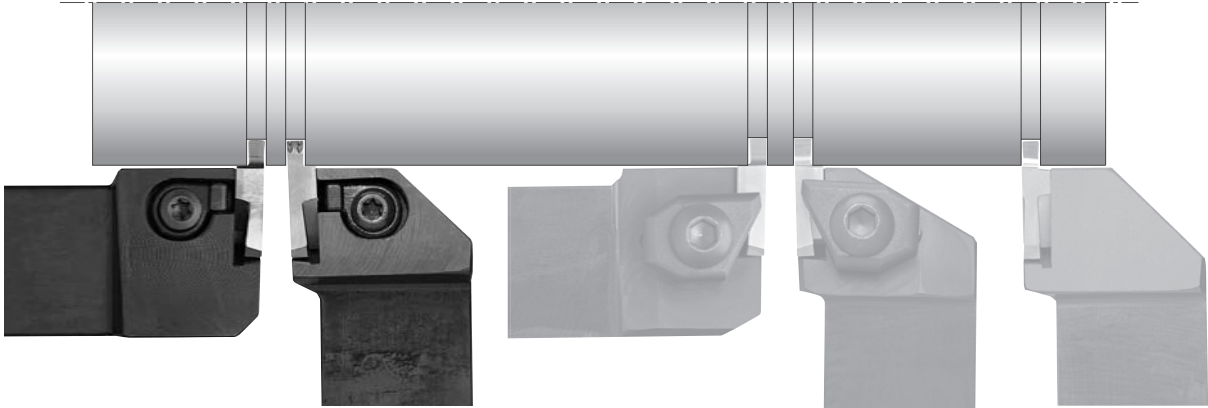


# Summary of External Grooving

## External Grooving (G10~G21)

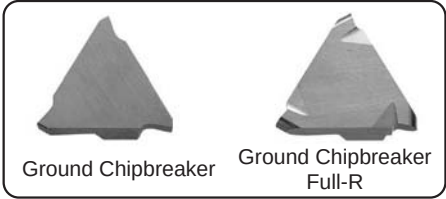
### Shallow Grooving (Grooving Depth: ~5mm)



| Type                | KGBAS    | KGBA     | KGBS    | KGB     | KTG      |
|---------------------|----------|----------|---------|---------|----------|
| Width (mm)          | 0.33~4.8 | 0.33~4.8 | 0.5~4.8 | 0.5~4.8 | 0.75~4.5 |
| Grooving Depth (mm) | 0.8~5.0  | 0.8~5.0  | 1.0~5.0 | 1.0~5.0 | 2.0~5.0  |
| Ref. Page           | G13      | G13      | G15     | G15     | G18      |



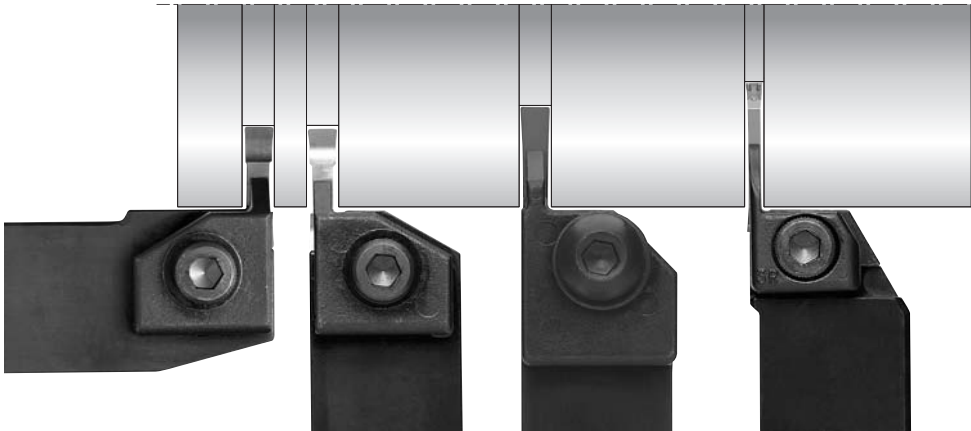
| Edge Shape | General (Square) | Full-R (Round) | MY Chipbreaker |
|------------|------------------|----------------|----------------|
|            |                  |                |                |



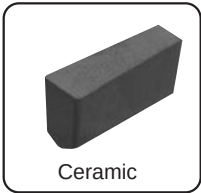
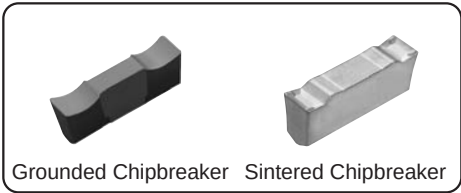
\* These shallow groove types of the previous system will be switched to the system on the left.

KGBS → KGBAS  
KGB → KGBA  
KTG → KGBA

### Deep Grooving (Grooving Depth: ~25mm)



| Type                | KGHS    | KGH      | KN91    | KGA     |
|---------------------|---------|----------|---------|---------|
| Width (mm)          | 4.0~8.0 | 4.0~12.0 | 4.0~8.0 | 3.0~5.0 |
| Grooving Depth (mm) | 13      | 13~17    | 15~17   | 20~25   |
| Ref. Page           | G20     | G20      | G19     | G21     |



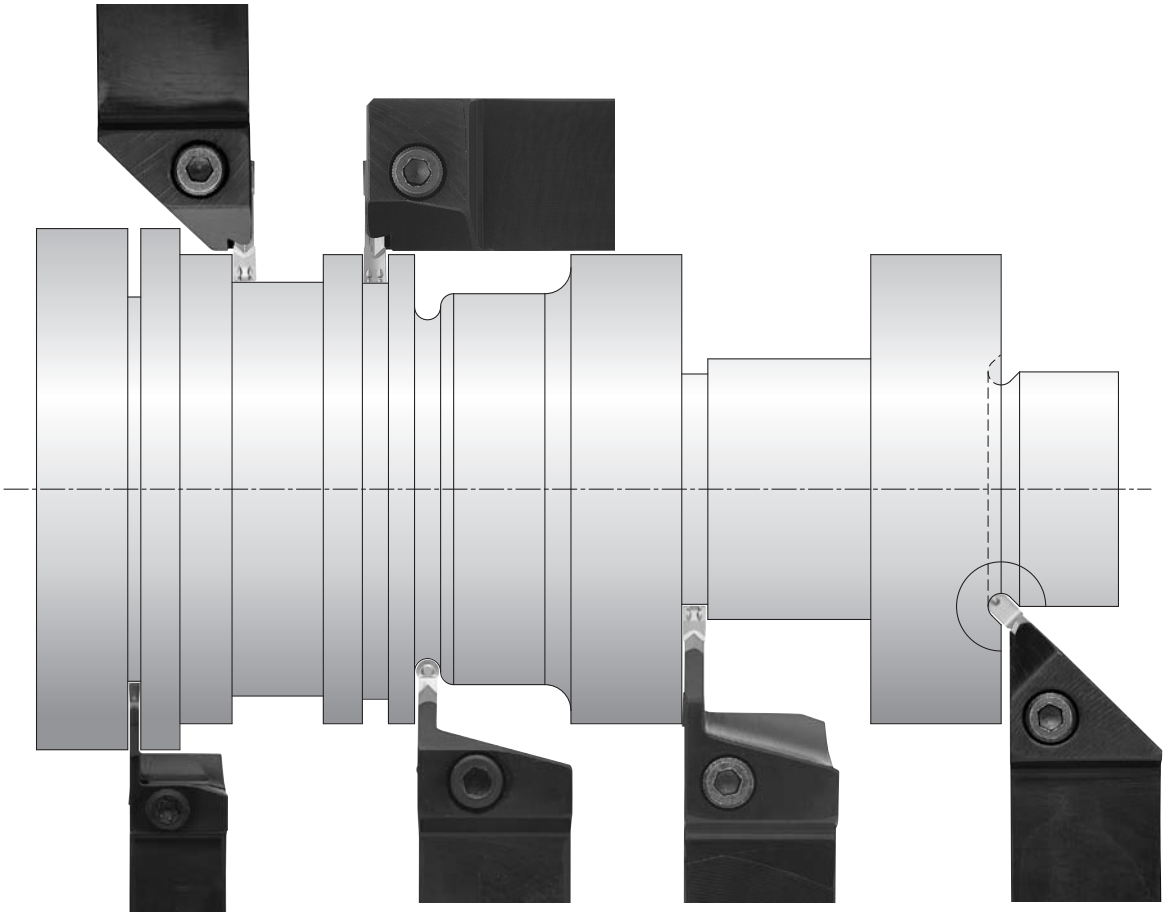
# Summary of External Grooving

## External Grooving & Longitudinal turning (G32~G39)

CERACUT Plunge & Turn

| Type                | KGMM       |
|---------------------|------------|
| Width (mm)          | 3.0~5.0    |
| Grooving Depth (mm) | 4.8        |
| Ref. Page           | <b>G38</b> |

| Type                | KGMS       |
|---------------------|------------|
| Width (mm)          | 3.0~5.0    |
| Grooving Depth (mm) | 4.8        |
| Ref. Page           | <b>G38</b> |

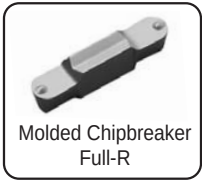
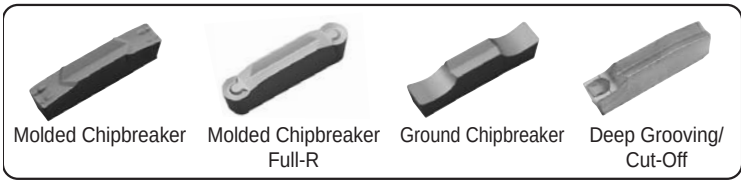


| Type                | KGM        |
|---------------------|------------|
| Width (mm)          | 1.5~4.0    |
| Grooving Depth (mm) | 5~16       |
| Ref. Page           | <b>G36</b> |

| Type                | KGM        |
|---------------------|------------|
| Width (mm)          | 3.0~8.0    |
| Grooving Depth (mm) | 9~25       |
| Ref. Page           | <b>G36</b> |

| Type                | KGM-T      |
|---------------------|------------|
| Width (mm)          | 2.0~6.0    |
| Grooving Depth (mm) | 17~30      |
| Ref. Page           | <b>G37</b> |

| Type                | KGMU       |
|---------------------|------------|
| Width (mm)          | 3.0~5.0    |
| Grooving Depth (mm) | 3.5~4.5    |
| Ref. Page           | <b>G39</b> |



G

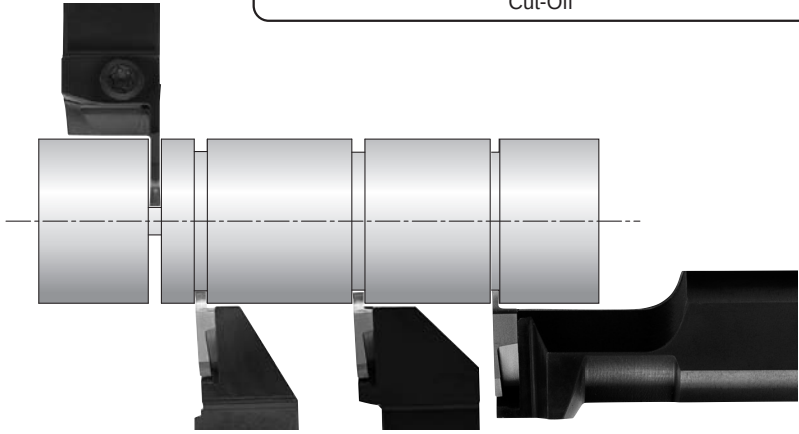
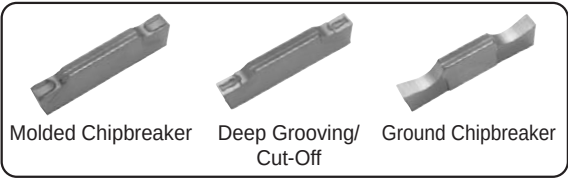


Grooving

## ■ External Grooving of Precision Parts (G16~G17, G36)

### Small Shank

| Type                | KGM        |
|---------------------|------------|
| Width (mm)          | 1.5~4.0    |
| Grooving Depth (mm) | 5~16       |
| Ref. Page           | <b>G36</b> |

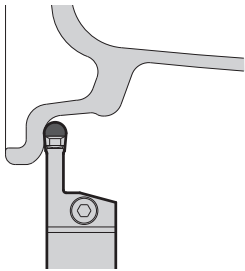


| Type                | KTGF-F     | KTGF |
|---------------------|------------|------|
| Width (mm)          | 0.33~2.5   |      |
| Grooving Depth (mm) | 0.8~2.5    |      |
| Ref. Page           | <b>G16</b> |      |

| S-KTGF     |
|------------|
| 0.33~2.5   |
| 0.8~2.5    |
| <b>G16</b> |



## ■ For Aluminum Wheel External Grooving (External / Facing / Copying) (G40)



| Type                | KGMW       |
|---------------------|------------|
| Width (mm)          | 6.0~8.0    |
| Grooving Depth (mm) | 25         |
| Ref. Page           | <b>G40</b> |



# Grooving Inserts

## Applicable Inserts

| Applicable Inserts |  |  |  | P | Carbon steel / Alloy steel |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | </ |
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• Dimension B shows available grooving depth.

\* The edge width tolerance of GBA32R/L050 (with mark) is different (0.50<sup>+0.05</sup><sub>-0</sub>)

• See G55 for KIGBA

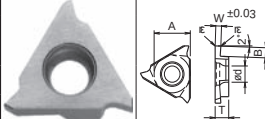
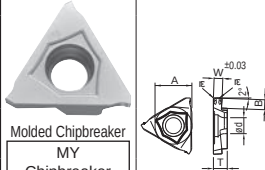
Recommended Cutting Conditions ● G89

Inserts are sold in  
10 piece boxes.

● : Std. Item  
□ : Check Availability



## Applicable Inserts

| Applicable Inserts                                                                                                                                                                                                    |                                 |                             |                           |                |     |     |        |        |           |                    |        |       |         |                        |   | Classification of usage<br>● : Continuous-Light<br>○ : Continuous-Light<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice |                                                                                                                                    | Ref. Page for Toolholder |   |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------|---------------------------|----------------|-----|-----|--------|--------|-----------|--------------------|--------|-------|---------|------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---|--|--|--|--|
|                                                                                                                                                                                                                       |                                 |                             |                           | (mm)           | P   | M   | K      | N      | S         | H                  |        |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 |                             |                           |                |     |     |        |        |           |                    |        |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
| Description                                                                                                                                                                                                           | A                               | T                           | ød                        |                |     |     |        |        |           |                    |        |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
| GBA32                                                                                                                                                                                                                 | 9.525                           | 3.18                        | 4.4                       |                |     |     |        |        |           |                    |        |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
| GBA43                                                                                                                                                                                                                 | 12.70                           | 4.76                        | 5.5                       |                |     |     |        |        |           |                    |        |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
| GBA43 <sup>®</sup> /L480                                                                                                                                                                                              | 12.70                           | 5.00                        | 5.5                       |                |     |     |        |        |           |                    |        |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
| Shape                                                                                                                                                                                                                 |                                 | Description                 | (Old Description)         | Dimension (mm) |     |     | Cermet |        | MEGA COAT | PVD Coated Carbide |        |       | Carbide | Applicable Toolholders |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 |                             |                           | W              | B   | ℓE  | TC40   | TN6020 | TN90      | PR1215             | PR1115 | PR905 | PR930   |                        |   | PR630                                                                                                                                 | KW10                                                                                                                               |                          |   |  |  |  |  |
| Handed Insert shows R-hand.                                                                                                                                                                                           |                                 |                             |                           |                |     |     |        |        |           |                    |        |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                      | GBA43 <sup>®</sup> /L 280-030   | GBA43 <sup>®</sup> /L 280   | 2.80                      | 4.0            | 0.3 | □   |        | ●      |           |                    |        |       | ●       | □                      | ● | KGBA <sup>®</sup> /L...22-25<br>KGBAS <sup>®</sup> /L...22-25<br>KGBA <sup>®</sup> /L...22-25T5<br>KGBAS <sup>®</sup> /L...22-25T5    |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 280-030                     | -                         | 2.80           | 5.0 |     |        |        | ●         |                    | ●      | ●     |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 300-010                     | -                         | 3.00           | 5.0 | 0.1 |        |        |           | ●                  |        | ●     |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 300-030                     | GBA43 <sup>®</sup> /L 300 | 3.00           | 4.0 |     | □      |        | ●         |                    |        |       |         | ●                      | □ |                                                                                                                                       |                                                                                                                                    | ●                        |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 300-030                     | -                         | 3.00           | 5.0 |     |        |        |           | ●                  |        | ●     | ●       |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 325-030                     | GBA43 <sup>®</sup> /L 325 | 3.25           | 5.0 | 0.3 |        |        |           |                    |        | R     | R       |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 330-030                     | 330                       | 3.30           | 4.0 |     | □      |        | ●         |                    |        |       |         | ●                      | □ |                                                                                                                                       |                                                                                                                                    | ●                        |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 330-030                     | -                         | 3.30           | 5.0 |     |        |        |           | ●                  |        | ●     | ●       |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 350-010                     | -                         | 3.50           | 5.0 | 0.1 |        |        |           |                    | ●      |       | ●       |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 350-030                     | GBA43 <sup>®</sup> /L 350 | 3.50           |     | 0.3 | □      |        | ●         | ●                  |        |       | ●       | ●                      | ● |                                                                                                                                       |                                                                                                                                    | □                        | ● |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 400-010                     | -                         | 4.00           |     | 0.1 |        |        |           | ●                  |        | ●     |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 400-040                     | GBA43 <sup>®</sup> /L 400 | 4.00           |     |     | □      |        | ●         | ●                  |        |       | ●       | ●                      | ● |                                                                                                                                       |                                                                                                                                    | □                        | ● |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 430-040                     | 430                       | 4.30           | 5.0 | 0.4 | □      |        | R         | ●                  |        |       | ●       | ●                      | ● |                                                                                                                                       |                                                                                                                                    | □                        | ● |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 450-040                     | 450                       | 4.50           |     |     | □      |        | R         | ●                  |        |       | ●       | ●                      | ● |                                                                                                                                       |                                                                                                                                    | □                        | ● |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 480-040                     | 480                       | 4.80           |     |     | □      |        | R         | ●                  |        |       | ●       | ●                      | ● |                                                                                                                                       |                                                                                                                                    | □                        | ● |  |  |  |  |
| <br>Molded Chipbreaker<br>MY<br>Chipbreaker<br> | GBA43 <sup>®</sup> /L 175-020MY | GBA43 <sup>®</sup> /L 175MY | 1.75                      |                |     |     | ●      |        | ●         |                    | ●      |       | ●       |                        |   | KGBA <sup>®</sup> /L...22-15<br>KGBAS <sup>®</sup> /L...22-15                                                                         |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 185-020MY                   | 185MY                     | 1.85           |     |     |        | ●      |           | ●                  |        | ●     |         | ●                      |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 200-020MY                   | 200MY                     | 2.00           |     |     |        | ●      |           | ●                  |        | ●     |         | ●                      |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 230-020MY                   | 230MY                     | 2.30           |     |     |        | ●      |           | ●                  |        | ●     |         | ●                      |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       | 250-030MY                       | GBA43 <sup>®</sup> /L 250MY | 2.50                      | 4.0            |     |     |        | ●      |           |                    |        |       |         | ●                      |   |                                                                                                                                       | KGBA <sup>®</sup> /L...22-25<br>KGBAS <sup>®</sup> /L...22-25<br>KGBA <sup>®</sup> /L...22-25T5<br>KGBAS <sup>®</sup> /L...22-25T5 |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | -                           | 2.50                      | 5.0            |     |     |        |        |           | ●                  |        |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       | 265-030MY                       | GBA43 <sup>®</sup> /L 265MY | 2.65                      | 4.0            |     |     |        | ●      |           |                    |        |       |         | ●                      |   |                                                                                                                                       | KGBA <sup>®</sup> /L...22-25<br>KGBAS <sup>®</sup> /L...22-25<br>KGBA <sup>®</sup> /L...22-25T5<br>KGBAS <sup>®</sup> /L...22-25T5 |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | -                           | 2.65                      | 5.0            |     |     |        |        |           |                    | ●      |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       | 300-030MY                       | GBA43 <sup>®</sup> /L 300MY | 3.00                      | 4.0            |     |     |        |        | ●         |                    |        |       |         |                        | ● |                                                                                                                                       | KGBA <sup>®</sup> /L...22-25<br>KGBAS <sup>®</sup> /L...22-25<br>KGBA <sup>®</sup> /L...22-25T5<br>KGBAS <sup>®</sup> /L...22-25T5 |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | -                           | 3.00                      | 5.0            |     |     |        |        |           |                    | ●      |       |         |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       | 330-030MY                       | GBA43 <sup>®</sup> /L 330MY | 3.30                      | 4.0            |     |     |        | R      |           |                    |        |       |         | R                      |   |                                                                                                                                       | KGBAR...22-25<br>KGBASL...22-25<br>KGBAR...22-25T5<br>KGBASL...22-25T5                                                             |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | -                           | 3.30                      | 5.0            |     |     |        |        |           |                    | ●      |       | ●       |                        |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       | 350-030MY                       | GBA43 <sup>®</sup> /L 350MY | 3.50                      |                |     |     |        |        | ●         |                    |        |       |         | ●                      |   |                                                                                                                                       | KGBA <sup>®</sup> /L...22-25T5<br>KGBAS <sup>®</sup> /L...22-25T5                                                                  |                          |   |  |  |  |  |
|                                                                                                                                                                                                                       |                                 | 400-040MY                   | 400MY                     | 4.00           | 5.0 | 0.4 |        |        | ●         |                    |        | ●     |         | ●                      |   |                                                                                                                                       |                                                                                                                                    |                          |   |  |  |  |  |

• Dimension B shows available grooving depth.

• See G55 for KIGBA

Recommended Cutting Conditions G89

● : Std. Item  
R : R-hand Only  
□ : Check Availability

Inserts are sold in  
10 piece boxes.

G11

G

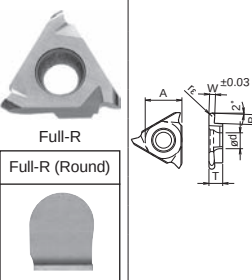


Grooving

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# Grooving Inserts

## Applicable Inserts

| Applicable Inserts                                                                                                                                                                                 |                                |                            |                | (mm)                    | P    | M      | K      | N         | S      | H                  | Classification of usage<br>● : Continuous-Light<br>Interruption / 1st Choice<br>☺ : Continuous-Light<br>Interruption / 2nd Choice<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice |       |       |         |                        |                              |                               |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------|----------------|-------------------------|------|--------|--------|-----------|--------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|---------|------------------------|------------------------------|-------------------------------|--|--|--|
| Description                                                                                                                                                                                        | A                              | T                          | ød             | N                       | S    | H      |        |           |        |                    |                                                                                                                                                                                                 |       |       |         |                        |                              |                               |  |  |  |
| GBA32                                                                                                                                                                                              | 9.525                          | 3.18                       | 4.4            | Titanium Alloy          |      |        |        |           |        |                    |                                                                                                                                                                                                 |       |       |         |                        |                              |                               |  |  |  |
| GBA43                                                                                                                                                                                              | 12.70                          | 4.76                       | 5.5            | Hard materials (~40HRC) |      |        |        |           |        |                    |                                                                                                                                                                                                 |       |       |         |                        |                              |                               |  |  |  |
| GBA43 <sup>®</sup> /L480                                                                                                                                                                           | 12.70                          | 5.00                       | 5.5            | Hard materials (40HRC~) |      |        |        |           |        |                    |                                                                                                                                                                                                 |       |       |         |                        |                              |                               |  |  |  |
| Shape<br><br>Handed Insert shows R-hand.                                                                                                                                                           | Description                    | (Old Description)          | Dimension (mm) |                         |      | Cermet |        | MEGA COAT |        | PVD Coated Carbide |                                                                                                                                                                                                 |       |       | Carbide | Applicable Toolholders |                              |                               |  |  |  |
|                                                                                                                                                                                                    |                                |                            | W              | B                       | ℓE   | TC40   | TN6020 | TN90      | PR1215 |                    | PR1115                                                                                                                                                                                          | PR905 | PR930 | PR630   |                        | KW10                         |                               |  |  |  |
| <br>Full-R<br>Full-R (Round)<br> | GBA32 <sup>®</sup> /L 200-100R | -                          | 2.00           | 2.5                     | 1.00 |        |        |           | R      |                    |                                                                                                                                                                                                 | R     |       |         |                        | KGBAR...16                   |                               |  |  |  |
|                                                                                                                                                                                                    | 300-150R                       |                            | 3.00           |                         | 1.50 |        |        |           | R      |                    |                                                                                                                                                                                                 |       |       |         | KGBASL...16            |                              |                               |  |  |  |
|                                                                                                                                                                                                    | GBA43 <sup>®</sup> /L 100-050R | GBA43 <sup>®</sup> /L 050R | 1.00           | 2.0                     | 0.50 |        |        |           | ●      | ●                  |                                                                                                                                                                                                 | ●     | ●     | ●       | □                      | ●                            | KGBA <sup>®</sup> /L...22-15  |  |  |  |
|                                                                                                                                                                                                    | 150-075R                       | 075R                       | 1.50           | 3.5                     | 0.75 |        |        |           | ●      | ●                  |                                                                                                                                                                                                 | ●     | ●     | ●       | □                      | ●                            | KGBAS <sup>®</sup> /L...22-15 |  |  |  |
|                                                                                                                                                                                                    | 200-100R                       | 100R                       | 2.00           |                         | 1.00 |        |        |           | ●      | ●                  |                                                                                                                                                                                                 | ●     | ●     | ●       | □                      | ●                            |                               |  |  |  |
|                                                                                                                                                                                                    | 250-125R                       | 125R                       | 2.50           | 4.0                     | 1.25 |        |        |           | ●      | ●                  |                                                                                                                                                                                                 | ●     | ●     | ●       | □                      | ●                            | KGBA <sup>®</sup> /L...22-25  |  |  |  |
|                                                                                                                                                                                                    | 300-150R                       | 150R                       | 3.00           |                         | 1.50 |        |        |           | ●      | ●                  |                                                                                                                                                                                                 | ●     | ●     | ●       | □                      | ●                            | KGBAS <sup>®</sup> /L...22-25 |  |  |  |
| 400-200R                                                                                                                                                                                           | 200R                           | 4.00                       | 5.0            | 2.00                    |      |        |        | R         | ●      |                    | ●                                                                                                                                                                                               | ●     | ●     | □       | ●                      | KGBA <sup>®</sup> /L...22-35 |                               |  |  |  |
|                                                                                                                                                                                                    |                                |                            |                |                         |      |        |        |           |        |                    |                                                                                                                                                                                                 |       |       |         |                        |                              |                               |  |  |  |

Ref. Page for Toolholder

G13  
G15  
G55  
(Internal)

- Dimension B shows available grooving depth.
- See G55 for KIGBA

Recommended Cutting Conditions  G89

## Applicable Inserts

| Applicable Inserts |  |  |  | Carbon steel / Alloy steel |  |  |  |  |  | Classification of usage     |  |  |  | Ref. Page for Toolholder |
|--------------------|--|--|--|----------------------------|--|--|--|--|--|-----------------------------|--|--|--|--------------------------|
|                    |  |  |  | M Stainless Steel          |  |  |  |  |  | ● : Continuous -Light       |  |  |  |                          |
|                    |  |  |  | K Cast Iron                |  |  |  |  |  | Interruption / 1st Choice   |  |  |  |                          |
|                    |  |  |  | N Non-ferrous Metals       |  |  |  |  |  | ☺ : Continuous -Light       |  |  |  |                          |
|                    |  |  |  | S Titanium Alloy           |  |  |  |  |  | Interruption / 2nd Choice   |  |  |  |                          |
|                    |  |  |  | H Hard materials (~40HRC)  |  |  |  |  |  | ● : Continuous / 1st Choice |  |  |  |                          |
|                    |  |  |  | Hard materials (40HRC~)    |  |  |  |  |  | ○ : Continuous / 2nd Choice |  |  |  |                          |
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|                    |  |  |  |                            |  |  |  |  |  |                             |  |  |  |                          |

- Dimension B shows available grooving depth.
- See G55 for KIGBA

Recommended Cutting Conditions  G89

MEGACOAT

# PR1215

### Advantages

- High reliability and long tool life grooving owing to micro-grain carbide substrate and MEGACOAT technology
- Machining cost reduction at high speed cutting by MEGACOAT with high hardness and oxidation resistance
- Suitable for shallow grooving of steel and stainless steel

### Material Application Map

#### Steel

| High speed | Medium speed | Low speed | Application                                |
|------------|--------------|-----------|--------------------------------------------|
| PR1215     | PR1115       | PR930     | Continuous Light interruption Interruption |

#### Stainless Steel

| High speed | Medium speed | Low speed | Application                                |
|------------|--------------|-----------|--------------------------------------------|
| PR1215     | PR1115       |           | Continuous Light interruption Interruption |

#### Cast Iron

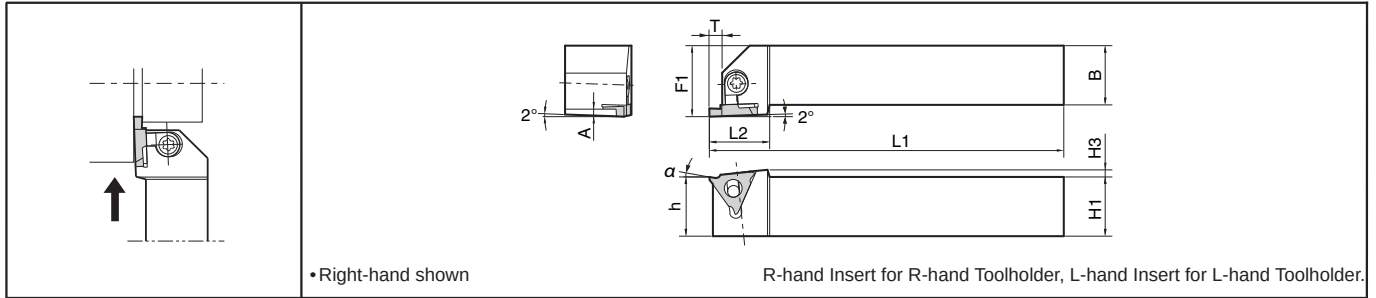
| High speed | Medium speed | Low speed | Application                                |
|------------|--------------|-----------|--------------------------------------------|
|            | PR905        |           | Continuous Light interruption Interruption |

Inserts are sold in 10 piece boxes.

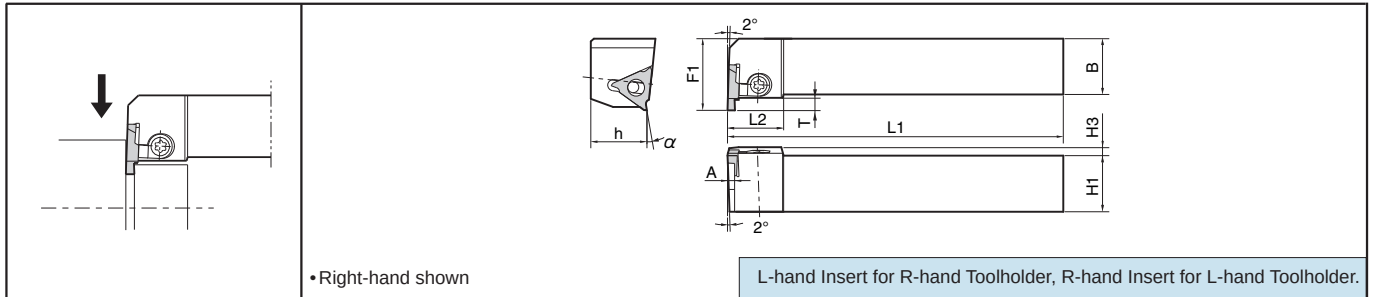
CBN & PCD Inserts are sold in 1 piece boxes.

● : Std. Item  
R : R-hand Only  
□ : Check Availability

### KGBA



### KGBAS



#### Toolholder Dimensions

| Description                                                                                                                                                                                                                                                                                                                                        |   | Std. |     | Dimension (mm) |     |      |      |     |     |     |   |  |                          | Spare Parts                                                                          |                                                                                      | <div>Applicable Inserts</div> <div>➡ G10~G12</div> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------|-----|----------------|-----|------|------|-----|-----|-----|---|--|--------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                    |   |      |     |                |     |      |      |     |     |     |   |  |                          | Clamp Set                                                                            | Wrench                                                                               |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    |   | R    | L   | H1=h           | H3  | B    | L1   | L2  | F1  | A   | T |  |                          |  |  |                                                    |
| <div>KGBA<sup>R/L</sup></div> <div>1616H-16</div> <div>2020K-16</div> <div>2525M-16</div> <div>2020K22-15</div> <div>2525M22-15</div> <div>2020K22-25</div> <div>2525M22-25</div> <div>2020K22-25T5</div> <div>2525M22-25T5</div> <div>2020K22-35</div> <div>2525M22-35</div> <div>2020H22-15*</div> <div>2020H22-25*</div> <div>2020H22-35*</div> | ● | ●    | 16  |                | 16  | 100  |      | 20  | -   | 2.5 |   |  | LGBA-16 <sup>R/L</sup> S | FT-15                                                                                | GBA32 <sup>R/L</sup> type                                                            |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.0            | 20  | 125  | 24   | 25  | -   |     |   |  | LGBA-22 <sup>R/L</sup> S |                                                                                      | GBA43 <sup>R/L</sup> type                                                            |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  |                | 25  | 150  |      | 30  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.0            | 20  | 125  | 25.5 | 25  | 1.0 | 4.0 |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  |                | 25  | 150  |      | 30  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.0            | 20  | 125  | 25.5 | 25  | 2.0 | 4.5 |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  |                | 25  | 150  |      | 30  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.0            | 20  | 125  | 25.5 | 25  | 2.0 |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  |                | 25  | 150  |      | 30  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.0            | 20  | 125  | 25.5 | 25  | 3.0 |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  |                | 25  | 150  |      | 30  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.0            | 20  | 125  | 25.5 | 25  | 1.0 | 4.0 |   |  |                          |                                                                                      |                                                                                      |                                                    |
| ●                                                                                                                                                                                                                                                                                                                                                  | ● | 25   |     | 25             | 150 |      | 30   |     |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
| ●                                                                                                                                                                                                                                                                                                                                                  | ● | 20   | 4.0 | 20             | 125 | 25.5 | 25   | 2.0 | 4.5 |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
| ●                                                                                                                                                                                                                                                                                                                                                  | ● | 25   |     | 25             | 150 |      | 30   |     |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
| ●                                                                                                                                                                                                                                                                                                                                                  | ● | 20   | 4.0 | 20             | 125 | 25.5 | 25   | 3.0 |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
| ●                                                                                                                                                                                                                                                                                                                                                  | ● | 25   |     | 25             | 150 |      | 30   |     |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
| <div>KGBAS<sup>R/L</sup></div> <div>2020K-16</div> <div>2525M-16</div> <div>2020K22-15</div> <div>2525M22-15</div> <div>2020K22-25</div> <div>2525M22-25</div> <div>2020K22-25T5</div> <div>2525M22-25T5</div> <div>2020K22-35</div> <div>2525M22-35</div>                                                                                         | ● | ●    | 20  | 4.0            | 20  | 125  | 25   | 25  | -   | 2.5 |   |  | LGBA-16 <sup>R/L</sup> S | FT-15                                                                                | GBA32 <sup>R/L</sup> type                                                            |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  | 4.5            | 25  | 150  |      | 30  |     |     |   |  | LGBA-22 <sup>R/L</sup> S |                                                                                      | GBA43 <sup>R/L</sup> type                                                            |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.5            | 20  | 125  | 25   | 27  | 1.0 | 4.0 |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  | 5.0            | 25  | 150  | 25   | 32  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.5            | 20  | 125  | 25   | 27  | 2.0 | 4.5 |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  | 5.0            | 25  | 150  |      | 32  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.5            | 20  | 125  | 25   | 27  | 2.0 |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  | 5.0            | 25  | 150  | 25   | 32  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.5            | 20  | 125  | 25   | 27  | 3.0 |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  | 5.0            | 25  | 150  |      | 32  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 20  | 4.5            | 20  | 125  | 25   | 27  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |
|                                                                                                                                                                                                                                                                                                                                                    | ● | ●    | 25  | 5.0            | 25  | 150  |      | 32  |     |     |   |  |                          |                                                                                      |                                                                                      |                                                    |

• Dimension T shows the distance from the Toolholder to the cutting edge. Dimension B shows available grooving depth.

★ mark indicates short shank type.

• Clamp Set : KGBA<sup>R/L</sup>...LGBA-ORS for R-hand Toolholder, and LGBA-OLS for L-hand Toolholder.

KGBAS<sup>R/L</sup>...LGBA-OLS for R-hand Toolholder, and LGBA-ORS for L-hand Toolholder.

#### Rake Angle (α) after Installment of GBA

| GBA32 <sup>R/L</sup> ○○○-○○○ |                                                               | GBA43 <sup>R/L</sup> ○○○-○○○ |                                                                      | GBA43 <sup>R/L</sup> ○○○-○○○ R(Full-R) |                                                                                            |
|------------------------------|---------------------------------------------------------------|------------------------------|----------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------|
| α                            | Insert Grades                                                 | α                            | Insert Grades                                                        | α                                      | Insert Grades                                                                              |
| 10°                          | TN90, PR630, PR930<br>PR1115, PR1215, PR905<br>KPD001, KPD010 | 0°                           | KBN510, KBN525                                                       | 10°                                    | TN90, PR630, PR930<br>PR1115, PR1215, PR905<br>TN90, PR630, PR930<br>PR1115, PR1215, PR905 |
|                              |                                                               | 10°                          | TC40N, TN90, PR630, PR930<br>PR1115, PR1215, PR905<br>KPD001, KPD010 | 14°                                    | 200R                                                                                       |
| 20°                          | KW10                                                          | 20°                          | KW10                                                                 |                                        | KW10                                                                                       |
|                              |                                                               |                              |                                                                      |                                        | 050R~200R                                                                                  |

#### Rake Angle (α) after Installment of GBA-MY

| α   | Description                                                |
|-----|------------------------------------------------------------|
| 15° | GBA43 <sup>R/L</sup> .175MY<br>GBA43 <sup>R/L</sup> .350MY |
| 14° | GBA43 <sup>R/L</sup> .400MY                                |

α indicates the rake angle at the center of the edge width, after installing insert.

#### External Grooving Toolholders KGBA Short Shank types are available

For NC lathe and HSK tooling, KGBAR2020K-○○ (Overall length 125mm) short shank type KGBAR2020H22-○○ (Overall length 100mm) is available. No longer required for the users to cut the shank portion.

● : Std. Item    □ : Check Availability

G

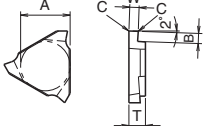
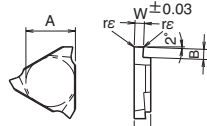
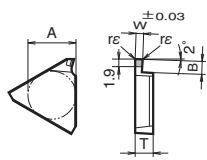
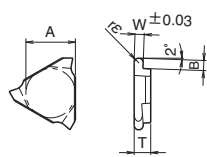


Grooving

## Applicable Inserts

|                          | (mm)  |      |
|--------------------------|-------|------|
| Description              | A     | T    |
| GB32                     | 9.525 | 3.18 |
| GB43                     | 12.70 | 4.76 |
| GB43 <sup>7/8</sup> /480 | 12.70 | 5.00 |

|   |                              |  |  |  |  |  |                                                                                                                                                                                                                  |
|---|------------------------------|--|--|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P | Carbon Steel / Alloy Steel   |  |  |  |  |  | <p>Classification of usage</p> <p>● : Continuous-Light Interruption / 1st Choice</p> <p>☺ : Continuous-Light Interruption / 2nd Choice</p> <p>● : Continuous / 1st Choice</p> <p>○ : Continuous / 2nd Choice</p> |
| M | Stainless Steel              |  |  |  |  |  |                                                                                                                                                                                                                  |
| K | Cast Iron                    |  |  |  |  |  |                                                                                                                                                                                                                  |
| N | Non-ferrous Metals           |  |  |  |  |  |                                                                                                                                                                                                                  |
| S | Titanium Alloy               |  |  |  |  |  |                                                                                                                                                                                                                  |
| H | Hard materials (under 40HRC) |  |  |  |  |  |                                                                                                                                                                                                                  |
|   | Hard materials (over 40HRC)  |  |  |  |  |  |                                                                                                                                                                                                                  |

| Insert<br><br>Right-hand Shown                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                  | Description                     | Dimension (mm) |     |                           | Cermat |      | PVD<br>Coated Carbide |       | Carbide | Dia-<br>mond | Applicable<br>Toolholder | Ref.<br>Page for<br>Toolholder |        |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------|-----|---------------------------|--------|------|-----------------------|-------|---------|--------------|--------------------------|--------------------------------|--------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  |                                 | W              | B   | C<br>or<br>r <sub>e</sub> | TC40   | TC60 | PR630                 | PR930 | KW10    | KPD001       |                          |                                | KPD010 |  |
| <div>General (Square)<br/>(Corner is C shaped)</div> <div></div> <div>GB32 type</div> <div></div> <div>General (Square)<br/>(Corner is R shape)</div> <div></div> <div>GB43 type</div> | <div></div> <div>(Corner is C shape)</div>                                                                                                                                                      | <b>GB32<sup>R/L</sup></b> 050 * | 0.50           | 1.0 | C0.05                     |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 075                             | 0.75           | 2.0 | C0.10                     |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 095                             | 0.95           |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 100                             | 1.00           |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 125                             | 1.25           |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 145                             | 1.45           |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 150                             | 1.50           |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 200                             | 2.00           | 2.5 |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             | 250                                                                                                                                                                                                                                                                              | 2.50                            |                |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             | <div></div> <div>GB type insert changes to<br/>GBA type when order is<br/>placed.<br/>When replacing with GBA<br/>insert, please consider the<br/>Corner-R(r<sub>e</sub>) specification.</div> | <b>GB43<sup>R/L</sup></b> 125   | 1.25           | 2.0 | 0.1                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 125                             | 1.25           | 2.0 | 0.2                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 145                             | 1.45           | 2.0 | 0.2                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 150                             | 1.50           | 3.5 | 0.1                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 150                             | 1.50           |     | 0.2                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 175                             | 1.75           |     | 0.2                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 185                             | 1.85           |     | 0.2                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 200                             | 2.00           | 4.0 | 0.1                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 200                             | 2.00           |     | 0.2                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 230                             | 2.30           |     | 0.2                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 250                             | 2.50           |     | 0.1                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 250                             | 2.50           | 5.0 | 0.3                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 265                             | 2.65           |     | 0.3                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 280                             | 2.80           |     | 0.3                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 300                             | 3.00           |     | 0.1                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 300                             | 3.00           | 5.0 | 0.3                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 330                             | 3.30           |     | 0.3                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 350                             | 3.50           |     | 0.1                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 350                             | 3.50           |     | 0.3                       |        |      |                       |       |         |              |                          |                                |        |  |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                  | 4.00                            | 5.0            | 0.1 |                           |        |      |                       |       |         |              |                          |                                |        |  |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.00                                                                                                                                                                                                                                                                             | 0.4                             |                |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
| 430                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.30                                                                                                                                                                                                                                                                             | 0.4                             |                |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
| 450                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.50                                                                                                                                                                                                                                                                             | 0.4                             |                |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
| 480                                                                                                                                                                                                                                                                                                                                                                                                                                         | 4.80                                                                                                                                                                                                                                                                             |                                 | 0.4            |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
| <div></div> <div>1-Edge</div>                                                                                                                                                                                                                                                                                                                            | <div></div>                                                                                                                                                                                   | <b>GB43<sup>R/L</sup></b> 125   | 1.25           | 2.0 | 0.1                       |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 150                             | 1.50           | 3.5 |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 200                             | 2.00           | 4.0 |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 250                             | 2.50           |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 300                             | 3.00           |     |                           |        |      |                       |       |         |              |                          |                                |        |  |
| <div></div> <div>Full-R</div>                                                                                                                                                                                                                                                                                                                            | <div></div>                                                                                                                                                                                   | <b>GB43<sup>R/L</sup></b> 050R  | 1.00           | 2.0 | 0.50                      |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 075R                            | 1.50           | 3.5 | 0.75                      |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 100R                            | 2.00           |     | 1.00                      |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 125R                            | 2.50           | 4.0 | 1.25                      |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 150R                            | 3.00           |     | 1.50                      |        |      |                       |       |         |              |                          |                                |        |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                  | 200R                            | 4.00           | 5.0 | 2.00                      |        |      |                       |       |         |              |                          |                                |        |  |

- Dimension B shows available grooving depth.

The edge width tolerance of GB32<sup>R</sup>/L050 is different.  $0.50^{+0.05}_{-0}$  (\*)

\* Material selection standard when changing to GBA.

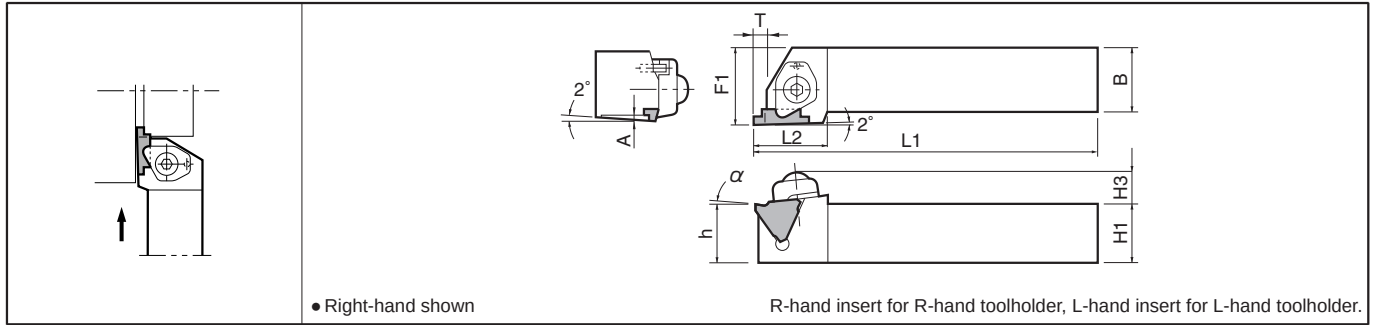
| GB Insert | GBA Insert      |
|-----------|-----------------|
| TC40      | TC40            |
| TC60      | TN90            |
| PR630     | PR1215/PR1115   |
| PR930     | PR1215/PR1115   |
| KPD010    | KPD001 (KPD010) |

\* Check the corner-R(rε) of the insert when changing.

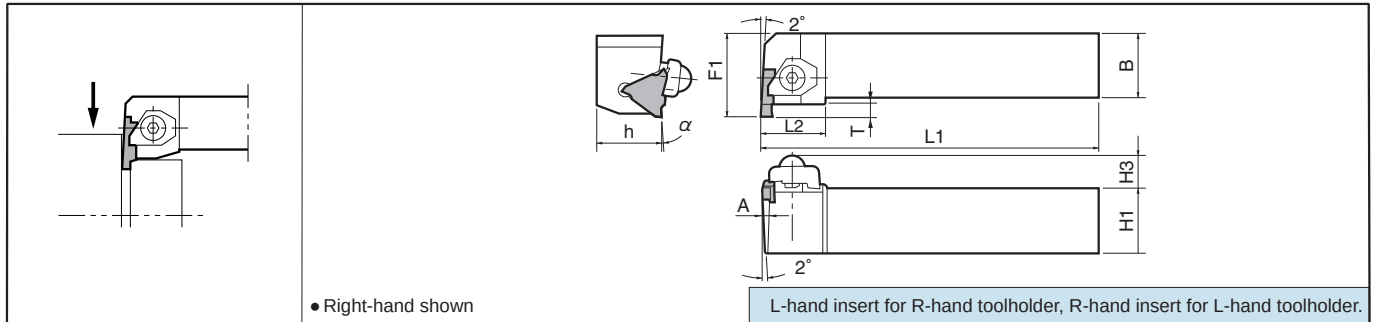
For recommended cutting conditions, see page  **G89**

☐ : Check Availability

### KGB (Changes to KGBA G13)



### KGBS (Changes to KGBAS G13)



#### Toolholder Dimensions

| Description                                                                                                                           | Std.                     |                          | Dimension (mm) |      |    |     |      |    |     |     | Spare Parts                                                                         |                                                                                       |                                                                                       |                                                                                       | Applicable Inserts<br> G10~G12<br> G14 |
|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|----------------|------|----|-----|------|----|-----|-----|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                       | R                        | L                        | H1=h           | H3   | B  | L1  | L2   | F1 | A   | T   |  |  |  |  |                                                                                                                                                                                                                  |
| <b>KGB<sup>R/L</sup></b><br>2020K-16<br>2525M-16<br>2020K22-15<br>2525M22-15<br>2020K22-25<br>2525M22-25<br>2020K22-35<br>2525M22-35  | <input type="checkbox"/> | <input type="checkbox"/> | 20             | 11   | 20 | 125 | 24   | 25 | -   | 2.5 | CGB <sup>R/L</sup>                                                                  | BH6X25                                                                                | SP-6                                                                                  | LW-4                                                                                  | GB32 <sup>R/L</sup><br>GBA32 <sup>R/L</sup>                                                                                                                                                                      |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 25             |      | 25 | 150 |      | 30 |     |     |                                                                                     |                                                                                       |                                                                                       |                                                                                       | GB43 <sup>R/L</sup><br>GBA43 <sup>R/L</sup>                                                                                                                                                                      |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 20             | 11.5 | 20 | 125 | 25.5 | 25 | 1.0 | 4.0 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                                                                  |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 25             |      | 25 | 150 |      | 30 |     |     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                                                                  |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 20             | 11.5 | 20 | 125 | 25.5 | 25 | 2.0 | 4.5 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                                                                  |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 25             |      | 25 | 150 |      | 30 |     |     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                                                                  |
| <b>KGBS<sup>R/L</sup></b><br>2020K-16<br>2525M-16<br>2020K22-15<br>2525M22-15<br>2020K22-25<br>2525M22-25<br>2020K22-35<br>2525M22-35 | <input type="checkbox"/> | <input type="checkbox"/> | 20             | 11   | 20 | 125 | 25   | 25 | -   | 2.5 | CGB <sup>R/L</sup>                                                                  | BH6X25                                                                                | SP-6                                                                                  | LW-4                                                                                  | GB32 <sup>L/R</sup><br>GBA32 <sup>L/R</sup>                                                                                                                                                                      |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 25             |      | 25 | 150 |      | 30 |     |     |                                                                                     |                                                                                       |                                                                                       |                                                                                       | GB43 <sup>L/R</sup><br>GBA43 <sup>L/R</sup>                                                                                                                                                                      |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 20             | 11.5 | 20 | 125 | 25   | 27 | 1.0 | 4.0 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                                                                  |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 25             |      | 25 | 150 |      | 32 |     |     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                                                                  |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 20             | 11.5 | 20 | 125 | 25   | 27 | 2.0 | 4.5 |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                                                                  |
|                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | 25             |      | 25 | 150 |      | 32 |     |     |                                                                                     |                                                                                       |                                                                                       |                                                                                       |                                                                                                                                                                                                                  |

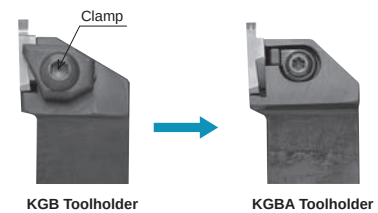
• Dimension T shows the distance from the Toolholder to the cutting edge. Dimension B shows available grooving depth.

Clamp: KGB<sup>R/L</sup> ... CGBR for Right-hand Toolholder, and CGBL for Left-hand Toolholder.

KGBS<sup>R/L</sup> ... CGBR for Right-hand Toolholder, and CGBL for Left-hand Toolholder.

#### Rake Angle (α) after Installment of GBA

| GB32 <sup>R/L</sup> ○○○○ |               | GB43 <sup>R/L</sup> ○○○○ |                          | GBA43 <sup>R/L</sup> ○○○○ R (Full-R) |                        |
|--------------------------|---------------|--------------------------|--------------------------|--------------------------------------|------------------------|
| α                        | Insert Grades | α                        | Insert Grades            | α                                    | Insert Grades          |
| 5°                       | TC60<br>PR630 | 5°                       | TC40 TC60<br>PR630 PR930 | 5°                                   | TC60 PR630 } 050R~150R |
| 20°                      | KW10          | 10°                      | KPD010                   | 14°                                  | TC60 PR630 } 200R      |
|                          |               | 20°                      | KW10                     |                                      | KW10...050R~200R       |

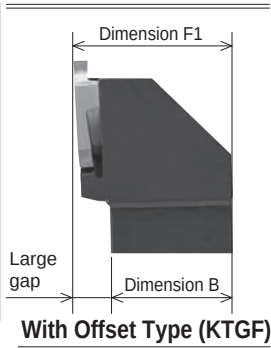
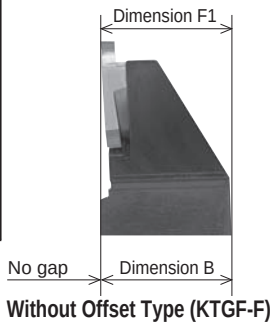


\* KGB / KGBS toolholder changes to KGBA / KGBAS.  
Better Chip flow.

\* For applicable insert, GB insert changes to GBA. There are various types of GBA insert materials available depending on the user's cutting condition requirements.

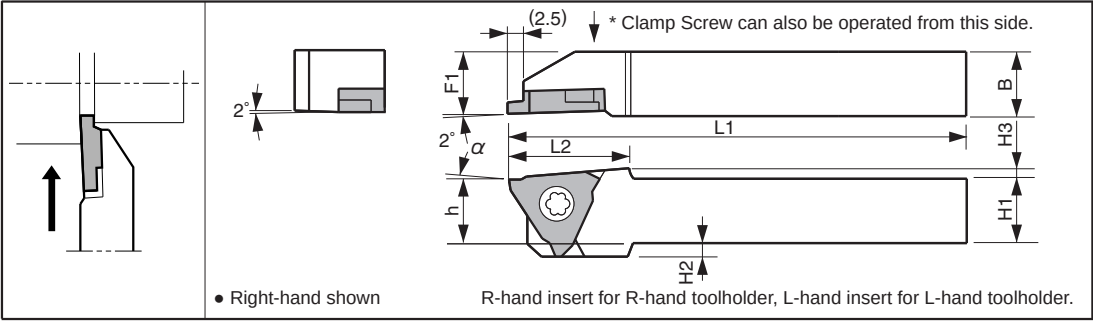
External Shallow Grooving Toolholders [for TGF Insert]

● Usage difference between KTGF-F and KTGF toolholders. It is necessary to use "Without Offset Type" in operating the automatic lathe.

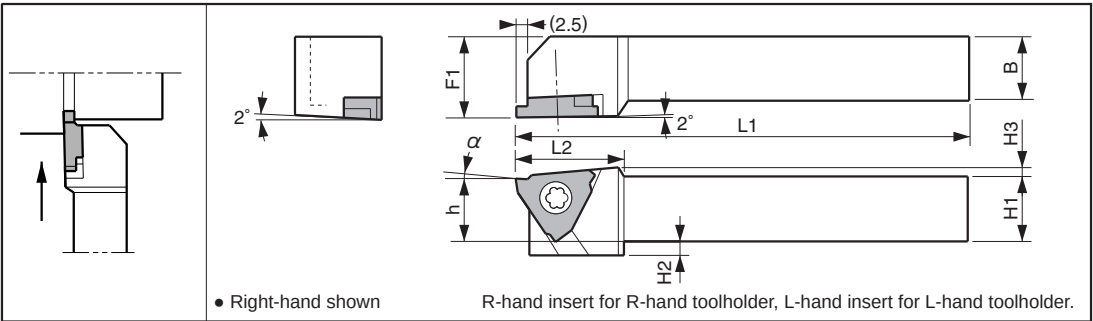


With Offset Type (KTGF)

KTGF-F (Without Offset)



KTGF (With Offset)

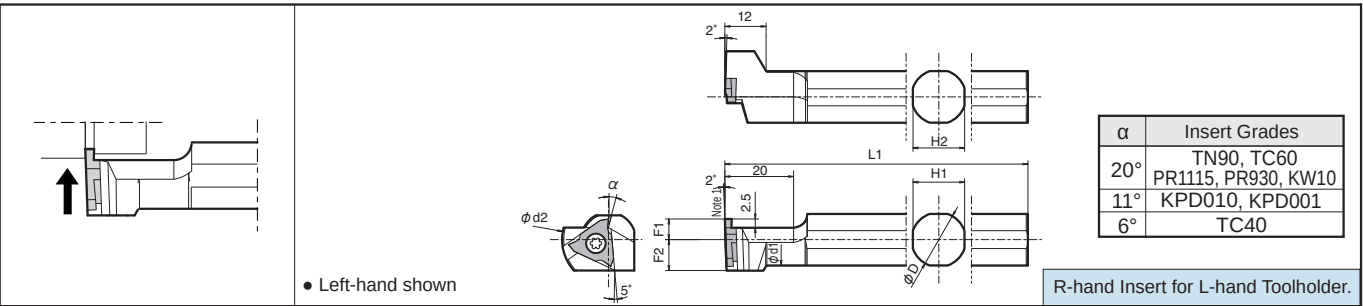


● Toolholder Dimensions

| Description                    | Std. |   | Dimension (mm) |    |     |    |     |      |    | Spare Parts |  |        | Remarks |
|--------------------------------|------|---|----------------|----|-----|----|-----|------|----|-------------|--|--------|---------|
|                                | R    | L | H1=h           | H2 | H3  | B  | L1  | L2   | F1 | Clamp Screw |  | Wrench |         |
| KTGF <sup>R/L</sup> 1010JX-16F | ●    | ● | 10             | 2  | 2.5 | 10 | 120 | 18.5 | 10 | SB-4070TRW  |  | FT-8   |         |
| 1212JX-16F                     | ●    | ● | 12             | -  |     | 12 | 120 | 18.5 | 12 |             |  |        |         |
| 1616JX-16F                     | ●    | ● | 16             | -  |     | 16 | 120 | 18.5 | 16 |             |  |        |         |
| KTGF <sup>R/L</sup> 1212F-16F  | ●    | ● | 12             | -  | 2.5 | 12 | 85  | 18.5 | 12 | SB-4070TRW  |  | FT-8   |         |
| KTGF <sup>R/L</sup> 1010F-16   | ●    | ● | 10             | 4  | 2.5 | 10 | 80  | 18.5 | 12 |             |  |        |         |
| 1212H-16                       | ●    | ● | 12             | 2  |     | 12 | 100 |      | 16 |             |  |        |         |
| 1616H-16                       | ●    | ● | 16             | -  |     | 16 | 100 | 20   | 20 | SB-4070TRS  |  | FT-10  |         |
| 2020K-16                       | ●    | ● | 20             | -  |     | 20 | 125 |      | 25 |             |  |        |         |
| 2525M-16                       | ●    | ● | 25             | -  |     | 25 | 150 |      | 32 |             |  |        |         |

| α   | Insert Grades                     |
|-----|-----------------------------------|
| 20° | TN90, TC60<br>PR1115, PR930, KW10 |
| 11° | KPD010, KPD001                    |
| 6°  | TC40                              |

S-KTGF (Sleeve Holder)



● Toolholder Dimensions

| Description    | Std. | Dimension (mm) |     |    |      |      |     |       | Spare Parts |        |
|----------------|------|----------------|-----|----|------|------|-----|-------|-------------|--------|
|                |      | øD             | L1  | F1 | F2   | ød1  | ød2 | H1=H2 | Clamp Screw | Wrench |
| S12F-KTGFL16   | ●    | 12.0           | 80  | 6  | 9.0  | 11.0 | 27  | 11    |             |        |
| S14H-KTGFL16   | ●    | 14.0           | 100 |    |      | 13.0 |     | 13    |             |        |
| S15F-KTGFL16   | ●    | 15.875         | 85  |    |      | 14.6 |     | 15    |             |        |
| S16F-KTGFL16   | ●    | 16.0           | 85  |    |      | 14.6 |     | 15    |             |        |
| S19G-KTGFL16   | ●    | 19.05          | 90  |    |      | 17.6 |     | 17    |             |        |
| S19K-KTGFL16   | ●    | 19.05          | 120 |    |      | 17.6 |     | 17    |             |        |
| S20G-KTGFL16   | ●    | 20.0           | 90  | 10 | 14.0 | 18.6 | 32  | 18    | SB-4070TRS  |        |
| S20K-KTGFL16   | ●    | 20.0           | 120 |    |      | 18.6 |     | 18    |             |        |
| S25.0H-KTGFL16 | ●    | 25.0           | 100 |    |      | 23.6 |     | 23    |             |        |
| S25K-KTGFL16   | ●    | 25.4           | 120 |    |      | 23.6 |     | 23    |             |        |

● : Std. Item    □ : Check Availability

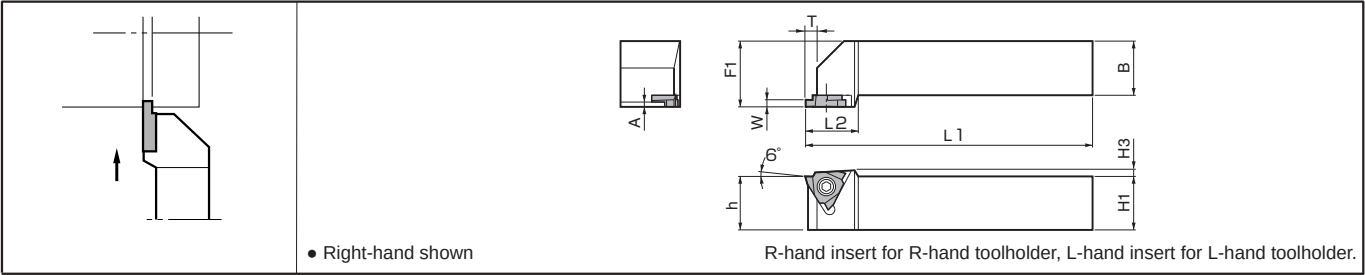


## Applicable Inserts

| Applicable Inserts |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Classification of usage                                                                                                                                        |  |  |
|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | ● : Continuous-Light Interruption / 1st Choice<br>☺ : Continuous-Light Interruption / 2nd Choice<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice |  |  |
|                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |                                                                                                                                                                |  |  |
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External Shallow Grooving Toolholders [TG Insert]

KTG (Changes to KGBA  G13)



Toolholder Dimensions

| Description                 | Std. |   | Dimension (mm) |     |    |     |    |    |     |     |  |  | Spare Parts                                                                        |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------|------|---|----------------|-----|----|-----|----|----|-----|-----|--|--|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                             | R    | L | H1=h           | H3  | B  | L1  | L2 | F1 | A   | T   |  |  | Clamp Screw                                                                        |                                                                                     | Wrench                                                                              |                                                                                     |
|                             |      |   |                |     |    |     |    |    |     |     |  |  |  |  |  |  |
| KTG <sup>R/L</sup> 2020K-16 | ●    | ● | 20             | 3.0 | 20 | 125 | 20 | 25 | -   | 2.5 |  |  | SB-4TR                                                                             | -                                                                                   | FT-15                                                                               | -                                                                                   |
| 2525M-16                    | ●    | ● | 25             |     | 25 | 150 |    | 30 |     |     |  |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 2020K22-15                  | ●    | ● | 20             |     | 20 | 125 |    | 25 |     |     |  |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 2525M22-15                  | ●    | ● | 25             | 3.0 | 25 | 150 | 25 | 30 | 1.0 | 4.0 |  |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 2020K22-25                  | ●    | ● | 20             |     | 20 | 125 |    | 25 |     |     |  |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 2525M22-25                  | ●    | ● | 25             | 3.0 | 25 | 150 | 25 | 30 | 2.0 | 4.5 |  |  | -                                                                                  | GS-50                                                                               | -                                                                                   | LW-3                                                                                |
| 2020K22-35                  | ●    | ● | 20             |     | 20 | 125 |    | 25 |     |     |  |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| 2525M22-35                  | ●    | ● | 25             | 3.0 | 25 | 150 | 25 | 30 | 3.0 | 5.5 |  |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |

• Dimension T shows the distance from the Toolholder to the cutting edge. Dimension B shows available grooving depth.

\* GBA Insert cannot be installed to this toolholder.

Applicable Inserts

(TG insert changes to GBA  G10~ G12)

| (mm)        |       |      |     | K | Cast Iron                    |  |  |  | ● : Continuous-Light Interruption / 1st Choice<br>⦿ : Continuous-Light Interruption / 2nd Choice<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice |  |  |  |
|-------------|-------|------|-----|---|------------------------------|--|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| Description | A     | T    | ød  | N | Non-ferrous Metals           |  |  |  |                                                                                                                                                                |  |  |  |
| TG32_       | 9.525 | 3.18 | 4.5 | S | Titanium Alloy               |  |  |  |                                                                                                                                                                |  |  |  |
| TG43_       | 12.70 | 4.76 | 5.5 | H | Hard materials (under 40HRC) |  |  |  |                                                                                                                                                                |  |  |  |
|             |       |      |     |   | Hard materials (over 40HRC)  |  |  |  |                                                                                                                                                                |  |  |  |

| Insert                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                               | Description                                                                                    | Dimension (mm)      |      |         |      | Cermet |      |      |      | Applicable Toolholder    | Ref. Page for Toolholder    |     |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------|------|---------|------|--------|------|------|------|--------------------------|-----------------------------|-----|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                | W                   | B    | C or rε |      | TN60   | TN90 | TC40 | TC60 |                          |                             |     |  |
| R-hand shown                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                               |                                                                                                |                     |      |         |      |        |      |      |      |                          |                             |     |  |
| <div>General (Square)<br/>(Corner is C shape)</div> <div></div> <div>TG32 type</div> <div></div> <div>General (Square)<br/>(Corner is R shape)</div> <div></div> <div>TG43 type</div> | <div></div> <div>(Corner is C shape)</div> | TG32 <sup>R/L</sup>                                                                            | 075                 | 0.75 | 2.0     | C0.1 | ●      |      |      |      | KTG <sup>R/L</sup> ...16 | G18                         |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                | 095                 | 0.95 |         |      | ●      |      |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                | 125                 | 1.25 |         |      | ●      |      |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                | 145                 | 1.45 |         |      | ●      |      |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                | 150                 | 1.50 |         |      | ●      |      |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                | 175                 | 1.75 |         |      | ●      |      |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                | 200                 | 2.00 |         |      | ●      |      |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               | <div></div> | TG43 <sup>R/L</sup> | 150  | 1.50    | 3.5  | 0.2    | ●    |      |      |                          | KTG <sup>R/L</sup> ...22-15 | G18 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                |                     | 175  | 1.75    |      |        | ●    |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                |                     | 200  | 2.00    |      |        | ●    |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                |                     | 230  | 2.30    |      |        | ●    |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                |                     | 250  | 2.50    |      |        | ●    |      |      |                          |                             |     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                               |                                                                                                |                     | 265  | 2.65    |      |        | ●    |      |      |                          |                             |     |  |
| 280                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |                                                                                                |                     | 2.80 | 4.0     |      |        | 0.3  | ●    |      |                          |                             |     |  |
| 300                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |                                                                                                | 3.00                | ●    |         |      |        |      |      |      |                          |                             |     |  |
| 330                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |                                                                                                | 3.30                | ●    |         |      |        |      |      |      |                          |                             |     |  |
| 350                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |                                                                                                | 3.50                | ●    |         |      |        |      |      |      |                          |                             |     |  |
| 400                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |                                                                                                | 4.00                | 5.0  |         | 0.4  | ●      |      |      |      |                          | KTG <sup>R/L</sup> ...22-35 |     |  |
| 430                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |                                                                                                | 4.30                |      |         |      | ●      |      |      |      |                          |                             |     |  |
| 450                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                               |                                                                                                | 4.50                |      |         |      | ●      |      |      |      |                          |                             |     |  |

• Dimension B shows available grooving depth.

\* KTG will be switched to KGBA.

Machining against the wall is available.

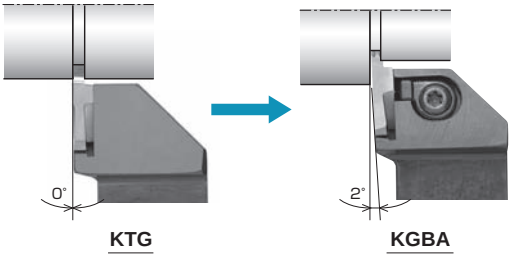
\* For applicable insert, TG insert changes to GBA.

Change Insert Grade TN60 for TN90.

There are various types of GBA insert materials available depending on the user's cutting condition requirements.

\* Check the corner-R(ε) of the insert when changing.

For recommended cutting conditions, see page  G90



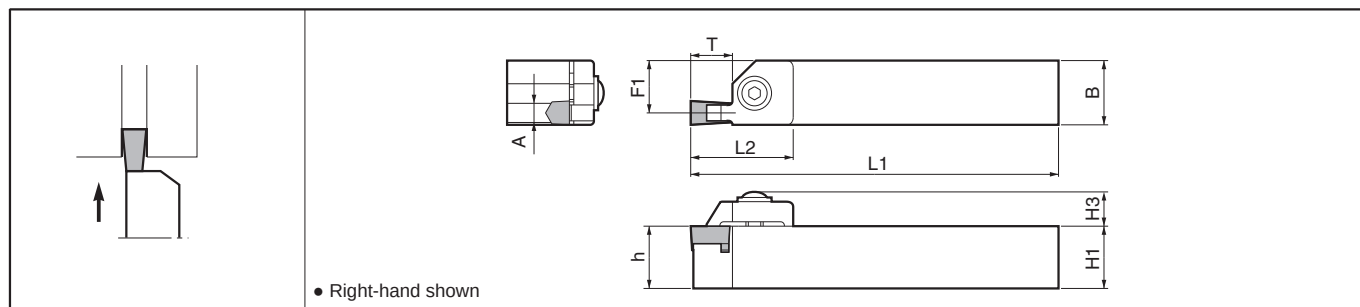
● : Std. Item    □ : Check Availability    R : Std. Item (R-hand Only)    L : Std. Item (L-hand Only)

Inserts are sold in 10 piece boxes.



# External Shallow Grooving Toolholders [Ceramic TG Insert]

## KN91



### Toolholder Dimensions

| Description                           | Std.                     |                          | Dimension (mm) |    |    |     |    |      |     |    |  |  | Spare Parts  |            |        |        |        |
|---------------------------------------|--------------------------|--------------------------|----------------|----|----|-----|----|------|-----|----|--|--|--------------|------------|--------|--------|--------|
|                                       | R                        | L                        | H1=h           | H3 | B  | L1  | L2 | F1   | A   | T  |  |  | Clamp        | Clamp Bolt | Washer | Spring | Wrench |
|                                       |                          |                          |                |    |    |     |    |      |     |    |  |  |              |            |        |        |        |
| <b>KN91<sup>R/L</sup></b> <b>44-4</b> | <input type="checkbox"/> | <input type="checkbox"/> |                |    |    |     | 40 | 22.5 | 3.4 | 15 |  |  | CE-111 / 121 | BH8X30     | W-8    | SP-8   | LW-5   |
| <b>44-5</b>                           | <input type="checkbox"/> | <input type="checkbox"/> | 25             | 16 | 25 | 150 | 42 | 22.5 | 4.4 | 17 |  |  |              |            |        |        |        |
| <b>44-7</b>                           | <input type="checkbox"/> | <input type="checkbox"/> |                |    |    |     | 42 | 21   | 6.4 | 17 |  |  | CE-131 / 141 |            |        |        |        |

• Dimension T shows available grooving depth.

Clamp: KN91<sup>R/L</sup> 44-4 / 5 ... CE-111 for Right-hand Toolholder, and CE-121 for Left-hand Toolholder.

KN91<sup>R/L</sup> 44-7 ... CE-131 for Right-hand Toolholder, and CE-141 for Left-hand Toolholder.

### Applicable Inserts

| Description          | L (mm) | H (mm) |
|----------------------|--------|--------|
| <b>GS91-4</b>        | 12     | 5.0    |
| <b>GS91-5-GS91-8</b> | 15     | 7.5    |

| P | Carbon Steel / Alloy Steel   |   |  | Classification of usage<br>● : Continuous-Light Interruption / 1st Choice<br>☺ : Continuous-Light Interruption / 2nd Choice<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice |
|---|------------------------------|---|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| M | Stainless Steel              |   |  |                                                                                                                                                                                           |
| K | Cast Iron                    | ● |  |                                                                                                                                                                                           |
| N | Non-ferrous Metals           |   |  |                                                                                                                                                                                           |
| S | Titanium Alloy               |   |  |                                                                                                                                                                                           |
| H | Hard materials (under 40HRC) |   |  |                                                                                                                                                                                           |
|   | Hard materials (over 40HRC)  | ○ |  |                                                                                                                                                                                           |

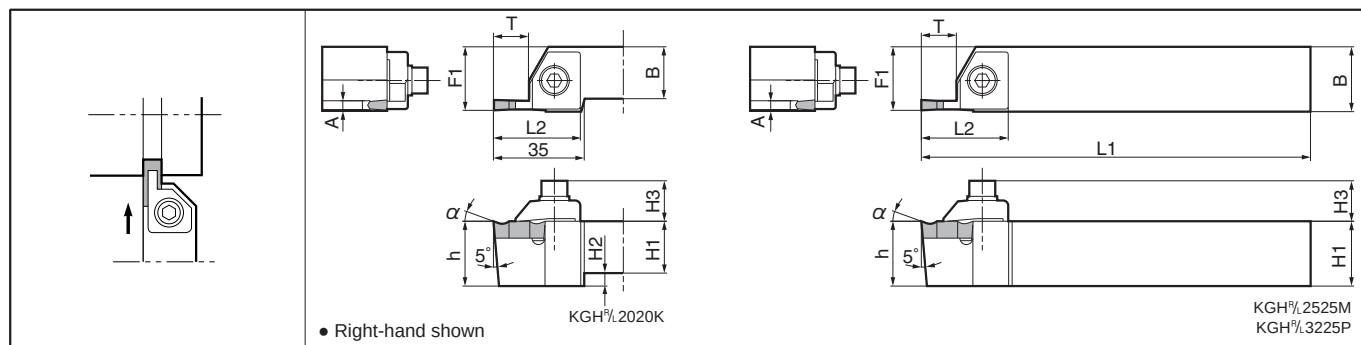
| Insert |  | Description    | Dimension (mm) |     | Ceramic                  | PVD Ceramic | Applicable Toolholder         | Ref. Page for Toolholder |
|--------|--|----------------|----------------|-----|--------------------------|-------------|-------------------------------|--------------------------|
|        |  |                | W              | rε  | A65                      | A66N        |                               |                          |
|        |  | <b>GS 91-4</b> | 4.0            | 0.5 | <input type="checkbox"/> |             | <b>KN91<sup>R/L</sup>...4</b> | <b>G19</b>               |
|        |  | <b>91-5</b>    | 5.0            |     | <input type="checkbox"/> |             | <b>KN91<sup>R/L</sup>...5</b> |                          |
|        |  | <b>91-6</b>    | 6.0            |     | <input type="checkbox"/> |             |                               |                          |
|        |  | <b>91-7</b>    | 7.0            | 0.8 | <input type="checkbox"/> |             | <b>KN91<sup>R/L</sup>...7</b> |                          |
|        |  | <b>91-8</b>    | 8.0            |     | <input type="checkbox"/> |             |                               |                          |

### Recommended Cutting Conditions

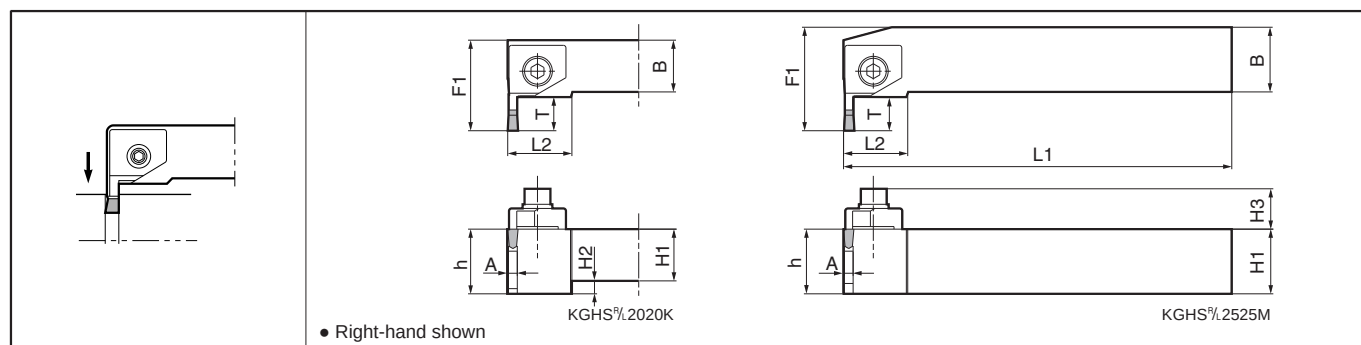
| Workpiece Material         | Recommended Insert Grade (Cutting Speed m/min) | f (mm/rev)                 |                  |
|----------------------------|------------------------------------------------|----------------------------|------------------|
|                            | Ceramic                                        |                            |                  |
|                            | <b>A65</b>                                     | GS91-4<br>GS91-5<br>GS91-6 | GS91-7<br>GS91-8 |
| Cast Iron (FC / FCD, etc.) | ★<br>150~300                                   | 0.03~0.07                  | 0.04~0.08        |
| Hard Materials             | ★<br>40~80                                     | 0.02~0.05                  | 0.04~0.07        |

★ : 1st Recommendation

### KGH



### KGHS



#### Toolholder Dimensions

| Description                      |          | Std. |    | Dimension (mm) |    |      |     |     |           |           |     | Spare Parts |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|----------------------------------|----------|------|----|----------------|----|------|-----|-----|-----------|-----------|-----|-------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                  |          |      |    |                |    |      |     |     |           |           |     | Clamp       | Clamp Bolt                                                                          | Washer                                                                              | Spring                                                                              | Wrench                                                                              |                                                                                     |
|                                  |          | R    | L  | H1=h           | H2 | H3   | B   | L1  | L2        | F1        | A   | T           |  |  |  |  |  |
| KGH <sup>R</sup> / <sub>L</sub>  | 2020K-4  | ●    | ●  | 20             | 5  |      | 20  | 125 |           | 24.5-24.8 | 3.4 | 13          | CGH-1 <sup>R</sup> / <sub>L</sub>                                                   | HH6X25                                                                              | W-6                                                                                 | SP-6                                                                                | LW-5                                                                                |
|                                  | 2525M-4  | ●    | ●  | 25             | -  | 15.6 | 25  | 150 | 33.5      | 24.5-24.8 |     |             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 2020K-5  | ●    | ●  | 20             | 5  |      | 20  | 125 |           | 25.0-25.8 |     |             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 2525M-5  | ●    | ●  | 25             | -  | 15.6 | 25  | 150 | 33.5      | 25.0-25.8 | 4.2 | 13          | CGH-1 <sup>R</sup> / <sub>L</sub>                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 3225P-5  | ●    | ●  | 32             | -  |      | 25  | 170 |           | 25.0-25.8 |     |             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 2020K-7  | ●    | ●  | 20             | 5  |      | 20  | 125 |           | 24.5-25.0 | 5.8 | 13          | CGH-2 <sup>R</sup> / <sub>L</sub>                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 2525M-7  | ●    | ●  | 25             | -  | 15.6 | 25  | 150 | 33.5      | 24.5-25.0 |     |             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 2525M-10 | ●    | ●  | 25             | -  | 16.1 | 25  | 150 | 41        | 25.5-26.5 | 9.0 | 17          | CGH-3 <sup>R</sup> / <sub>L</sub>                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 3225P-10                         | ●        |      | 32 | -              |    | 25   | 170 |     | 25.5-26.5 |           |     |             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| KGHS <sup>R</sup> / <sub>L</sub> | 2020K-4  | ●    | ●  | 20             | 5  |      | 20  | 125 | 25        | 35        | 3.4 | 13          | CGH-1 <sup>1</sup> / <sub>R</sub>                                                   | HH6X25                                                                              | W-6                                                                                 | SP-6                                                                                | LW-5                                                                                |
|                                  | 2525M-4  | ●    | ●  | 25             | -  | 15.6 | 25  | 150 |           | 40        |     |             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 2020K-5  | ●    | ●  | 20             | 5  |      | 20  | 125 | 25        | 35        | 4.2 | 13          | CGH-1 <sup>1</sup> / <sub>R</sub>                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 2525M-5  | ●    | ●  | 25             | -  | 15.6 | 25  | 150 |           | 40        |     |             |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|                                  | 2525M-7  | □    | □  | 25             | -  | 15.6 | 25  | 150 | 25        | 40        | 5.8 | 13          | CGH-2 <sup>1</sup> / <sub>R</sub>                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

• Dimension T shows available grooving depth.

• Dimension F1 of KGH %<sub>L</sub> Toolholder depends on the insert's edge width.

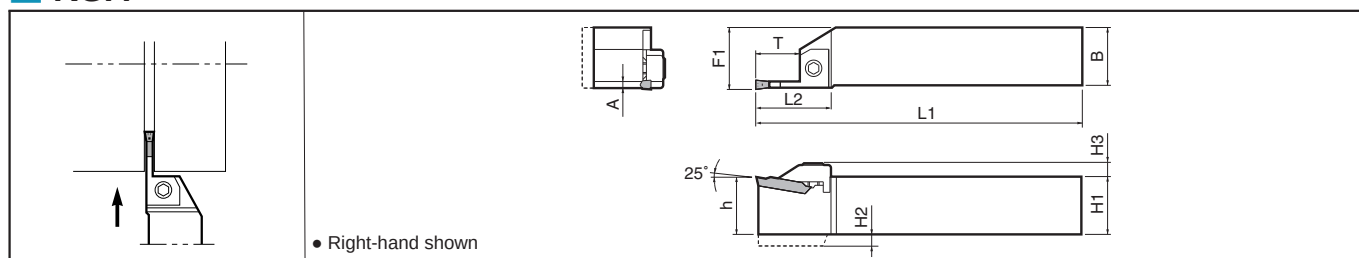
• Clamp: KGH %<sub>L</sub> ... CGH- ○ R for Right-hand Toolholder, and CGH- ○ L for Left-hand Toolholder.

KGHS %<sub>L</sub> ... CGH- ○ L for Right-hand Toolholder, and CGH- ○ R for Left-hand Toolholder.

#### Rake Angle (α) after Installment of GH / GHU insert

| GH ○○○○ - ○○ |                                    | GHU ○○○○ |                |
|--------------|------------------------------------|----------|----------------|
| α            | Insert Grades                      | α        | Insert Grades  |
| 0°           | A65, A66N                          | 10°      | TN60<br>CR9025 |
| 10°          | TC40                               |          |                |
| 20°          | TN90, TC60<br>PR630, PR930<br>KW10 |          |                |

## KGA



## Toolholder Dimensions

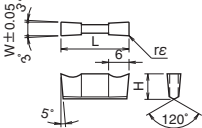
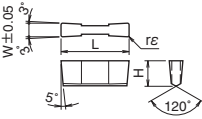
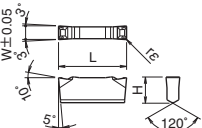
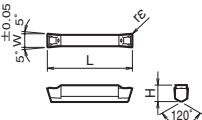
| Description        |          | Std. |   | Dimension (mm) |    |    |    |     |    |      |     |    |  | Spare Parts                                                                        |                                                                                     |                                                                                     |                                                                                     |
|--------------------|----------|------|---|----------------|----|----|----|-----|----|------|-----|----|--|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                    |          |      |   |                |    |    |    |     |    |      |     |    |  | Clamp                                                                              | Clamp Bolt                                                                          | Spring                                                                              | Wrench                                                                              |
|                    |          | R    | L | H1=h           | H2 | H3 | B  | L1  | L2 | F1   | A   | T  |  |  |  |  |  |
| KGA <sup>R/L</sup> | 2020K-3  | ●    | ● | 20             | 5  | 6  | 20 | 125 | 37 | 21.5 | 2.3 | 20 |  | CGA-3 <sup>R/L</sup>                                                               | HH6X20                                                                              | SP-6                                                                                | LW-5                                                                                |
|                    | 2525M-3  | ●    | ● | 25             | -  | 6  | 20 | 125 | 37 | 26.5 |     |    |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
|                    | 2020K-4  | ●    | ● | 20             | 5  | 6  | 20 | 125 | 37 | 21.5 |     |    |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
|                    | 2525M-4  | ●    | ● | 25             | -  | 6  | 20 | 125 | 37 | 26.5 |     |    |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| KGA <sup>R/L</sup> | 2020K-5  | ●    | ● | 20             | 5  | 6  | 20 | 125 | 42 | 21.5 | 4.3 | 25 |  | CGA-5 <sup>R/L</sup>                                                               | HH6X20                                                                              | SP-6                                                                                | LW-5                                                                                |
|                    | 2525M-5  | ●    | ● | 25             | -  | 6  | 20 | 125 | 42 | 26.5 |     |    |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
|                    | 2020K-3S | ●    | ● | 20             | 5  | 6  | 20 | 125 | 34 | 21.5 |     |    |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
|                    | 2525M-3S | ●    | ● | 25             | -  | 6  | 20 | 125 | 34 | 26.5 |     |    |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| KGA <sup>R/L</sup> | 2020K-4S | ●    | ● | 20             | 5  | 6  | 20 | 125 | 34 | 21.5 | 3.3 | 16 |  | CGA-4 <sup>R/L</sup>                                                               | HH6X20                                                                              | SP-6                                                                                | LW-5                                                                                |
|                    | 2525M-4S | ●    | ● | 25             | -  | 6  | 20 | 125 | 34 | 26.5 |     |    |  |                                                                                    |                                                                                     |                                                                                     |                                                                                     |

• Dimension T shows available grooving depth.

• Clamp: CGA- ○ R for Right-hand Toolholder, and CGA- ○ L for Left-hand Toolholder.

## Applicable Inserts

| Description              |  |  | L  | H   | (mm)                         |                            |  |  |  |  |  |  |  |   | Classification of usage |   |   |                                                                                                                                                                |
|--------------------------|--|--|----|-----|------------------------------|----------------------------|--|--|--|--|--|--|--|---|-------------------------|---|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GH4020- ○ ○ ~GH8020- ○ ○ |  |  | 20 | 7.5 | P                            | Carbon Steel / Alloy Steel |  |  |  |  |  |  |  |   | ●                       |   |   | ● : Continuous-Light Interruption / 1st Choice<br>☺ : Continuous-Light Interruption / 2nd Choice<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice |
| GH10025-05~GH12025-05    |  |  | 25 |     | M                            | Stainless Steel            |  |  |  |  |  |  |  |   | ●                       |   |   |                                                                                                                                                                |
| GHU ○ ○ ○ ○              |  |  | 20 |     | K                            | Cast Iron                  |  |  |  |  |  |  |  |   | ●                       | ○ | ● |                                                                                                                                                                |
| GA30, GA40               |  |  | 25 | N   | Non-ferrous Metals           |                            |  |  |  |  |  |  |  | ● |                         |   |   |                                                                                                                                                                |
| GA50                     |  |  | 30 | S   | Titanium Alloy               |                            |  |  |  |  |  |  |  | ● |                         |   |   |                                                                                                                                                                |
|                          |  |  |    | H   | Hard materials (under 40HRC) |                            |  |  |  |  |  |  |  | ● |                         |   |   |                                                                                                                                                                |
|                          |  |  |    |     | Hard materials (over 40HRC)  |                            |  |  |  |  |  |  |  |   |                         | ○ | ● |                                                                                                                                                                |

| Insert                                                                                                                                                                                                                                                |                                                                                                                                                                                | Description | Dimension (mm) |            | Cermet |      |      |      | CVD Coated Carbide | PVD Coated Carbide | Carbide | Ceramic |     | Applicable Toolholder | Ref. Page for Toolholder                            |      |                                                     |                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------------|------------|--------|------|------|------|--------------------|--------------------|---------|---------|-----|-----------------------|-----------------------------------------------------|------|-----------------------------------------------------|-----------------------------------------------------|
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             | W              | rε         | TN60   | TN90 | TC40 | TC60 | CR9025             | PR630              | PR930   | KW10    | A65 |                       |                                                     | A66N | PT600M                                              |                                                     |
| <br>Ground Chipbreaker<br><br><br>Ceramic<br><br>Ceramic insert is above shape. | <br><br> | GH 4020-02  | 4.0            | 0.2        | ●      | ●    |      |      |                    |                    | ●       | ●       |     |                       | KGH <sup>R/L</sup> ...4<br>KGHS <sup>R/L</sup> ...4 | G20  |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             |                | GH 4020-05 | 0.5    | ●    | ●    |      |                    |                    |         | ●       | ●   | ●                     |                                                     |      | ●                                                   |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 4520-02  | 4.5            | 0.2        |        |      | ●    |      |                    |                    |         |         |     |                       |                                                     |      | KGH <sup>R/L</sup> ...5<br>KGHS <sup>R/L</sup> ...5 |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             |                | GH 4520-05 | 0.5    |      |      | ●    |                    |                    |         |         |     |                       |                                                     |      |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 5020-02  | 5.0            | 0.2        |        | ●    | ●    |      |                    |                    |         | ●       | ●   |                       |                                                     |      | KGH <sup>R/L</sup> ...7<br>KGHS <sup>R/L</sup> ...7 |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             |                | GH 5020-05 | 0.5    |      | ●    | ●    |                    |                    |         |         | ●   | ●                     | ●                                                   |      |                                                     | ●                                                   |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 5520-02  | 5.5            | 0.2        |        |      | ●    |      |                    |                    |         |         |     |                       |                                                     |      | KGH <sup>R/L</sup> ...10                            |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             |                | GH 5520-05 | 0.5    |      |      | ●    |                    |                    |         |         |     |                       |                                                     |      |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 6020-02  | 6.0            | 0.2        |        | ●    | ●    |      |                    |                    |         |         | ●   | ●                     |                                                     |      |                                                     | KGH <sup>R/L</sup> ...4<br>KGHS <sup>R/L</sup> ...4 |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             |                | GH 6020-05 | 0.5    |      | ●    | ●    |                    |                    |         |         | ●   | ●                     | ●                                                   |      | ●                                                   |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 6520-02  | 6.5            | 0.2        |        |      | ●    |      |                    |                    |         |         |     |                       |                                                     |      | KGH <sup>R/L</sup> ...5<br>KGHS <sup>R/L</sup> ...5 |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             |                | GH 6520-05 | 0.5    |      |      | ●    |                    |                    |         |         |     |                       |                                                     |      |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 7020-02  | 7.0            | 0.2        |        | ●    | ●    |      |                    |                    |         |         | ●   | ●                     |                                                     |      |                                                     | KGH <sup>R/L</sup> ...7<br>KGHS <sup>R/L</sup> ...7 |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             |                | GH 7020-05 | 0.5    |      | ●    | ●    |                    |                    |         |         | ●   | ●                     | ●                                                   |      | ●                                                   |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 7520-02  | 7.5            | 0.2        |        |      |      | ●    |                    |                    |         |         |     |                       |                                                     |      | KGH <sup>R/L</sup> ...10                            |                                                     |
| GH 7520-05                                                                                                                                                                                                                                            | 0.5                                                                                                                                                                            |             |                |            |        | ●    |      |      |                    |                    |         |         |     |                       |                                                     |      |                                                     |                                                     |
| GH 8020-02                                                                                                                                                                                                                                            | 8.0                                                                                                                                                                            | 0.2         |                | ●          | ●      |      |      |      |                    |                    | ●       | ●       |     |                       | KGH <sup>R/L</sup> ...4<br>KGHS <sup>R/L</sup> ...4 |      |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 8020-05  | 0.5            |            | ●      | ●    |      |      |                    |                    | ●       | ●       |     |                       |                                                     |      |                                                     |                                                     |
| GH 10025-05                                                                                                                                                                                                                                           | 10.0                                                                                                                                                                           | 0.5         |                |            |        |      |      |      |                    |                    | ●       | ●       |     |                       | KGH <sup>R/L</sup> ...5<br>KGHS <sup>R/L</sup> ...5 |      |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                | GH 12025-05 | 0.5            |            |        |      |      |      |                    |                    | ●       | ●       |     |                       |                                                     |      |                                                     |                                                     |
| <br>Molded Chipbreaker                                                                                                                                             |                                                                                             | GHU 4020    | 4.0            | 0.25       | ●      |      |      |      | ●                  |                    |         |         |     |                       | KGH <sup>R/L</sup> ...4<br>KGHS <sup>R/L</sup> ...4 | G20  |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             | 5020           | 5.0        | 0.30   | ●    |      |      |                    | ●                  |         |         |     |                       | KGH <sup>R/L</sup> ...5<br>KGHS <sup>R/L</sup> ...5 |      |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             | 6020           | 6.0        | 0.30   | ●    |      |      |                    | ●                  |         |         |     |                       |                                                     |      | KGH <sup>R/L</sup> ...5<br>KGHS <sup>R/L</sup> ...5 |                                                     |
| <br>GA                                                                                                                                                             |                                                                                             | GA 30       | 3.0            | 0.20       | ●      |      |      |      | ●                  |                    |         |         |     |                       | KGA <sup>R/L</sup> ...3                             | G21  |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             | 40             | 4.0        | 0.25   | ●    |      |      |                    | ●                  |         |         |     |                       | KGA <sup>R/L</sup> ...4                             |      |                                                     |                                                     |
|                                                                                                                                                                                                                                                       |                                                                                                                                                                                |             | 50             | 5.0        | 0.30   | ●    |      |      |                    | ●                  |         |         |     |                       |                                                     |      | KGA <sup>R/L</sup> ...5                             |                                                     |

For recommended cutting conditions, see page G90~G91

● : Std. Item □ : Check Availability R : Std. Item (R-hand Only) L : Std. Item (L-hand Only)

Inserts are sold  
in 10 piece boxes.



# Summary of KGD Grooving

## Features

### 1 Various insert lineup

#### Smooth chip control

➡ Newly-introduced chipbreakers designed to cover a variety of workpiece materials.

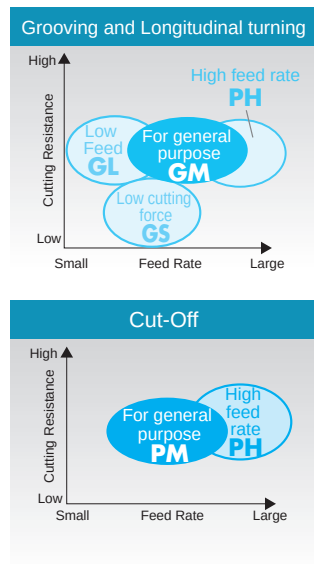
#### High precision edge preparation

➡ High precision molding technology with tolerance  $\pm 0.03$  mm (Edge width 2, 3, 4 mm types)

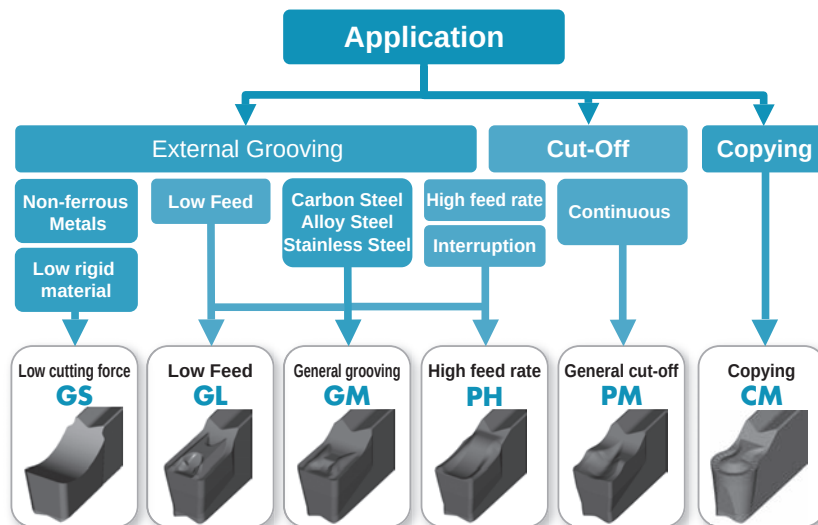
#### Highly-reputed MEGACOAT technology

➡ Long tool life and high efficiency machining achieved by superior oxidation resistance and wear resistance.

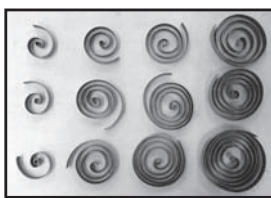
#### Application Map



#### Chipbreaker Selection



#### Comparison of Chip Control (SCM415 Vc=150m/min, f=0.15mm/rev)



GM Chipbreaker



Competitor A

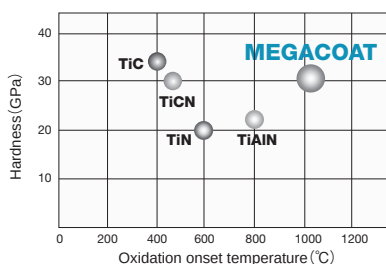


Competitor B

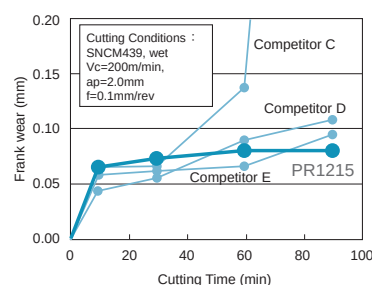
Smooth chip control

Less chip biting troubles

#### Features of MEGACOAT



#### Wear Resistance Comparison



#### PR1225:

1st choice for cut-off, grooving and Longitudinal turning

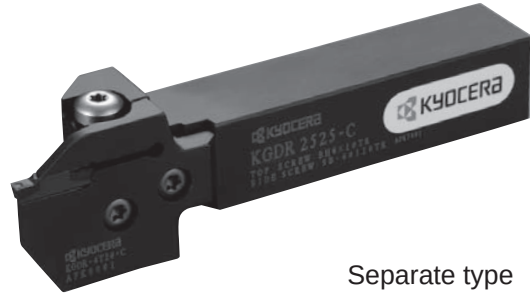
#### PR1215:

With superior wear resistance, recommended for grooving and cut-off under the stable conditions as well as machining of cast iron.

- Integral type and separate type (toolholder + blade) are available.



Integral Type



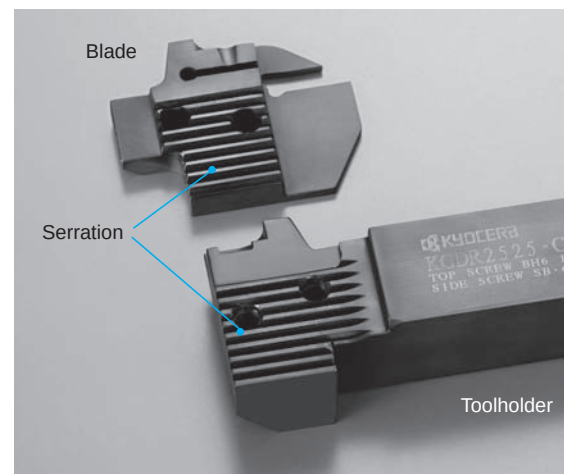
Separate type

- High rigidity separate type toolholder

#### ► Adaptable to wide applications by changing blades

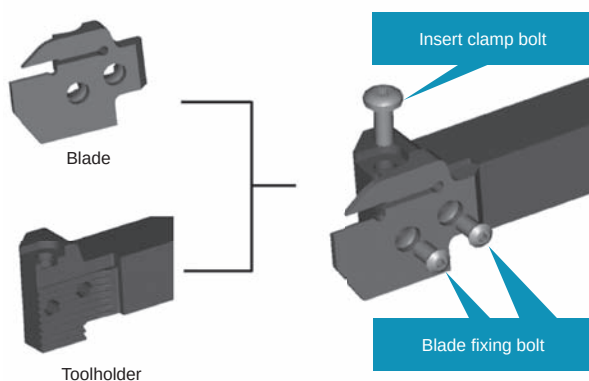
Deals with various edge widths and cutting depths by changing the blade and toolholder combination.

Even if the blade is broken, you only need to replace the broken part.



### ■ Structure of toolholder unit (Toolholder + Blade)

#### ●KGD-S(0° separate type)

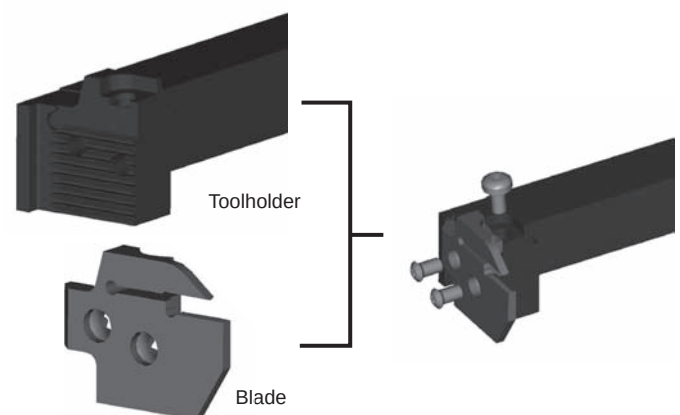


※Note for the toolholder and blade combination of 0° separate type

Toolholder(KGD<sup>°</sup>/L ○○-C)  
+  
Blade(KGD<sup>°</sup>/L-○T○○-C)

⇒R-hand Blade for R-hand Toolholder,  
L-hand Blade for L-hand Toolholder.

#### ●KGDS-S(90° separate type)



※Note for the toolholder and blade combination of 90° separate type

Toolholder(KGDS<sup>°</sup>/L ○○-C)  
+  
Blade(KGD<sup>1/2</sup>/h-○T○○-C)

⇒L-hand Blade for R-hand Toolholder,  
R-hand Blade for L-hand Toolholder.

# Inserts for Grooving and Cut-off

## GDM / GDMS / GDG

| Classification of usage                                                                                                                                        |               |                | P     | Carbon steel / Alloy steel |       |      | ●         | ●      | ☺      |          | Ref. Page for Toolholder |         |                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|-------|----------------------------|-------|------|-----------|--------|--------|----------|--------------------------|---------|-------------------|
|                                                                                                                                                                |               |                | M     | Stainless Steel            |       |      |           | ●      | ☺      |          |                          |         |                   |
| ● : Continuous-Light Interruption / 1st Choice<br>☺ : Continuous-Light Interruption / 2nd Choice<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice |               |                | K     | Cast Iron                  |       |      |           |        | ●      |          |                          |         |                   |
|                                                                                                                                                                |               |                | N     | Non-ferrous Metals         |       |      |           |        |        | ●        |                          |         |                   |
|                                                                                                                                                                |               |                | S     | Titanium Alloy             |       |      |           |        |        | ●        |                          |         |                   |
|                                                                                                                                                                |               |                | H     | Hard Materials ( ~ 40HRC)  |       |      |           |        |        |          |                          |         |                   |
|                                                                                                                                                                |               |                |       | Hard Materials (40HRC ~ )  |       |      |           |        |        |          |                          |         |                   |
| Description                                                                                                                                                    |               | Dimension (mm) |       |                            |       |      | Angle (°) | Cermet |        | MEGACOAT |                          | Carbide |                   |
|                                                                                                                                                                |               | W              | rε    | M                          | L     | H    | θ         | TN90   | PR1225 | PR1215   | GW15                     |         |                   |
| tolerance                                                                                                                                                      |               |                |       |                            |       |      |           |        |        |          |                          |         |                   |
| M                                                                                                                                                              | 2420N-020GM   | 2.4            | ±0.03 | 0.2                        | 1.95  | 20   | 4.3       | -      | ●      | ●        | ●                        |         | G26<br>G27<br>G28 |
|                                                                                                                                                                | 3020N-020GM   | 3.0            |       | 0.2                        | 2.3   |      |           |        | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 3020N-040GM   |                |       | 0.4                        |       |      |           |        | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 4020N-020GM   | 4.0            |       | 0.2                        | 3.3   |      |           |        | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 4020N-040GM   |                |       | 0.4                        |       |      |           |        | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 4020N-080GM   |                |       | 0.8                        |       |      |           |        | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 5020N-040GM   |                | 5.0   | 0.4                        |       | 4.2  | ●         |        | ●      | ●        |                          |         |                   |
|                                                                                                                                                                | 5020N-080GM   | 0.8            |       | ●                          | ●     |      | ●         |        |        |          |                          |         |                   |
|                                                                                                                                                                | 6020N-040GM   | 6.0            |       | 0.4                        | 5.2   |      | ●         |        | ●      | ●        |                          |         |                   |
|                                                                                                                                                                | 6020N-080GM   |                |       | 0.8                        |       |      | ●         |        | ●      | ●        |                          |         |                   |
|                                                                                                                                                                | 8030N-080GM   | 8.0            | ±0.05 | 0.8                        | 6.0   | 30   | 5.5       |        | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | MS            | 2220N-020GM    | 2.2   | ±0.03                      | 0.2   | 1.75 | 20        |        | 4.3    | -        | ●                        | ●       |                   |
| 3020N-040GM                                                                                                                                                    |               | 3.0            | 0.4   |                            | 2.3   | ●    |           | ●      |        |          | ●                        |         |                   |
| 4020N-040GM                                                                                                                                                    |               | 4.0            | 0.4   |                            | 3.3   | ●    |           | ●      |        |          | ●                        |         |                   |
| 5020N-080GM                                                                                                                                                    |               | 5.0            | ±0.04 | 0.8                        | 4.2   | ●    |           | ●      |        |          | ●                        |         |                   |
| 6020N-080GM                                                                                                                                                    |               | 6.0            |       | 0.8                        | 5.2   | ●    |           | ●      |        |          | ●                        |         |                   |
| M                                                                                                                                                              |               | 2420N-020GL    | 2.4   | ±0.03                      | 0.2   | 1.95 |           | 20     |        |          | 4.3                      | -       |                   |
|                                                                                                                                                                | 3020N-020GL   | 3.0            | 0.2   |                            | 2.3   | ●    | ●         |        | ●      |          |                          |         |                   |
|                                                                                                                                                                | 3020N-040GL   |                | 0.4   |                            |       | ●    | ●         |        | ●      |          |                          |         |                   |
|                                                                                                                                                                | 4020N-020GL   | 4.0            | 0.2   |                            | 3.3   | ●    | ●         |        | ●      |          |                          |         |                   |
|                                                                                                                                                                | 4020N-040GL   |                | 0.4   |                            |       | ●    | ●         |        | ●      |          |                          |         |                   |
|                                                                                                                                                                | 5020N-040GL   | 5.0            | ±0.04 |                            | 0.4   | 4.2  | ●         |        | ●      | ●        |                          |         |                   |
|                                                                                                                                                                | 6020N-040GL   | 6.0            |       | 0.4                        | 5.2   | ●    | ●         |        | ●      |          |                          |         |                   |
|                                                                                                                                                                | G             | 2520N-020GS    | 2.5   | ±0.02                      | 0.2   | 2.0  | 20        |        | 4.3    | -        |                          |         |                   |
| 3020N-020GS                                                                                                                                                    |               | 3.0            | 2.3   |                            |       | ●    |           | ●      |        |          | ●                        | ●       |                   |
| 3520N-020GS                                                                                                                                                    |               | 3.5            | 2.8   |                            |       | ●    |           | ●      |        |          | ●                        | ●       |                   |
| 4020N-040GS                                                                                                                                                    |               | 4.0            | 0.4   |                            | 3.3   | ●    |           | ●      |        |          | ●                        | ●       |                   |
| 5020N-040GS                                                                                                                                                    |               | 5.0            |       |                            | 4.2   | ●    |           | ●      |        |          | ●                        | ●       |                   |
| 6020N-040GS                                                                                                                                                    |               | 6.0            |       |                            | 5.2   | ●    |           | ●      |        |          | ●                        | ●       |                   |
| 8030N-040GS                                                                                                                                                    |               | 8.0            |       |                            | 6.0   | 30   |           | 5.5    |        |          | ●                        | ●       | ●                 |
| M                                                                                                                                                              |               | 3020N-150R-CM  | 3.0   |                            | ±0.03 | 1.5  |           | 2.3    |        |          | 20                       | 4.3     | -                 |
|                                                                                                                                                                | 4020N-200R-CM | 4.0            | 2.0   | 3.3                        |       | ●    | ●         | ●      |        |          |                          |         |                   |
|                                                                                                                                                                | 5020N-250R-CM | 5.0            | ±0.04 | 2.5                        | 4.2   | ●    | ●         | ●      |        |          |                          |         |                   |
|                                                                                                                                                                | 6020N-300R-CM | 6.0            |       | 3.0                        | 5.2   | ●    | ●         | ●      |        |          |                          |         |                   |
| M                                                                                                                                                              | 2020N-020PH   | 2.0            | ±0.03 | 0.2                        | 1.5   | 20   | 4.3       | -      | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 3020N-030PH   | 3.0            |       | 0.3                        | 2.3   |      |           |        | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 4020N-030PH   | 4.0            |       | 0.3                        | 3.3   |      |           |        | ●      | ●        | ●                        |         |                   |
| MS                                                                                                                                                             | 2020N-020PH   | 2.0            | ±0.03 | 0.2                        | 1.5   | 20   | -         | -      | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 3020N-030PH   | 3.0            |       | 0.3                        | 2.3   |      |           |        | ●      | ●        | ●                        |         |                   |
|                                                                                                                                                                | 4020N-030PH   | 4.0            |       | 0.3                        | 3.3   |      |           |        | ●      | ●        | ●                        |         |                   |

Recommended Cutting Conditions ● G29

◆ Note for the holder and insert combination of KGD type (new) and KGM type (conventional)

● Insert setting angle for grooving toolholders

| KGD...0°                                                                            | Conventional tools KGM...5°                                                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |


  
New Toolholder KGD


  
Conventional Toolholder KGM

Installing conventional inserts to the new toolholder is not recommended.

● : Std. Item

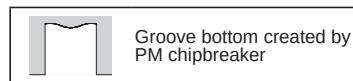


## GDM / GDMS

|                                                                                                                                                                |   |                            |  |   |   |  |                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------|--|---|---|--|------------------|
| Classification of usage                                                                                                                                        | P | Carbon steel / Alloy steel |  | ● | ○ |  | or<br>Toolholder |
|                                                                                                                                                                | M | Stainless Steel            |  | ● | ○ |  |                  |
| ● : Continuous-Light Interruption / 1st Choice<br>○ : Continuous-Light Interruption / 2nd Choice<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice | K | Cast Iron                  |  |   | ● |  |                  |
|                                                                                                                                                                | N | Non-ferrous Metals         |  |   |   |  |                  |
|                                                                                                                                                                | S | Titanium Alloy             |  |   |   |  |                  |
|                                                                                                                                                                | H | Hard Materials ( ~ 40HRC)  |  |   |   |  |                  |
|                                                                                                                                                                |   | Hard Materials (40HRC ~ )  |  |   |   |  |                  |

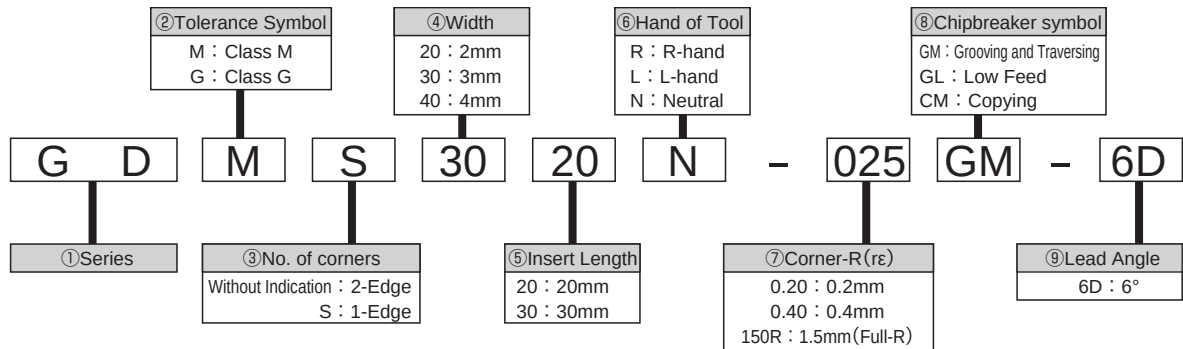
| Shape                       |        | Description         | Dimension (mm) |       |      |      |    | Angle (°) | Cermet | MEGACOAT | Carbide | Ref. Page for Toolholder |
|-----------------------------|--------|---------------------|----------------|-------|------|------|----|-----------|--------|----------|---------|--------------------------|
|                             |        |                     | W              | rε    | M    | L    | H  |           |        |          |         |                          |
| Handed insert shows R-hand. |        |                     | tolerance      |       |      |      |    | θ         | TN90   | PR1225   | PR1215  | GW15                     |
| Cut-Off                     | 2-Edge | GDM 2020N-020PM     | 2.0            | ±0.03 | 0.2  | 1.5  | 20 | -         |        | ●        | ●       |                          |
|                             |        | 2520N-020PM         | 2.5            | ±0.03 | 0.2  | 1.95 | 20 | -         |        | ●        | ●       |                          |
|                             |        | 3020N-025PM         | 3.0            | ±0.03 | 0.25 | 2.3  | 20 | -         |        | ●        | ●       |                          |
|                             |        | 4020N-030PM         | 4.0            | ±0.03 | 0.3  | 3.3  | 20 | -         |        | ●        | ●       |                          |
|                             | 2-Edge | GDM 2020R-020PM-6D  | 2.0            | ±0.03 | 0.2  | 1.5  | 20 | 6°        |        | ●        | ●       |                          |
|                             |        | 2520R-020PM-6D      | 2.5            | ±0.03 | 0.2  | 1.95 | 20 | 6°        |        | ●        | ●       |                          |
|                             |        | 3020R-025PM-6D      | 3.0            | ±0.03 | 0.25 | 2.3  | 20 | 6°        |        | ●        | ●       |                          |
|                             | 1-Edge | GDMS 2020N-020PM    | 2.0            | ±0.03 | 0.2  | 1.5  | 20 | -         |        | ●        | ●       |                          |
|                             |        | 3020N-025PM         | 3.0            | ±0.03 | 0.25 | 2.3  | 20 | -         |        | ●        | ●       |                          |
|                             |        | 4020N-030PM         | 4.0            | ±0.03 | 0.3  | 3.3  | 20 | -         |        | ●        | ●       |                          |
|                             | 1-Edge | GDMS 2020R-020PM-6D | 2.0            | ±0.03 | 0.2  | 1.5  | 20 | 6°        |        | ●        | ●       |                          |
|                             |        | 3020R-025PM-6D      | 3.0            | ±0.03 | 0.25 | 2.3  | 20 | 6°        |        | ●        | ●       |                          |
|                             |        | 4020R-030PM-6D      | 4.0            | ±0.03 | 0.3  | 3.3  | 20 | 6°        |        | ●        | ●       |                          |

Note 1. Using the PM chipbreaker (for cut-off) for grooving cannot create a flat bottom (See the right figure).



Recommended Cutting Conditions **G29**

### Indication of Description



## Setting the inserts

1. Use compressed air or other measures to remove chips from the insert mounting part see (Fig. 1).
2. Put the insert into the holder and push it until it makes contact with the back end of the holder's surface (see Fig. 2 and 3).
3. Keeping the insert fit to the surface, tighten the insert clamp bolt at an appropriate torque.
4. Make sure that there is no gap between the insert and the back end of the holder's surface and that the insert is set straight.

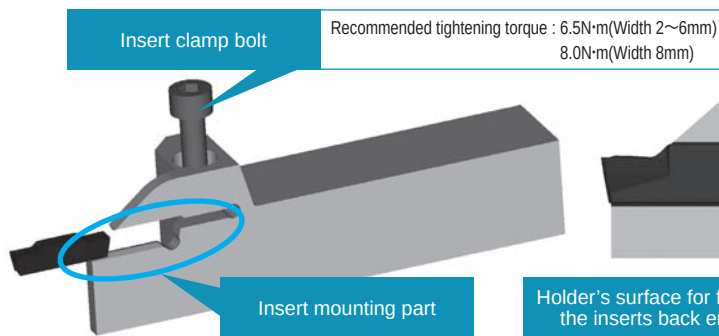


Fig. 1

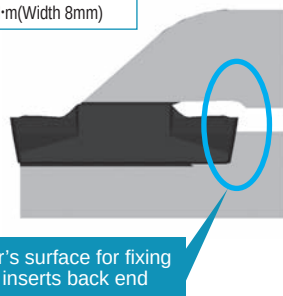


Fig. 2

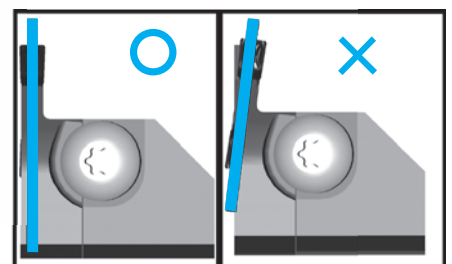
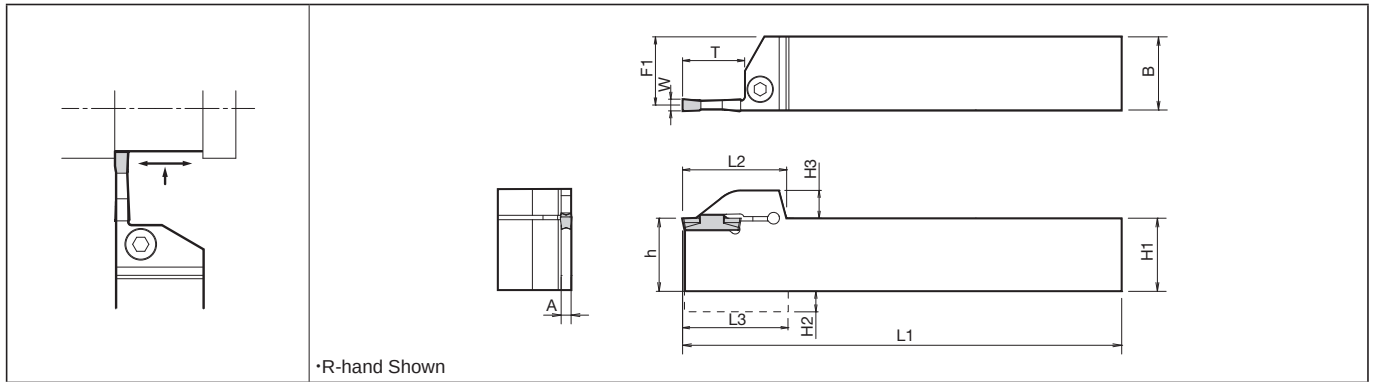


Fig. 3



# Toolholders for Grooving and Cut-off

## KGD (Integral Type)



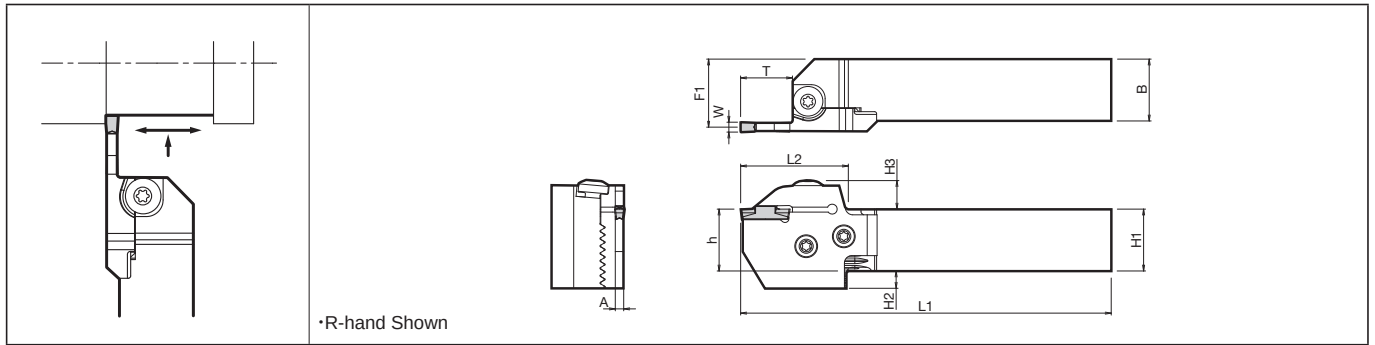
### Toolholder Dimensions

| Width (mm) | Max. depth of cut (mm) | Description        |                    | Std.       |   | Dimension (mm) |     |     |      |      |      |      |        |        |      |        | Width W (mm) |                                                                                     | Spare Parts                                                                         |      |      |     |     |        |
|------------|------------------------|--------------------|--------------------|------------|---|----------------|-----|-----|------|------|------|------|--------|--------|------|--------|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|------|-----|-----|--------|
|            |                        |                    |                    | R          | L | H1=h           | H2  | H3  | B    | L1   | L2   | L3   | F1     | A      | T    | MIN    | MAX          | Clamp Bolt                                                                          | Wrench                                                                              |      |      |     |     |        |
|            |                        |                    |                    |            |   |                |     |     |      |      |      |      |        |        |      |        |              |  |  |      |      |     |     |        |
| 2          | 6                      | KGD <sup>R/L</sup> | 1616H-2T06         | ●          | ● | 16             | 4.0 | 9.5 | 16   | 100  | 27.7 | 28.0 | 15.2   | 1.7    | 6    | 2.0    | 3.0          | HH5X16                                                                              | LW-4                                                                                |      |      |     |     |        |
|            |                        |                    | 2020K-2T06         | ●          | ● | 20             | -   |     | 20   | 125  | 28.0 | -    | 19.2   |        |      |        |              | HH5X25                                                                              |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2525M-2T06         | ●          | ● | 25             | -   |     | 25   | 150  | 28.0 | -    | 24.2   |        |      |        |              | HH5X16                                                                              |                                                                                     |      |      |     |     |        |
|            | 10                     | KGD <sup>R/L</sup> | 1616H-2T10         | ●          | ● | 16             | 4.0 |     | 16   | 100  | 30.2 | 30.5 | 15.2   |        | 10   |        |              | HH5X16                                                                              |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2020K-2T10         | ●          | ● | 20             | -   |     | 20   | 125  | 30.5 | -    | 19.2   |        |      |        |              | HH5X25                                                                              |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2525M-2T10         | ●          | ● | 25             | -   |     | 25   | 150  | 30.5 | -    | 24.2   |        |      |        |              | HH5X16                                                                              |                                                                                     |      |      |     |     |        |
|            | 17                     | KGD <sup>R/L</sup> | 1616H-2T17         | ●          | ● | 16             | 4.0 |     | 16   | 100  | 31.2 | 31.5 | 15.2   |        | 17   |        |              | HH5X16                                                                              |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2012K-2T17         | ●          | ● | 20             | -   |     | 12   | 125  | -    | 11.2 | HH5X25 |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2020K-2T17         | ●          | ● |                |     |     | 20   | 125  |      | 32.5 |        |        |      |        |              | -                                                                                   |                                                                                     | 19.2 |      |     |     |        |
|            |                        |                    | 2525M-2T17         | ●          | ● |                |     |     | 25   | 150  |      | 24.2 |        |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            | 3                      | 6                  | KGD <sup>R/L</sup> | 1616H-3T06 | ● | ●              | 16  |     | 4.0  | 16   | 100  | 27.7 |        |        | 28.0 |        |              | 14.8                                                                                |                                                                                     | 2.4  | 6    | 3.0 | 4.0 | HH5X16 |
|            |                        |                    |                    | 2020K-3T06 | ● | ●              | 20  |     | -    | 20   | 125  | 28.0 | -      |        | 18.8 |        |              | HH5X25                                                                              |                                                                                     |      |      |     |     |        |
| 2525M-3T06 |                        |                    |                    | ●          | ● | 25             | -   | 25  | 150  | 28.0 | -    | 23.8 | HH5X16 |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
| 10         |                        | KGD <sup>R/L</sup> | 1616H-3T10         | ●          | ● | 16             | 4.0 | 16  | 100  | 30.2 | 30.5 | 14.8 | 10     | HH5X16 |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2020K-3T10         | ●          | ● | 20             | -   | 20  | 125  | 30.5 | -    | 18.8 |        | HH5X25 |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2525M-3T10         | ●          | ● | 25             | -   | 25  | 150  |      |      | 23.8 |        | HH5X16 |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
| 20         |                        | KGD <sup>R/L</sup> | 1616H-3T20         | ●          | ● | 16             | 4.0 | 16  | 100  | 34.2 | 34.5 | 14.8 | 20     | HH5X16 |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2012K-3T20         | ●          | ● | 20             | -   | 12  | 125  | 34.5 | -    | 10.8 |        | HH5X25 |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2020K-3T20         | ●          | ● |                |     | 20  | 125  |      |      | 18.8 |        |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2525M-3T20         | ●          | ● |                |     | 25  | 150  |      |      | 35.5 |        |        | 23.8 |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
| 4          |                        | 10                 | KGD <sup>R/L</sup> | 2020K-4T10 | ● | ●              | 20  | -   | 20   | 125  | 30.5 | -    | 18.3   |        | 3.4  | 10     | 4.0          | 5.0                                                                                 | HH5X16                                                                              |      | LW-4 |     |     |        |
|            |                        |                    |                    | 2525M-4T10 | ● | ●              | 25  |     | 25   | 150  |      |      | 23.3   |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            | 20                     | KGD <sup>R/L</sup> | 2020K-4T20         | ●          | ● | 20             | 20  |     | 125  | 34.5 | -    | 18.3 | 20     | HH5X16 |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2525M-4T20         | ●          | ● | 25             | 25  |     | 150  | 35.5 |      | 23.3 |        | HH5X25 |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            | 25                     | KGD <sup>R/L</sup> | 2525M-4T25         | ●          | ● | 25             | 25  |     | 150  | 40.5 | 23.3 | 25   | HH5X25 |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
| 5          | 10                     | KGD <sup>R/L</sup> | 2020K-5T10         | ●          | ● | 20             | 20  | 125 | 30.5 | -    | 17.8 | 4.4  | 10     | 5.0    | 6.0  | HH5X16 | LW-4         |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2525M-5T10         | ●          | ● | 25             | 25  | 150 |      |      | 22.8 |      |        |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            | 17                     | KGD <sup>R/L</sup> | 2020K-5T17         | ●          | ● | 20             | 20  | 125 | 37.5 | -    | 17.8 |      | 17     |        |      | HH5X25 |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            |                        |                    | 2525M-5T17         | ●          | ● | 25             | 25  | 150 |      |      | 22.8 |      |        |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
|            | 25                     | KGD <sup>R/L</sup> | 2525M-5T25         | ●          | ● | 25             | 25  | 150 | 40.5 | 22.8 | 25   |      |        |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |
| 6          | 15                     | KGD <sup>R/L</sup> | 2525M-6T15         | ●          | ● | 25             | -   | 25  | 150  | 32.5 | -    | 22.4 | 5.3    | 15     | 6.0  | 6.0    | HH5X25       | LW-4                                                                                |                                                                                     |      |      |     |     |        |
|            | 30                     | KGD <sup>R/L</sup> | 2525M-6T30         | ●          | ● | 25             |     | 25  | 150  | 45.5 |      | 22.4 |        |        |      |        | 30           |                                                                                     |                                                                                     |      |      |     |     |        |
| 8          | 25                     | KGD <sup>R/L</sup> | 2525M-8T25         | ●          | ● | 25             | 7.0 | 25  | 150  | 43.3 | 44.2 | 22.0 | 6.0    | 25     | 8.0  | 8.0    | HH6X25       | LW-5                                                                                |                                                                                     |      |      |     |     |        |
|            |                        |                    | 3232P-8T25         | ●          | ● | 32             | -   | 32  | 170  |      | -    | 29.0 |        |        |      |        |              |                                                                                     |                                                                                     |      |      |     |     |        |

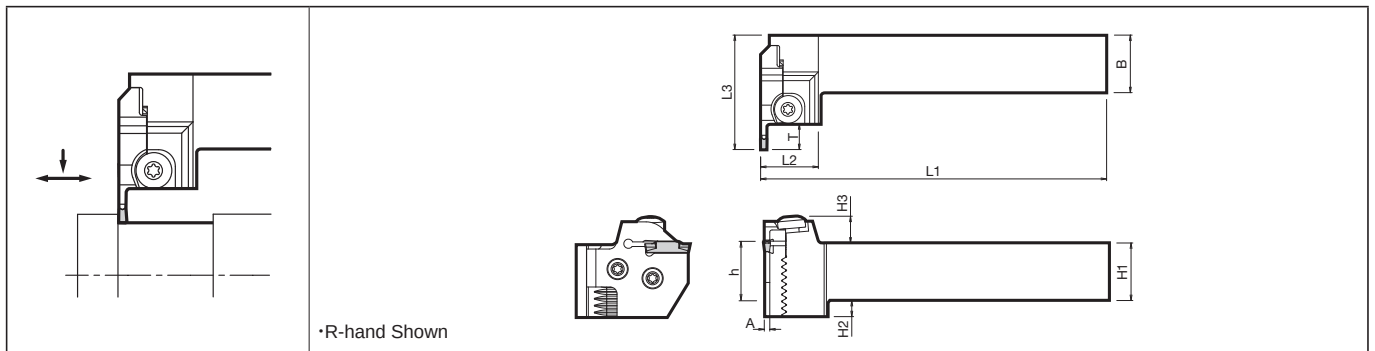
Note) 1. Dimension T: Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum depth of groove made by the 2-edge insert will be 18 mm.)

● : Std. Item  
□ : Check Availability

## KGD-S (0° separate type)



## KGDS-S (90° separate type)



### Toolholder Dimensions (Toolholder+Blade)

| Shank Angle | Width (mm) | Max. depth of cut (mm) | Unit Description<br>(Standard Stock Description) | Std.        |   | Toolholder Description<br>🌀 G28 | Blade Description<br>🌀 G28  | Dimension (mm) |                            |      |     |      |      |    |      |     |     |     | Width W (mm) |     |      |
|-------------|------------|------------------------|--------------------------------------------------|-------------|---|---------------------------------|-----------------------------|----------------|----------------------------|------|-----|------|------|----|------|-----|-----|-----|--------------|-----|------|
|             |            |                        |                                                  | R           | L |                                 |                             | H1=h           | H2                         | H3   | B   | L1   | L2   | L3 | F1   | A   | T   | MIN | MAX          |     |      |
| 0°          | 2          | 17                     | KGD <sup>R/L</sup> 2020X-2T17S                   | ●           | ● | KGD <sup>R/L</sup> 2020-C       | KGD <sup>R/L</sup> -2T17-C  | 20             | 12                         | 11.6 | 20  | 122  | 39.9 | -  | 23.4 | 1.7 | 17  | 2.0 | 3.0          |     |      |
|             |            |                        |                                                  | 2525X-2T17S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 2525-C  |      | 25  | 7    |      |    | 25   |     |     |     |              | 147 | 28.4 |
|             | 3          | 10                     | KGD <sup>R/L</sup> 2020X-3T10S                   | ●           | ● | KGD <sup>R/L</sup> 2020-C       | KGD <sup>R/L</sup> -3T10-C  | 20             | 12                         |      | 20  | 115  | 32.9 |    | 23.0 | 2.4 | 10  | 3.0 | 4.0          |     |      |
|             |            |                        |                                                  | 2525X-3T10S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 2525-C  |      | 25  | 7    |      |    | 25   |     |     |     |              | 140 | 28.0 |
|             |            |                        |                                                  | 3232X-3T10S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 3232-C  |      | 32  | -    |      |    | 32   |     |     |     |              | 160 | 33.0 |
|             |            | 20                     | KGD <sup>R/L</sup> 2020X-3T20S                   | ●           | ● | KGD <sup>R/L</sup> 2020-C       | KGD <sup>R/L</sup> -3T20-C  | 20             | 12                         |      | 20  | 125  | 42.9 |    | 23.0 |     | 20  |     |              |     |      |
|             |            |                        |                                                  | 2525X-3T20S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 2525-C  |      | 25  | 7    |      |    | 25   |     |     |     |              | 150 | 28.0 |
|             |            |                        |                                                  | 3232X-3T20S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 3232-C  |      | 32  | -    |      |    | 32   |     |     |     |              | 170 | 33.0 |
|             | 4          | 10                     | KGD <sup>R/L</sup> 2020X-4T10S                   | ●           | ● | KGD <sup>R/L</sup> 2020-C       | KGD <sup>R/L</sup> -4T10-C  | 20             | 12                         |      | 20  | 115  | 32.9 |    | 22.5 | 3.4 | 10  | 4.0 | 5.0          |     |      |
|             |            |                        |                                                  | 2525X-4T10S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 2525-C  |      | 25  | 7    |      |    | 25   |     |     |     |              | 140 | 27.5 |
|             |            |                        |                                                  | 3232X-4T10S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 3232-C  |      | 32  | -    |      |    | 32   |     |     |     |              | 160 | 32.5 |
|             |            | 20                     | KGD <sup>R/L</sup> 2020X-4T20S                   | ●           | ● | KGD <sup>R/L</sup> 2020-C       | KGD <sup>R/L</sup> -4T20-C  | 20             | 12                         |      | 20  | 125  | 42.9 |    | 22.5 |     | 20  |     |              |     |      |
|             |            |                        |                                                  | 2525X-4T20S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 2525-C  |      | 25  | 7    |      |    | 25   |     |     |     |              | 150 | 27.5 |
|             |            |                        |                                                  | 3232X-4T20S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 3232-C  |      | 32  | -    |      |    | 32   |     |     |     |              | 170 | 32.5 |
|             |            | 25                     | KGD <sup>R/L</sup> 2020X-4T25S                   | ●           | ● | KGD <sup>R/L</sup> 2020-C       | KGD <sup>R/L</sup> -4T25-C  | 20             | 12                         |      | 20  | 130  | 47.9 |    | 22.5 |     | 25  |     |              |     |      |
|             |            |                        |                                                  | 2525X-4T25S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 2525-C  |      | 25  | 7    |      |    | 25   |     |     |     |              | 155 | 27.5 |
|             |            |                        |                                                  | 3232X-4T25S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 3232-C  |      | 32  | -    |      |    | 32   |     |     |     |              | 175 | 32.5 |
|             | 5          | 10                     | KGD <sup>R/L</sup> 2020X-5T10S                   | ●           | ● | KGD <sup>R/L</sup> 2020-C       | KGD <sup>R/L</sup> -5T10-C  | 20             | 12                         |      | 20  | 115  | 32.9 |    | 22.0 | 4.4 | 10  | 5.0 | 6.0          |     |      |
|             |            |                        |                                                  | 2525X-5T10S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 2525-C  |      | 25  | 7    |      |    | 25   |     |     |     |              | 140 | 27.0 |
|             |            |                        |                                                  | 3232X-5T10S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 3232-C  |      | 32  | -    |      |    | 32   |     |     |     |              | 160 | 32.0 |
|             |            | 25                     | KGD <sup>R/L</sup> 2020X-5T25S                   | ●           | ● | KGD <sup>R/L</sup> 2020-C       | KGD <sup>R/L</sup> -5T25-C  | 20             | 12                         |      | 20  | 130  | 47.9 |    | 22.0 |     | 25  |     |              |     |      |
|             |            |                        |                                                  | 2525X-5T25S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 2525-C  |      | 25  | 7    |      |    | 25   |     |     |     |              | 155 | 27.0 |
|             |            |                        |                                                  | 3232X-5T25S | ● |                                 |                             | ●              | KGD <sup>R/L</sup> 3232-C  |      | 32  | -    |      |    | 32   |     |     |     |              | 175 | 32.0 |
| 90°         | 3          | 10                     | KGDS <sup>R/L</sup> 2020X-3T10S                  | ●           | ● | KGDS <sup>R/L</sup> 2020-C      | KGDS <sup>R/L</sup> -3T10-C | 20             | 12                         | 20   | 125 | 25.1 | 49.7 | -  | 2.4  | 10  | 3.0 | 4.0 |              |     |      |
|             |            |                        |                                                  | 2525X-3T10S | ● |                                 |                             | ●              | KGDS <sup>R/L</sup> 2525-C | 25   | 7   |      |      |    |      |     |     |     | 25           | 150 |      |

Note) 1. When using the toolholder in normal mounting position, the lower jaw of toolholder may interfere with the tool presetter.

2. The toolholder and blade Description are printed on the toolholder body. (Unit description is not printed.)

KGDS-S: R-hand Blade for R-hand Toolholder, L-hand Blade for L-hand Toolholder.

KGDS-S: L-hand Blade for R-hand Toolholder, R-hand Blade for L-hand Toolholder.

Combination of the optional toolholder (KGD...-C) and blade (KGD...-C) (both separately sold) can make up the corresponding assembly part.

Make sure of the "hand of toolholder" and "hand of blade".

3. Dimension T: Maximum depth to which processing can be made. (If the dimension T is 20 mm or more, the maximum depth of groove made by the 2-corner insert will be 18 mm.)

● : Std. Item

G



Grooving

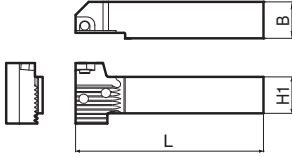


G27

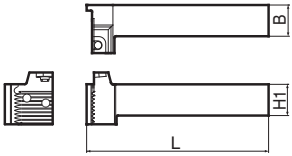
# Toolholders for Grooving and Cut-off

## ● Toolholder

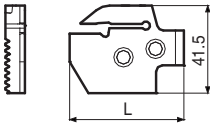
### KG-D-S (0° separate type)

| Shape of 0° type<br>R-hand Shown                                                  | Description   | Std. |   | Dimension |    |    |  |  |
|-----------------------------------------------------------------------------------|---------------|------|---|-----------|----|----|--|--|
|                                                                                   |               | R    | L | L         | B  | H1 |  |  |
|  | KGDR/L 2020-C | ●    | ● | 104       | 20 | 20 |  |  |
|                                                                                   | 2525-C        | ●    | ● | 129       | 25 | 25 |  |  |
|                                                                                   | 3232-C        | ●    | ● | 149       | 32 | 32 |  |  |

### KGDS-S (90° separate type)

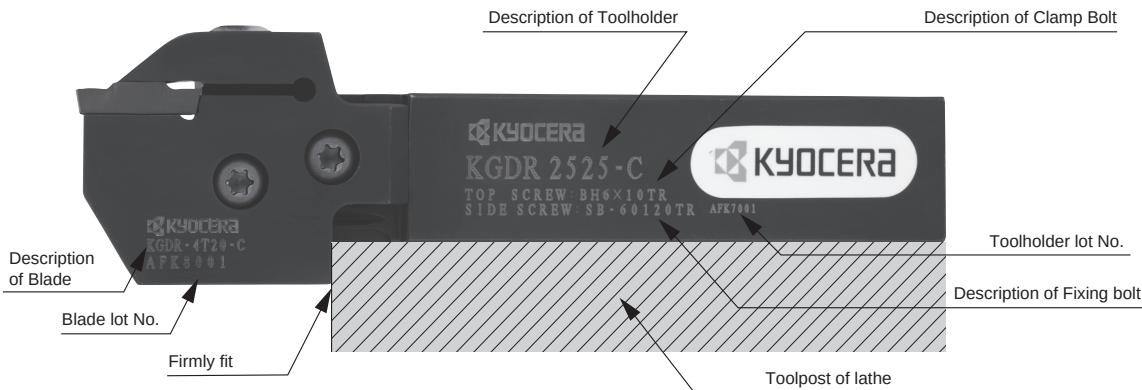
| Shape of 90° type<br>R-hand Shown                                                 | Description    | Std. |   | Dimension |    |    |  |  |
|-----------------------------------------------------------------------------------|----------------|------|---|-----------|----|----|--|--|
|                                                                                   |                | R    | L | L         | B  | H1 |  |  |
|  | KGDSR/L 2020-C | ●    | ● | 122       | 20 | 20 |  |  |
|                                                                                   | 2525-C         | ●    | ● | 147       | 25 | 25 |  |  |

## ● Blade

| Shape of Blade<br>R-hand Shown                                                      | Blade Description | Std. |   | Dimension |      |     |     |
|-------------------------------------------------------------------------------------|-------------------|------|---|-----------|------|-----|-----|
|                                                                                     |                   | R    | L | L         | T    | A   |     |
|  | KGDR/L -2T17-C    | ●    | ● | 51.2      | 17.2 | 1.7 |     |
|                                                                                     | -3T10-C           | ●    | ● | 44.2      | 10.2 |     | 2.4 |
|                                                                                     | -3T20-C           | ●    | ● | 53.2      | 20.2 |     |     |
|                                                                                     | -4T10-C           | ●    | ● | 44.2      | 10.2 |     | 3.4 |
|                                                                                     | -4T20-C           | ●    | ● | 54.2      | 20.2 |     |     |
|                                                                                     | -4T25-C           | ●    | ● | 59.2      | 25.2 |     |     |
|                                                                                     | -5T10-C           | ●    | ● | 44.2      | 10.2 |     | 4.4 |
|                                                                                     | -5T25-C           | ●    | ● | 59.2      | 25.2 |     |     |

## ■ Separate type Toolholder Identification System and Their Setting to Lathe

- Firmly fit the lower jaw to the tool post of the lathe.



## ● Spare Parts (Common with separate types)

\* The parts are included in the toolholder.

| Unit Description | Spare Parts                                                                        |                                                                                     |                                                                                     |
|------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                  | Clamp Bolt (for Insert Clamp)                                                      | Fixing bolt (for blade)                                                             | Wrench                                                                              |
|                  |  |  |  |
| KGDR/L.....S     | BH6X10TR                                                                           | SB-60120TR                                                                          | LTW-25                                                                              |

## ■ Setting the blade (Separate type toolholder)

1. Use compressed air or other measures to remove chips and dust from the serration part (see Fig. 4).
2. Mate and fit the serrations of the blade and toolholder, and also fit the blade end to the toolholder.
3. Tighten the blade fixing screws at an appropriate torque (Recommended tightening torque: 8N·m). You can tighten them in any order.
4. Set the insert after setting the blade.

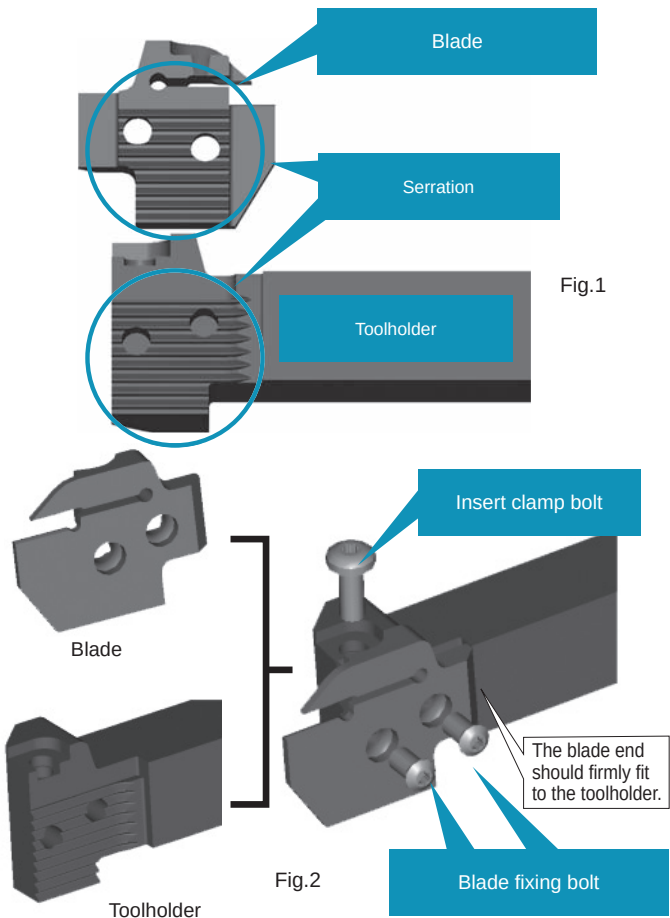


Fig.1

Fig.2

● : Std. Item

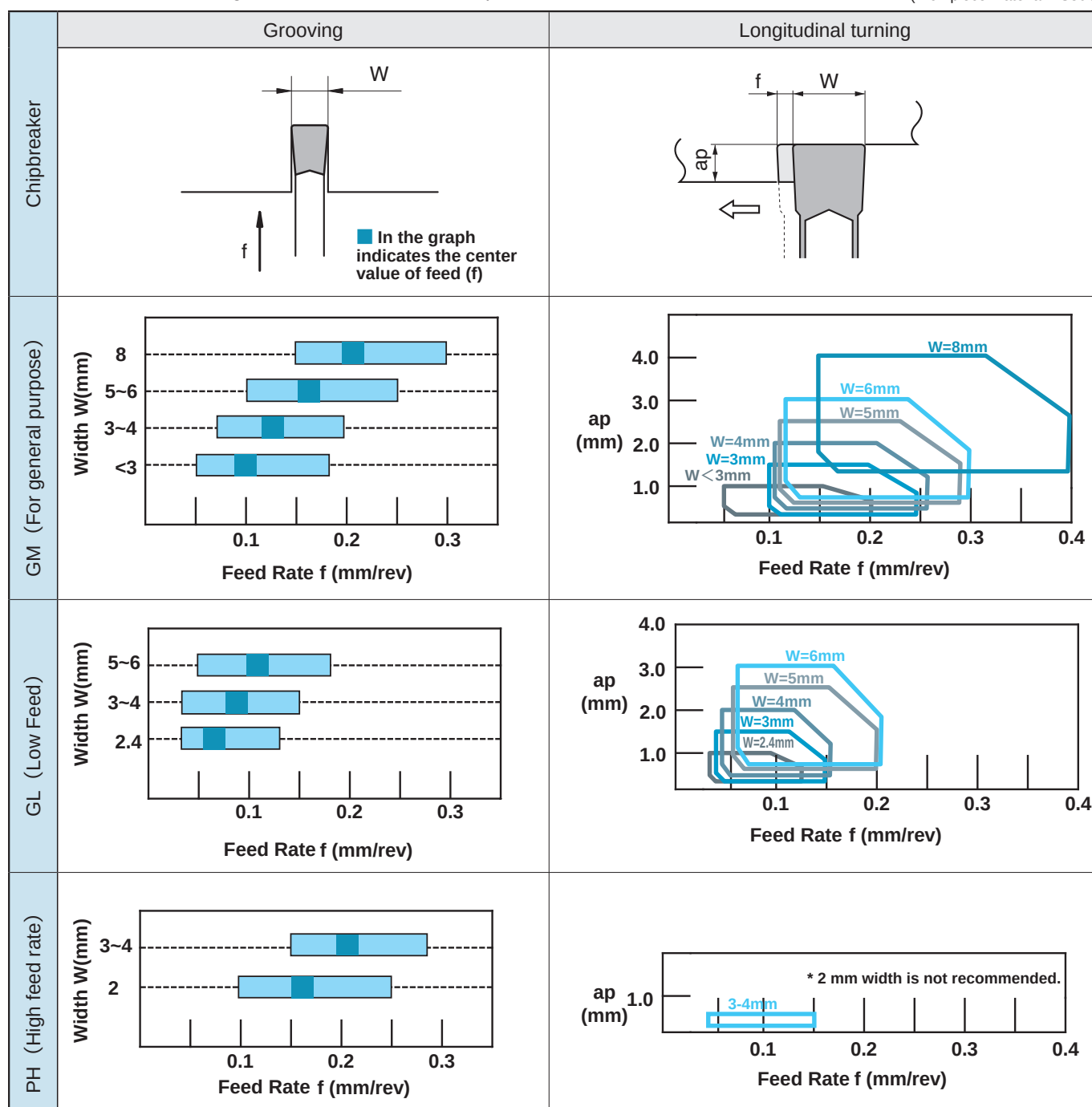
# Recommended Cutting Conditions

## Recommended Cutting Conditions (Vc)

| Workpiece Material            | Chipbreaker                      | Recommended Insert Grade (Vc :m/min) |             |              |              | Remarks |
|-------------------------------|----------------------------------|--------------------------------------|-------------|--------------|--------------|---------|
|                               |                                  | Cermet                               | MEGACOAT    |              | Carbide      |         |
|                               |                                  | TN90                                 | PR1225      | PR1215       | GW15         |         |
| Carbon Steel (SxxC etc.)      | GM<br>GL<br>CM<br>PH<br>GS<br>PM | ☆<br>100~220                         | ★<br>80~200 | ☆<br>100~200 | -            | Coolant |
| Alloy Steel (SCM etc.)        |                                  | ☆<br>80~200                          | ★<br>70~180 | ☆<br>80~180  | -            |         |
| Stainless Steel (SUS304 etc.) |                                  | ☆<br>70~180                          | ★<br>60~150 | ☆<br>60~150  | -            |         |
| Cast Iron (FC/FCD etc.)       |                                  | -                                    | -           | ★<br>100~200 | -            |         |
| Aluminum                      |                                  | -                                    | -           | -            | ★<br>200~500 |         |
| Brass                         |                                  | -                                    | -           | -            | ★<br>100~200 |         |

## Recommended Cutting Conditions (Feed Rate / ap) ★ : 1st Recommendation ☆ : 2nd Recommendation

(Workpiece Material : S50C)



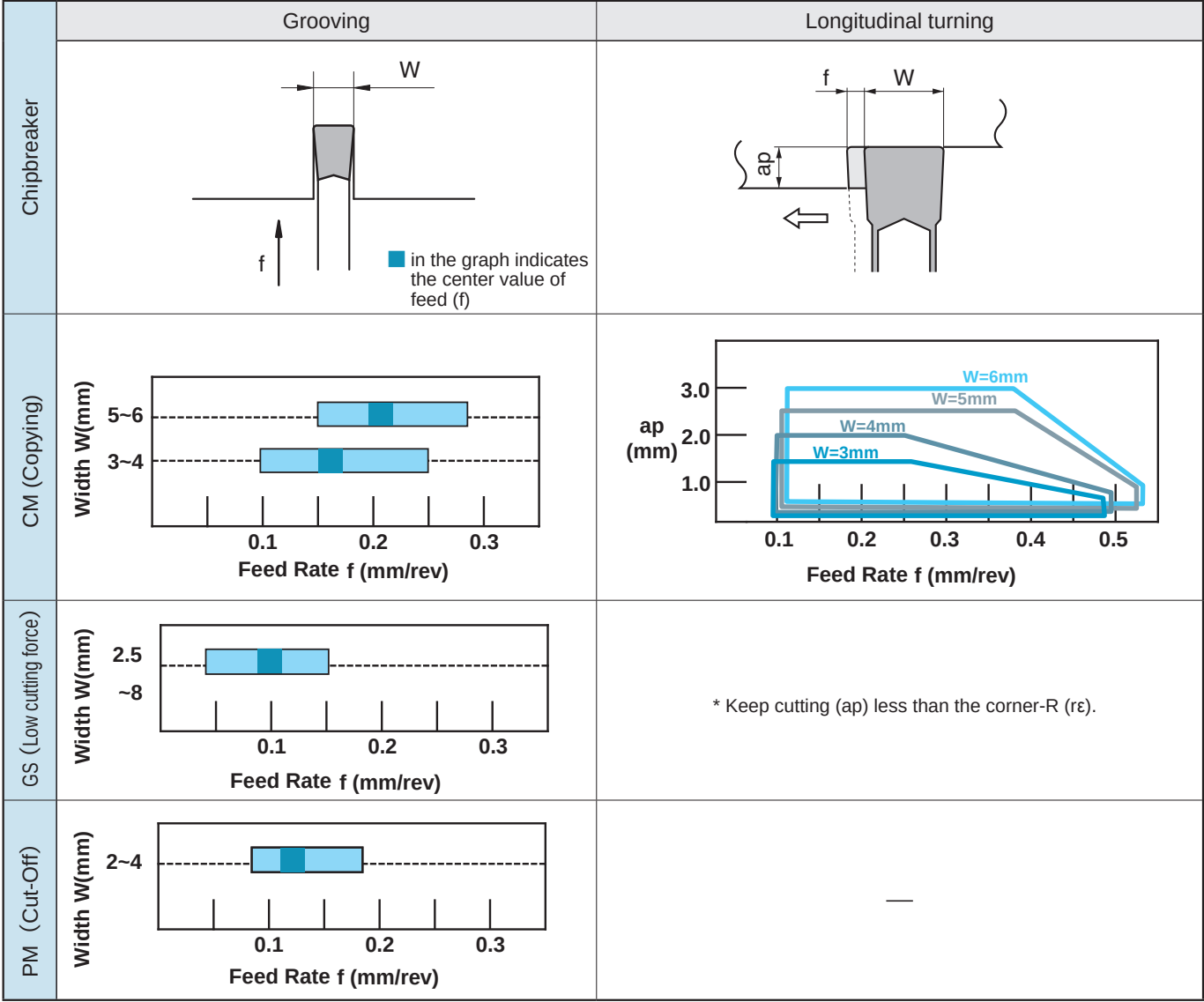
- 1) The above values are based on the condition that the dimension T of toolholder is 17 mm or less.
- 2) If the toolholder is not for the 8 mm width insert and its dimension T is over 17 mm, set the values for Longitudinal turning to less than 90% of those above.

G



Grooving

# Recommended Cutting Conditions

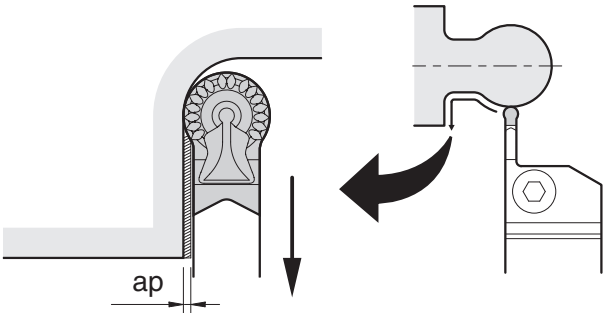


- 1) The above values are based on the condition that the dimension T of toolholder is 17 mm or less.  
2) If the toolholder is not for the 8 mm width insert and its dimension T is over 17 mm, set the values for traversing to less than 90% of those above.

## ◆ CM Chipbreakers [Cutting amount (ap) in back copying]

- Estimated maximum cutting amount (ap) in back copying

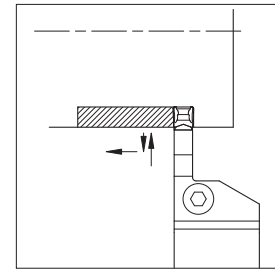
| Description |               | Max ap (ap : mm)    |              |              |              |              |
|-------------|---------------|---------------------|--------------|--------------|--------------|--------------|
|             |               | Toolholder part No. |              |              |              |              |
|             |               | KGD...-2T...        | KGD...-3T... | KGD...-4T... | KGD...-5T... | KGD...-6T... |
| GDM         | 3020N-150R-CM | 0.24                | 0.20         | -            | -            | -            |
|             | 4020N-200R-CM | -                   | 0.24         | 0.20         | -            | -            |
|             | 5020N-250R-CM | -                   | -            | 0.30         | 0.20         | -            |
|             | 6020N-300R-CM | -                   | -            | -            | 0.30         | 0.25         |



## Guide for External Machining

### ● Point (I) (Longitudinal turning after Grooving)

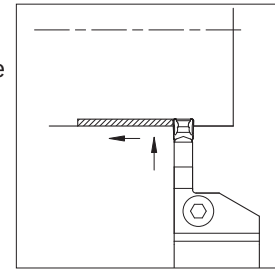
- 1) Grooving Depth Over 0.5mm: For roughing (Refer to Fig. 1)  
Before longitudinal turning, pull the tool back about 0.1mm after grooving, instead of longitudinal turning subsequent to grooving.  
(Failure to pull the tool back before traverse cutting will result in an unbalanced load applied on only one side of the cutting edge.)



Before Longitudinal turning, pull the tool back about 0.1mm after grooving, instead of Longitudinal turning subsequent to grooving. (Grooving Depth Over 0.5mm: At roughing)

Fig.1

- 2) Grooving Depth under 0.5mm: For finishing (Refer to Fig. 2)  
Longitudinal turning subsequent to grooving is possible because shallow groove depths relate a small load on the cutting edge.  
(Dwell-motion is not necessary.)



Traversing subsequent to grooving (Grooving Depth under 0.5mm: At finishing)

Fig.2

### ● Point (II)

- 1) When widening the groove width (Refer to Fig. 3)  
Apply the "Step Turning".
  - 2) Then perform finishing.  
(For better chip control, over 0.5 mm ap is recommended.)
- Note) If machining is made toward the center but the center is not pressed, lower the feed rate.

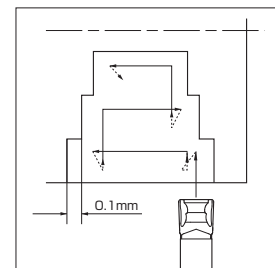


Fig.3

G

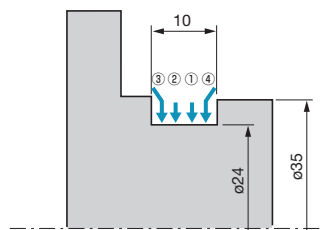


Grooving

## Case Studies

### 17Cr3 (SCr420H) (Grooving)

·Gear  
·Vc=113~164 m/min  
·f=0.06 mm/rev  
·Wet  
·GDM4020N-040GM (PR1225)  
·KGDL2525X-3T10S



GM Chipbreaker (PR1225)

1500 pcs/C

Competitor K (PVD Coated Carbide)

250 pcs/C

x6 longer life

#### Result

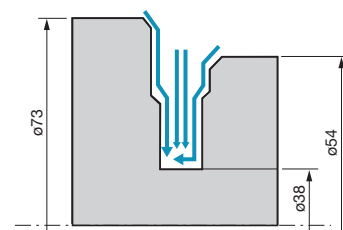
·KGD type grooving toolholder + GM chipbreaker (PR1225) showed 6 times longer tool life than that of Competitor K.  
·Good chip control without burned chips.



(Evaluation by the user)

### 20CrMo5 (SCM420) (Grooving Traversing)

·Gear  
·Vc=170m/min  
·f=0.15 mm/rev(Roughing)  
0.10 mm/rev(Finishing)  
·ap=0.2mm (Finishing)  
·Wet  
·GDM4020N-040GM (PR1215)  
·KGDR2525X-4T20S



GM Chipbreaker (PR1215)

250 pcs/C

Competitor L (Roughing: PVD Coated Carbide) (Finishing: Cermet)

200 pcs/C

#### Result

·GM chipbreaker reduced occurrence rate of tangle of chips (occurrence rate 80% => 10%). The problem was persistent with Competitor L. Machining productivity is improved.



Chips easily tangled Competitor L (Finishing) Smooth chip control GM Chipbreaker (Finishing)

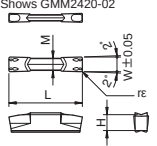
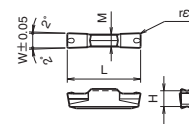
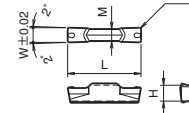
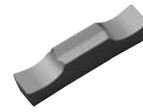
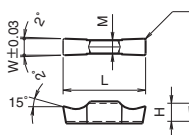
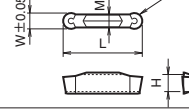
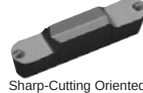
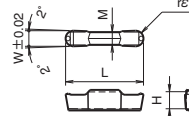
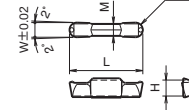
(Evaluation by the user)



# Multi-Function / Grooving (Cut-Off)

## GMM / GMG

| Classification of usage                                                                                                                                        | P | Carbon Steel / Alloy Steel   |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|---|------------------------------|--|--|--|--|--|--|--|--|
|                                                                                                                                                                | M | Stainless Steel              |  |  |  |  |  |  |  |  |
| ● : Continuous-Light Interruption / 1st Choice<br>☉ : Continuous-Light Interruption / 2nd Choice<br>● : Continuous / 1st Choice<br>○ : Continuous / 2nd Choice | K | Cast Iron                    |  |  |  |  |  |  |  |  |
|                                                                                                                                                                | N | Non-ferrous Metals           |  |  |  |  |  |  |  |  |
|                                                                                                                                                                | S | Titanium Alloy               |  |  |  |  |  |  |  |  |
|                                                                                                                                                                | H | Hard materials (under 40HRC) |  |  |  |  |  |  |  |  |
|                                                                                                                                                                |   | Hard materials (over 40HRC)  |  |  |  |  |  |  |  |  |

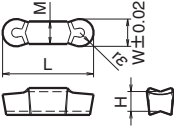
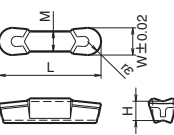
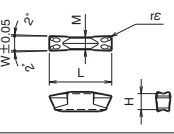
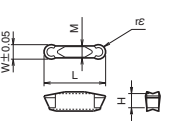
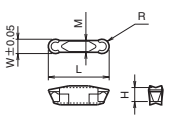
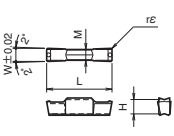
| Insert<br><br>R-hand shown                                                                                                                                 |                                                                                                                | Description    | (Previous Description) | Dimension (mm) |     |     |    |     | TN90 | CVD<br>CR9025 | PVD<br>Coated Carbide |       |       |                   | Ref. Page |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------|------------------------|----------------|-----|-----|----|-----|------|---------------|-----------------------|-------|-------|-------------------|-----------|
|                                                                                                                                                            |                                                                                                                |                |                        | W              | ε   | M   | L  | H   |      |               | PR915                 | PR930 | PR905 | KW10              |           |
| <br><br>Chip Control Oriented<br>M Class                                  | <br><br>Shows GMM2420-02      | GMM 2420-020MW | GMM 2420-02            | 2.4            | 0.2 | 1.9 | 20 | 4.3 | ●    | ●             | ●                     | ●     | ●     | G36,G37           |           |
|                                                                                                                                                            |                                                                                                                | 3020-020MW     | 3020-02                | 3.0            | 0.2 | 2.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 3020-040MW     | 3020-04                |                | 0.4 |     |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 4020-020MW     | 4020-02                |                | 0.2 |     |    |     | ●    | ●             | ●                     | ●     | ●     | G36<br>G37<br>G38 |           |
|                                                                                                                                                            |                                                                                                                | 4020-040MW     | 4020-04                | 4.0            | 0.4 | 3.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 4020-080MW     | 4020-08                |                | 0.8 |     |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 5020-040MW     | 5020-04                | 5.0            | 0.4 | 4.2 |    |     | ●    | ●             | ●                     | ●     | ●     | G36<br>G37        |           |
|                                                                                                                                                            |                                                                                                                | 5020-080MW     | 5020-08                |                | 0.8 |     |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 6020-040MW     | 6020-04                | 6.0            | 0.4 | 5.2 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 6020-080MW     | 6020-08                |                | 0.8 |     |    |     | ●    | ●             | ●                     | ●     | ●     | G36<br>G37        |           |
| 8030-080MW                                                                                                                                                 | 8030-08                                                                                                        | 8.0            | 0.8                    | 6.0            | 30  | 5.5 | ●  | ●   | ●    | ●             | G36,G59               |       |       |                   |           |
| <br><br>Sharp-Cutting Oriented<br>M Class                                 | <br><br>Shows GMM3020-02MS   | GMM 3020-020MS | GMM 3020-02MS          | 3.0            | 0.2 | 2.3 | 20 | 4.3 | ●    | ●             | ●                     | ●     | ●     | G36<br>G37<br>G38 |           |
|                                                                                                                                                            |                                                                                                                | 3020-040MS     | 3020-04MS              |                | 0.4 |     |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 4020-040MS     | 4020-04MS              | 4.0            |     | 3.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 5020-040MS     | 5020-04MS              | 5.0            | 0.4 | 4.2 |    |     | ●    | ●             | ●                     | ●     | ●     | G36,G37           |           |
|                                                                                                                                                            |                                                                                                                | 6020-040MS     | 6020-04MS              | 6.0            |     | 5.2 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
| <br><br>Sharp-Cutting Oriented<br>Precision Class                       | <br><br>Shows GMG3020-00MS  | GMG 3020-000MS | GMG 3020-00            |                | 0.0 |     | 20 | 4.3 | ●    | ●             | ●                     | ●     | ●     | G36<br>G37<br>G38 |           |
|                                                                                                                                                            |                                                                                                                | 3020-020MS     | 3020-02                | 3.0            | 0.2 | 2.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 3020-040MS     | 3020-04                |                | 0.4 |     |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 4020-020MS     | 4020-02                |                | 0.2 |     |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 4020-040MS     | 4020-04                | 4.0            | 0.4 | 3.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 4020-080MS     | 4020-08                |                | 0.8 |     |    |     | ●    | ●             | ●                     | ●     | ●     | G36<br>G37        |           |
|                                                                                                                                                            |                                                                                                                | 5020-040MS     | 5020-04                | 5.0            | 0.4 | 4.2 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 5020-080MS     | 5020-08                |                | 0.8 |     |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
| 6020-040MS                                                                                                                                                 | 6020-04                                                                                                        | 6.0            | 0.4                    | 5.2            | 20  | 4.3 | ●  | ●   | ●    | ●             | G36<br>G37            |       |       |                   |           |
| 6020-080MS                                                                                                                                                 | 6020-08                                                                                                        |                | 0.8                    |                |     |     | ●  | ●   | ●    | ●             |                       |       |       |                   |           |
| <br><br>Sharp-Cutting Oriented<br>Precision Class<br>Ground Chipbreaker | <br><br>Shows GMG2520-03MG  | GMG 2520-030MG | GMG 2520-03MG          | 2.5            |     | 2.0 | 20 | 4.3 | ●    | ●             | ●                     | ●     | ●     | G36,G37           |           |
|                                                                                                                                                            |                                                                                                                | 3020-030MG     | 3020-03MG              | 3.0            | 0.3 | 2.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 3520-030MG     | 3520-03MG              | 3.5            |     | 2.8 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 4020-040MG     | 4020-04MG              | 4.0            |     | 3.3 |    |     | ●    | ●             | ●                     | ●     | ●     | G36,G37           |           |
|                                                                                                                                                            |                                                                                                                | 5020-040MG     | 5020-04MG              | 5.0            | 0.4 | 4.2 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 6020-040MG     | 6020-04MG              | 6.0            |     | 5.2 |    |     | ●    | ●             | ●                     | ●     | ●     | G36,G37           |           |
|                                                                                                                                                            |                                                                                                                | 8030-050MG     | 8030-05MG              | 8.0            | 0.5 | 6.0 |    |     | 30   | 5.5           | ●                     | ●     | ●     | ●                 | G36,G59   |
| <br><br>Chip Control Oriented<br>M Class Full-R / Copying               | <br><br>Shows GMM3020-150R  | GMM 3020-150R  | GMM 3020-15R           | 3.0            | 1.5 | 2.3 | 20 | 4.3 | ●    | ●             | ●                     | ●     | ●     | G36<br>G37<br>G38 |           |
|                                                                                                                                                            |                                                                                                                | 4020-200R      | 4020-20R               | 4.0            | 2.0 | 3.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 5020-250R      | 5020-25R               | 5.0            | 2.5 | 4.2 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 6020-300R      | 6020-30R               | 6.0            | 3.0 | 5.2 |    |     | ●    | ●             | ●                     | ●     | ●     | G36,G37           |           |
| <br><br>Sharp-Cutting Oriented<br>Precision Class<br>Full-R / Copying   | <br><br>Shows GMG3020-150R  | GMG 3020-150R  | GMG 3020-15R           | 3.0            | 1.5 | 2.3 | 20 | 4.3 | ●    | ●             | ●                     | ●     | ●     | G36<br>G37<br>G38 |           |
|                                                                                                                                                            |                                                                                                                | 4020-200R      | 4020-20R               | 4.0            | 2.0 | 3.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 5020-250R      | 5020-25R               | 5.0            | 2.5 | 4.2 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 6020-300R      | 6020-30R               | 6.0            | 3.0 | 5.2 |    |     | ●    | ●             | ●                     | ●     | ●     | G36,G37           |           |
| <br><br>Undercutting<br>Chip Control Oriented                           | <br><br>Shows GMG3020-150RU | GMG 3020-150RU | GMG 3020-15RU          | 3.0            | 1.5 | 2.3 | 20 | 4.3 | ●    | ●             | ●                     | ●     | ●     | G38<br>G39        |           |
|                                                                                                                                                            |                                                                                                                | 4020-200RU     | 4020-20RU              | 4.0            | 2.0 | 3.3 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |
|                                                                                                                                                            |                                                                                                                | 5020-250RU     | 5020-25RU              | 5.0            | 2.5 | 4.2 |    |     | ●    | ●             | ●                     | ●     | ●     |                   |           |

For recommended cutting conditions, see page [G93](#)

Inserts are sold  
in 10 piece boxes.

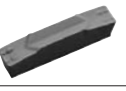
● : Std. Item   □ : Check Availability   R : Std. Item (R-hand Only)   L : Std. Item (L-hand Only)

## GMM / GMGA / FGG

| Insert                                                                                                                                            |                                                                                     | Description                                      | (Previous Description) | Dimension (mm) |     |     |    |     | Cermel<br>TN90 | CVD<br>CR9025 | PVD<br>PR915 | PVD<br>PR930 | Carbide<br>KW10 | Ref. Page for Toolholder |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------|------------------------|----------------|-----|-----|----|-----|----------------|---------------|--------------|--------------|-----------------|--------------------------|
|                                                                                                                                                   |                                                                                     |                                                  |                        | W              | re  | M   | L  | H   |                |               |              |              |                 |                          |
| R-hand shown                                                                                                                                      |                                                                                     |                                                  |                        |                |     |     |    |     |                |               |              |              |                 |                          |
| <br>Sharp-Cutting Oriented / Precision Class<br>Full-R / Copying |    | GMGA 6020-300R                                   | GMGA 6020-30R          | 6.0            | 3.0 | 4.3 | 20 | 4.3 |                |               |              |              |                 | G37                      |
|                                                                                                                                                   |                                                                                     |                                                  |                        |                |     |     |    |     |                |               |              |              |                 |                          |
| <br>Sharp-Cutting Oriented / Precision Class<br>Full-R / Copying |    | GMGA 8030-400R                                   | GMGA 8030-40R          | 8.0            | 4.0 | 6.0 | 30 | 5.5 |                |               |              |              |                 | G37<br>G39               |
|                                                                                                                                                   |                                                                                     |                                                  |                        |                |     |     |    |     |                |               |              |              |                 |                          |
| <br>Chip Control Oriented<br>M Class                             |    | GMM 3014-04                                      | -                      | 3.0            | 0.4 | 2.3 | 14 | 4.3 |                |               |              |              |                 | G38                      |
|                                                                                                                                                   |                                                                                     |                                                  |                        |                |     |     |    |     |                |               |              |              |                 |                          |
| <br>Chip Control Oriented / M Class<br>Full-R / Copying         |   | GMM 3014-15R                                     | -                      | 3.0            | 1.5 | 2.3 | 14 | 4.3 |                |               |              |              |                 | G38                      |
|                                                                                                                                                   |                                                                                     |                                                  |                        |                |     |     |    |     |                |               |              |              |                 |                          |
| <br>Undercutting<br>Chip Control Oriented                      |  | GMM 3014-15RU                                    | -                      | 3.0            | 1.5 | 2.3 | 14 | 4.3 |                |               |              |              |                 | G38                      |
|                                                                                                                                                   |                                                                                     |                                                  |                        |                |     |     |    |     |                |               |              |              |                 |                          |
| <br>Face Grooving<br>Chip Control Oriented<br>Precision Class  |  | FGG <sup>R/L</sup> 3020-02<br>4020-04<br>5020-04 | -                      | 3.0            | 0.2 | 2.3 | 20 | 4.3 |                |               |              |              |                 | G38                      |
|                                                                                                                                                   |                                                                                     |                                                  |                        | 4.0            | 0.4 | 3.3 |    |     |                |               |              |              |                 |                          |
|                                                                                                                                                   |                                                                                     |                                                  |                        | 5.0            | 0.4 | 4.2 |    |     |                |               |              |              |                 |                          |

For recommended cutting conditions, see page [G91~G93](#)

## Multi-Function Tool CERACUT Plunge &amp; Turn Chipbreakers

| Series           | Shape                                                                               | Features                                                                                         |
|------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| GMM-MW           |  | Excellent chip evacuation at Grooving, Longitudinal turning, Cut-Off.                            |
| GMG-MG           |  | Low cutting force with ground chipbreaker.                                                       |
| GMG-MS<br>GMM-MS |  | Grooving / Longitudinal turning / Cut-Off operations are minimum cutting force at Positive Edge. |
| GMM-MT           |  | Small corner-R(re) and minimize the core which remains in the center of the face.                |
| GMM-TK           |  | Large corner-R(re) and stable performance at cut off.                                            |
| GMM-NB           |  | Flat rake face and non-chipbreaker. It works well for brass.                                     |

## ◆ Edge Preparation

| Edge Preparation         | Chamfer + R-honed<br>Corner-R(re) = 0.05                                              | Chamfer + R-honed<br>Sharp Corner                                                     |
|--------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                          |  |  |
| MT Chipbreaker.          | CR9025 / PR915                                                                        | PR930 / KW10                                                                          |
| Edge Preparation         | Chamfer + R-honed<br>Corner-R(re) = 0.2-0.3                                           | Sharp Edge<br>Corner-R(re) = 0.2-0.3                                                  |
|                          |  |  |
| TK Chipbreaker           | CR9025 / PR915                                                                        | PR930 / KW10                                                                          |
| Edge Preparation         | R Honing<br>Corner-R(re) = 0.05                                                       | Sharp Edge<br>Sharp Corner                                                            |
|                          |  |  |
| Without Chipbreaker (NB) | CR9025                                                                                | PR930 / KW10                                                                          |

\* Sharp Edge Spec. can reduce cutting resistance 40% less than that of chamfer edge.

# Grooving / Cut-Off (Multi-Function)

## GMM / GMN

| Classification of usage                        |                | P    | Steel                        |    |     |           |        | ☺                  | ☹                   |       | Ref. Page for Toolholder |          |   |   |   |
|------------------------------------------------|----------------|------|------------------------------|----|-----|-----------|--------|--------------------|---------------------|-------|--------------------------|----------|---|---|---|
|                                                |                | M    | Stainless Steel              |    |     |           |        | ☹                  | ☺                   |       |                          |          |   |   |   |
| ☺ : Continuous-Light Interruption / 1st Choice |                |      |                              |    |     |           |        |                    |                     |       |                          |          |   |   |   |
| ☺ : Continuous-Light Interruption / 2nd Choice |                |      |                              |    |     |           |        |                    |                     |       |                          |          |   |   |   |
| ☹ : Continuous / 1st Choice                    |                |      |                              |    |     |           |        |                    |                     |       |                          |          |   |   |   |
| ☹ : Continuous / 2nd Choice                    |                |      |                              |    |     |           |        |                    |                     |       |                          |          |   |   |   |
|                                                |                | S    | Titanium Alloy               |    |     |           |        |                    |                     | ☹     |                          |          |   |   |   |
|                                                |                | H    | Hard materials (under 40HRC) |    |     |           |        | ○                  | ●                   |       |                          |          |   |   |   |
|                                                |                |      | Hard materials (over 40HRC)  |    |     |           |        |                    |                     |       |                          |          |   |   |   |
| Description                                    | Dimension (mm) |      |                              |    |     | Angle (°) | Cermet | CVD Coated Carbide | PVD Ccoated Carbide |       |                          | Car-bide |   |   |   |
|                                                | W              | rε   | M                            | L  | H   | θ         | TN90   | CR9025             | PR915               | PR930 | KW10                     |          |   |   |   |
| 1520-MT                                        | 1.5            | 0.0  | 1.2                          | 20 | 4.3 | -         |        |                    |                     | ●     | ●                        |          |   |   |   |
|                                                |                | 0.05 |                              |    |     |           |        |                    | ●                   |       |                          |          |   |   |   |
| 2020-MT                                        | 2.0            | 0.0  | 1.5                          |    |     |           |        |                    |                     |       | ●                        | ●        |   |   |   |
|                                                |                | 0.05 |                              |    |     |           |        | ●                  | ●                   |       |                          |          |   |   |   |
| 2520-MT                                        | 2.5            | 0.0  | 1.9                          |    |     |           |        |                    |                     |       | ●                        | ●        |   |   |   |
|                                                |                | 0.05 |                              |    |     |           |        | ●                  | ●                   |       |                          |          |   |   |   |
| 3020-MT                                        | 3.0            | 0.0  | 2.3                          |    |     |           |        |                    |                     |       | ●                        | ●        |   |   |   |
|                                                |                | 0.05 |                              |    |     |           |        | ●                  | ●                   |       |                          |          |   |   |   |
| 1520 <sup>R/L</sup> -MT-15D                    | 1.5            | 0.0  | 1.2                          | 20 | 4.3 | 15°       |        |                    |                     | ●     | ●                        |          |   |   |   |
|                                                | 0.05           |      |                              |    |     |           |        |                    |                     | R     |                          |          |   |   |   |
| 2020 <sup>R/L</sup> -MT-15D                    | 2.0            | 0.0  |                              |    |     | 1.5       | 15°    |                    |                     |       | ●                        | R        |   | ● |   |
|                                                |                | 0.05 |                              |    |     |           |        | ●                  | R                   |       |                          |          |   |   |   |
| 2520 <sup>R/L</sup> -MT-15D                    | 2.5            | 0.0  |                              |    |     | 1.9       | 15°    |                    |                     |       | ●                        | R        |   | ● |   |
|                                                |                | 0.05 |                              |    |     |           |        | ●                  | R                   |       |                          |          |   |   |   |
| 3020 <sup>R/L</sup> -MT-15D                    | 3.0            | 0.0  |                              |    |     | 2.3       | 15°    |                    |                     |       | ●                        | R        |   | ● |   |
|                                                |                | 0.05 |                              |    |     |           |        | ●                  | R                   |       |                          |          |   |   |   |
| 1520-NB                                        | 1.5            | 0.0  | 1.2                          | 20 | 4.3 | -         |        |                    |                     | ●     | ●                        |          |   |   |   |
|                                                |                | 0.05 |                              |    |     |           |        |                    |                     |       |                          |          |   |   |   |
| 2020-NB                                        | 2.0            | 0.0  |                              |    |     |           | 1.5    |                    |                     |       |                          | ●        |   | ● | ● |
|                                                |                | 0.05 |                              |    |     |           |        |                    |                     |       |                          | ●        |   |   | ● |
| 2520-NB                                        | 2.5            | 0.0  |                              |    |     |           | 1.9    |                    |                     |       |                          | ●        |   | ● | ● |
|                                                |                | 0.05 |                              |    |     |           |        |                    |                     |       |                          | ●        |   |   | ● |
| 3020-NB                                        | 3.0            | 0.0  |                              |    |     |           | 2.3    |                    |                     |       |                          | ●        |   | ● | ● |
|                                                |                | 0.05 |                              |    |     |           |        |                    | ●                   |       |                          |          |   |   |   |
| 2020-TK                                        | 2.0            | 0.20 | 1.5                          | 20 | 4.3 | -         |        |                    | ●                   | ●     | ●                        | ●        |   |   |   |
| 2520-TK                                        | 2.5            | 0.20 |                              |    |     |           | 1.9    | ●                  | ●                   | ●     | ●                        |          |   |   |   |
| 3020-TK                                        | 3.0            | 0.25 |                              |    |     |           | 2.3    | ●                  | ●                   | ●     | ●                        |          |   |   |   |
| 2020 <sup>R/L</sup> -TK-8D                     | 2.0            | 0.20 | 1.5                          | 20 | 4.3 | 8°        |        |                    |                     |       |                          |          |   |   |   |
| 2520 <sup>R/L</sup> -TK-8D                     | 2.5            | 0.20 |                              |    |     |           | 1.9    | R                  | R                   | R     | R                        | R        | R |   |   |
| 3020 <sup>R/L</sup> -TK-8D                     | 3.0            | 0.25 |                              |    |     |           | 2.3    | R                  | R                   | R     | R                        | R        | R |   |   |
| 2-TK                                           | 2.0            | 0.20 | 1.8                          | 20 | 4.3 | -         |        |                    | ●                   | ●     | ●                        | ●        |   |   |   |
| 3-TK                                           | 3.0            | 0.25 |                              |    |     |           | 2.3    | ●                  | ●                   | ●     | ●                        |          |   |   |   |
| 4-TK                                           | 4.0            | 0.30 |                              |    |     |           | 3.3    | ●                  | ●                   | ●     | ●                        |          |   |   |   |
| 2-TK-8D                                        | 2.0            | 0.20 | 1.8                          | 20 | 4.3 | 8°        |        |                    |                     |       |                          |          |   |   |   |
| 3-TK-8D                                        | 3.0            | 0.25 |                              |    |     |           | 2.3    | R                  | R                   | R     | R                        | R        | R |   |   |
| 4-TK-8D                                        | 4.0            | 0.30 |                              |    |     |           | 3.3    | R                  | R                   | R     | R                        | R        | R |   |   |
| 2.2                                            | 2.2            | 0.17 | 1.8                          | 20 | 4.3 | -         | ●      | ●                  |                     | ●     | ●                        |          |   |   |   |
| 3                                              | 3.0            | 0.20 |                              |    |     |           | 2.3    | ●                  | ●                   | ●     | ●                        |          |   |   |   |
| 4                                              | 4.0            | 0.25 |                              |    |     |           | 3.3    | ●                  | ●                   | ●     | ●                        |          |   |   |   |
| 5                                              | 5.0            | 0.8  |                              |    |     |           | 4.2    | □                  | ●                   | ●     | ●                        |          |   |   |   |
| 6                                              | 6.0            | 0.8  |                              |    |     |           | 5.2    | □                  | ●                   | ●     | ●                        |          |   |   |   |
| 2.2-8D                                         | 2.2            | 0.17 | 1.8                          | 20 | 4.3 | 8°        | R      | R                  |                     | ●     | R                        |          |   |   |   |
| 2.2-15D                                        | 2.2            | 0.00 |                              |    |     |           | 1.8    | R                  | R                   | ●     | R                        |          |   |   |   |
| 3-4D                                           | 3.0            | 0.20 |                              |    |     |           | 2.3    | ●                  |                     | ●     |                          |          |   |   |   |
| 3-15D                                          | 3.0            | 0.20 |                              |    |     |           | 2.3    | □                  |                     | ●     |                          |          |   |   |   |
| 4-4D                                           | 4.0            | 0.25 |                              |    |     |           | 3.3    | ●                  |                     | ●     | R                        |          |   |   |   |

For recommended cutting conditions, see page [G93](#)

Inserts are sold  
in 10 piece boxes.

● : Std. Item   □ : Check Availability   R : Std. Item (R-hand Only)   L : Std. Item (L-hand Only)

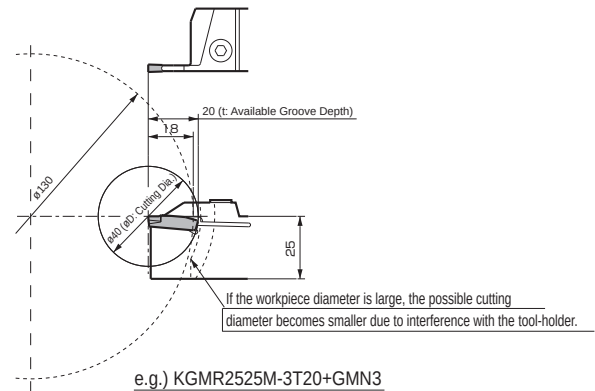
## GMN

| Insert                                                                                                       |  | Description  | Dimension (mm) |                |     |    |     | Angle<br>(°) | CBN    |        |        | PCD    |        | Ref. Page for Toolholder |
|--------------------------------------------------------------------------------------------------------------|--|--------------|----------------|----------------|-----|----|-----|--------------|--------|--------|--------|--------|--------|--------------------------|
|                                                                                                              |  |              | W              | r <sub>ε</sub> | M   | L  | H   |              | KBN10B | KBN510 | KBN525 | KPD001 | KPD010 |                          |
| <br>Deep Grooving<br>1-Edge |  | <b>GMN 2</b> | 2.0            | 0.2<br>0.4     | 1.8 | 20 | 4.3 | -            | ●      | ●      | ●      | ●      | ●      | <b>G37<br/>G38</b>       |
|                                                                                                              |  | <b>3</b>     | 3.0            | 0.2<br>0.4     | 2.3 |    |     |              |        |        |        | ●      | ●      |                          |
|                                                                                                              |  | <b>4</b>     | 4.0            | 0.2<br>0.4     | 3.3 |    |     |              | ●      | ●      | ●      | ●      | ●      |                          |
|                                                                                                              |  | <b>5</b>     | 5.0            | 0.2<br>0.4     | 4.2 |    |     |              | ●      | ●      | ●      | ●      | ●      |                          |
|                                                                                                              |  | <b>6</b>     | 6.0            | 0.2<br>0.4     | 5.2 |    |     |              | ●      | ●      | ●      |        | ●      |                          |
|                                                                                                              |  |              |                |                |     |    |     |              |        |        |        |        |        |                          |

For recommended cutting conditions, see page [G91](#)

### Available cutting diameter of KGM (For automatic lathe) / KGM-T type

- There is a limit to the possible grooving depth depending on the workpiece diameter.



### KGM Possible Cutting Diameter Table

| Toolholder                      |               | øD (Cutting Dia.) |    |    |    |      |     |    |    |    |    |    |     |    |    |    |    |   |
|---------------------------------|---------------|-------------------|----|----|----|------|-----|----|----|----|----|----|-----|----|----|----|----|---|
| KGM&                            | 0810K-1.5-125 | -                 | -  | -  | -  | -    | -   | -  | -  | -  | -  | -  | -   | 10 | 14 | 16 | 32 | ∞ |
|                                 | 1010○-1.5...  | -                 | -  | -  | -  | -    | -   | -  | 20 | 25 | 32 | 40 | 60  | ∞  | ∞  | ∞  | ∞  |   |
|                                 | 1212○-1.5...  | -                 | -  | -  | -  | 25   | 26  | 28 | 32 | 36 | 40 | 60 | 100 |    |    |    |    |   |
|                                 | 0810K-2-125   | -                 | -  | -  | -  | -    | -   | -  | -  | -  | -  | -  | -   | 10 | 14 | 16 | 32 |   |
|                                 | 1010○-2...    | -                 | -  | -  | -  | -    | -   | -  | 20 | 25 | 32 | 40 | 60  |    |    |    |    |   |
|                                 | 1212○-2...    | -                 | -  | -  | -  | 25   | 26  | 28 | 50 |    | ∞  | ∞  | ∞   | ∞  |    |    |    |   |
|                                 | 1616○-2...    | 32                | 40 | 50 | 60 | 80   | 100 | ∞  | ∞  |    |    |    |     |    |    |    |    |   |
|                                 | 1010○-2.5...  | -                 | -  | -  | -  | -    | -   | -  | 20 | 25 | 32 | 40 | 60  | ∞  | ∞  | ∞  |    |   |
|                                 | 1212○-2.5...  | -                 | -  | -  | -  | 25   | 26  | 28 | 32 | 36 | 40 | 60 | 100 |    |    |    |    |   |
|                                 | 1616○-2.5...  | 32                | 40 | 50 | 60 | 80   | 100 |    | ∞  | ∞  | ∞  | ∞  | ∞   |    |    |    |    |   |
| 1616○-3...                      | 32            | 40                | 50 | 60 | 80 | 100  |     |    |    |    |    |    |     |    |    |    |    |   |
| Available Grooving Depth t (mm) |               | 16                | 15 | 14 | 13 | 12.5 | 12  | 11 | 10 | 9  | 8  | 7  | 6   | 5  | 4  | 3  | 2  | 1 |

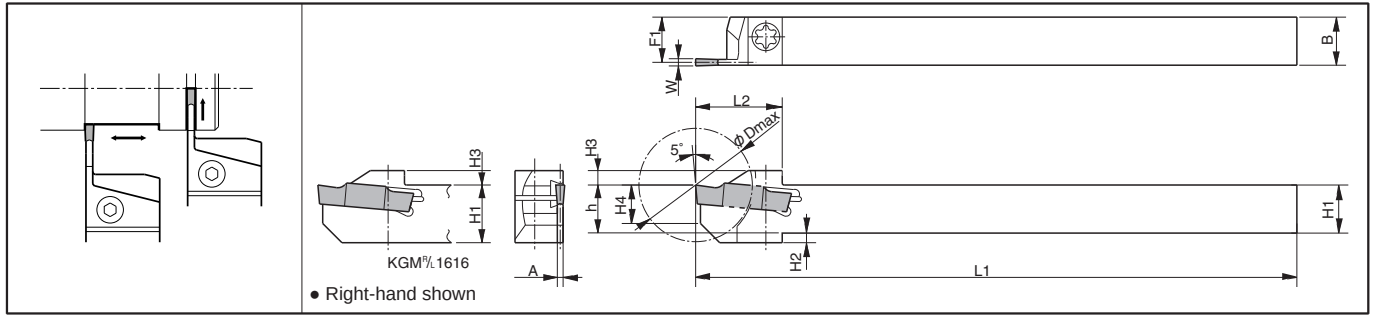
### KGM-T Possible Cutting Diameter Table (GMN, GM& When using 1-edge insert)

| Toolholder |                                 | øD (Cutting Dia.) |     |    |     |     |    |    |     |     |     |     |     |    |          |
|------------|---------------------------------|-------------------|-----|----|-----|-----|----|----|-----|-----|-----|-----|-----|----|----------|
| KGM&       | 2012K-2T17                      |                   |     |    |     |     |    |    |     |     |     |     |     |    |          |
|            | 2020K-2T17                      | -                 | -   | -  | -   | -   | -  | -  | -   | 66  | 80  | 130 | 260 |    |          |
|            | 2525M-2T17                      |                   |     |    |     |     |    |    |     |     |     |     |     |    |          |
|            | 1616H-3T20                      | -                 | -   | -  | -   | -   | 40 | 54 | 70  | 100 | 180 |     |     |    |          |
|            | 2012K-3T20                      |                   |     |    |     |     |    |    |     |     |     |     |     |    |          |
|            | 2020K-3T20                      |                   |     |    |     |     |    |    |     |     |     |     |     |    |          |
|            | 2525M-3T20                      | -                 | -   | -  | -   | -   | 40 | 90 | 130 | 240 |     |     |     |    |          |
|            | 2020K-4T20                      |                   |     |    |     |     |    |    |     |     |     |     |     |    |          |
|            | 2525M-4T20                      |                   |     |    |     |     |    |    |     |     |     |     |     |    |          |
|            | 2525M-4T25                      |                   |     |    |     |     |    |    |     |     |     |     |     |    |          |
|            | 2525M-5T25                      | -                 | -   | 50 | 140 | 240 |    |    |     |     |     |     |     |    |          |
|            | 3232P-5T25                      | -                 | -   | 50 | 280 | 600 |    |    |     |     |     |     |     |    |          |
|            | 2525M-6T30                      | 100               | 300 | ∞  | ∞   | ∞   |    |    |     |     |     |     |     |    |          |
|            | Available Grooving Depth t (mm) |                   | 30  | 27 | 25  | 23  | 22 | 20 | 19  | 18  | 17  | 16  | 15  | 14 | Under 13 |

# External Grooving Toolholders

## KGM (For automatic lathe)

Width: 1.5~4.0mm

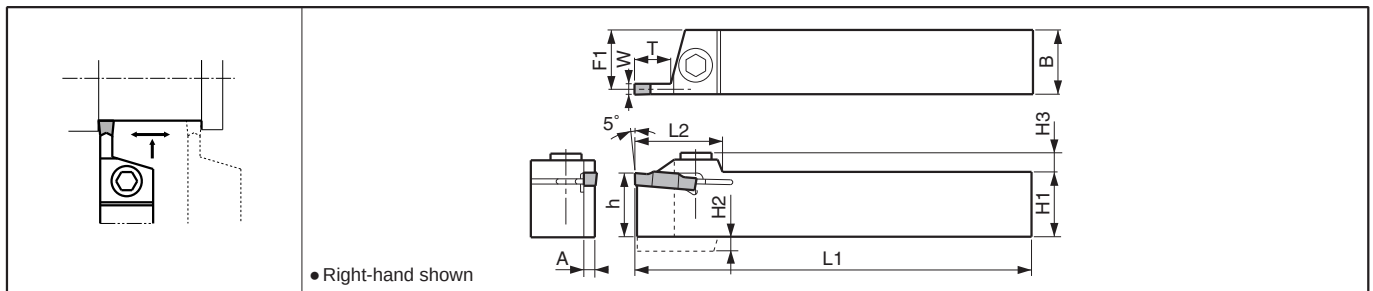


### Toolholder Dimensions

| Description        |              | Std. |   | Cutting Dia.<br>ØDmax | Dimension (mm) |    |    |    |    |     |      |       |     | Width W (mm) |      | Spare Parts                                                                         |                                                                                     |
|--------------------|--------------|------|---|-----------------------|----------------|----|----|----|----|-----|------|-------|-----|--------------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                    |              | R L  |   |                       | H1=h           | H2 | H3 | H4 | B  | L1  | L2   | F1    | A   | MIN.         | MAX. | Screw                                                                               | Wrench                                                                              |
|                    |              |      |   |                       |                |    |    |    |    |     |      |       |     |              |      |  |  |
| KGM <sup>R/L</sup> | 1010JX-1.5   | ●    | ● | 20                    | 10             | 2  | 3  | 8  | 10 | 120 | 18   | 9.4   | 1.2 | 1.5          | 2.0  | SE-40120TR                                                                          | LTW-15S                                                                             |
|                    | 1212JX-1.5   | ●    | ● | 25                    | 12             |    | 4  | 10 | 12 |     | 20.5 | 11.4  |     |              |      |                                                                                     |                                                                                     |
| KGM <sup>R/L</sup> | 1010JX-2     | ●    | ● | 20                    | 10             | 2  | 3  | 8  | 10 | 120 | 18   | 9.15  | 1.7 | 2.0          | 3.0  | SE-40120TR                                                                          | LTW-15S                                                                             |
|                    | 1212JX-2     | ●    | ● | 25                    | 12             |    | 4  | 10 | 12 |     | 19   | 11.15 |     |              |      |                                                                                     |                                                                                     |
|                    | 1616JX-2     | ●    | ● | 32                    | 16             |    | -  | 4  | 9  |     | 16   | 24.5  |     |              |      | 15.15                                                                               | SE-50125TR                                                                          |
| KGM <sup>R/L</sup> | 1010JX-2.5   | ●    | ● | 20                    | 10             | 2  | 3  | 8  | 10 | 120 | 18   | 9     | 2.0 | 2.4          | 3.0  | SE-40120TR                                                                          | LTW-15S                                                                             |
|                    | 1212JX-2.5   | ●    | ● | 25                    | 12             |    | 4  | 10 | 12 |     | 20.5 | 11    |     |              |      |                                                                                     |                                                                                     |
|                    | 1616JX-2.5   | ●    | ● | 32                    | 16             |    | -  | 4  | 9  |     | 16   | 25.5  |     |              |      | 15                                                                                  | SE-50125TR                                                                          |
| KGM <sup>R/L</sup> | 1616JX-3     | ●    | ● | 32                    | 16             | -  | 4  | 9  | 16 | 120 | 25.5 | 14.8  | 2.4 | 3.0          | 4.0  | SE-50125TR                                                                          | LTW-20                                                                              |
| KGM <sup>R/L</sup> | 1212F-1.5-85 | ●    |   | 25                    | 12             | 2  | 4  | 10 | 12 | 85  | 19   | 11.4  | 1.2 | 1.5          | 2.0  | SE-40120TR                                                                          | LTW-15S                                                                             |
| KGM <sup>R/L</sup> | 1212F-2-85   | ●    | ● | 25                    | 12             | 2  | 4  | 10 | 12 | 85  | 19   | 11.15 | 1.7 | 2.0          | 3.0  | SE-40120TR                                                                          | LTW-15S                                                                             |
| KGM <sup>R/L</sup> | 1212F-2.5-85 | ●    | ● | 25                    | 12             | 2  | 4  | 10 | 12 | 85  | 19   | 11    | 2.0 | 2.4          | 3.0  | SE-40120TR                                                                          | LTW-15S                                                                             |

## KGM

Width: 3.0~8.0mm



### Toolholder Dimensions

| Description                      | Std. |   | Dimension (mm) |     |      |    |     |    |      |     |    |  | Width W (mm) |      | Spare Parts |        |        |      |
|----------------------------------|------|---|----------------|-----|------|----|-----|----|------|-----|----|--|--------------|------|-------------|--------|--------|------|
|                                  | R    | L | H1=h           | H2  | H3   | B  | L1  | L2 | F1   | A   | T  |  | MIN.         | MAX. | Screw       |        | Wrench |      |
|                                  |      |   |                |     |      |    |     |    |      |     |    |  |              |      |             |        |        |      |
| <b>KGM<sup>R/L</sup></b> 1212H-3 | ●    | ● | 12             | 4   | 6    | 12 | 100 | 27 | 10.8 | 2.4 | 9  |  | 3.0          | 3.0  | SB-5TR      | -      | LTW-20 | -    |
| 1616H-3                          | ●    | ● | 16             |     | 7    | 16 |     |    | 14.8 |     |    |  |              |      |             |        |        |      |
| 2020K-3                          | ●    | ● | 20             | -   | 7    | 20 | 125 | 27 | 18.8 | 3.4 | 10 |  | 3.0          | 4.0  | -           | HH5X16 | -      | LW-4 |
| 2525M-3                          | ●    | ● | 25             |     |      | 25 | 150 |    | 23.8 |     |    |  |              |      |             |        |        |      |
| 2020K-4                          | ●    | ● | 20             | -   | 7    | 20 | 125 | 27 | 18.3 | 3.4 | 10 |  | 4.0          | 5.0  | -           | HH5X16 | -      | LW-4 |
| 2525M-4                          | ●    | ● | 25             |     |      | 25 | 150 |    | 23.3 |     |    |  |              |      |             |        |        |      |
| 2020K-5                          | ●    | ● | 20             | -   | 7    | 20 | 125 | 27 | 17.8 | 4.4 | 10 |  | 5.0          | 6.0  | -           | HH5X16 | -      | LW-4 |
| 2525M-5                          | ●    | ● | 25             |     |      | 25 | 150 |    | 22.8 |     |    |  |              |      |             |        |        |      |
| 3232P-5                          | ●    | ● | 32             | 7.5 | 10.5 | 32 | 170 | 40 | 29.8 | 6.0 | 25 |  | 8.0          | 8.0  | -           | HH5X25 | -      | LW-4 |
| 2525M-8                          | ●    | ● | 25             |     |      | 25 | 150 |    | 22.0 |     |    |  |              |      |             |        |        |      |
| 3232P-8                          | ●    | ● | 32             |     |      | 32 | 170 |    | 29.0 |     |    |  |              |      |             | HH6X25 | -      | LW-5 |

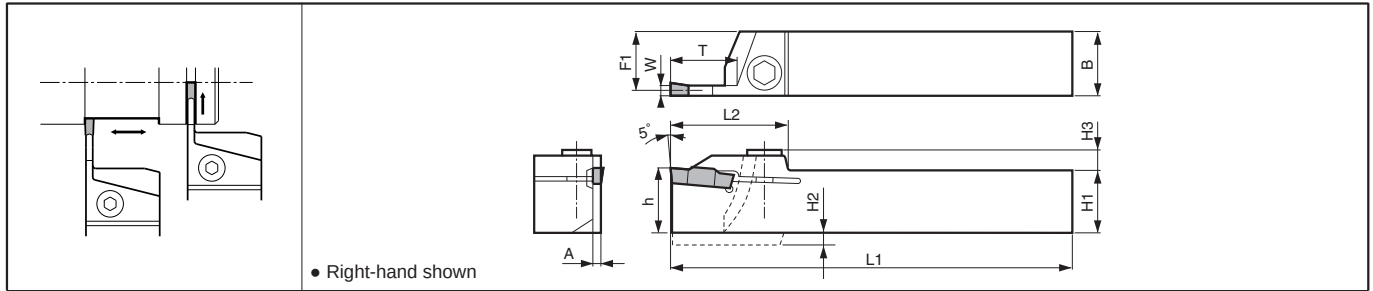
\* Dimension T shows available grooving depth.

\* 4.0mm width Insert can be installed in KGM%1212H-3, but is not recommended due to the toolholder's rigidity.

● : Std. Item

**KGM-T** (Deep Grooving Type)

Width: 2.0~6.0mm



## • Toolholder Dimensions

| Description              | Std.              |   | Dimension (mm) |    |    |     |     |       |    |       |     |    | Width<br>W (mm) |      | Spare Parts |        |        |      |
|--------------------------|-------------------|---|----------------|----|----|-----|-----|-------|----|-------|-----|----|-----------------|------|-------------|--------|--------|------|
|                          | R                 | L | H1-h           | H2 | H3 | B   | L1  | L2    | F1 | A     | T   |    | MIN.            | MAX. | Screw       |        | Wrench |      |
|                          |                   |   |                |    |    |     |     |       |    |       |     |    |                 |      |             |        |        |      |
| <b>KGM<sup>R/L</sup></b> | <b>2012K-2T17</b> | ● | ●              | 20 |    | 12  | 125 | 11.15 |    |       |     |    | 2.0             | 3.0  | SB-5TR      | -      | LTW-20 | -    |
|                          | <b>2020K-2T17</b> | ● | ●              | 20 | -  | 7   | 20  | 125   | 33 | 19.15 | 1.7 | 17 |                 |      | -           | HH5X16 | -      | LW-4 |
|                          | <b>2525M-2T17</b> | ● | ●              | 25 |    |     | 25  | 150   |    | 24.15 |     |    |                 |      | -           | HH5X25 | -      | LW-4 |
|                          | <b>1616H-3T20</b> | ● | ●              | 16 | 4  |     | 16  | 100   |    | 14.8  |     |    |                 |      | -           | HH5X16 | -      | LW-4 |
|                          | <b>2012K-3T20</b> | ● | ●              | 20 | -  | 7   | 12  | 125   | 36 | 10.8  | 2.4 | 20 | 3.0             | 4.0  | SB-5TR      | -      | LTW-20 | -    |
|                          | <b>2020K-3T20</b> | ● | ●              | 20 | -  |     | 20  | 125   |    | 18.8  |     |    |                 |      | -           | HH5X16 | -      | LW-4 |
|                          | <b>2525M-3T20</b> | ● | ●              | 25 | -  |     | 25  | 150   |    | 23.8  |     |    |                 |      | -           | HH5X25 | -      | LW-4 |
|                          | <b>2020K-4T20</b> | ● | ●              | 20 |    |     | 20  | 125   | 36 | 18.3  |     | 20 |                 |      | -           | HH5X16 | -      | LW-4 |
|                          | <b>2525M-4T20</b> | ● | ●              | 25 | -  | 7.5 | 25  | 150   | 36 | 23.3  | 3.4 | 20 | 4.0             | 5.0  | -           | HH5X25 | -      | LW-4 |
|                          | <b>2525M-4T25</b> | ● | ●              | 25 |    |     | 25  | 150   | 41 | 23.3  |     | 25 |                 |      |             |        |        |      |
|                          | <b>2525M-5T25</b> | ● | ●              | 25 | -  | 8.5 | 25  | 150   | 42 | 22.8  | 4.4 | 25 | 5.0             | 6.0  | -           | HH5X25 | -      | LW-4 |
|                          | <b>3232P-5T25</b> | ● | ●              | 32 |    |     | 32  | 170   |    | 29.8  |     |    |                 |      |             |        |        |      |
|                          | <b>2525M-6T30</b> | ● | ●              | 25 | -  | 9.5 | 25  | 150   | 45 | 22.4  | 5.2 | 30 | 6.0             | 6.0  | -           | HH5X25 | -      | LW-4 |

• Dimension T shows the distance from the Toolholder to the cutting edge. Refer to the Table (G35) for the relationship between the available Grooving Depth and the Cutting Dia.  
 • When using GMG / GMM type (2-Edge) insert, set the groove depth under 15mm.

## • Applicable Inserts

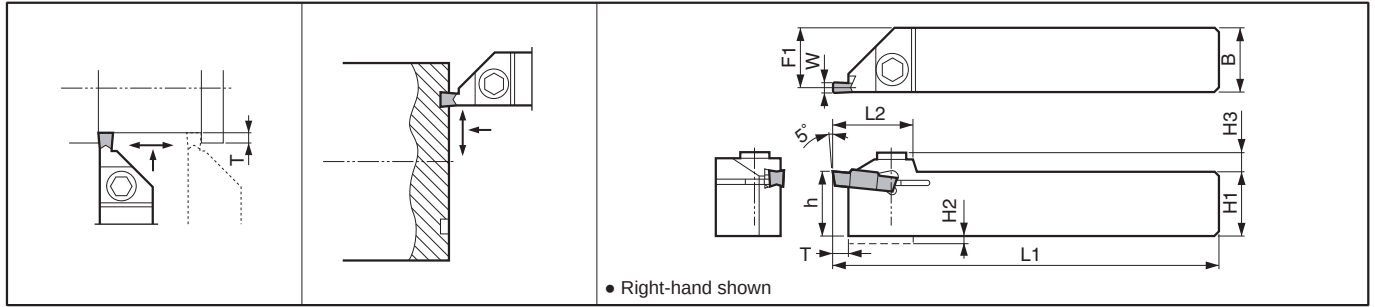
| Applications                    | Grooving / Traversing      | Grooving / Traversing                                    | Grooving                                  | Full-R / Copying                                     | Full-R / Copying | Deep Grooving / Cut-off                                                                      | Deep Grooving / Cut-off                   | Deep Grooving / Cut-off                                                                      | Deep Grooving / Cut-off                        | Deep Grooving / Cut-off                    | Deep Grooving  |
|---------------------------------|----------------------------|----------------------------------------------------------|-------------------------------------------|------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------|--------------------------------------------|----------------|
| Ref. Page                       | G32                        | G32                                                      | G32                                       | G32                                                  | G33              | G34                                                                                          | G34                                       | G34                                                                                          | G34                                            | G34                                        | G35            |
| Insert                          | <b>MW</b>                  | <b>MS</b>                                                | <b>MG</b>                                 |                                                      |                  | <b>MT</b>                                                                                    | <b>NB</b>                                 | <b>TK</b>                                                                                    | <b>TK</b>                                      |                                            | <b>CBN PCD</b> |
| Toolholder                      |                            |                                                          |                                           |                                                      |                  |                                                                                              |                                           |                                                                                              |                                                |                                            |                |
| <b>KGM<sup>R/L</sup>...1.5</b>  | -                          | -                                                        | -                                         | -                                                    | -                | GMM1520..MT<br>GMM2020..MT<br>GMM1520%L..MT<br>GMM2020%L..MT                                 | GMM1520..NB<br>GMM2020..NB                | GMM2020..TK<br>GMM2020%L..TK                                                                 | GMN2..TK<br>GM%L2..TK                          | -                                          | -              |
| <b>KGM<sup>R/L</sup>...2(T)</b> | GMM2420..MW<br>GMM3020..MW | GMG3020..MS<br>GMM3020..MS                               | GMG2520..MG<br>GMG3020..MG                | GMG3020..R<br>GMM3020..R                             | -                | GMM2020..MT<br>GMM2520..MT<br>GMM3020..MT<br>GMM2020%L..MT<br>GMM2520%L..MT<br>GMM3020%L..MT | GMM2020..NB<br>GMM2520..NB<br>GMM3020..NB | GMM2020..TK<br>GMM2520..TK<br>GMM3020..TK<br>GMM2020%L..TK<br>GMM2520%L..TK<br>GMM3020%L..TK | GMN2..TK<br>GMN3..TK<br>GM%L2..TK<br>GM%L3..TK | GMN2<br>GMN2.2<br>GMN3<br>GM%L2.2<br>GM%L3 | GMN2<br>GMN3   |
| <b>KGM<sup>R/L</sup>...2.5</b>  | GMM2420..MW<br>GMM3020..MW | GMG3020..MS<br>GMM3020..MS                               | GMG2520..MG<br>GMG3020..MG                | GMG3020..R<br>GMM3020..R                             | -                | GMM2520..MT<br>GMM3020..MT<br>GMM2520%L..MT<br>GMM3020%L..MT                                 | GMM2520..NB<br>GMM3020..NB                | GMM2520..TK<br>GMM3020..TK<br>GMM2520%L..TK<br>GMM3020%L..TK                                 | GMN3..TK<br>GM%L3..TK                          | GMN3<br>GM%L3                              | GMN3           |
| <b>KGM<sup>R/L</sup>...3(T)</b> | GMM3020..MW<br>GMM4020..MW | GMG3020..MS<br>GMM3020..MS<br>GMG4020..MS<br>GMM4020..MS | GMG3020..MG<br>GMG3520..MG<br>GMG4020..MG | GMG3020..R<br>GMM3020..R<br>GMG4020..R<br>GMM4020..R | -                | GMM3020..MT<br>GMM3020%L..MT                                                                 | GMM3020..NB                               | GMM3020..TK<br>GMM3020%L..TK                                                                 | GMN3..TK<br>GMN4..TK<br>GM%L3..TK<br>GM%L4..TK | GMN3<br>GMN4<br>GM%L3<br>GM%L4             | GMN3<br>GMN4   |
| <b>KGM<sup>R/L</sup>...4(T)</b> | GMM4020..MW<br>GMM5020..MW | GMG4020..MS<br>GMM4020..MS<br>GMG5020..MS<br>GMM5020..MS | GMG4020..MG<br>GMM4020..MG<br>GMG5020..MG | GMG4020..R<br>GMM4020..R<br>GMG5020..R<br>GMM5020..R | -                | -                                                                                            | -                                         | -                                                                                            | GMN4..TK<br>GM%L4..TK                          | GMN4<br>GMN5<br>GM%L4                      | GMN4<br>GMN5   |
| <b>KGM<sup>R/L</sup>...5(T)</b> | GMM5020..MW<br>GMM6020..MW | GMG5020..MS<br>GMM5020..MS<br>GMG6020..MS<br>GMM6020..MS | GMG5020..MG<br>GMM5020..MG<br>GMG6020..MG | GMG5020..R<br>GMM5020..R<br>GMG6020..R<br>GMM6020..R | GMGA6020..R      | -                                                                                            | -                                         | -                                                                                            | -                                              | GMN5<br>GMN6                               | GMN5<br>GMN6   |
| <b>KGM<sup>R/L</sup>...6T</b>   | GMM6020..MW                | GMG6020..MS<br>GMM6020..MS                               | GMG6020..MG                               | GMG6020..R<br>GMM6020..R                             | GMGA6020..R      | -                                                                                            | -                                         | -                                                                                            | -                                              | GMN6                                       | GMN6           |
| <b>KGM<sup>R/L</sup>...8</b>    | GMM8030..MW                | -                                                        | GMG8030..MG                               | -                                                    | GMGA8030..R      | -                                                                                            | -                                         | -                                                                                            | -                                              | -                                          | -              |

• If using a full-R insert, you need to modify the corner of insert adapter part (dimension A) of toolholder. For recommended cutting conditions, see page **G93**  
 For recommended cutting conditions of CBN / PCD, see page **G91**

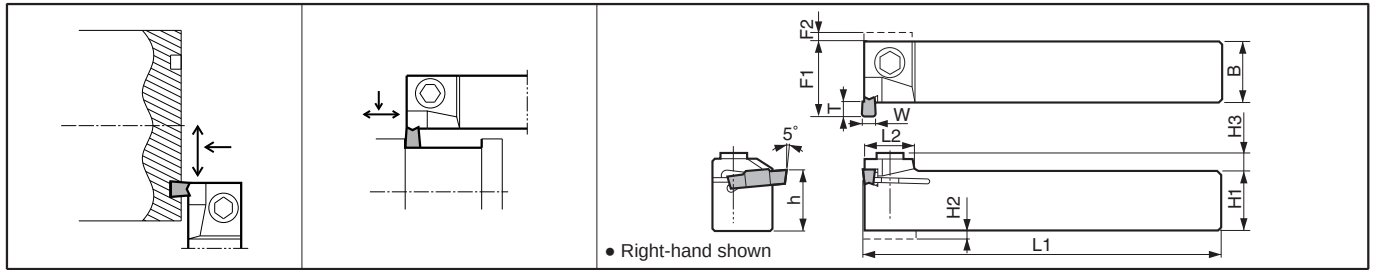


# External Grooving (External / Face Grooving) Toolholders

## KGMM



## KGMS



### Toolholder Dimensions

| Description                                                                                        | Std.                                |                                     | Dimension (mm) |    |    |    |     |    |      |     |     |  |     | Width<br>W (mm) |  | Spare Parts |        |        |      |
|----------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|----------------|----|----|----|-----|----|------|-----|-----|--|-----|-----------------|--|-------------|--------|--------|------|
|                                                                                                    | R                                   | L                                   | H1-h           | H2 | H3 | B  | L1  | L2 | F1   | F2  | T   |  | MIN | MAX             |  | Screw       |        | Wrench |      |
| <b>KGMM</b> <sup>R/L</sup><br><b>1212H-3</b><br><b>1616H-3</b><br><b>2020K-3</b><br><b>2525M-3</b> | <input type="checkbox"/>            | <input type="checkbox"/>            | 12             | 4  | 5  | 12 | 100 |    | 10.8 |     |     |  | 3.0 | 5.0             |  | SB-5TR      | -      | LTW-20 | -    |
|                                                                                                    | <input type="checkbox"/>            | <input type="checkbox"/>            | 16             |    |    | 16 |     | 25 | 14.8 |     | 4.8 |  |     |                 |  | -           | HH5X16 | -      | LW-4 |
|                                                                                                    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 20             | -  | 6  | 20 | 125 |    | 18.8 |     |     |  |     |                 |  | -           | HH5X25 | -      |      |
|                                                                                                    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 25             |    |    | 25 | 150 |    | 23.8 |     |     |  |     |                 |  | -           | HH5X25 | -      |      |
| <b>KGMS</b> <sup>R/L</sup><br><b>1212H-3</b><br><b>1616H-3</b><br><b>2020K-3</b><br><b>2525M-3</b> | <input type="checkbox"/>            | <input type="checkbox"/>            | 12             | 4  | 5  | 12 | 100 | 17 | 17   | 1.5 | 4.8 |  | 3.0 | 3.0             |  | SB-5TR      | -      | LTW-20 | -    |
|                                                                                                    | <input type="checkbox"/>            | <input type="checkbox"/>            | 16             |    |    | 16 |     |    | 21.5 |     |     |  |     |                 |  | GS-50       | -      | -      | LW-3 |
|                                                                                                    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 20             | -  | 6  | 20 | 125 |    | 25   |     |     |  | 3.0 | 5.0             |  | -           | HH5X16 | -      | LW-4 |
|                                                                                                    | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 25             |    |    | 25 | 150 |    | 30   |     |     |  |     |                 |  | -           | HH5X25 | -      |      |

• Dimension T shows available grooving depth. (See the table **G39** for Face Grooving )

### Applicable Inserts [External Grooving]

| Applications                                                       | Grooving / Traversing                     | Grooving / Traversing                     | Grooving                                  | Full-R / Copying                       | Grooving    | Grooving    | Grooving    | Grooving    | Grooving    | Grooving    | Grooving       |
|--------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|----------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|
| Ref. Page                                                          | G32, G33                                  | G32                                       | G32                                       | G32                                    | G34         | G34         | G34         | G34         | G34         | G34         | G35            |
| Insert                                                             | <b>MW</b>                                 | <b>MS</b>                                 | <b>MG</b>                                 |                                        | <b>MT</b>   | <b>NB</b>   | <b>TK</b>   | <b>TK</b>   |             |             | <b>CBN PCD</b> |
| Toolholder                                                         |                                           |                                           |                                           |                                        |             |             |             |             |             |             |                |
| <b>KGMS</b> <sup>R/L</sup> <b>1212H-3</b>                          | GMM3014..                                 | -                                         | -                                         | GMM3014..R                             | -           | -           | -           | -           | -           | -           | -              |
| <b>KGMM</b> <sup>R/L</sup> ...3<br><b>KGMS</b> <sup>R/L</sup> ...3 | GMM3020..MW<br>GMM4020..MW<br>GMM5020..MW | GMM3020..MS<br>GMM4020..MS<br>GMM5020..MS | GMM3020..MG<br>GMM4020..MG<br>GMM5020..MG | GMM3020..R<br>GMM4020..R<br>GMM5020..R | GMM3020..MT | GMM3020..NB | GMM3020..TK | GMM3020..TK | GMM3020..TK | GMM3020..TK | GMM3020..TK    |

### Applicable Inserts [Face Grooving]

| Applications                                                       | Grooving / Traversing                                                               | Grooving / Traversing                     | Grooving / Traversing                     | Grooving / Traversing                     | Grooving                                  | Full-R / Copying                       | Grooving    | Grooving    | Grooving    | Grooving    | Grooving    |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|-------------------------------------------|----------------------------------------|-------------|-------------|-------------|-------------|-------------|
| Ref. Page                                                          | G33                                                                                 | G32, G33                                  | G32                                       | G32                                       | G32                                       | G32                                    | G34         | G34         | G34         | G34         | G34, G35    |
| Insert                                                             | <b>MW</b>                                                                           | <b>MS</b>                                 | <b>MG</b>                                 | <b>MT</b>                                 | <b>NB</b>                                 | <b>TK</b>                              | <b>TK</b>   | <b>TK</b>   | <b>TK</b>   | <b>TK</b>   | <b>TK</b>   |
| Toolholder                                                         |                                                                                     |                                           |                                           |                                           |                                           |                                        |             |             |             |             |             |
| <b>KGMS</b> <sup>R/L</sup> <b>1212H-3</b>                          | -                                                                                   | GMM3014..RU                               | -                                         | -                                         | -                                         | -                                      | -           | -           | -           | -           | -           |
| <b>KGMM</b> <sup>R/L</sup> ...3<br><b>KGMS</b> <sup>R/L</sup> ...3 | FGG <sup>R/L</sup> 3020..<br>FGG <sup>R/L</sup> 4020..<br>FGG <sup>R/L</sup> 5020.. | GMM3020..RU<br>GMM4020..RU<br>GMM5020..RU | GMM3020..MW<br>GMM4020..MW<br>GMM5020..MW | GMM3020..MS<br>GMM4020..MS<br>GMM5020..MS | GMM3020..MG<br>GMM4020..MG<br>GMM5020..MG | GMM3020..R<br>GMM4020..R<br>GMM5020..R | GMM3020..MT | GMM3020..NB | GMM3020..TK | GMM3020..TK | GMM3020..TK |

For recommended cutting conditions, see page **G93**

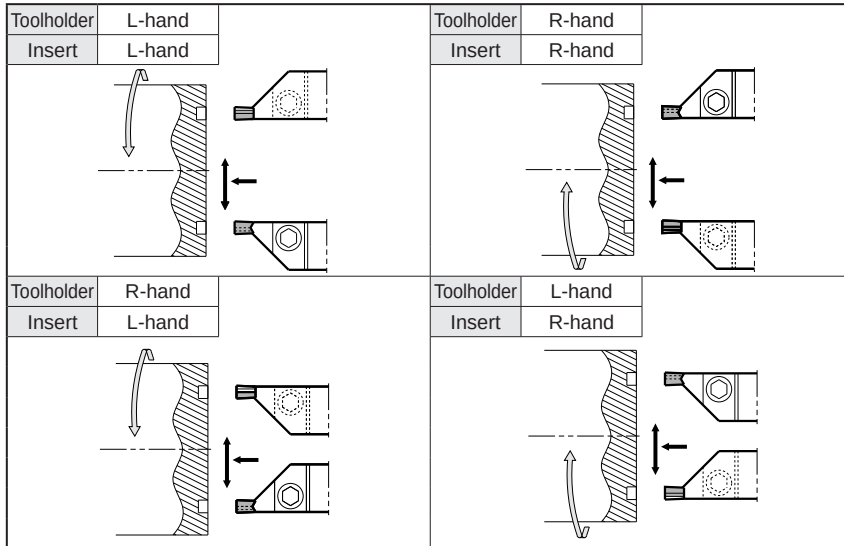
For recommended cutting conditions of CBN / PCD, see page **G91**

● : Std. Item    □ : Check Availability

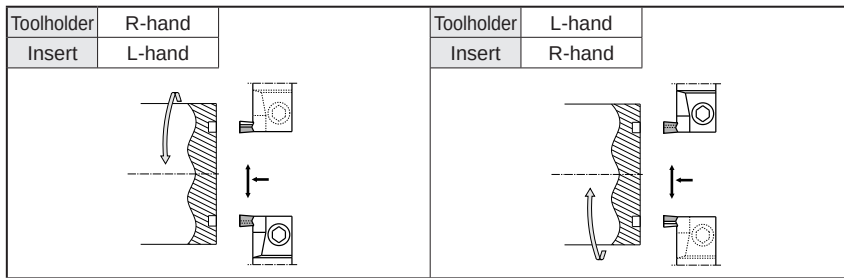


# ◆ Selection of Insert & Toolholder (Face Grooving)

## ● Case of KGMM



## ● Case of KGMS



# ◆ Min. Cutting Dia. (Face Grooving)

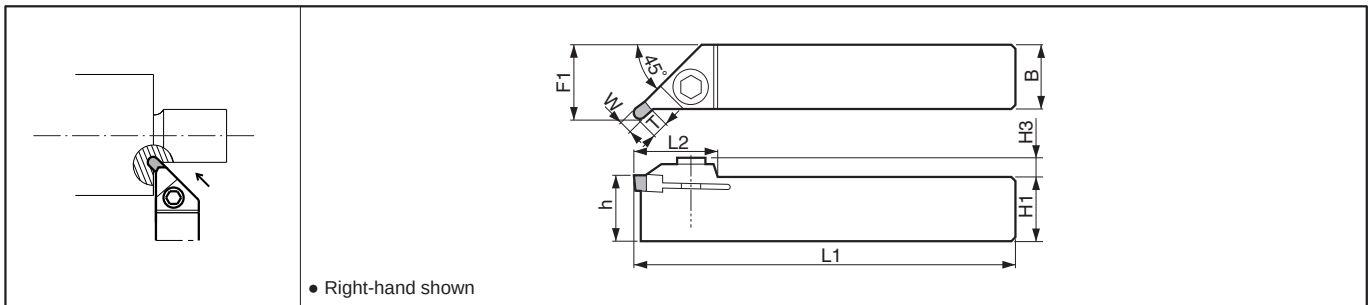
## ● KGMM / KGMS (Common)

| Description                | øDmin | t   |
|----------------------------|-------|-----|
| GMG / GMM3020-○○○○         | ø100  | 4.8 |
| GMG / GMM4020-○○○○         |       |     |
| GMG / GMM5020-○○○○         |       |     |
| FGG <sup>®</sup> /L3020-02 | ø22   | 4.3 |
| FGG <sup>®</sup> /L4020-04 | ø28   | 4.8 |
| FGG <sup>®</sup> /L5020-04 | ø30   |     |
| GMG3020-150RU              | ø22   | 4.3 |
| GMG4020-200RU              | ø28   | 4.8 |
| GMG5020-250RU              | ø30   |     |

G

Grooving

# ■ KGMU (External Undercutting Toolholder)



## ● Toolholder Dimensions

| Description                | Std. | Dimension (mm) |    |      |    |     |      |      |     |   |  | Edge Width<br>W (mm) |      | Spare Parts |        |
|----------------------------|------|----------------|----|------|----|-----|------|------|-----|---|--|----------------------|------|-------------|--------|
|                            |      | R              | L  | H1=h | H3 | B   | L1   | L2   | F1  | T |  | MIN.                 | MAX. | Screw       | Wrench |
|                            |      |                |    |      |    |     |      |      |     |   |  |                      |      |             |        |
| KGMM <sup>®</sup> /L 2020K | ●    | ●              | 20 | 6    | 20 | 125 | 28.5 | 23.6 | 4.8 |   |  | 3.0                  | 5.0  | HH5X16      | LW-4   |
| 2525M                      | ●    | ●              | 25 |      | 25 | 150 | 28.5 | 28.6 |     |   |  | (6.0)                |      | HH5X25      |        |

\* Dimension T shows the distance from the Toolholder to the cutting edge. See the table below for the available Grooving Depth.

Dimension F1 shows at GMM5020-RU. ( ) indicates external grooving inserts when installed.

## ● Applicable Insert

| Applications               | Undercutting |  |  |
|----------------------------|--------------|--|--|
| Ref. Page                  | G32          |  |  |
| Shape                      |              |  |  |
| Toolholder                 |              |  |  |
| KGMM <sup>®</sup> /L 2020K | GMG3020..RU  |  |  |
| 2525M                      | GMG4020..RU  |  |  |
|                            | GMG5020..RU  |  |  |

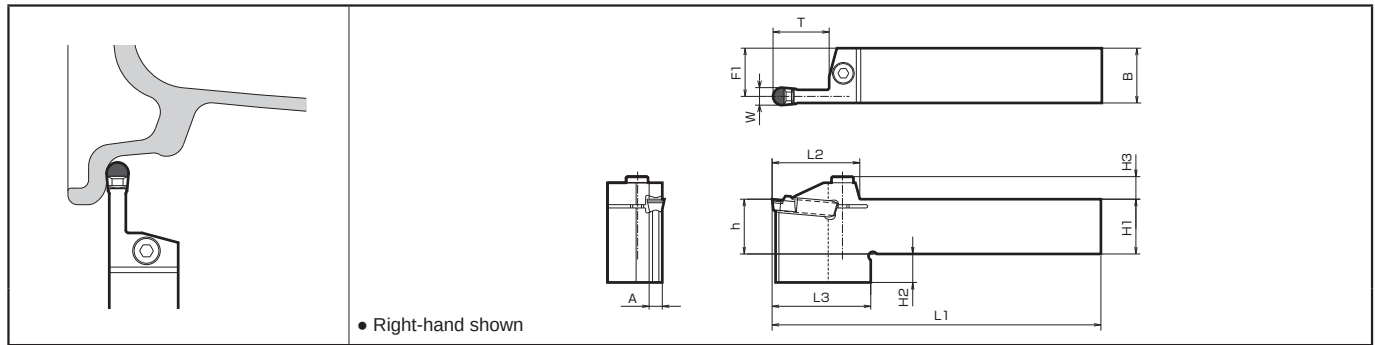
\* External grooving inserts (grooving width 3mm~6mm) will be attached.  
(In case of using GMG○○20-○○, GMM○○20-○○○○, GMN○ insert)

## ◆ Undercut Depth t

| Description  | Undercut Depth | Distance from the face of the workpiece. |
|--------------|----------------|------------------------------------------|
|              | t (mm)         | ap (mm)                                  |
| GMG3020-15RU | 3.5            | 1.8                                      |
| GMG4020-20RU | 4.0            | 1.9                                      |
| GMG5020-25RU | 4.5            | 2.1                                      |

\* In case of undercutting for the diameter over 100mm, external grooving inserts  
GMG ○○ 20-○○, GMM ○○ 20-○○○○, GMN ○ are also available.

● : Std. Item □ : Check Availability

**KGMW** (External / Facing / Copying)

## ● Toolholder Dimensions

| Description                       | Std.                     |                          | Dimension (mm) |    |      |    |     |    |    |      |     |    | Spare Parts |        | Applicable Inserts              |
|-----------------------------------|--------------------------|--------------------------|----------------|----|------|----|-----|----|----|------|-----|----|-------------|--------|---------------------------------|
|                                   | R                        | L                        | H1=h           | H2 | H3   | B  | L1  | L2 | L3 | F1   | A   | T  | Screw       | Wrench |                                 |
| <b>KGMW<sup>R/L</sup> 2525M-6</b> | <input type="checkbox"/> | <input type="checkbox"/> | 25             | 13 | 10.3 | 25 | 150 | 40 | 55 | 22.8 | 4.4 | 25 | HH6X25      | LW-5   | GMGW6030-30R                    |
| <b>2525M-8</b>                    | <input type="checkbox"/> | <input type="checkbox"/> |                |    |      |    |     |    |    | 22   | 6   |    |             |        | GMGW8030-40R<br>GMGW8030-40R-HR |

## ● Applicable Inserts

| Shape |  | Description             | Dimension (mm) |    |    |     |   |     | No. of Edge | PCD                      |  |
|-------|--|-------------------------|----------------|----|----|-----|---|-----|-------------|--------------------------|--|
|       |  |                         | W              | rε | L  | H   | M | S   |             | KPD001                   |  |
|       |  | <b>GMGW 6030-30R</b>    | 6              | 3  | 30 | 5.5 | 5 | 4.5 | 1           | <input type="checkbox"/> |  |
|       |  | <b>8030-40R</b>         | 8              | 4  |    |     | 6 | 6   | 1           | <input type="checkbox"/> |  |
|       |  | <b>GMGW 8030-40R-HR</b> | 8              | 4  | 30 | 5.5 | 6 | 5   | 1           | <input type="checkbox"/> |  |

• GMGW insert is exclusively used for KGMW type / KIGMW type toolholder. It cannot be used for other toolholder because of its different installation angle.

• GMGW inserts Edge Preparation: R-honed Cutting Edge.

## ◆ Recommended Cutting Conditions

| Workpiece Material | Insert Grade (Vc: m/min) |  | ① f for Grooving (mm/rev)<br>② f for Longitudinal turning (mm/rev)<br>③ ap for Longitudinal turning (mm) |
|--------------------|--------------------------|--|----------------------------------------------------------------------------------------------------------|
|                    | PCD                      |  |                                                                                                          |
|                    | KPD001                   |  |                                                                                                          |
| Aluminum           | ★<br>150~2700            |  | ① 0.05~0.3 mm/rev<br>② 0.2~0.8 mm/rev<br>③ MAX.3 mm                                                      |

★ : 1st Recommendation