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Nate Lively  
nlively@rjwindustrial.com  
(717)-314-0530



# HF4 YG MILL

New HIGH FEED 4 Corner Milling Series

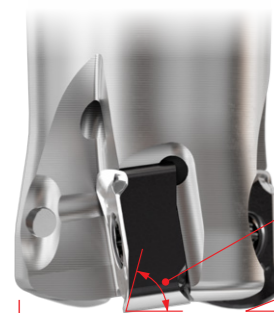
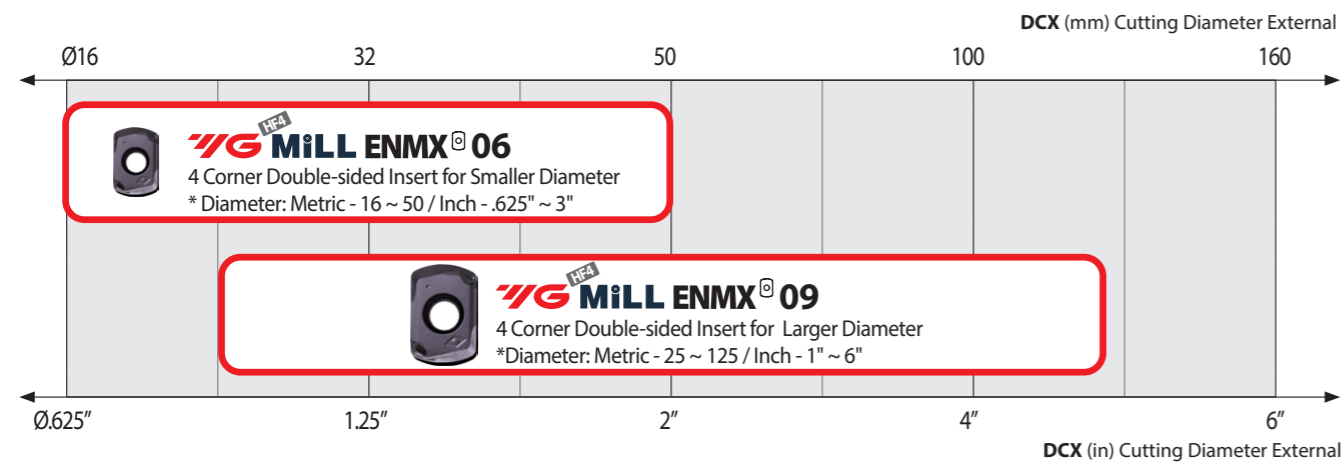
## ENMX MINI HIGH FEED

for Narrow and Long Reach Application

- Variety of cutter range  $\varnothing 16 \sim \varnothing 125$  ( $\varnothing 625'' \sim \varnothing 6''$ ) with 2 different size of insert
- Double sided with 4 cutting edges
- Dedicated grade with chip breaker for ISO P, M, K and H
- Efficiency solutions with high feed, Facing, Ramping, Plunging and Helical interpolation.



## High Feed Milling HF4 Series



Positive Rake Angle for Lower Cutting Force

Low Entering Angle for High Feed Rate

Small Size for Narrow Application (Minimum Ø16)

### Application

- High feed milling, Profiling, Face milling, Ramping, Plunging, Helical interpolation

### Features

- Diameter range : 16~125mm (.625"~6")
- Double-sided insert with 4 corners
- Wide flank face with reinforced insert shape
- Positive rake angle & low entering angle
- 3 Insert geometries



**ENMX<sup>®</sup> General**  
Carbon Steel  
Low Alloy Steel



**ENMX<sup>®</sup> -TR**  
Reinforced Edge  
High Alloy Steel  
Hardened Steel  
Cast Iron



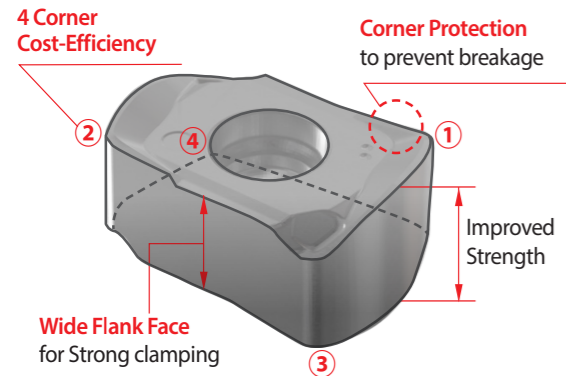
**ENMX<sup>®</sup> -ST**  
Reinforced Edge  
High Alloy Steel  
Hardened Steel  
Cast Iron

### Advantages

- Narrow application available (minimum Ø16)
- High versatile machining
- High cost-efficiency
- Rigid clamping on insert seat
- Prevent breakage on machining
- High feed rate available with low cutting force

### Benefits

- Expand machining ability with high versatility & small diameter ability
- Boost up productivity with high feed rate
- Safe machining with rigidity and strong insert shape



## YG HF4 Mill ENMX for Chip breakers & Grades

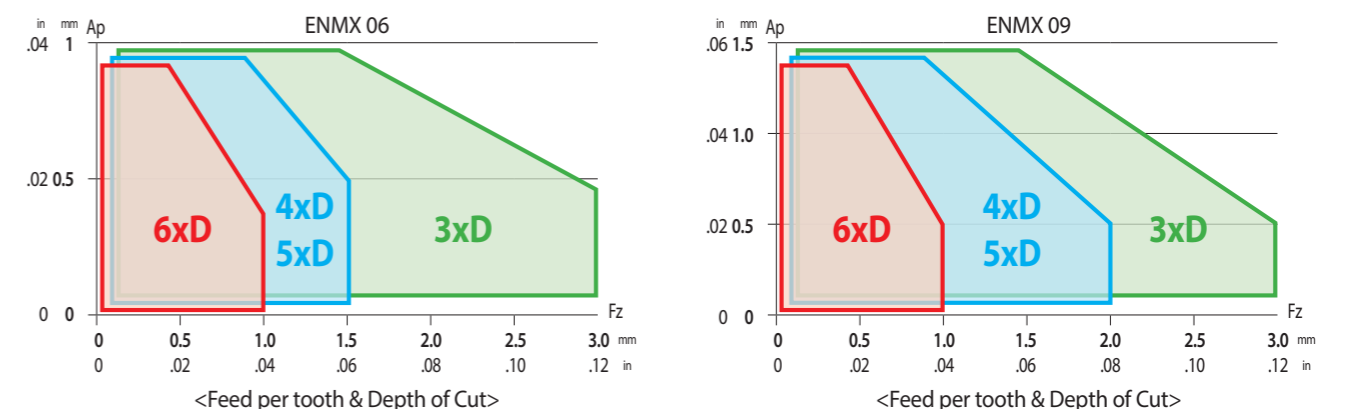
### Chip breakers

| P | M | K | S | Chip breaker                  | Application   | ENMX Insert                                |
|---|---|---|---|-------------------------------|---|--|
|   | M | K | S | <b>ST</b><br>Sticky material  | Aerospace<br>Sticky materials<br>Stainless Steel & Super Alloys                 | ENMX 06 (available)<br>ENMX 09 (available) |
| P | M | K |   | <b>General</b><br>Universal   | General Application<br>Carbon Steels<br>Low Alloyed Steels<br>Low cutting force | ENMX 06 (available)<br>ENMX 09 (available) |
| P |   | K |   | <b>-TR</b><br>Reinforced Edge | Mold & Die<br>High Alloyed Steels<br>Cast Irons                                 | ENMX 06 (available)<br>ENMX 09 (available) |

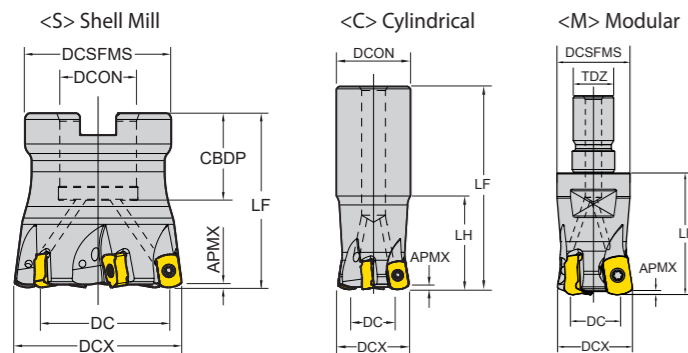
### Grades

| Grade        | ENMX 06 | ENMX 09 | Application             | ISO Range                                  |
|--------------|---------|---------|-------------------------|--|
| <b>YG602</b> | ●       | ●       | Multi-Purpose Grade     | P20 - P35 M20 - M40<br>K20 - K40 S15 - S25 |
| <b>YG712</b> | ●       | ●       | Carbon or Alloyed Steel | P10 - P30                                  |
| <b>YG613</b> | ●       | ●       | Stainless Steel         | P30 - P50<br>M30 - M40                     |

### Ap / Fz Information by cutter length. (Alloy Steel)



### YG HF4 Mill - Milling Cutter (Metric)

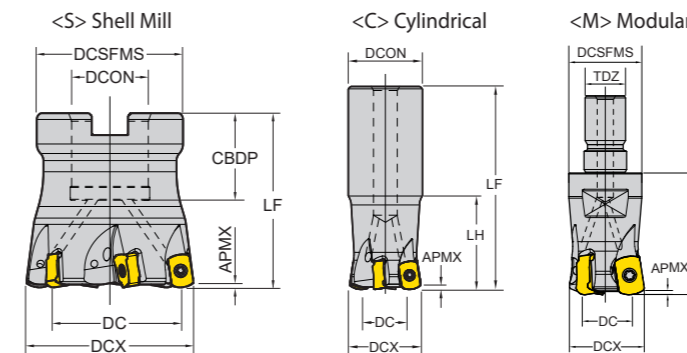


| Series    | Series | EDP 1800.. | Designation |
|-----------|--------|------------|-------------|
| ENMX 0604 | Wrench | 0218       | TPWBTP08    |
|           | Screw  | 0206       | TP082507-GS |
|           | Handle | 0189       | DH-H4       |
| ENMX 0905 | Wrench | 0216       | TPWBTP09    |
|           | Screw  | 0214       | TP093510-GS |
|           | Handle | 0189       | DH-H4       |
|           | Bit    | 0209       | DB-TP09     |

Unit : mm

| Series    | APMX                  | Designation              | EDP 1700..               | DC     | DCX   | ZEFP | LF  | Type        | DCON /TDZ | LH  | CBDP | DCSFMS | ⚙️ |
|-----------|-----------------------|--------------------------|--------------------------|--------|-------|------|-----|-------------|-----------|-----|------|--------|----|
| ENMX 0604 | 0.9                   | EHF-ENMX06-D16Z2C16-L100 | 0644                     | 9.0    | 16    | 2    | 100 | Cylindrical | 16        | 30  | -    | -      | ●  |
|           |                       | EHF-ENMX06-D16Z2C16-L150 | 0645                     | 9.0    | 16    | 2    | 150 |             | 16        | 50  | -    | -      | ●  |
|           |                       | EHF-ENMX06-D17Z2C16-L100 | 0674                     | 10.0   | 17    | 2    | 100 |             | 16        | 20  | -    | -      | ●  |
|           |                       | EHF-ENMX06-D17Z2C16-L150 | 0473                     | 10.0   | 17    | 2    | 150 |             | 16        | 20  | -    | -      | ●  |
|           | 1                     | Cylindrical              | EHF-ENMX06-D20Z3C20-L130 | 0463   | 12.6  | 20   | 3   | 130         | 20        | 50  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX06-D20Z3C20-L160 | 0646   | 12.6  | 20   | 3   | 160         | 20        | 80  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX06-D21Z3C20-L150 | 0475   | 13.6  | 21   | 3   | 150         | 20        | 20  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX06-D21Z3C20-L200 | 0476   | 13.6  | 21   | 3   | 200         | 20        | 20  | -    | -      | ●  |
|           |                       | Shell Mill               | EHF-ENMX06-D25Z4C25-L140 | 0647   | 17.6  | 25   | 4   | 140         | 25        | 60  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX06-D25Z4C25-L180 | 0464   | 17.6  | 25   | 4   | 180         | 25        | 80  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX06-D25Z4C25-L250 | 0648   | 17.6  | 25   | 4   | 250         | 25        | 120 | -    | -      | ●  |
|           |                       |                          | EHF-ENMX06-D26Z4C25-L150 | 0479   | 18.6  | 26   | 4   | 150         | 25        | 30  | -    | -      | ●  |
| ENMX 0905 | 0.9                   | EHF-ENMX06-D26Z4C25-L200 | 0480                     | 18.6   | 26    | 4    | 200 | Modular     | 25        | 30  | -    | -      | ●  |
|           |                       | EHF-ENMX06-D32Z5C32-L150 | 0649                     | 24.6   | 32    | 5    | 150 |             | 32        | 70  | -    | -      | ●  |
|           |                       | EHF-ENMX06-D32Z5C32-L200 | 0465                     | 24.6   | 32    | 5    | 200 |             | 32        | 100 | -    | -      | ●  |
|           |                       | FHF-ENMX06-D40Z6S16      | 0482                     | 32.6   | 40    | 6    | 40  |             | 16        | -   | 18   | 37     | ●  |
|           | 1                     | Shell Mill               | FHF-ENMX06-D50Z6S22      | 0471   | 42.6  | 50   | 6   | 50          | 22        | -   | 25   | 42     | ●  |
|           |                       |                          | MHF-ENMX06-D16Z2M08      | 0691   | 9.0   | 16   | 2   | 23          | M08       | -   | -    | 13     | ●  |
|           |                       |                          | MHF-ENMX06-D18Z2M08      | 0730   | 11.0  | 18   | 2   | 23          | M08       | -   | -    | 13     | ●  |
|           |                       |                          | MHF-ENMX06-D20Z3M10      | 0692   | 12.6  | 20   | 3   | 30          | M10       | -   | -    | 18     | ●  |
|           |                       | Modular                  | MHF-ENMX06-D25Z4M12      | 0693   | 17.6  | 25   | 4   | 35          | M12       | -   | -    | 21     | ●  |
|           |                       |                          | MHF-ENMX06-D32Z5M16      | 0694   | 24.6  | 32   | 5   | 42          | M16       | -   | -    | 29     | ●  |
|           |                       |                          | MHF-ENMX06-D35Z5M16      | 0695   | 27.6  | 35   | 5   | 42          | M16       | -   | -    | 29     | ●  |
|           |                       |                          | MHF-ENMX06-D40Z6M16      | 0732   | 32.6  | 40   | 6   | 42          | M16       | -   | -    | 29     | ●  |
| ENMX 0905 | 1.5                   | MHF-ENMX06-D42Z6M16      | 0696                     | 34.6   | 42    | 6    | 42  | M16         | -         | -   | 29   | ●      |    |
|           |                       | Cylindrical              | EHF-ENMX09-D25Z2C25-L150 | 0745   | 14.5  | 25   | 2   | 150         | 25        | 70  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX09-D26Z2C25-L200 | 0746   | 15.74 | 26   | 2   | 200         | 25        | 30  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX09-D26Z3C25-L200 | 0747   | 15.74 | 26   | 3   | 200         | 25        | 30  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX09-D32Z3C32-L160 | 0748   | 21.1  | 32   | 3   | 160         | 32        | 70  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX09-D33Z3C32-L200 | 0749   | 22.26 | 33   | 3   | 200         | 32        | 30  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX09-D33Z4C32-L200 | 0750   | 22.26 | 33   | 4   | 200         | 32        | 40  | -    | -      | ●  |
|           |                       |                          | EHF-ENMX09-D40Z5C32-L180 | 0751   | 29.11 | 40   | 5   | 180         | 32        | 40  | -    | -      | ●  |
|           |                       |                          | FHF-ENMX09-D50Z5S22      | 0752   | 38.39 | 50   | 5   | 50          | 22        | -   | 20   | 42     | ●  |
|           |                       | Shell Mill               | FHF-ENMX09-D63Z6S22      | 0753   | 51.28 | 63   | 6   | 50          | 22        | -   | 20   | 48     | ●  |
|           |                       |                          | FHF-ENMX09-D63Z7S22      | 0754   | 51.28 | 63   | 7   | 50          | 22        | -   | 20   | 48     | ●  |
|           |                       |                          | FHF-ENMX09-D80Z8S27      | 0755   | 67.4  | 80   | 8   | 50          | 27        | -   | 23   | 56     | ●  |
|           | FHF-ENMX09-D100Z10S32 |                          | 0824                     | 86.74  | 100   | 10   | 63  | 32          | -         | 26  | 78   | ●      |    |
|           | FHF-ENMX09-D125Z12S40 |                          | 0825                     | 110.94 | 125   | 12   | 63  | 40          | -         | 29  | 89   | ●      |    |
|           | Modular               |                          | MHF-ENMX09-D25Z2M12      | 0811   | 14.5  | 25   | 2   | 35          | M12       | 35  | -    | 21     | ●  |
|           |                       |                          | MHF-ENMX09-D25Z3M12      | 0812   | 14.5  | 25   | 3   | 35          | M12       | 35  | -    | 21     | ●  |
|           |                       |                          | MHF-ENMX09-D26Z2M12      | 0813   | 15.74 | 26   | 2   | 35          | M12       | 35  | -    | 21     | ●  |
|           |                       |                          | MHF-ENMX09-D26Z3M12      | 0814   | 15.74 | 26   | 3   | 35          | M12       | 35  | -    | 21     | ●  |
|           |                       |                          | MHF-ENMX09-D32Z3M16      | 0815   | 21.1  | 32   | 3   | 42          | M16       | 42  | -    | 29     | ●  |
|           |                       |                          | MHF-ENMX09-D32Z4M16      | 0816   | 21.1  | 32   | 4   | 42          | M16       | 42  | -    | 29     | ●  |
|           |                       |                          | MHF-ENMX09-D33Z2M16      | 0817   | 22.26 | 33   | 2   | 42          | M16       | 42  | -    | 29     | ●  |
|           |                       | MHF-ENMX09-D33Z3M16      | 0818                     | 22.26  | 33    | 3    | 42  | M16         | 42        | -   | 29   | ●      |    |
|           |                       | MHF-ENMX09-D33Z4M16      | 0819                     | 22.26  | 33    | 4    | 42  | M16         | 42        | -   | 29   | ●      |    |

### YG HF4 Mill - Milling Cutter (Inch)

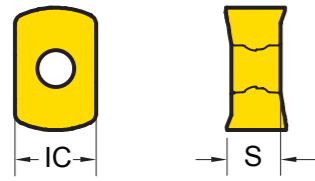


| Series    | Series | EDP 1800.. | Designation |
|-----------|--------|------------|-------------|
| ENMX 0604 | Wrench | 0218       | TPWBTP08    |
|           | Screw  | 0206       | TP082507-GS |
|           | Handle | 0189       | DH-H4       |
| ENMX 0905 | Wrench | 0216       | TPWBTP09    |
|           | Screw  | 0214       | TP093510-GS |
|           | Handle | 0189       | DH-H4       |
|           | Bit    | 0209       | DB-TP09     |

Unit : inch

| Series                | APMX        | Designation                   | EDP 1700..              | DC    | DCX   | ZEFP  | LF    | Type        | DCON /TDZ | LH    | CBDP  | DCSFMS | ⚙️ |
|-----------------------|-------------|-------------------------------|-------------------------|-------|-------|-------|-------|-------------|-----------|-------|-------|--------|----|
| ENMX 0604             | .035        | EHF-ENMX06-D0625Z2W0625-L500i | 0759                    | .310  | .625  | 2     | 5.000 | Cylindrical | .625      | 1.250 | -     | -      | ●  |
|                       |             | EHF-ENMX06-D075Z3W075-L500i   | 0669                    | .460  | .750  | 2     | 5.000 |             | .750      | 2.000 | -     | -      | ●  |
|                       |             | EHF-ENMX06-D100Z4W100-L550i   | 0670                    | .710  | 1.000 | 4     | 5.500 |             | 1.000     | 2.500 | -     | -      | ●  |
|                       |             | EHF-ENMX06-D125Z5W125-L600i   | 0671                    | .960  | 1.250 | 5     | 6.000 |             | 1.250     | 3.000 | -     | -      | ●  |
|                       | .039        | Shell Mill                    | FHF-ENMX06-D150Z6S050i  | 0672  | 1.210 | 1.500 | 6     | 1.575       | .500      | -     | .750  | 1.340  | ●  |
|                       |             |                               | FHF-ENMX06-D200Z6S075i  | 0673  | 1.710 | 2.000 | 6     | 1.969       | .750      | -     | .750  | 1.570  | ●  |
|                       |             |                               | FHF-ENMX06-D300Z10S100i | 0760  | 2.710 | 3.000 | 10    | 2.480       | 1.000     | -     | 1.024 | 2.835  | ●  |
|                       |             |                               | MHF-ENMX06-D0625Z2M08i  | 0761  | .310  | .625  | 2     | 1.000       | M08       | -     | -     | .512   | ●  |
|                       |             | Modular                       | MHF-ENMX06-D0705Z2M08i  | 0762  | .410  | .705  | 2     | 1.000       | M08       | -     | -     | .512   | ●  |
|                       |             |                               | MHF-ENMX06-D075Z3M10i   | 0763  | .460  | .750  | 3     | 1.250       | M10       | -     | -     | .709   | ●  |
|                       |             |                               | MHF-ENMX06-D083Z3M10i   | 0764  | .540  | .830  | 3     | 1.250       | M10       | -     | -     | .709   | ●  |
|                       |             |                               | MHF-ENMX06-D100Z4M12i   | 0765  | .710  | 1.000 | 4     | 1.500       | M12       | -     | -     | .827   | ●  |
| .059                  | Shell Mill  | MHF-ENMX06-D1125Z4M12i        | 0766                    | .830  | 1.125 | 4     | 1.500 | M12         | -         | -     | .827  | ●      |    |
|                       |             | MHF-ENMX06-D125Z5M16i         | 0767                    | .960  | 1.250 | 5     | 1.750 | M16         | -         | -     | 1.142 | ●      |    |
|                       |             | MHF-ENMX06-D1375Z5M16i        | 0768                    | 1.080 | 1.375 | 5     | 1.750 | M16         | -         | -     | 1.142 | ●      |    |
|                       |             | MHF-ENMX06-D150Z6M16i         | 0769                    | 1.210 | 1.500 | 6     | 1.750 | M16         | -         | -     | 1.142 | ●      |    |
|                       | Cylindrical | EHF-ENMX09-D100Z2W100-L550i   | 0777                    | 0.61  | 1.0   | 2     | 5.5   | 1.0         | 2.50      | -     | -     | ●      |    |
|                       |             | EHF-ENMX09-D125Z3W125-L600i   | 0778                    | 0.86  | 1.25  | 3     | 6.0   | 1.25        | 3.0       | -     | -     | ●      |    |
|                       |             | EHF-ENMX09-D150Z4W125-L600i   | 0779                    | 1.11  | 1.50  | 4     | 6.0   | 1.25        | 1.5       | -     | -     | ●      |    |
|                       |             | FHF-ENMX09-D200Z5S075i        | 0780                    | 1.6   | 2.0   | 5     | 1.969 | 0.75        | -         | 0.75  | 1.75  | ●      |    |
| ENMX 0905             | .059        | Shell Mill                    | FHF-ENMX09-D250Z6S075i  | 0781  | 2.1   | 2.5   | 6     | 1.969       | 0.75      | -     | 0.75  | 2.2    | ●  |
|                       |             |                               | FHF-ENMX09-D300Z8S100i  | 0782  | 2.6   | 3.0   | 8     | 2.48        | 1.0       | -     | 1.05  | 2.2    | ●  |
|                       |             |                               | FHF-ENMX09-D400Z10S125i | 0783  | 3.6   | 4.0   | 10    | 2.48        | 1.25      | -     | 1.26  | 3      | ●  |
|                       |             |                               | FHF-ENMX09-D600Z14S200i | 0784  | 5.6   | 6.0   | 14    | 2.48        | 2.0       | -     | 1.5   | 4.7    | ●  |
|                       | Modular     | MHF-ENMX09-D100Z2M12i         | 0852                    | 0.6   | 1.0   | 2     | 1.5   | M12         | 1.5       | -     | 0.827 | ●      |    |
|                       |             | MHF-ENMX09-D1125Z2M12i        | 0853                    | 0.73  | 1.125 | 2     | 1.5   | M12         | 1.5       | -     | 0.827 | ●      |    |
|                       |             | MHF-ENMX09-D125Z3M16i         | 0854                    | 0.82  | 1.25  | 3     | 1.75  | M16         | 1.75      | -     | 1.142 | ●      |    |
|                       |             | MHF-ENMX09-D1375Z3M16i        | 0855                    | 0.98  | 1.375 | 3     | 1.75  | M16         | 1.75      | -     | 1.142 | ●      |    |
| MHF-ENMX09-D150Z4M16i | 0856        | 1.11                          | 1.5                     | 4     | 1.75  | M16   | 1.75  | -           | 1.142     | ●     |       |        |    |

### YG HF4 Mill - Milling Inserts - ENMX06/09 (Metric / Inch)



| Series    | IC  | S    |
|-----------|-----|------|
| ENMX 0604 | 6.3 | 4.21 |
| ENMX 0905 | 9.0 | 5.40 |

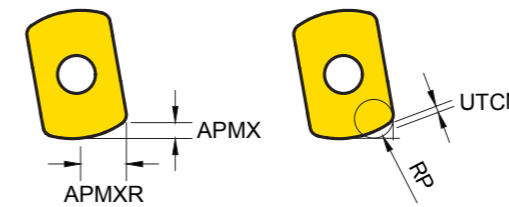
EDP 1200.. ● Stock item

| Material | YG602 | YG712 | YG613 |
|----------|-------|-------|-------|
| P25      | ●     | ●     | ●     |
| M30      | ●     | ●     | ●     |
| K30      | ●     | ●     | ●     |
| S20      | ●     | ●     | ●     |

| ENMX                    | Designation  | Fz (mm/tooth) | Fz (inch/tooth) | YG602     | YG712     | YG613     |
|-------------------------|--------------|---------------|-----------------|-----------|-----------|-----------|
| ENMX General            | ENMX 0604    | 0.3 ~ 2.0     | .012 ~ .079     | ●<br>0474 |           | ●<br>0606 |
|                         | ENMX 0905    | 0.3 ~ 2.5     | .012 ~ .059     | ●<br>0702 |           | ●<br>0703 |
| - ST<br>Stainless Steel | ENMX 0604-ST | 0.1 ~ 0.8     | .004 ~ .031     | ●<br>0623 |           | ●<br>0625 |
|                         | ENMX 0905-ST | 0.2 ~ 1.2     | .012 ~ .047     | ●<br>0705 |           | ●<br>0706 |
| - TR<br>Hardened Steel  | ENMX 0604-TR | 0.3 ~ 2.5     | .012 ~ .098     | ●<br>0459 | ●<br>0504 |           |
|                         | ENMX 0905-TR | 0.3 ~ 3.0     | .012 ~ .079     | ●<br>0600 |           |           |

### YG HF4 Mill - Technical Information (Metric)

#### ENMX 0604



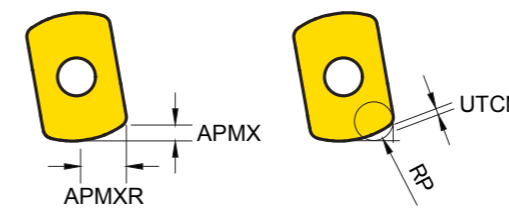
Unit:mm

| RP<br>Programmed<br>Corner R | UTCN<br>Uncut Thickness | Overcut |
|------------------------------|-------------------------|---------|
| R2.0                         | 0.31                    | 0.00    |
| R2.5                         | 0.18                    | 0.18    |
| R3.0                         | 0.07                    | 0.36    |



| DCX<br>External<br>Cutter Diameter | APMX<br>Maximum<br>Depth of Cut | APMXR<br>Maximum Radial<br>Depth of Cut | RMPX<br>Maximum<br>Ramping Angle(°) | RP<br>Programmed<br>Corner Radius | UTCN<br>Uncut<br>Thickness | Diameter<br>Minimum<br>Cutting Diameter | Diameter<br>Maximum<br>Cutting Diameter | Pitch<br>Helical<br>Interpolation<br>Pitch | Ae<br>Enlarge<br>Width |
|------------------------------------|---------------------------------|---|-------------------------------------|-----------------------------------|----------------------------|---|---|--|------------------------|
| 16                                 | 0.9                             | 3.5                                     | 3.5°                                | R2.0                              | 0.3                        | 21                                      | 30                                      | 0.9  | 12                     |
| 20                                 | 1                               | 3.7                                     | 1.8°                                | R2.0                              | 0.31                       | 29                                      | 38                                      | 1  | 16                     |
| 25                                 | 1                               | 3.7                                     | 1.2°                                | R2.0                              | 0.31                       | 39                                      | 48                                      | 1  | 21                     |
| 32                                 | 1                               | 3.7                                     | 0.8°                                | R2.0                              | 0.31                       | 53                                      | 62                                      | 1  | 28                     |
| 40                                 | 1                               | 3.7                                     | 0.6°                                | R2.0                              | 0.31                       | 69                                      | 78                                      | 1  | 36                     |
| 50                                 | 1                               | 3.7                                     | 0.5°                                | R2.0                              | 0.31                       | 89                                      | 98                                      | 1  | 46                     |

#### ENMX 0905



Unit:mm

| RP<br>Programmed<br>Corner R | UTCN<br>Uncut Thickness | Overcut |
|------------------------------|-------------------------|---------|
| R2.5                         | 0.56                    | 0.00    |
| R3.0                         | 0.40                    | 0.10    |
| R3.5                         | 0.24                    | 0.25    |
| R4.0                         | 0.10                    | 0.41    |
| R4.5                         | 0                       | 0.49    |

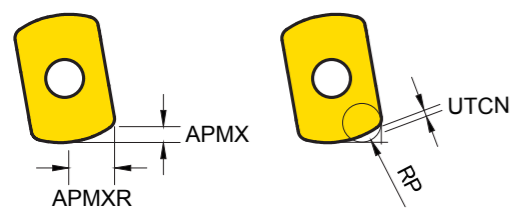


| DCX<br>External<br>Cutter Diameter | APMX<br>Maximum<br>Depth of Cut | APMXR<br>Maximum Radial<br>Depth of Cut | RMPX<br>Maximum<br>Ramping Angle(°) | RP<br>Programmed<br>Corner Radius | UTCN<br>Uncut<br>Thickness | Diameter<br>Minimum<br>Cutting Diameter | Diameter<br>Maximum<br>Cutting Diameter | Pitch<br>Helical<br>Interpolation<br>Pitch | Ae<br>Enlarge<br>Width |
|------------------------------------|---------------------------------|---|-------------------------------------|-----------------------------------|----------------------------|---|---|--|------------------------|
| 25                                 | 1.5                             | 4.7                                     | 3.8°                                | 2.5                               | 0.56                       | 42                                      | 48                                      | 1.5  | 20                     |
| 26                                 | 1.5                             | 4.7                                     | 3.5°                                | 2.5                               | 0.56                       | 44                                      | 50                                      | 1.5  | 21                     |
| 32                                 | 1.5                             | 4.7                                     | 2.4°                                | 2.5                               | 0.56                       | 56                                      | 62                                      | 1.5  | 27                     |
| 33                                 | 1.5                             | 4.7                                     | 2.2°                                | 2.5                               | 0.56                       | 58                                      | 64                                      | 1.5  | 28                     |
| 40                                 | 1.5                             | 4.7                                     | 1.6°                                | 2.5                               | 0.56                       | 72                                      | 78                                      | 1.5  | 35                     |
| 50                                 | 1.5                             | 4.7                                     | 1.1°                                | 2.5                               | 0.56                       | 92                                      | 98                                      | 1.5  | 45                     |
| 63                                 | 1.5                             | 4.7                                     | 0.8°                                | 2.5                               | 0.56                       | 118                                     | 124                                     | 1.5  | 57                     |
| 80                                 | 1.5                             | 4.7                                     | 0.6°                                | 2.5                               | 0.56                       | 152                                     | 158                                     | 1.5  | 74                     |
| 100                                | 1.5                             | 4.7                                     | 0.5°                                | R2.5                              | 0.56                       | 192                                     | 198                                     | 1.5  | 57                     |
| 125                                | 1.5                             | 4.7                                     | 0.4°                                | R2.5                              | 0.56                       | 242                                     | 248                                     | 1.5  | 74                     |

| Cutting Speed |       |                            | Vc (m/min.) |     |       |     |       |     | Vc (ft/min) |      |       |     |       |     |
|---------------|-------|----------------------------|-------------|-----|-------|-----|-------|-----|-------------|------|-------|-----|-------|-----|
| ISO           | VDI   | Sub Group                  | YG602       |     | YG712 |     | YG613 |     | YG602       |      | YG712 |     | YG613 |     |
|               |       |                            | Min         | Max | Min   | Max | Min   | Max | Min         | Max  | Min   | Max | Min   | Max |
| P             | 1~5   | Non-Alloyed Steel          | 180         | 280 | 220   | 320 | 100   | 210 | 590         | 1250 | 560   | 980 | 330   | 690 |
|               | 6~9   | Low-Alloyed Steel          | 150         | 250 | 190   | 290 | 70    | 180 | 390         | 980  | 590   | 820 | 230   | 590 |
|               | 10~11 | High-Alloyed Steel         | 70          | 140 | 90    | 155 | 40    | 90  | 230         | 490  | 330   | 460 | 130   | 290 |
| M             | 12~13 | Ferritic & Martensitic     | 120         | 200 | -     | -   | 70    | 180 | 390         | 660  | -     | -   | 230   | 590 |
|               | 14    | Austenitic Stainless Steel | 130         | 250 | -     | -   | 70    | 200 | 430         | 820  | -     | -   | 230   | 660 |
| K             | 15~16 | Grey Cast Iron             | 120         | 250 | -     | -   | -     | -   | 390         | 820  | -     | -   | -     | -   |
|               | 17~18 | Nodular Cast Iron          | 130         | 220 | -     | -   | -     | -   | 430         | 720  | -     | -   | -     | -   |
| N             | 21~30 | Non-Ferrous Metals (Al)    | -           | -   | -     | -   | -     | -   | -           | -    | -     | -   | -     |     |
| S             | 31~37 | Superalloys & Titanium     | 25          | 45  | -     | -   | -     | -   | 80          | 150  | -     | -   | -     | -   |
| H             | 38~41 | Hard Materials             | 40          | 80  | -     | -   | -     | -   | 130         | 260  | -     | -   | -     | -   |

## YG HF4 Mill - Technical Information (Inch)

### ENMX 0604



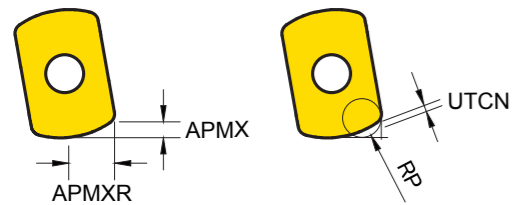
Unit: inch

| RP<br>Programmed<br>Corner R | UTCN<br>Uncut Thickness | Overcut |
|------------------------------|-------------------------|---------|
| .079                         | .012                    | .000    |
| .098                         | .007                    | .007    |
| .118                         | .003                    | .014    |



| DCX<br>External<br>Cutter Diameter | APMX<br>Maximum<br>Depth of Cut | APMXR<br>Maximum Radial<br>Depth of Cut | RMPX<br>Maximum<br>Ramping Angle(°) | RP<br>Programmed<br>Corner Radius | UTCN<br>Uncut<br>Thickness | Diameter<br>Minimum<br>Cutting Diameter | Diameter<br>Maximum<br>Cutting Diameter | Pitch<br>Helical<br>Interpolation Pitch | Ae<br>Enlarge Width |
|------------------------------------|---------------------------------|---|-------------------------------------|-----------------------------------|----------------------------|---|---|---|---------------------|
| .625                               | .035                            | .137                                    | 3.4°                                | R.079                             | .011                       | .817                                    | 1.171                                   | .035                                    | .487                |
| .750                               | .039                            | .145                                    | 2.0°                                | R.079                             | .012                       | 1.067                                   | 1.421                                   | .039                                    | .612                |
| 1.00                               | .039                            | .145                                    | 1.2°                                | R.079                             | .012                       | 1.567                                   | 1.921                                   | .039                                    | .862                |
| 1.25                               | .039                            | .145                                    | 0.9°                                | R.079                             | .012                       | 2.067                                   | 2.421                                   | .039                                    | 1.112               |
| 1.50                               | .039                            | .145                                    | 0.7°                                | R.079                             | .012                       | 2.567                                   | 2.921                                   | .039                                    | 1.362               |
| 2.00                               | .039                            | .145                                    | 0.5°                                | R.079                             | .012                       | 3.567                                   | 3.921                                   | .039                                    | 1.862               |
| 3.00                               | .039                            | .145                                    | 0.3°                                | R.079                             | .012                       | 5.567                                   | 5.922                                   | .039                                    | 2.862               |

### ENMX 0905



Unit: inch

| RP<br>Programmed<br>Corner R | UTCN<br>Uncut Thickness | Overcut |
|------------------------------|-------------------------|---------|
| .098                         | .022                    | .000    |
| .118                         | .015                    | .004    |
| .137                         | .009                    | .001    |
| .157                         | .004                    | .016    |
| .177                         | .000                    | .019    |



| DCX<br>External<br>Cutter Diameter | APMX<br>Maximum<br>Depth of Cut | APMXR<br>Maximum Radial<br>Depth of Cut | RMPX<br>Maximum<br>Ramping Angle(°) | RP<br>Programmed<br>Corner Radius | UTCN<br>Uncut<br>Thickness | Diameter<br>Minimum<br>Cutting Diameter | Diameter<br>Maximum<br>Cutting Diameter | Pitch<br>Helical<br>Interpolation Pitch | Ae<br>Enlarge Width |
|------------------------------------|---------------------------------|---|-------------------------------------|-----------------------------------|----------------------------|---|---|---|---------------------|
| 1.0                                | .059                            | .185                                    | 3.8°                                | R.098                             | .022                       | 1.685                                   | 1.921                                   | .059                                    | .803                |
| 1.25                               | .059                            | .185                                    | 2.4°                                | R.098                             | .022                       | 2.185                                   | 2.421                                   | .059                                    | 1.053               |
| 1.5                                | .059                            | .185                                    | 1.7°                                | R.098                             | .022                       | 2.685                                   | 2.921                                   | .059                                    | 1.303               |
| 2.0                                | .059                            | .185                                    | 1.1°                                | R.098                             | .022                       | 3.685                                   | 3.921                                   | .059                                    | 1.803               |
| 2.5                                | .059                            | .185                                    | 0.8°                                | R.098                             | .022                       | 4.685                                   | 4.921                                   | .059                                    | 2.303               |
| 3.0                                | .059                            | .185                                    | 0.7°                                | R.098                             | .022                       | 5.685                                   | 5.921                                   | .059                                    | 2.803               |
| 4.0                                | .059                            | .185                                    | 0.4°                                | R.098                             | .022                       | 7.685                                   | 7.921                                   | .059                                    | 3.803               |
| 6.0                                | .059                            | .185                                    | 0.3°                                | R.098                             | .022                       | 11.685                                  | 11.921                                  | .059                                    | 5.803               |

## YG HF4 Mill - ENMX06 - Success Story

**P** Carbon Steel 1.1121  
JIS S10C DIN Ck10 AISI 1010

|   | YIG                              | Competitor A                     |
|---|----------------------------------|----------------------------------|
| <b>Designation</b>                        | ENMX 0604                        | High Feed                        |
| <b>Chip breaker</b>                       | TR                               | General                          |
| <b>Grade</b>                              | YG602                            | P Grade                          |
| <b>Cutter Dia</b>                         | 16 mm                            | 16 mm                            |
| <b>ZEFP</b><br>(Effective number of edge) | 2                                | 2                                |
| <b>Vc</b><br>(Cutting Speed)              | 100 m/min<br>(328.08 ft/min)     | 90 m/min<br>(295.27 ft/min)      |
| <b>Fz</b><br>(Feed per tooth)             | 0.58 mm/tooth<br>(.022 in/tooth) | 0.42 mm/tooth<br>(.016 in/tooth) |
| <b>Ap</b><br>(Depth of Cut)               | 0.5 mm (.019 in)                 | 0.2 mm (.007 in)                 |
| <b>Tool Life</b>                          | <b>32 pcs</b><br>+166% Tool Life | <b>12 pcs</b>                    |

**166%**  
Tool Life

**32 pcs**  
YIG ENMX

**12 pcs**  
Competitor A  
High Feed

**P** Carbon Steel 1.0503  
JIS S45C DIN C45 AISI 1045

|   | YIG                             | Competitor B                    |
|---|---------------------------------|---------------------------------|
| <b>Designation</b>                        | ENMX 0604                       | High Feed                       |
| <b>Chip breaker</b>                       | TR                              | General                         |
| <b>Grade</b>                              | YG602                           | P Grade                         |
| <b>Cutter Dia</b>                         | 20 mm                           | 20 mm                           |
| <b>ZEFP</b><br>(Effective number of edge) | 3                               | 3                               |
| <b>Vc</b><br>(Cutting Speed)              | 188 m/min<br>(616.79 ft/min)    | 157 m/min<br>(515.09 ft/min)    |
| <b>Fz</b><br>(Feed per tooth)             | 1.5 mm/tooth<br>(.059 in/tooth) | 0.8 mm/tooth<br>(.031 in/tooth) |
| <b>Ap</b><br>(Depth of Cut)               | 0.5 mm (.019 in)                |                                 |
| <b>Tool Life</b>                          | <b>3 pcs</b><br>+200% Tool Life | <b>1 pc</b>                     |

**200%**  
Tool Life

**3 pcs**  
YIG ENMX

**1 pc**  
Competitor B  
High Feed

### YG HF4 Mill - ENMX06 - Success Story

**P** Tool Steel 1.6565  
JIS SNCM447 DIN 40NiCrMo6 AISI 4340

|                                 | <b>YG</b>                        | Competitor C |
|---------------------------------|----------------------------------|--------------|
| Designation                     | ENMX 0604                        | High Feed    |
| Chip breaker                    | TR                               | General      |
| Grade                           | YG602                            | P Grade      |
| Cutter Dia                      | 25 mm                            | 20 mm        |
| ZEFP (Effective number of edge) | 4                                | 4            |
| Vc (Cutting Speed)              | 150 m/min (492.13 ft/min)        |              |
| Fz (Feed per tooth)             | 0.39 mm/tooth (.015 in/tooth)    |              |
| Ap (Depth of Cut)               | 0.5 mm (.019 in)                 |              |
| Tool Life                       | <b>20 pcs</b><br>+100% Tool Life | 10 pcs       |

**100%**  
Tool Life

**20 pcs**  
**YG**  
ENMX



**10 pcs**  
Competitor C  
High Feed

### YG HF4 Mill - ENMX09 - Success Story

**P** Tool Steel 1.2344  
JIS SKD61 DIN X40CrMoV5-1 AISI H13

|                                   | <b>YG</b>                  | Competitor E |
|-----------------------------------|----------------------------|--------------|
| Designation                       | ENMX0905-TR                | High Feed    |
| Chip breaker                      | TR                         | General      |
| Grade                             | YG602                      | P Grade      |
| Cutter Dia                        | 25 mm                      | 25mm         |
| ZEFP (Effective number of edge)   | 2                          | 2            |
| Vc (Cutting Speed)                | 220 m/min (719 ft/min)     |              |
| Vf (Feed per Minute / Table Feed) | 2164 mm/min (85.19 in/min) |              |
| Ap (Depth of Cut)                 | 0.5 mm (0.02 in)           |              |
| Tool Life                         | <b>4 Hours</b>             | 2.5 Hours    |

**62.5%**  
Tool Life

**4 Hours**  
**YG**  
ENMX



**2.5 Hours**  
Competitor E  
High Feed

**P** Alloy Steel 1.6565  
JIS SNCM447 DIN 40NiCrMo6 AISI 4340

|                                 | <b>YG</b>                      | Competitor D |
|---------------------------------|--------------------------------|--------------|
| Designation                     | ENMX 0604                      | High Feed    |
| Chip breaker                    | GN                             | General      |
| Grade                           | YG602                          | P Grade      |
| Cutter Dia                      | 20 mm                          | 20 mm        |
| ZEFP (Effective number of edge) | 3                              | 3            |
| Vc (Cutting Speed)              | 180 m/min (590.55 ft/min)      |              |
| Fz (Feed per tooth)             | 0.66 mm/tooth (.025 in/tooth)  |              |
| Ap (Depth of Cut)               | 0.5 mm (.019 in)               |              |
| Tool Life                       | <b>7 pcs</b><br>+75% Tool Life | 4 pcs        |

**75%**  
Tool Life

**7 pcs**  
**YG**  
ENMX



**4 pcs**  
Competitor D  
High Feed

**P** Tool Steel 1.2344  
JIS SKD61 DIN X40CrMoV5-1 AISI H13

|                                   | <b>YG</b>                   | Competitor F                |
|-----------------------------------|-----------------------------|-----------------------------|
| Designation                       | ENMX0905-TR                 | High Feed                   |
| Chip breaker                      | TR                          | General                     |
| Grade                             | YG622                       | P Grade                     |
| Cutter Dia                        | 25 mm                       | 25mm                        |
| ZEFP (Effective number of edge)   | 2                           | 3                           |
| Vc (Cutting Speed)                | 157 m/min (513 ft/min)      | 196 m/min (641 ft/min)      |
| Vf (Feed per Minute / Table Feed) | 4500 mm/min (177.16 in/min) | 3600 mm/min (141.73 in/min) |
| Ap (Depth of Cut)                 | 0.5 mm (0.02 in)            | 0.3 mm (0.011 in)           |
| Tool Life                         | <b>4 Hours</b>              | 2.5 Hours                   |

**62.5%**  
Tool Life

**4 Hours**  
**YG**  
ENMX



**2.5 Hours**  
Competitor E  
High Feed



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YG HF4 Mill ENMX tools at work.

## YG-1 CO., LTD.

### HEAD OFFICE

13-40, Songdogwahak-ro 16beon-gil, Yeonsu-gu, Incheon 21984, South Korea

**Phone: +82-32-526-0909**

**Http://www.yg1.kr**

**E-mail: yg1@yg1.kr**

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