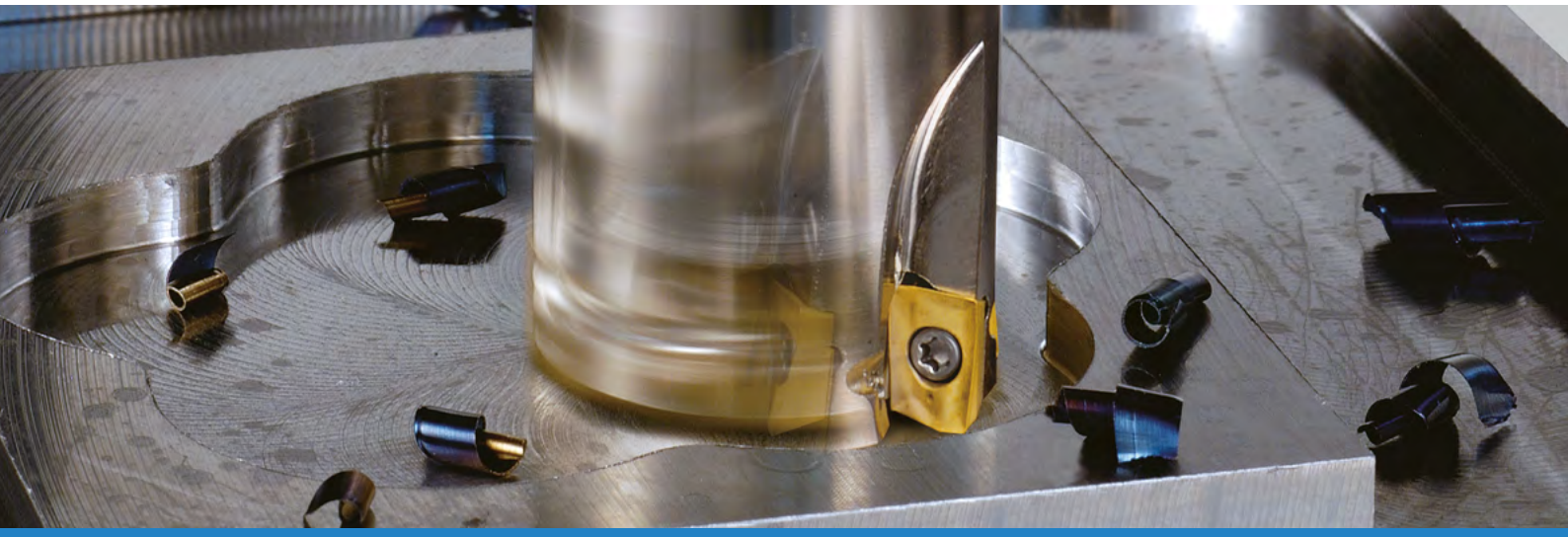
THE NEW VALUE FRONTIER

KYOCERA

Conical type
milling cutters | MEC

# MEC Conical



## Large lineup for various applications


High efficiency conical milling cutters

# MEC

Scan QR code for MEC 90° products

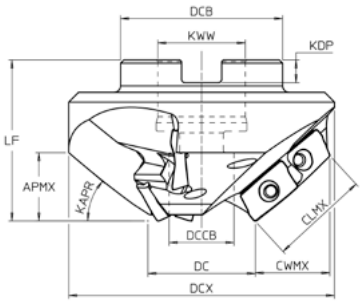
## Excellent surface finish and wide range of cutters for various applications.

**1** Low cutting force and sharp cutting performance

**2** Smooth surface finish

**3** Large tooling lineup

## **MEC** Conical face mill

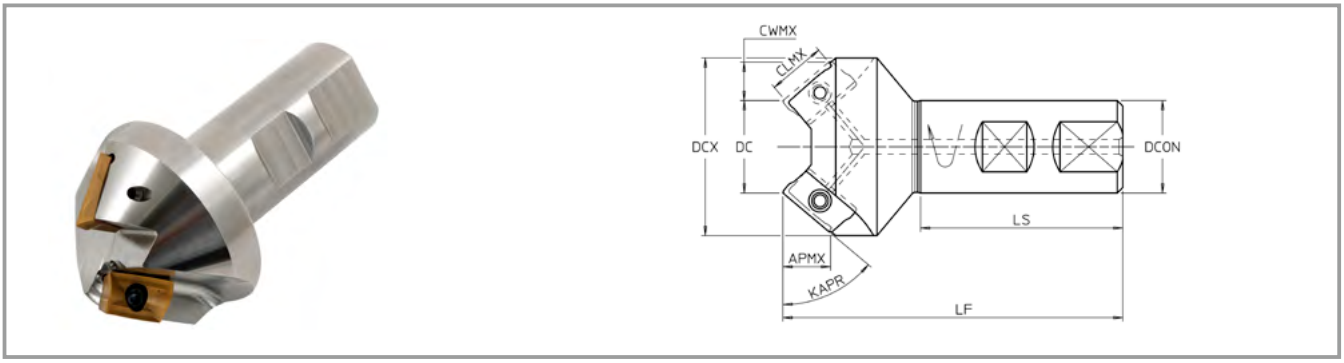



### Toolholder dimensions

| Description | Order number | Availability | No. of flutes | No. of stages | No of inserts | Dimension (mm) | | | | | | | | | | RE (Standard) | KAPR | Spare parts | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | DC | DCX | DCB | DCCB | LF | KDP | KWW | APMX | CWMX | CLMX | | | Clamp screw | Wrench |
| MECC 15035R-17-2-3T-M | 411550/000008 | ○ | 3 | 2 | 6 | 35 | 90.6 | 27 | 22 | 50 | 7 | 12.4 | 7 | 28 | 31 | 0.8 | 15° | SB-4070TRN | DTM-15 |
| 25035R-17-2-3T-M | 411550/000009 | ○ | | | | 35 | 87.3 | 27 | 22 | 50 | 7 | 12.4 | 12 | 26 | 31 | 0.8 | 25° | | |
| 30035R-17-2-3T-M | 411550/000010 | ○ | | | | 35 | 85.1 | 27 | 22 | 50 | 7 | 12.4 | 14 | 25 | 31 | 0.8 | 30° | | |
| 35035R-17-2-3T-M | 411550/000011 | ○ | | | | 35 | 82.4 | 27 | 22 | 50 | 7 | 12.4 | 16 | 23 | 31 | 0.8 | 35° | | |
| 40035R-17-2-3T-M | 411550/000012 | ○ | | | | 35 | 79.4 | 27 | 22 | 50 | 7 | 12.4 | 18 | 22 | 31 | 0.8 | 40° | | |
| 45035R-17-2-3T-M | 411550/000013 | ○ | | | | 35 | 76.1 | 27 | 22 | 50 | 7 | 12.4 | 20 | 20 | 31 | 0.8 | 45° | | |
| 50035R-17-2-3T-M | 411550/000014 | ○ | | | | 35 | 72.4 | 27 | 22 | 50 | 7 | 12.4 | 22 | 18 | 31 | 0.8 | 50° | | |
| 55035R-17-2-3T-M | 411550/000015 | ○ | | | | 35 | 68.4 | 27 | 22 | 50 | 7 | 12.4 | 23 | 16 | 31 | 0.8 | 55° | | |
| 60035R-17-2-3T-M | 411550/000016 | ○ | | | | 35 | 64.2 | 27 | 22 | 50 | 7 | 12.4 | 25 | 14 | 31 | 0.8 | 60° | | |
| MECC 25045R-17-3-4T-M | 411550/000017 | ○ | 4 | 2 | 8 | 45 | 97.3 | 27 | 22 | 50 | 7 | 12.4 | 12 | 26 | 31 | 0.8 | 25° | SB-4070TRN | DTM-15 |
| 30045R-17-3-4T-M | 411550/000018 | ○ | | | | 45 | 95.1 | 27 | 22 | 50 | 7 | 12.4 | 14 | 25 | 31 | 0.8 | 30° | | |
| 35045R-17-3-4T-M | 411550/000019 | ○ | | | | 45 | 92.4 | 27 | 22 | 50 | 7 | 12.4 | 16 | 23 | 31 | 0.8 | 35° | | |
| 40045R-17-3-4T-M | 411550/000020 | ○ | | | | 45 | 89.5 | 27 | 22 | 50 | 7 | 12.4 | 18 | 22 | 31 | 0.8 | 40° | | |
| 45045R-17-3-4T-M | 411550/000021 | ○ | | | | 45 | 86.1 | 27 | 22 | 50 | 7 | 12.4 | 20 | 20 | 31 | 0.8 | 45° | | |
| 50045R-17-3-4T-M | 411550/000022 | ○ | | | | 45 | 82.4 | 27 | 22 | 50 | 7 | 12.4 | 22 | 18 | 31 | 0.8 | 50° | | |
| 55045R-17-3-4T-M | 411550/000023 | ○ | | | | 45 | 78.4 | 27 | 22 | 50 | 7 | 12.4 | 23 | 16 | 31 | 0.8 | 55° | | |
| 60045R-17-3-4T-M | 411550/000024 | ○ | | | | 45 | 74.2 | 27 | 22 | 50 | 7 | 12.4 | 25 | 14 | 31 | 0.8 | 60° | | |
| MECC 75045R-17-2-3T-M | 411550/000025 | ○ | 3 | 2 | 6 | 45 | 60.1 | 27 | 22 | 50 | 7 | 12.4 | 28 | 7 | 31 | 0.8 | 75° | SB-4070TRN | DTM-15 |

Coat anti-seize compound (P-37) thinly on portion of taper and thread when insert is fixed.

○: Check availability

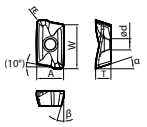
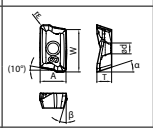
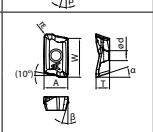



## Toolholder dimensions

| Description | | Order number | Availability | No. of inserts | Dimension (mm) | | | | | | | | RE (Standard) | KAPR | Spare parts | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | DC | DCX | DCON | LF | LS | APMX | CWMX | CLMX | | | Clamp screw | Wrench |
| MECC | 30025R-17-W25-2T | 431550/000130 | ○ | 2 | 25 | 56 | 25 | 80 | 56 | 8 | 14 | 15 | 0.8 | 30° | SB-4070TRN | DTM-15 |
| | 35025R-17-W25-2T | 431550/000131 | ○ | | 25 | 53 | 25 | 81 | 56 | 9 | 13 | 15 | 0.8 | 35° | | |
| | 40025R-17-W25-2T | 431550/000132 | ○ | | 25 | 51 | 25 | 82 | 56 | 10 | 12 | 15 | 0.8 | 40° | | |
| | 45025R-17-W25-2T | 431550/000133 | ○ | | 25 | 49 | 25 | 84 | 56 | 11 | 11 | 15 | 0.8 | 45° | | |
| | 50025R-17-W25-2T | 431550/000134 | ○ | | 25 | 47 | 25 | 85 | 56 | 12 | 10 | 15 | 0.8 | 50° | | |
| | 55025R-17-W25-2T | 431550/000135 | ○ | | 25 | 45 | 25 | 85 | 56 | 13 | 13 | 15 | 0.8 | 55° | | |
| | 60025R-17-W25-2T | 431550/000136 | ○ | | 25 | 42 | 25 | 86 | 56 | 14 | 14 | 15 | 0.8 | 60° | | |
| | 65025R-17-W25-2T | 431550/000137 | ○ | | 25 | 40 | 25 | 87 | 56 | 14.5 | 14 | 15 | 0.8 | 65° | | |
| | 70025R-17-W25-2T | 431550/000138 | ○ | | 25 | 37 | 25 | 87 | 56 | 15 | 14 | 15 | 0.8 | 70° | | |
| | 75025R-17-W25-2T | 431550/000139 | ○ | | 25 | 34 | 25 | 88 | 56 | 15.5 | 14.5 | 15 | 0.8 | 75° | | |
| | 80025R-17-W25-2T | 431550/000140 | ○ | | 25 | 31 | 25 | 88 | 56 | 16 | 14.5 | 15 | 0.8 | 80° | | |
| MECC | 30030R-17T-W32-3T | 431550/000141 | ○ | 3 | 30 | 60 | 32 | 84 | 60 | 8 | 14 | 15 | 0.8 | 30° | SB-4070TRN | DTM-15 |
| | 35030R-17T-W32-3T | 431550/000142 | ○ | | 30 | 58 | 32 | 85 | 60 | 9 | 13 | 15 | 0.8 | 35° | | |
| | 40030R-17T-W32-3T | 431550/000143 | ○ | | 30 | 56 | 32 | 86 | 60 | 10 | 12 | 15 | 0.8 | 40° | | |
| | 45030R-17T-W32-3T | 431550/000144 | ○ | | 30 | 54 | 32 | 88 | 60 | 11 | 11 | 15 | 0.8 | 45° | | |
| | 50030R-17T-W32-3T | 431550/000145 | ○ | | 30 | 52 | 32 | 89 | 60 | 12 | 10 | 15 | 0.8 | 50° | | |
| | 55030R-17T-W32-3T | 431550/000146 | ○ | | 30 | 50 | 32 | 89 | 60 | 13 | 13 | 15 | 0.8 | 55° | | |
| | 60030R-17T-W32-3T | 431550/000147 | ○ | | 30 | 47 | 32 | 90 | 60 | 14 | 14 | 15 | 0.8 | 60° | | |
| | 65030R-17T-W32-3T | 431550/000148 | ○ | | 30 | 45 | 32 | 91 | 60 | 14,5 | 14 | 15 | 0.8 | 65° | | |
| | 70030R-17T-W32-3T | 431550/000149 | ○ | | 30 | 42 | 32 | 91 | 60 | 15 | 14 | 15 | 0.8 | 70° | | |
| | 75030R-17T-W32-3T | 431550/000150 | ○ | | 30 | 40 | 32 | 87 | 60 | 15,5 | 14.5 | 15 | 0.8 | 75° | | |
| MECC | 80030R-17T-W32-3T | 431550/000151 | ○ | | 30 | 37 | 32 | 87 | 60 | 16 | 14.5 | 15 | 0.8 | 80° | SB-4070TRN | DTM-15 |

○ : Check availability

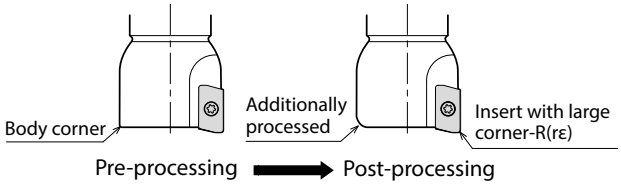
## Available inserts

| Insert | | Description | | Dimension (mm) | | | | | Angle | | Cermet | CVD coated carbide | MEGACOAT NANO carbide | MEGACOAT carbide | | PVD coated carbide | DLC coated carbide | Uncoated carbide |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | A | T | ød | W | rε/RE | α | β | TN100M | CA6535 | PR1535 | PR1225 | PR1210 | PR830 | PDL025 | GW25 |
|  |  | BDMT | 170404ER-JT | 9.6 | 4.9 | 4.4 | 17.0 | 0.4 | 18° | 13° | | ● | ● | ● | ● | ● | | |
| | | | 170408ER-JT | | | | | 0.8 | | | ● | ● | ● | ● | ● | ● | | |
| | | | 170412ER-JT | | | | | 1.2 | | | | ● | ● | ● | ● | ● | | |
| | | | 170416ER-JT | | | | | 1.6 | | | | ● | ● | ● | ● | ● | | |
| | | | 170420ER-JT | | | | | 2.0 | | | | ● | ● | ● | ● | ● | | |
| | | | 170424ER-JT | | | | | 2.4 | | | | ● | ● | ● | ● | ● | | |
| | | | 170431ER-JT | | | | | 3.1 | | | | ● | ● | ● | ● | ● | | |
| | | | 170440ER-JT | | | | | 4.0 | | | | ● | ● | ● | ● | ● | | |
|  |  | BDMT | 170404ER-JS | 9.6 | 4.9 | 4.4 | 17.0 | 0.4 | 18° | 13° | | ● | ● | ● | | ● | | |
| | | | 170408ER-JS | | | | | 0.8 | | | | ● | ● | ● | | ● | | |
|  |  | BDGT | 170404FR-JA | 9.6 | 4.9 | 4.4 | 17.0 | 0.4 | 18° | 13° | | | | | | | ● | ● |
| | | | 170408FR-JA | | | | | 0.8 | | | | | | | | | ● | ● |
| | | | 170420FR-JA | | | | | 2.0 | | | | | | | | | ● | ● |
| | | | 170431FR-JA | | | | | 3.1 | | | | | | | | | ● | ● |

When using inserts with corner-R(rε)1.6 or larger, additional modifications of the cutter body will be necessary. Ref. to the chart below for the recommended modifications.
If corner-radius is 1.2 mm, additional processing is not needed.

| Insert Corner-R(rε) | Additional modifications of the cutter body corner |
|---|---|
| 1.6 | R1.0 |
| 2.0 | |
| 2.4 | R1.2 |
| 3.1 | R1.6 |
| 4.0 | R2.5 |

* R shape is recommended for additional processing to the body corner.
When applying chamfer shaped additional processing, do not cut away too much.



# Recommended cutting conditions – MEC conical ★1st recommendation ☆2nd recommendation

## JT chipbreaker

| Workpiece material | Recommended insert grades (Vc m/min) | | | | | | Recommended feed rate (fz mm/t) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Cermet | MEGACOAT NANO | MEGACOAT | | PVD coated carbide | CVD coated carbide | Lead angle | | | | |
| | TN100M | PR1535 | PR1225 | PR1210 | PR830 | CA6535 | 15° | 30° | 45° | 60° | 80° |
| Carbon steel | ☆ 120 – 160 – 200 | ☆ 120 – 180 – 250 | ★ 120 – 180 – 250 | — | ☆ 120 – 160 – 200 | — | 0.31 – 0.58 – 0.97 | 0.16 – 0.3 – 0.5 | 0.11 – 0.21 – 0.35 | 0.09 – 0.17 – 0.29 | 0.08 – 0.15 – 0.25 |
| Alloy steel | ☆ 100 – 140 – 180 | ☆ 100 – 160 – 220 | ★ 100 – 160 – 220 | — | ☆ 100 – 140 – 180 | — | 0.31 – 0.58 – 0.77 | 0.16 – 0.3 – 0.4 | 0.11 – 0.21 – 0.28 | 0.09 – 0.17 – 0.23 | 0.08 – 0.15 – 0.2 |
| Mold steel | ☆ 80 – 120 – 150 | ☆ 80 – 140 – 180 | ★ 80 – 140 – 180 | — | ☆ 80 – 120 – 150 | — | 0.31 – 0.46 – 0.77 | 0.16 – 0.24 – 0.4 | 0.11 – 0.17 – 0.28 | 0.09 – 0.14 – 0.23 | 0.08 – 0.12 – 0.2 |
| Austenitic stainless steel | — | ☆ 100 – 160 – 200 | ☆ 100 – 160 – 200 | — | ☆ 100 – 140 – 180 | — | 0.31 – 0.46 – 0.58 | 0.16 – 0.24 – 0.3 | 0.11 – 0.17 – 0.21 | 0.09 – 0.14 – 0.17 | 0.08 – 0.12 – 0.15 |
| Martensitic stainless steel | — | ☆ 150 – 200 – 250 | — | — | — | ★ 180 – 240 – 300 | 0.31 – 0.46 – 0.77 | 0.16 – 0.24 – 0.4 | 0.11 – 0.17 – 0.28 | 0.09 – 0.14 – 0.23 | 0.08 – 0.12 – 0.2 |
| Precipitation hardened stainless steel | — | ★ 90 – 120 – 150 | — | — | — | — | 0.31 – 0.46 – 0.77 | 0.16 – 0.24 – 0.4 | 0.11 – 0.17 – 0.28 | 0.09 – 0.14 – 0.23 | 0.08 – 0.12 – 0.2 |
| Gray cast iron | — | — | — | ★ 120 – 180 – 250 | — | — | 0.31 – 0.7 – 0.97 | 0.16 – 0.36 – 0.5 | 0.11 – 0.25 – 0.35 | 0.09 – 0.21 – 0.29 | 0.08 – 0.18 – 0.25 |
| Nodular cast iron | — | — | — | ★ 100 – 150 – 200 | — | — | 0.31 – 0.58 – 0.77 | 0.16 – 0.3 – 0.4 | 0.11 – 0.21 – 0.28 | 0.09 – 0.17 – 0.23 | 0.08 – 0.15 – 0.2 |
| Ni-base heat resistant alloy | — | ★ 20 – 30 – 50 | — | — | — | ☆ 20 – 30 – 50 | 0.31 – 0.46 – 0.58 | 0.16 – 0.24 – 0.3 | 0.11 – 0.17 – 0.21 | 0.09 – 0.14 – 0.17 | 0.08 – 0.12 – 0.15 |
| Titanium alloy | — | ☆ 40 – 60 – 80 | — | ☆ 30 – 50 – 70 | — | — | 0.31 – 0.58 – 0.77 | 0.16 – 0.3 – 0.4 | 0.11 – 0.21 – 0.28 | 0.09 – 0.17 – 0.23 | 0.08 – 0.15 – 0.2 |

Cutting with coolant is recommended for Ni-base heat resistant alloy and titanium alloy.

## JS chipbreaker

| Workpiece material | Insert grades (Cutting speed Vc m/min) | | | | Recommended feed rate (fz mm/t) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | MEGACOAT NANO | MEGACOAT | PVD coated carbide | CVD coated carbide | Lead angle | | | | |
| | PR1535 | PR1225 | PR830 | CA6535 | 15° | 30° | 45° | 60° | 80° |
| Carbon steel | ☆ 120 – 180 – 250 | ★ 120 – 180 – 250 | ☆ 120 – 160 – 200 | — | 0.31 – 0.58 – 0.7 | 0.16 – 0.3 – 0.36 | 0.11 – 0.21 – 0.25 | 0.09 – 0.17 – 0.21 | 0.08 – 0.15 – 0.18 |
| Alloy steel | ☆ 100 – 160 – 220 | ★ 100 – 160 – 220 | ☆ 100 – 140 – 180 | — | 0.31 – 0.46 – 0.58 | 0.16 – 0.24 – 0.3 | 0.11 – 0.17 – 0.21 | 0.09 – 0.14 – 0.17 | 0.08 – 0.12 – 0.15 |
| Mold steel | ☆ 80 – 140 – 180 | ★ 80 – 140 – 180 | ☆ 80 – 120 – 150 | — | 0.31 – 0.39 – 0.46 | 0.16 – 0.2 – 0.24 | 0.11 – 0.14 – 0.17 | 0.09 – 0.12 – 0.14 | 0.08 – 0.1 – 0.12 |
| Austenitic stainless steel | ★ 100 – 160 – 200 | ☆ 100 – 160 – 200 | ☆ 100 – 140 – 180 | — | 0.31 – 0.39 – 0.46 | 0.16 – 0.2 – 0.24 | 0.11 – 0.14 – 0.17 | 0.09 – 0.12 – 0.14 | 0.08 – 0.1 – 0.12 |
| Martensitic stainless steel | ☆ 150 – 200 – 250 | — | — | ★ 180 – 240 – 300 | 0.31 – 0.39 – 0.46 | 0.16 – 0.2 – 0.24 | 0.11 – 0.14 – 0.17 | 0.09 – 0.12 – 0.14 | 0.08 – 0.1 – 0.12 |
| Precipitation hardened stainless steel | ☆ 90 – 120 – 150 | — | — | — | 0.31 – 0.39 – 0.46 | 0.16 – 0.2 – 0.24 | 0.11 – 0.14 – 0.17 | 0.09 – 0.12 – 0.14 | 0.08 – 0.1 – 0.12 |
| Ni-base heat resistant alloy | ★ 20 – 30 – 50 | — | — | ☆ 20 – 30 – 50 | 0.31 – 0.39 – 0.46 | 0.16 – 0.2 – 0.24 | 0.11 – 0.14 – 0.17 | 0.09 – 0.12 – 0.14 | 0.08 – 0.1 – 0.12 |
| Titanium Alloy | ☆ 40 – 60 – 80 | — | — | — | 0.31 – 0.39 – 0.46 | 0.16 – 0.2 – 0.24 | 0.11 – 0.14 – 0.17 | 0.09 – 0.12 – 0.14 | 0.08 – 0.1 – 0.12 |

Cutting with coolant is recommended for Ni-base heat resistant alloy and titanium alloy.

## JA chipbreaker

| Workpiece material | Recommended insert grades ( Vc m/min) | | Recommended feed rate (fz mm/t) | | | | |
|---|---|---|---|---|---|---|---|
| | DLC coated carbide | Carbide | Lead angle | | | | |
| | PDL025 | GW25 | 15° | 30° | 45° | 60° | 80° |
| Aluminium alloys (Si 13% or below) | 200 – 1,000 | 200 – 800 | 0.19 – 1.16 | 0.1 – 0.6 | 0.07 – 0.42 | 0.06 – 0.35 | 0.05 – 0.3 |



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