100 | 78  | 31.75 | 46   | -   | 50 | 34 | 8   | 12.7 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.2   | 1.5         | 12,000                               |
|             | 100R-12-9T       | ○     | 9              | 6               | 100 | 78  | 31.75 | 46   | -   | 50 | 34 | 8   | 12.7 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.2   | 1.5         | 12,000                               |
|             | MRX 080R-16-5T   | ○     | 5              | 8               | 80  | 70  | 25.4  | 20   | 13  | 50 | 27 | 6   | 9.5  | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.1   | 1.1         | 11,500                               |
|             | 080R-16-6T       | ○     | 6              | 8               | 80  | 70  | 25.4  | 20   | 13  | 50 | 27 | 6   | 9.5  | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.1   | 1.1         | 11,500                               |
|             | 100R-16-6T       | ○     | 6              | 8               | 100 | 78  | 31.75 | 46   | -   | 50 | 34 | 8   | 12.7 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.2   | 1.4         | 10,000                               |
|             | 100R-16-7T       | ○     | 7              | 8               | 100 | 78  | 31.75 | 46   | -   | 50 | 34 | 8   | 12.7 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.2   | 1.4         | 10,000                               |
|             | 125R-16-6T       | ○     | 6              | 8               | 125 | 89  | 38.1  | 55   | -   | 63 | 38 | 10  | 15.9 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.2   | 2.7         | 9,000                                |
|             | 125R-16-8T       | ○     | 8              | 8               | 125 | 89  | 38.1  | 55   | -   | 63 | 38 | 10  | 15.9 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.2   | 2.7         | 9,000                                |
| Metric Spec | MRX 040R-10-5T-M | ○     | 5              | 5               | 40  | 38  | 16    | 15   | 9   | 40 | 19 | 5.6 | 8.4  | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.1   | 0.2         | 20,000                               |
|             | 050R-10-6T-M     | ○     | 6              | 5               | 50  | 48  | 22    | 18   | 11  | 40 | 21 | 6.3 | 10.4 | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.1   | 0.3         | 17,500                               |
|             | MRX 063R-10-7T-M | ○     | 7              | 5               | 63  | 60  | 22    | 18   | 11  | 40 | 21 | 6.3 | 10.4 | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.1   | 0.6         | 15,000                               |
|             | MRX 040R-12-4T-M | ○     | 4              | 6               | 40  | 38  | 16    | 13.5 | 9   | 40 | 19 | 5.6 | 8.4  | 2.9 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 0.2         | 21,000                               |
|             | 050R-12-4T-M     | ○     | 4              | 6               | 50  | 48  | 22    | 18   | 11  | 40 | 21 | 6.3 | 10.4 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 0.3         | 18,000                               |
|             | 050R-12-5T-M     | ○     | 5              | 6               | 50  | 48  | 22    | 18   | 11  | 40 | 21 | 6.3 | 10.4 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 0.3         | 18,000                               |
|             | 063R-12-5T-M     | ○     | 5              | 6               | 63  | 60  | 22    | 18   | 11  | 40 | 21 | 6.3 | 10.4 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 0.6         | 15,500                               |
|             | 063R-12-6T-M     | ○     | 6              | 6               | 63  | 60  | 22    | 18   | 11  | 40 | 21 | 6.3 | 10.4 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 0.6         | 15,500                               |
|             | 080R-12-6T-M     | ○     | 6              | 6               | 80  | 70  | 27    | 20   | 13  | 50 | 24 | 7   | 12.4 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 1.2         | 13,500                               |
|             | 080R-12-8T-M     | ○     | 8              | 6               | 80  | 70  | 27    | 20   | 13  | 50 | 24 | 7   | 12.4 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.1   | 1.1         | 13,500                               |
|             | 100R-12-7T-M     | ○     | 7              | 6               | 100 | 78  | 32    | 46   | -   | 50 | 30 | 8   | 14.4 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.2   | 1.4         | 12,000                               |
|             | 100R-12-9T-M     | ○     | 9              | 6               | 100 | 78  | 32    | 46   | -   | 50 | 30 | 8   | 14.4 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.2   | 1.4         | 12,000                               |
|             | MRX 063R-16-4T-M | ○     | 4              | 8               | 63  | 60  | 22    | 18   | 11  | 40 | 21 | 6.3 | 10.4 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.1   | 0.5         | 13,500                               |
|             | 063R-16-5T-M     | ○     | 5              | 8               | 63  | 60  | 22    | 18   | 11  | 40 | 21 | 6.3 | 10.4 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.1   | 0.5         | 13,500                               |
|             | 080R-16-5T-M     | ○     | 5              | 8               | 80  | 70  | 27    | 20   | 13  | 50 | 24 | 7   | 12.4 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.1   | 1.1         | 11,500                               |
|             | 080R-16-6T-M     | ○     | 6              | 8               | 80  | 70  | 27    | 20   | 13  | 50 | 24 | 7   | 12.4 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.1   | 1.1         | 11,500                               |
|             | 100R-16-6T-M     | ○     | 6              | 8               | 100 | 78  | 32    | 46   | -   | 50 | 30 | 8   | 14.4 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.2   | 1.4         | 10,000                               |
|             | 100R-16-7T-M     | ○     | 7              | 8               | 100 | 78  | 32    | 46   | -   | 50 | 30 | 8   | 14.4 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.2   | 1.4         | 10,000                               |
|             | 125R-16-6T-M     | ○     | 6              | 8               | 125 | 89  | 40    | 55   | -   | 63 | 33 | 9   | 16.4 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.2   | 2.6         | 9,000                                |
|             | 125R-16-8T-M     | ○     | 8              | 8               | 125 | 89  | 40    | 55   | -   | 63 | 33 | 9   | 16.4 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.2   | 2.6         | 9,000                                |

Recommended Cutting Conditions **P9**

Face Mill Spare Parts and Applicable Inserts **P4**

○ : World Express



| Part Number      | Stock | No. of Inserts | Dimensions (mm) |    |      |      |    |    |           |    |    |   | Rake Angle |       | Coolant Hole | Applicable Inserts | Max. Revolution (min <sup>-1</sup> ) |
|------------------|-------|----------------|-----------------|----|------|------|----|----|-----------|----|----|---|------------|-------|--------------|--------------------|--------------------------------------|
|                  |       |                | r               | ØD | ØD1  | Ød1  | L  | L1 | M1        | H  | B  | S | A.R. (MAX) | R.R.  |              |                    |                                      |
| MRX 16-M08-08-2T | ○     | 2              | 4               | 16 | 14.7 | 8.5  | 43 | 25 | M8xP1.25  | 12 | 8  | 4 | +3°        | -5.5° | ✗            | RDMT08<br>RDGT08   | 38,000                               |
| 20-M10-08-2T     | ○     | 2              | 4               | 20 | 18.7 | 10.5 | 49 | 30 | M10xP1.5  | 15 | 9  | 4 | +10°       | -5.5° | ✓            |                    | 32,000                               |
| 25-M12-08-4T     | ○     | 4              | 4               | 25 | 23   | 12.5 | 57 | 35 | M12xP1.75 | 19 | 10 | 4 | +10°       | -5.5° | ✓            |                    | 28,000                               |
| MRX 20-M10-10-2T | ○     | 2              | 5               | 20 | 18.7 | 10.5 | 49 | 30 | M10xP1.5  | 15 | 9  | 5 | +5°        | -8°   | ✗            | RPMT10<br>RPGT10   | 30,000                               |
| 25-M12-10-3T     | ○     | 3              | 5               | 25 | 23   | 12.5 | 57 | 35 | M12xP1.75 | 19 | 10 | 5 | +10°       | -5.5° | ✓            |                    | 28,000                               |
| 32-M16-10-4T     | ○     | 4              | 5               | 32 | 30   | 17   | 63 | 40 | M16xP2    | 24 | 12 | 5 | +10°       | -5.5° | ✓            |                    | 22,500                               |
| MRX 32-M16-12-3T | ○     | 3              | 6               | 32 | 30   | 17   | 63 | 40 | M16xP2    | 24 | 12 | 6 | +10°       | -5.5° | ✓            | RPMT12<br>RPGT12   | 24,500                               |
| 40-M16-12-4T     | ○     | 4              | 6               | 40 | 30   | 17   | 63 | 40 | M16xP2    | 24 | 12 | 6 | +10°       | -5.5° | ✓            |                    | 21,000                               |
| MRX 40-M16-16-2T | ○     | 2              | 8               | 40 | 30   | 17   | 63 | 40 | M16xP2    | 24 | 12 | 8 | +10°       | -5.5° | ✓            | RPMT16<br>RPGT16   | 18,000                               |

• Caution with Max. Revolution

When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

○ : World Express

Modular Endmill Identification System

**MRX 16 - M08 - 08 - 2T**

|        |              |                          |             |                |
|--------|--------------|--------------------------|-------------|----------------|
| Series | Cutting Dia. | Thread Size for Clamping | Insert Size | No. of Inserts |
|--------|--------------|--------------------------|-------------|----------------|

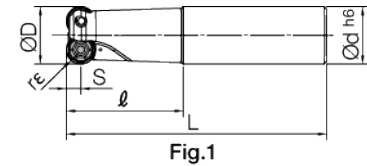
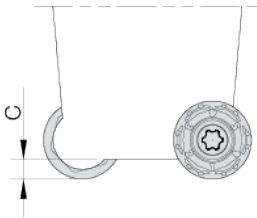


Fig.1

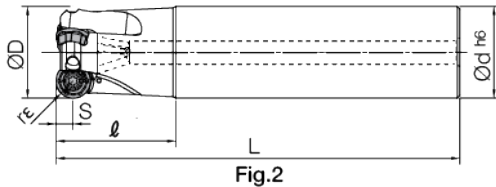


Fig.2

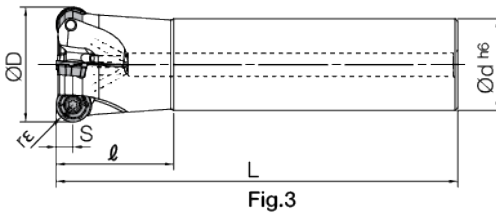


Fig.3

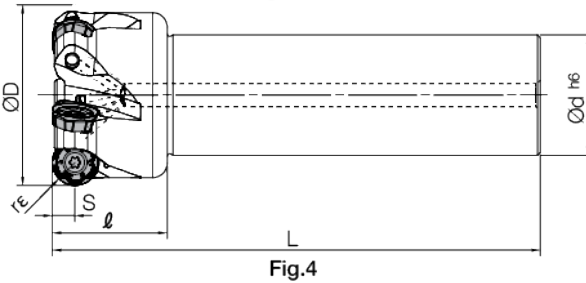


Fig.4



Fig.5



Fig.6

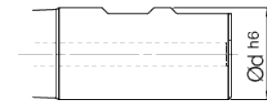


Fig.7

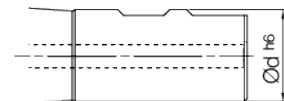


Fig.8

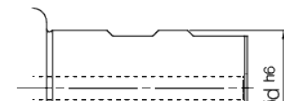


Fig.9

MRX Endmill (metric)

| Shank                 | Part Number          | Stock | No. of Inserts | Dimensions (mm) |    |    |     |    |     |   | Rake Angle |       | Coolant Hole | Drawing | Max. Revolution (min <sup>-1</sup> ) |
|-----------------------|----------------------|-------|----------------|-----------------|----|----|-----|----|-----|---|------------|-------|--------------|---------|--------------------------------------|
|                       |                      |       |                | rε              | ØD | Ød | L   | l  | C   | S | A.R. (MAX) | R.R.  |              |         |                                      |
| Standard (Straight)   | MRX 16-S16-08-2T     | ○     | 2              | 4               | 16 | 16 | 110 | 40 | 2.4 | 4 | +3°        | -5.5° | ×            | Fig.1   | 38,000                               |
|                       | 20-S20-08-2T         | ○     | 2              | 4               | 20 | 20 | 120 | 40 | 2.4 | 4 | +10°       | -5.5° | ✓            | Fig.2   | 32,000                               |
|                       | 25-S25-08-4T         | ○     | 4              | 4               | 25 | 25 | 120 | 40 | 2.4 | 4 | +10°       | -5.5° | ✓            | Fig.2   | 28,000                               |
|                       | MRX 20-S20-10-2T     | ○     | 2              | 5               | 20 | 20 | 120 | 40 | 2.9 | 5 | +5°        | -8°   | ×            | Fig.1   | 30,000                               |
|                       | 25-S25-10-3T         | ○     | 3              | 5               | 25 | 25 | 120 | 40 | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.2   | 28,000                               |
|                       | 32-S32-10-4T         | ○     | 4              | 5               | 32 | 32 | 140 | 40 | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.2   | 22,500                               |
|                       | MRX 32-S32-12-3T     | ○     | 3              | 6               | 32 | 32 | 140 | 40 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.2   | 24,500                               |
|                       | 40-S32-12-4T         | ○     | 4              | 6               | 40 | 32 | 140 | 40 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.3   | 21,000                               |
|                       | 50-S42-12-5T         | ○     | 5              | 6               | 50 | 42 | 170 | 40 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.3   | 18,000                               |
|                       | MRX 40-S32-16-2T     | ○     | 2              | 8               | 40 | 32 | 140 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.3   | 18,000                               |
|                       | 50-S42-16-4T         | ○     | 4              | 8               | 50 | 42 | 170 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.3   | 15,500                               |
|                       | 63-S42-16-5T         | ○     | 5              | 8               | 63 | 42 | 170 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.4   | 13,500                               |
| Standard (Weldon)     | MRX 16-W16-08-2T     | ○     | 2              | 4               | 16 | 16 | 89  | 40 | 2.4 | 4 | +3°        | -5.5° | ×            | Fig.5   | 38,000                               |
|                       | 20-W20-08-2T         | ○     | 2              | 4               | 20 | 20 | 91  | 40 | 2.4 | 4 | +10°       | -5.5° | ✓            | Fig.6   | 32,000                               |
|                       | 25-W25-08-4T         | ○     | 4              | 4               | 25 | 25 | 97  | 40 | 2.4 | 4 | +10°       | -5.5° | ✓            | Fig.7   | 28,000                               |
|                       | MRX 20-W20-10-2T     | ○     | 2              | 5               | 20 | 20 | 91  | 40 | 2.9 | 5 | +5°        | -8°   | ×            | Fig.5   | 30,000                               |
|                       | 25-W25-10-3T         | ○     | 3              | 5               | 25 | 25 | 97  | 40 | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.7   | 28,000                               |
|                       | 32-W32-10-4T         | ○     | 4              | 5               | 32 | 32 | 101 | 40 | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.7   | 22,500                               |
|                       | MRX 32-W32-12-3T     | ○     | 3              | 6               | 32 | 32 | 101 | 40 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.7   | 24,500                               |
|                       | 40-W32-12-4T         | ○     | 4              | 6               | 40 | 32 | 101 | 40 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.8   | 21,000                               |
|                       | 50-W40-12-5T         | ○     | 5              | 6               | 50 | 40 | 111 | 40 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.8   | 18,000                               |
|                       | MRX 40-W32-16-2T     | ○     | 2              | 8               | 40 | 32 | 101 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.8   | 18,000                               |
|                       | 50-W40-16-4T         | ○     | 4              | 8               | 50 | 40 | 111 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.8   | 15,500                               |
|                       | 63-W40-16-5T         | ○     | 5              | 8               | 63 | 40 | 112 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.9   | 13,500                               |
| Long Shank (Straight) | MRX 16-S16-08-2T-160 | ○     | 2              | 4               | 16 | 16 | 160 | 70 | 2.4 | 4 | +3°        | -5.5° | ×            | Fig.1   | 38,000                               |
|                       | 20-S20-08-2T-180     | ○     | 2              | 4               | 20 | 20 | 180 | 80 | 2.4 | 4 | +10°       | -5.5° | ✓            | Fig.2   | 32,000                               |
|                       | 25-S25-08-4T-180     | ○     | 4              | 4               | 25 | 25 | 180 | 80 | 2.4 | 4 | +10°       | -5.5° | ✓            | Fig.2   | 28,000                               |
|                       | MRX 20-S20-10-2T-180 | ○     | 2              | 5               | 20 | 20 | 180 | 80 | 2.9 | 5 | +5°        | -8°   | ×            | Fig.1   | 30,000                               |
|                       | 25-S25-10-2T-180     | ○     | 2              | 5               | 25 | 25 | 180 | 80 | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.2   | 28,000                               |
|                       | 32-S32-10-4T-200     | ○     | 4              | 5               | 32 | 32 | 200 | 80 | 2.9 | 5 | +10°       | -5.5° | ✓            | Fig.2   | 22,500                               |
|                       | MRX 32-S32-12-2T-200 | ○     | 2              | 6               | 32 | 32 | 200 | 80 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.2   | 24,500                               |
|                       | 40-S32-12-4T-200     | ○     | 4              | 6               | 40 | 32 | 200 | 40 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.3   | 21,000                               |
|                       | 50-S42-12-4T-300     | ○     | 4              | 6               | 50 | 42 | 300 | 40 | 3.4 | 6 | +10°       | -5.5° | ✓            | Fig.3   | 18,000                               |
|                       | MRX 40-S32-16-2T-200 | ○     | 2              | 8               | 40 | 32 | 200 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.3   | 18,000                               |
|                       | 50-S42-16-4T-300     | ○     | 4              | 8               | 50 | 42 | 300 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.3   | 15,500                               |
|                       | 63-S42-16-4T-300     | ○     | 4              | 8               | 63 | 42 | 300 | 40 | 4.4 | 8 | +10°       | -5.5° | ✓            | Fig.4   | 13,500                               |

# MRX Inserts

| MRX Endmill Spare Parts and Applicable Inserts (inch / metric) |  |             |            |                     |   |
|--|--|-------------|------------|---------------------|---|
| Part Number  | Spare Parts  |             |            |                     | Applicable Inserts  |
|  | Insert Screw   | DTPM Wrench | TTP Wrench | Anti-seize Compound |   |
| MRX...-08...   | SB-2555TRP<br>Recommended Torque for Insert Screw<br>1.2N · m  | DTPM-8      | -          | MP-1                | RDMT0803M0ER-GM<br>RDGT0803M0ER-GM<br>RDGT0803M0ER-SM ※1<br>RDMT0803M0EN-GH |
| MRX...-10...   | SB-3070TRP<br>Recommended Torque for Insert Screw<br>2.0N · m  | DTPM-10     | -          | MP-1                | RPMT10T3M0ER-GM ※2<br>RPGT10T3M0ER-GM<br>RPGT10T3M0ER-SM<br>RPMT10T3M0EN-GH |
| MRX...-12...   | SB-4090TRPN<br>Recommended Torque for Insert Screw<br>3.5N · m | DTPM-15     | -          | MP-1                | RPMT1204M0ER-GM ※3<br>RPMT1204M0ER-GM<br>RPGT1204M0ER-SM<br>RPMT1204M0EN-GH |
| MRX...-16...   | SB-50120TRP<br>Recommended Torque for Insert Screw<br>4.5N · m | -           | TTP-20     | MP-1                | RPMT1605M0ER-GM ※4<br>RPGT1605M0ER-GM<br>RPGT1605M0ER-SM<br>RPMT1605M0EN-GH |

• **Caution with Max. Revolution**  
When running an endmill or a cutter at the maximum revolution, the insert or cutter may be damaged by centrifugal force.

• Coat Anti-seize Compound (MP-1) thinly on portion of taper and thread when insert is fixed

※1... Not compatible with conventional RPMT08T2M0-H inserts

※2... Not compatible with conventional RPMT10T3M0 inserts (without ER-.. or EN-..)

※3... Not compatible with conventional RPMT1204M0 or RPMT1204M0-H inserts (without ER-.. or EN-..)

※4... Not compatible with conventional RPMT1605M0-H

Recommended Cutting Conditions P9

| Applicable Inserts   |                  |                             |       |       |                            |       |               |                |        |                    |                                |        |                       |                |  |
|--|------------------|-----------------------------|-------|-------|----------------------------|-------|---------------|----------------|--------|--------------------|--------------------------------|--------|-----------------------|----------------|--|
| Usage Classification   | P                | Carbon Steel / Alloy Steel  |       | M     | Austenitic Stainless Steel |       | K             | Gray Cast Iron |        | S                  | Heat Resistant Alloy (Ni-base) |        | H                     | Hard Materials |  |
|  |                  | ★                           | ★     |       | ★                          | ☆     |               | ★              | ★      |                    | ☆                              | ☆      |                       |                |  |
| ★ Roughing / 1st Choice<br>☆ Roughing / 2nd Choice<br>■ Finishing / 1st Choice<br>□ Finishing / 2nd Choice<br>(When hardness is under 45HRC) | M                | Martensitic Stainless Steel |       | K     | Nodular Cast Iron          |       | S             | Titanium Alloy |        | H                  | CVD Coated Carbide             |        | Applicable Toolholder |                |  |
|  |                  | ★                           | ☆     |       | ★                          | ★     |               | ★              | ☆      |                    | □                              |        |                       |                |  |
| Insert   | Part Number      | Dimensions (in)             |       |       |                            | Angle | MEGACOAT NANO |                |        | CVD Coated Carbide |                                |        |                       |                |  |
|  |                  | ØA                          | T     | Ød    | re                         |       | α             | PR1535         | PR1525 |                    | PR1510                         | CA6535 |                       |                |  |
| <br>General Purpose (M-Class)  | RDMT 0803M0ER-GM | 0.315 (8mm)                 | 0.125 | 0.118 | 0.157                      | 15°   | ●             | ●              | ○      | ●                  | P4-7                           |        |                       |                |  |
|  | RPMT 10T3M0ER-GM | 0.394 (10mm)                | 0.156 | 0.138 | 0.197                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
|  | 1204M0ER-GM      | 0.472 (12mm)                | 0.187 | 0.181 | 0.236                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
|  | 1605M0ER-GM      | 0.630 (16mm)                | 0.219 | 0.228 | 0.315                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
| <br>General Purpose (G-Class)  | RDGT 0803M0ER-GM | 0.315 (8mm)                 | 0.125 | 0.118 | 0.157                      | 15°   | ●             | ●              | ○      | ●                  | P4-7                           |        |                       |                |  |
|  | RPGT 10T3M0ER-GM | 0.394 (10mm)                | 0.156 | 0.138 | 0.197                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
|  | 1204M0ER-GM      | 0.472 (12mm)                | 0.187 | 0.181 | 0.236                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
|  | 1605M0ER-GM      | 0.630 (16mm)                | 0.219 | 0.228 | 0.315                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
| <br>For Stainless Steel (Low Cutting Force)  | RDGT 0803M0ER-SM | 0.315 (8mm)                 | 0.125 | 0.118 | 0.157                      | 15°   | ●             | ●              | ○      | ●                  | P4-7                           |        |                       |                |  |
|  | RPGT 10T3M0ER-SM | 0.394 (10mm)                | 0.156 | 0.138 | 0.197                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
|  | 1204M0ER-SM      | 0.472 (12mm)                | 0.187 | 0.181 | 0.236                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
|  | 1605M0ER-SM      | 0.630 (16mm)                | 0.219 | 0.228 | 0.315                      | 11°   | ●             | ●              | ○      | ●                  |                                |        |                       |                |  |
| <br>Tough Edge (Heavy Milling)   | RDMT 0803M0EN-GH | 0.315 (8mm)                 | 0.125 | 0.118 | 0.157                      | 15°   | ○             | ●              | ○      | ○                  | P4-7                           |        |                       |                |  |
|  | RPMT 10T3M0EN-GH | 0.394 (10mm)                | 0.156 | 0.138 | 0.197                      | 11°   | ○             | ●              | ○      | ○                  |                                |        |                       |                |  |
|  | 1204M0EN-GH      | 0.472 (12mm)                | 0.187 | 0.181 | 0.236                      | 11°   | ○             | ●              | ○      | ○                  |                                |        |                       |                |  |
|  | 1605M0EN-GH      | 0.630 (16mm)                | 0.219 | 0.228 | 0.315                      | 11°   | ○             | ●              | ○      | ○                  |                                |        |                       |                |  |

● : Standard Stock ○ : World Express



| Recommended Cutting Conditions         |   |                                 |                                 |                                 |                                   |                           |                           |                           |
|--|---|---------------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------|---------------------------|---------------------------|
| Workpiece Material                     | Recommended Chipbreaker per Material (fz:ipt)   |                                 |                                 |                                 | Recommended Insert Grade Vc (sfm) |                           |                           |                           |
|  | ※RD..08 type: ap=0.079"<br>RP..10 type: ap=0.098"<br>RP..12 type: ap=0.118"<br>RP..16 type: ap=0.158" |                                 |                                 |                                 | MEGACOAT NANO                     |                           |                           | CVD Coated Carbide        |
|  | RDMT-GM<br>RPMT-GM  | RDGT-GM<br>RPGT-GM              | RDGT-SM<br>RPGT-SM              | RDMT-GH<br>RPMT-GH              | PR1535                            | PR1525                    | PR1510                    | CA6535                    |
| Carbon Steel                           | ★<br>0.004- <b>0.008</b> -0.012   | ☆<br>0.004- <b>0.008</b> -0.012 | ☆<br>0.002- <b>0.006</b> -0.008 | ☆<br>0.006- <b>0.012</b> -0.014 | -                                 | ★<br>400- <b>600</b> -825 | -                         | -                         |
| Alloy Steel                            | ★<br>0.004- <b>0.008</b> -0.012   | ☆<br>0.004- <b>0.008</b> -0.012 | ☆<br>0.002- <b>0.006</b> -0.008 | ☆<br>0.006- <b>0.012</b> -0.014 | -                                 | ★<br>325- <b>525</b> -725 | -                         | -                         |
| Die Steel                              | ★<br>0.004- <b>0.006</b> -0.010   | ☆<br>0.004- <b>0.006</b> -0.010 | ☆<br>0.002- <b>0.005</b> -0.008 | ☆<br>0.006- <b>0.008</b> -0.012 | -                                 | ★<br>250- <b>450</b> -600 | -                         | -                         |
| Austenitic Stainless Steel             | ☆<br>0.004- <b>0.006</b> -0.008   | ☆<br>0.004- <b>0.006</b> -0.008 | ★<br>0.002- <b>0.005</b> -0.008 | -                               | ★<br>325- <b>525</b> -650         | ☆<br>325- <b>525</b> -650 | -                         | -                         |
| Martensitic Stainless Steel            | ☆<br>0.004- <b>0.006</b> -0.008   | ☆<br>0.004- <b>0.006</b> -0.008 | ★<br>0.002- <b>0.005</b> -0.008 | -                               | ☆<br>500- <b>650</b> -825         | -                         | -                         | ★<br>600- <b>775</b> -975 |
| Precipitation Hardened Stainless Steel | ☆<br>0.004- <b>0.006</b> -0.008   | ★<br>0.004- <b>0.006</b> -0.008 | ☆<br>0.002- <b>0.005</b> -0.008 | -                               | ★<br>300- <b>400</b> -500         | -                         | -                         | -                         |
| Gray Cast Iron                         | ★<br>0.004- <b>0.008</b> -0.012   | ☆<br>0.004- <b>0.008</b> -0.012 | -                               | ☆<br>0.006- <b>0.012</b> -0.014 | -                                 | -                         | ★<br>400- <b>600</b> -825 | -                         |
| Nodular Cast Iron                      | ★<br>0.004- <b>0.006</b> -0.010   | ☆<br>0.004- <b>0.006</b> -0.010 | -                               | ☆<br>0.006- <b>0.008</b> -0.012 | -                                 | -                         | ★<br>325- <b>500</b> -650 | -                         |
| Ni-base Heat Resistant Alloy           | ☆<br>0.004- <b>0.005</b> -0.006   | ★<br>0.004- <b>0.005</b> -0.006 | ☆<br>0.002- <b>0.004</b> -0.006 | -                               | ☆<br>75- <b>100</b> -175          | -                         | -                         | ★<br>75- <b>100</b> -175  |
| Titanium Alloy                         | ☆<br>0.004- <b>0.005</b> -0.006   | ☆<br>0.004- <b>0.005</b> -0.006 | ★<br>0.002- <b>0.004</b> -0.006 | -                               | ★<br>125- <b>200</b> -250         | -                         | ☆<br>100- <b>175</b> -225 | -                         |

※ Machining with coolant is recommended for Ni-base Heat Resistant Alloy and Titanium Alloy.

※ RDGT / RPGT are recommended for Stainless Steel, Ni-base Heat Resistant Alloy, and Titanium Alloy.

※ The figure in bold font is the starting value of the recommended cutting conditions.  
Adjust the cutting speed and the feed rate within the above conditions according to the actual machining situation.

※ Recommended feed rate is the reference value when ap is  $\epsilon/2$  (0.079" for RD..08 / 0.098" for RP..10 / 0.118" for RP..12 / 0.158" for RP..16).  
For other ap, calculate the recommended feed rate based on the conversion factor below.

※ For MRX16-S16-08-2T(-160), MRX16-W-08-2T, MRX20-S20-10-2T(-180), MRX20-W20-10-2T, MRX0625-W625-08-2T, MRX0625-S625-08-2T-6 set the feed rate no higher than 50% of the recommended cutting conditions.

| Conversion Factor for Feed Per Tooth by Depth of Cut (ap) |                 |  |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|---|-----------------|--|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Insert  | ap (max)        | Conversion Factor for Feed Per Tooth (ipt) |                      |                      |                      |                      |                      |                      |                      |                      |                      |
|   |                 | ap=0.020"<br>(0.5mm)                       | ap=0.039"<br>(1.0mm) | ap=0.059"<br>(1.5mm) | ap=0.079"<br>(2.0mm) | ap=0.098"<br>(2.5mm) | ap=0.118"<br>(3.0mm) | ap=0.158"<br>(4.0mm) | ap=0.197"<br>(5.0mm) | ap=0.236"<br>(6.0mm) | ap=0.315"<br>(8.0mm) |
| <b>RD..08 type</b><br>(GM/SM/GH Chipbreaker)              | 0.020"<br>(4mm) | 1.7  | 1.3                  | 1.1                  | 1<br>(Standard)      | 0.9                  | 0.8                  | 0.8                  | -                    | -                    | -                    |
| <b>RP..10 type</b><br>(GM/SM/GH Chipbreaker)              | 0.197"<br>(5mm) | 1.9  | 1.4                  | 1.2                  | 1                    | 1<br>(Standard)      | 0.9                  | 0.8                  | 0.8                  | -                    | -                    |
| <b>RP..12 type</b><br>(GM/SM/GH Chipbreaker)              | 0.236"<br>(6mm) | 2.1  | 1.5                  | 1.3                  | 1.1                  | 1                    | 1<br>(Standard)      | 0.9                  | 0.8                  | 0.8                  | -                    |
| <b>RP..16 type</b><br>(GM/SM/GH Chipbreaker)              | 0.315"<br>(8mm) | 2.4  | 1.7                  | 1.4                  | 1.3                  | 1.1                  | 1.1                  | 1                    | 1<br>(Standard)      | 0.9                  | 0.8                  |

※ **Calculation Example** (RPMT12 type, Carbon Steel, GM Chipbreaker, ap=0.039")  
**0.008ipt** (Reference value for Carbon Steel and GM Chipbreaker)  
 × **1.5** (Conversion factor for RP..12 type, ap=0.039")  
 = **0.012ipt** (Recommended Feed Rate)

# Drilling & Ramping

## Drilling

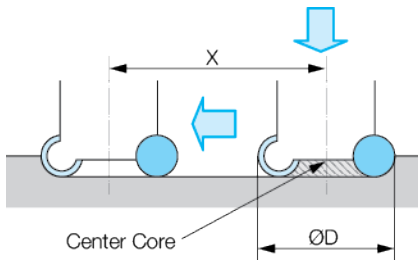
### [ Drilling Depth ]

See Max. Cutting Depth (Pd) in the table to the right.

### [ Traversing After Drilling ]

Caution when Traversing right after Drilling

- Reduce the table feed by 50% of the recommended conditions until the center core part is completely cut off. The internal cutting edge's radial rake angle is large in the negative direction.
- Min cutting length for flat bottom face (X) is in the table to the right.



| inch            |           |        |                         |  | mm                |           |        |                         |  |
|-----------------|-----------|--------|-------------------------|--|-------------------|-----------|--------|-------------------------|--|
| Inch Tool Spec. |           | Max ap | Max. Cutting Depth (Pd) | Min. Cutting Length for flat bottom face (X) | Metric Tool Spec. |           | Max ap | Max. Cutting Depth (Pd) | Min. Cutting Length for flat bottom face (X) |
| Insert          | Tool Dia. |        |                         |  | Insert            | Tool Dia. |        |                         |  |
| RD..08          | 0.625     | 0.157  | 0.028                   | 0.349  | RD..08            | 16        | 4      | 0.7                     | 9  |
|                 | 0.750     | 0.157  | 0.055                   | 0.474  |                   | 20        | 4      | 1.4                     | 13   |
|                 | 1.000     | 0.157  | 0.055                   | 0.724  |                   | 25        | 4      | 1.4                     | 18   |
| RP..10          | 0.750     | 0.197  | 0.024                   | 0.396  | RP..10            | 20        | 5      | 0.6                     | 11   |
|                 | 1.000     | 0.197  | 0.075                   | 0.646  |                   | 25        | 5      | 1.9                     | 16   |
|                 | 1.250     | 0.197  | 0.075                   | 0.896  |                   | 32        | 5      | 1.9                     | 23   |
|                 | 1.500     | 0.197  | 0.075                   | 1.146  |                   | 40        | 5      | 1.9                     | 31   |
|                 | 2.000     | 0.197  | 0.075                   | 1.646  |                   | 50        | 5      | 1.9                     | 41   |
|                 | 2.500     | 0.197  | 0.075                   | 2.146  |                   | 63        | 5      | 1.9                     | 54   |
| RP..12          | 1.250     | 0.236  | 0.094                   | 0.817  | RP..12            | 32        | 6      | 2.4                     | 21   |
|                 | 1.500     | 0.236  | 0.094                   | 1.067  |                   | 40        | 6      | 2.4                     | 29   |
|                 | 2.000     | 0.236  | 0.094                   | 1.567  |                   | 50        | 6      | 2.4                     | 39   |
|                 | 2.500     | 0.236  | 0.094                   | 2.067  |                   | 63        | 6      | 2.4                     | 52   |
|                 | 3.000     | 0.236  | 0.094                   | 2.567  |                   | 80        | 6      | 2.4                     | 69   |
|                 | 4.000     | 0.236  | 0.094                   | 3.567  |                   | 100       | 6      | 2.4                     | 89   |
| RP..16          | 1.500     | 0.315  | 0.134                   | 0.909  | RP..16            | 40        | 8      | 3.4                     | 25   |
|                 | 2.000     | 0.315  | 0.134                   | 1.409  |                   | 50        | 8      | 3.4                     | 35   |
|                 | 2.500     | 0.315  | 0.134                   | 1.909  |                   | 63        | 8      | 3.4                     | 48   |
|                 | 3.000     | 0.315  | 0.134                   | 2.409  |                   | 80        | 8      | 3.4                     | 65   |
|                 | 4.000     | 0.315  | 0.134                   | 3.409  |                   | 100       | 8      | 3.4                     | 85   |
|                 | 5.000     | 0.315  | 0.134                   | 4.346  |                   | 125       | 8      | 3.4                     | 110  |

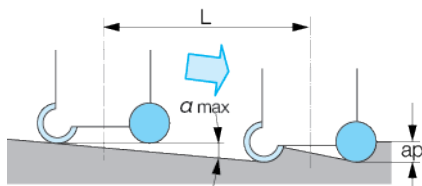
※ Above value is based on the clearance of 0.039" between the tool and the workpiece.

## Ramping

- Ramping angle should be under  $\alpha_{max}$  (maximum ramping angle) in the table to the right.
- Feed rate should be under 70% of the cutting conditions on page 9

Formula for Max. cutting length (L) at Max. ramping angle

$$L = \frac{ap}{\tan \alpha_{max}}$$



| inch            |           |        |                                  |                    |   | mm                |           |                                  |                    |   |     |
|-----------------|-----------|--------|----------------------------------|--------------------|---|-------------------|-----------|----------------------------------|--------------------|---|-----|
| Inch Tool Spec. |           | Max ap | Max Ramping Angle $\alpha_{max}$ | tan $\alpha_{max}$ | Max. Cutting Length at Max. Ramping Angle (L) | Metric Tool Spec. |           | Max Ramping Angle $\alpha_{max}$ | tan $\alpha_{max}$ | Max. Cutting Length at Max. Ramping Angle (L) |     |
| Insert          | Tool Dia. |        |                                  |                    |   | Insert            | Tool Dia. |                                  |                    |   |     |
| RD..08          | 0.625     | 0.157  | 7°                               | 0.123              | 1.282   | RD..08            | 16        | 4                                | 8°                 | 0.141   | 28  |
|                 | 0.750     | 0.157  | 9°                               | 0.158              | 0.994   |                   | 20        | 4                                | 9°                 | 0.158   | 25  |
|                 | 1.000     | 0.157  | 5°                               | 0.087              | 1.800   |                   | 25        | 4                                | 5°                 | 0.087   | 45  |
| RP..10          | 0.750     | 0.197  | 4°                               | 0.070              | 2.816   | RP..10            | 20        | 5                                | 5°                 | 0.087   | 57  |
|                 | 1.000     | 0.197  | 9°                               | 0.158              | 1.243   |                   | 25        | 5                                | 10°                | 0.176   | 28  |
|                 | 1.250     | 0.197  | 6°                               | 0.105              | 1.873   |                   | 32        | 5                                | 6°                 | 0.105   | 47  |
|                 | 1.500     | 0.197  | 4°                               | 0.070              | 2.816   |                   | 40        | 5                                | 4°                 | 0.070   | 71  |
|                 | 2.000     | 0.197  | 3°                               | 0.052              | 3.757   |                   | 50        | 5                                | 3°                 | 0.052   | 95  |
|                 | 2.500     | 0.197  | 2°                               | 0.035              | 5.640   |                   | 63        | 5                                | 2°                 | 0.035   | 143 |
| RP..12          | 1.250     | 0.236  | 9°                               | 0.158              | 1.491   | RP..12            | 32        | 6                                | 9°                 | 0.158   | 37  |
|                 | 1.500     | 0.236  | 6°                               | 0.105              | 2.248   |                   | 40        | 6                                | 5°                 | 0.087   | 68  |
|                 | 2.000     | 0.236  | 4°                               | 0.070              | 3.379   |                   | 50        | 6                                | 4°                 | 0.070   | 85  |
|                 | 2.500     | 0.236  | 2°                               | 0.035              | 6.768   |                   | 63        | 6                                | 2°                 | 0.035   | 171 |
|                 | 3.000     | 0.236  | 2°                               | 0.035              | 6.768   |                   | 80        | 6                                | 2°                 | 0.035   | 171 |
|                 | 4.000     | 0.236  | 1°                               | 0.017              | 13.498  |                   | 100       | 6                                | 1°                 | 0.017   | 343 |
| RP..16          | 1.500     | 0.315  | 12°                              | 0.213              | 1.481   | RP..16            | 40        | 8                                | 11°                | 0.194   | 41  |
|                 | 2.000     | 0.315  | 6°                               | 0.105              | 2.997   |                   | 50        | 8                                | 7°                 | 0.123   | 65  |
|                 | 2.500     | 0.315  | 4°                               | 0.070              | 4.506   |                   | 63        | 8                                | 4°                 | 0.070   | 114 |
|                 | 3.000     | 0.315  | 3°                               | 0.052              | 6.011   |                   | 80        | 8                                | 3°                 | 0.052   | 152 |
|                 | 4.000     | 0.315  | 2°                               | 0.035              | 9.025   |                   | 100       | 8                                | 2°                 | 0.035   | 229 |
|                 | 5.000     | 0.315  | 1°                               | 0.017              | 17.998  |                   | 125       | 8                                | 1°                 | 0.017   | 458 |

※ Above value is based on the clearance of 0.039" between the tool and the workpiece.

## Helical Milling

- Sinking depth (**h**) when helical milling should be under **Max ap** in table below.  
Sinking angle **α** (with trajectory of the center line of tool) should be under **α max** (maximum ramping angle) in cutting conditions on **page 10**.
- Feed rate should be under 70% of cutting conditions on **page 9**.
- Climb milling is recommended.

### Formula for Sinking Depth (h)

$$h = \pi \times \text{ØDs} \times \tan \alpha$$

(h should be under ap)

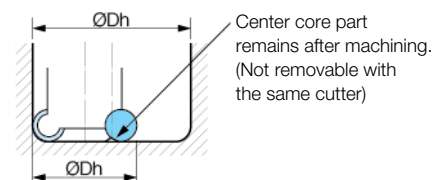
(α should be under α max)

ØDs (Trajectory diameter of cutter's center line)

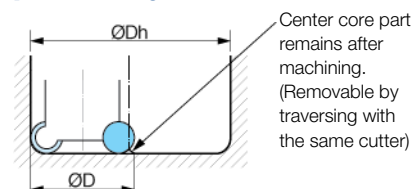
$$\text{ØDs} = \text{ØDh} - \text{ØD}$$

## Requirements for Removing Core

[ When Cutting Dia.  $\text{ØDh1} \leq \text{ØDh} < \text{ØDh3}$  ]



[ When Cutting Dia.  $\text{ØDh2} \leq \text{ØDh} \leq \text{ØDh3}$  ]

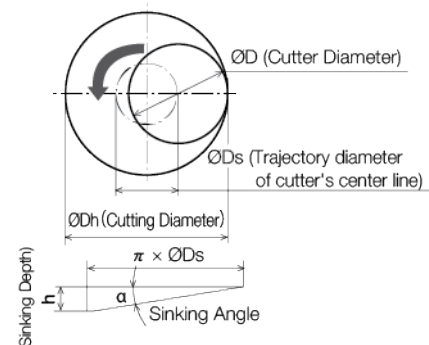


※ Refer to table on the left for ØDh1-ØDh3.

| inch            |           |        |                        |   |                        | mm                |           |                        |   |                        |     |
|-----------------|-----------|--------|------------------------|---|------------------------|-------------------|-----------|------------------------|---|------------------------|-----|
| Inch Tool Spec. |           | Max ap | Min. Cutting Dia. ØDh1 | Min. Cutting Dia. for flat bottom facing ØDh2 | Max. Cutting Dia. ØDh3 | Metric Tool Spec. |           | Min. Cutting Dia. ØDh1 | Min. Cutting Dia. for flat bottom facing ØDh2 | Max. Cutting Dia. ØDh3 |     |
| Insert          | Tool Dia. |        |                        |   |                        | Insert            | Tool Dia. |                        |   |                        |     |
| RD..08          | 0.625     | 0.157  | 0.787                  | 0.935   | 1.171                  | RD..08            | 16        | 4                      | 20  | 24                     | 30  |
|                 | 0.750     | 0.157  | 0.984                  | 1.185   | 1.421                  |                   | 20        | 4                      | 26  | 32                     | 38  |
|                 | 1.000     | 0.157  | 1.457                  | 1.685   | 1.921                  |                   | 25        | 4                      | 36  | 42                     | 48  |
| RP..10          | 0.750     | 0.197  | 0.945                  | 1.106   | 1.421                  | RP..10            | 20        | 5                      | 26  | 30                     | 38  |
|                 | 1.000     | 0.197  | 1.299                  | 1.606   | 1.921                  |                   | 25        | 5                      | 33  | 40                     | 48  |
|                 | 1.250     | 0.197  | 1.811                  | 2.106   | 2.421                  |                   | 32        | 5                      | 47  | 54                     | 62  |
|                 | 1.500     | 0.197  | 2.323                  | 2.606   | 2.921                  |                   | 40        | 5                      | 63  | 70                     | 78  |
|                 | 2.000     | 0.197  | 3.307                  | 3.606   | 3.921                  |                   | 50        | 5                      | 83  | 90                     | 98  |
|                 | 2.500     | 0.197  | 4.331                  | 4.606   | 4.921                  |                   | 63        | 5                      | 109   | 116                    | 124 |
| RP..12          | 1.250     | 0.236  | 1.654                  | 2.028   | 2.421                  | RP..12            | 32        | 6                      | 43  | 52                     | 62  |
|                 | 1.500     | 0.236  | 2.165                  | 2.528   | 2.921                  |                   | 40        | 6                      | 59  | 68                     | 78  |
|                 | 2.000     | 0.236  | 3.150                  | 3.528   | 3.921                  |                   | 50        | 6                      | 79  | 88                     | 98  |
|                 | 2.500     | 0.236  | 4.173                  | 4.528   | 4.921                  |                   | 63        | 6                      | 105   | 114                    | 124 |
|                 | 3.000     | 0.236  | 5.157                  | 5.528   | 5.921                  |                   | 80        | 6                      | 139   | 148                    | 158 |
|                 | 4.000     | 0.236  | 7.165                  | 7.528   | 7.921                  |                   | 100       | 6                      | 179   | 188                    | 198 |
| RP..16          | 1.500     | 0.315  | 1.890                  | 2.370   | 2.921                  | RP..16            | 40        | 8                      | 51  | 64                     | 78  |
|                 | 2.000     | 0.315  | 2.874                  | 3.370   | 3.921                  |                   | 50        | 8                      | 71  | 84                     | 98  |
|                 | 2.500     | 0.315  | 3.858                  | 4.370   | 4.921                  |                   | 63        | 8                      | 97  | 110                    | 124 |
|                 | 3.000     | 0.315  | 4.882                  | 5.370   | 5.921                  |                   | 80        | 8                      | 131   | 144                    | 158 |
|                 | 4.000     | 0.315  | 6.890                  | 7.370   | 7.921                  |                   | 100       | 8                      | 171   | 184                    | 198 |
|                 | 5.000     | 0.315  | 8.740                  | 9.244   | 9.795                  |                   | 125       | 8                      | 221   | 234                    | 248 |

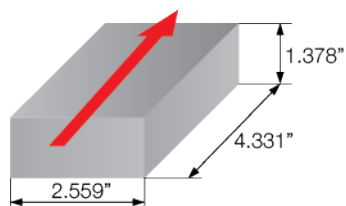
※ Above value is based on the clearance of 0.039° between the tool and the workpiece.

## Helical Milling Factors



## Case Studies

### 304 Steel



4.5 times longer tool life

- Nozzle Parts • Vc=375sfm • fz=0.006ipt
- ap × ae=0.039° × 2.559" • Dry
- MRX100R-12-9T-M (9 edges) • RPGT1204M0ER-SM (PR1535)

**PR1535**

450pcs / Edge

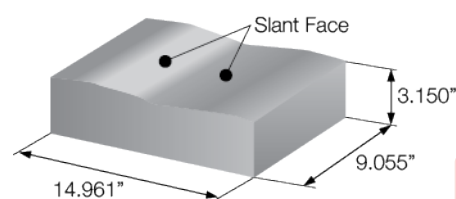
Conventional

100pcs / Edge

Cost savings with 4.5 times longer tool life with 1.5 times more insert edges. MRX prevented burr formation and improved surface finish.

(User Evaluation)

### H13 Steel



More than double tool life

- Mold Parts • Vc=400sfm • fz=0.010ipt
- ap × ae=0.039-0.079° × 0.394" • Dry
- MRX20-S20-08-2T (2 edges) • RDGT0803M0ER-GM (PR1525)

**PR1525**

2pcs with Stable Machining

Conventional

1pc with Unstable Tool Life

Conventional tool only machined 1 workpiece due to unstable tool life, but the MRX doubled the tool life with stable machining.

(User Evaluation)

## CAT40

### Face Mill Toolholders

- Made from 8620 Alloy Steel
- Concentricity is less than .0002 at face and arbor
- All critical surfaces are precision ground
- Case hardened to 54-58 RC
- Case depth is .03-.04
- Balanced to G2.5 @ 20,000 rpm
- Rear thread for pull stud is 5/8-11
- Coolant through capable

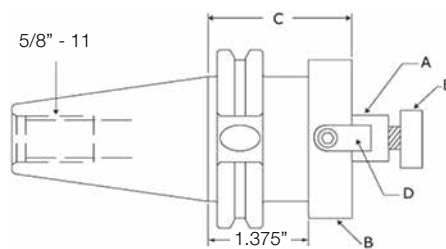


Fig.1

## CAT40

### Endmill Toolholders

- Made from 8620 Alloy Steel
- All critical surfaces are precision ground
- Case hardened to 56-58 RC
- Case depth is .03-.04
- Balanced to G2.5 @ 20,000 rpm
- Concentricity is .0001 or less
- Rear thread for pull stud is 5/8-11
- Coolant through capable

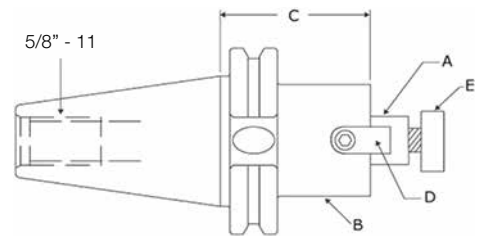


Fig.2

### CAT40 Face Mill Holder

| Part Number          | Stock | Dimensions (in)    |          |                 |               |           | Fig. | Suggested Retail Price |
|----------------------|-------|--------------------|----------|-----------------|---------------|-----------|------|------------------------|
|                      |       | Arbor Diameter (A) | O.D. (B) | Gage Length (C) | Key Width (D) | Screw (E) |      |                        |
| KYO-CAT40- FM.75-2.0 | ●     | 0.750              | 1.750    | 2.000           | 5/16          | 3/8-24    | 2    | \$139                  |
| FM1.0-2.0            | ●     | 1.000              | 2.180    | 2.000           | 3/8           | 1/2-20    | 1    | \$139                  |
| FM1.25-2.0           | ●     | 1.250              | 2.440    | 2.000           | 1/2           | 5/8-18    | 1    | \$139                  |
| FM1.5-2.0            | ●     | 1.500              | 2.520    | 2.000           | 5/8           | 3/4-16    | 1    | \$139                  |

● : Standard Stock

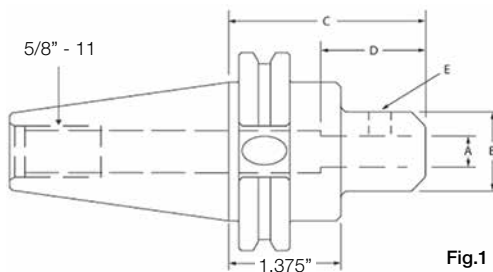


Fig.1

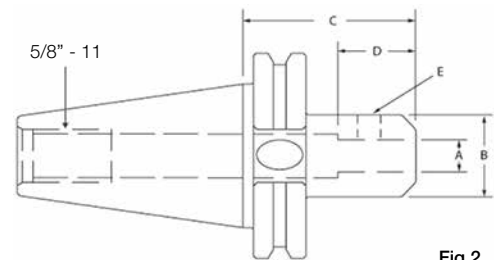


Fig.2

### CAT40 Endmill Holder

| Part Number            | Stock | Dimensions (in) |          |                 |                |               | Fig. | Suggested Retail Price |
|------------------------|-------|-----------------|----------|-----------------|----------------|---------------|------|------------------------|
|                        |       | I.D. (A)        | O.D. (B) | Gage Length (C) | Tool Depth (D) | Set Screw (E) |      |                        |
| KYO-CAT40- EM.500-1.75 | ●     | 0.500           | 1.375    | 1.750           | N/A            | 7/16-20       | 2    | \$109                  |
| EM.625-1.75            | ●     | 0.625           | 1.500    | 1.750           | 2.100          | 9/16-18       | 2    | \$109                  |
| EM.75-1.75             | ●     | 0.750           | 1.750    | 1.750           | 2.500          | 5/8-18        | 2    | \$109                  |
| EM1.0-1.75             | ●     | 1.000           | 1.750    | 1.750           | 2.600          | 5/8-18        | 2    | \$109                  |
| EM1.25-2.5             | ●     | 1.250           | 2.500    | 2.500           | 2.750          | 3/4-16        | 1    | \$114                  |
| EM1.5-4.0              | ●     | 1.500           | 2.620    | 4.000           | 3.000          | 2x - 3/4-16   | 2*   | \$129                  |

※ This tool holder does not have a safety zone for the tool changer.  
Although most machines do not require a safety zone, please be sure to check your machine tool requirements.

● : Standard Stock



# CAT50

## Face Mill Toolholders

- Made from 8620 Alloy Steel
- Concentricity is less than .0002 at face and arbor
- All critical surfaces are precision ground
- Case hardened to 54-58 RC
- Case depth is .03-.04
- Balanced to G2.5 @ 20,000 rpm
- Rear thread for pull stud is 1" x 8
- Coolant through capable

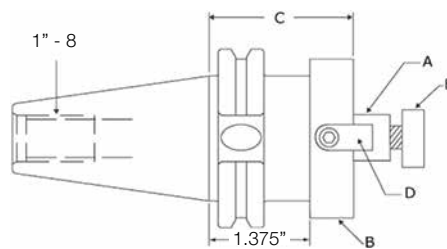


Fig.1

# CAT50

## Endmill Toolholders

- Made from 8620 Alloy Steel
- All critical surfaces are precision ground
- Case hardened to 56-58 RC
- Case depth is .03-.04
- Balanced to G2.5 @ 20,000 rpm
- Concentricity is .0002 or less
- Rear thread for pull stud is 1" x 8
- Coolant through capable

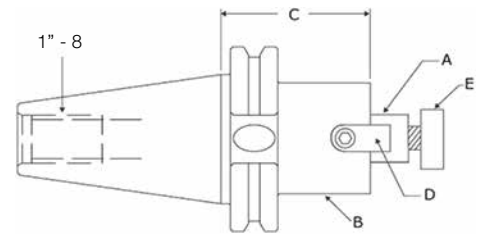


Fig.2

### CAT50 Face Mill Holder

| Part Number          | Stock | Dimensions (in)    |          |                 |               |           | Fig. | Suggested Retail Price |
|----------------------|-------|--------------------|----------|-----------------|---------------|-----------|------|------------------------|
|                      |       | Arbor Diameter (A) | O.D. (B) | Gage Length (C) | Key Width (D) | Screw (E) |      |                        |
| KYO-CAT50- FM.75-3.0 | ●     | 0.750              | 1.750    | 3.000           | 5/16          | 3/8-24    | 2    | \$199                  |
| FM1.0-3.0            | ●     | 1.000              | 2.180    | 3.000           | 3/8           | 1/2-20    | 2    | \$199                  |
| FM1.25-3.0           | ●     | 1.250              | 2.440    | 3.000           | 1/2           | 5/8-18    | 2    | \$199                  |
| FM1.5-3.0            | ●     | 1.500              | 2.740    | 3.000           | 5/8           | 3/4-16    | 2    | \$199                  |
| FM2.0-3.0            | ●     | 2.000              | 3.700    | 3.000           | 3/4           | 1-14      | 1    | \$229                  |
| FM2.5-3.0            | ●     | 2.500              | 4.000    | 3.000           | 1.0           | 1-14      | 1    | \$229                  |

● : Standard Stock

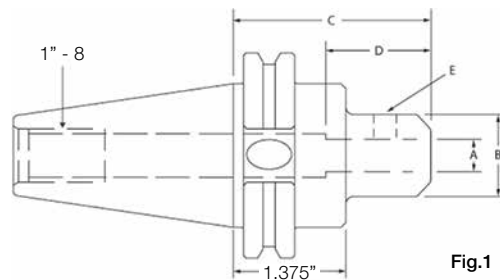


Fig.1

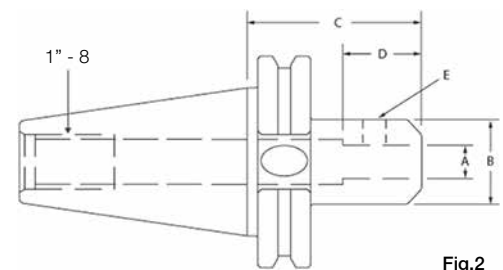


Fig.2

### CAT50 Endmill Holder

| Part Number           | Stock | Dimensions (in) |          |                 |                |               | Fig. | Suggested Retail Price |
|-----------------------|-------|-----------------|----------|-----------------|----------------|---------------|------|------------------------|
|                       |       | I.D. (A)        | O.D. (B) | Gage Length (C) | Tool Depth (D) | Set Screw (E) |      |                        |
| KYO-CAT50- EM.500-3.0 | ●     | 0.500           | 1.375    | 3.000           | N/A            | 7/16-20       | 1    | \$169                  |
| EM.625-3.0            | ●     | 0.625           | 1.500    | 3.000           | N/A            | 9/16-18       | 1    | \$169                  |
| EM.75-3.0             | ●     | 0.750           | 1.750    | 3.000           | N/A            | 5/8-18        | 1    | \$169                  |
| EM1.0-4.0             | ●     | 1.000           | 1.900    | 4.000           | 2.750          | 5/8-18        | 1    | \$179                  |
| EM1.25-4.0            | ●     | 1.250           | 2.500    | 4.000           | 2.750          | 3/4-16        | 1    | \$179                  |
| EM1.5-4.5             | ●     | 1.500           | 2.750    | 4.500           | 3.000          | 2x - 3/4-16   | 1    | \$189                  |
| EM2.0-5.0             | ●     | 2.000           | 3.500    | 5.000           | 3.500          | 2x - 1.0-14   | 2*   | \$214                  |

※ This tool holder does not have a safety zone for the tool changer.  
Although most machines do not require a safety zone, please be sure to check your machine tool requirements.

● : Standard Stock



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