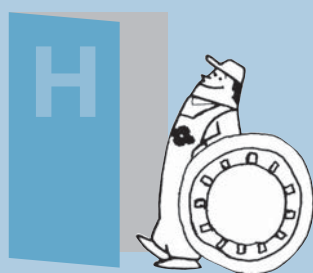


# Milling Cutters (Special Purpose)

## H275 to H289



Milling Cutters  
(Special Purpose)

H

Goal Mill

High-Feed

Quick  
Change

|  |  |      |
|--|--|------|
| For High Feed<br>Cast Iron<br>Milling                              | SEC-Goal Mill series .....             | H276 |
|  | GFX(C) 13000 type .....                | H278 |
|  | GFX 16000 type .....                   | H279 |
|  | GRHNM 17000 type .....                 | H280 |
|  | GRHNF 17000 type .....                 | H281 |
| For High Feed<br>Cast Iron<br>Milling                              | SEC-High-Feed Mill series .....        | H282 |
|  | Cutting Edge Reference System .....    | H283 |
|  | NRV 4000 / 5000 type .....             | H284 |
|  | DPV 4000 / 5000 type .....             | H285 |
|  | NFV 4000 / 5000 type .....             | H286 |
| For High-Feed Milling<br>of Non-Ferrous Alloys/<br>Thin Workpieces | APV 5000 type .....                    | H287 |
| QC System  | IGETALLOY Quick Change System .....    | H288 |
|  | Applicable Cutters for QC-System ..... | H289 |

### Stock Markings and Symbols

- mark: Standard stocked item
- mark: To be replaced with the new item featured on the same page
- ▲ mark: To be replaced by a new product, made to order, or discontinued (please confirm stock availability)

- \* mark: Semi-standard stock (please confirm stock availability)
- mark: Stock or planned stock (please confirm stock availability)
- Blank: Made-to-order item
- mark: Not available

# GFX series / GRHN type

Milling Cutters  
(Special Purpose)

H

Goal Mill

High-Feed

Quick Change





### ■ Features


SEC-Goal Mill series cutters have been developed for high-efficiency machining and finishing of cast iron parts (such as engine cylinder blocks and transmission cases).


- Special cutters for high-feed milling of cast iron
- Multi-teeth design (approx. 3 teeth per inch)
- Finishing cutters feature an easy-to-use function for edge runout fine adjustment
- Highly reliable cutter with tangential inserts for finishing
- Chipbreaker type inserts for low cutting force

### ■ Product Range


| Series Code       | GFX  | GRHN  |
|-------------------|--|---|
| Applications      | Finishing  | Roughing  |
| Surface Roughness | < Ra3.2  | < Ra12.5  |
| Appearance        |  |  |

Refer to the QC system on pages H288 to H289 for details and specifications on the two-piece mounting system and adapter.

| Work Material   | Applications | High-speed Finishing | Finishing to General Cutting | Interrupted Cutting | Applicable Cutter |
|---|--------------|----------------------|------------------------------|---------------------|-------------------|
|  | Finishing    | BN7000               |                              | ACK260              | GFX type          |
|   |              |                      |                              |                     |                   |
|   |              |                      |                              |                     |                   |

| Work Material   | Applications | Light Cutting | General Cutting | Heavy Interrupted Cutting | Applicable Cutter |
|---|--------------|---------------|-----------------|---------------------------|-------------------|
|  | For Roughing | ACK100        |                 | ACK200                    | GRHN type         |
|   |              |               |                 |                           |                   |
|   |              |               |                 |                           |                   |

### ■ Grade Characteristics

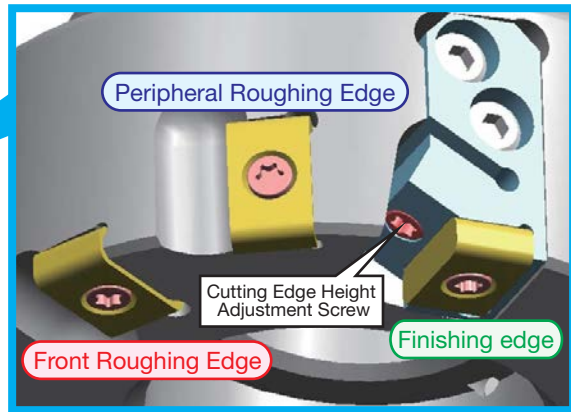
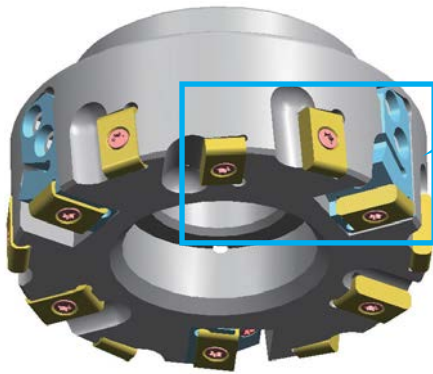
| Work Material   | Grade          | Hardness | TRS (GPa)        | Main Coating Components | Coating Thickness (µm) | Features |  |
|---|----------------|----------|------------------|-------------------------|------------------------|----------|--|
|  | Coated Carbide | ACK100   | 92.0HRA          | 2.4                     | Super FF Coat          | 6        | Adopts a high-strength ultra-hard substrate and Super FF Coat, for a high-speed milling grade with excellent wear resistance.  |
|   |                | ACK200   | 91.7HRA          | 2.5                     | Super FF Coat          | 6        | A grade that employs a tough carbide substrate and thin Super FF Coat to provide superior thermal crack and wear resistance.   |
|   |                | ACK260   | 92.6HRA          | 2.6                     | Super ZX Coat          | 3        | From finishing to general Milling of cast iron and ductile cast iron. Employs new super multi-layered PVD coating consisting of nanometre-thin layers of TiAlN and AlCrN. Combines with a tough, thermal-resistant substrate for long and stable tool life.  |
|   |                | ACK280   | 91.7HRA          | 3.0                     | Super ZX Coat          | 3        | For heavy interrupted cutting or wet cutting of cast iron and ductile cast iron. Employs new super multi-layered PVD coating consisting of nanometre-thin layers of TiAlN and AlCrN. Coupled with an ultra-tough substrate for superior fracture resistance and thermal crack resistance during wet cutting. |
|   |                | ACK300   | 91.4HRA          | 3.3                     | Super ZX Coat          | 3        | General-purpose to interrupted milling of cast iron and ductile cast iron. Employs PVD coating consisting of multiple nanometre-thin layers. Provides excellent fracture resistance when combined with a fine-grained tough substrate.   |
|   | CBN            | BN7000   | 41.0HV to 44.0HV | 1.8 up to 1.9           | —                      | —        | Grade exhibiting wear and fracture resistance in cutting of cast iron and exotic alloys.   |

BN7000 Characteristic Values 

ACK100, ACK200, ACK300 Characteristic Values 

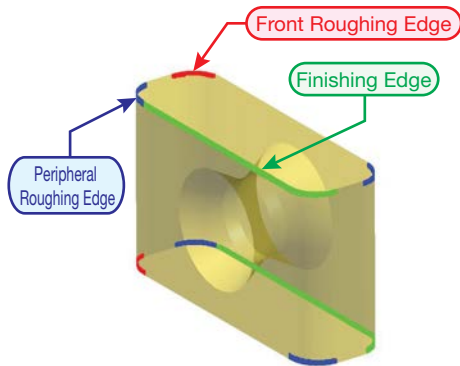
■ GFX type Features

- Simple Runout Adjustment

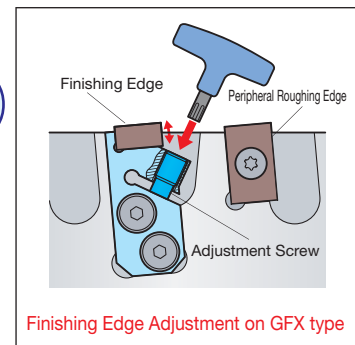
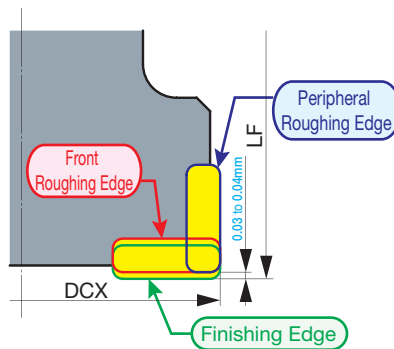


Finishing edge runout can be adjusted by 5  $\mu\text{m}$  or less simply by turning the adjustment screw.

- Economical 8-Cornered Insert



Arraying the same number of vertical and horizontal inserts allows 8-corner configuration.



■ GFX type Finishing Edge Runout Adjustment Procedure

|  |  |   |  |
|--|--|---|--|
| <p>(1) Insert Assembly<br/>Attach insert to cutter body. When doing so, check that the cartridge adjustment screw is completely loose.</p> |  | <p>(4) Adjust Finishing Edge Height<br/>Select a finishing edge and adjust with the adjustment screw so that the edge protrudes around 0.03 to 0.04mm further than (3).</p>   |  |
| <p>(2) Check Roughing Edge Runout<br/>Measure face runout of the roughing edge and identify the cutting edge that protrudes the most.</p>  |  | <p>(5) Adjust Runout<br/>With the finishing edge from (4) as a reference, adjust the position of the other finishing edges so that runout is equal to or less than 5 <math>\mu\text{m}</math>.</p>  |  |
| <p>(3) Set Reference Roughing Edge<br/>Set the cutting edge height of the insert identified in (2) as "0".</p>                             |  | <p><b>!</b></p> <ul style="list-style-type: none"> <li>Always adjust finishing edge height before use. Adjust the height in the screw tightening directions.</li> <li>Using the tool with the adjustment screw loose may result in tool breakage.</li> </ul> <p>* Adjusting finishing edge runout to 2 <math>\mu\text{m}</math> or less will result in a better machined surface.</p> |  |

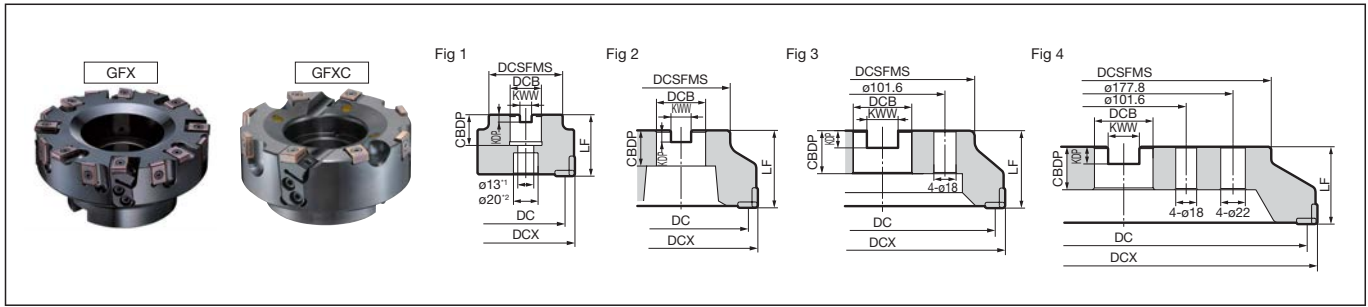
# GFX 13000 / GFXC 13000 type



|       |        |     |
|-------|--------|-----|
| Rake  | Radial | -8° |
| Angle | Axial  | -5° |

1 mm  $89 \sim 89.30$

Face Milling



## Body (Standard Pitch)

| Cat. No.            | Stock |   | Max. Dia. DCX | Dia. DC | Boss DCSFMS | Height LF | Hole Dia. DCB | Keyway Width KWW | Keyway Depth KDP | Mounting Depth CBBDP | Total No. of Teeth | Number Of Finishing Teeth | Effective No. of Teeth | Weight (kg) | Fig |
|---------------------|-------|---|---------------|---------|-------------|-----------|---------------|------------------|------------------|----------------------|--------------------|---------------------------|------------------------|-------------|-----|
|                     | R     | L |               |         |             |           |               |                  |                  |                      |                    |                           |                        |             |     |
| <b>GFX 13080R/L</b> | ●     |   | <b>80</b>     | 67.3    | 60          | 50        | <b>25.4</b>   | 9.5              | 6                | 25                   | 8                  | 2                         | 8                      | 1.4         | 1   |
| <b>13100R/L</b>     | ●     |   | <b>100</b>    | 87.3    | 70          | 50        | <b>31.75</b>  | 12.7             | 8                | 32                   | 12                 | 3                         | 12                     | 1.9         | 2   |
| <b>13125R/L</b>     | ●     |   | <b>125</b>    | 112.3   | 80          | 63        | <b>38.1</b>   | 15.9             | 10               | 38                   | 16                 | 4                         | 16                     | 3.3         | 2   |
| <b>13160R/L</b>     | ●     |   | <b>160</b>    | 147.3   | 120         | 63        | <b>50.8</b>   | <b>19.1</b>      | 11               | 38                   | 20                 | 5                         | 20                     | 6.4         | 2   |
| <b>13200R/L</b>     | ●     |   | <b>200</b>    | 187.3   | 150         | 63        | <b>47.625</b> | 25.4             | 14               | 35                   | 28                 | 7                         | 28                     | 7.8         | 3   |
| <b>13250R/L</b>     | ●     |   | <b>250</b>    | 237.3   | 200         | 63        | <b>47.625</b> | 25.4             | 14               | 35                   | 36                 | 9                         | 36                     | 12.6        | 3   |
| <b>13315R/L</b>     | ●     |   | <b>315</b>    | 302.3   | 240         | 80        | <b>47.625</b> | 25.4             | 14               | 35                   | 44                 | 11                        | 44                     | 20.2        | 4   |

## Body (Coarse Pitch)

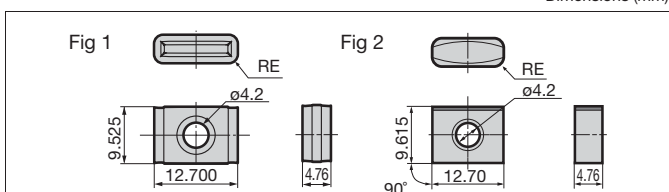
| Cat. No.              | Stock |   | Max. Dia. DCX | Dia. DC | Boss DCSFMS | Height LF | Hole Dia. DCB | Keyway Width KWW | Keyway Depth KDP | Mounting Depth CBBDP | Total No. of Teeth | Number Of Finishing Teeth | Effective No. of Teeth | Weight (kg) | Fig |
|-----------------------|-------|---|---------------|---------|-------------|-----------|---------------|------------------|------------------|----------------------|--------------------|---------------------------|------------------------|-------------|-----|
|                       | R     | L |               |         |             |           |               |                  |                  |                      |                    |                           |                        |             |     |
| <b>GFXC13063RS/LS</b> | ●     |   | <b>63</b>     | 50.3    | 50          | 50        | <b>22</b>     | 10.4             | <b>6.3</b>       | 20                   | 4                  | 1                         | 4                      | 0.9         | 1   |
| <b>GFXC13080R/L</b>   | ●     |   | <b>80</b>     | 67.3    | 60          | 50        | <b>25.4</b>   | 9.5              | 6                | 25                   | 6                  | 1                         | 6                      | 1.4         | 1   |
| <b>13100R/L</b>       | ●     |   | <b>100</b>    | 87.3    | 70          | 50        | <b>31.75</b>  | 12.7             | 8                | 32                   | 8                  | 2                         | 8                      | 1.9         | 2   |
| <b>13125R/L</b>       | ●     |   | <b>125</b>    | 112.3   | 80          | 63        | <b>38.1</b>   | 15.9             | 10               | 38                   | 10                 | 2                         | 10                     | 3.3         | 2   |
| <b>13160R/L</b>       | ●     |   | <b>160</b>    | 147.3   | 120         | 63        | <b>50.8</b>   | <b>19.1</b>      | 11               | 38                   | 12                 | 3                         | 12                     | <b>5.9</b>  | 2   |
| <b>13200R/L</b>       | ●     |   | <b>200</b>    | 187.3   | 150         | 63        | <b>47.625</b> | 25.4             | 14               | 35                   | 16                 | 4                         | 16                     | 7.8         | 3   |
| <b>13250R/L</b>       | ●     |   | <b>250</b>    | 237.3   | 184         | 63        | <b>47.625</b> | 25.4             | 14               | 35                   | 20                 | 5                         | 20                     | 9.4         | 3   |
| <b>13315R/L</b>       | ●     |   | <b>315</b>    | 302.3   | 240         | 80        | <b>47.625</b> | 25.4             | 14               | 35                   | 24                 | 6                         | 24                     | 17.9        | 4   |

\*1: GFXC13063RS/LS is ø11. (Fig 1) \*2: GFXC13063RS/LS is ø18. (Fig 1) Inserts are sold separately.

Note For mounting the cutters marked with \* to an arbor, use a JIS B1176 hex socket bolt (M12 x 30 to 35mm).

Note: The values in red have been changed from the 2021-2022 General Catalogue.

## Insert



| Grade Classification     |                          | Coated Carbide | Carbide  | CBN      | Corner Radius RE | Fig    |        |
|--------------------------|--------------------------|----------------|----------|----------|------------------|--------|--------|
| Process                  | High-speed Finishing     |                |          | <b>K</b> |                  |        |        |
|                          | Finishing/Medium Cutting | <b>K</b>       |          |          |                  |        |        |
|                          | Roughing                 | <b>K</b>       | <b>K</b> |          |                  |        |        |
| Cat. No.                 |                          | ACK260         | ACK280   | ACK300   | H10E             | BN7125 | BN7000 |
| <b>LNGX 130508PNFN-W</b> | ●                        | ●              | ●        | ○        | ●                | ○      | ●      |
| <b>130516PNFN-W</b>      | ●                        | ●              | ●        | ○        | ●                | ○      | ●      |
| <b>130516PNTN-W</b>      | ○                        | ○              | ○        | ○        | ○                | ○      | ●      |

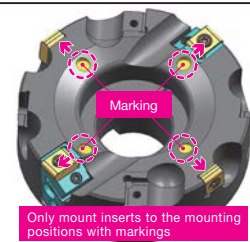
Parts H279

● Allowable Spindle Speed for CBN Inserts by Size

H279

## Precautions for Use of GFXC type

GFXC type can be used with fewer teeth attached. In this case, only mount inserts to the mounting positions with markings. Remove the screws from the mounting positions where inserts will not be mounted.



GFXC type with total no. of teeth and when mounting reduced no. of teeth.

| Cat. No.               | Dia. DC | Total No. of Teeth | Reduced No. of Teeth | Cat. No.             | Dia. DC | Total No. of Teeth | Reduced No. of Teeth |
|------------------------|---------|--------------------|----------------------|----------------------|---------|--------------------|----------------------|
| <b>GFXC 13063RS/LS</b> | 63mm    | 4                  | 2                    | <b>GFXC 13160R/L</b> | 160mm   | 12                 | 6                    |
| 13080R/L               | 80mm    | 6                  | 2                    | 13200R/L             | 200mm   | 16                 | 8                    |
| 13100R/L               | 100mm   | 8                  | 4                    | 13250R/L             | 250mm   | 20                 | 10                   |
| 13125R/L               | 125mm   | 10                 | 4                    | 13315R/L             | 315mm   | 24                 | 12                   |

The number of inserts mounted should always match either the "Total No. of Teeth" or "Reduced No. of Teeth" quantities.

## Recommended Cutting Conditions

| ISO      | Work Material | Hardness | Cutting Speed vc (m/min)<br>Min. - Optimum - Max. | Feed Rate fz (mm/t)<br>Min. - Optimum - Max. | Insert Grades |
|----------|---------------|----------|---|--|---------------|
| <b>K</b> | Cast Iron     | 250HB    | 200- 250- 350                                     | 0.1-0.3-0.5                                  | ACK260        |
| <b>K</b> | Cast Iron     | 250HB    | 800- 1,000- 1,200                                 | 0.1-0.3-0.5                                  | BN7125        |

Note Calculate cutting conditions based on effective no. of teeth. The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

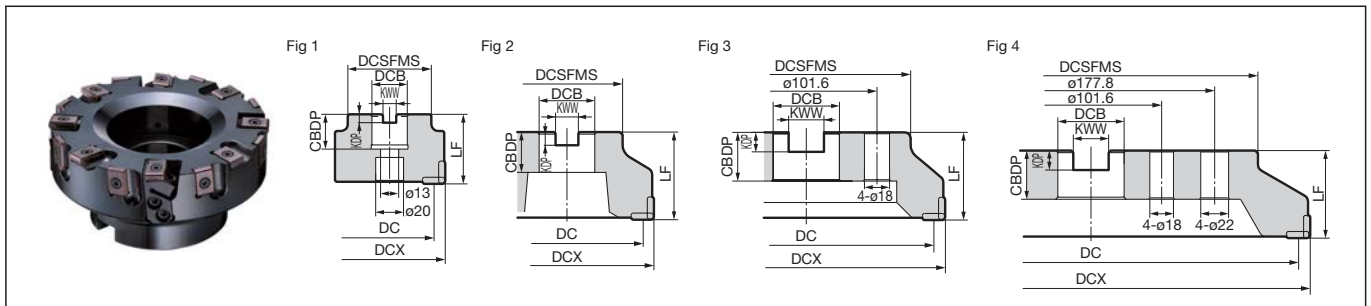
# GFX 16000 type



|            |        |     |
|------------|--------|-----|
| Rake Angle | Radial | -8° |
| Angle      | Axial  | -5° |

1 mm 89°~89.30°

Face Milling



## Body

| Cat. No.            | Stock |   | Dimensions (mm) |         |             |           |               |                  |                  |                     |                    |                           |                        |             |     |
|---------------------|-------|---|-----------------|---------|-------------|-----------|---------------|------------------|------------------|---------------------|--------------------|---------------------------|------------------------|-------------|-----|
|                     | R     | L | Max. Dia. DCX   | Dia. DC | Boss DCSFMS | Height LF | Hole Dia. DCB | Keyway Width KWW | Keyway Depth KDP | Mounting Depth CDBP | Total No. of Teeth | Number Of Finishing Teeth | Effective No. of Teeth | Weight (kg) | Fig |
| <b>GFX 16080R/L</b> |       |   | 80              | 64.1    | 60          | 50        | 25.4          | 9.5              | 6                | 25                  | 8                  | 2                         | 8                      | 1.4         | 1   |
| <b>16100R/L</b>     | ●     |   | 100             | 84.125  | 70          | 50        | 31.75         | 12.7             | 8                | 32                  | 12                 | 3                         | 12                     | 1.9         | 2   |
| <b>16125R/L</b>     | ●     |   | 125             | 109.125 | 80          | 63        | 38.1          | 15.9             | 10               | 38                  | 16                 | 4                         | 16                     | 3.3         | 2   |
| <b>16160R/L</b>     | ●     |   | 160             | 144.125 | 120         | 63        | 50.8          | 19.1             | 11               | 38                  | 20                 | 5                         | 20                     | 6.4         | 2   |
| <b>16200R/L</b>     | ●     |   | 200             | 184.125 | 150         | 63        | 47.625        | 25.4             | 14               | 35                  | 28                 | 7                         | 28                     | 7.8         | 3   |
| <b>16250R/L</b>     |       |   | 250             | 234.1   | 130         | 63        | 47.625        | 25.4             | 14               | 35                  | 36                 | 9                         | 36                     | 12.6        | 3   |
| <b>16315R/L</b>     |       |   | 315             | 299.125 | 240         | 80        | 47.625        | 25.4             | 14               | 35                  | 44                 | 11                        | 44                     | 20.8        | 4   |

Inserts are sold separately.

**Note** For mounting the cutters marked with \* to an arbor, use a JIS B1176 hex socket bolt (M12 x 30 to 35mm).

Note: The values in red have been changed from the 2021-2022 General Catalogue.

## Insert

| Grade Classification     |                          | Coated Carbide | Carbide  | CBN    |      |          |        |     |
|--------------------------|--------------------------|----------------|----------|--------|------|----------|--------|-----|
| Process                  | High-speed Finishing     |                |          |        |      | <b>K</b> |        |     |
|                          | Finishing/Medium Cutting | <b>K</b>       |          |        |      |          |        |     |
|                          | Roughing                 | <b>K</b>       | <b>K</b> |        |      |          |        |     |
| Cat. No.                 |                          | ACK260         | ACK280   | ACK300 | H10E | BN7125   | BN7000 | Fig |
| <b>LNGX 160516PNFN-W</b> |                          | ●              | ●        | —      | ●    | —        | —      | 1   |
| <b>160516PNTN-W</b>      |                          | —              | —        | —      | —    | —        | —      | 2   |

Fig 1

Fig 2

## Parts

| Cartridges  |             | Wrench           | Adjustment | Wrench                 | Flat         | Wrench     | Cap Screw/Radial Cartridge |                | Anti-seizure |
|-------------|-------------|------------------|------------|------------------------|--------------|------------|----------------------------|----------------|--------------|
| (For 13000) | (For 16000) | (For Cartridges) | Screw      | (For Adjustment Screw) | Insert Screw |            | (For GFXX4R/L)             | (For GFVK5R/L) | Cream        |
|             |             |                  |            |                        |              |            |                            |                |              |
| GFXX4R/L    | GFVK5R/L    | TH030            | BTD05F09   | LT15                   | BFTX03588    | 3.0 TTX15W | BX0414                     | BX0418         | SUMI-P       |

Finishing cartridges do not come assembled with inserts.

### ● Allowable Spindle Speed for CBN Inserts by Size

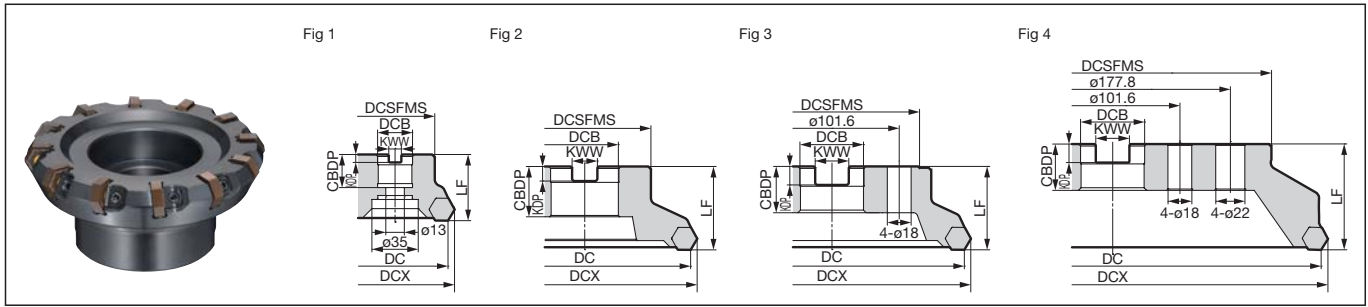
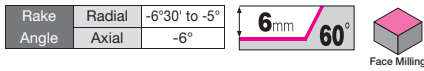
| Max. Dia. (mm) DCX | Allowable Spindle Speed (min <sup>-1</sup> ) n max. | Max. Dia. (mm) DCX | Allowable Spindle Speed (min <sup>-1</sup> ) n max. |
|--------------------|---|--------------------|---|
| ø63                | 6,000   | ø160               | 2,300   |
| ø80                | 4,700   | ø200               | 1,900   |
| ø100               | 3,800   | ø250               | 1,500   |
| ø125               | 3,000   | ø315               | 1,200   |

### Recommended Cutting Conditions

| ISO      | Work Material | Hardness | Cutting Speed vc (m/min) Min. - Optimum - Max. | Feed Rate fz (mm/t) Min. - Optimum - Max. | Insert Grades |
|----------|---------------|----------|--|---|---------------|
| <b>K</b> | Cast Iron     | 250HB    | 200- 250- 350                                  | 0.1-0.3-0.5                               | ACK260        |
| <b>K</b> | Cast Iron     | 250HB    | 800- 1,000 -1,200                              | 0.1-0.3-0.5                               | BN7125        |

**Note** Calculate cutting conditions based on effective no. of teeth. The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

# GRHNM 17000 type



Milling Cutters  
(Special Purpose)

H

Goal Mill

High-Feed

Quick Change

## Body

| Cat. No.       | Stock |   | Dimensions (mm) |               |             |           |               |                  |                  |                      |                    |             |     |
|----------------|-------|---|-----------------|---------------|-------------|-----------|---------------|------------------|------------------|----------------------|--------------------|-------------|-----|
|                | R     | L | Dia. DC         | Max. Dia. DCX | Boss DCSFMS | Height LF | Hole Dia. DCB | Keyway Width KWW | Keyway Depth KDP | Mounting Depth CBBDP | Total No. of Teeth | Weight (kg) | Fig |
| GRHNM 17080R/L | ●     |   | 80              | 90.5          | 60          | 50        | 25.4          | 9.5              | 6                | 25                   | 8                  | 1.2         | 1   |
| 17100R/L       | ●     |   | 100             | 110.5         | 70          | 50        | 31.75         | 12.7             | 8                | 32                   | 10                 | 1.7         | 2   |
| 17125R/L       | ●     |   | 125             | 135.5         | 80          | 63        | 38.1          | 15.9             | 10               | 38                   | 12                 | 2.9         | 2   |
| 17160R/L       | ●     |   | 160             | 170.5         | 100         | 63        | 50.8          | 19.1             | 11               | 38                   | 16                 | 4.5         | 2   |
| 17200R/L       | ●     |   | 200             | 210.5         | 130         | 63        | 47.625        | 25.4             | 14               | 35                   | 20                 | 7.3         | 3   |
| 17250R/L       | ●     |   | 250             | 260.5         | 130         | 63        | 47.625        | 25.4             | 14               | 35                   | 24                 | 13.1        | 3   |
| 17315R/L       | ●     |   | 315             | 325.5         | 240         | 80        | 47.625        | 25.4             | 14               | 40                   | 28                 | 24.5        | 4   |

Inserts are sold separately.  
 Note: For mounting the cutters marked with \* to an arbor, use a JIS B1176 hex socket bolt (M12 x 30 to 35mm).  
 Note: The values in red have been changed from the 2021-2022 General Catalogue.

## Insert

| Grade Classification |                          | Coated Carbide |        |        | Fig |
|----------------------|--------------------------|----------------|--------|--------|-----|
| Process              | High-speed/Light Cutting | K              | K      |        |     |
|                      | General-purpose          | K              | K      |        |     |
|                      | Roughing                 |                |        | K      |     |
| Cat. No.             |                          | ACK100         | ACK200 | ACK300 |     |
| HNEF 100608DNEN-G    |                          | ●              | ●      | ●      | 1   |

## Parts

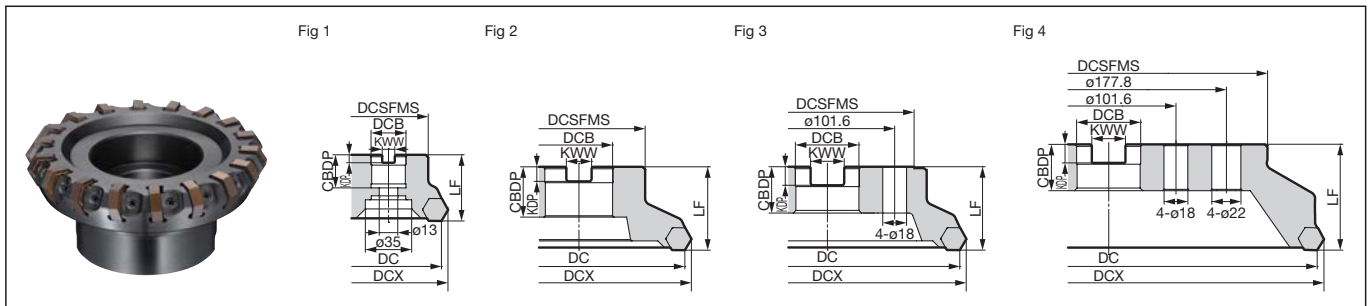
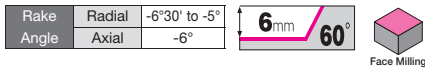
| Double Screw | Clamp Plate | Wrench | Anti-seizure Cream |
|--------------|-------------|--------|--------------------|
|              |             |        |                    |
| WB6-20T      | 6.0 GRHNW   | TTX20  | SUMI-P             |

## Recommended Cutting Conditions

| ISO | Work Material | Hardness | Cutting Speed vc (m/min)<br>Min. - Optimum - Max. | Feed Rate fz (mm/t)<br>Min. - Optimum - Max. | Insert Grades |
|-----|---------------|----------|---|--|---------------|
| K   | Cast Iron     | 250HB    | 200-250-300                                       | 0.15-0.23-0.30                               | ACK200        |

Note: Calculate cutting conditions based on effective no. of teeth. The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

# GRHNF 17000 type



## Body

| Cat. No.       | Stock |   | Dimensions (mm) |               |             |           |               |                  |                  |                     |                    |             |     |
|----------------|-------|---|-----------------|---------------|-------------|-----------|---------------|------------------|------------------|---------------------|--------------------|-------------|-----|
|                | R     | L | Dia. DC         | Max. Dia. DCX | Boss DCSFMS | Height LF | Hole Dia. DCB | Keyway Width KWW | Keyway Depth KDP | Mounting Depth CDBP | Total No. of Teeth | Weight (kg) | Fig |
| GRHNF 17080R/L | ●     |   | 80              | 90.5          | 60          | 50        | 25.4          | 9.5              | 6                | 25                  | 10                 | 1.2         | 1   |
| 17100R/L       | ●     |   | 100             | 110.5         | 70          | 50        | 31.75         | 12.7             | 8                | 32                  | 14                 | 1.8         | 2   |
| 17125R/L       | ●     |   | 125             | 135.5         | 80          | 63        | 38.1          | 15.9             | 10               | 38                  | 18                 | 2.9         | 2   |
| 17160R/L       | ●     |   | 160             | 170.5         | 100         | 63        | 50.8          | 19.1             | 11               | 38                  | 22                 | 4.5         | 2   |
| 17200R/L       | ●     |   | 200             | 210.5         | 130         | 63        | 47.625        | 25.4             | 14               | 35                  | 28                 | 7.3         | 3   |
| 17250R/L       | ●     |   | 250             | 260.5         | 130         | 63        | 47.625        | 25.4             | 14               | 35                  | 36                 | 13.1        | 3   |
| 17315R/L       | ●     |   | 315             | 325.5         | 240         | 80        | 47.625        | 25.4             | 14               | 40                  | 44                 | 24.5        | 4   |

Inserts are sold separately.

**Note** For mounting the cutters marked with \* to an arbor, use a JIS B1176 hex socket bolt (M12 x 30 to 35mm).

Note: The values in red have been changed from the 2021-2022 General Catalogue.

## Insert

| Grade Classification |                          | Coated Carbide |        |        | Fig |
|----------------------|--------------------------|----------------|--------|--------|-----|
| Process              | High-speed/Light Cutting | K              | K      |        |     |
|                      | General-purpose          | K              | K      |        |     |
|                      | Roughing                 |                |        | K      |     |
| Cat. No.             |                          | ACK100         | ACK200 | ACK300 |     |
| HNEF 100608DNEN-G    |                          | ●              | ●      | ●      | 1   |

## Parts

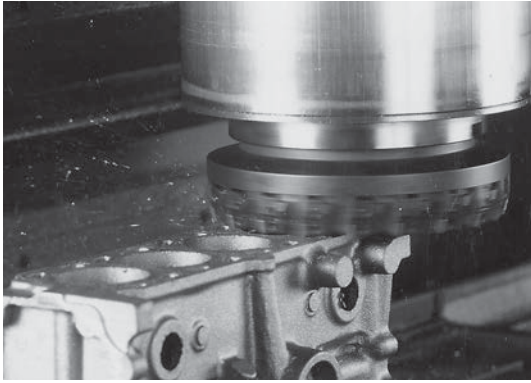
| Double Screw | Clamp Plate | Wrench | Anti-seizure Cream |
|--------------|-------------|--------|--------------------|
|              |             |        |                    |
| WB6-20T      | 6.0 GRHNW   | TTX20  | SUMI-P             |

## Recommended Cutting Conditions

| ISO | Work Material | Hardness | Cutting Speed $v_c$ (m/min)<br>Min. - Optimum - Max. | Feed Rate $f_z$ (mm/t)<br>Min. - Optimum - Max. | Insert Grades |
|-----|---------------|----------|--|---|---------------|
| K   | Cast Iron     | 250HB    | 200-250-300  | 0.15-0.23-0.30                                  | ACK200        |

**Note** Calculate cutting conditions based on effective no. of teeth. The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.

# High-Feed Face Mills



## ■ Features

Sumitomo Electric Hardmetal SEC-High-Feed Face Mills achieve high-performance milling particularly suited for cast irons, aluminum and light alloys. Cutting edge reference system design is rugged, simple and easy to maintain. A range of face mills are available to suit various applications.

## ■ Series Common Features

- Dedicated cutter for high-feed Milling of cast iron and light alloys.
- Cutting edge reference system provides simple, easy and fast runout management. (→H283)
- Fine-pitched cutter design (3 teeth per inch) is ideal for high-efficiency machining.  
Cutting edge to O.D. inch conversion (example:  $\phi 100 \approx 4$  inches  $\times 3 = 12$  teeth)
- An excellent range of cutter designs and insert grades to suit various applications.
- Quick change system enables fast replacement of cutter. (→H288)

|     | Cat. No.          | Specifications                    | Applicable Cutter Size  |
|-----|-------------------|-----------------------------------|-------------------------|
| (1) | F type / NF type* | Quick Change System               | $\phi 160$ mm and below |
| (2) | 2-piece type      | 2-piece system                    | $\phi 200$ mm and above |
| (3) |                   | Two-piece cutter with centre bolt |                         |

\* The Quick Change System NF type is a made-to-order item. For details, please contact us directly.

## ■ Type / Specifications

| Applications                        |                   | Cat. No.             | Approach Angle & Maximum Depth of Cut<br>( ) for 5000 type | Rake Angle |             | Insert Cat. No. | Page |
|-------------------------------------|-------------------|----------------------|--|------------|-------------|-----------------|------|
| Applications                        | Surface Roughness |                      |  | Axial Rake | Radial Rake |                 |      |
| Roughing                            | 25S               | <b>NRV 4000 type</b> |  | -5°        | -6°         | SNC43MW         | H238 |
|                                     |                   | <b>NRV 5000 type</b> |  |            |             | SNC535          |      |
| Roughing / Finishing                | 18S               | <b>DPV 4000 type</b> |  | +10°       | +5°         | SDCN42R/L       | H239 |
|                                     |                   | <b>DPV 5000 type</b> |  |            |             | SDCN53R/L       |      |
| Finishing                           | 12.5S             | <b>NFV 4000 type</b> |  | -5°        | -6°         | 6SS43M          | H240 |
|                                     |                   | <b>NFV 5000 type</b> |  |            |             | 6SS53M          |      |
| Roughing / Finishing of Light Alloy | 12.5S             | <b>APV 5000 type</b> |  | +18°       | -2°         | SDC53R/L        | H241 |

## ■ Recommended Cutting Conditions

| Cat. No.             | Insert Cat. No. | Insert Grades | Cutting Conditions (Min. - Optimum - Max.) |                         |           |
|----------------------|-----------------|---------------|--|-------------------------|-----------|
|                      |                 |               | vc(m /min)                                 | fz(mm/t)                | ap(mm)    |
| <b>NRV 4000 type</b> | SNC43MW         | ACK200        | 80 - <b>100</b> - 120                      | 0.1 - <b>0.15</b> - 0.2 | up to 3   |
| <b>NRV 5000 type</b> | SNC535          | ACK200        | 80 - <b>100</b> - 120                      | 0.1 - <b>0.15</b> - 0.2 | up to 3   |
| <b>DPV 4000 type</b> | SDCN42R/L       | G10E          | 80 - <b>100</b> - 120                      | 0.1 - <b>0.15</b> - 0.2 | up to 3   |
| <b>DPV 5000 type</b> | SDCN53R/L       | G10E          | 80 - <b>100</b> - 120                      | 0.1 - <b>0.15</b> - 0.2 | up to 5   |
| <b>NFV 4000 type</b> | 6SS43M          | H10E          | 120 - <b>160</b> - 200                     | 0.1 - <b>0.15</b> - 0.2 | up to 0.5 |
| <b>NFV 5000 type</b> | 6SS53M          | H10E          | 120 - <b>160</b> - 200                     | 0.1 - <b>0.15</b> - 0.2 | up to 0.5 |
| <b>APV 5000 type</b> | SDC53R/L        | H1            | < 400                                      | 0.1 - <b>0.20</b> - 0.3 | up to 3   |

**Note** The cutting conditions above are a guide. Actual conditions will need to be adjusted according to machine rigidity, work clamp rigidity, depth of cut and other factors.



# Cutting Edge Reference System

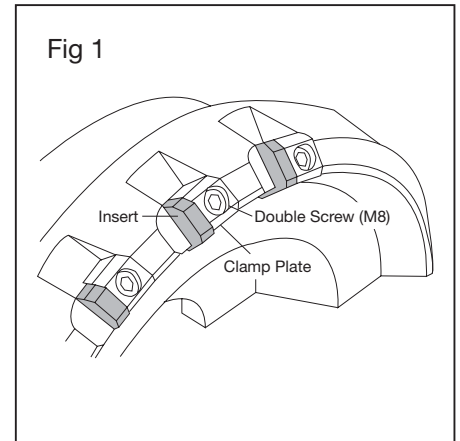


## ■ Features

Conventional indexable cutters are designed to position and clamp two or three faces of the insert with locators, etc. The cutting edge reference cutter, on the other hand, retains the insert only with a clamp plate. (See Fig 1) This system is adopted for our entire high-feed cutter series.

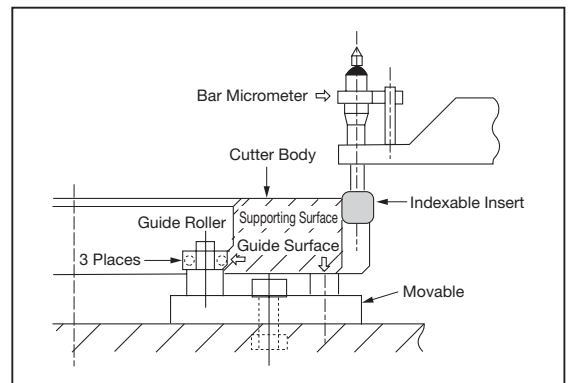
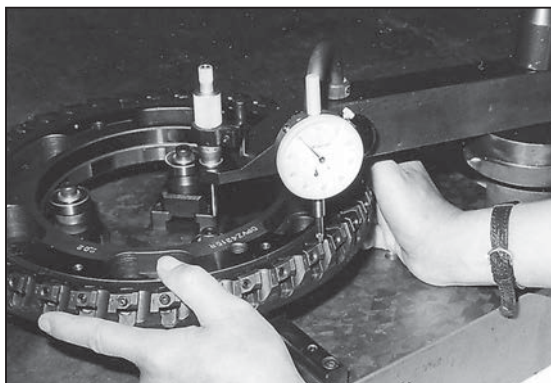
## ■ Features of the Cutting Edge Reference Cutter

- Axial runout of the inserts is kept within 5 to 10 $\mu$ m to ensure stable surface roughness and longer tool life.
- Simple design with fewer parts compared to the locator type facilitates cleaning the typical cast iron machining dirt and is comparatively inexpensive.
- Fewer parts allow high-density cutter design, higher machining efficiency and longer tool life.



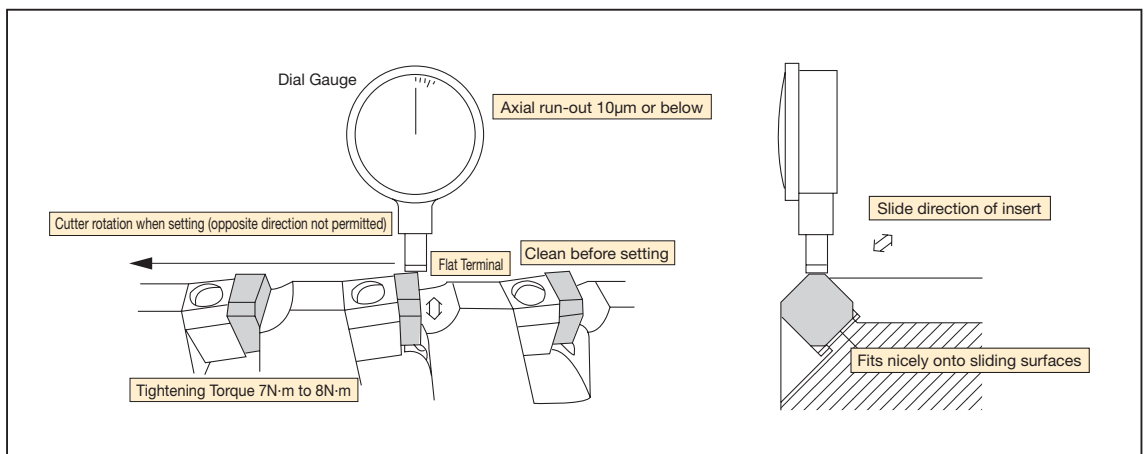
## ■ Assembly Jig

Application of a special assembly jig (as shown in the figure below) is recommended to accurately assemble the cutting edge reference cutter.



## ■ Insert Assembly Guidelines

When mounting (assembling) the inserts, pay careful attention to the points noted below in     .

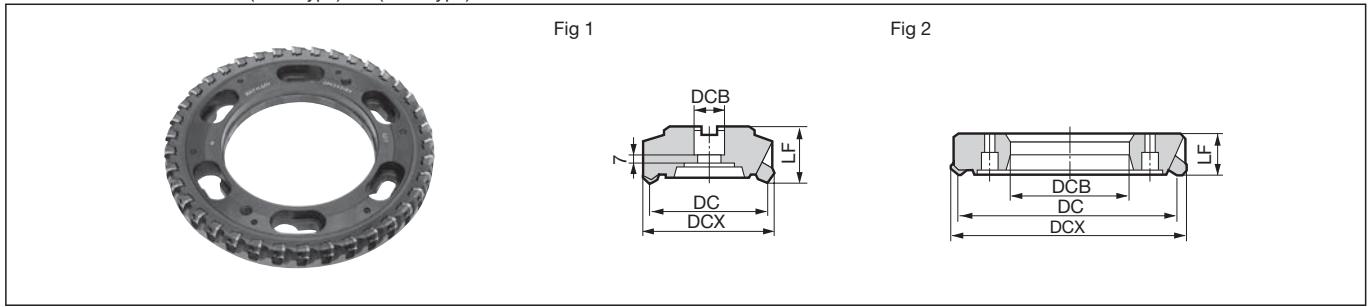




# DPV 4000/5000 type



|            |        |     |                         |                           |                  |
|------------|--------|-----|-------------------------|---------------------------|------------------|
| Rake Angle | Radial | 5°  | <br>7mm 65° (4000 type) | <br>7.5mm 65° (5000 type) | <br>Face Milling |
|            | Axial  | 10° |                         |                           |                  |



## Body

Dimensions (mm)

| Classification | Cat. No.     | Stock       |   | Dia. DC | Max. Dia. DCX* | Height LF | Hole Dia. DCB | Number of Teeth 4000 | Number of Teeth 5000 | Weight (kg) | Fig |
|----------------|--------------|-------------|---|---------|----------------|-----------|---------------|----------------------|----------------------|-------------|-----|
|                |              | R           | L |         |                |           |               |                      |                      |             |     |
| Inch           | F type       | DPV○100QR/L |   | 100     | 107.2(109.6)   | 60        | 31.75         | 12                   | 10                   | 2.6         | 1   |
|                |              | ○125QR/L    |   | 125     | 131.5(133.6)   | 60        | 38.1          | 16                   | 14                   | 3.6         | 1   |
|                |              | ○160QR/L    |   | 160     | 165.8(176.6)   | 60        | 50.8          | 20                   | 18                   | 6.0         | 1   |
| Inch           | 2-piece type | DPVZ○200R/L |   | 200     | 206.5(208)     | 40        | 80            | 26                   | 24                   | 5.5         | 2   |
|                |              | ○250R/L     |   | 250     | 256 (258)      | 40        | 120           | 32                   | 32                   | 9.0         | 2   |
|                |              | ○315R/L     |   | 315     | 322.5(323)     | 40        | 180           | 38                   | 36                   | 12.0        | 2   |
|                |              | ○355R/L     |   | 355     | 361.5(363)     | 40        | 220           | 44                   | 42                   | 15.0        | 2   |
|                |              | ○400R/L     |   | 400     | 406.5(408)     | 40        | 250           | 50                   | 48                   | 17.8        | 2   |
|                |              | ○450R/L     |   | 450     | 456.5(458)     | 40        | 300           | 56                   | 54                   | 20.8        | 2   |

Inserts are sold separately.

Put 4 or 5 in "○" in the catalogue number.

Refer to page H288 for special arbors for the type of cutters shown in Fig 1.

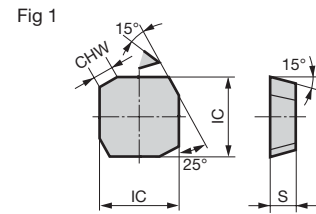
Refer to page H288 for dedicated adapters for the type of cutters shown in Fig 2.

\* marked dimensions in ( ) are for the 5000 type.

## Insert

Dimensions (mm)

| Grade Classification | Coated Carbide           |        | Cemented Carbide | Inscribed Circle IC | Thickness S | Chamfering CHW | Applicable Cutter | Fig |
|----------------------|--------------------------|--------|------------------|---------------------|-------------|----------------|-------------------|-----|
|                      | High-speed/Light Cutting | K      | K                |                     |             |                |                   |     |
| Process              | General-purpose          | K      |                  |                     |             |                |                   |     |
|                      | Roughing                 | K      |                  |                     |             |                |                   |     |
| Cat. No.             | ACK200                   | ACK300 | H10E             |                     |             |                |                   |     |
| SDCN 42R             |                          |        | ●                | 12.70               | 3.18        | 3.5            | DPV4000R          | 1   |
| 42L                  |                          |        | ●                | 12.70               | 3.18        | 3.5            | DPV4000L          | 1   |
| SDCN 53R             |                          |        | ●                | 15.875              | 5.0         | 5.0            | DPV5000R          | 1   |
| 53L                  |                          |        | ●                | 15.875              | 5.0         | 5.0            | DPV5000L          | 1   |



Recommended Cutting Conditions H282

## Parts

| Applicable Cutters | Clamp Plate    |                | Double Screw | Wrench | Anti-seizure Cream | Jig  |
|--------------------|----------------|----------------|--------------|--------|--------------------|--|
|                    | ø160 and below | ø200 and above |              |        |                    |  |
| DPV(Z) 4000R type  | HTW40R         | HTW41R         | WB6-20       | TH030  | SUMI-P             | · Arbor for F type<br>· Adapter for 2-piece type |
| DPV(Z) 4000L type  | HTW40L         | HTW41L         |              |        |                    |  |
| DPV(Z) 5000R type  | HTW50R         | HTW51R         | WB6-20       |        |                    |  |
| DPV(Z) 5000L type  | HTW50L         | HTW51L         |              |        |                    |  |

Milling Cutters  
(Special Purpose)

H

Goal Mill

High-Feed

Quick Change

# NFV 4000/5000 type

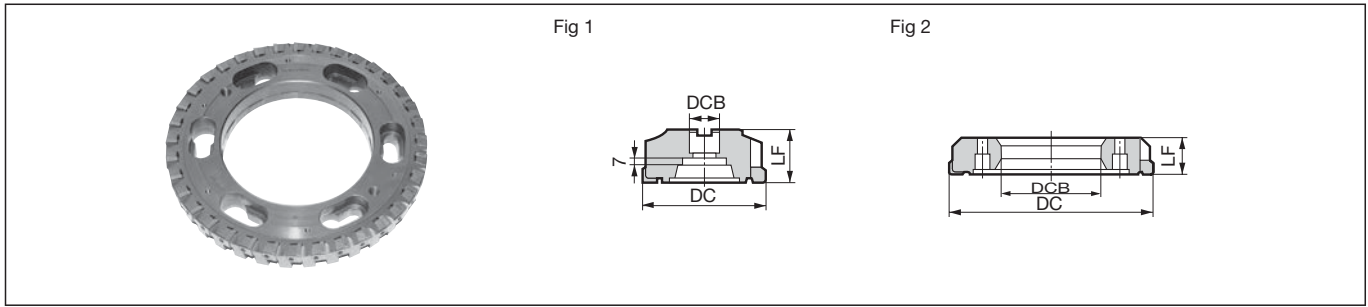


|            |        |     |
|------------|--------|-----|
| Rake Angle | Radial | -6° |
|            | Axial  | -5° |

0.5mm 90°



Face Milling



## Body

Dimensions (mm)

| Classification | Cat. No.    | Stock |   | Dia. DC | Height LF | Hole Dia. DCB | Number of Teeth | Weight (kg) | Fig |
|----------------|-------------|-------|---|---------|-----------|---------------|-----------------|-------------|-----|
|                |             | R     | L |         |           |               |                 |             |     |
| F type         | NFV○100QR/L |       |   | 100     | 60        | 31.75         | 10              | 2.6         | 1   |
|                | ○125QR/L    |       |   | 125     | 60        | 38.1          | 14              | 3.9         | 1   |
|                | ○160QR/L    |       |   | 160     | 60        | 50.8          | 18              | 6.3         | 1   |
| 2-piece type   | NFVZ○200R/L |       |   | 200     | 40        | 80            | 24              | 5.3         | 2   |
|                | ○250R/L     |       |   | 250     | 40        | 120           | 30              | 9.0         | 2   |
|                | ○315R/L     |       |   | 315     | 40        | 180           | 36              | 11.3        | 2   |
|                | ○355R/L     |       |   | 355     | 40        | 220           | 42              | 14.0        | 2   |
|                | ○400R/L     |       |   | 400     | 40        | 250           | 48              | 16.5        | 2   |
|                | ○450R/L     |       |   | 450     | 40        | 300           | 54              | 21.0        | 2   |

Inserts are sold separately.

Put 4 or 5 in "O" in the catalogue number.

Refer to page H288 for special arbors for the type of cutters shown in Fig 1.

Refer to page H288 for dedicated adapters for the type of cutters shown in Fig 2.

## Insert

Dimensions (mm)

| Grade Classification     | Carbide |                     |             |                   |     |
|--------------------------|---------|---------------------|-------------|-------------------|-----|
| High-speed/Light Cutting |         |                     |             |                   |     |
| General-purpose          |         |                     |             |                   |     |
| Roughing                 |         |                     |             |                   |     |
| Cat. No.                 | H10E    | Inscribed Circle IC | Thickness S | Applicable Cutter | Fig |
| SNEF 43W                 | ●       | 12.70               | 4.76        | NFV4000           | 1   |
| 6SS 43M                  | ●       | 12.70               | 4.76        | NFV4000           | 2   |
| SNEF 53W                 | ●       | 15.875              | 4.76        | NFV5000           | 1   |
| 53WT                     | ●       | 15.875              | 4.76        | NFV5000           | 1   |
| 6SS 53M                  | ●       | 15.875              | 4.76        | NFV5000           | 2   |
| SNEN 535W                | ●       | 15.875              | 4.76        | NFV5000           | 3   |

Fig 1

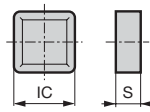


Fig 2

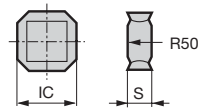
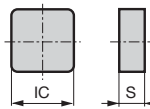


Fig 3



Recommended Cutting Conditions H282

## Parts

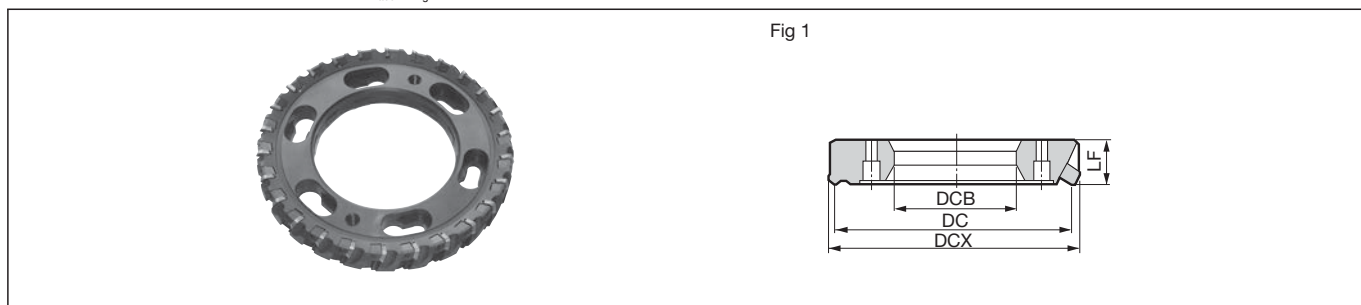
| Application Milling Cutters | Clamp Plate    |                | Double Screw | Wrench | Anti-seizure Cream | Jig  |
|-----------------------------|----------------|----------------|--------------|--------|--------------------|--|
|                             | ø160 and below | ø200 and above |              |        |                    |  |
|                             |                |                |              |        |                    |  |
| NFV(Z) 4000R type           | NW41FR         | NW42FR         | WB6-20       | TH030  | SUMI-P             | · Arbor for F type<br>· Adapter for 2-piece type |
| NFV(Z) 4000L type           | NW41FL         | NW42FL         |              |        |                    |  |
| NFV(Z) 5000R type           | NW51R          | NW52R          |              |        |                    |  |
| NFV(Z) 5000L type           | NW51L          | NW52L          |              |        |                    |  |

# APV 5000 type



|            |        |     |
|------------|--------|-----|
| Rake Angle | Radial | -2° |
|            | Axial  | 18° |

10mm 65° Face Milling



## Body

Dimensions (mm)

| Classification | Cat. No.     | Stock        |   | Dia. DC | Max. Dia. DCX | Height LF | Hole Dia. DCB | Number of Teeth | Weight (kg) | Fig |
|----------------|--------------|--------------|---|---------|---------------|-----------|---------------|-----------------|-------------|-----|
|                |              | R            | L |         |               |           |               |                 |             |     |
| Inch           | 2-piece type | APVZ 5200R/L |   | 200     | 211           | 40        | 80            | 18              | 7.0         | 1   |
|                |              | 5250R/L      |   | 250     | 261           | 40        | 120           | 22              | 10.8        | 1   |
|                |              | 5315R/L      |   | 315     | 326           | 40        | 180           | 26              | 13.7        | 1   |
|                |              | 5355R/L      |   | 355     | 366           | 40        | 220           | 32              | 16.3        | 1   |
|                |              | 5400R/L      |   | 400     | 411           | 40        | 250           | 36              | 20.0        | 1   |
|                |              | 5450R/L      |   | 450     | 461           | 40        | 300           | 40              | 23.6        | 1   |

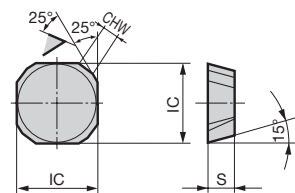
Inserts are sold separately.

## Insert

Dimensions (mm)

| Grade Classification     |                 | Cemented Carbide | Cermet |                     |             |                |                   |     |  |
|--------------------------|-----------------|------------------|--------|---------------------|-------------|----------------|-------------------|-----|--|
| High-speed/Light Cutting |                 |                  |        |                     |             |                |                   |     |  |
| Process                  | General-purpose |                  |        |                     |             |                |                   |     |  |
|                          | Roughing        |                  |        |                     |             |                |                   |     |  |
| Cat. No.                 | A30N            | H1               | T250A  | Inscribed Circle IC | Thickness S | Chamfering CHW | Applicable Cutter | Fig |  |
| SDC 53R                  |                 | ●                |        | 15.88               | 4.76        | 2.5            | APV5000R          | 1   |  |
| 53L                      |                 | ●                |        | 15.88               | 4.76        | 2.5            | APV5000L          | 1   |  |
| 53TR                     | ●               |                  |        | 15.88               | 4.76        | 2.5            | APV5000R          | 1   |  |
| 53TL                     |                 |                  |        | 15.88               | 4.76        | 2.5            | APV5000L          | 1   |  |
| 53TR-R                   |                 |                  |        | 15.88               | 4.76        | 2.5            | APV5000R          | 1   |  |
| SDCH 53TR                | ●               |                  |        | 15.88               | 4.76        | 2.5            | APV5000R          | 1   |  |
| 53TR-R                   |                 |                  |        | 15.88               | 4.76        | 2.5            | APV5000R          | 1   |  |

Fig 1



Recommended Cutting Conditions H282

## Parts

| Applicable Cutter | Clamp Plate    | Double Screw | Wrench | Anti-seizure Cream | Jig                        |
|-------------------|----------------|--------------|--------|--------------------|----------------------------|
|                   | ø200 and above |              |        |                    |                            |
| APVZ55000R type   | AW52R          | WB6-20       | TH030  | SUMI-P             | · Adapter for 2-piece type |
| APVZ55000L type   | AW52L          |              |        |                    |                            |

Milling Cutters  
(Special Purpose)

H

Goal Mill

High-Feed

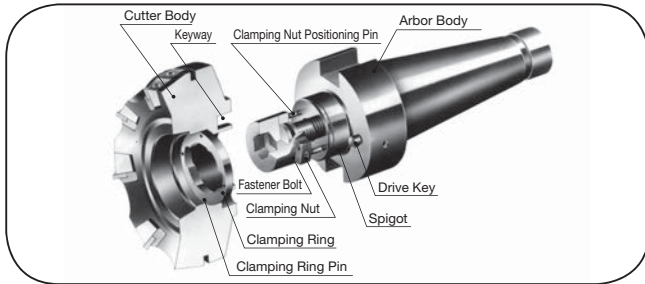
Quick Change

# QC System

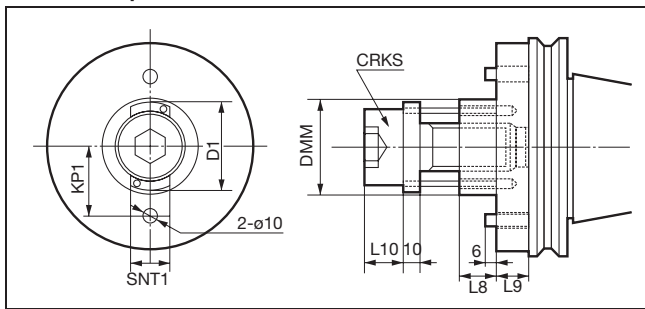
Milling Cutters (Special Purpose)  
H  
Goal Mill  
High-Feed  
Quick Change

## Quick-F series

### Structure



### Arbor Specifications



Dimensions (mm)

| Cat. No.   | Shank DMM | Bolt D1 | Screw CRKS | Keyway Width SNT1 | Length L8 | Length L9 | Length L10 | Key position KP1 |
|------------|-----------|---------|------------|-------------------|-----------|-----------|------------|------------------|
| ○○○○QF4R/L | 31.75     | 30.75   | M14 P2.0   | 18                | 22        | 22        | 13         | 27.5             |
| ○○○○QF5R/L | 38.1      | 37.1    | M16 P2.0   | 20                | 20        | 24        | 14         | 27.5             |
| ○○○○QF6R/L | 50.8      | 49.8    | M20 P2.5   | 24                | 20        | 30        | 16         | 34               |

Enter the taper code in the ○ mark. (Example: BT50-QF4R)

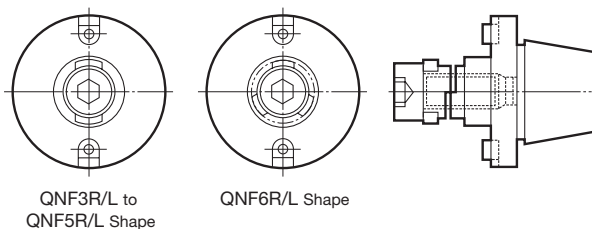
### Features and Applications

- (1) Requires less time for mounting and removing.
- (2) Can be used with cutter diameters of 4" (ø100) to 6" (ø160).

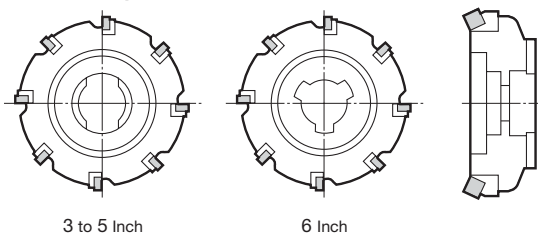
## Quick-NF series (Applicable to cutter diameters of 3" (ø80) to 6" (ø160))

\* Made-to-order item. Please contact us directly when ordering.

### Arbor specifications



### Cutter specifications

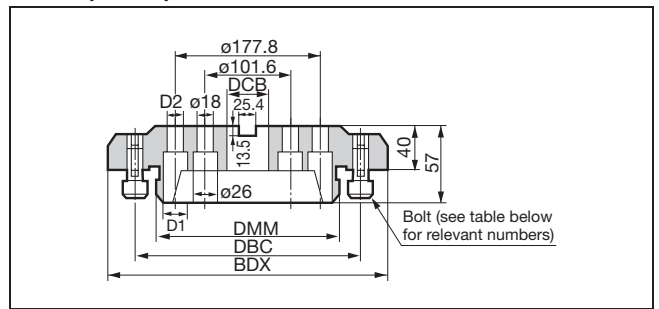


## Two-piece Cutter with Slotted Hole

### Appearance of Slotted Hole type Body



### Adapter Specifications



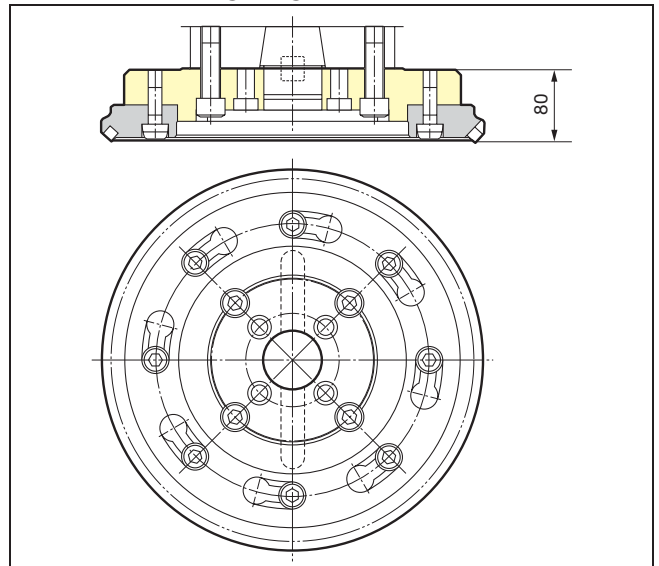
Dimensions (mm)

| Cat. No.       | Shank DMM | Maximum O.D. BDX | Hole Dia. DCB | Bolt D1 | Bolt D2 | Hole Position DBC | No. of Bolts n | Cutter Size (mm) |
|----------------|-----------|------------------|---------------|---------|---------|-------------------|----------------|------------------|
| <b>QAD 200</b> | 80        | 180              | <b>47.625</b> | —       | —       | 120               | 4              | ø200             |
| <b>250</b>     | 120       | 230              | <b>47.625</b> | —       | —       | 170               | 4              | ø250             |
| <b>315</b>     | 180       | 295              | <b>47.625</b> | 32      | 22      | 230               | 6              | ø315             |
| <b>355</b>     | 220       | 335              | <b>63.5</b>   | 32      | 22      | 270               | 6              | ø355             |
| <b>400</b>     | 250       | 370              | <b>63.5</b>   | 32      | 22      | 300               | 6              | ø400             |
| <b>450</b>     | 300       | 420              | <b>63.5</b>   | 32      | 22      | 350               | 6              | ø450             |

### Features and Applications

- (1) Lightweight ring cutter body.
- (2) Cutter can be changed without removing the bolt.
- (3) A tapered spline system is used to connect the adapter to the cutter.
- (4) Can be used for cutters over ø200.
- (5) Effective when mounting several cutter body sizes on the same adapter.

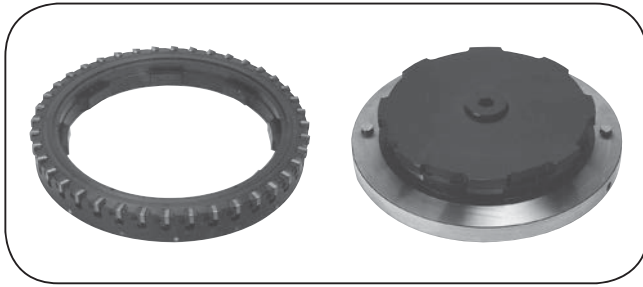
### Cutter Mounting Diagram



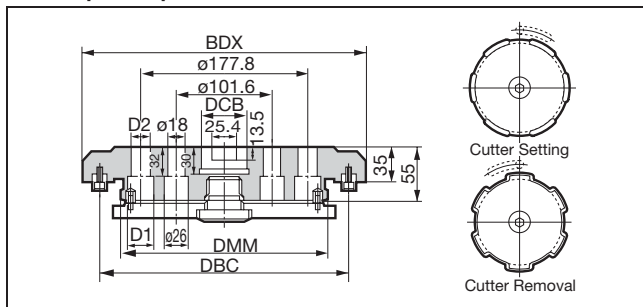
# Applicable Cutter

## Two-piece Cutter with Centre Bolt

### Appearance



### Adapter Specifications

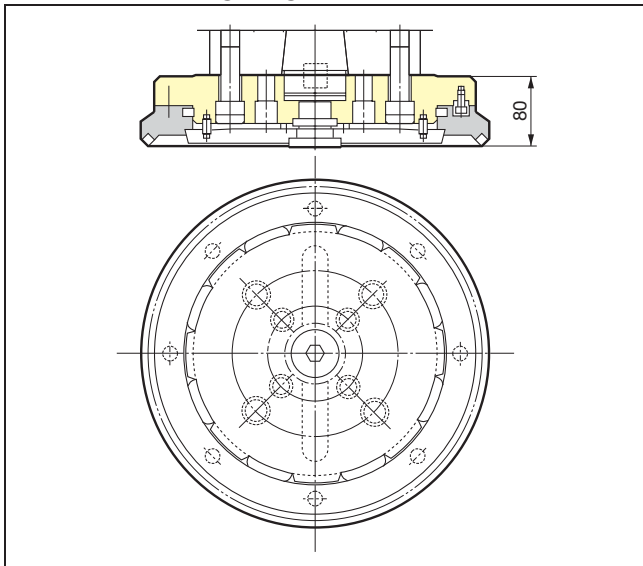


| Cat. No.        | Dimensions (mm) |                  |               |         |         |                   |            | Cutter Size (mm) |
|-----------------|-----------------|------------------|---------------|---------|---------|-------------------|------------|------------------|
|                 | Shank DMM       | Maximum O.D. BDX | Hole Dia. DCB | Bolt D1 | Bolt D2 | Hole Position DBC |            |                  |
| <b>NQAD 200</b> | 105             | 180              | <b>47.625</b> | —       | —       | 155               | $\phi 200$ |                  |
| <b>250</b>      | 155             | 240              | <b>47.625</b> | —       | —       | 205               | $\phi 250$ |                  |
| <b>315</b>      | 220             | 305              | <b>47.625</b> | 32      | 22      | 270               | $\phi 315$ |                  |
| <b>355</b>      | 260             | 345              | <b>63.5</b>   | 32      | 22      | 310               | $\phi 355$ |                  |
| <b>400</b>      | 305             | 390              | <b>63.5</b>   | 32      | 22      | 355               | $\phi 400$ |                  |
| <b>450</b>      | 355             | 440              | <b>63.5</b>   | 32      | 22      | 405               | $\phi 450$ |                  |

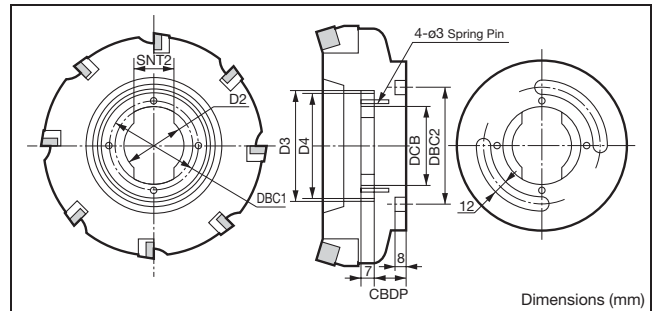
### Features and Applications

- (1) With one clamping bolt, the total weight of the two-piece cutter is lighter.
- (2) Cutter can be replaced quickly - simply turn one bolt halfway to mount and remove.
- (3) A tapered spline system is used to connect the adapter to the cutter.
- (4) Can be used for cutters over  $\phi 200$ .

### Cutter Mounting Diagram



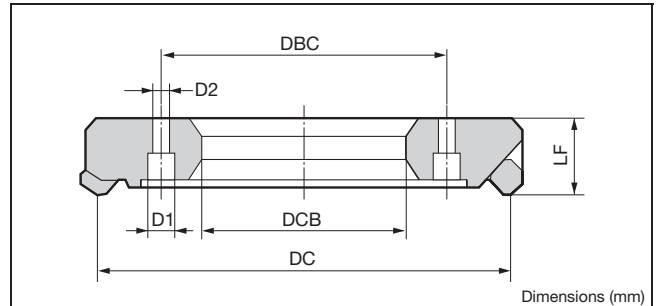
## Quick-F QF type Cutter Specifications



| Cutter Size (mm) | Hole Dia. DCB | Bolt D2 | Bolt D3 | Diameter D4 | Hole position DBC1 | Hole Position DBC2 | Keyway Width SNT2 | Mounting Depth CBDP |
|------------------|---------------|---------|---------|-------------|--------------------|--------------------|-------------------|---------------------|
| $\phi 100$       | 31.75         | 22      | 43.75   | 43.5        | 37.75              | 55                 | 20                | 24                  |
| $\phi 125$       | 38.1          | 29      | 50.1    | 49.8        | 44.1               | 55                 | 22                | 22                  |
| $\phi 160$       | 50.8          | 41      | 62.8    | 62.5        | 56.8               | 68                 | 26                | 22                  |

This design applies to all F type high-feed cutters ( $\rightarrow$  H284 to H287). Conventional cutter can be easily adapted to quick change through slight modification.

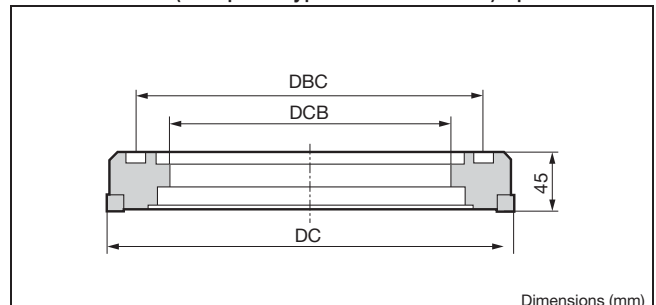
## QAD Cutter (Two-piece type) Specifications



| Cutter Size (mm) | Dia. DC    | Hole Dia. DCB | Bolt D1 | Bolt D2 | Hole position DBC | Height LF | No. of Bolts n | Adapter Cat. No. |
|------------------|------------|---------------|---------|---------|-------------------|-----------|----------------|------------------|
| $\phi 200$       | <b>200</b> | <b>80</b>     | 24      | 14      | 120               | 40        | 4              | QAD200           |
| $\phi 250$       | <b>250</b> | <b>120</b>    | 30      | 18      | 170               | 40        | 4              | QAD250           |
| $\phi 315$       | <b>315</b> | <b>180</b>    | 30      | 18      | 230               | 40        | 6              | QAD315           |
| $\phi 355$       | <b>355</b> | <b>220</b>    | 30      | 18      | 270               | 40        | 6              | QAD355           |
| $\phi 400$       | <b>400</b> | <b>250</b>    | 30      | 18      | 300               | 40        | 8              | QAD400           |
| $\phi 450$       | <b>450</b> | <b>300</b>    | 30      | 18      | 350               | 40        | 8              | QAD450           |

This design applies to the 2-piece type high-feed cutters ( $\rightarrow$  H284 to H287).

## NQAD Cutter (Two-piece type with Centre Bolt) Specifications



| Cutter Size (mm) | Dia. DC    | Hole Dia. DCB | Hole Position DBC | Adapter Cat. No. |
|------------------|------------|---------------|-------------------|------------------|
| $\phi 200$       | <b>200</b> | <b>105</b>    | 155               | NQAD200          |
| $\phi 250$       | <b>250</b> | <b>155</b>    | 205               | NQAD250          |
| $\phi 315$       | <b>315</b> | <b>220</b>    | 270               | NQAD315          |
| $\phi 355$       | <b>355</b> | <b>260</b>    | 310               | NQAD355          |
| $\phi 400$       | <b>400</b> | <b>305</b>    | 355               | NQAD400          |
| $\phi 450$       | <b>450</b> | <b>355</b>    | 405               | NQAD450          |

This design applies to all two-piece type high-feed cutters with a centre bolt ( $\rightarrow$  H284 to H287).

