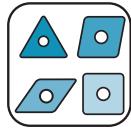


# Turning indexable inserts



# B

|   |                          |                             |      |
|---|--------------------------|-----------------------------|------|
| <b>Introduction</b>                             |                          | <b>B2</b>                   |      |
| Negative-Chipbreaker                            |                          | B4                          |      |
| Positive-chipbreaker                            |                          | B12                         |      |
| How to read pages of turning inserts            |                          | B15                         |      |
| <b>Coated carbide / carbide / cermet lineup</b> |                          | <b>B16</b>                  |      |
| Negative inserts                                | CN type                  | B16                         |      |
|   | DN type                  | B24                         |      |
|   | KNMX                     | B32                         |      |
|   | RN type                  | B33                         |      |
|   | SN type                  | B34                         |      |
|   | TN type                  | B39                         |      |
|   | VN type                  | B47                         |      |
|   | WN type                  | B50                         |      |
|   | Small double sided tools | B55                         |      |
|   | Positive inserts         | CC type                     | B58  |
|   |                          | CP type                     | B67  |
|   |                          | DC type                     | B68  |
|   |                          | DP type                     | B79  |
|   |                          | JC type                     | B80  |
| RC type   |                          | B81                         |      |
| SC / SP type                                    |                          | B82                         |      |
| TB type   |                          | B84                         |      |
| TC type   |                          | B85                         |      |
| TP type   |                          | B88                         |      |
| VB type   |                          | B97                         |      |
| VC type   |                          | B100                        |      |
| VP type   |                          | B102                        |      |
| WB type   |                          | B105                        |      |
| WP type   |                          | B107                        |      |
| ZBMT  |                          | B108                        |      |
| Bearing machining                               |                          | RCMT-BB / PRMT-BB / SNMF-21 | B109 |
| Inserts for back turning                        | TKFB                     | B110                        |      |
|   | TKF-GTP                  | B111                        |      |
|   | ABS / ABW                | B112                        |      |
| <b>Ceramic lineup</b>                           |                          | <b>B113</b>                 |      |
| Negative inserts                                | CN type                  | B113                        |      |
|   | DN type                  | B114                        |      |
|   | EN type                  | B115                        |      |
|   | RN type                  | B116                        |      |
|   | SN type                  | B117                        |      |
|   | TN type                  | B118                        |      |
|   | VN type                  | B119                        |      |
|   | Positive inserts         | RP type                     | B120 |
|   |                          | SP type                     | B121 |
| TB / TP type                                    |                          | B122                        |      |
| Inserts for high hardened roll                  | RBG / RCGX / RPGX        | B123                        |      |
| Grooving inserts                                | GH                       | B124                        |      |

B



Turning indexable inserts

Turning indexable inserts identification system

| Symbol | Shape             |
|--------|-------------------|
| H      | Hexagon           |
| O      | Octagon           |
| P      | Pentagon          |
| S      | Square            |
| T      | Triangle          |
| C      | 80° Rhombic       |
| D      | 55° Rhombic       |
| E      | 75° Rhombic       |
| F      | 50° Rhombic       |
| M      | 86° Rhombic       |
| V      | 35° Rhombic       |
| W      | 80° Trigon        |
| L      | Rectangle         |
| A      | 85° Parallelogram |
| B      | 82° Parallelogram |
| K      | 55° Parallelogram |
| R      | Round             |

Shown angle stands for acute angle for rhombic and parallelogram inserts.

«1» Shape symbol

| Symbol | Relief angle |
|--------|--------------|
| A      | 3°           |
| B      | 5°           |
| C      | 7°           |
| D      | 15°          |
| E      | 20°          |
| F      | 25°          |
| G      | 30°          |
| N      | 0°           |
| P      | 11°          |

«2» Relief angle symbol

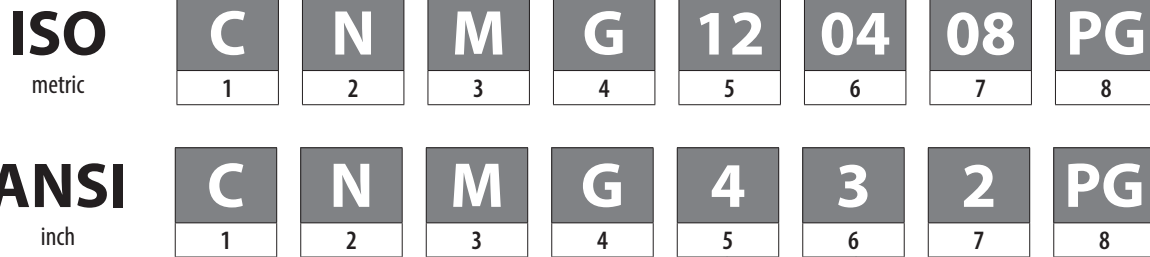
| Symbol Class | Tolerance (mm) |           |               |
|--------------|----------------|-----------|---------------|
|              | Corner Height  | Thickness | I.C. Size     |
| A            | ±0.005         | ±0.025    | ±0.025        |
| F            |                |           | ±0.013        |
| C            |                |           | ±0.025        |
| H            | ±0.013         | ±0.013    | ±0.013        |
| E            |                |           | ±0.025        |
| G            | ±0.025         | ±0.13     | ±0.025        |
| J            | ±0.005         | ±0.025    | ±0.05 - ±0.15 |
| K*           | ±0.013         |           |               |
| L*           | ±0.025         |           |               |
| M*           | ±0.08 - ±0.18  | ±0.13     | ±0.08 - ±0.25 |
| N*           |                | ±0.025    |               |
| U*           | ±0.13 - ±0.38  | ±0.13     | ±0.08 - ±0.25 |

\* Insert's periphery is as fired. Tolerance difference is depending on insert size.

«3» Tolerance symbol

| Symbol | Hole                                    | Hole shape | Chipbreaker  | Shape |
|--------|---|------------|--------------|-------|
| N      | No                                      | -          | No           |       |
| R      |   |            | Single sided |       |
| F      |   |            | Double sided |       |
| A      | With hole                               | -          | No           |       |
| M      |   |            | Single sided |       |
| G      | With hole and one countersink 40° - 60° | -          | No           |       |
| W      |   |            | Single sided |       |
| T      | With hole and two countersink 40° - 60° | -          | No           |       |
| Q      |   |            | Double sided |       |
| U      | With hole and one countersink 70° - 90° | -          | No           |       |
| B      |   |            | Single sided |       |
| H      | With hole and two countersink 70° - 90° | -          | No           |       |
| C      |   |            | Double sided |       |
| J      | -                                       | -          | -            | -     |
| X      | -                                       | -          | -            | -     |

«4» Hole / Chipbreaker symbol



| «5» Edge length symbol (ISO) |    |    |    |    |    |    | I.C. size (mm) | «5» I.C. size (ANSI) |        |
|------------------------------|----|----|----|----|----|----|----------------|----------------------|--------|
| C                            | D  | R  | S  | T  | V  | W  | I.C. size (mm) | I.C. size (inch)     | Symbol |
| 03                           | 04 |    | 03 | 06 |    |    | 3.97           | 5/32                 | 12     |
| 04                           | 05 |    | 04 | 08 | 08 |    | 4.76           | 3/16                 | 15     |
|                              |    | 05 |    |    |    |    |                | 5                    |        |
| 05                           | 06 |    | 05 | 09 |    |    | 5.56           | 7/32                 | 18     |
|                              |    | 06 |    |    |    |    |                | 6                    |        |
| 06                           | 07 |    | 06 | 11 | 11 | 04 | 6.35           | 1/4                  | 2      |
| 08                           | 09 |    | 07 | 13 |    | 05 | 7.94           | 5/16                 | 25     |
|                              |    | 08 |    |    |    |    |                | 8                    |        |
| 09                           | 11 | 09 | 09 | 16 | 16 | 06 | 9.525          | 3/8                  | 3      |
|                              |    | 12 | 10 |    |    |    |                | 10                   |        |
|                              |    | 12 |    |    |    |    |                | 12                   |        |
| 12                           | 15 | 12 | 12 | 22 | 22 | 08 | 12.7           | 1/2                  | 4      |
| 16                           | 19 | 15 | 15 | 27 | 27 | 10 | 15.875         | 5/8                  | 5      |
|                              |    | 16 |    |    |    |    |                | 16                   |        |
| 19                           | 23 | 19 | 19 | 33 | 33 | 13 | 19.05          | 3/4                  | 6      |
|                              |    | 20 |    |    |    |    |                | 20                   |        |
| 22                           | 27 |    | 22 | 38 |    |    | 22.225         | 7/8                  | 7      |
|                              |    | 25 |    |    |    |    |                | 25                   |        |
| 25                           | 31 | 25 | 25 | 44 | 44 | 17 | 25.4           | 1                    | 8      |
| 32                           | 38 | 31 | 31 | 54 | 54 | 21 | 31.75          | 1-1/4                | 10     |
|                              |    | 32 |    |    |    |    |                | 32                   |        |

| «6» Thickness symbol |        |                  |        |
|----------------------|--------|------------------|--------|
| ISO                  |        | ANSI             |        |
| Thickness (mm)       | Symbol | Thickness (inch) | Symbol |
| 1.59                 | 01     | 1/16             | 1      |
| 1.98                 | T1     | 5/64             | 12     |
| 2.38                 | 02     | 3/32             | 15     |
| 2.78                 | T2     | -                | -      |
| 3.18                 | 03     | 1/8              | 2      |
| 3.97                 | T3     | 5/32             | 25     |
| 4.76                 | 04     | 3/16             | 3      |
| 5.56                 | 05     | 7/32             | 35     |
| 6.35                 | 06     | 1/4              | 4      |
| 7.94                 | 07     | 5/16             | 5      |
| 9.525                | 09     | 3/8              | 6      |

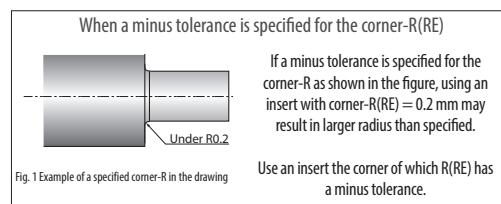
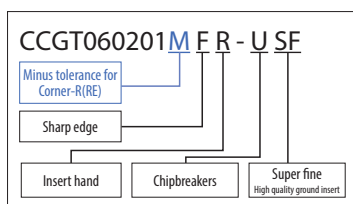
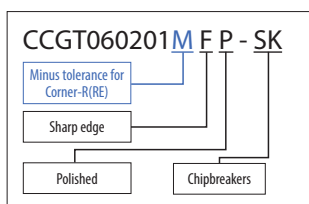
Thickness displayed as the distance between bottom surface and highest point on cutting edge.

| «7» Corner-R (RE) symbol |                          |                     |        |
|--------------------------|--------------------------|---------------------|--------|
| ISO                      |                          | ANSI                |        |
| Corner-R(RE) (mm)        | Symbol                   | Corner-R(RE) (inch) | Symbol |
| Sharp corner             | 00                       | .000                | 00     |
| 0.03                     | 003                      | .001                | 01     |
| 0.05                     | 005                      | .002                | 013    |
| 0.1                      | 01                       | .004                | 02     |
| 0.2                      | 02                       | .008                | 05     |
| 0.4                      | 04                       | 1/64                | 1      |
| 0.8                      | 08                       | 1/32                | 2      |
| 1.2                      | 12                       | 3/64                | 3      |
| 1.6                      | 16                       | 1/16                | 4      |
| 2.0                      | 20                       | 5/64                | 5      |
| 2.4                      | 24                       | 3/32                | 6      |
| 2.8                      | 28                       | 7/64                | 7      |
| 3.2                      | 32                       | 1/8                 | 8      |
| Round insert             | 00 (inch) or M0 (metric) | Round insert        | 0      |

«8» Manufacturer's option  
Hand symbol, chipbreaker symbol, etc.

- Expressed as edge length for ISO.  
- ANSI expresses the inscribed circle diameter in inches.

Positive inserts identification system




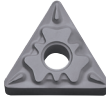






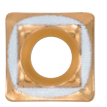

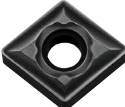

## Insert colour

Red colour = New grade

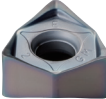

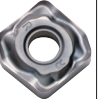
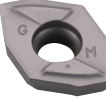
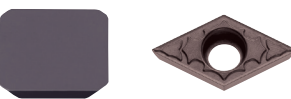
### Cermet

| Grades        | Cermet  |       |        |        |      |      |        |       |       | CVD coated cermet   | MEGACOAT NANO cermet   |       |       |       | MEGACOAT cermet   | PVD coated cermet   |
|---------------|---|-------|--------|--------|------|------|--------|-------|-------|---|--|-------|-------|-------|---|---|
|               | TN610   | TN620 | TN620M | TN6020 | TN60 | TN90 | TN100M | TC40N | TC60M | CCX   | PV710  | PV720 | PV730 | PV60M | PV7005  | PV7040  |
| Insert colour |  |       |        |        |      |      |        |       |       |  |  |       |       |       |  |  |


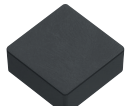

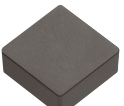
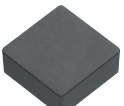
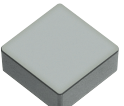
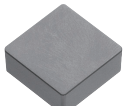
### CVD coated carbide

| Grades        | CVD coated carbide   |       |       |  |  |  |   |       |       |        |       |       |             |             |        |
|---------------|--|-------|-------|--|--|--|---|-------|-------|--------|-------|-------|-------------|-------------|--------|
|               | CA310  | CA315 | CA320 | CA415D   | CA520D   | CA420M   | CA45 series   | CA510 | CA515 | CA025P | CA525 | CA530 | CA55 series | CA65 series | CR9025 |
| Insert colour |  |       |       |  |  |  |  |       |       |        |       |       |             |             |        |

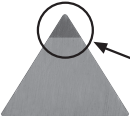
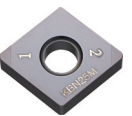

### PVD coated carbide

| Grades        | MEGACOAT NANO   |        |        |        |        | MEGACOAT NANO PLUS  |        | MEGACOAT HARD   |        | MEGACOAT  |        |        |        | PVD coated carbide   |       |       |        |        |
|---------------|---|--------|--------|--------|--------|---|--------|---|--------|---|--------|--------|--------|--|-------|-------|--------|--------|
|               | PR1510  | PR1515 | PR1525 | PR1535 | PR1625 | PR1705  | PR1725 | PR005S  | PR015S | PR1210  | PR1215 | PR1225 | PR1230 | PR905  | PR915 | PR930 | PR1025 | PR1115 |
| Insert colour |  |        |        |        |        |  |        |  |        |  |        |        |        |  |       |       |        |        |


### Ceramic

| Grades        | Aluminum oxide ceramic  |     |      | PVD coated ceramic  |  | MEGACOAT ceramic  |  | Silicon nitride ceramic   |        | CVD coated silicon nitride ceramic   |  | SiAlON ceramic  |        |   |  |
|---------------|---|-----|------|---|--|---|--|---|--------|--|--|---|--------|---|--|
|               | KA30  | A65 | KT66 | A66N  |  | PT600M  |  | KS6015  | KS6050 | CS7050   |  | KS6030  | KS6040 |   |  |
| Insert colour |  |     |      |  |  |  |  |  |        |  |  |  |        |  |  |

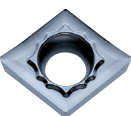
### CBN & PCD

| Grades        | CBN   |        |        |        | PCD    |        |        | MEGACOAT TOUGH CBN / MEGACOAT CBN   |         | PVD coated CBN  |
|---------------|---|--------|--------|--------|--------|--------|--------|---|---------|---|
|               | KBN475  | KBN510 | KBN525 | KBN570 | KPD001 | KPD010 | KPD230 | KBN020  | KBN...M | KBN900  |
| Insert colour |  |        |        |        |        |        |        |  |         |  |

### DLC coated carbide

| Grades        | DLC coated carbide  |        |
|---------------|---|--------|
|               | PDL010  | PDL025 |
| Insert colour |  |        |

### Uncoated carbide

| Grades        | Carbide   |      |      |      |      |
|---------------|---|------|------|------|------|
|               | GW05  | GW15 | GW25 | KW10 | SW05 |
| Insert colour |  |      |      |      |      |

B



Turning indexable inserts

# Negative-Chipbreaker


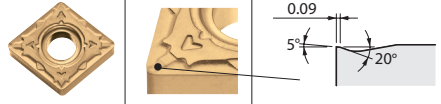
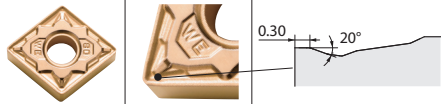
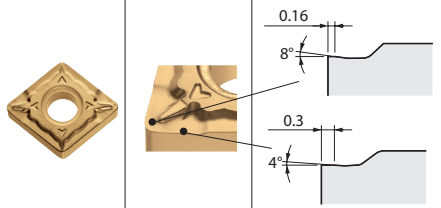
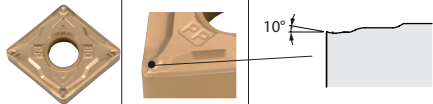
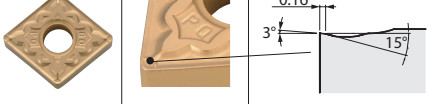
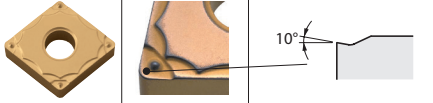
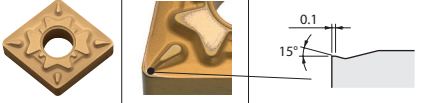
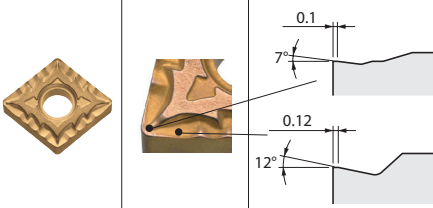
B



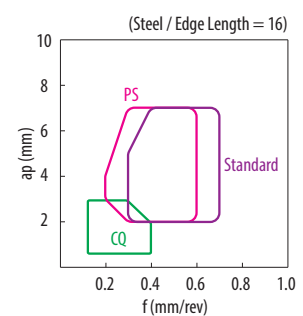
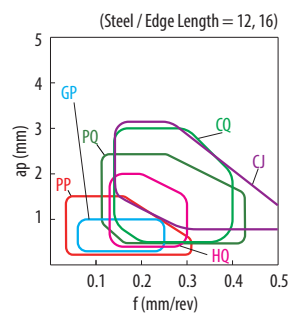
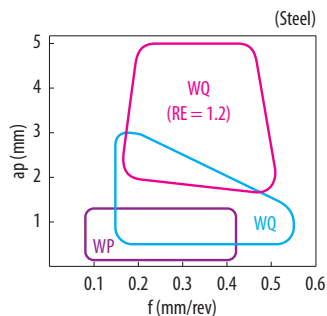
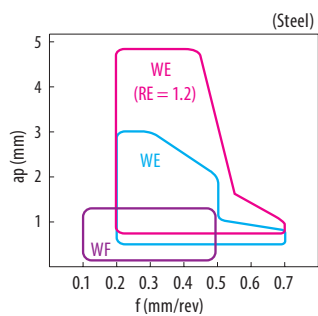
Turning indexable inserts

Chip breakers

## Steel (Molded chipbreaker)

| Cutting Range      | Name | Design   | Advantages   |
|--------------------|------|--|--|
| Finishing          | WF   |     | <ul style="list-style-type: none"> <li>• Wiper insert</li> <li>• Good chip control in finishing operations</li> <li>• Excellent surface roughness by controlling adhesion</li> <li>• Less cutting force due to sharp cutting edge</li> </ul> |
| Finishing          | WP   |     | <ul style="list-style-type: none"> <li>• Wiper insert</li> <li>• Good chip control at small machining</li> </ul>   |
| Finishing - Medium | WE   |   | <ul style="list-style-type: none"> <li>• Wiper insert</li> <li>• Good surface finish at high feed machining</li> <li>• High productivity with smooth chip control in a wide range of applications</li> </ul>                                 |
| Finishing - Medium | WQ   |   | <ul style="list-style-type: none"> <li>• Wiper insert</li> <li>• Double feed rate possible while maintaining a smooth finish</li> <li>• High efficiency and good chip control</li> </ul>   |
| Finishing          | PP   |    | <ul style="list-style-type: none"> <li>• 3-step dot structure realizes stable chip control at a wide range of feed rate</li> <li>• Less cutting force due to sharp cutting edge and smooth rake face</li> </ul>                              |
| Finishing - Medium | PQ   |    | <ul style="list-style-type: none"> <li>• Stable chip control in a wide feed rate range by breaking chips effectively</li> <li>• Well-balanced edge sharpness and toughness</li> </ul>  |
| Finishing          | GP   |  | <ul style="list-style-type: none"> <li>• Finishing to light machining</li> <li>• Good chip control</li> </ul>  |
| Finishing - Medium | HQ   |  | <ul style="list-style-type: none"> <li>• Sharp cutting performance with 3-D rake angle and double projection design</li> </ul>   |
| Finishing - Medium | CQ   |  | <ul style="list-style-type: none"> <li>• Good chip control for varied ap such as copying</li> <li>• Applicable to up facing</li> </ul>   |

Applicable chipbreaker range (ap indicates radius)



B4

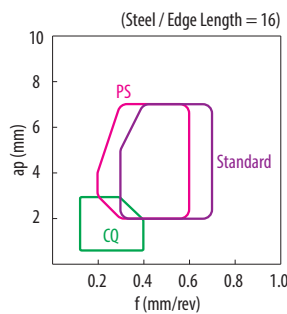
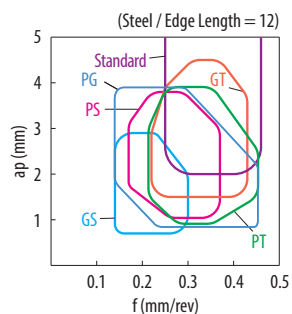
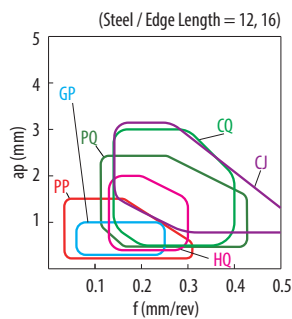
# Negative-Chipbreaker

## Steel (Molded chipbreaker)

| Cutting Range                  | Name | Design | Advantages   |
|--------------------------------|------|--------|--|
| Finishing - Medium / up facing | CJ   |        | <ul style="list-style-type: none"> <li>Improved chip curling at small machining and high feed rate machining</li> <li>Improved chip evacuation at copying and up facing</li> </ul>   |
| Medium - Roughing              | PG   |        | <ul style="list-style-type: none"> <li>Stable machining with good balance of edge sharpness and strength</li> <li>Prevent chip dogging at high feed rate</li> <li>Good chip control at low feed rate</li> <li>Stable machining with wide chip control range</li> </ul> |
| Medium - Roughing              | GS   |        | <ul style="list-style-type: none"> <li>Strong edge chipbreaker</li> <li>Stable for continuous machining and light interrupted machining</li> </ul>   |
| Medium - Roughing              | PS   |        | <ul style="list-style-type: none"> <li>General purpose chipbreaker</li> <li>More stable due to large contact surface</li> </ul>  |

| Cutting Range                             | Name | Design | Advantages   |
|---|------|--------|--|
| Medium - Roughing / High Feed Rate        | PT   |        | <ul style="list-style-type: none"> <li>Low cutting force at high feed machining</li> <li>Land support structure</li> </ul>                                   |
| Medium - Roughing / High Feed Rate        | GT   |        | <ul style="list-style-type: none"> <li>Strong edge chipbreaker</li> <li>Wide land design and smooth chip control even at high feed rate machining</li> </ul> |
| Roughing<br>Standard (without indication) |      |        | <ul style="list-style-type: none"> <li>Low cutting force and applicable to large ap roughing</li> </ul>  |

Applicable chipbreaker range (ap indicates radius)



B



Turning indexable inserts

B5

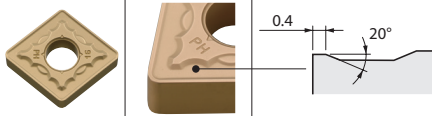
# Negative-Chipbreaker

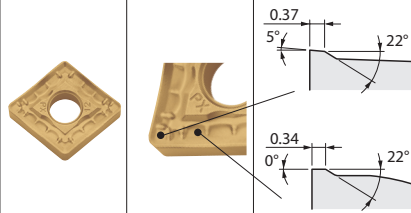
B



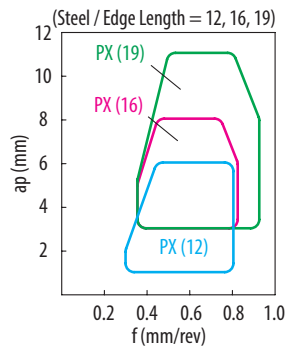
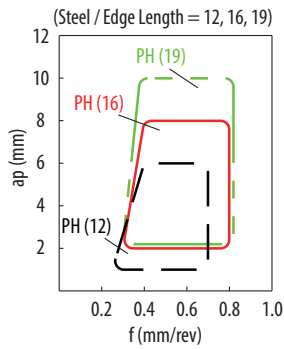
Turning indexable inserts

## Steel (Molded chipbreaker)

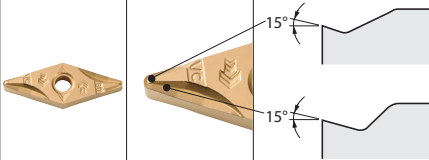
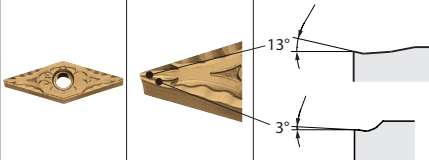
| Cutting Range | Name | Design  | Advantages  |
|---------------|------|---|---|
| Roughing      | PH   |  | <ul style="list-style-type: none"> <li>Suitable for heavy interrupted machining and for workpieces with scale due to strong cutting edge</li> </ul> |

| Cutting Range             | Name | Design   | Advantages   |
|---------------------------|------|--|--|
| Roughing (high feed rate) | PX   |  | <ul style="list-style-type: none"> <li>Roughing and high feed rate operation</li> <li>Low cutting force chipbreaker</li> </ul> |

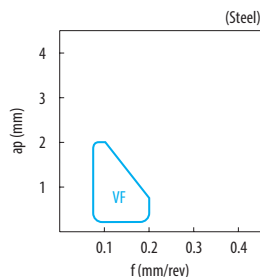
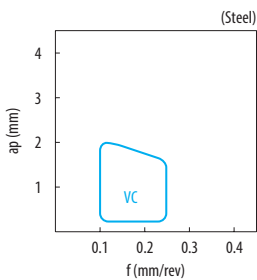
Applicable chipbreaker range (ap indicates radius)



## Steel (copying / undercutting , varied ap)

| Cutting Range      | Name | Design  | Advantages  |
|--------------------|------|---|---|
| Finishing - Medium | VC   |  | <ul style="list-style-type: none"> <li>Handed chipbreaker for copying</li> <li>Good chip control at varied ap because of the large space on the main cutting edge side</li> </ul> |
| Finishing - Medium | VF   |  | <ul style="list-style-type: none"> <li>Good chip control at varied ap such as copying and undercutting</li> </ul>   |

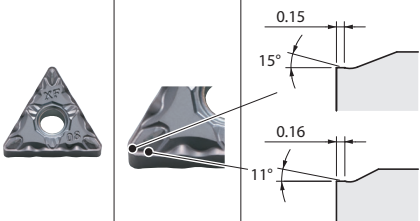
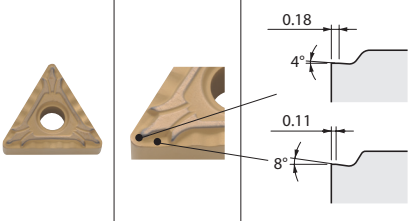
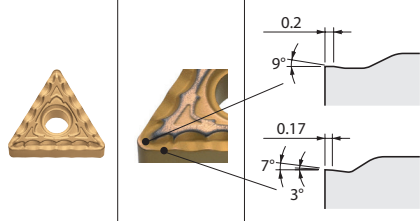
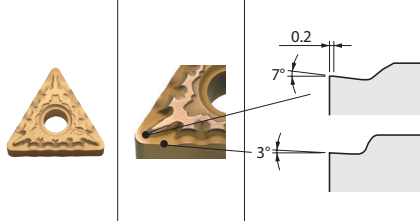
Applicable chipbreaker range (ap indicates radius)




B6

# Negative-Chipbreaker

## Low carbon steel (pipe / rolled plate / rolled steel)

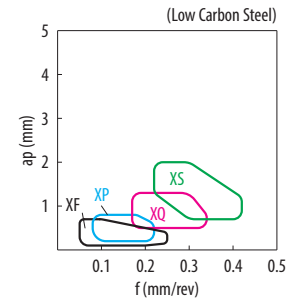
| Cutting Range | Name | Design   | Advantages  |
|---------------|------|--|---|
| Finishing     | XF   |   | • Excellent chip control at high speed and small ap machining of low carbon steel |
|               | XP   |   | • Short chips due to sharp cutting and special design                             |
| Medium        | XQ   |  | • Consistent chip breaking due to moderate rake face and special design           |
|               | XS   |  | • Consistent chip breaking due to special rake face and rake angle design         |

**B**

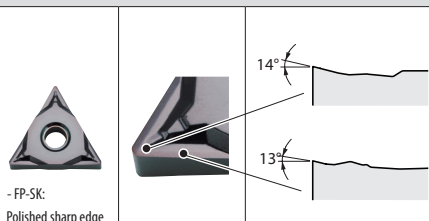
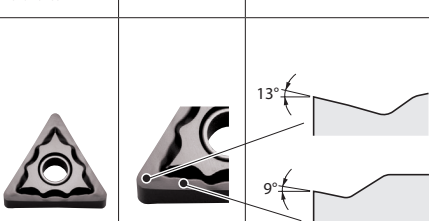
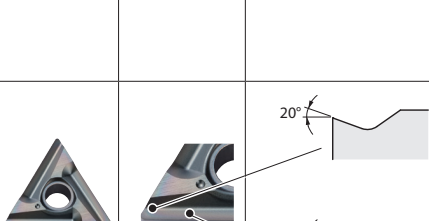


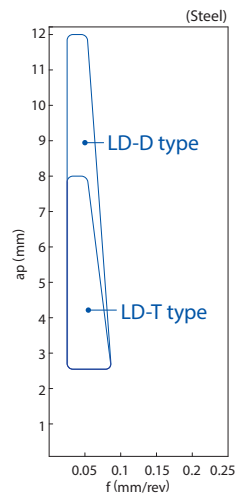
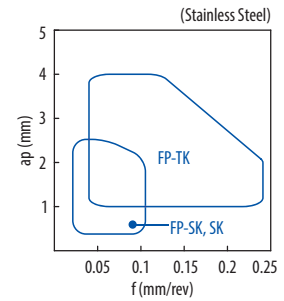
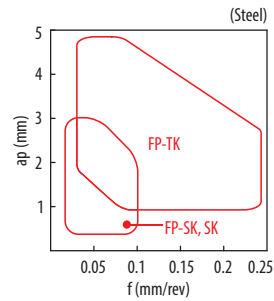
Turning indexable inserts

Applicable chipbreaker range (ap indicates radius)



## Steel / stainless steel (for automatic lathe)

| Cutting Range      | Name  | Design   | Advantages  |
|--------------------|-------|--|---|
| Finishing - Medium | SK    | <br>- FP-SK: Polished sharp edge<br>- SK: Honed | • Machining in automatic lathes<br>• Sharp cutting performance equivalent to positive inserts<br>• 2-step dot design provides reliable chip control at various ap   |
| Medium - Roughing  | FP-TK |   | • Good in automatic lathes (When machining workpieces of medium to large diameter)<br>• Superior cutting performance achieved by sharp edge and polished surface<br>• Smooth chipbreaker geometry improves chip flow with less adhesion<br>• Large curled chips |
| Large ap           | LD    |   | • Available for greater depths of cut than many conventional chipbreakers<br>• Achieves high-precision machining in a single pass<br>• Chipbreaker shape optimized for various depths of cut<br>• Stable chip control in a wide range of machining applications |



# Negative-Chipbreaker

B



Turning indexable inserts

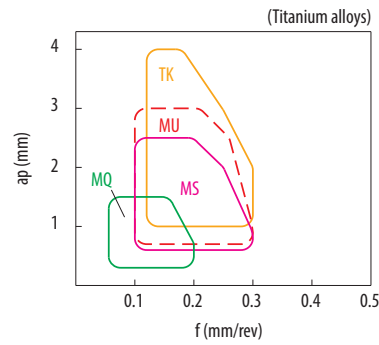
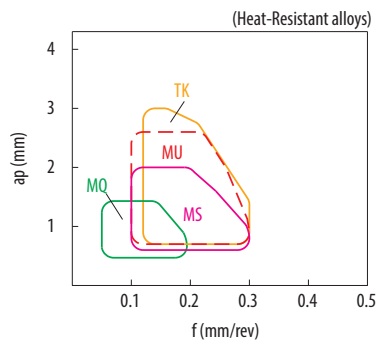
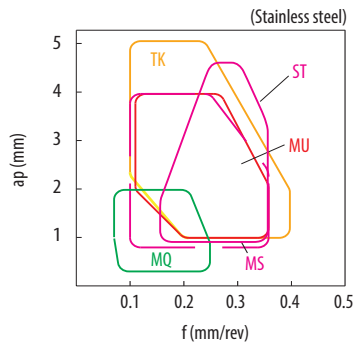
Chip breakers

## Stainless steel / heat-resistant alloys / titanium alloy

| Cutting Range     | Name | Design | Advantages   |
|-------------------|------|--------|--|
| Finishing         | MQ   |        | <ul style="list-style-type: none"> <li>Large rake angle</li> <li>Low cutting force and good chip control</li> </ul>  |
| Medium - Roughing | MS   |        | <ul style="list-style-type: none"> <li>Superior cutting edge sharpness and strength achieved by a positive land</li> <li>Extra strength of cutting edge inhibits damage from wall shouldering</li> </ul> |
| Medium - Roughing | MU   |        | <ul style="list-style-type: none"> <li>Large rake angle reduces cutting force</li> <li>Less burring achieved by diminishing damage from notching</li> </ul>  |

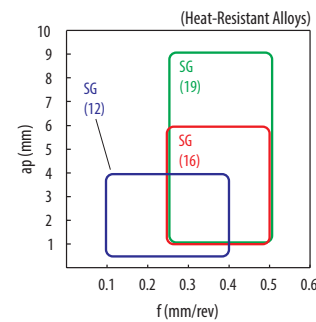
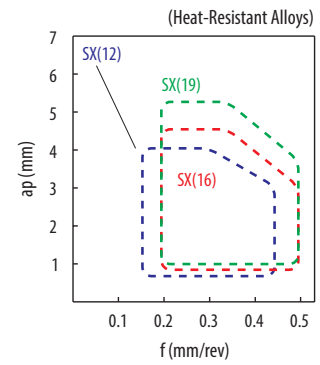
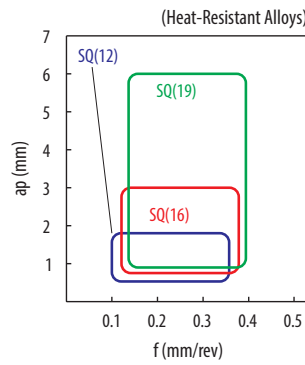
| Cutting Range     | Name | Design | Advantages  |
|-------------------|------|--------|---|
| Medium - Roughing | TK   |        | <ul style="list-style-type: none"> <li>Smooth chipbreaker geometry improves chip flow with less adhesion</li> <li>Large curled chips</li> </ul> |
| Medium - Roughing | ST   |        | <ul style="list-style-type: none"> <li>Less cutting force due to large rake angle</li> <li>Less notching by special design</li> </ul>           |

Applicable chipbreaker range (ap indicates radius)



## Heat-resistant alloys




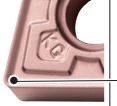


| Cutting Range      | Name | Design | Advantages  |
|--------------------|------|--------|---|
| Finishing - Medium | SQ   |        | <ul style="list-style-type: none"> <li>Effective for burr suppression and reducing notching by slant cutting edge (inclined in (-) direction)</li> </ul>  |
| Roughing           | SG   |        | <ul style="list-style-type: none"> <li>Well-balanced edge strength</li> <li>Cutting force reduction for stable machining at high-load cutting</li> <li>Shallow and gently curved breaker controls chips smoothly</li> </ul> |
| Roughing           | SX   |        | <ul style="list-style-type: none"> <li>Slant cutting edge reduces cutting force</li> <li>Less burring achieved by unique cutting edge design</li> </ul>   |



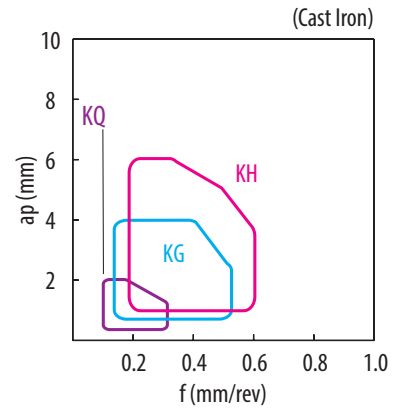
B8

# Negative-Chipbreaker

## Cast iron (K series)

| Cutting Range          | Name | Design  |   | Advantages   |
|------------------------|------|---|---|--|
| Sharp cutting oriented | KQ   |  |  | <ul style="list-style-type: none"> <li>• Sharp cutting chipbreaker</li> <li>• Edge geometry is suitable for workpieces that require sharpness such as thin-walled</li> </ul>   |
| Roughing               | KG   |  |  | <ul style="list-style-type: none"> <li>• Excellent balance of sharpness and strength</li> <li>• Realized stability at continuous machining</li> </ul>  |
| Roughing               | KH   |  |  | <ul style="list-style-type: none"> <li>• Good for heavily interrupted machining</li> <li>• Strong edge chipbreaker</li> <li>• Improved locating / seating in the toolholder pocket, high reliability achieved</li> </ul> |

Applicable chipbreaker range (ap indicates radius)

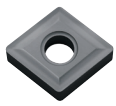

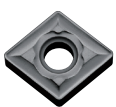
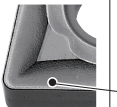
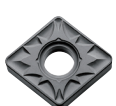
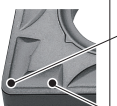
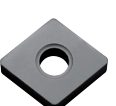



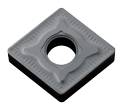

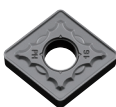

B

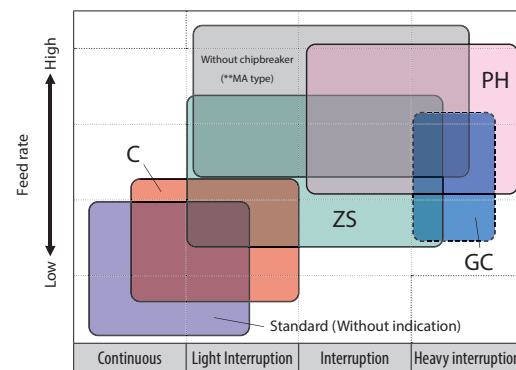


Turning indexable inserts

## Cast iron

| Cutting Range          | Name                          | Design  |   | Advantages  |
|------------------------|-------------------------------|---|---|---|
| Sharp cutting oriented | Standard (Without Indication) |  |  | <ul style="list-style-type: none"> <li>• Standard type for continuous to light interrupted cut (Low cutting force)</li> </ul>   |
|                        | C                             |  |  | <ul style="list-style-type: none"> <li>• High feed rate chipbreaker for continuous to light interrupted cut</li> </ul>          |
|                        | ZS                            |  |  | <ul style="list-style-type: none"> <li>• Standard type for light interrupted to interrupted cut (Stability oriented)</li> </ul> |
|                        | Without chipbreaker           |  |  | <ul style="list-style-type: none"> <li>• High feed rate chipbreaker for light interrupted to interrupted cut</li> </ul>         |

| Cutting Range      | Name | Design   |   | Advantages  |
|--------------------|------|--|---|---|
| Stability oriented | GC   |  |  | <ul style="list-style-type: none"> <li>• For heavy interrupted cut (Tough edge chipbreaker)</li> </ul>  |
|                    | PH   |  |  | <ul style="list-style-type: none"> <li>• For roughing</li> <li>• Suitable for heavy interrupted cut and for workpieces with scale due to strong cutting edge</li> </ul> |



B9



# Negative-Chipbreaker

B

## Non-ferrous metals

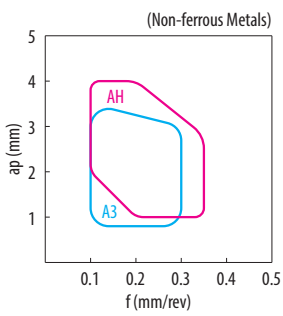


Turning indexable inserts

| Cutting Range      | Name | Design |  | Advantages   | Cutting Range     | Name | Design  |  | Advantages  |
|--------------------|------|--------|--|--|-------------------|------|---|--|---|
| Finishing - Medium | A3   |        |  | <ul style="list-style-type: none"> <li>• Large rake angle and smooth surface</li> <li>• Good chip control and less adhesion</li> </ul> | Medium - Roughing | AH   |   |  | <ul style="list-style-type: none"> <li>• Polished chipbreaker</li> <li>• Smooth chip control and less adhesion</li> </ul> |
|                    |      |        |  |  |                   |      | G class: Sharp edge<br>M class: Horned edge prep. |  |   |

Applicable chipbreaker range (ap indicates radius)

Chip breakers



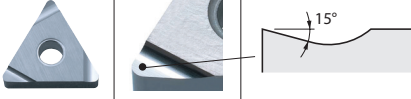
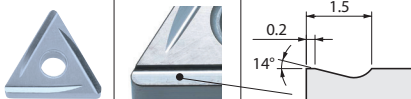
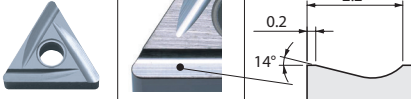
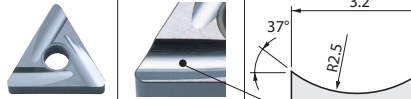
| A3 chipbreaker |                             |
|----------------|-----------------------------|
|                | ap = 2 mm<br>f = 0.2 mm/rev |
|                | ap = 2 mm<br>f = 0.3 mm/rev |

| AH chipbreaker |                             |
|----------------|-----------------------------|
|                | ap = 2 mm<br>f = 0.2 mm/rev |
|                | ap = 2 mm<br>f = 0.3 mm/rev |



# Negative-Chipbreaker

## Steel (Ground chipbreaker)

| Cutting Range                         | Name | Design   | Advantages  |
|---------------------------------------|------|--|---|
| Finishing                             | S    |   | <ul style="list-style-type: none"> <li>• Sharp edge and less cutting force</li> <li>• Good chip control and smooth chip evacuation</li> </ul>                           |
| Finishing - Medium                    | B    |   | <ul style="list-style-type: none"> <li>• Suitable for general purpose machining at feed rate 0.15 to 0.25mm/rev</li> </ul>  |
| Medium - Roughing                     | C    |  | <ul style="list-style-type: none"> <li>• Suitable for general purpose machining at feed rate 0.20 to 0.35 mm/rev</li> </ul>   |
| Medium - Roughing / Low cutting force | 25R  |  | <ul style="list-style-type: none"> <li>• Applicable to sticky material such as low carbon steel</li> <li>• Large rake angle and suitable for stainless steel</li> </ul> |

B

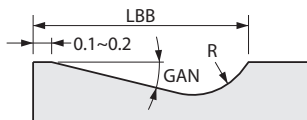


Turning indexable inserts

### Effectiveness of ground chipbreaker

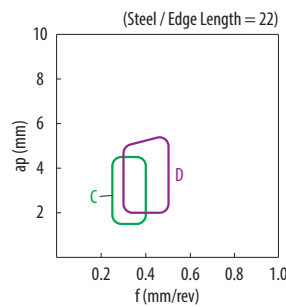
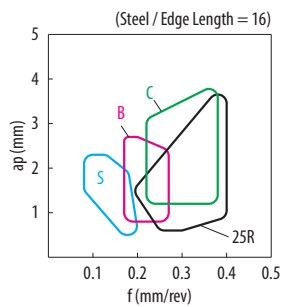
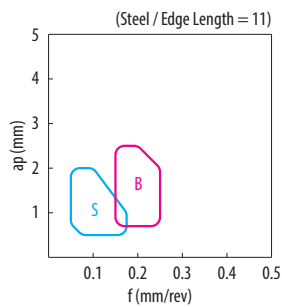
1. Lower cutting force and improve edge
2. Improved adhesion resistance
3. Improved dimension accuracy and finishing surface accuracy
4. Controlled chip evacuation direction

### Specification of B, C and parallel ground chipbreaker



| Insert type | Size  | Chipbreaker name                  | LBB | GAN | R   |
|-------------|-------|-----------------------------------|-----|-----|-----|
| CNGG        | 09,12 | Without indication (Similar to C) | 2.2 | 14° | 1.0 |
| WNGG        | 06    | Without indication (Similar to C) | 2.2 | 14° | 1.0 |
| TNGG        | 11,16 | B                                 | 1.5 | 14° | 0.5 |
|             | 16,22 | C                                 | 2.2 | 14° | 1.0 |
| DNGG        | 11,15 | Without indication (Similar to C) | 2.5 | 14° | 2.0 |
| VNGG        | 16    | Without indication (Similar to B) | 1.5 | 14° | 0.5 |
| SNGG        | 09,12 | B                                 | 1.5 | 14° | 0.5 |
|             | 12    | C                                 | 2.2 | 14° | 1.0 |

### Applicable chipbreaker range (ap indicates radius)



# Positive-chipbreaker

B



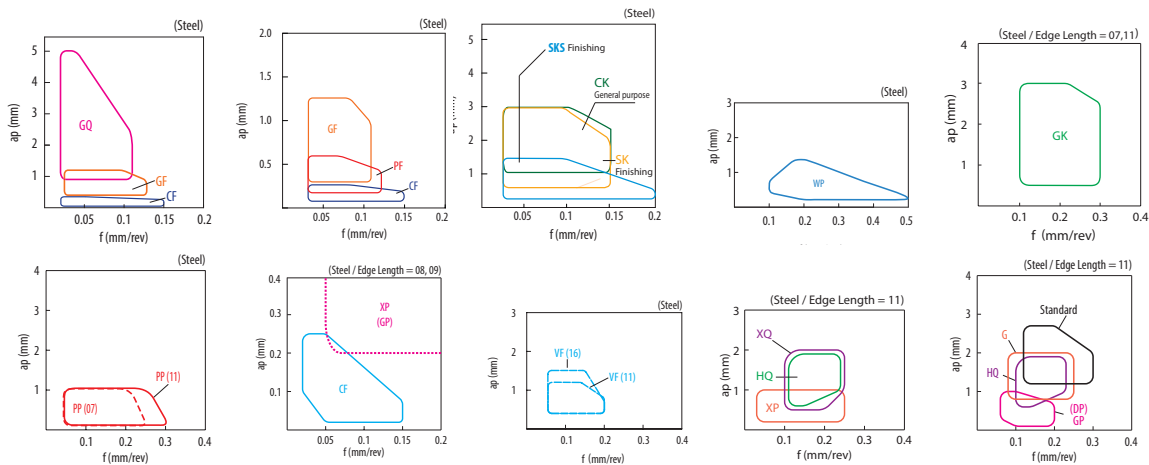
Turning indexable inserts

Chip breakers

## Steel (Molded chipbreaker)

| Name                                    | Design |  | Advantages   |
|---|--------|--|--|
| Minute ap<br>CF                         |        |  | • Available for minute ap (0.02 to 0.2 mm) finishing   |
| Finishing<br>PF                         |        |  | • Chipbreaker for finishing boring available from ap 0.15~0.6 mm   |
| Finishing<br>GF                         |        |  | • Chips fragmented in small pieces in machining of small ap  |
| Finishing - Medium<br>GQ                |        |  | • Wide range of conditions by using the optimum chipbreaker width according to the cutting depth   |
| Finishing<br>SKS                        |        |  | • Chipbreaker for finishing available from 0.2~1.5mm<br>• Rake face, bottom face and chipbreaker face provide stable chip control.                             |
| Finishing<br>SK                         |        |  | • Sharp cutting performance due to large rake angle<br>• Large dot to the corner edge improved chip control in a wide feed rate range                          |
| Finishing<br>CK                         |        |  | • Good cutting performance<br>• Applicable without hand for two direction machining on automatic lathe   |
| Finishing<br>WP                         |        |  | • Wiper insert<br>• Good surface finish and good chip control at high feeds<br>• Reduces surface finish galling  |
| Finishing - Medium<br>GK                |        |  | • Good chip evacuation at wide range by breaker dot and wide chip pocket   |
| Finishing<br>PP                         |        |  | • 1st. recommendation<br>• Stable chip control in a wide feed rate range<br>• Stable tool life due to special edge design with sharpness and improved strength |
| Finishing<br>DP                         |        |  | • Consistent chip breaking performance for finishing   |
| Finishing<br>GP                         |        |  | • Good chip control  |
| Finishing<br>VF                         |        |  | • Good chip control for varied ap such as copying and undercutting   |
| Finishing - Medium<br>HQ                |        |  | • General purpose chipbreaker for medium machining   |
| Medium<br>G                             |        |  | • Chipbreaker for short chips  |
| Medium<br>Standard (without indication) |        |  | • Strong edge chipbreaker  |

Applicable chipbreaker range (ap indicates radius)



B12

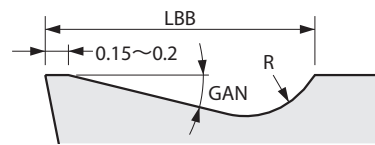
# Positive-chipbreaker

## Steel (Ground chipbreaker)

| Cutting Range | Name                      | Design | Advantages   |
|---------------|---------------------------|--------|--|
| Finishing     | Lead (Without Indication) |        | • Good chip control at finishing to light machining with low cutting force                   |
| Finishing     | F                         |        | • Good chip control at finishing to light machining with low cutting force                   |
| Finishing     | P                         |        | • Flows chips towards the inlet of hole<br>• Sharp edge                                      |
| Medium        | Y                         |        | • Sharp cutting performance and good surface finish  |
| Low Feed      | J                         |        | • Slant chipbreaker width and chip control at various ap<br>• Applicable to automatic lathes |
| Low Feed      | U                         |        | • Good chip control at low feed rate and varied ap with low cutting force                    |

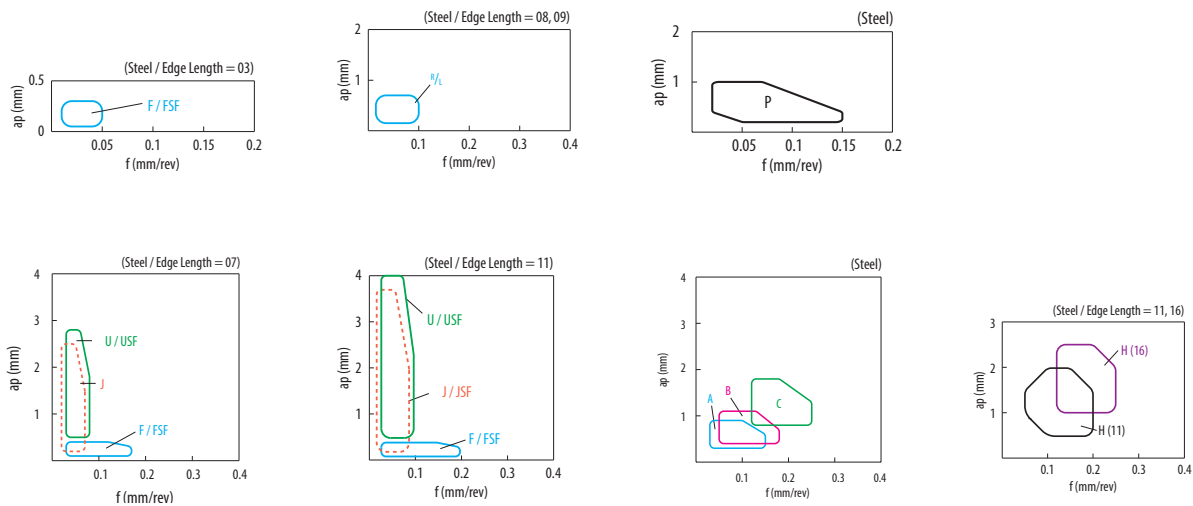
| Cutting Range      | Name | Design | Advantages  |
|--------------------|------|--------|---|
| Finishing          | A    |        | • Large rake angle and low cutting force<br>• Narrow chipbreaker width and consistent chip control          |
| Finishing - Medium | B    |        | • General purpose chipbreaker for medium machining<br>• Good balance between chip control and sharp cutting |
| Medium             | C    |        | • Applicable to high load machining<br>• Good chip flow and less resistance                                 |
| Medium             | H    |        | • Sharp cutting performance and small curled chips  |

Specification of A, B, C and parallel ground chipbreaker



| Insert type | Size  | Chipbreaker name                  | LBB | GAN | R   |
|-------------|-------|-----------------------------------|-----|-----|-----|
| TPGR        | 11    | A                                 | 1.0 | 17° | 0.5 |
|             | 11,16 | B                                 | 1.5 | 14° | 0.5 |
|             | 16    | C                                 | 2.2 | 14° | 1.0 |
| SPGR        | 09    | Without Indication (Similar to B) | 1.5 | 14° | 0.5 |
|             | 12    | Without Indication (Similar to C) | 2.2 | 14° | 1.0 |

Applicable chipbreaker range (ap indicates radius)



B



Turning indexable inserts

# Positive-chipbreaker

B



Turning indexable inserts

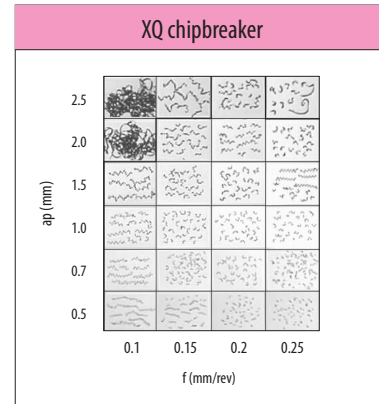
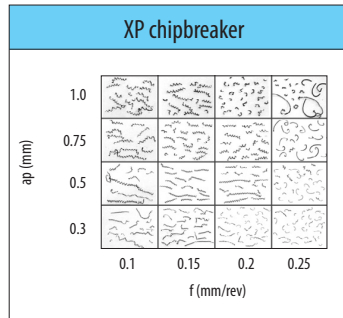
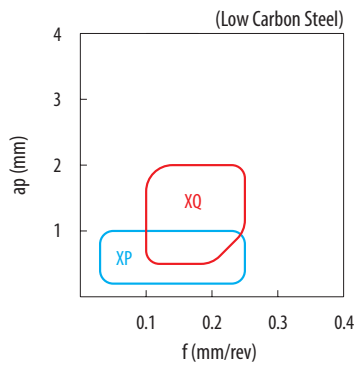
Chip breakers

## Low carbon steel (pipe / rolled plate / rolled steel)

| Cutting Range | Name | Design | Advantages   |
|---------------|------|--------|--|
| Finishing     | XP   | 20°    | <ul style="list-style-type: none"> <li>Consistent chip breaking performance even for low carbon steel and sticky material</li> </ul> |

| Cutting Range      | Name | Design             | Advantages   |
|--------------------|------|--------------------|--|
| Finishing - Medium | XQ   | 0.05<br>20°<br>20° | <ul style="list-style-type: none"> <li>Wide chip control range and sharp cutting performance</li> <li>Suitable for low carbon steel and sticky material</li> </ul> |

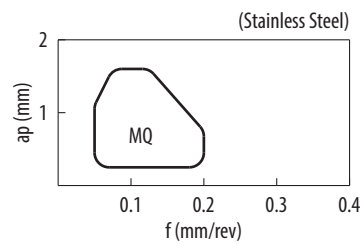
Applicable chipbreaker range (ap indicates radius)



## Stainless steel

| Cutting Range | Name | Design          | Advantages  |
|---------------|------|-----------------|---|
| Finishing     | MQ   | 0°<br>0.2<br>7° | <ul style="list-style-type: none"> <li>Good chip evacuation at internal turning</li> <li>Small curled chips</li> <li>Prevents chip entanglement with toolholder and stabilizes surface roughness</li> </ul> |

Applicable chipbreaker range (ap indicates radius)

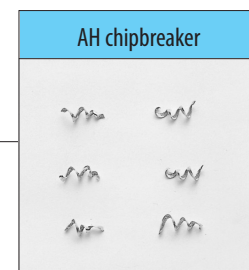
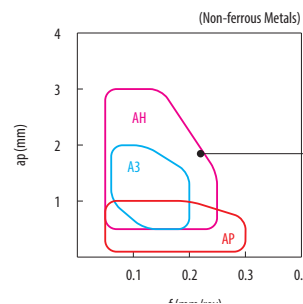


## Non-ferrous metals

| Cutting Range      | Name | Design    | Advantages  |
|--------------------|------|-----------|---|
| Finishing          | AP   | 27°<br>5° | <ul style="list-style-type: none"> <li>Curved edge and shape of chipbreaker lead good chip control</li> <li>Sharp cutting edge provides excellent surface finish</li> <li>Polished chipbreaker</li> </ul> |
| Finishing - Medium | AH   | 25°       | <ul style="list-style-type: none"> <li>Positive chip groove and good chip control with low cutting force</li> <li>Polished surface reduces adhesion</li> </ul>  |

| Cutting Range      | Name | Design | Advantages  |
|--------------------|------|--------|---|
| Finishing - Medium | A3   | 30°    | <ul style="list-style-type: none"> <li>Large rake angle, smooth chip flow and less adhesion</li> <li>Superior cutting performance achieved by sharp edge</li> </ul> |

Applicable chipbreaker range (ap indicates radius)



B14









## 80° Rhombic

How to read pages of "Turning inserts" → See page B15

**B**

Turning indexable inserts

Chip breakers

Negative

C

D

R

S

T

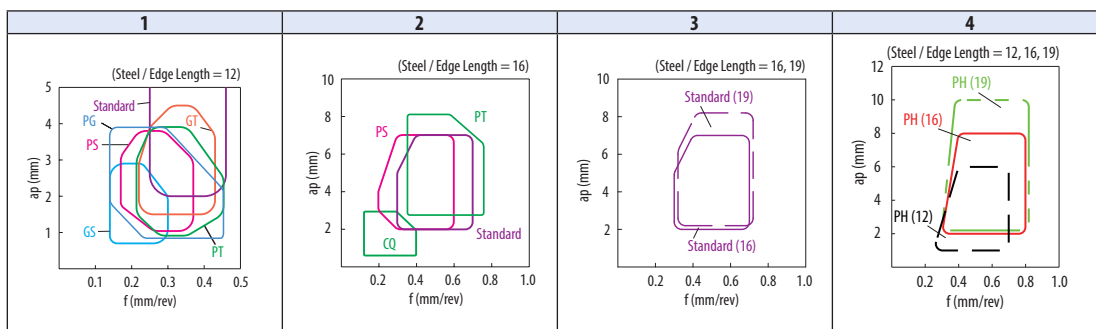
V

W

Ceramic

| Insert            | Description   | Applicable chipbreaker range | Dimension (mm) |        |      |      | Material                 |                    |                            |                 |                |                   |                    |                      |                |                |        |        |        | Applicable toolholder |        |        |        |     |        |       |       |       |      |      |       |       |                                |
|-------------------|---|------------------------------|----------------|--------|------|------|--------------------------|--------------------|----------------------------|-----------------|----------------|-------------------|--------------------|----------------------|----------------|----------------|--------|--------|--------|-----------------------|--------|--------|--------|-----|--------|-------|-------|-------|------|------|-------|-------|--------------------------------|
|                   |   |                              | No. of edges   | IC     | S    | D1   | RE                       | Material           |                            |                 |                |                   |                    |                      |                |                |        |        |        |                       |        |        |        |     |        |       |       |       |      |      |       |       |                                |
|                   |   |                              |                |        |      |      |                          | Free-cutting steel | Carbon steel / Alloy steel | Stainless steel | Gray cast iron | Nodular cast iron | Non-ferrous metals | Heat-resistant alloy | Titanium alloy | Hard materials | P      | M      | K      |                       | N      | S      | H      |     |        |       |       |       |      |      |       |       |                                |
| Medium - Roughing | <br>CNMG 120404PS<br>120408PS<br>120412PS<br>120416PS | 1                            | 4              | 12.7   | 4.76 | 5.16 | 0.4<br>0.8<br>1.2<br>1.6 | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D8~D10<br>F116<br>F125<br>F126 |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
| Medium - Roughing | <br>CNMG 120408PT<br>120412PT                         | 1                            | 4              | 12.7   | 4.76 | 5.16 | 0.8<br>1.2               | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D8~D10<br>F116,<br>F125 F126   |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
| Medium - Roughing | <br>CNMG 120408GT<br>120412GT                         | 1                            | 4              | 12.7   | 4.76 | 5.16 | 0.8<br>1.2               | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D8~D10<br>F116<br>F125<br>F126 |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
| Roughing          | <br>CNMG 120404<br>120408<br>120412<br>120416         | 1                            | 4              | 12.7   | 4.76 | 5.16 | 0.4<br>0.8<br>1.2<br>1.6 | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D8~D10<br>F116<br>F125<br>F126 |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
| Roughing          | <br>CNMG 120408PH<br>120412PH<br>120416PH             | 4                            | 4              | 12.7   | 4.76 | 5.16 | 0.8<br>1.2<br>1.6        | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D8~D10<br>F116,<br>F125 F126   |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
| Roughing          | <br>CNMG 160612PS<br>160616PS                         | 2                            | 4              | 15.875 | 6.35 | 6.35 | 1.2<br>1.6               | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |
|                   |   |                              |                |        |      |      |                          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505 | CA5515 | CA5525 | CA5535                | CA6515 | CA6525 | PRT535 | CCX | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D10                            |

### Applicable chipbreaker range



● : Standard item □ : Deleted from the next catalog

## B18





80° Rhombic

How to read pages of "Turning inserts" See page B15

**B**

Turning indexable inserts

Chip breakers

Negative

C

D

R

S

T

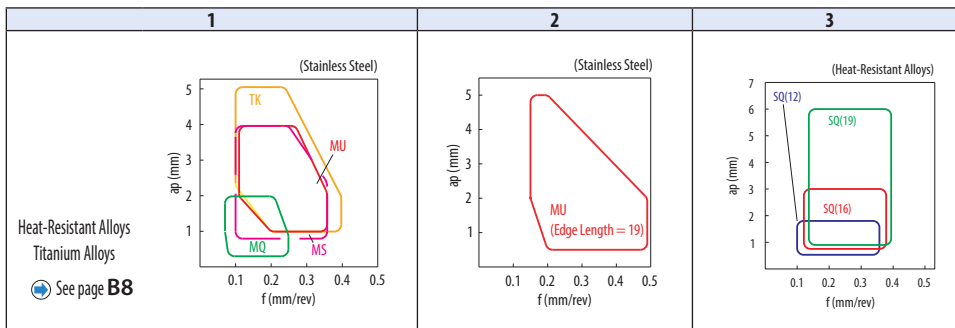
V

W

Ceramic

| Insert   | Description                        | Applicable chipbreaker range                      | Dimension (mm) |      |        |            | Carbide |                          |     |   |   | Applicable toolholder |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|--|------------------------------------|---|----------------|------|--------|------------|---------|--------------------------|-----|---|---|-----------------------|---|--------------------------------|-----|--|--|--|--|--|--|--|--|---|----------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------------|---|---|---|---|---|---|---|---|---|---|---|---|----------------|--|--|--|--|--|--|--|--|--|--|--|--|---|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|---|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|----------------|--|--|--|--|--|--|--|--|--|--|--|--|---|
|  |                                    |   | No. of edges   | IC   | S      | D1         | RE      |                          |     |   |   |                       |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|  |                                    |   |                |      |        |            |         | CVD                      | PVD |   |   |                       |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|  |                                    |   |                |      |        |            |         |                          |     |   |   |                       |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| <table border="1"> <tr><td>Free-cutting steel</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>P</td></tr> <tr><td>Carbon steel / Alloy steel</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Stainless steel</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>●</td><td>M</td></tr> <tr><td>Gray cast iron</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>K</td></tr> <tr><td>Nodular cast iron</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Non-ferrous metals</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>N</td></tr> <tr><td>Heat-resistant alloy</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>○</td><td>S</td></tr> <tr><td>Titanium alloy</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Hard materials</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>H</td></tr> </table> |                                    |   |                |      |        |            |         |                          |     |   |   | Free-cutting steel    |   |                                |     |  |  |  |  |  |  |  |  | P | Carbon steel / Alloy steel |  |  |  |  |  |  |  |  |  |  |  |  |  | Stainless steel | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | M | Gray cast iron |  |  |  |  |  |  |  |  |  |  |  |  | K | Nodular cast iron |  |  |  |  |  |  |  |  |  |  |  |  |  | Non-ferrous metals |  |  |  |  |  |  |  |  |  |  |  |  | N | Heat-resistant alloy | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | S | Titanium alloy |  |  |  |  |  |  |  |  |  |  |  |  |  | Hard materials |  |  |  |  |  |  |  |  |  |  |  |  | H |
| Free-cutting steel   |                                    |   |                |      |        |            |         |                          |     |   |   | P                     |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Carbon steel / Alloy steel   |                                    |   |                |      |        |            |         |                          |     |   |   |                       |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Stainless steel  | ●                                  | ●   | ●              | ●    | ●      | ●          | ●       | ●                        | ●   | ● | ● | M                     |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Gray cast iron   |                                    |   |                |      |        |            |         |                          |     |   |   |                       | K |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Nodular cast iron  |                                    |   |                |      |        |            |         |                          |     |   |   |                       |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Non-ferrous metals   |                                    |   |                |      |        |            |         |                          |     |   |   |                       | N |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Heat-resistant alloy   | ○                                  | ○   | ○              | ○    | ○      | ○          | ○       | ○                        | ○   | ○ | ○ | ○                     | S |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Titanium alloy   |                                    |   |                |      |        |            |         |                          |     |   |   |                       |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Hard materials   |                                    |   |                |      |        |            |         |                          |     |   |   |                       | H |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Stainless steel / Heat-resistant alloys  | <br>Medium - Roughing / Sharp edge | CNGG 120404TK<br>120408TK                         | 1              | 4    | 12.7   | 4.76       | 5.16    | 0.4<br>0.8               |     |   |   |                       |   | D8~D10<br>F116<br>F125<br>F126 |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|  | <br>Medium - Roughing              | CNMG 120404TK<br>120408TK                         | 1              | 4    | 12.7   | 4.76       | 5.16    | 0.4<br>0.8               | ●   | ● | ● | ●                     |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|  | <br>Finishing - Medium             | CNMG 120404MQ<br>120408MQ                         | 1              | 4    | 12.7   | 4.76       | 5.16    | 0.4<br>0.8               | ●   | ● | ● | ●                     | ● |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Heat-resistant alloys  | <br>Finishing - Medium             | CNMG 120404SQ<br>120408SQ<br>120412SQ             | 3              | 4    | 12.7   | 4.76       | 5.16    | 0.4<br>0.8<br>1.2        | ●   | ● | ● | ●                     |   | D10                            |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|  |                                    | CNMG 160612SQ<br>160616SQ                         | 3              | 4    | 15.875 | 6.35       | 6.35    | 1.2<br>1.6               | ●   | ● | ● | ●                     |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|  |                                    | CNMG 190612SQ<br>190616SQ                         | 3              | 4    | 19.05  | 6.35       | 7.94    | 1.2<br>1.6               | ●   | ● | ● | ●                     |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| Stainless steel / Heat-resistant alloys  | <br>Medium - Roughing              | CNMG 120404MS<br>120408MS<br>120412MS<br>120416MS | 1              | 4    | 12.7   | 4.76       | 5.16    | 0.4<br>0.8<br>1.2<br>1.6 | ●   | ● | ● | ●                     | ● | D8~D10<br>F116<br>F125<br>F126 |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|  |                                    | CNMG 120404MU<br>120408MU<br>120412MU             | 1              | 4    | 12.7   | 4.76       | 5.16    | 0.4<br>0.8<br>1.2        | ●   | ● | ● | ●                     | ● |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
|  |                                    | CNMG 160608MU<br>160612MU<br>160616MU             | 1              | 4    | 15.875 | 6.35       | 6.35    | 0.8<br>1.2<br>1.6        | ●   | ● | ● | ●                     | ● |                                | D10 |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |
| CNMG 190612MU<br>190616MU  | 2                                  | 4   | 19.05          | 6.35 | 7.94   | 1.2<br>1.6 | ●       | ●                        | ●   | ● | ● |                       |   |                                |     |  |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |  |  |  |                 |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |   |                   |  |  |  |  |  |  |  |  |  |  |  |  |  |                    |  |  |  |  |  |  |  |  |  |  |  |  |   |                      |   |   |   |   |   |   |   |   |   |   |   |   |   |                |  |  |  |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |  |  |  |   |

Applicable chipbreaker range

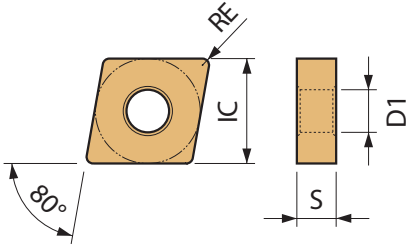


● : Standard item

B20

80° Rhombic

How to read pages of "Turning inserts" See page B15

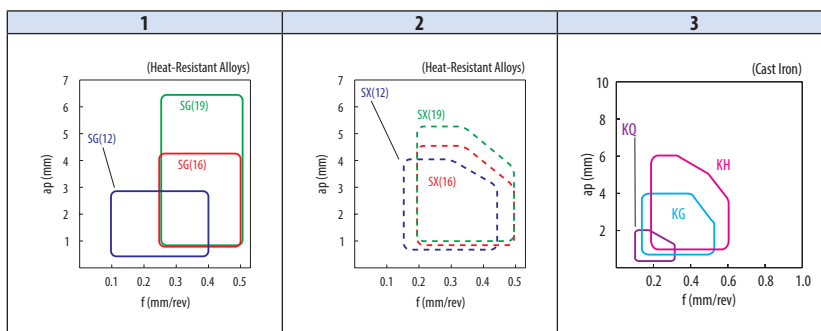


|  |  | Material Compatibility |                            |                 |                |                   |                    |                      |                |                |   |
|--|--|------------------------|----------------------------|-----------------|----------------|-------------------|--------------------|----------------------|----------------|----------------|---|
|  |  | Free-cutting steel     | Carbon steel / Alloy steel | Stainless steel | Gray cast iron | Nodular cast iron | Non-ferrous metals | Heat-resistant alloy | Titanium alloy | Hard materials |   |
|  |  |                        |                            |                 | ●              | ●                 |                    | ●                    | ●              |                | P |
|  |  |                        |                            |                 |                |                   |                    |                      |                |                | M |
|  |  |                        |                            |                 | ●              | ●                 |                    |                      |                |                | K |
|  |  |                        |                            |                 | ○              | ●                 |                    |                      |                |                | K |
|  |  |                        |                            |                 |                |                   |                    |                      |                |                | N |
|  |  |                        |                            |                 |                |                   |                    |                      |                |                | S |
|  |  |                        |                            |                 |                |                   |                    |                      |                |                | H |

| Insert   | Description                           | Applicable chipbreaker range |    | Dimension (mm) |      |      |                   | Carbide |       |       |       |        | Applicable toolholder |                                |
|--|---------------------------------------|------------------------------|----|----------------|------|------|-------------------|---------|-------|-------|-------|--------|-----------------------|--------------------------------|
|  |                                       | No. of edges                 | IC | S              | D1   | RE   | CVD               | PVD     |       |       |       |        |                       |                                |
|  |                                       |                              |    |                |      |      |                   |         | CA310 | CA315 | CA320 | PR005S |                       | PR015S                         |
| Heat-resistant alloys<br>Roughing                | CNMG 120408SG<br>120412SG             | 1                            | 4  | 12.7           | 4.76 | 5.16 | 0.8<br>1.2        | ●       | ●     | ●     | ●     | ●      | ●                     | D8~D10<br>F116, F125<br>F126   |
|  | CNMG 160612SG<br>160616SG             | 1                            | 4  | 15.875         | 6.35 | 6.35 | 1.2<br>1.6        | ●       | ●     | ●     | ●     | ●      | ●                     | D10                            |
|  | CNMG 190612SG<br>190616SG             | 1                            | 4  | 19.05          | 6.35 | 7.94 | 1.2<br>1.6        | ●       | ●     | ●     | ●     | ●      | ●                     | D10                            |
| Heat-resistant alloys<br>Roughing / Single-sided | CNMM 1204XR-SX<br>1204XL-SX           | 2                            | 2  | 12.7           | 4.42 | 5.16 | -                 | ●       | ●     | ●     | ●     | ●      | ●                     | D8~D10                         |
|  | CNMM 1606XR-SX<br>1606XL-SX           | 2                            | 2  | 15.875         | 5.96 | 6.35 | -                 | ●       | ●     | ●     | ●     | ●      | ●                     | D10                            |
|  | CNMM 1906XR-SX<br>1906XL-SX           | 2                            | 2  | 19.05          | 5.93 | 7.94 | -                 | ●       | ●     | ●     | ●     | ●      | ●                     | D10                            |
| Cast iron<br>Sharp cutting oriented              | CNMG 120404KQ<br>120408KQ<br>120412KQ | 3                            | 4  | 12.7           | 4.76 | 5.16 | 0.4<br>0.8<br>1.2 | ●       | ●     | ●     | ●     | ●      | ●                     | D8~D10<br>F116<br>F125<br>F126 |
|  | CNMG 120404KG<br>120408KG<br>120412KG | 3                            | 4  | 12.7           | 4.76 | 5.16 | 0.4<br>0.8<br>1.2 | ●       | ●     | ●     | ●     | ●      | ●                     | D8~D10<br>F116<br>F125<br>F126 |
|  | CNMG 120408KH<br>120412KH<br>120416KH | 3                            | 4  | 12.7           | 4.76 | 5.16 | 0.8<br>1.2<br>1.6 | ●       | ●     | ●     | ●     | ●      | ●                     | D8~D10<br>F116<br>F125<br>F126 |

Applicable chipbreaker range



B  
Turning indexable inserts

80° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Negative

C

D

R

S

T

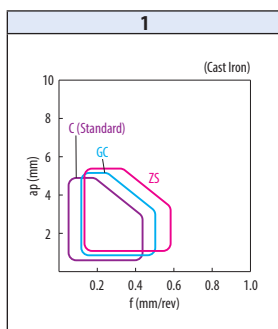
V

W

Ceramic

| Insert                           | Description                                   | Applicable chipbreaker range | No. of edges | Dimension (mm) |      |      |                          | Carbide |       |       |        |        |        | Cermet                         | Applicable toolholder          |
|----------------------------------|---|------------------------------|--------------|----------------|------|------|--------------------------|---------|-------|-------|--------|--------|--------|--------------------------------|--------------------------------|
|                                  |   |                              |              | IC             | S    | D1   | RE                       | CVD     |       |       |        |        |        |                                |                                |
|                                  |   |                              |              |                |      |      |                          | CA310   | CA315 | CA320 | CA4505 | CA4515 | CA5505 |                                |                                |
| Cast iron<br>Roughing            | CNMG 120404C<br>120408C<br>120412C<br>120416C | 1                            | 4            | 12.7           | 4.76 | 5.16 | 0.4<br>0.8<br>1.2<br>1.6 | ●●●●    | ●●●●  | ●●●●  | ●●●●   | ●●●●   | ●●●●   | ●●●●                           | D8~D10<br>F116<br>F125<br>F126 |
|                                  | CNMG 160612C                                  | 1                            | 4            | 15.875         | 6.35 | 6.35 | 1.2                      | ●●●●    | ●●●●  | ●●●●  | ●●●●   | ●●●●   | ●●●●   | D10                            |                                |
| Cast iron<br>Roughing            | CNMG 120408ZS<br>120412ZS                     | 1                            | 4            | 12.7           | 4.76 | 5.16 | 0.8<br>1.2               | ●●●●    | ●●●●  | ●●●●  | ●●●●   | ●●●●   | ●●●●   | D8~D10<br>F116<br>F125<br>F126 |                                |
|                                  | CNMG 120408GC<br>120412GC                     | 1                            | 4            | 12.7           | 4.76 | 5.16 | 0.8<br>1.2               | ●●●●    | ●●●●  | ●●●●  | ●●●●   | ●●●●   | ●●●●   |                                | D8~D10<br>F116<br>F125<br>F126 |
| Cast iron<br>Without Chipbreaker | CNMA 120404<br>120408                         | -                            | 4            | 12.7           | 4.76 | 5.16 | 0.4<br>0.8               | ●●●●    | ●●●●  | ●●●●  | ●●●●   | ●●●●   | ●●●●   | D8~D10<br>F116<br>F125<br>F126 |                                |
|                                  | CNMA 120404<br>120408                         | -                            | 4            | 12.7           | 4.76 | 5.16 | 0.4<br>0.8               | ●●●●    | ●●●●  | ●●●●  | ●●●●   | ●●●●   | ●●●●   |                                |                                |
|                                  | CNMA 120412<br>120416                         | -                            | 4            | 12.7           | 4.76 | 5.16 | 1.2<br>1.6               | ●●●●    | ●●●●  | ●●●●  | ●●●●   | ●●●●   | ●●●●   |                                |                                |
|                                  | CNMA 120412<br>120416                         | -                            | 4            | 12.7           | 4.76 | 5.16 | 1.2<br>1.6               | ●●●●    | ●●●●  | ●●●●  | ●●●●   | ●●●●   | ●●●●   |                                |                                |

Applicable chipbreaker range



● : Standard item

B22



55° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Negative

C

D

R

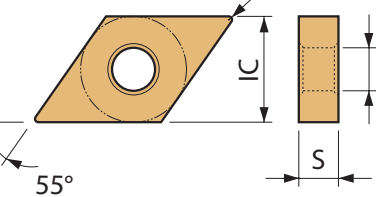



S

T

V

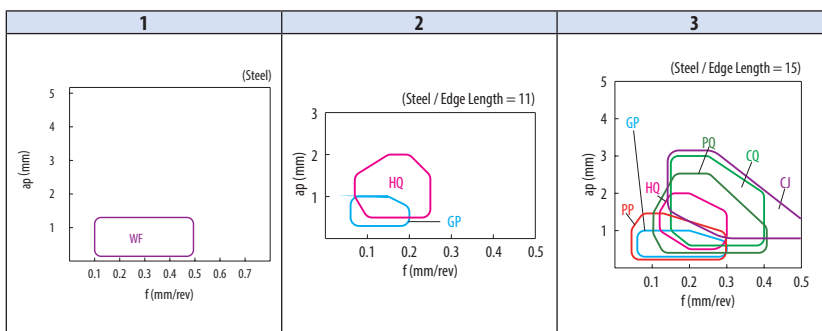
W

Ceramic

| Insert   | Description                                       | Applicable chipbreaker range | Dimension (mm) |       |      |      | Carbide                  |          | Cermet |          |   |       | Applicable toolholder              |       |       |
|--|---|------------------------------|----------------|-------|------|------|--------------------------|----------|--------|----------|---|-------|------------------------------------|-------|-------|
|  |   |                              | No. of edges   | IC    | S    | D1   | RE                       | CVD      |        | PVD      | - |       |                                    |       |       |
|  |   |                              |                |       |      |      |                          | CA02SP   | CA510  |          |   | CA515 |                                    | CA525 | CA530 |
| <br>With Wiper Edge | DNMX 150404WF<br>150408WF<br>150412WF             | 1                            | 4              | 12.7  | 4.76 | 5.16 | 0.4<br>0.8<br>1.2        | ●●●●●●●● |        | ●●       |   | ●●    | D13~D17<br>F118, F130<br>F132~F134 |       |       |
|  | DNMX 150604WF<br>150608WF<br>150612WF             | 1                            | 4              | 12.7  | 6.35 | 5.16 | 0.4<br>0.8<br>1.2        | ●●●●●●●● |        | ●●       |   | ●●    | D13~D17<br>F118                    |       |       |
|                   | DNMG 150402PP<br>150404PP<br>150408PP<br>150412PP | 3                            | 4              | 12.7  | 4.76 | 5.16 | 0.2<br>0.4<br>0.8<br>1.2 | ●●●●●●●● | ●●     | ●●●●●●●● |   | ●●    | D13~D17<br>F118, F130<br>F132~F134 |       |       |
|  | DNMG 150602PP<br>150604PP<br>150608PP<br>150612PP | 3                            | 4              | 12.7  | 6.35 | 5.16 | 0.2<br>0.4<br>0.8<br>1.2 | ●●●●●●●● | ●      | ●●●●●●●● |   | ●●    | D13~D17<br>F118                    |       |       |
|                   | DNMG 110404GP<br>110408GP                         | 2                            | 4              | 9.525 | 4.76 | 3.81 | 0.4<br>0.8               | ●●●●●●●● | ●●     | ●●       | □ | ●●    | D16<br>F128                        |       |       |
|  | DNMG 150402GP<br>150404GP<br>150408GP             | 3                            | 4              | 12.7  | 4.76 | 5.16 | 0.2<br>0.4<br>0.8        | ●●●●●●●● | ●●     | ●●●●●●●● | □ | ●●    | D13~D17<br>F118, F130<br>F132~F134 |       |       |
|  | DNMG 150602GP<br>150604GP<br>150608GP             | 3                            | 4              | 12.7  | 6.35 | 5.16 | 0.2<br>0.4<br>0.8        | ●●●●●●●● | ●      | ●●       | □ | ●●    | D13~D17<br>F118                    |       |       |
|                   | DNMG 150404PQ<br>150408PQ<br>150412PQ             | 3                            | 4              | 12.7  | 4.76 | 5.16 | 0.4<br>0.8<br>1.2        | ●●●●●●●● | ●●     | ●●●●●●●● |   | ●●    | D13~D17<br>F118, F130<br>F132~F134 |       |       |
|  | DNMG 150604PQ<br>150608PQ<br>150612PQ             | 3                            | 4              | 12.7  | 6.35 | 5.16 | 0.4<br>0.8<br>1.2        | ●●●●●●●● | ●      | ●●●●●●●● |   | ●●    | D13~D17<br>F118                    |       |       |

See "Precautions when using Wiper inserts" in the R34 and R35 for WF chipbreaker.

Applicable chipbreaker range



● : Standard item □ : Deleted from the next catalog

B24



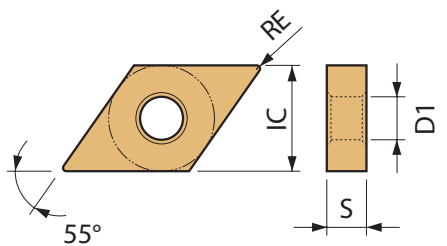






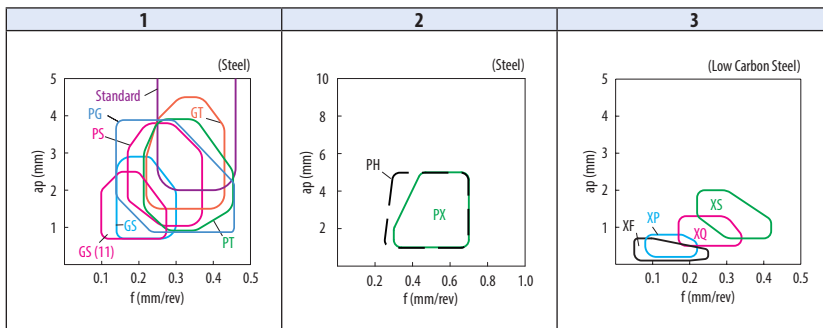
55° Rhombic

How to read pages of "Turning inserts" See page B15



| Insert           | Description                           | Applicable chipbreaker range | Dimension (mm) |      |      |      | Material |                    |                            |                 |                |                   |                    |                      |                |                | Applicable toolholder |        |        |        |    |        |       |       |       |      |      |       |       |                                    |
|------------------|---------------------------------------|------------------------------|----------------|------|------|------|----------|--------------------|----------------------------|-----------------|----------------|-------------------|--------------------|----------------------|----------------|----------------|-----------------------|--------|--------|--------|----|--------|-------|-------|-------|------|------|-------|-------|------------------------------------|
|                  |                                       |                              | No. of edges   | IC   | S    | D1   | RE       | Material           |                            |                 |                |                   |                    |                      |                |                |                       |        |        |        |    |        |       |       |       |      |      |       |       |                                    |
|                  |                                       |                              |                |      |      |      |          | Free-cutting steel | Carbon steel / Alloy steel | Stainless steel | Gray cast iron | Nodular cast iron | Non-ferrous metals | Heat-resistant alloy | Titanium alloy | Hard materials |                       | P      | M      | K      | N  | S      | H     |       |       |      |      |       |       |                                    |
| Roughing         | DNMG 150404<br>150408<br>150412       | 1                            | 4              | 12.7 | 4.76 | 5.16 | 0.4      | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D13~D17<br>F118, F130<br>F132~F134 |
|                  |                                       |                              |                |      |      |      |          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 |                                    |
| Roughing         | DNMG 150604<br>150608<br>150612       | 1                            | 4              | 12.7 | 6.35 | 5.16 | 0.4      | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D13~D17<br>F118                    |
|                  |                                       |                              |                |      |      |      |          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 |                                    |
| Roughing         | DNMG 150408PH<br>150412PH<br>150416PH | 2                            | 4              | 12.7 | 4.76 | 5.16 | 0.8      | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D13~D17<br>F118, F130<br>F132~F134 |
|                  |                                       |                              |                |      |      |      |          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 |                                    |
| Roughing         | DNMM 150408PX<br>150412PX<br>150416PX | 2                            | 2              | 12.7 | 4.76 | 5.16 | 0.8      | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D13~D17<br>F118, F130<br>F132~F134 |
|                  |                                       |                              |                |      |      |      |          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 |                                    |
| Low carbon steel | DNMG 150404XF<br>150408XF             | 3                            | 4              | 12.7 | 4.76 | 5.16 | 0.4      | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D13~D17<br>F118, F130<br>F132~F134 |
|                  |                                       |                              |                |      |      |      |          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 |                                    |
| Low carbon steel | DNMG 150404XP<br>150408XP             | 3                            | 4              | 12.7 | 4.76 | 5.16 | 0.4      | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D13~D17<br>F118                    |
|                  |                                       |                              |                |      |      |      |          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 |                                    |
| Low carbon steel | DNMG 150404XQ<br>150408XQ             | 3                            | 4              | 12.7 | 4.76 | 5.16 | 0.4      | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D13~D17<br>F118, F130<br>F132~F134 |
|                  |                                       |                              |                |      |      |      |          | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 |                                    |
| Low carbon steel | DNMG 150408XS                         | 3                            | 4              | 12.7 | 4.76 | 5.16 | 0.8      | CA02SP             | CA310                      | CA315           | CA320          | CA4505            | CA4515             | CA510                | CA525          | CA530          | CA5505                | CA5515 | CA5525 | CA5535 | CY | PV7005 | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 | D13~D17<br>F118, F130<br>F132~F134 |

Applicable chipbreaker range



● : Standard item □ : Deleted from the next catalog

B



Turning indexable inserts

55° Rhombic

How to read pages of "Turning inserts" See page B15

**B**

Turning indexable inserts

Chip breakers

Negative

C

D

R

S

T

V

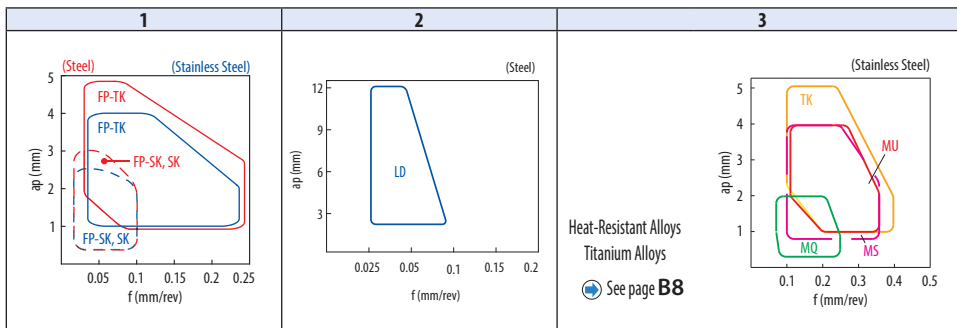
W

Ceramic

| Insert                                      | Description                       | Applicable chipbreaker range | Dimension (mm) |      |      |      | Carbide        |            |         |        |        |        | Applicable toolholder |        |        |        |                                    |
|---|-----------------------------------|------------------------------|----------------|------|------|------|----------------|------------|---------|--------|--------|--------|-----------------------|--------|--------|--------|------------------------------------|
|   |                                   |                              | No. of edges   | IC   | S    | D1   | RE             | CVD        |         | PVD    |        | Cermet |                       |        |        |        |                                    |
|   |                                   |                              |                |      |      |      |                | CA 6515    | CA 6525 | PR0055 | PR0155 |        |                       | PR1225 | PR1535 | PR1725 | SW05                               |
| Finishing - Medium<br>Polished / Sharp edge | DNGG 150402MFP-SK<br>150404MFP-SK | 1                            | 4              | 12.7 | 4.76 | 5.16 | < 0.2<br>< 0.4 | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      | D13~D17<br>F118, F130<br>F132~F134 |
|   |                                   |                              |                |      |      |      |                | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      |                                    |
| Large-ap                                    | DNMG 150402R-LD<br>150404R-LD     | 2                            | 4              | 12.7 | 4.76 | 5.16 | 0.2<br>0.4     | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      | D13~D17<br>F118, F130<br>F132~F134 |
| Medium - Roughing<br>Polished / Sharp edge  | DNGG 150404FP-TK<br>150408FP-TK   | 1                            | 4              | 12.7 | 4.76 | 5.16 | 0.4<br>0.8     | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      |                                    |
| Stainless steel / Heat-resistant alloys     | DNGG 150404TK<br>150408TK         | 3                            | 4              | 12.7 | 4.76 | 5.16 | 0.4<br>0.8     | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      | D13~D17<br>F118                    |
|   | DNMG 150404TK<br>150408TK         | 3                            | 4              | 12.7 | 4.76 | 5.16 | 0.4<br>0.8     | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      |                                    |
|   | DNMG 150604TK<br>150608TK         | 3                            | 4              | 12.7 | 6.35 | 5.16 | 0.4<br>0.8     | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      |                                    |
|   | DNMG 150404MQ<br>150408MQ         | 3                            | 4              | 12.7 | 4.76 | 5.16 | 0.4<br>0.8     | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      |                                    |
|   | DNMG 150604MQ<br>150608MQ         | 3                            | 4              | 12.7 | 6.35 | 5.16 | 0.4<br>0.8     | ●          | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      |                                    |
|   | Finishing - Medium                | DNMG 150604MQ<br>150608MQ    | 3              | 4    | 12.7 | 6.35 | 5.16           | 0.4<br>0.8 | ●       | ●      | ●      | ●      | ●                     | ●      | ●      | ●      | ●                                  |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range

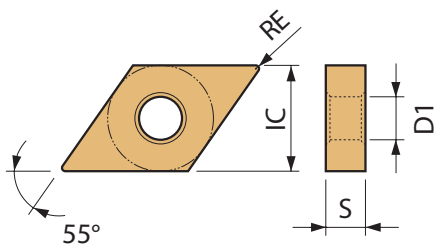


● : Standard item

B28

55° Rhombic

How to read pages of "Turning inserts" See page B15

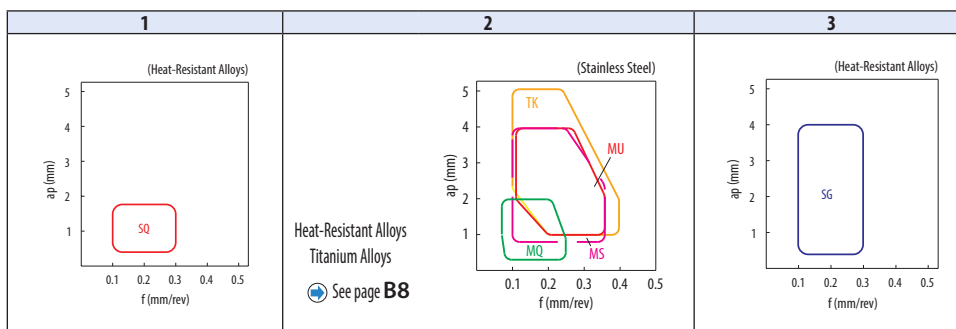


|  |  | Material Compatibility |                            |                 |                |                   |                    |                      |                |                |   |
|--|--|------------------------|----------------------------|-----------------|----------------|-------------------|--------------------|----------------------|----------------|----------------|---|
|  |  | Free-cutting steel     | Carbon steel / Alloy steel | Stainless steel | Gray cast iron | Nodular cast iron | Non-ferrous metals | Heat-resistant alloy | Titanium alloy | Hard materials |   |
|  |  |                        |                            | ●               | ●              | ●                 | ●                  | ○                    | ●              | ●              | P |
|  |  |                        |                            | ●               | ●              | ●                 | ●                  | ○                    | ●              | ●              | M |
|  |  |                        |                            | ●               | ●              | ●                 | ●                  | ○                    | ●              | ●              | K |
|  |  |                        |                            | ●               | ●              | ●                 | ●                  | ○                    | ●              | ●              | N |
|  |  |                        |                            | ●               | ●              | ●                 | ●                  | ○                    | ●              | ●              | S |
|  |  |                        |                            | ●               | ●              | ●                 | ●                  | ○                    | ●              | ●              | H |

| Insert   | Description                           | Applicable chipbreaker range | Dimension (mm) |      |      |      | Carbide           |             |             |             |             | Applicable toolholder              |  |
|--|---------------------------------------|------------------------------|----------------|------|------|------|-------------------|-------------|-------------|-------------|-------------|------------------------------------|--|
|  |                                       |                              | No. of edges   | IC   | S    | D1   | RE                |             |             |             |             |                                    |  |
|  |                                       |                              |                |      |      |      |                   | CVD         | PVD         | -           |             |                                    |  |
| Heat-resistant alloys<br>Finishing - Medium                  | DNMG 150404SQ<br>150408SQ<br>150412SQ | 1                            | 4              | 12.7 | 4.76 | 5.16 | 0.4<br>0.8<br>1.2 | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>● | D13~D17<br>F118, F130<br>F132~F134 |  |
|  | DNMG 150604SQ<br>150608SQ<br>150612SQ | 1                            | 4              | 12.7 | 6.35 | 5.16 | 0.4<br>0.8<br>1.2 | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>● | D13~D17<br>F118                    |  |
| Stainless steel / Heat-resistant alloys<br>Medium - Roughing | DNMG 150404MS<br>150408MS<br>150412MS | 2                            | 4              | 12.7 | 4.76 | 5.16 | 0.4<br>0.8<br>1.2 | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>● | D13~D17<br>F118, F130<br>F132~F134 |  |
|  | DNMG 150604MS<br>150608MS<br>150612MS | 2                            | 4              | 12.7 | 6.35 | 5.16 | 0.4<br>0.8<br>1.2 | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>● | ●<br>●<br>● | D13~D17<br>F118                    |  |
| Stainless steel / Heat-resistant alloys<br>Medium - Roughing | DNMG 150404MU<br>150408MU             | 2                            | 4              | 12.7 | 4.76 | 5.16 | 0.4<br>0.8        | ●<br>●      | ●<br>●      | ●<br>●      | ●<br>●      | D13~D17<br>F118, F130<br>F132~F134 |  |
|  | DNMG 150604MU<br>150608MU             | 2                            | 4              | 12.7 | 6.35 | 5.16 | 0.4<br>0.8        | ●<br>●      | ●<br>●      | ●<br>●      | ●<br>●      | D13~D17<br>F118                    |  |
| Heat-resistant alloys<br>Roughing                            | DNMG 150408SG<br>150412SG             | 3                            | 4              | 12.7 | 4.76 | 5.16 | 0.8<br>1.2        | ●<br>●      | ●<br>●      | ●<br>●      | ●<br>●      | D13~D17<br>F118, F130<br>F132~F134 |  |
|  | DNMG 150608SG<br>150612SG             | 3                            | 4              | 12.7 | 6.35 | 5.16 | 0.8<br>1.2        | ●<br>●      | ●<br>●      | ●<br>●      | ●<br>●      | D13~D17<br>F118                    |  |

Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts

## 55° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Negative

C

D

R

S

T

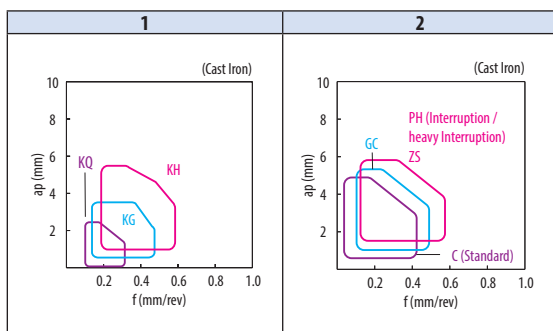
V

W

Ceramic

| Insert                              | Description                           | Applicable chipbreaker range | No. of edges | Dimension (mm) |      |      |                   | Carbide              |                      |                      |                      | Applicable toolholder              |
|-------------------------------------|---------------------------------------|------------------------------|--------------|----------------|------|------|-------------------|----------------------|----------------------|----------------------|----------------------|------------------------------------|
|                                     |                                       |                              |              | IC             | S    | D1   | RE                | CVD                  |                      |                      |                      |                                    |
|                                     |                                       |                              |              |                |      |      |                   | CA310                | CA315                | CA320                | CA4505               |                                    |
| Cast iron<br>Sharp cutting oriented | DNMG 150404KQ<br>150408KQ             | 1                            | 4            | 12.7           | 4.76 | 5.16 | 0.4<br>0.8        | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | D13~D17<br>F118, F130<br>F132~F134 |
|                                     | DNMG 150604KQ<br>150608KQ             | 1                            | 4            | 12.7           | 6.35 | 5.16 | 0.4<br>0.8        | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | D13~D17<br>F118                    |
| Cast iron<br>Roughing               | DNMG 150404KG<br>150408KG<br>150412KG | 1                            | 4            | 12.7           | 4.76 | 5.16 | 0.4<br>0.8<br>1.2 | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | D13~D17<br>F118, F130<br>F132~F134 |
|                                     | DNMG 150604KG<br>150608KG<br>150612KG | 1                            | 4            | 12.7           | 6.35 | 5.16 | 0.4<br>0.8<br>1.2 | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | D13~D17<br>F118                    |
|                                     | DNMG 150408KH<br>150412KH             | 1                            | 4            | 12.7           | 4.76 | 5.16 | 0.8<br>1.2        | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | D13~D17<br>F118, F130<br>F132~F134 |
| Cast iron<br>Roughing               | DNMG 150608KH<br>150612KH             | 1                            | 4            | 12.7           | 6.35 | 5.16 | 0.8<br>1.2        | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | D13~D17<br>F118                    |
|                                     | DNMG 150404C<br>150408C<br>150412C    | 2                            | 4            | 12.7           | 4.76 | 5.16 | 0.4<br>0.8<br>1.2 | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | D13~D17<br>F118, F130<br>F132~F134 |
| Cast iron<br>Roughing               | DNMG 150604C<br>150608C<br>150612C    | 2                            | 4            | 12.7           | 6.35 | 5.16 | 0.4<br>0.8<br>1.2 | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | ●●●●<br>●●●●<br>●●●● | D13~D17<br>F118                    |
|                                     | DNMG 150408ZS<br>150412ZS             | 2                            | 4            | 12.7           | 4.76 | 5.16 | 0.8<br>1.2        | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | D13~D17<br>F118, F130<br>F132~F134 |
| Cast iron<br>Roughing               | DNMG 150608ZS<br>150612ZS             | 2                            | 4            | 12.7           | 6.35 | 5.16 | 0.8<br>1.2        | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | D13~D17<br>F118                    |
|                                     | DNMG 150408GC<br>150412GC             | 2                            | 4            | 12.7           | 4.76 | 5.16 | 0.8<br>1.2        | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | D13~D17<br>F118, F130<br>F132~F134 |
| Cast iron<br>Roughing               | DNMG 150608GC<br>150612GC             | 2                            | 4            | 12.7           | 6.35 | 5.16 | 0.8<br>1.2        | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | ●●●●<br>●●●●         | D13~D17<br>F118                    |

### Applicable chipbreaker range



● : Standard item

## B30



55° Parallelogram

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

| Insert                | Description    | Applicable chipbreaker range |   | Dimension (mm) |      |     | Carbide            | Applicable toolholder |
|-----------------------|----------------|------------------------------|---|----------------|------|-----|--------------------|-----------------------|
|                       |                | No. of edges                 |   | IC             | S    | RE  |                    |                       |
| Medium - Roughing<br> | KNMX 160405R-1 | 1                            | 2 | 9.525          | 4.76 | 0.5 | CA 5515<br>CA 5525 | -                     |
|                       | 160405L-1      |                              |   |                |      | 0.5 |                    |                       |
|                       | 160410R-1      |                              |   |                |      | 1   |                    |                       |
|                       | 160410L-1      |                              |   |                |      | 1   |                    |                       |

|                            |   |   |
|----------------------------|---|---|
| Free-cutting steel         |   | P |
| Carbon steel / Alloy steel | ● | P |
| Stainless steel            |   | M |
| Gray cast iron             |   | K |
| Nodular cast iron          |   | K |
| Non-ferrous metals         |   | N |
| Heat-resistant alloy       |   | S |
| Titanium alloy             |   | S |
| Hard materials             |   | H |

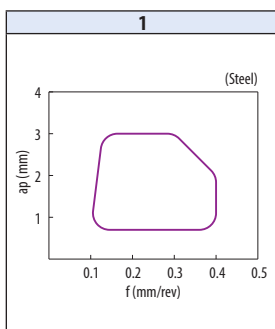
Chip breakers

Negative



Ceramic

Applicable chipbreaker range



● : Standard item

B32

Round

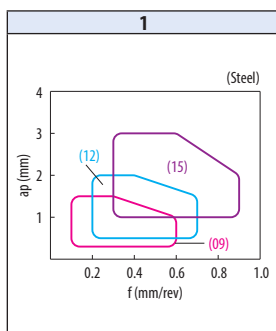
How to read pages of "Turning inserts" See page B15

| Insert            | Description | Applicable chipbreaker range | Dimension (mm) |      |      | Carbide |       |       |       |       |       |       | Cermet |   | Applicable toolholder |        |        |        |       |
|-------------------|-------------|------------------------------|----------------|------|------|---------|-------|-------|-------|-------|-------|-------|--------|---|-----------------------|--------|--------|--------|-------|
|                   |             |                              | IC             | S    | D1   | CVD     |       |       |       |       |       |       | PVD    | - |                       |        |        |        |       |
|                   |             |                              |                |      |      | CA02SP  | CA310 | CA315 | CA320 | CA515 | CA525 | CA530 |        |   |                       | CA5515 | CA5525 | PV7005 | PV720 |
| Medium - Roughing | RNMG 090300 | 1                            | 9.525          | 3.18 | 3.81 | ●       |       | ●     | ●     |       |       |       |        | ● | ●                     | ●      | ●      | D42    |       |
|                   | RNMG 120400 | 1                            | 12.7           | 4.76 | 5.16 | ●       | ●     | ●     | ●     | ●     | ●     | ●     | ●      | ● | ●                     | ●      | ●      |        |       |
|                   | RNMG 150600 | 1                            | 15.875         | 6.35 | 6.35 | ●       | ●     | ●     | ●     |       |       | ●     |        |   |                       |        |        |        | -     |



Turning indexable inserts

Applicable chipbreaker range



● : Standard item











90° Square

How to read pages of "Turning inserts" See page B15

**B**

Turning indexable inserts

Chip breakers

Negative

C

D

R

**S**

T

V

W

Ceramic

| Insert                           | Description           | Applicable chipbreaker range | No. of edges | Dimension (mm) |      |            | Carbide     |             |                       | Applicable toolholder |
|----------------------------------|-----------------------|------------------------------|--------------|----------------|------|------------|-------------|-------------|-----------------------|-----------------------|
|                                  |                       |                              |              | IC             | S    | RE         | CVD         |             |                       |                       |
|                                  |                       |                              |              |                |      |            | CA310       | CA315       | CA320                 |                       |
| Cast iron<br>Without Chipbreaker | SNMN 120408<br>120412 | -                            | 8            | 12.7           | 4.76 | 0.8<br>1.2 | ●<br>●<br>● | ●<br>●<br>● | D52~D54<br>D63<br>D64 |                       |

|                            |  |  |   |   |   |   |   |   |   |          |
|----------------------------|--|--|---|---|---|---|---|---|---|----------|
| Free-cutting steel         |  |  |   |   |   |   |   |   |   | <b>P</b> |
| Carbon steel / Alloy steel |  |  |   |   |   |   |   |   |   |          |
| Stainless steel            |  |  |   |   |   |   |   |   |   | <b>M</b> |
| Gray cast iron             |  |  | ● | ● | ● | ● | ● | ● | ● | <b>K</b> |
| Nodular cast iron          |  |  | ○ | ○ | ○ | ○ | ○ | ○ | ○ |          |
| Non-ferrous metals         |  |  |   |   |   |   |   |   |   | <b>N</b> |
| Heat-resistant alloy       |  |  |   |   |   |   |   |   |   | <b>S</b> |
| Titanium alloy             |  |  |   |   |   |   |   |   |   |          |
| Hard materials             |  |  |   |   |   |   |   |   |   | <b>H</b> |

● : Standard item

**B38**









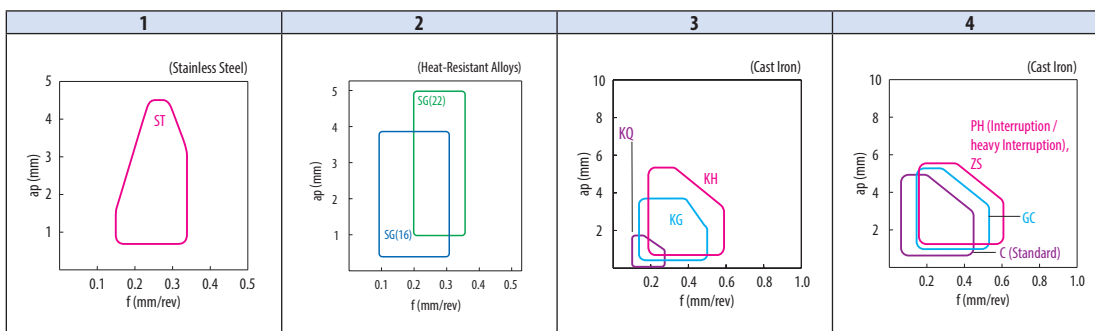


60° Triangle

How to read pages of "Turning inserts" See page B15

| Insert                | Description            | Applicable chipbreaker range                        | Dimension (mm) |    |       |      | Material |                    |                            |                 |                |                   |                    |                      |                |                |         |        |        |        | Applicable toolholder |      |       |         |      |       |                                     |                                     |
|-----------------------|------------------------|---|----------------|----|-------|------|----------|--------------------|----------------------------|-----------------|----------------|-------------------|--------------------|----------------------|----------------|----------------|---------|--------|--------|--------|-----------------------|------|-------|---------|------|-------|-------------------------------------|-------------------------------------|
|                       |                        |   | No. of edges   | IC | S     | D1   | RE       | Material           |                            |                 |                |                   |                    |                      |                |                |         |        |        |        |                       |      |       |         |      |       |                                     |                                     |
|                       |                        |   |                |    |       |      |          | Free-cutting steel | Carbon steel / Alloy steel | Stainless steel | Gray cast iron | Nodular cast iron | Non-ferrous metals | Heat-resistant alloy | Titanium alloy | Hard materials | Carbide |        |        |        |                       |      |       | Cermets |      |       |                                     |                                     |
|                       |                        |   |                |    |       |      | CVD      |                    |                            |                 |                |                   |                    | PVD                  |                | -              |         | -      |        |        |                       |      |       |         |      |       |                                     |                                     |
|                       |                        |   |                |    |       |      | CA02SP   | CA310              | CA315                      | CA320           | CA4505         | CA510             | CA525              | CA530                | CA5505         | CA5525         | CA6515  | CA6525 | PR0055 | PR0155 | PR1535                | SW05 | PV710 | PV720   | TN60 | TN610 | TN620                               |                                     |
| Stainless steel       | Medium - Roughing      | TNMG 160404R-ST, 160404L-ST, 160408R-ST, 160408L-ST | 1              | 6  | 9.525 | 4.76 | 3.81     | 0.4, 0.8           | ●                          | ●               | ●              | ●                 | ●                  | ●                    | ●              | ●              | ●       | ●      | ●      | ●      | ●                     | ●    | ●     | ●       | ●    | ●     | ●                                   | D22~D25, D27, D28, F120, F137, F138 |
| Heat-resistant alloys | Roughing               | TNMG 160408SG, 160412SG                             | 2              | 6  | 9.525 | 4.76 | 3.81     | 0.8, 1.2           |                            |                 |                |                   |                    |                      |                |                |         | ●      | ●      | ●      | ●                     |      |       |         |      |       | D24, D25, F137                      |                                     |
| Cast iron             | Sharp cutting oriented | TNMG 160404KQ, 160408KQ                             | 3              | 6  | 9.525 | 4.76 | 3.81     | 0.4, 0.8           | ●                          | ●               | ●              | ●                 |                    |                      |                |                |         |        |        |        |                       |      |       |         |      |       |                                     |                                     |
| Cast iron             | Roughing               | TNMG 160404KG, 160408KG, 160412KG                   | 3              | 6  | 9.525 | 4.76 | 3.81     | 0.4, 0.8, 1.2      | ●                          | ●               | ●              | ●                 |                    |                      |                |                |         |        |        |        |                       |      |       |         |      |       |                                     |                                     |
| Cast iron             | Roughing               | TNMG 160408KH, 160412KH, 160416KH                   | 3              | 6  | 9.525 | 4.76 | 3.81     | 0.8, 1.2, 1.6      | ●                          | ●               | ●              | ●                 |                    |                      |                |                |         |        |        |        |                       |      |       |         |      |       | D22~D25, D27, D28, F120, F137, F138 |                                     |
| Cast iron             | Roughing               | TNMG 160404C, 160408C, 160412C                      | 4              | 6  | 9.525 | 4.76 | 3.81     | 0.4, 0.8, 1.2      | ●                          | ●               | ●              | ●                 | ●                  | ●                    |                |                |         |        |        |        |                       |      |       |         |      |       |                                     |                                     |
| Cast iron             | Roughing               | TNMG 160408ZS, 160412ZS                             | 4              | 6  | 9.525 | 4.76 | 3.81     | 0.8, 1.2           | ●                          | ●               | ●              | ●                 | ●                  | ●                    |                |                |         |        |        |        |                       |      |       |         |      |       |                                     |                                     |
| Cast iron             | Roughing               | TNMG 160408GC, 160412GC                             | 4              | 6  | 9.525 | 4.76 | 3.81     | 0.8, 1.2           | ●                          | ●               | ●              | ●                 | ●                  | ●                    |                |                |         |        |        |        |                       |      |       |         |      |       |                                     |                                     |

Applicable chipbreaker range



● : Standard item

B  
Turning indexable inserts

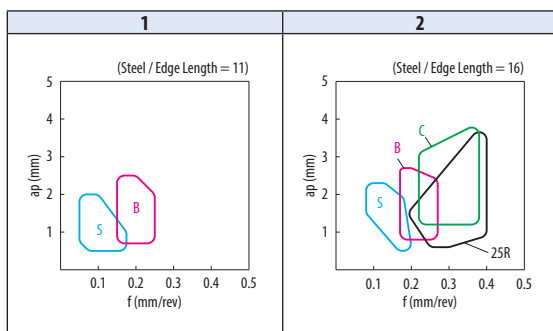


60° Triangle

How to read pages of "Turning inserts" See page B15

| Insert  |     | Description      | Applicable chipbreaker range |    |       |      | Dimension (mm) |     |   |     | Carbide |  | Cermet     |   | Applicable toolholder                       |
|---|-----|------------------|------------------------------|----|-------|------|----------------|-----|---|-----|---------|--|------------|---|---|
|   |     |                  | No. of edges                 | IC | S     | D1   | RE             | PVD |   | PVD |         |  |            |   |   |
|   |     |                  |                              |    |       |      |                | -   | - | -   | -       |  |            |   |   |
|   |     |                  |                              |    |       |      |                |     |   |     |         |  |            |   |   |
|   |     |                  |                              |    |       |      |                |     |   |     |         |  |            |   |   |
| Finishing<br>Precision / Sharp edge               |     | TNEG 160402R-SSF | 2                            | 6  | 9.525 | 4.76 | 3.81           | 0.2 |   |     |         |  |            |   | D22~D25<br>D27, D28<br>F120<br>F137<br>F138 |
|   |     | 160402L-SSF      |                              |    |       |      |                | 0.2 |   |     |         |  |            |   |   |
|   |     | 160404R-SSF      |                              |    |       |      |                | 0.4 |   |     |         |  |            |   |   |
|   |     | 160404L-SSF      |                              |    |       |      |                | 0.4 |   |     |         |  |            |   |   |
| Finishing<br>Sharp edge / Surface finish oriented |     | TNGG 110402R-S   | 1                            | 6  | 6.35  | 4.76 | 2.26           | 0.2 |   |     |         |  |            | D24<br>D25<br>F138                          |   |
|   |     | 110402L-S        |                              |    |       |      |                | 0.2 |   |     |         |  |            |   |   |
|   |     | 110404R-S        |                              |    |       |      |                | 0.4 |   |     |         |  |            |   |   |
|   |     | 110404L-S        |                              |    |       |      |                | 0.4 |   |     |         |  |            |   |   |
|   |     | 110408R-S        |                              |    |       |      |                | 0.8 |   |     |         |  |            |   |   |
|   |     | 110408L-S        | 0.8                          |    |       |      |                |     |   |     |         |  |            |   |   |
|   |     | TNGG 160401R-S   | 2                            | 6  | 9.525 | 4.76 | 3.81           | 0.1 |   |     |         |  |            | D22~D25<br>D27, D28<br>F120<br>F137<br>F138 |   |
|   |     | 160401L-S        |                              |    |       |      |                | 0.1 |   |     |         |  |            |   |   |
|   |     | 160402R-S        |                              |    |       |      |                | 0.2 |   |     |         |  |            |   |   |
|   |     | 160402L-S        |                              |    |       |      |                | 0.2 |   |     |         |  |            |   |   |
| 160404R-S   | 0.4 |                  |                              |    |       |      |                |     |   |     |         |  |            |   |   |
| 160404L-S   | 0.4 |                  |                              |    |       |      |                |     |   |     |         |  |            |   |   |
| 160408R-S   | 0.8 |                  |                              |    |       |      |                |     |   |     |         |  |            |   |   |
| 160408L-S   | 0.8 |                  |                              |    |       |      |                |     |   |     |         |  |            |   |   |
| Finishing - Medium                                |     | TNGG 110302R-B   | 4                            | 6  | 6.35  | 3.18 | 2.26           | 0.2 |   |     |         |  | D24<br>D25 |   |   |
|   |     | 110302L-B        |                              |    |       |      |                | 0.2 |   |     |         |  |            |   |   |
|   |     | 110304R-B        |                              |    |       |      |                | 0.4 |   |     |         |  |            |   |   |
|   |     | 110304L-B        |                              |    |       |      |                | 0.4 |   |     |         |  |            |   |   |
|   |     | TNGG 160304R-B   | 3                            | 6  | 9.525 | 3.18 | 3.81           | 0.4 |   |     |         |  |            |   |   |
|   |     | TNGG 160402R-B   | 3                            | 6  | 9.525 | 4.76 | 3.81           | 0.2 |   |     |         |  |            | D22~D25<br>D27, D28<br>F120<br>F137<br>F138 |   |
|   |     | 160402L-B        |                              |    |       |      |                | 0.2 |   |     |         |  |            |   |   |
|   |     | 160404R-B        |                              |    |       |      |                | 0.4 |   |     |         |  |            |   |   |
|   |     | 160404L-B        |                              |    |       |      |                | 0.4 |   |     |         |  |            |   |   |
| 160408R-B   | 0.8 |                  |                              |    |       |      |                |     |   |     |         |  |            |   |   |
| 160408L-B   | 0.8 |                  |                              |    |       |      |                |     |   |     |         |  |            |   |   |

Applicable chipbreaker range



● : Standard item □ : Deleted from the next catalog

B



Turning indexable inserts

## 60° Triangle

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

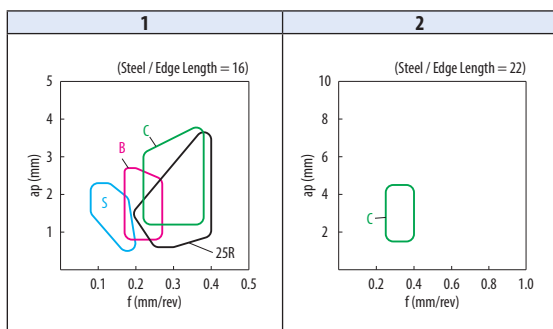
Negative



Ceramic

| Insert           | Description    | Applicable chipbreaker range | Dimension (mm) |       |      |      | Carbide |                 | Cermet        |   | Applicable toolholder                       |   |
|------------------|----------------|------------------------------|----------------|-------|------|------|---------|-----------------|---------------|---|---|---|
|                  |                |                              | No. of edges   | IC    | S    | D1   | RE      | PVD             |               | - |   |   |
|                  |                |                              |                |       |      |      |         | PR1535<br>PR930 | KW10<br>PV705 |   |   | PV710<br>PV730<br>PR930                     |
|                  | TNGG 160402R-C | 1                            | 6              | 9.525 | 4.76 | 3.81 | 0.2     |                 |               |   |   | D22~D25<br>D27, D28<br>F120<br>F137<br>F138 |
|                  | 160402L-C      |                              |                |       |      |      | 0.2     |                 |               |   |   |   |
|                  | 160404R-C      |                              |                |       |      |      | 0.4     |                 |               |   |   |   |
|                  | 160404L-C      |                              |                |       |      |      | 0.4     |                 |               |   |   |   |
|                  | 160408R-C      |                              |                |       |      |      | 0.8     |                 |               |   |   |   |
|                  | 160408L-C      |                              |                |       |      |      | 0.8     |                 |               |   |   |   |
|                  | TNGG 220404R-C | 2                            | 6              | 12.7  | 4.76 | 5.16 | 0.4     |                 |               |   |   | D24<br>D25<br>F137                          |
|                  | 220404L-C      |                              |                |       |      |      | 0.4     |                 |               |   |   |   |
|                  | 220408R-C      |                              |                |       |      |      | 0.8     |                 |               |   |   |   |
|                  | 220408L-C      |                              |                |       |      |      | 0.8     |                 |               |   |   |   |
|                  | TNMG 160404R-C | 1                            | 6              | 9.525 | 4.76 | 3.81 | 0.4     |                 |               |   |   | D22~D25<br>D27, D28<br>F120<br>F137<br>F138 |
|                  | 160404L-C      |                              |                |       |      |      | 0.4     |                 |               |   |   |   |
| 160408R-C        | 0.8            |                              |                |       |      |      |         |                 |               |   |   |   |
| 160408L-C        | 0.8            |                              |                |       |      |      |         |                 |               |   |   |   |
| TNGG 110402R     | 1              | 6                            | 6.35           | 4.76  | 2.26 | 0.2  |         |                 |               |   | D24<br>D25<br>F138                          |   |
| 110404R          |                |                              |                |       |      | 0.4  |         |                 |               |   |   |   |
| 110404L          |                |                              |                |       |      | 0.4  |         |                 |               |   |   |   |
| 110408R          |                |                              |                |       |      | 0.8  |         |                 |               |   |   |   |
| TNGG 160404R-2SR | 1              | 6                            | 9.525          | 4.76  | 3.81 | 0.4  |         |                 |               |   | D22~D25<br>D27, D28<br>F120<br>F137<br>F138 |   |
| 160404L-2SR      |                |                              |                |       |      | 0.4  |         |                 |               |   |   |   |
| 160408R-2SR      |                |                              |                |       |      | 0.8  |         |                 |               |   |   |   |
| 160408L-2SR      |                |                              |                |       |      | 0.8  |         |                 |               |   |   |   |

### Applicable chipbreaker range



● : Standard item □ : Deleted from the next catalog

## B46

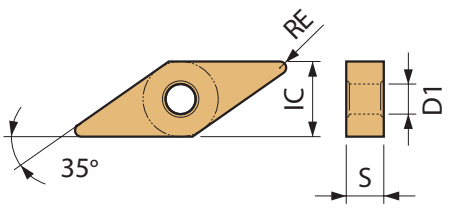






35° Rhombic

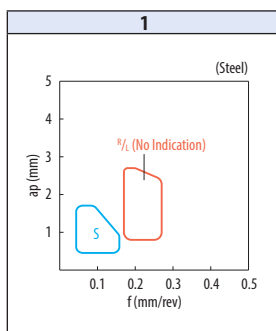
How to read pages of "Turning inserts" See page B15



| Insert  | Description   | Applicable chipbreaker range | Dimension (mm) |       |      |      | Carbide    |     | Cermet |     | Applicable toolholder |
|---|---|------------------------------|----------------|-------|------|------|------------|-----|--------|-----|-----------------------|
|   |   |                              | No. of edges   | IC    | S    | D1   | RE         | PVD |        | -   |                       |
|   |   |                              |                |       |      |      |            | -   | PVD    |     |                       |
| Cast iron<br>Without Chipbreaker                  | VNGA 160404<br>160408   | -                            | 4              | 9.525 | 4.76 | 3.81 | 0.4<br>0.8 | ● ● | ● ●    |     |                       |
| Finishing<br>Sharp edge / Surface finish oriented | VNGG 160402R-S<br>160402L-S<br>160404R-S<br>160404L-S               | 1                            | 4              | 9.525 | 4.76 | 3.81 | 0.2        | ●   | ● ●    | ● ● | ● ●                   |
|   |   |                              |                |       |      |      | 0.2        | ●   | ● ●    | ● ● | ● ●                   |
|   |   |                              |                |       |      |      | 0.4        | ●   | ● ●    | ● ● | ● ●                   |
|   |   |                              |                |       |      |      | 0.4        | ●   | ● ●    | ● ● | ● ●                   |
| Medium  | VNGG 160402R<br>160402L<br>160404R<br>160404L<br>160408R<br>160408L | 1                            | 4              | 9.525 | 4.76 | 3.81 | 0.2        | ●   | ● ●    | ● ● | ● ●                   |
|   |   |                              |                |       |      |      | 0.2        | ●   | ● ●    | ● ● | ● ●                   |
|   |   |                              |                |       |      |      | 0.4        | ●   | ● ●    | ● ● | ● ●                   |
|   |   |                              |                |       |      |      | 0.4        | ●   | ● ●    | ● ● | ● ●                   |
|   |   |                              |                |       |      |      | 0.8        | ●   | ● ●    | ● ● | ● ●                   |
|   |   |                              |                |       |      |      | 0.8        | ●   | ● ●    | ● ● | ● ●                   |

B  
Turning indexable inserts

Applicable chipbreaker range



● : Standard item □ : Deleted from the next catalog





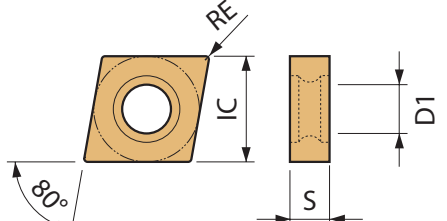






Small double sided tools

How to read pages of "Turning inserts" See page B15



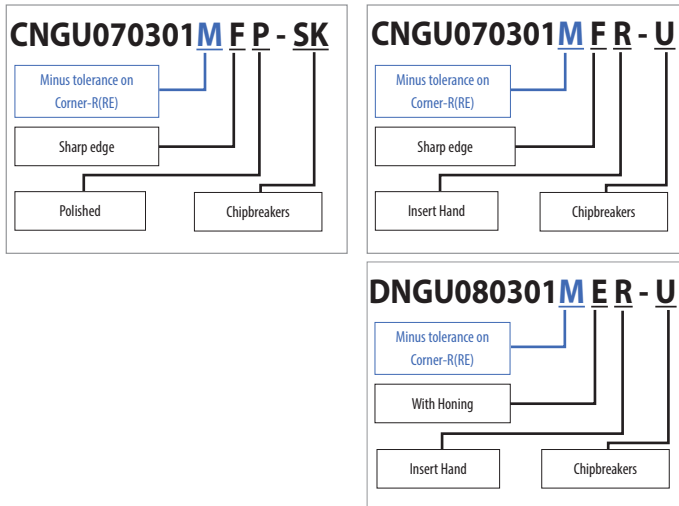
| Insert                     | Description | Applicable chipbreaker range | Dimension (mm) |    |   |    | Carbide |        |        | Applicable toolholder |        |
|----------------------------|-------------|------------------------------|----------------|----|---|----|---------|--------|--------|-----------------------|--------|
|                            |             |                              | No. of edges   | IC | S | D1 | RE      | PVD    |        |                       |        |
|                            |             |                              |                |    |   |    |         | PR1225 | PR1535 |                       | PR1705 |
| Free-cutting steel         |             |                              |                |    |   |    |         |        |        | P                     |        |
| Carbon steel / Alloy steel |             |                              |                |    |   |    |         |        |        | M                     |        |
| Stainless steel            |             |                              |                |    |   |    |         |        |        | K                     |        |
| Gray cast iron             |             |                              |                |    |   |    |         |        |        | N                     |        |
| Nodular cast iron          |             |                              |                |    |   |    |         |        |        | S                     |        |
| Non-ferrous metals         |             |                              |                |    |   |    |         |        |        | H                     |        |
| Heat-resistant alloy       |             |                              |                |    |   |    |         |        |        |                       |        |
| Titanium alloy             |             |                              |                |    |   |    |         |        |        |                       |        |
| Hard materials             |             |                              |                |    |   |    |         |        |        |                       |        |

| Insert                                      | Description  | Applicable chipbreaker range | No. of edges | IC  | S    | D1  | RE     | Carbide |        |        | Applicable toolholder |
|---|--|------------------------------|--------------|-----|------|-----|--------|---------|--------|--------|-----------------------|
|   |  |                              |              |     |      |     |        | PR1225  | PR1535 | PR1705 |                       |
| Finishing - Medium<br>Polished / Sharp edge | CNGU 070301MFP-SK<br>070302MFP-SK                              | 1                            | 4            | 7.5 | 3.18 | 3.6 | < 0.1  | ●       | ●      | ●      | E60                   |
|   |  |                              |              |     |      |     | < 0.2  | ●       | ●      | ●      |                       |
| Medium - Roughing<br>With honing            | CNMU 070302E-GK<br>070304E-GK                                  | 1                            | 4            | 7.5 | 3.18 | 3.6 | 0.2    | ●       | ●      | ●      | E60                   |
|   |  |                              |              |     |      |     | 0.4    | ●       | ●      | ●      |                       |
| Finishing<br>Sharp edge                     | CNGU 0703005MFR-F<br>070301MFR-F<br>070302MFR-F<br>070304MFR-F | 1                            | 4            | 7.5 | 3.18 | 3.6 | < 0.05 | ●       | ●      | ●      | E60                   |
|   |  |                              |              |     |      |     | < 0.1  | ●       | ●      | ●      |                       |
|   |  |                              |              |     |      |     | < 0.2  | ●       | ●      | ●      |                       |
|   |  |                              |              |     |      |     | < 0.4  | ●       | ●      | ●      |                       |
| Low feed<br>Sharp edge                      | CNGU 0703005MFR-U<br>070301MFR-U<br>070302MFR-U<br>070304MFR-U | 1                            | 4            | 7.5 | 3.18 | 3.6 | < 0.05 | ●       | ●      | ●      | E60                   |
|   |  |                              |              |     |      |     | < 0.1  | ●       | ●      | ●      |                       |
|   |  |                              |              |     |      |     | < 0.2  | ●       | ●      | ●      |                       |
|   |  |                              |              |     |      |     | < 0.4  | ●       | ●      | ●      |                       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Small Double Sided Tools Identification System



When a minus tolerance is specified for the corner-R(RE)

If a minus tolerance is specified for the corner-R(RE) as shown in the Fig. 1, using an insert with corner-R(RE)=0.2 mm may result in larger radius than specified. Use an insert the corner of which R(RE) has a minus tolerance.

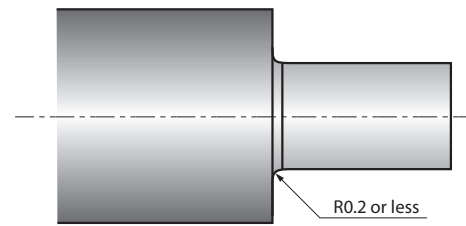
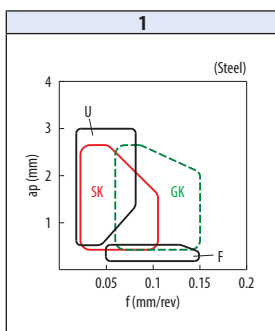


Fig. 1 Example of a specified corner-R in the drawing

Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts



Small double sided tools

How to read pages of "Turning inserts" See page B15

**B**

Turning indexable inserts

Chip breakers

Negative

C

D

R

S

T

V

W

Ceramic

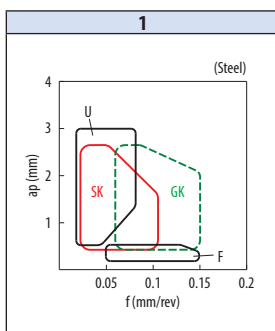
| Insert                                      | Description                                       | Applicable chipbreaker range | Dimension (mm) |    |      |     | Carbide                 |        |        | Applicable toolholder |        |
|---|---|------------------------------|----------------|----|------|-----|-------------------------|--------|--------|-----------------------|--------|
|   |   |                              | No. of edges   | IC | S    | D1  | RE                      | PVD    |        |                       |        |
|   |   |                              |                |    |      |     |                         | PR1225 | PR1535 |                       | PR1705 |
| Finishing - Medium<br>Polished / Sharp edge | DNGU 080301MFP-SK<br>080302MFP-SK<br>080304MFP-SK | 1                            | 4              | 7  | 3.18 | 3.6 | < 0.1<br>< 0.2<br>< 0.4 | ● ● ●  | ● ● ●  | E61                   |        |
| Medium - Roughing<br>With honing            | DNMU 080302E-GK<br>080304E-GK                     | 1                            | 4              | 7  | 3.18 | 3.6 | 0.2<br>0.4              | ● ● ●  | ● ● ●  |                       |        |
| Finishing<br>Sharp edge                     | DNGU 080301MFR-F<br>080302MFR-F<br>080304MFR-F    | 1                            | 4              | 7  | 3.18 | 3.6 | < 0.1<br>< 0.2<br>< 0.4 | ● ● ●  | ● ● ●  |                       |        |
| Low feed<br>Sharp edge                      | DNGU 080301MFR-U<br>080302MFR-U<br>080304MFR-U    | 1                            | 4              | 7  | 3.18 | 3.6 | < 0.1<br>< 0.2<br>< 0.4 | ● ● ●  | ● ● ●  |                       |        |
| Low feed<br>With honing                     | DNGU 080301MER-U<br>080302MER-U<br>080304MER-U    | 1                            | 4              | 7  | 3.18 | 3.6 | < 0.1<br>< 0.2<br>< 0.4 | ● ● ●  | ● ● ●  |                       |        |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Chipbreaker Selection (Negative Inserts)

| Cutting Range      | Name | Cross-section | Advantages   |
|--------------------|------|---------------|--|
| Finishing - Medium | SK   |               | A low cutting force chipbreaker designed for chip control in steel and stainless steel. Cutting performance is similar to comparable sized positive inserts. |
| Medium - Roughing  | GK   |               | Good chip evacuation at wide range by breaker dot and wide chip pocket.  |
| Finishing          | F    |               | Good chip control at finishing with low cutting force.   |
| Low Feed           | U    |               | Good chip control at low feed rate and varied ap with low cutting force.   |

Applicable chipbreaker range

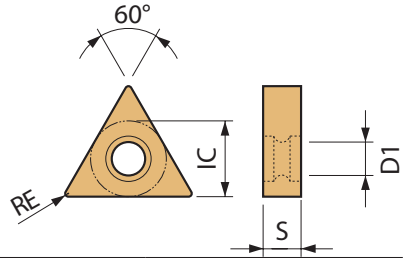





● : Standard item

B56

Small double sided tools

How to read pages of "Turning inserts" See page B15



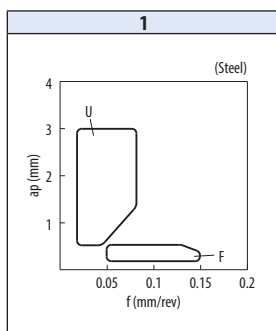
| Insert  | Description  | Applicable chipbreaker range | Dimension (mm) |      |      |    | Carbide                           |                  |                  | Applicable toolholder |        |
|---|--|------------------------------|----------------|------|------|----|-----------------------------------|------------------|------------------|-----------------------|--------|
|   |  |                              | No. of edges   | IC   | S    | D1 | RE                                | PVD              |                  |                       |        |
|   |  |                              |                |      |      |    |                                   | PR1725           | PR1535           |                       | PR1705 |
| Finishing<br>  | TNGU 0903005MFR-F<br>090301MFR-F<br>090302MFR-F<br>090304MFR-F | 1                            | 6              | 5.56 | 3.18 | 3  | < 0.05<br>< 0.1<br>< 0.2<br>< 0.4 | ●<br>●<br>●<br>● | ●<br>●<br>●<br>● | E62                   |        |
| Low feed<br>  | TNGU 090301MFR-U<br>090302MFR-U<br>090304MFR-U                 | 1                            | 6              | 5.56 | 3.18 | 3  | < 0.1<br>< 0.2<br>< 0.4           | ●<br>●<br>●      | ●<br>●<br>●      |                       |        |
| Low feed<br> | TNGU 090304MER-U   | 1                            | 6              | 5.56 | 3.18 | 3  | < 0.4                             | ●                | ●                |                       |        |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).



Turning indexable inserts

Applicable chipbreaker range



● : Standard item

## 80° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive

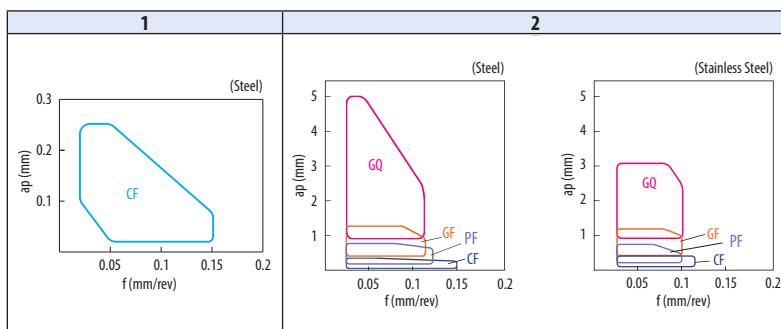


Ceramic

| Insert                                 | Description                                       | Applicable chipbreaker range | Dimension (mm) |       |      |     |                         | Angle (°) | Carbide |         |        |        |        | Applicable toolholder |                          |
|--|---|------------------------------|----------------|-------|------|-----|-------------------------|-----------|---------|---------|--------|--------|--------|-----------------------|--------------------------|
|  |   |                              | No. of edges   | IC    | S    | D1  | RE                      |           | AN      | Carbide |        |        |        |                       |                          |
|  |   |                              |                |       |      |     |                         |           |         | POL010  | POL025 | PR1725 | PR1535 |                       | PR1705                   |
| <br>Minute ap<br>Polished / Sharp edge | CCGT 030101MP-CF<br>030102MP-CF                   | 1                            | 2              | 3.5   | 1.4  | 2   | < 0.1<br>< 0.2          | 7         | ●       | ●       | ●      | ●      | ●      | ●                     | F31<br>F32<br>F60<br>F62 |
|  | CCGT 040101MP-CF<br>040102MP-CF                   | 1                            | 2              | 4.3   | 1.8  | 2.4 | < 0.1<br>< 0.2          | 7         | ●       | ●       | ●      | ●      | ●      | ●                     |                          |
| <br>Finishing<br>Polished / Sharp edge | CCGT 030101MFP-PF<br>030102MFP-PF                 | 2                            | 2              | 3.5   | 1.4  | 2   | < 0.1<br>< 0.2          | 7         |         |         | ●      | ●      | ●      | ●                     |                          |
|  | CCGT 040101MFP-PF<br>040102MFP-PF                 | 2                            | 2              | 4.3   | 1.8  | 2.4 | < 0.1<br>< 0.2          | 7         |         |         | ●      | ●      | ●      | ●                     |                          |
|  | CCGT 060201MFP-PF<br>060202MFP-PF<br>060204MFP-PF | 2                            | 2              | 6.35  | 2.38 | 3   | < 0.1<br>< 0.2<br>< 0.4 | 7         |         |         | ●      | ●      | ●      | ●                     |                          |
| <br>Finishing<br>Polished / Sharp edge | CCGT 060201MFP-GF<br>060202MFP-GF<br>060204MFP-GF | 2                            | 2              | 6.35  | 2.38 | 3   | < 0.1<br>< 0.2<br>< 0.4 | 7         | ●       | ●       | ●      | ●      | ●      | ●                     |                          |
|  | CCGT 09T301MFP-GF<br>09T302MFP-GF<br>09T304MFP-GF | 2                            | 2              | 9.525 | 3.97 | 4.7 | < 0.1<br>< 0.2<br>< 0.4 | 7         | ●       | ●       | ●      | ●      | ●      | ●                     |                          |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

### Applicable chipbreaker range



● : Standard item

**B58**

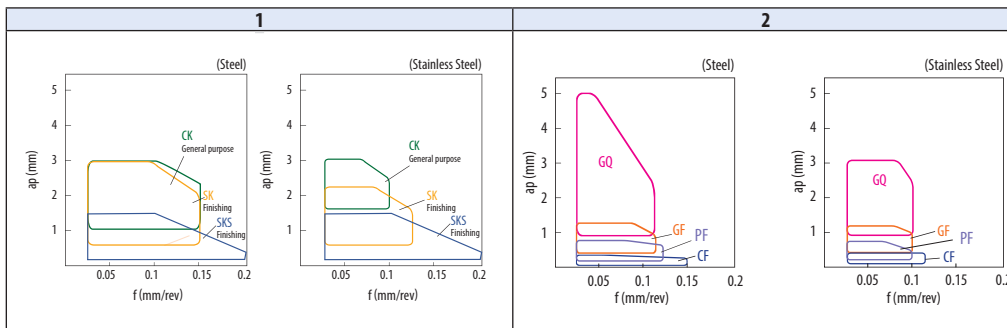
80° Rhombic

How to read pages of "Turning inserts" See page B15

| Insert                                      | Description  | Applicable chipbreaker range | Dimension (mm) |       |      |     |                                   | Angle (°) | Carbide |        |        |        | Applicable toolholder |  |
|---|--|------------------------------|----------------|-------|------|-----|-----------------------------------|-----------|---------|--------|--------|--------|-----------------------|--|
|   |  |                              | No. of edges   | IC    | S    | D1  | RE                                |           | AN      | Cermet |        |        |                       |  |
|   |  |                              |                |       |      |     |                                   |           |         | POL010 | POL025 | PR1225 |                       | PR1535                                 |
| Finishing<br>Polished / Sharp Edge          | CCGT 0602005MFP-SKS<br>060201MFP-SKS<br>060202MFP-SKS                  | 1                            | 2              | 6.35  | 2.38 | 3   | < 0.05<br>< 0.1<br>< 0.2          | 7         |         | ●      | ●      | ●      | ●                     | E26, E28<br>E54<br>F31, F32<br>F60~F62 |
|   | CCGT 09T3005MFP-SKS<br>09T301MFP-SKS<br>09T302MFP-SKS<br>09T304MFP-SKS | 1                            | 2              | 9.525 | 3.97 | 4.7 | < 0.05<br>< 0.1<br>< 0.2<br>< 0.4 | 7         |         | ●      | ●      | ●      | ●                     | E26~E28<br>E54<br>F60~F62<br>F122      |
| Finishing<br>Polished / Sharp edge          | CCGT 060201MFP-SK<br>060202MFP-SK<br>060204MFP-SK                      | 1                            | 2              | 6.35  | 2.38 | 3   | < 0.1<br>< 0.2<br>< 0.4           | 7         | ●       | ●      | ●      | ●      | ●                     | E26, E28<br>E54<br>F31, F32<br>F60~F62 |
|   | CCGT 09T301MFP-SK<br>09T302MFP-SK<br>09T304MFP-SK                      | 1                            | 2              | 9.525 | 3.97 | 4.7 | < 0.1<br>< 0.2<br>< 0.4           | 7         | ●       | ●      | ●      | ●      | ●                     | E26~E28<br>E54<br>F60~F62<br>F122      |
| Finishing<br>Polished / Sharp edge          | CCGT 060201MP-CK<br>060202MP-CK  | 1                            | 2              | 6.35  | 2.38 | 3   | < 0.1<br>< 0.2                    | 7         | ●       | ●      | ●      | ●      | ●                     | E26, E28<br>E54<br>F31, F32<br>F60~F62 |
|   | CCGT 09T301MP-CK<br>09T302MP-CK  | 1                            | 2              | 9.525 | 3.97 | 4.7 | < 0.1<br>< 0.2                    | 7         | ●       | ●      | ●      | ●      | ●                     | E26~E28<br>E54<br>F60~F62<br>F122      |
| Finishing - Medium<br>Polished / Sharp edge | CCGT 060201MFP-GQ<br>060202MFP-GQ<br>060204MFP-GQ                      | 2                            | 2              | 6.35  | 2.38 | 3   | < 0.1<br>< 0.2<br>< 0.4           | 7         |         | ●      | ●      | ●      | ●                     | E26, E28<br>E54<br>F31, F32<br>F60~F62 |
|   | CCGT 09T301MFP-GQ<br>09T302MFP-GQ<br>09T304MFP-GQ                      | 2                            | 2              | 9.525 | 3.97 | 4.7 | < 0.1<br>< 0.2<br>< 0.4           | 7         |         | ●      | ●      | ●      | ●                     | E26~E28<br>E54<br>F60~F62<br>F122      |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts



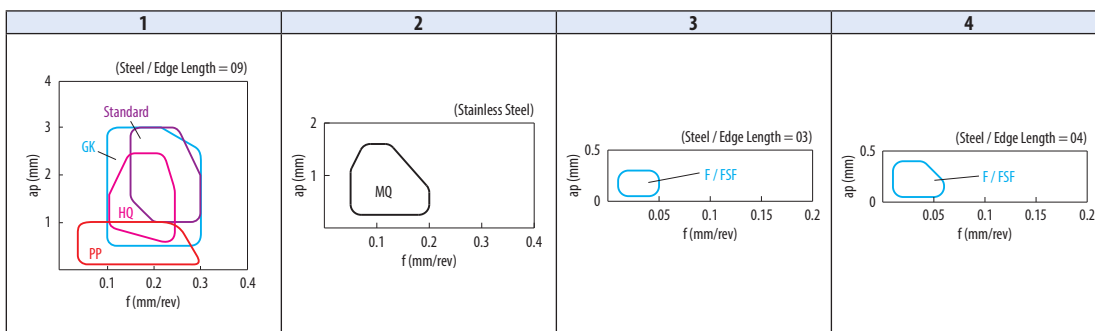
80° Rhombic

How to read pages of "Turning inserts" See page B15

| Insert  | Description   | Applicable chipbreaker range |                | Dimension (mm) |      |     |  | Angle (°) | Carbide |        |        |        |        |        |        | Cermet | Applicable toolholder |        |       |  |                          |
|---|---|------------------------------|----------------|----------------|------|-----|--|-----------|---------|--------|--------|--------|--------|--------|--------|--------|-----------------------|--------|-------|--|--------------------------|
|   |   | No. of edges                 | No. of grooves | IC             | S    | D1  | RE   |           | CA6515  | CA6525 | PR0055 | PR0155 | PR1225 | PR1535 | PR1705 |        |                       | PR1725 | PR930 | SW05                                   | TN60                     |
| Medium<br>Sharp edge  | CCGT 0602005MF<br>060201MF<br>060202MF<br>060204MF  | 1                            | 2              | 6.35           | 2.38 | 2.8 | < 0.05<br>< 0.1<br>< 0.2<br>< 0.4                            | 7         |         |        |        |        |        |        |        |        |                       |        |       | E26, E28<br>E54<br>F31, F32<br>F60~F62 |                          |
|   | CCGT 09T3005MF<br>09T301MF<br>09T302MF<br>09T304MF  | 1                            | 2              | 9.525          | 3.97 | 4.4 | < 0.05<br>< 0.1<br>< 0.2<br>< 0.4                            | 7         |         |        |        |        |        |        |        |        |                       |        |       | E26~E28<br>E54<br>F60~F62              |                          |
| Stainless steel / Heat-resistant alloys<br>Finishing - Medium | CCMT 09T304MQ<br>09T308MQ   | 2                            | 2              | 9.525          | 3.97 | 4.7 | 0.4<br>0.8   | 7         |         |        |        |        |        |        |        |        |                       |        |       | F122                                   |                          |
| Finishing<br>Precision / Sharp edge                           | CCET 0301003R-FSF<br>0301003L-FSF<br>030101R-FSF<br>030101L-FSF<br>030102R-FSF<br>030102L-FSF<br>030104R-FSF<br>030104L-FSF | 3                            | 2              | 3.5            | 1.4  | 1.9 | 0.03<br>0.03<br>0.1<br>0.1<br>0.2<br>0.2<br>0.4<br>0.4       | 7         |         |        |        |        |        |        |        |        |                       |        |       |  |                          |
|   | CCET 040101R-FSF<br>040101L-FSF<br>040102R-FSF<br>040102L-FSF<br>040104R-FSF<br>040104L-FSF                                 | 4                            | 2              | 4.3            | 1.8  | 2.3 | 0.1<br>0.1<br>0.2<br>0.2<br>0.4<br>0.4                       | 7         |         |        |        |        |        |        |        |        |                       |        |       |  | F31<br>F32<br>F60<br>F62 |
| Finishing<br>Precision / Sharp edge                           | CCET 0301005ML-FSF<br>030101MR-FSF<br>030101ML-FSF<br>030102MR-FSF<br>030102ML-FSF<br>030104MR-FSF<br>030104ML-FSF          | 3                            | 2              | 3.5            | 1.4  | 1.9 | < 0.05<br>< 0.1<br>< 0.1<br>< 0.2<br>< 0.2<br>< 0.4<br>< 0.4 | 7         |         |        |        |        |        |        |        |        |                       |        |       |  |                          |
|   | CCET 0401005ML-FSF<br>040101MR-FSF<br>040101ML-FSF<br>040102MR-FSF<br>040102ML-FSF<br>040104ML-FSF<br>040104MR-FSF          | 4                            | 2              | 4.3            | 1.8  | 2.3 | < 0.05<br>< 0.1<br>< 0.1<br>< 0.2<br>< 0.2<br>< 0.4<br>< 0.4 | 7         |         |        |        |        |        |        |        |        |                       |        |       |  |                          |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts

## 80° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive

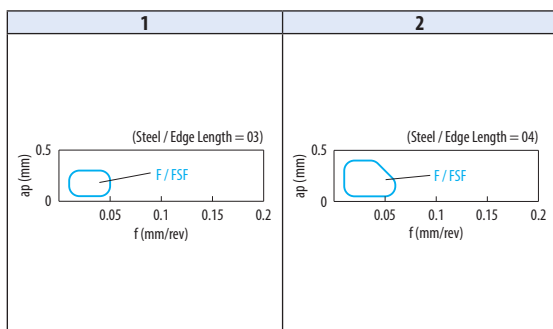


Ceramic

| Insert | Description | Applicable chipbreaker range | Dimension (mm) |     |     |        | Angle (°) | Carbide |    |        |        |        |        | Cermet |        |       | Applicable toolholder |                          |                          |       |       |
|--------|-------------|------------------------------|----------------|-----|-----|--------|-----------|---------|----|--------|--------|--------|--------|--------|--------|-------|-----------------------|--------------------------|--------------------------|-------|-------|
|        |             |                              | No. of edges   | IC  | S   | D1     |           | RE      | AN | DLC    |        | PVD    |        | -      |        | PVD   |                       | -                        |                          |       |       |
|        |             |                              |                |     |     |        |           |         |    | P01010 | P01025 | PR1225 | PR1535 | PR1705 | PR1725 | PR930 |                       |                          | KW10                     | PV710 | PV720 |
|        | CCET        | 1                            | 2              | 3.5 | 1.4 | 1.9    | < 0.05    | 7       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        | F31<br>F32<br>F60<br>F62 |       |       |
|        |             |                              |                |     |     |        | < 0.05    |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     |       |
|        |             |                              |                |     |     |        | < 0.1     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     | ●     |
|        |             |                              |                |     |     |        | < 0.1     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     | ●     |
|        |             |                              |                |     |     |        | < 0.2     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     | ●     |
|        |             |                              |                |     |     |        | < 0.2     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     | ●     |
|        |             |                              |                |     |     |        | < 0.4     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     | ●     |
|        | CCET        | 2                            | 2              | 4.3 | 1.8 | 2.3    | < 0.1     | 7       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        | F31<br>F32<br>F60<br>F62 |       |       |
|        |             |                              |                |     |     |        | < 0.1     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          |       |       |
|        |             |                              |                |     |     |        | < 0.2     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     |       |
|        |             |                              |                |     |     |        | < 0.2     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     |       |
|        |             |                              |                |     |     |        | < 0.4     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     |       |
|        |             |                              |                |     |     |        | < 0.4     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     |       |
|        |             |                              |                |     |     |        | < 0.4     |         | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | ●                        |                          | ●     |       |
| CCGT   | 1           | 2                            | 3.5            | 1.4 | 1.9 | 0.03   | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | F31<br>F32<br>F60<br>F62 |                          |       |       |
|        |             |                              |                |     |     | 0.1    |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | 0.1    |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          | ●                        |       |       |
|        |             |                              |                |     |     | 0.2    |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          | ●                        |       |       |
|        |             |                              |                |     |     | 0.2    |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          | ●                        |       |       |
|        |             |                              |                |     |     | 0.4    |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          | ●                        |       |       |
|        |             |                              |                |     |     | 0.4    |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          | ●                        |       |       |
| CCGT   | 1           | 2                            | 3.5            | 1.4 | 1.9 | < 0.05 | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | F31<br>F32<br>F60<br>F62 |                          |       |       |
|        |             |                              |                |     |     | < 0.1  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.1  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.2  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.2  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.4  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.4  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
| CCGT   | 2           | 2                            | 4.3            | 1.8 | 2.3 | < 0.05 | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     | F31<br>F32<br>F60<br>F62 |                          |       |       |
|        |             |                              |                |     |     | < 0.1  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.1  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.2  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.2  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.4  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |
|        |             |                              |                |     |     | < 0.4  |           | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●      | ●     | ●                     |                          |                          |       |       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

### Applicable chipbreaker range



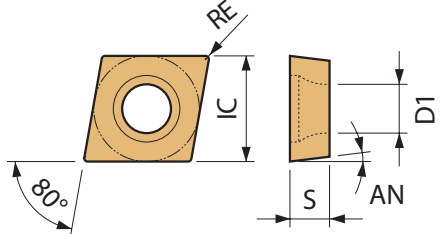
● : Standard item □ : Deleted from the next catalog

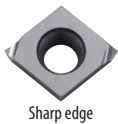
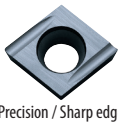

**B62**



80° Rhombic

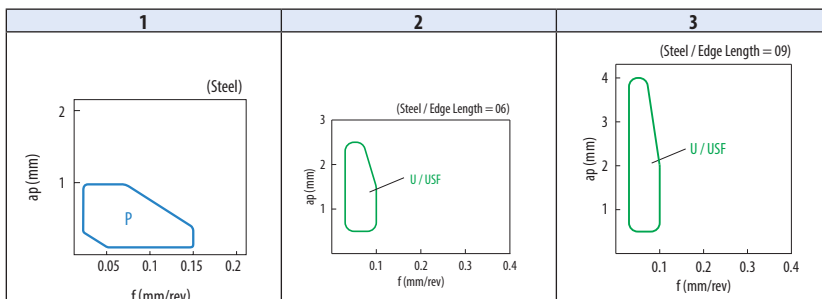
How to read pages of "Turning inserts" See page B15



| Insert  | Description         | Applicable chipbreaker range | Dimension (mm) |       |      |        | Angle (°) | Carbide |     | Cermet |     | Applicable toolholder             |  |
|---|---------------------|------------------------------|----------------|-------|------|--------|-----------|---------|-----|--------|-----|-----------------------------------|--|
|   |                     |                              | No. of edges   | IC    | S    | D1     |           | AN      | DLC | PVD    | PVD |                                   | -  |
|   |                     |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| Finishing<br><br>Sharp edge              | CCET 09T301MR-P     | 1                            | 2              | 9.525 | 3.97 | 4.4    | < 0.1     | 7       |     |        |     |                                   | E26~E28<br>E54<br>F60~F62<br>F122          |
|   | 09T301ML-P          |                              |                |       |      |        |           |         |     |        |     |                                   |  |
|   | 09T302MR-P          |                              |                |       |      |        |           |         |     |        |     |                                   |  |
|   | 09T302ML-P          |                              |                |       |      |        |           |         |     |        |     |                                   |  |
|   | 09T304MR-P          |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| 09T304ML-P  |                     |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| Low feed<br><br>Precision / Sharp edge | CCET 0602003FR-USF  | 2                            | 2              | 6.35  | 2.38 | 2.8    | 0.03      | 7       |     |        |     |                                   | E26<br>E28<br>E54<br>F31<br>F32<br>F60~F62 |
|   | 0602003FL-USF       |                              |                |       |      |        | 0.03      |         |     |        |     |                                   |  |
|   | 060201FR-USF        |                              |                |       |      |        | 0.1       |         |     |        |     |                                   |  |
|   | 060201FL-USF        |                              |                |       |      |        | 0.1       |         |     |        |     |                                   |  |
|   | 060202FR-USF        |                              |                |       |      |        | 0.2       |         |     |        |     |                                   |  |
|   | 060202FL-USF        | 0.2                          |                |       |      |        |           |         |     |        |     |                                   |  |
|   | CCET 09T3003FR-USF  | 3                            | 2              | 9.525 | 3.97 | 4.4    | 0.03      | 7       |     |        |     |                                   | E26~E28<br>E54<br>F60~F62<br>F122          |
|   | 09T3003FL-USF       |                              |                |       |      |        | 0.03      |         |     |        |     |                                   |  |
|   | 09T301FR-USF        |                              |                |       |      |        | 0.1       |         |     |        |     |                                   |  |
|   | 09T301FL-USF        |                              |                |       |      |        | 0.1       |         |     |        |     |                                   |  |
|   | 09T302FR-USF        |                              |                |       |      |        | 0.2       |         |     |        |     |                                   |  |
|   | 09T302FL-USF        | 0.2                          |                |       |      |        |           |         |     |        |     |                                   |  |
|   | CCET 0602005MFR-USF | 2                            | 2              | 6.35  | 2.38 | 2.8    | < 0.05    | 7       |     |        |     |                                   | E26<br>E28<br>E54<br>F31<br>F32<br>F60~F62 |
|   | 0602005MFL-USF      |                              |                |       |      |        | < 0.05    |         |     |        |     |                                   |  |
|   | 060201MFR-USF       |                              |                |       |      |        | < 0.1     |         |     |        |     |                                   |  |
| 060201MFL-USF   | < 0.1               |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| 060202MFR-USF   | < 0.2               |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| 060202MFL-USF   | < 0.2               |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| CCET 09T3005MFR-USF   | 3                   | 2                            | 9.525          | 3.97  | 4.4  | < 0.05 | 7         |         |     |        |     | E26~E28<br>E54<br>F60~F62<br>F122 |  |
| 09T3005MFL-USF  |                     |                              |                |       |      | < 0.05 |           |         |     |        |     |                                   |  |
| 09T301MFR-USF   |                     |                              |                |       |      | < 0.1  |           |         |     |        |     |                                   |  |
| 09T301MFL-USF   |                     |                              |                |       |      | < 0.1  |           |         |     |        |     |                                   |  |
| 09T302MFR-USF   |                     |                              |                |       |      | < 0.2  |           |         |     |        |     |                                   |  |
| 09T302MFL-USF   | < 0.2               |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| Low feed<br><br>Sharp edge             | CCET 0602005MFR-U   | 2                            | 2              | 6.35  | 2.38 | 2.8    | < 0.05    | 7       |     |        |     |                                   | E26<br>E28<br>E54<br>F31<br>F32<br>F60~F62 |
|   | 0602005MFL-U        |                              |                |       |      |        | < 0.05    |         |     |        |     |                                   |  |
|   | 060201MFR-U         |                              |                |       |      |        | < 0.1     |         |     |        |     |                                   |  |
|   | 060201MFL-U         |                              |                |       |      |        | < 0.1     |         |     |        |     |                                   |  |
|   | 060202MFR-U         |                              |                |       |      |        | < 0.2     |         |     |        |     |                                   |  |
|   | 060202MFL-U         | < 0.2                        |                |       |      |        |           |         |     |        |     |                                   |  |
|   | CCET 09T3005MFL-U   | 3                            | 2              | 9.525 | 3.97 | 4.4    | < 0.05    | 7       |     |        |     |                                   | E26~E28<br>E54<br>F60~F62<br>F122          |
|   | 09T3005MFR-U        |                              |                |       |      |        | < 0.05    |         |     |        |     |                                   |  |
|   | 09T301MFL-U         |                              |                |       |      |        | < 0.1     |         |     |        |     |                                   |  |
|   | 09T301MFR-U         |                              |                |       |      |        | < 0.1     |         |     |        |     |                                   |  |
| 09T302MFL-U   | < 0.2               |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| 09T302MFR-U   | < 0.2               |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| 09T304MFL-U   | < 0.4               |                              |                |       |      |        |           |         |     |        |     |                                   |  |
| 09T304MFR-U   | < 0.4               |                              |                |       |      |        |           |         |     |        |     |                                   |  |

Applicable chipbreaker range

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).



● : Standard item

B



Turning indexable inserts

80° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive

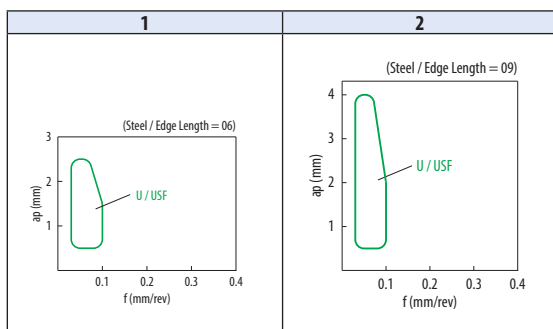


Ceramic

| Insert            | Description      | Applicable chipbreaker range |       | Dimension (mm) |      |        |      | Angle (°) | Material |   |         |         | Applicable toolholder |
|-------------------|------------------|------------------------------|-------|----------------|------|--------|------|-----------|----------|---|---------|---------|-----------------------|
|                   |                  | No. of edges                 | IC    | S              | D1   | RE     | AN   |           | Carbide  |   | Cermet  |         |                       |
|                   |                  |                              |       |                |      |        |      | PVD       | -        | - |         | -       |                       |
|                   | CCGT 0602003FR-U | 1                            | 2     | 6.35           | 2.38 | 2.8    | 0.03 | 7         | ●        | ● | ●       | ●       | E26                   |
|                   | 0602003FL-U      |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       | E28                   |
|                   | 060201FR-U       |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       | E54                   |
|                   | 060201FL-U       |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       | F31                   |
|                   | 060202FR-U       |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       | F32                   |
|                   | 060202FL-U       |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       | F60~F62               |
|                   | CCGT 09T3003FR-U | 2                            | 2     | 9.525          | 3.97 | 4.4    | 0.03 | 7         | ●        | ● | ●       | ●       | E26~E28               |
|                   | 09T3003FL-U      |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       | E54                   |
|                   | 09T301FR-U       |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       | F60~F62               |
|                   | 09T301FL-U       |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       | F122                  |
|                   | 09T302FR-U       |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       |                       |
|                   | 09T302FL-U       |                              |       |                |      |        |      |           | ●        | ● | ●       | ●       |                       |
| CCGT 0602005MFR-U | 1                | 2                            | 6.35  | 2.38           | 2.8  | < 0.05 | 7    | ●         | ●        | ● | ●       | E26     |                       |
| 0602005MFL-U      |                  |                              |       |                |      | < 0.05 |      | ●         | ●        | ● | E28     |         |                       |
| 060201MFR-U       |                  |                              |       |                |      | < 0.1  |      | ●         | ●        | ● | E54     |         |                       |
| 060201MFL-U       |                  |                              |       |                |      | < 0.1  |      | ●         | ●        | ● | F31     |         |                       |
| 060202MFR-U       |                  |                              |       |                |      | < 0.2  |      | ●         | ●        | ● | F32     |         |                       |
| 060202MFL-U       |                  |                              |       |                |      | < 0.2  |      | ●         | ●        | ● | F60~F62 |         |                       |
| CCGT 09T3005MFR-U | 2                | 2                            | 9.525 | 3.97           | 4.4  | < 0.05 | 7    | ●         | ●        | ● | ●       | E26~E28 |                       |
| 09T3005MFL-U      |                  |                              |       |                |      | < 0.05 |      | ●         | ●        | ● | E54     |         |                       |
| 09T301MFR-U       |                  |                              |       |                |      | < 0.1  |      | ●         | ●        | ● | F60~F62 |         |                       |
| 09T301MFL-U       |                  |                              |       |                |      | < 0.1  |      | ●         | ●        | ● | F122    |         |                       |
| 09T302MFR-U       |                  |                              |       |                |      | < 0.2  |      | ●         | ●        | ● |         |         |                       |
| 09T302MFL-U       |                  |                              |       |                |      | < 0.2  |      | ●         | ●        | ● |         |         |                       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range

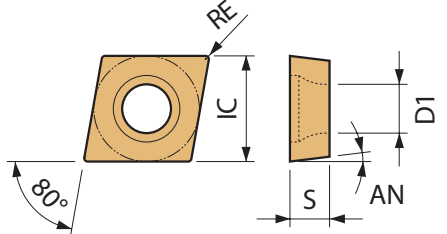


● : Standard item

B64

80° Rhombic

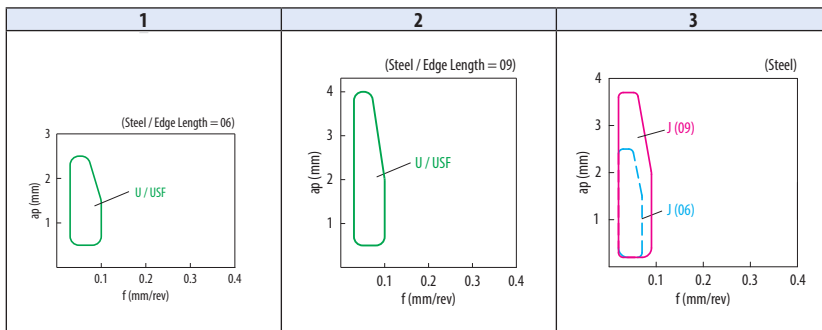
How to read pages of "Turning inserts" See page B15



| Insert                  | Description       | Applicable chipbreaker range |                | Dimension (mm) |      |      |       | Angle (°) | Material |        |       |        |       |       | Applicable toolholder |          |          |          |         |
|-------------------------|-------------------|------------------------------|----------------|----------------|------|------|-------|-----------|----------|--------|-------|--------|-------|-------|-----------------------|----------|----------|----------|---------|
|                         |                   | No. of edges                 | No. of inserts | IC             | S    | D1   | RE    |           | Carbide  |        |       | Cermet |       |       |                       |          |          |          |         |
|                         |                   |                              |                |                |      |      |       | PR1225    | PR1535   | PR1725 | PR950 | PV710  | PV720 | PV730 |                       | Ti60     | Ti610    | Ti620    |         |
| Low feed<br>With honing | CCGT 060201ER-U   | 1                            | 2              | 6.35           | 2.38 | 2.8  | 0.1   | 7         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | E26      |          |         |
|                         | 060201EL-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | E28      |         |
|                         | 060202ER-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | ●        | E54     |
|                         | 060202EL-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | ●        | F31     |
|                         | 060204ER-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | ●        | F32     |
|                         | 060204EL-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | ●        | F60~F62 |
|                         | CCGT 09T301ER-U   | 2                            | 2              | 9.525          | 3.97 | 4.4  | 0.1   | 7         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | E26~E28  |          |         |
|                         | 09T301EL-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | E54      |         |
|                         | 09T302ER-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | ●        | F60~F62 |
|                         | 09T302EL-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | ●        | F122    |
|                         | 09T304ER-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | ●        |         |
|                         | 09T304EL-U        |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | ●        |         |
| CCGT 060202MER-U        | 1                 | 2                            | 6.35           | 2.38           | 2.8  | <0.2 | 7     | ●         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | E26, E28 |          |          |         |
| 060202MEL-U             |                   |                              |                |                |      | ●    |       | ●         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | E54      |          |          |         |
| 060204MER-U             |                   |                              |                |                |      | ●    |       | ●         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | F31, F32 |          |         |
| 060204MEL-U             |                   |                              |                |                |      | ●    |       | ●         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | F60~F62  |          |         |
| CCGT 09T301MER-U        | 2                 | 2                            | 9.525          | 3.97           | 4.4  | <0.1 | 7     | ●         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | E26~E28  |          |          |         |
| 09T302MER-U             |                   |                              |                |                |      | ●    |       | ●         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | E54      |          |          |         |
| 09T302MEL-U             |                   |                              |                |                |      | ●    |       | ●         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | F60~F62  |          |         |
| 09T304MER-U             |                   |                              |                |                |      | ●    |       | ●         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | F122     |          |         |
| CCGT 09T304MEL-U        | ●                 | ●                            | ●              | ●              | ●    | ●    | ●     | ●         | ●        | ●      | ●     |        |       |       |                       |          |          |          |         |
| Low feed<br>Sharp edge  | CCET 0602005MFR-J | 3                            | 2              | 6.35           | 2.38 | 2.8  | <0.05 | 7         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | E26, E28 |          |         |
|                         | 060201MFR-J       |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | E54      |          |         |
|                         | 060201MFL-J       |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | F31, F32 |         |
|                         | 060202MFR-J       |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | F60~F62  |         |
|                         | 060202MFL-J       |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        |          |         |
|                         | CCET 09T301MFR-J  | 3                            | 2              | 9.525          | 3.97 | 4.4  | <0.1  | 7         | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | E26~E28  |          |         |
|                         | 09T301MFL-J       |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | E54      |          |         |
|                         | 09T302MFR-J       |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | F60~F62  |         |
|                         | 09T302MFL-J       |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        | F122     |         |
|                         | 09T304MFR-J       |                              |                |                |      |      | ●     |           | ●        | ●      | ●     | ●      | ●     | ●     | ●                     | ●        | ●        |          |         |
| 09T304MFL-J             | ●                 | ●                            | ●              | ●              | ●    | ●    | ●     | ●         | ●        | ●      |       |        |       |       |                       |          |          |          |         |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts

80° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

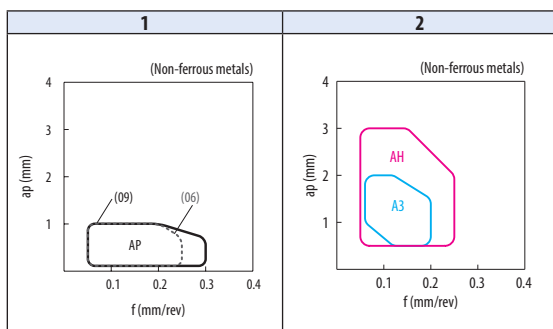
Positive



Ceramic

| Insert  | Description   | Applicable chipbreaker range |                     | Dimension (mm) |      |     |  |    | Angle (°) | Carbide |      |                                      | Applicable toolholder |
|---|---|------------------------------|---------------------|----------------|------|-----|--|----|-----------|---------|------|--------------------------------------|-----------------------|
|   |   | No. of edges                 | No. of chipbreakers | IC             | S    | D1  | RE                                     | AN |           | DLC     |      |                                      |                       |
|   |   |                              |                     |                |      |     |  |    | POL010    | POL025  | KW10 |                                      |                       |
| <br>Non-Ferrous Metals<br>Finishing / Sharp edge          | CCGT 060202AP<br>060204AP   | 1                            | 2                   | 6.35           | 2.38 | 3   | 0.2<br>0.4                             | 7  | ●         | ●       | ●    | E26, E28, E54<br>F31, F32<br>F60~F62 |                       |
|   | CCGT 09T302AP<br>09T304AP<br>09T308AP   | 1                            | 2                   | 9.525          | 3.97 | 4.7 | 0.2<br>0.4<br>0.8                      | 7  | ●         | ●       | ●    | E26~E28<br>E54<br>F60~F62<br>F122    |                       |
| <br>Non-Ferrous Metals<br>Finishing - Medium / Sharp edge | CCGT 09T302R-A3<br>09T302L-A3<br>09T304R-A3<br>09T304L-A3<br>09T308R-A3<br>09T308L-A3 | 2                            | 2                   | 9.525          | 3.97 | 4.4 | 0.2<br>0.2<br>0.4<br>0.4<br>0.8<br>0.8 | 7  | ●         | ●       | ●    | E26~E28<br>E54<br>F60~F62<br>F122    |                       |
|   | CCGT 120402R-A3<br>120402L-A3<br>120404R-A3<br>120404L-A3<br>120408R-A3<br>120408L-A3 | 2                            | 2                   | 12.7           | 4.76 | 5.5 | 0.2<br>0.2<br>0.4<br>0.4<br>0.8<br>0.8 | 7  | ●         | ●       | ●    | E28                                  |                       |
| <br>Non-Ferrous Metals<br>Finishing - Medium / Sharp edge | CCGT 09T304AH<br>09T308AH   | 2                            | 2                   | 9.525          | 3.97 | 4.4 | 0.4<br>0.8                             | 7  | ●         | ●       | ●    | E26~E28<br>E54<br>F60~F62<br>F122    |                       |
| <br>Cast Iron<br>Without Chipbreaker                      | CCGW 060201<br>060202   | -                            | 2                   | 6.35           | 2.38 | 2.8 | 0.1<br>0.2                             | 7  | ●         | ●       | ●    | E26, E28, E54<br>F31, F32<br>F60~F62 |                       |
|   | CCGW 09T300<br>09T301<br>09T302<br>09T304   | -                            | 2                   | 9.525          | 3.97 | 4.4 | 0<br>0.1<br>0.2<br>0.4                 | 7  | ●         | ●       | ●    | E26~E28<br>E54<br>F60~F62<br>F122    |                       |

Applicable chipbreaker range



● : Standard item

B66



55° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive



Ceramic

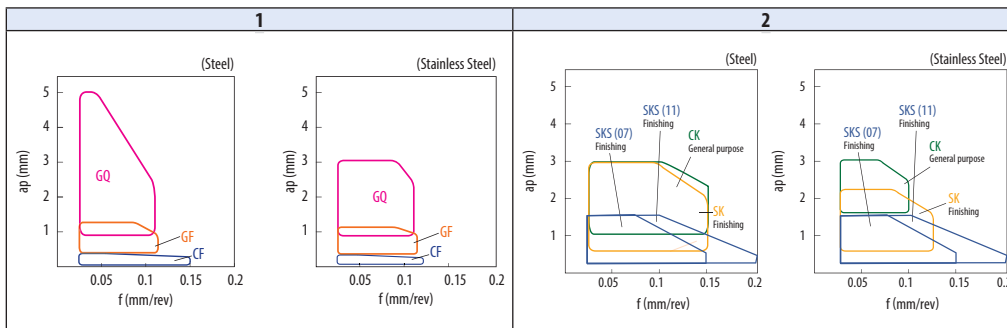
| Insert                             | Description  | Applicable chipbreaker range | Dimension (mm) |       |      |     |                               | Angle (°) | Carbide |    |        |        |        |        | Cermet | Applicable toolholder |   |       |
|------------------------------------|--|------------------------------|----------------|-------|------|-----|-------------------------------|-----------|---------|----|--------|--------|--------|--------|--------|-----------------------|---|-------|
|                                    |  |                              | No. of edges   |       | IC   | S   | D1                            |           | RE      | AN | DLC    |        | PVD    |        |        |                       | - | PV730 |
|                                    |  |                              | 1              | 2     |      |     |                               |           |         |    | POL010 | POL025 | PR1725 | PR1535 |        |                       |   |       |
| Minute ap<br>Sharp edge            | DCGT 070202CF  | 1                            | 2              | 6.35  | 2.38 | 2.8 | 0.2                           | 7         |         |    |        |        |        |        |        |                       |   | *1    |
|                                    | DCGT 11T302CF  | 1                            | 2              | 9.525 | 3.97 | 4.4 | 0.2                           | 7         |         |    |        |        |        |        |        |                       |   | *2    |
| Minute ap<br>Polished / Sharp edge | DCGT 070201MP-CF<br>070202MP-CF  | 1                            | 2              | 6.35  | 2.38 | 2.8 | <0.1<br><0.2                  | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *1    |
|                                    | DCGT 11T301MP-CF<br>11T302MP-CF  | 1                            | 2              | 9.525 | 3.97 | 4.4 | <0.1<br><0.2                  | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *2    |
| Finishing<br>Polished / Sharp edge | DCGT 070201MFP-GF<br>070202MFP-GF<br>070204MFP-GF                      | 1                            | 2              | 6.35  | 2.38 | 3   | <0.1<br><0.2<br><0.4          | 7         |         |    | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *1    |
|                                    | DCGT 11T301MFP-GF<br>11T302MFP-GF<br>11T304MFP-GF                      | 1                            | 2              | 9.525 | 3.97 | 4.7 | <0.1<br><0.2<br><0.4          | 7         |         |    | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *2    |
| Finishing<br>Polished / Sharp Edge | DCGT 0702005MFP-SKS<br>070201MFP-SKS<br>070202MFP-SKS                  | 2                            | 2              | 6.35  | 2.38 | 3   | <0.05<br><0.1<br><0.2         | 7         |         |    | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *1    |
|                                    | DCGT 11T3005MFP-SKS<br>11T301MFP-SKS<br>11T302MFP-SKS<br>11T304MFP-SKS | 2                            | 2              | 9.525 | 3.97 | 4.7 | <0.05<br><0.1<br><0.2<br><0.4 | 7         |         |    | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *2    |
| Finishing<br>Polished / Sharp edge | DCGT 070201MFP-SK<br>070202MFP-SK<br>070204MFP-SK                      | 2                            | 2              | 6.35  | 2.38 | 3   | <0.1<br><0.2<br><0.4          | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *1    |
|                                    | DCGT 11T301MFP-SK<br>11T302MFP-SK<br>11T304MFP-SK                      | 2                            | 2              | 9.525 | 3.97 | 4.7 | <0.1<br><0.2<br><0.4          | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *2    |
| Finishing                          | DCGT 070201CK<br>070202CK  | 2                            | 2              | 6.35  | 2.38 | 2.8 | 0.1<br>0.2                    | 7         |         |    |        |        |        | ●      | ●      | ●                     | ● | *1    |
|                                    | DCGT 11T301CK<br>11T302CK  | 2                            | 2              | 9.525 | 3.97 | 4.4 | 0.1<br>0.2                    | 7         |         |    |        |        |        | ●      | ●      | ●                     | ● | *2    |
| Finishing<br>Polished / Sharp edge | DCGT 070201MP-CK<br>070202MP-CK  | 2                            | 2              | 6.35  | 2.38 | 2.8 | <0.1<br><0.2                  | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *1    |
|                                    | DCGT 11T301MP-CK<br>11T302MP-CK  | 2                            | 2              | 9.525 | 3.97 | 4.4 | <0.1<br><0.2                  | 7         | ●       | ●  | ●      | ●      | ●      | ●      | ●      | ●                     | ● | *2    |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

\*1: DC..07type E29, E31, E34 E35, E55, E56, F66~F68, F70~F72, F74~F76

\*2: DC..11type E23, E29~E32, E34, E35, E55, E56 F66~F68, F70~F72, F74~F76, F123

Applicable chipbreaker range



● : Standard item

B68







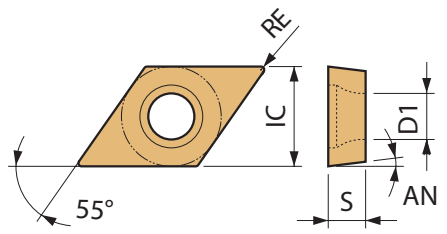


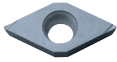




55° Rhombic

How to read pages of "Turning inserts" See page B15



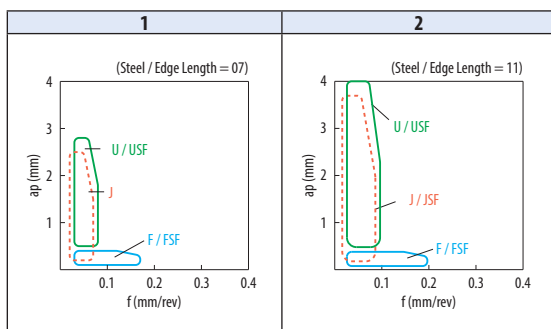
| Insert   | Description   | Applicable chipbreaker range | Dimension (mm) |       |      |     |        | Angle (°) | Material |        |   |   | Applicable toolholder |
|--|---|------------------------------|----------------|-------|------|-----|--------|-----------|----------|--------|---|---|-----------------------|
|  |   |                              | No. of edges   | IC    | S    | D1  | RE     |           | Carbide  | Cermet |   |   |                       |
| Finishing<br><br>Sharp edge | DCGT 0702003R-F<br>0702003L-F<br>070201R-F<br>070201L-F<br>070202R-F<br>070202L-F<br>070204R-F<br>070204L-F         | 1                            | 2              | 6.35  | 2.38 | 2.8 | 0.03   | 7         | ●        | ●      | ● | ● | *1                    |
|  |   |                              |                |       |      |     | 0.1    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.2    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.4    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.4    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.4    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.4    |           | ●        | ●      | ● |   |                       |
|  | DCGT 11T3003R-F<br>11T3003L-F<br>11T301R-F<br>11T301L-F<br>11T302R-F<br>11T302L-F<br>11T304R-F<br>11T304L-F         | 2                            | 2              | 9.525 | 3.97 | 4.4 | 0.03   | 7         | ●        | ●      | ● | ● | *2                    |
|  |   |                              |                |       |      |     | 0.1    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.2    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.4    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.4    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.4    |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | 0.4    |           | ●        | ●      | ● |   |                       |
|  | DCGT 0702005MR-F<br>0702005ML-F<br>070201MR-F<br>070201ML-F<br>070202MR-F<br>070202ML-F<br>070204MR-F<br>070204ML-F | 1                            | 2              | 6.35  | 2.38 | 2.8 | < 0.05 | 7         | ●        | ●      | ● | ● | *1                    |
|  |   |                              |                |       |      |     | < 0.1  |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | < 0.2  |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | < 0.4  |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | < 0.4  |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | < 0.4  |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | < 0.4  |           | ●        | ●      | ● |   |                       |
|  | DCGT 11T3005MR-F<br>11T301MR-F<br>11T301ML-F<br>11T302MR-F<br>11T302ML-F<br>11T304MR-F<br>11T304ML-F                | 2                            | 2              | 9.525 | 3.97 | 4.4 | < 0.05 | 7         | ●        | ●      | ● | ● | *2                    |
|  |   |                              |                |       |      |     | < 0.1  |           | ●        | ●      | ● |   |                       |
|  |   |                              |                |       |      |     | < 0.2  |           | ●        | ●      | ● |   |                       |
| < 0.4  |   |                              |                |       |      |     | ●      |           | ●        | ●      |   |   |                       |
| < 0.4  |   |                              |                |       |      |     | ●      |           | ●        | ●      |   |   |                       |
| < 0.4  |   |                              |                |       |      |     | ●      |           | ●        | ●      |   |   |                       |
| < 0.4  |   |                              |                |       |      |     | ●      |           | ●        | ●      |   |   |                       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

\*1: DC..07type E29, E31, E34 E35, E55, E56, F66~F68, F70~F72, F74~F76

\*2: DC..11type E23, E29~E32, E34, E35, E55, E56 F66~F68, F70~F72, F74~F76, F123

Applicable chipbreaker range



● : Standard item

B

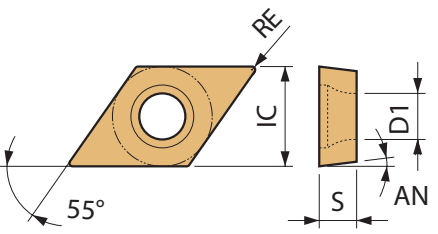



Turning indexable inserts



55° Rhombic

How to read pages of "Turning inserts" See page B15



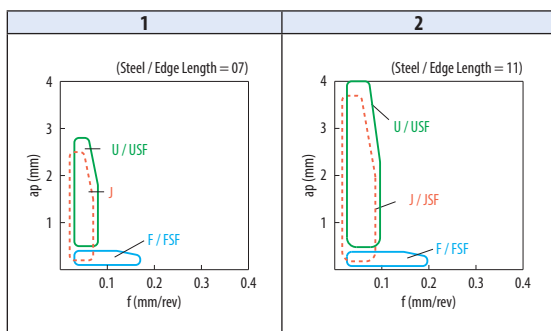
| Insert  | Description  | Applicable chipbreaker range |                | Dimension (mm) |      |     |        | Angle (°) | Material |        |   |   | Applicable toolholder |
|---|--|------------------------------|----------------|----------------|------|-----|--------|-----------|----------|--------|---|---|-----------------------|
|   |  | No. of edges                 | No. of inserts | IC             | S    | D1  | RE     |           | Carbide  | Cermet |   |   |                       |
| Low feed<br> | DCGT<br>0702003FR-U<br>0702003FL-U<br>070201FR-U<br>070201FL-U<br>070202FR-U<br>070202FL-U                                     | 1                            | 2              | 6.35           | 2.38 | 2.8 | 0.03   | 7         | ●        | ●      | ● | ● | *1                    |
|   |  |                              |                |                |      |     | 0.03   |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | 0.1    |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | 0.1    |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | 0.2    |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | 0.2    |           | ●        | ●      | ● |   |                       |
|   | DCGT<br>11T3003FR-U<br>11T3003FL-U<br>11T301FR-U<br>11T301FL-U<br>11T302FR-U<br>11T302FL-U                                     | 2                            | 2              | 9.525          | 3.97 | 4.4 | 0.03   | 7         | ●        | ●      | ● | ● | *2                    |
|   |  |                              |                |                |      |     | 0.03   |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | 0.1    |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | 0.1    |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | 0.2    |           | ●        | □      | ● |   |                       |
|   | 0.2  | ●                            | ●              | ●              |      |     |        |           |          |        |   |   |                       |
|   | DCGT<br>0702005MFR-U<br>0702005MFL-U<br>070201MFR-U<br>070201MFL-U<br>070202MFR-U<br>070202MFL-U<br>070204MFR-U<br>070204MFL-U | 1                            | 2              | 6.35           | 2.38 | 2.8 | < 0.05 | 7         | ●        | ●      | ● | ● | *1                    |
|   |  |                              |                |                |      |     | < 0.05 |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | < 0.1  |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | < 0.1  |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | < 0.2  |           | ●        | ●      | ● |   |                       |
|   |  |                              |                |                |      |     | < 0.2  |           | ●        | ●      | ● |   |                       |
|   | DCGT<br>11T3005MFR-U<br>11T301MFR-U<br>11T301MFL-U<br>11T302MFR-U<br>11T302MFL-U<br>11T304MFR-U<br>11T304MFL-U                 | 3                            | 2              | 9.525          | 3.97 | 4.4 | < 0.05 | 7         | ●        | ●      | ● | ● | *2                    |
|   |  |                              |                |                |      |     | < 0.1  |           | ●        | ●      | ● |   |                       |
| < 0.1   |  |                              |                |                |      |     | ●      |           | ●        | ●      |   |   |                       |
| < 0.2   |  |                              |                |                |      |     | ●      |           | ●        | ●      |   |   |                       |
| < 0.2   |  |                              |                |                |      |     | ●      |           | ●        | ●      |   |   |                       |
| < 0.4   |  |                              |                |                |      |     | ●      |           | ●        | ●      |   |   |                       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

\*1: DC..07type E29, E31, E34 E35, E55, E56, F66~F68, F70~F72, F74~F76

\*2: DC..11type E23, E29~E32, E34, E35, E55, E56 F66~F68, F70~F72, F74~F76, F123

Applicable chipbreaker range



● : Standard item □ : Deleted from the next catalog

B  
Turning indexable inserts

55° Rhombic

How to read pages of "Turning inserts" See page B15

**B**

Turning indexable inserts

Chip breakers

Positive

C

D

R

S

T

V

W

Ceramic

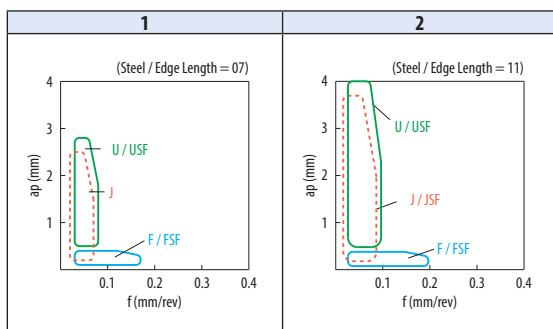
| Insert  | Description   | Applicable chipbreaker range | Dimension (mm) |       |      |       | Angle (°) | Carbide |        | Cermet |       | Applicable toolholder |       |
|---|---|------------------------------|----------------|-------|------|-------|-----------|---------|--------|--------|-------|-----------------------|-------|
|   |   |                              | IC             | S     | D1   | RE    |           | AN      | PVD    | PVD    | -     |                       |       |
|   |   |                              |                |       |      |       |           |         | PR1225 | PR1725 | PR930 |                       | PV110 |
| Low feed<br>  | DCGT 070201ER-U<br>070201EL-U<br>070202ER-U<br>070202EL-U<br>070204ER-U<br>070204EL-U               | 1                            | 2              | 6.35  | 2.38 | 2.8   | 0.1       | 7       | ●      | ●      | ●     | *1                    |       |
|   |   |                              |                |       |      |       | 0.1       |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | 0.2       |         | ●      | ●      | ●     |                       | ●     |
|   |   |                              |                |       |      |       | 0.2       |         | ●      | ●      | ●     |                       | ●     |
|   |   |                              |                |       |      |       | 0.4       |         | ●      | ●      | ●     |                       | ●     |
|   |   |                              |                |       |      |       | 0.4       |         | ●      | ●      | ●     |                       | ●     |
|   | DCGT 11T301ER-U<br>11T301EL-U<br>11T302ER-U<br>11T302EL-U<br>11T304ER-U<br>11T304EL-U               | 2                            | 2              | 9.525 | 3.97 | 4.4   | 0.1       | 7       | ●      | ●      | ●     | *2                    |       |
|   |   |                              |                |       |      |       | 0.1       |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | 0.2       |         | ●      | ●      | ●     |                       | ●     |
|   |   |                              |                |       |      |       | 0.2       |         | ●      | ●      | ●     |                       | ●     |
|   |   |                              |                |       |      |       | 0.4       |         | ●      | ●      | ●     |                       | ●     |
|   |   |                              |                |       |      |       | 0.4       |         | ●      | ●      | ●     |                       | ●     |
|   | DCGT 070201MER-U<br>070202MER-U<br>070202MEL-U<br>070204MER-U<br>070204MEL-U                        | 1                            | 2              | 6.35  | 2.38 | 2.8   | < 0.1     | 7       | ●      | ●      | ●     | *1                    |       |
|   |   |                              |                |       |      |       | < 0.2     |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | < 0.2     |         | ●      | ●      | ●     |                       |       |
| < 0.4   |   |                              |                |       |      |       | ●         |         | ●      | ●      |       |                       |       |
| < 0.4   |   |                              |                |       |      |       | ●         |         | ●      | ●      |       |                       |       |
| < 0.4   |   |                              |                |       |      |       | ●         |         | ●      | ●      |       |                       |       |
| DCGT 11T301MER-U<br>11T301MEL-U<br>11T302MER-U<br>11T302MEL-U<br>11T304MER-U<br>11T304MEL-U | 2   | 2                            | 9.525          | 3.97  | 4.4  | < 0.1 | 7         | ●       | ●      | ●      | *2    |                       |       |
|   |   |                              |                |       |      | < 0.1 |           | ●       | ●      | ●      |       |                       |       |
|   |   |                              |                |       |      | < 0.2 |           | ●       | ●      | ●      |       |                       |       |
|   |   |                              |                |       |      | < 0.2 |           | ●       | ●      | ●      |       |                       |       |
|   |   |                              |                |       |      | < 0.4 |           | ●       | ●      | ●      |       |                       |       |
|   |   |                              |                |       |      | < 0.4 |           | ●       | ●      | ●      |       |                       |       |
| Low feed<br>  | DCET 11T3003FR-JSF<br>11T3003FL-JSF<br>11T301FR-JSF<br>11T301FL-JSF<br>11T302FR-JSF<br>11T302FL-JSF | 2                            | 2              | 9.525 | 3.97 | 4.4   | 0.03      | 7       | ●      | ●      | ●     | *2                    |       |
|   |   |                              |                |       |      |       | 0.03      |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | 0.1       |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | 0.1       |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | 0.2       |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | 0.2       |         | ●      | ●      | ●     |                       |       |
|   | DCET 11T3005MFR-JSF<br>11T301MFR-JSF<br>11T302MFR-JSF<br>11T302MFL-JSF                              | 2                            | 2              | 9.525 | 3.97 | 4.4   | < 0.05    | 7       | ●      | ●      | ●     | *2                    |       |
|   |   |                              |                |       |      |       | < 0.1     |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | < 0.2     |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | < 0.2     |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | < 0.2     |         | ●      | ●      | ●     |                       |       |
|   |   |                              |                |       |      |       | < 0.2     |         | ●      | ●      | ●     |                       |       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

\*1: DC..07type E29, E31, E34 E35, E55, E56, F66~F68, F70~F72, F74~F76

\*2: DC..11type E23, E29~E32, E34, E35, E55, E56 F66~F68, F70~F72, F74~F76, F123

Applicable chipbreaker range



● : Standard item

B76

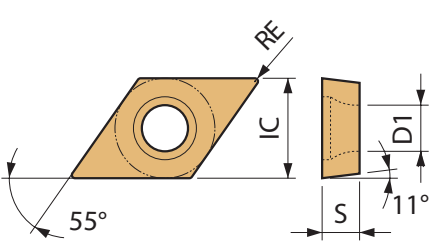


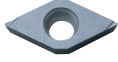
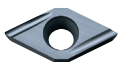




55° Rhombic

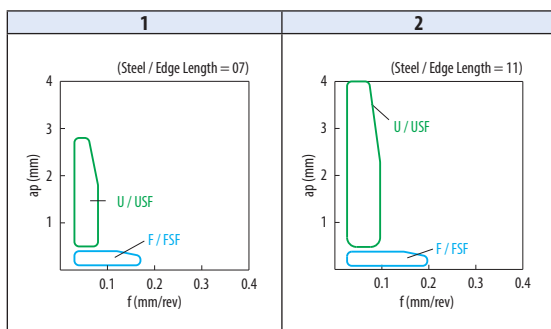
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| Insert   | Description   | Applicable chipbreaker range   |   | Dimension (mm) |       |      |                           | Angle (°)                        | Car-bide | Cermet | Applicable toolholder |   |
|--|---|--|---|----------------|-------|------|---------------------------|----------------------------------|----------|--------|-----------------------|---|
|  |   | No. of edges   |   | IC             | S     | D1   | RE                        |                                  |          |        |                       |   |
| Finishing<br><br>Precision / Sharp edge | DPET 0702003R-FSF<br>070201R-FSF<br>070202R-FSF<br>070202L-FSF  | 1  | 2 | 6.35           | 2.38  | 2.8  | 0.03<br>0.1<br>0.2<br>0.2 | 11                               | ●        | ●      | E37                   |   |
|  | DPET 11T3003R-FSF<br>11T301R-FSF<br>11T302R-FSF<br>11T302L-FSF  | 2  | 2 | 9.525          | 3.97  | 4.4  | 0.03<br>0.1<br>0.2<br>0.2 | 11                               | ●        | ●      |                       |   |
|  | DPET 070202MR-FSF<br>070202ML-FSF   | 1  | 2 | 6.35           | 2.38  | 2.8  | < 0.2                     | 11                               | ●        | ●      |                       |   |
|  | DPET 11T3005MR-FSF<br>11T301MR-FSF<br>11T302MR-FSF  | 2  | 2 | 9.525          | 3.97  | 4.4  | < 0.05<br>< 0.1<br>< 0.2  | 11                               | ●        | ●      |                       |   |
|  | Low feed<br><br>Precision / Sharp edge | DPET 0702003FR-USF<br>070201FR-USF<br>070201FL-USF<br>070202FR-USF<br>070202FL-USF | 1 | 2              | 6.35  | 2.38 | 2.8                       | 0.03<br>0.1<br>0.1<br>0.2<br>0.2 | 11       | ●      |                       | ● |
|  |   | DPET 11T3003FR-USF<br>11T301FR-USF<br>11T301FL-USF<br>11T302FR-USF<br>11T302FL-USF | 2 | 2              | 9.525 | 3.97 | 4.4                       | 0.03<br>0.1<br>0.1<br>0.2<br>0.2 | 11       | ●      |                       | ● |
|  |   | DPET 0702005MFR-USF<br>070201MFR-USF<br>070202MFR-USF                              | 1 | 2              | 6.35  | 2.38 | 2.8                       | < 0.05<br>< 0.1<br>< 0.2         | 11       | ●      |                       | ● |
|  |   | DPET 11T3005MFR-USF<br>11T301MFR-USF<br>11T302MFR-USF                              | 2 | 2              | 9.525 | 3.97 | 4.4                       | < 0.05<br>< 0.1<br>< 0.2         | 11       | ●      |                       | ● |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts

70° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

| Insert                              | Description   | Applicable chipbreaker range |                     | Dimension (mm) |     |     |  |    | Angle (°) | Material |   |        |            | Applicable toolholder |
|-------------------------------------|---|------------------------------|---------------------|----------------|-----|-----|--|----|-----------|----------|---|--------|------------|-----------------------|
|                                     |   | No. of edges                 | No. of chipbreakers | IC             | S   | D1  | RE                                     | AN |           | Carbide  |   | Cermet |            |                       |
|                                     |   |                              |                     |                |     |     |  |    | PVD       | -        | - |        |            |                       |
| Finishing<br>Precision / Sharp edge | JCET 030102R-FSF<br>030102L-FSF<br>030104L-FSF                                  | 1                            | 2                   | 3.5            | 1.4 | 1.9 | 0.2<br>0.2<br>0.4                      | 7  |           | ●        | ● |        | F78<br>F79 |                       |
|                                     | JCET 030101MR-FSF<br>030101ML-FSF   | 1                            | 2                   | 3.5            | 1.4 | 1.9 | <0.1                                   | 7  | ●         | ●        |   |        |            |                       |
| Finishing<br>Sharp edge             | JCET 030102MR-F<br>030102ML-F<br>030104MR-F<br>030104ML-F                       | 1                            | 2                   | 3.5            | 1.4 | 1.9 | <0.2<br><0.2<br><0.4<br><0.4           | 7  | ●         | ●        | ● |        |            |                       |
|                                     | JCGT 030101R-F<br>030101L-F<br>030102R-F<br>030102L-F<br>030104R-F<br>030104L-F | 1                            | 2                   | 3.5            | 1.4 | 1.9 | 0.1<br>0.1<br>0.2<br>0.2<br>0.4<br>0.4 | 7  | ●         | ●        | ● |        |            |                       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

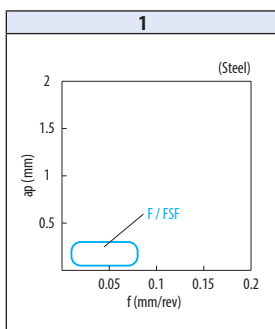
Chip breakers

Positive



Ceramic

Applicable chipbreaker range



● : Standard item

B80

Round

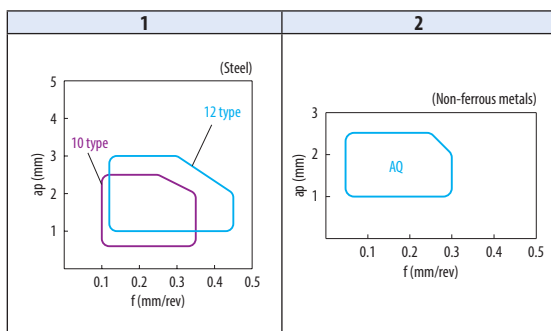
How to read pages of "Turning inserts" See page B15

| Insert                                   | Description    | Applicable chipbreaker range | Dimension (mm) |        |       |       | Angle (°) | Material |        |        |        |      |       |       |      |       |   | Applicable toolholder |        |     |
|--|----------------|------------------------------|----------------|--------|-------|-------|-----------|----------|--------|--------|--------|------|-------|-------|------|-------|---|-----------------------|--------|-----|
|  |                |                              | IC             | S      | D1    | AN    |           | Carbide  |        |        |        |      |       |       |      |       |   |                       | Cermet |     |
|  |                |                              |                |        |       |       |           | CVD      |        |        |        |      |       |       |      |       |   |                       | -      | PVD |
| CA02SP                                   | CA310          | CA315                        | CA320          | CA4515 | CA510 | CA515 | CA525     | CA530    | CA5515 | CA5525 | CA6225 | KW10 | PV720 | PV730 | TN60 | TN620 |   |                       |        |     |
| Medium                                   | RCMX 1003M0    | 1                            | 10             | 3.18   | 3.6   | 7     | ●         | ●        | ●      | ●      | ●      | ●    | ●     | ●     | ●    | ●     | ● | ●                     | ●      | D40 |
|  | RCMX 1204M0    | 1                            | 12             | 4.76   | 4.2   | 7     | ●         | ●        | ●      | ●      | ●      | ●    | ●     | ●     | ●    | ●     | ● | ●                     | ●      |     |
| Non-Ferrous Metals<br>Finishing - Medium | RCGX 1003M0-AQ | 2                            | 10             | 3.18   | 3.6   | 7     |           |          |        |        |        |      |       |       |      |       |   |                       | ●      |     |

Chipbreaker shape of RCMX... varies by grade (cermet / PVD coated cermet / CVD coated carbide)

B  
Turning indexable inserts

Applicable chipbreaker range



● : Standard item

90° Square

How to read pages of "Turning inserts" See page B15

**B**

Turning indexable inserts

Chip breakers

Positive

C

D

R

**S**

T

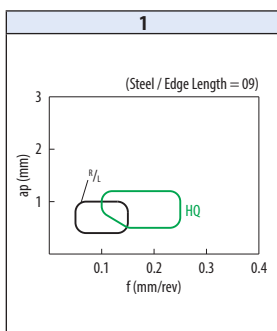
V

W

Ceramic

| Insert             | Description               | Applicable chipbreaker range | Dimension (mm) |       |      |     |            | Angle (°) | Carbide |        |       |       |       |       | Cermets |     |   | Applicable toolholder |        |        |       |       |       |      |
|--------------------|---------------------------|------------------------------|----------------|-------|------|-----|------------|-----------|---------|--------|-------|-------|-------|-------|---------|-----|---|-----------------------|--------|--------|-------|-------|-------|------|
|                    |                           |                              | No. of edges   | IC    | S    | D1  | RE         |           | AN      | CVD    |       |       |       |       |         | PVD | - |                       |        |        |       |       |       |      |
|                    |                           |                              |                |       |      |     |            |           |         | CA02SP | CA510 | CA515 | CA525 | CA530 | CA5515  |     |   |                       | CA5525 | CA5535 | PV710 | PV720 | PV730 | TN60 |
| Finishing - Medium | SCMT 09T304HQ<br>09T308HQ | 1                            | 4              | 9.525 | 3.97 | 4.4 | 0.4<br>0.8 | 7         | ●       | ●      | ●     | ●     | ●     | ●     | ●       | ●   | ● | ●                     | ●      | ●      | ●     | ●     | ●     | -    |
| Finishing          | SPGH 090304L              | 1                            | 4              | 9.525 | 3.18 | 4.6 | 0.4        | 11        |         |        |       |       |       |       |         |     |   |                       |        |        |       |       |       | F111 |

Applicable chipbreaker range



**B82**





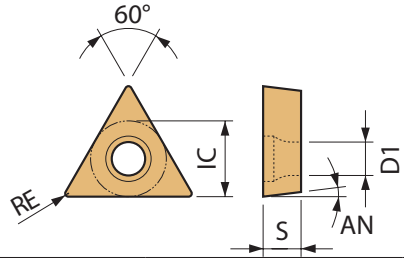








60° Triangle

How to read pages of "Turning inserts" See page B15



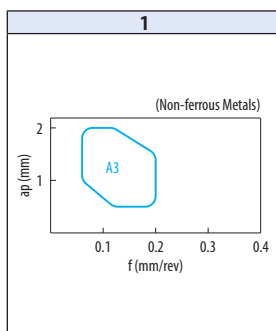
| Insert   | Description  | Applicable chipbreaker range | Dimension (mm) |      |      |     |     | Angle (°) | Carbide |     |     | Applicable toolholder |
|--|--|------------------------------|----------------|------|------|-----|-----|-----------|---------|-----|-----|-----------------------|
|  |  |                              | No. of edges   | IC   | S    | D1  | RE  |           | AN      | DLC | -   |                       |
| Non-Ferrous Metals<br><br>Finishing - Medium / Sharp edge | TCGT<br>110302R-A3<br>110302L-A3<br>110304R-A3<br>110304L-A3<br>110308R-A3<br>110308L-A3 | 1                            | 3              | 6.35 | 3.18 | 2.8 | 0.2 | 7         | ●       | ●   | E38 |                       |
|  |  |                              |                |      |      |     | 0.2 |           | ●       | ●   |     |                       |
|  |  |                              |                |      |      |     | 0.4 |           | ●       | ●   |     |                       |
|  |  |                              |                |      |      |     | 0.4 |           | ●       | ●   |     |                       |
|  |  |                              |                |      |      |     | 0.8 |           | ●       | ●   |     |                       |
|  |  |                              |                |      |      |     | 0.8 |           | ●       | ●   |     |                       |
| Cast iron<br><br>Without Chipbreaker                     | TCGW<br>080201<br>080202   | -                            | 3              | 4.76 | 2.38 | 2.5 | 0.1 | 7         | ●       | ●   | E38 |                       |
|  |  |                              |                |      |      |     | 0.2 |           | ●       | ●   |     |                       |
|  | TCGW<br>110301<br>110302<br>110304   | -                            | 3              | 6.35 | 3.18 | 2.8 | 0.1 | 7         | ●       | ●   | E38 |                       |
|  |  |                              |                |      |      |     | 0.2 |           | ●       | ●   |     |                       |
|  |  |                              |                |      |      |     | 0.2 |           | ●       | ●   |     |                       |
|  |  |                              |                |      |      |     | 0.4 |           | ●       | ●   |     |                       |

B



Turning indexable inserts

Applicable chipbreaker range



● : Standard item

60° Triangle

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive

C

D

R

S

T

V

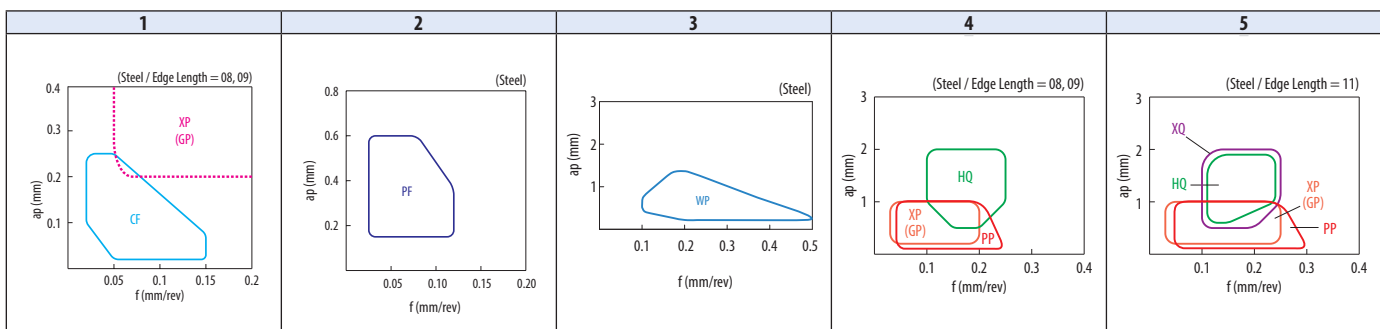
W

Ceramic

| Insert                             | Description                                       | Applicable chipbreaker range          |    | Dimension (mm) |      |      |                      | Angle (°)         | Carbide |       |       |       |        |        | Cermet |     | Applicable toolholder |   |                            |
|------------------------------------|---|---------------------------------------|----|----------------|------|------|----------------------|-------------------|---------|-------|-------|-------|--------|--------|--------|-----|-----------------------|---|----------------------------|
|                                    |   | No. of edges                          | IC | S              | D1   | RE   | AN                   |                   | CVD     |       |       | PVD   |        |        | CVD    | PVD |                       | - |                            |
|                                    |   |                                       |    |                |      |      |                      | CA02SP            | CA510   | CA515 | CA525 | CA530 | PR1225 | PR1535 |        |     |                       |   | PR1705                     |
| Minute ap<br>Sharp edge            | TPGT 080202CF                                     | 1                                     | 3  | 4.76           | 2.38 | 2.3  | 0.2                  | 11                |         |       |       |       |        |        |        |     |                       |   | E39<br>F80~F82<br>F86      |
|                                    | TPGT 090202CF                                     | 1                                     | 3  | 5.56           | 2.38 | 2.8  | 0.2                  | 11                |         |       |       |       |        |        |        |     |                       |   | F33, F34<br>F80~F82<br>F86 |
| Minute ap<br>Polished / Sharp edge | TPGT 080201MP-CF<br>080202MP-CF                   | 1                                     | 3  | 4.76           | 2.38 | 2.3  | <0.1<br><0.2         | 11                |         |       |       |       |        |        |        |     |                       |   | E39<br>F80~F82<br>F86      |
|                                    | TPGT 090201MP-CF<br>090202MP-CF                   | 1                                     | 3  | 5.56           | 2.38 | 2.8  | <0.1<br><0.2         | 11                |         |       |       |       |        |        |        |     |                       |   | E39<br>F80~F82<br>F86      |
| Finishing<br>Polished / Sharp edge | TPGT 090201MFP-PF<br>090202MFP-PF<br>090204MFP-PF | 2                                     | 3  | 5.56           | 2.38 | 2.8  | <0.1<br><0.2<br><0.4 | 11                |         |       |       |       |        |        |        |     |                       |   | F33, F34<br>F80~F82<br>F86 |
|                                    | TPMX 090202WP<br>090204WP<br>090208WP             | 3                                     | 3  | 5.56           | 2.38 | 2.8  | 0.2<br>0.4<br>0.8    | 11                |         |       |       |       |        |        |        |     |                       |   | E39<br>F80~F82<br>F86      |
|                                    |   | TPMX 110302WP<br>110304WP<br>110308WP | 3  | 3              | 6.35 | 3.18 | 3.3                  | 0.2<br>0.4<br>0.8 | 11      |       |       |       |        |        |        |     |                       |   |                            |
| Finishing<br>With Wiper Edge       | TPMX 110304R-WP<br>110304L-WP                     | 3                                     | 3  | 6.35           | 3.18 | 3.3  | 0.4                  | 11                |         |       |       |       |        |        |        |     |                       |   | F33, F34<br>F80~F82<br>F86 |
| Finishing                          | TPMT 090202PP<br>090204PP                         | 4                                     | 3  | 5.56           | 2.38 | 2.8  | 0.2<br>0.4           | 11                |         |       |       |       |        |        |        |     |                       |   | E39<br>F80~F82<br>F84, F85 |
|                                    | TPMT 110302PP<br>110304PP<br>110308PP             | 5                                     | 3  | 6.35           | 3.18 | 3.3  | 0.2<br>0.4<br>0.8    | 11                |         |       |       |       |        |        |        |     |                       |   | E39<br>F80~F82<br>F84, F85 |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).  
See "Precautions when using Wiper inserts" in the R36 and R37 for WP chipbreaker.

Applicable chipbreaker range



● : Standard item

B88

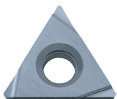






60° Triangle

How to read pages of "Turning inserts" See page B15

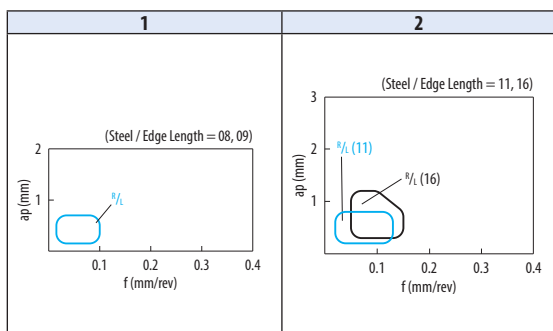
| Insert  | Description   | Applicable chipbreaker range | Dimension (mm) |       |      |     |       | Angle (°) | Carbide | Applicable toolholder      |
|---|---------------|------------------------------|----------------|-------|------|-----|-------|-----------|---------|----------------------------|
|   |               |                              | No. of edges   | IC    | S    | D1  | RE    |           |         |                            |
| Finishing  | TPGH 080201ML | 1                            | 3              | 4.76  | 2.38 | 2.3 | < 0.1 | 11        | ●       | E39<br>F80~F82<br>F86      |
|   | TPGH 080202MR |                              |                |       |      |     | < 0.2 |           |         |                            |
|   | TPGH 080202ML |                              |                |       |      |     | < 0.2 |           |         |                            |
|   | TPGH 080204MR |                              |                |       |      |     | < 0.4 |           |         |                            |
|   | TPGH 080204ML |                              |                |       |      |     | < 0.4 |           |         |                            |
|   | TPGH 090201ML | 1                            | 3              | 5.56  | 2.38 | 3.2 | < 0.1 | 11        | ●       | F33, F34<br>F80~F82<br>F86 |
|   | TPGH 090202MR |                              |                |       |      |     | < 0.2 |           |         |                            |
|   | TPGH 090202ML |                              |                |       |      |     | < 0.2 |           |         |                            |
|   | TPGH 090204MR |                              |                |       |      |     | < 0.4 |           |         |                            |
|   | TPGH 090204ML |                              |                |       |      |     | < 0.4 |           |         |                            |
|   | TPGH 110202ML | 2                            | 3              | 6.35  | 2.38 | 3.7 | < 0.2 | 11        | ●       | F84<br>F85                 |
|   | TPGH 110204ML |                              |                |       |      |     | < 0.4 |           |         |                            |
|   | TPGH 110302MR | 2                            | 3              | 6.35  | 3.18 | 3.3 | < 0.2 | 11        | ●       | E39<br>F80~F82<br>F84, F85 |
|   | TPGH 110302ML |                              |                |       |      |     | < 0.2 |           |         |                            |
|   | TPGH 110304MR |                              |                |       |      |     | < 0.4 |           |         |                            |
|   | TPGH 110304ML |                              |                |       |      |     | < 0.4 |           |         |                            |
|   | TPGH 110308ML |                              |                |       |      |     | < 0.8 |           |         |                            |
|   | TPGH 160302ML | 4                            | 3              | 9.525 | 3.18 | 4.7 | < 0.2 | 11        | ●       | F80~F82<br>F84             |
|   | TPGH 160304MR |                              |                |       |      |     | < 0.4 |           |         |                            |
|   | TPGH 160304ML |                              |                |       |      |     | < 0.4 |           |         |                            |
| TPGH 160308ML   | < 0.8         |                              |                |       |      |     |       |           |         |                            |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).



Turning indexable inserts

Applicable chipbreaker range



● : Standard item

60° Triangle

How to read pages of "Turning inserts" See page B15

**B**

Turning indexable inserts

Chip breakers

Positive

C

D

R

S

T

V

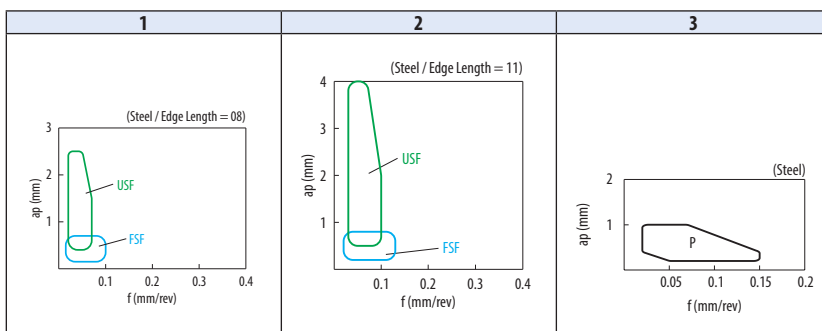
W

Ceramic

| Insert   | Description  | Applicable chipbreaker range   | Dimension (mm) |      |      |        | Angle (°) | Material |                            |                            | Applicable toolholder |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|--|--|--|----------------|------|------|--------|-----------|----------|----------------------------|----------------------------|-----------------------|-----------------------|-------|--|--|--|--|--|--|--|---|----------------------------|--|--|--|--|--|--|--|--|--|--|-----------------|--|--|--|--|--|--|--|--|--|---|----------------|--|--|--|--|--|--|--|--|--|--|-------------------|--|--|--|--|--|--|--|--|--|---|--------------------|--|--|--|--|--|--|--|--|--|---|----------------------|--|--|--|--|--|--|--|--|--|--|----------------|--|--|--|--|--|--|--|--|--|---|----------------|--|--|--|--|--|--|--|--|--|---|
|  |  |  | No. of Edges   | IC   | S    | D1     |           | RE       | AN                         | Carbide                    |                       | Cermet                |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           |          |                            | PVD                        |                       |                       | TiN60 |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           |          |                            |                            |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| <table border="1"> <tr> <td>Free-cutting steel</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>P</td> </tr> <tr> <td>Carbon steel / Alloy steel</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Stainless steel</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>M</td> </tr> <tr> <td>Gray cast iron</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Nodular cast iron</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>K</td> </tr> <tr> <td>Non-ferrous metals</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>N</td> </tr> <tr> <td>Heat-resistant alloy</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Titanium alloy</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>S</td> </tr> <tr> <td>Hard materials</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>H</td> </tr> </table> |  |  |                |      |      |        |           |          |                            |                            | Free-cutting steel    |                       |       |  |  |  |  |  |  |  | P | Carbon steel / Alloy steel |  |  |  |  |  |  |  |  |  |  | Stainless steel |  |  |  |  |  |  |  |  |  | M | Gray cast iron |  |  |  |  |  |  |  |  |  |  | Nodular cast iron |  |  |  |  |  |  |  |  |  | K | Non-ferrous metals |  |  |  |  |  |  |  |  |  | N | Heat-resistant alloy |  |  |  |  |  |  |  |  |  |  | Titanium alloy |  |  |  |  |  |  |  |  |  | S | Hard materials |  |  |  |  |  |  |  |  |  | H |
| Free-cutting steel   |  |  |                |      |      |        |           |          |                            | P                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Carbon steel / Alloy steel   |  |  |                |      |      |        |           |          |                            |                            |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Stainless steel  |  |  |                |      |      |        |           |          |                            | M                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Gray cast iron   |  |  |                |      |      |        |           |          |                            |                            |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Nodular cast iron  |  |  |                |      |      |        |           |          |                            | K                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Non-ferrous metals   |  |  |                |      |      |        |           |          |                            | N                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Heat-resistant alloy   |  |  |                |      |      |        |           |          |                            |                            |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Titanium alloy   |  |  |                |      |      |        |           |          |                            | S                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Hard materials   |  |  |                |      |      |        |           |          |                            | H                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Finishing  | <p>Precision / Sharp edge</p>  | TPET<br>0802003L-FSF<br>080201R-FSF<br>080201L-FSF<br>080202R-FSF<br>080202L-FSF         | 1              | 3    | 4.76 | 2.38   | 2.3       | 0.03     | 11                         | ●                          | ●                     | E39<br>F80~F82<br>F86 |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           | 0.1      |                            | ●                          | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           | 0.2      |                            | ●                          | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           | 0.2      |                            | ●                          | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           | 0.2      |                            | ●                          | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  | TPET<br>1103003R-FSF<br>1103003L-FSF<br>1103005L-FSF<br>110301R-FSF<br>110301L-FSF<br>110302R-FSF<br>110302L-FSF | 2  | 3              | 6.35 | 3.18 | 3.3    | 0.03      | 11       | ●                          | E39<br>F80~F82<br>F84, F85 |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        | 0.03      |          | ●                          |                            | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        | 0.05      |          | ●                          |                            | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        | 0.1       |          | ●                          |                            | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        | 0.1       |          | ●                          |                            | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| TPET<br>080202ML-FSF   | 1  | 3  | 4.76           | 2.38 | 2.3  | < 0.2  | 11        | ●        | E39<br>F80~F82, F86        |                            |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.2  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| TPET<br>1103005ML-FSF<br>110301MR-FSF<br>110301ML-FSF<br>110302MR-FSF<br>110302ML-FSF  | 2  | 3  | 6.35           | 3.18 | 3.3  | < 0.05 | 11        | ●        | E39<br>F80~F82<br>F84, F85 |                            |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.1  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.1  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.2  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.2  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| Finishing  | <p>Sharp edge</p>  | TPEH<br>080201MR-P<br>080201ML-P<br>080202MR-P<br>080202ML-P<br>080204MR-P<br>080204ML-P | 3              | 3    | 4.76 | 2.38   | 2.3       | < 0.1    | 11                         | ●                          | ●                     | E39<br>F80~F82<br>F86 |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           | < 0.1    |                            | ●                          | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           | < 0.2    |                            | ●                          | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           | < 0.2    |                            | ●                          | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        |           | < 0.4    |                            | ●                          | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  | TPEH<br>090201MR-P<br>090201ML-P<br>090202MR-P<br>090202ML-P<br>090204MR-P<br>090204ML-P                         | 3  | 3              | 5.56 | 2.38 | 3.2    | < 0.1     | 11       | ●                          | F33, F34<br>F80~F82<br>F86 |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        | < 0.1     |          | ●                          |                            | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        | < 0.2     |          | ●                          |                            | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        | < 0.2     |          | ●                          |                            | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      |        | < 0.4     |          | ●                          |                            | ●                     |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
| TPEH<br>110301MR-P<br>110301ML-P<br>110302MR-P<br>110302ML-P<br>110304MR-P<br>110304ML-P   | 3  | 3  | 6.35           | 3.18 | 3.3  | < 0.1  | 11        | ●        | E39<br>F80~F82<br>F84, F85 |                            |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.1  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.2  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.2  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |
|  |  |  |                |      |      | < 0.4  |           | ●        |                            | ●                          |                       |                       |       |  |  |  |  |  |  |  |   |                            |  |  |  |  |  |  |  |  |  |  |                 |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |  |                   |  |  |  |  |  |  |  |  |  |   |                    |  |  |  |  |  |  |  |  |  |   |                      |  |  |  |  |  |  |  |  |  |  |                |  |  |  |  |  |  |  |  |  |   |                |  |  |  |  |  |  |  |  |  |   |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range

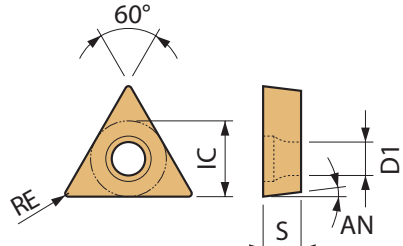


● : Standard item

B92

60° Triangle

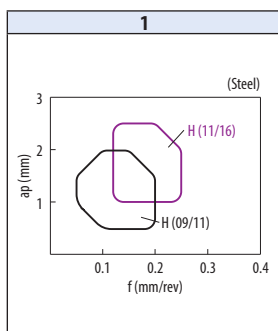
How to read pages of "Turning inserts" See page B15



| Insert | Description   | Applicable chipbreaker range |   | Dimension (mm) |      |     |  | Angle (°)  | Carbide |   | Cermet |   | Applicable toolholder      |
|--------|---|------------------------------|---|----------------|------|-----|--|--|---------|---|--------|---|----------------------------|
|        |   | No. of edges                 |   | IC             | S    | D1  | RE                                     |  | PVD     | - | PVD    | - |                            |
|        |   |                              |   |                |      |     |  | PR1535<br>PR1725<br>PR930<br>KW10<br>PV710<br>PV720<br>PV730<br>Ti60<br>Ti610<br>Ti620 |         |   |        |   |                            |
| Medium | TPGH 090201L-H<br>090202L-H<br>090204L-H  | 1                            | 3 | 5.56           | 2.38 | 3.2 | 0.1<br>0.2<br>0.4                      | 11   | ●       | ● |        |   | F33, F34<br>F80~F82<br>F86 |
|        | TPGH 110302R-H<br>110302L-H<br>110304R-H<br>110304L-H<br>110308R-H<br>110308L-H | 1                            | 3 | 6.35           | 3.18 | 3.3 | 0.2<br>0.2<br>0.4<br>0.4<br>0.8<br>0.8 | 11   | ●       | ● | ●      | ● | E39<br>F80~F82<br>F84, F85 |
|        | TPGH 160304R-H<br>160304L-H<br>160308R-H<br>160308L-H                           | 1                            | 3 | 9.525          | 3.18 | 4.7 | 0.4<br>0.4<br>0.8<br>0.8               | 11   | ●       | ● | ●      | ● | F80~F82<br>F84             |
|        | TPGT 160402L-H<br>160404L-H<br>160408L-H  | 1                            | 3 | 9.525          | 4.76 | 4.5 | 0.2<br>0.4<br>0.8                      | 11   |         |   | ●      | ● | -                          |
|        | TPGH 110302ML-H<br>110304ML-H   | 1                            | 3 | 6.35           | 3.18 | 3.3 | <0.2<br><0.4                           | 11   | ●       |   |        |   | E39<br>F80~F82<br>F84, F85 |
|        | TPGH 160304ML-H   | 1                            | 3 | 9.525          | 3.18 | 4.7 | <0.4                                   | 11   | ●       |   |        |   | F80~F82<br>F84             |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts

60° Triangle

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive

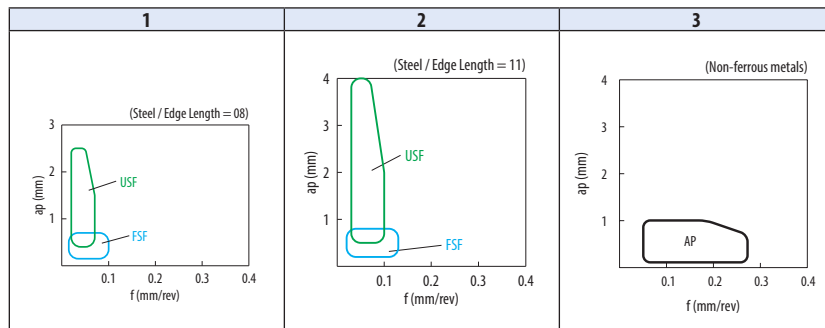


Ceramic

| Insert   | Description   | Applicable chipbreaker range |    | Dimension (mm) |      |     |                                  | Angle (°) | Material |       |      |        |       |       | Applicable toolholder |                            |
|--|---|------------------------------|----|----------------|------|-----|----------------------------------|-----------|----------|-------|------|--------|-------|-------|-----------------------|----------------------------|
|  |   | No. of edges                 | IC | S              | D1   | RE  | AN                               |           | Carbide  |       |      | Cermet |       |       |                       |                            |
|  |   |                              |    |                |      |     |                                  | POL010    | PR1725   | PR930 | KW10 | PV7005 | PV710 | PV720 |                       | PV730                      |
| <p>Precision / Sharp edge</p>                        | TPET 080201FL-USF<br>080202FR-USF<br>080202FL-USF                 | 1                            | 3  | 4.76           | 2.38 | 2.3 | 0.1<br>0.2<br>0.2                | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | E39<br>F80~F82<br>F86      |
|  | TPET 110301FR-USF<br>110301FL-USF<br>110302FR-USF<br>110302FL-USF | 2                            | 3  | 6.35           | 3.18 | 3.3 | 0.1<br>0.1<br>0.2<br>0.2         | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | E39<br>F80~F82<br>F84, F85 |
|  | TPET 080202MFR-USF<br>080202MFL-USF                               | 1                            | 3  | 4.76           | 2.38 | 2.3 | <0.2                             | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | E39<br>F80~F82<br>F86      |
|  | TPET 110301MFL-USF<br>110302MFR-USF<br>110302MFL-USF              | 2                            | 3  | 6.35           | 3.18 | 3.3 | <0.1<br><0.2<br><0.2             | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | E39<br>F80~F82<br>F84, F85 |
| <p>Non-Ferrous Metals<br/>Finishing / Sharp edge</p> | TPGT 090202AP<br>090204AP<br>090208AP                             | 3                            | 3  | 5.56           | 2.38 | 2.8 | 0.2<br>0.4<br>0.8                | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | F33, F34<br>F80~F82<br>F86 |
|  | TPGT 110302AP<br>110304AP<br>110308AP                             | 3                            | 3  | 6.35           | 3.18 | 3.3 | 0.2<br>0.4<br>0.8                | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | E39<br>F80~F82<br>F84, F85 |
| <p>Cast Iron<br/>Without Chipbreaker</p>             | TPGB 080202<br>080204<br>080208                                   | -                            | 3  | 4.76           | 2.38 | 2.3 | 0.2<br>0.4<br>0.8                | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | E39<br>F80~F82<br>F86      |
|  | TPGB 090202<br>090204   | -                            | 3  | 5.56           | 2.38 | 3.2 | 0.2<br>0.4                       | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | F33, F34<br>F80~F82<br>F86 |
|  | TPGB 1102005<br>110201<br>110202<br>110204                        | -                            | 3  | 6.35           | 2.38 | 3.7 | 0.05<br>0.1<br>0.2<br>0.4        | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | F84<br>F85                 |
|  | TPGB 1103005<br>110301<br>110302<br>110304<br>110308              | -                            | 3  | 6.35           | 3.18 | 3.3 | 0.05<br>0.1<br>0.2<br>0.4<br>0.8 | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | E39<br>F80~F82<br>F84, F85 |
|  | TPGB 160304<br>160308   | -                            | 3  | 9.525          | 3.18 | 4.7 | 0.4<br>0.8                       | 11        | ●        | ●     | ●    | ●      | ●     | ●     | ●                     | F80~F82<br>F84             |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item

B94



## 60° Triangle

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive

C

D

R

S

T

V

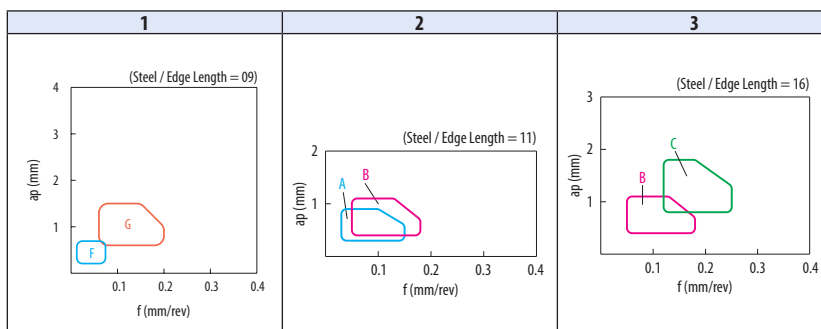
W

Ceramic

| Insert                           | Description    | Applicable chipbreaker range | Dimension (mm) |       |      |     | Angle (°) | Carbide |       |       |        | Cermet |        |      |        | Applicable toolholder |       |       |       |      |      |       |       |  |  |
|----------------------------------|----------------|------------------------------|----------------|-------|------|-----|-----------|---------|-------|-------|--------|--------|--------|------|--------|-----------------------|-------|-------|-------|------|------|-------|-------|--|--|
|                                  |                |                              | No. of edges   | IC    | S    | RE  |           | CVD     |       |       |        | PVD    |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  |                |                              |                |       |      |     |           | CA310   | CA315 | CA320 | CA4505 | CA4515 | CA5505 | KW10 | PV7005 |                       | PV710 | PV720 | PV730 | PV90 | TN60 | TN610 | TN620 |  |  |
| Finishing<br>Sharp edge          | TPGR 090202L-F | 1                            | 3              | 5.56  | 2.38 | 0.2 | 11        |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 090204R-F |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 090204L-F |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| Finishing                        | TPGR 110302R-A | 2                            | 3              | 6.35  | 3.18 | 0.2 | 11        |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 110302L-A |                              |                |       |      | 0.2 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 110304R-A |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 110304L-A |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| Finishing - Medium               | TPGR 110304R-B | 2                            | 3              | 6.35  | 3.18 | 0.4 | 11        |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 110304L-B |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 110308R-B |                              |                |       |      | 0.8 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 110308L-B |                              |                |       |      | 0.8 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160302R-B | 3                            | 3              | 9.525 | 3.18 | 0.2 | 11        |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160302L-B |                              |                |       |      | 0.2 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160304R-B |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160304L-B |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160308R-B |                              |                |       |      | 0.8 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160308L-B |                              |                |       |      | 0.8 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| Medium                           | TPGR 160304R-C | 3                            | 3              | 9.525 | 3.18 | 0.4 | 11        |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160304L-C |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160308R-C |                              |                |       |      | 0.8 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGR 160308L-C |                              |                |       |      | 0.8 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGN 090202    |                              |                |       |      | -   |           | 3       | 5.56  | 2.38  | 0.2    | 11     |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGN 090204    |                              |                |       |      |     |           |         |       |       | 0.4    |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| Cast iron<br>Without chipbreaker | TPGN 110302    | -                            | 3              | 6.35  | 3.18 | 0.2 | 11        |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGN 110304    |                              |                |       |      | 0.4 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGN 110308    |                              |                |       |      | 0.8 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGN 160304    | -                            | 3              | 9.525 | 3.18 | 0.4 | 11        |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
|                                  | TPGN 160308    |                              |                |       |      | 0.8 |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| TPMN 110304                      | -              | 3                            | 6.35           | 3.18  | 0.4  | 11  |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| TPMN 110308                      |                |                              |                |       | 0.8  |     |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| TPMN 160304                      | -              | 3                            | 9.525          | 3.18  | 0.4  | 11  |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| TPMN 160308                      |                |                              |                |       | 0.8  |     |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |
| TPMN 160312                      |                |                              |                |       | 1.2  |     |           |         |       |       |        |        |        |      |        |                       |       |       |       |      |      |       |       |  |  |

F113

### Applicable chipbreaker range

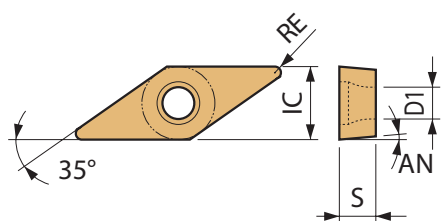


● : Standard item □ : Deleted from the next catalog

B96

35° Rhombic

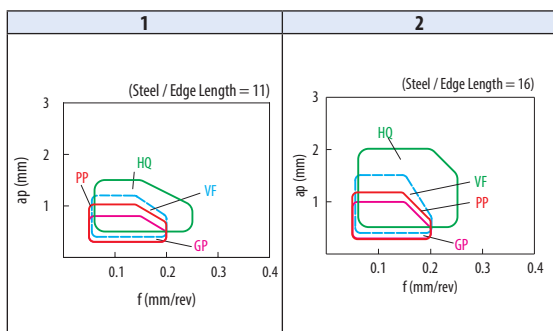
How to read pages of "Turning inserts" See page B15



| Insert             | Description                                       | Applicable chipbreaker range |    | Dimension (mm) |      |     |                          | Angle (°) | Carbide  |          |          |          |          |          |          |          |          |          | Cermet   |          |          |          | Applicable toolholder |          |                                       |                                       |
|--------------------|---|------------------------------|----|----------------|------|-----|--------------------------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------------------|----------|---------------------------------------|---------------------------------------|
|                    |   | No. of edges                 | IC | S              | D1   | RE  | AN                       |           | CVD      |          |          |          |          | PVD      |          | CVD      |          | PVD      |          | -        |          |          |                       |          |                                       |                                       |
|                    |   |                              |    |                |      |     |                          | CA02SP    | CA510    | CA515    | CA525    | CA530    | CA5505   | CA5515   | CA5525   | CA5535   | CA6515   | CA6525   | PR1225   |          | PR1535   | PR1725   |                       | PR950    | CCX                                   | PV7005                                |
| Finishing          | VBMT 110302PP<br>110304PP<br>110308PP             | 1                            | 2  | 6.35           | 3.18 | 2.8 | 0.2<br>0.4<br>0.8        | 5         | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●●              | ●●●●●●●● | ●●●●●●●●                              | E40~E43<br>E58<br>F90, F91<br>F94~F99 |
|                    | VBMT 160404PP<br>160408PP<br>160412PP             | 2                            | 2  | 9.525          | 4.76 | 4.4 | 0.4<br>0.8<br>1.2        | 5         | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●●              | ●●●●●●●● | E41~E43<br>F90, F91<br>F94~F99        |                                       |
| Finishing          | VBMT 110304GP                                     | 1                            | 2  | 6.35           | 3.18 | 2.8 | 0.4                      | 5         | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●●              | ●●●●●●●● | E40~E43<br>E58<br>F90, F91<br>F94~F99 |                                       |
|                    | VBMT 160404GP<br>160408GP                         | 2                            | 2  | 9.525          | 4.76 | 4.4 | 0.4<br>0.8               | 5         | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●●              | ●●●●●●●● | E41~E43<br>F90, F91<br>F94~F99        |                                       |
| Finishing          | VBMT 110302VF<br>110304VF<br>110308VF             | 1                            | 2  | 6.35           | 3.18 | 2.8 | 0.2<br>0.4<br>0.8        | 5         | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●●              | ●●●●●●●● | E40~E43<br>E58<br>F90, F91<br>F94~F99 |                                       |
|                    | VBMT 160402VF<br>160404VF<br>160408VF<br>160412VF | 2                            | 2  | 9.525          | 4.76 | 4.4 | 0.2<br>0.4<br>0.8<br>1.2 | 5         | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●●              | ●●●●●●●● | E41~E43<br>F90, F91<br>F94~F99        |                                       |
| Finishing - Medium | VBMT 110304HQ<br>110308HQ                         | 1                            | 2  | 6.35           | 3.18 | 2.8 | 0.4<br>0.8               | 5         | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●●              | ●●●●●●●● | E40~E43<br>E58<br>F90, F91<br>F94~F99 |                                       |
|                    | VBMT 160404HQ<br>160408HQ<br>160412HQ             | 2                            | 2  | 9.525          | 4.76 | 4.4 | 0.4<br>0.8<br>1.2        | 5         | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●● | ●●●●●●●●              | ●●●●●●●● | E41~E43<br>F90, F91<br>F94~F99        |                                       |

B  
Turning indexable inserts

Applicable chipbreaker range



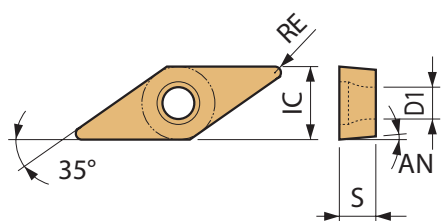
● : Standard item □ : Deleted from the next catalog







35° Rhombic

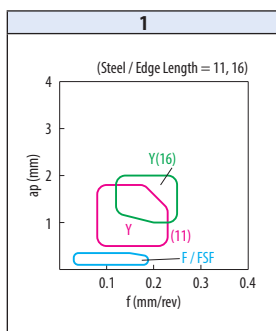
How to read pages of "Turning inserts" See page B15



| Insert  | Description      | Applicable chipbreaker range | Dimension (mm) |      |      |        |        | Angle (°) | Carbide |        | Cermet |        | Applicable toolholder                 |                                       |      |       |       |       |      |       |                                |
|---|------------------|------------------------------|----------------|------|------|--------|--------|-----------|---------|--------|--------|--------|---------------------------------------|---------------------------------------|------|-------|-------|-------|------|-------|--------------------------------|
|   |                  |                              | No. of edges   | IC   | S    | D1     | RE     |           | PVD     |        | -      |        |                                       |                                       |      |       |       |       |      |       |                                |
|   |                  |                              |                |      |      |        |        |           | PR1225  | PR1535 | PR1705 | PR1725 |                                       | PR950                                 | KW10 | PV710 | PV720 | PV730 | TN60 | TN620 |                                |
| Finishing - Medium<br>   | VBET 1103005MR-Y | 1                            | 2              | 6.35 | 3.18 | 2.8    | < 0.05 | 5         | ●       | ●      |        |        |                                       | E40~E43<br>E58<br>F90, F91<br>F94~F99 |      |       |       |       |      |       |                                |
|   | 1103005ML-Y      |                              |                |      |      |        | < 0.05 |           | ●       | ●      |        |        |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110301MR-Y       |                              |                |      |      |        | < 0.1  |           | ●       | ●      |        |        |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110301ML-Y       |                              |                |      |      |        | < 0.1  |           | ●       | ●      |        |        |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110302MR-Y       |                              |                |      |      |        | < 0.2  |           | ●       | ●      | ●      | ●      | ●                                     |                                       |      |       |       |       |      |       |                                |
|   | 110302ML-Y       |                              |                |      |      |        | < 0.2  |           | ●       | ●      | ●      | ●      | ●                                     |                                       |      |       |       |       |      |       |                                |
|   | 110304MR-Y       |                              |                |      |      |        | < 0.4  |           | ●       | ●      | ●      | ●      | ●                                     |                                       |      |       |       |       |      |       |                                |
| 110304ML-Y  | < 0.4            | ●                            | ●              | ●    | ●    | ●      |        |           |         |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| Finishing - Medium<br> | VBGT 1103003R-Y  | 1                            | 2              | 6.35 | 3.18 | 2.8    | 0.03   | 5         |         | ●      | ●      | ●      | ●                                     | E41~E43<br>F90, F91<br>F94~F99        |      |       |       |       |      |       |                                |
|   | 1103003L-Y       |                              |                |      |      |        | 0.03   |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110301R-Y        |                              |                |      |      |        | 0.1    |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110301L-Y        |                              |                |      |      |        | 0.1    |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110302R-Y        |                              |                |      |      |        | 0.2    |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110302L-Y        |                              |                |      |      |        | 0.2    |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110304R-Y        |                              |                |      |      |        | 0.4    |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110304L-Y        |                              |                |      |      |        | 0.4    |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110308R-Y        |                              |                |      |      |        | 0.8    |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | 110308L-Y        |                              |                |      |      |        | 0.8    |           |         | ●      | ●      | ●      |                                       |                                       |      |       |       |       |      |       |                                |
|   | VBGT 160402R-Y   |                              |                |      |      |        | 1      |           | 2       | 9.525  | 4.76   | 4.4    | 0.2                                   |                                       | 5    |       | ●     | ●     | ●    | ●     | E41~E43<br>F90, F91<br>F94~F99 |
|   | 160402L-Y        |                              |                |      |      |        |        |           |         |        |        |        | 0.2                                   |                                       |      |       | ●     | ●     | ●    |       |                                |
|   | 160404R-Y        |                              |                |      |      |        |        |           |         |        |        |        | 0.4                                   |                                       |      |       | ●     | ●     | ●    |       |                                |
|   | 160404L-Y        |                              |                |      |      |        |        |           |         |        |        |        | 0.4                                   |                                       |      |       | ●     | ●     | ●    |       |                                |
| 160408R-Y   | 0.8              |                              | ●              | ●    | ●    |        |        |           |         |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| 160408L-Y   | 0.8              |                              | ●              | ●    | ●    |        |        |           |         |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| VBGT 1103005MR-Y  | 1                | 2                            | 6.35           | 3.18 | 2.8  | < 0.05 | 5      | ●         | ●       |        |        |        | E40~E43<br>E58<br>F90, F91<br>F94~F99 |                                       |      |       |       |       |      |       |                                |
| 1103005ML-Y   |                  |                              |                |      |      | < 0.05 |        | ●         | ●       |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| 110301MR-Y  |                  |                              |                |      |      | < 0.1  |        | ●         | ●       |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| 110301ML-Y  |                  |                              |                |      |      | < 0.1  |        | ●         | ●       |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| 110302MR-Y  |                  |                              |                |      |      | < 0.2  |        | ●         | ●       | ●      | ●      |        |                                       |                                       |      |       |       |       |      |       |                                |
| 110302ML-Y  |                  |                              |                |      |      | < 0.2  |        | ●         | ●       | ●      | ●      |        |                                       |                                       |      |       |       |       |      |       |                                |
| 110304MR-Y  |                  |                              |                |      |      | < 0.4  |        | ●         | ●       | ●      | ●      |        |                                       |                                       |      |       |       |       |      |       |                                |
| 110304ML-Y  |                  |                              |                |      |      | < 0.4  |        | ●         | ●       | ●      | ●      |        |                                       |                                       |      |       |       |       |      |       |                                |
| VBGT 160402MR-Y   | 1                | 2                            | 9.525          | 4.76 | 4.4  | < 0.2  | 5      | ●         | ●       |        |        |        | E41~E43<br>F90, F91<br>F94~F99        |                                       |      |       |       |       |      |       |                                |
| 160402ML-Y  |                  |                              |                |      |      | < 0.2  |        | ●         | ●       |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| 160404MR-Y  |                  |                              |                |      |      | < 0.4  |        | ●         | ●       |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| 160404ML-Y  |                  |                              |                |      |      | < 0.4  |        | ●         | ●       |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| 160408MR-Y  |                  |                              |                |      |      | < 0.8  |        | ●         | ●       |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |
| 160408ML-Y  |                  |                              |                |      |      | < 0.8  |        | ●         | ●       |        |        |        |                                       |                                       |      |       |       |       |      |       |                                |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts

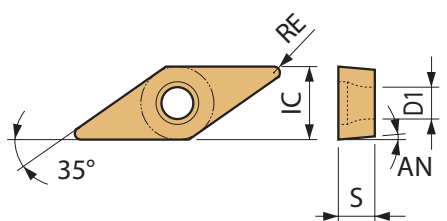


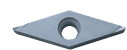
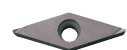




## 35° Rhombic

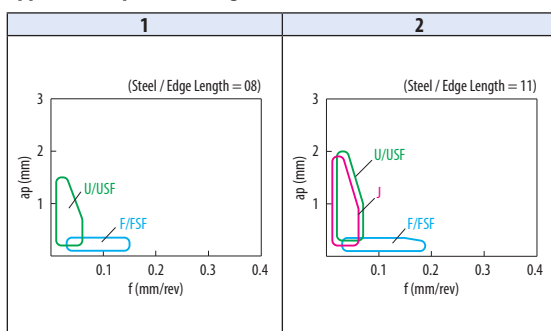
How to read pages of "Turning inserts" See page B15



| Insert  | Description  | Applicable chipbreaker range                               |    | Dimension (mm) |      |      |  | Angle (°)                         | Material |   |        |   | Applicable toolholder |                      |
|---|--|--|----|----------------|------|------|--|-----------------------------------|----------|---|--------|---|-----------------------|----------------------|
|   |  | No. of edges   | IC | S              | D1   | RE   | AN   |                                   | Carbide  |   | Cermet |   |                       |                      |
|   |  |  |    |                |      |      |  | PVD                               | -        |   |        |   |                       |                      |
| Finishing<br><br>Precision / Sharp edge | VPET 080201R-FSF<br>080201L-FSF<br>080202R-FSF<br>080202L-FSF  | 1  | 2  | 4.76           | 2.38 | 2.3  | 0.1<br>0.1<br>0.2<br>0.2                   | 11                                | ●        | ● | ●      | ● | E48, E49<br>F90, F91  |                      |
|   | VPET 1103003R-FSF<br>110301R-FSF<br>110301L-FSF<br>110302R-FSF<br>110302L-FSF                                  | 2  | 2  | 6.35           | 3.18 | 2.8  | 0.03<br>0.1<br>0.1<br>0.2<br>0.2           | 11                                | ●        | ● | ●      | ● | E24<br>E47~E49        |                      |
|   | VPET 080201MR-FSF<br>080201ML-FSF<br>080202MR-FSF<br>080202ML-FSF  | 1  | 2  | 4.76           | 2.38 | 2.3  | < 0.1<br>< 0.1<br>< 0.2<br>< 0.2           | 11                                | ●        | ● | ●      | ● | E48, E49<br>F90, F91  |                      |
|   | VPET 1103005MR-FSF<br>110301MR-FSF<br>110301ML-FSF<br>110302MR-FSF<br>110302ML-FSF                             | 2  | 2  | 6.35           | 3.18 | 2.8  | < 0.05<br>< 0.1<br>< 0.1<br>< 0.2<br>< 0.2 | 11                                | ●        | ● | ●      | ● | E24<br>E47~E49        |                      |
|   | Finishing<br><br>Sharp edge | VPET 080201MR-F<br>080201ML-F<br>080202MR-F<br>080202ML-F  | 1  | 2              | 4.76 | 2.38 | 2.3  | < 0.1<br>< 0.1<br>< 0.2<br>< 0.2  | 11       | ● | ●      | ● | ●                     | E48, E49<br>F90, F91 |
|   |  | VPET 1103005MR-F<br>110301MR-F<br>110302MR-F<br>110302ML-F | 2  | 2              | 6.35 | 3.18 | 2.8  | < 0.05<br>< 0.1<br>< 0.2<br>< 0.2 | 11       | ● | ●      | ● | ●                     | E24<br>E47~E49       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

### Applicable chipbreaker range



● : Standard item

B



Turning indexable inserts

35° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive

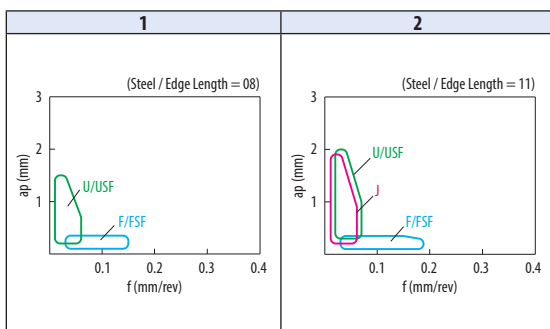


Ceramic

| Insert                 | Description   | Applicable chipbreaker range |    | Dimension (mm) |      |     |  | Angle (°) | Carbide |        |       |       | Cermet | Applicable toolholder |
|------------------------|---|------------------------------|----|----------------|------|-----|--|-----------|---------|--------|-------|-------|--------|-----------------------|
|                        |   | No. of edges                 | IC | S              | D1   | RE  | AN   |           | PVD     |        |       |       |        |                       |
|                        |   |                              |    |                |      |     |  | PR1225    | PR1535  | PR1725 | PR950 | TiN60 |        |                       |
| Precision / Sharp edge | VPET 080201FR-USF<br>080201FL-USF<br>080202FR-USF<br>080202FL-USF                                   | 1                            | 2  | 4.76           | 2.38 | 2.3 | 0.1<br>0.1<br>0.2<br>0.2                       | 11        |         |        |       |       |        | E48, E49<br>F90, F91  |
|                        | VPET 1103003FR-USF<br>1103003FL-USF<br>110301FR-USF<br>110301FL-USF<br>110302FR-USF<br>110302FL-USF | 2                            | 2  | 6.35           | 3.18 | 2.8 | 0.03<br>0.03<br>0.1<br>0.1<br>0.2<br>0.2       | 11        |         |        |       |       |        | E24<br>E47~E49        |
|                        | VPET 080201MFR-USF<br>080202MFR-USF<br>080202MFL-USF  | 1                            | 2  | 4.76           | 2.38 | 2.3 | <0.1<br><0.2<br><0.2                           | 11        |         |        |       |       |        | E48, E49<br>F90, F91  |
|                        | VPET 1103005MFR-USF<br>110301MFR-USF<br>110301MFL-USF<br>110302MFR-USF                              | 2                            | 2  | 6.35           | 3.18 | 2.8 | <0.05<br><0.1<br><0.1<br><0.2                  | 11        |         |        |       |       |        | E24<br>E47~E49        |
| Sharp edge             | VPET 080201MFR-U<br>080201MFL-U<br>080202MFR-U<br>080202MFL-U                                       | 1                            | 2  | 4.76           | 2.38 | 2.3 | <0.1<br><0.1<br><0.2<br><0.2                   | 11        |         |        |       |       |        | E48, E49<br>F90, F91  |
|                        | VPET 1103005MFR-U<br>1103005MFL-U<br>110301MFR-U<br>110301MFL-U<br>110302MFR-U<br>110302MFL-U       | 2                            | 2  | 6.35           | 3.18 | 2.8 | <0.05<br><0.05<br><0.1<br><0.1<br><0.2<br><0.2 | 11        |         |        |       |       |        | E24<br>E47~E49        |
| Sharp edge             | VPET 1103005MFR-J<br>110301MFR-J<br>110301MFL-J<br>110302MFR-J<br>110302MFL-J                       | 2                            | 2  | 6.35           | 3.18 | 2.8 | <0.05<br><0.1<br><0.1<br><0.2<br><0.2          | 11        |         |        |       |       |        | E24<br>E47~E49        |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item

B104



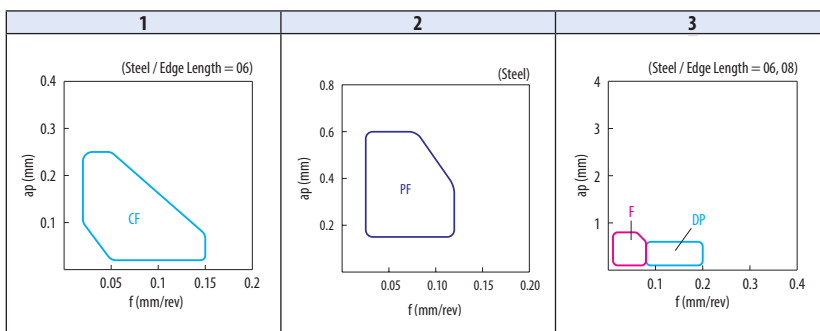
80° Trigon

How to read pages of "Turning inserts" See page B15

| Insert                |  | Description | Applicable chipbreaker range  | Dimension (mm) |      |      |     | Angle (°)                        | Carbide |        |  |       |       |       |        |        | Cermet |        |        |        | Applicable toolholder |                  |     |       |       |       |      |       |       |
|-----------------------|--|-------------|---|----------------|------|------|-----|----------------------------------|---------|--------|--|-------|-------|-------|--------|--------|--------|--------|--------|--------|-----------------------|------------------|-----|-------|-------|-------|------|-------|-------|
|                       |  |             |   | No. of edges   | IC   | S    | D1  |                                  | RE      | CVD    |  |       |       | PVD   |        |        |        | CVD    |        | PVD    |                       |                  |     |       |       |       |      |       |       |
|                       |  |             |   |                |      |      |     |                                  |         | CA02SP | CA510  | CA515 | CA525 | CA530 | CA5515 | CA5525 | PR1725 | PR1535 | PR1705 | PR1725 |                       | PR930            | CCY | PV710 | PV720 | PV730 | TN60 | TN610 | TN620 |
|                       |  |             |   |                |      |      |     |                                  |         |        |  |       |       |       |        |        |        |        |        |        |                       |                  |     |       |       |       |      |       |       |
| Minute ap             |  |             | 1   | 3              | 3.97 | 1.59 | 2.4 | < 0.1<br>< 0.1<br>< 0.2<br>< 0.2 | 5       |        |  |       |       |       |        |        |        |        |        |        |                       | F36<br>F100~F102 |     |       |       |       |      |       |       |
| Polished / Sharp edge |  |             |   |                |      |      |     |                                  |         | WBGT   | 060101MPR-CF<br>060101MPL-CF<br>060102MPR-CF<br>060102MPL-CF     |       |       |       |        |        |        |        |        |        |                       |                  |     |       |       |       |      |       |       |
| Finishing             |  |             |   |                |      |      |     |                                  |         | WBGT   | 060101MFPR-PF<br>060101MFPL-PF<br>060102MFPR-PF<br>060102MFPL-PF |       |       |       |        |        |        |        |        |        |                       |                  |     |       |       |       |      |       |       |
| Polished / Sharp edge |  |             |   |                |      |      |     |                                  |         |        | 080201MFPR-PF<br>080201MFPL-PF<br>080202MFPR-PF<br>080202MFPL-PF |       |       |       |        |        |        |        |        |        |                       |                  |     |       |       |       |      |       |       |
| Finishing             |  | WBMT        | 060102R-DP<br>060102L-DP<br>060104R-DP<br>060104L-DP  |                |      |      |     |                                  |         |        |  |       |       |       |        |        |        |        |        |        |                       |                  |     |       |       |       |      |       |       |
| Polished / Sharp edge |  |             | 080202R-DP<br>080202L-DP<br>080204R-DP<br>080204L-DP  |                |      |      |     |                                  |         |        |  |       |       |       |        |        |        |        |        |        |                       |                  |     |       |       |       |      |       |       |
| Finishing             |  | WBET        | 0601005ML-F<br>060101MR-F<br>060101ML-F<br>060102MR-F<br>060102ML-F<br>060104MR-F<br>060104ML-F |                |      |      |     |                                  |         |        |  |       |       |       |        |        |        |        |        |        |                       |                  |     |       |       |       |      |       |       |
| Sharp edge            |  |             | 080201MR-F<br>080201ML-F<br>080202MR-F<br>080202ML-F<br>080204MR-F<br>080204ML-F                |                |      |      |     |                                  |         |        |  |       |       |       |        |        |        |        |        |        |                       |                  |     |       |       |       |      |       |       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

Applicable chipbreaker range



● : Standard item



Turning indexable inserts

## 80° Trigon

How to read pages of "Turning inserts" → See page B15

B



Turning indexable inserts

Chip breakers

Positive

C

D

R

S

T

V

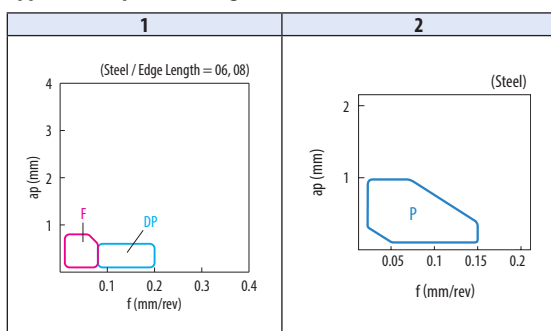
W

Ceramic

| Insert                     | Description             | Applicable chipbreaker range | Dimension (mm) |      |      |     |            | Angle (°) | Carbide |        |   |   | Applicable toolholder |   |
|----------------------------|-------------------------|------------------------------|----------------|------|------|-----|------------|-----------|---------|--------|---|---|-----------------------|---|
|                            |                         |                              | No. of edges   | IC   | S    | D1  | RE         |           | AN      | Cermet |   |   |                       |   |
|                            |                         |                              |                |      |      |     |            |           |         | PVD    | - | - |                       | - |
| <p>Sharp edge</p>          | WBGT 0601003L-F         | 1                            | 3              | 3.97 | 1.59 | 2.3 | 0.03       | 5         | ●       | ●      | ● | ● | F136<br>F100~F102     |   |
|                            | 060101R-F               |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 060101L-F               |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 060102R-F               |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 060102L-F               |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 060104R-F               |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 060104L-F               | ●                            | ●              | ●    | ●    |     |            |           |         |        |   |   |                       |   |
|                            | WBGT 080201L-F          | 1                            | 3              | 4.76 | 2.38 | 2.3 | 0.1        | 5         | ●       | ●      | ● | ● |                       |   |
|                            | 080202R-F               |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 080202L-F               |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
| 080204R-F                  | ●                       |                              |                |      |      |     |            |           | ●       | ●      | ● |   |                       |   |
| 080204L-F                  | ●                       |                              |                |      |      |     |            |           | ●       | ●      | ● |   |                       |   |
| <p>Sharp edge</p>          | WBET 080201MR-P         | 2                            | 3              | 4.76 | 2.38 | 2.3 | < 0.1      | 5         | ●       | ●      | ● | ● |                       |   |
|                            | 080201ML-P              |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 080202MR-P              |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 080202ML-P              |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
|                            | 080204MR-P              |                              |                |      |      |     |            |           | ●       | ●      | ● | ● |                       |   |
| 080204ML-P                 | ●                       | ●                            | ●              | ●    |      |     |            |           |         |        |   |   |                       |   |
| <p>Without Chipbreaker</p> | WBGW 060102L            | -                            | 3              | 3.97 | 1.59 | 2.3 | 0.2        | 5         | ●       | ●      | ● | ● |                       |   |
|                            | WBGW 080202L<br>080204L | -                            | 3              | 4.76 | 2.38 | 2.3 | 0.2<br>0.4 | 5         | ●       | ●      | ● | ● |                       |   |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

### Applicable chipbreaker range



● : Standard item

**B106**



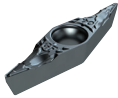
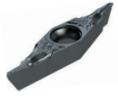
25° Rhombic

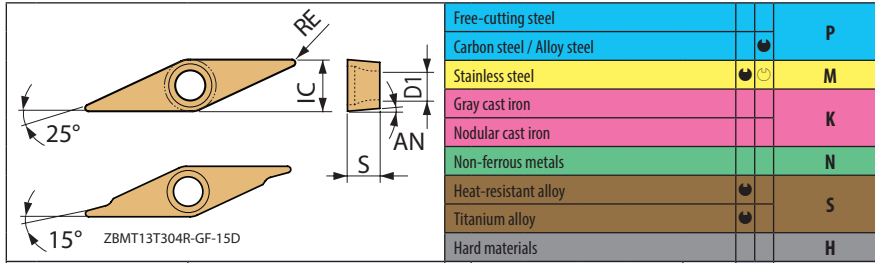
How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

| Insert    | Description   | No. of edges | Dimension (mm) |      |     |     |    | Angle (°) | Carbide               | Applicable toolholder |
|-----------|---|--------------|----------------|------|-----|-----|----|-----------|-----------------------|-----------------------|
|           |   |              | IC             | S    | D1  | RE  | AN |           |                       |                       |
| Finishing |  ZBMT 13T302GF<br>13T304GF<br>13T308GF | 2            | 6.35           | 3.97 | 3.7 | 0.2 | 5  | ●         | E52, E53<br>F106~F110 |                       |
|           |   |              |                |      |     | 0.4 |    | ●         |                       |                       |
|           |   |              |                |      |     | 0.8 |    | ●         |                       |                       |
| Finishing |  ZBMT 13T304R-GF-15D                   | 2            | 6.35           | 3.97 | 3.7 | 0.4 | 5  | ●         |                       |                       |



|                            |   |   |
|----------------------------|---|---|
| Free-cutting steel         | ● | P |
| Carbon steel / Alloy steel | ● |   |
| Stainless steel            | ● | M |
| Gray cast iron             |   | K |
| Nodular cast iron          |   |   |
| Non-ferrous metals         |   | N |
| Heat-resistant alloy       | ● | S |
| Titanium alloy             | ● |   |
| Hard materials             |   | H |

Chip breakers

Positive



Ceramic

● : Standard item

**B108**



## TKFB

How to read pages of "Turning inserts" See page B15

**B**

Turning indexable inserts

Chip breakers

Positive

C

D

R

S

T

V

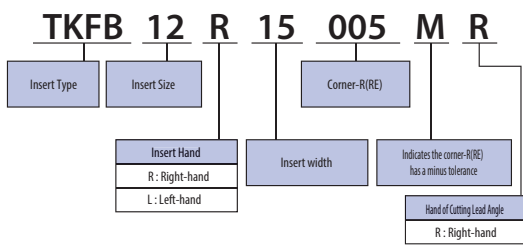
W

Ceramic

| Insert | Description       | No. of edges | Dimension (mm) |     |     |     |        |      |     | Angle (°) |        | Carbide |   |        |            | Applicable toolholder |
|--------|-------------------|--------------|----------------|-----|-----|-----|--------|------|-----|-----------|--------|---------|---|--------|------------|-----------------------|
|        |                   |              | CW             | CDX | S   | D1  | RE     | W1   | a   | θ         | PVD    |         | - |        |            |                       |
|        |                   |              |                |     |     |     |        |      |     |           | PR1225 | PR1535  |   | PR1725 | KW10       |                       |
|        | TKFB 12R15005M    | 2            | 1.5            | 2.6 |     |     | < 0.05 | 0.25 |     |           |        |         |   |        | E15<br>E16 |                       |
|        | 12R28005M         | 2            | 2.8            | 4.6 | 8.7 | 5.2 | < 0.05 | 0.3  |     |           |        |         |   |        |            |                       |
|        | 12R28010M         | 2            | 2.8            | 4.6 |     |     | < 0.1  | 0.3  |     |           |        |         |   |        |            |                       |
|        | TKFB 16R38005M    | 2            | 3.8            | 6.3 | 9.5 | 5.2 | < 0.05 | 4    | 0.3 |           |        |         |   |        |            |                       |
|        | 16R38010M         | 2            | 3.8            | 6.3 |     |     | < 0.1  |      |     |           |        |         |   |        |            |                       |
|        | TKFB 12L28005MR   | 2            | 2.8            | 4.6 | 8.7 | 5.2 | < 0.05 | 3    | 0.3 |           |        |         |   |        |            |                       |
|        | 12L28010MR        | 2            | 2.8            | 4.6 |     |     | < 0.1  |      |     |           |        |         |   |        |            |                       |
|        | TKFB 16L38005MR   | 2            | 3.8            | 6.3 | 9.5 | 5.2 | < 0.05 | 4    | 0.3 |           |        |         |   |        |            |                       |
|        | 16L38010MR        | 2            | 3.8            | 6.3 |     |     | < 0.1  |      |     |           |        |         |   |        |            |                       |
|        | TKFB 12R28005P-GQ | 2            | 2.8            | 4.6 | 8.7 | 5.2 | 0.05   | 3    | 1.5 | 74        |        |         |   |        |            |                       |
|        | 12R28015P-GQ      | 2            | 2.8            | 4.6 |     |     | 0.15   |      |     |           |        |         |   |        |            |                       |
|        | TKFB 16R38005P-GQ | 2            | 3.8            | 6.3 | 9.5 | 5.2 | 0.05   | 4    | 1.8 | 72        |        |         |   |        |            |                       |
|        | 16R38015P-GQ      | 2            | 3.8            | 6.3 |     |     | 0.15   |      |     |           |        |         |   |        |            |                       |
|        | TKFB 12R28005-GQ  | 2            | 2.8            | 4.6 | 8.7 | 5.2 | 0.05   | 3    | 1.5 | 74        |        |         |   |        |            |                       |
|        | 12R28015-GQ       | 2            | 2.8            | 4.6 |     |     | 0.15   |      |     |           |        |         |   |        |            |                       |
|        | TKFB 16R38005-GQ  | 2            | 3.8            | 6.3 | 9.5 | 5.2 | 0.05   | 4    | 1.8 | 72        |        |         |   |        |            |                       |
|        | 16R38015-GQ       | 2            | 3.8            | 6.3 |     |     | 0.15   |      |     |           |        |         |   |        |            |                       |

Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

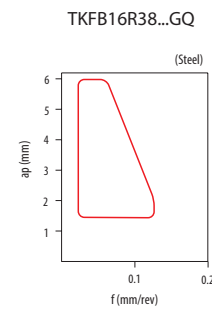
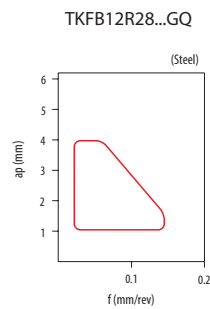
### Inserts Identification System (Ref. to Tables 1 and 2)



| Small machining | General purpose | Large machining |
|-----------------|-----------------|-----------------|
|                 |                 |                 |
| TKFB12R15.      | TKFB12R28.      | TKFB16R38.      |

| Toolholder | Right-hand | Toolholder | Left-hand  |
|------------|------------|------------|------------|
| Insert     | Right-hand | Insert     | Left-hand  |
| Lead angle | Right-hand | Lead angle | Right-hand |
|            |            |            |            |

### Applicable Chipbreaker Range

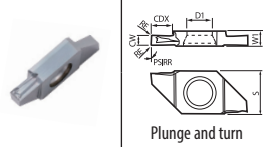


● : Standard item

## B110

## TKF-GTP

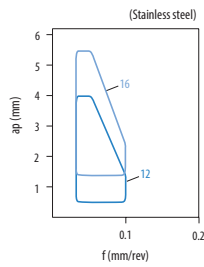
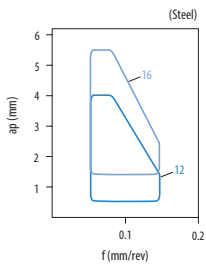
How to read pages of "Turning inserts" See page B15

| Insert   |  | Description |            | No. of edges | Dimension (mm) |     |     |     |      |    |       | Angle (°) | Carbide |            | Applicable toolholder |
|--|--|-------------|------------|--------------|----------------|-----|-----|-----|------|----|-------|-----------|---------|------------|-----------------------|
|  |  |             |            |              | CW             | CDX | S   | D1  | RE   | W1 | PSIRR |           | PVD     |            |                       |
|  |  |             |            |              |                |     |     |     |      |    |       |           | PR1535  | PR1725     |                       |
|  |  |             |            |              |                |     |     |     |      |    |       |           |         |            |                       |
|  |  |             |            |              |                |     |     |     |      |    |       |           |         |            |                       |
| <br>Plunge and turn |  | TKF         | 12R200-GTP | 2            | 2              | 4.3 | 8.7 | 5.2 | 0.08 | 3  | 0     | ●         | ●       | E15<br>E16 |                       |
|  |  | TKF         | 16R300-GTP | 2            | 3              | 5.8 | 9.5 | 5.2 | 0.08 | 4  | 0     | ●         | ●       |            |                       |



Turning indexable inserts

### Applicable Chipbreaker Range



● : Standard item



ABS / ABW

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Negative

C

D

R

S

T

V

W

Ceramic

| Insert |  | Description                 | No. of edges | Dimension (mm)   | Carbide |        |        |        |        |      | Applicable toolholder |
|--------|--|-----------------------------|--------------|------------------|---------|--------|--------|--------|--------|------|-----------------------|
|        |  |                             |              |                  | RE      | PVD    |        |        | Cermet |      |                       |
|        |  |                             |              |                  |         | PR1225 | PR1705 | PR1725 | PR930  | KW10 |                       |
|        |  | ABS<br>15R4005M<br>15R4015M | 2            | < 0.05<br>< 0.15 | ●       | ●      | ●      |        |        |      | E20                   |
|        |  |                             |              |                  | ●       | ●      | ●      |        |        |      |                       |
|        |  | ABS<br>15R4005<br>15R4015   | 2            | 0.05<br>0.15     |         |        |        | ●      | ●      | ●    | E21                   |
|        |  |                             |              |                  |         |        |        | ●      | ●      | ●    |                       |
|        |  | ABW<br>15R4005M<br>15R4015M | 2            | < 0.05<br>< 0.15 | ●       | ●      | ●      |        |        |      | E21                   |
|        |  |                             |              |                  | ●       | ●      | ●      |        |        |      |                       |
|        |  | ABW<br>15R4005<br>15R4015   | 2            | 0.05<br>0.15     |         |        |        | ●      | ●      | ●    | E22                   |
|        |  |                             |              |                  |         |        |        | ●      | ●      | ●    |                       |
|        |  | ABW<br>23R5005M<br>23R5015M | 2            | < 0.05<br>< 0.15 | ●       | ●      | ●      |        |        |      | E22                   |
|        |  |                             |              |                  | ●       | ●      | ●      |        |        |      |                       |
|        |  | ABW<br>23R5005<br>23R5015   | 2            | 0.05<br>0.15     |         |        |        | ●      | ●      | ●    | E22                   |
|        |  |                             |              |                  |         |        |        | ●      | ●      | ●    |                       |

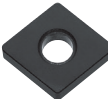
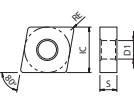
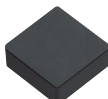
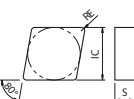
Insert whose corner-R(RE) dimension expressed with less than sign (e.g. <0.05, <0.1, <0.2 etc.) indicate models with minus tolerance on corner-R(RE).

● : Standard item

B112

80° Rhombic

How to read pages of "Turning inserts" See page B15

| Cutting edge preparation  |               |  |        | Material compatibility      |                                |                                |                                   |                          |                |         |      |        |        |        |      | Applicable toolholder          |
|---|---------------|--|--------|-----------------------------|--------------------------------|--------------------------------|-----------------------------------|--------------------------|----------------|---------|------|--------|--------|--------|------|--------------------------------|
| Symbol  | Specification | Example  |        | Gray cast iron (with scale) | Gray cast iron (without scale) | Nodular cast iron (with scale) | Nodular cast iron (without scale) | Heat-resistant alloy     | Hard materials | Ceramic |      |        |        |        |      |                                |
|   |               |  |        | IC                          | S                              | D1                             | RE                                | CVD                      | PVD            | -       |      |        |        |        |      |                                |
|   |               |  |        |                             |                                |                                |                                   | CS7050                   | Ag6N           | Ag5     | K130 | K56015 | K56040 | K56050 | KT66 |                                |
|     | CNGA          | 120412S01025   | S01025 | 4                           | 12.7                           | 4.76                           | 5.16                              | 1.2                      |                |         |      |        |        |        |      | D8~D10<br>F116<br>F125<br>F126 |
|   | CNGA          | 120404S01525<br>120408S01525<br>120412S01525                 | S01525 | 4                           | 12.7                           | 4.76                           | 5.16                              | 0.4<br>0.8<br>1.2        | ●              | ●       |      |        |        |        |      |                                |
|   | CNGA          | 120404S02025<br>120408S02025<br>120412S02025                 | S02025 | 4                           | 12.7                           | 4.76                           | 5.16                              | 0.4<br>0.8<br>1.2        | ●              | ●       |      |        |        |        |      |                                |
|   | CNGA          | 120404T02025<br>120408T02025<br>120412T02025                 | T02025 | 4                           | 12.7                           | 4.76                           | 5.16                              | 0.4<br>0.8<br>1.2        | ●              | ●       | ●    | ●      | ●      | ●      | ○    |                                |
|   | CNGA          | 120404S03030<br>120408S03030<br>120412S03030                 | S03030 | 4                           | 12.7                           | 4.76                           | 5.16                              | 0.4<br>0.8<br>1.2        | ●              | ●       |      |        |        |        |      |                                |
|   | CNMA          | 120408S01525   | S01525 | 4                           | 12.7                           | 4.76                           | 5.16                              | 0.8                      | ●              |         |      |        |        |        |      |                                |
|   | CNMA          | 120408S03030<br>120412S03030                                 | S03030 | 4                           | 12.7                           | 4.76                           | 5.16                              | 0.8<br>1.2               | ●              | ●       |      |        |        |        |      |                                |
|   | CNGN          | 120408T01020   | T01020 | 4                           | 12.7                           | 4.76                           | -                                 | 0.8                      |                |         |      |        | ●      |        | D49  |                                |
|   | CNGN          | 120412S01025   | S01025 | 4                           | 12.7                           | 4.76                           | -                                 | 1.2                      |                |         |      | ●      |        |        |      |                                |
|   | CNGN          | 120408T02025<br>120412T02025<br>120416T02025                 | T02025 | 4                           | 12.7                           | 4.76                           | -                                 | 0.8<br>1.2<br>1.6        | ●              | ●       |      | ●      |        | ●      |      |                                |
|   | CNGN          | 120708S01525<br>120712S01525                                 | S01525 | 4                           | 12.7                           | 7.94                           | -                                 | 0.8<br>1.2               | ●              | ●       |      |        |        |        |      |                                |
|   | CNGN          | 120704T02025<br>120708T02025<br>120712T02025<br>120716T02025 | T02025 | 4                           | 12.7                           | 7.94                           | -                                 | 0.4<br>0.8<br>1.2<br>1.6 |                | ●       | ●    | ●      | ●      |        |      |                                |
|   | CNGN          | 160708T02025<br>160712T02025<br>160716T02025                 | T02025 | 4                           | 15.875                         | 7.94                           | -                                 | 0.8<br>1.2<br>1.6        |                | ●       | ●    | ●      | ●      |        |      |                                |
|   | CNMN          | 120708T02025   | T02025 | 4                           | 12.7                           | 7.94                           | -                                 | 0.8                      |                | ●       |      |        |        |        |      |                                |

● : Standard item ○ : Check availability

**B**



Turning indexable inserts

55° Rhombic

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Negative



Ceramic

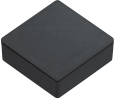
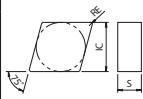
| Cutting edge preparation |   |                       |                                    | Gray cast iron (with scale) |      | Gray cast iron (without scale) |                          | Nodular cast iron (with scale) |   | Nodular cast iron (without scale) |                                    | Heat-resistant alloy |  | Hard materials |  |  |
|--------------------------|---|-----------------------|------------------------------------|-----------------------------|------|--------------------------------|--------------------------|--------------------------------|---|-----------------------------------|------------------------------------|----------------------|--|----------------|--|--|
| Symbol                   | Specification   | Example               |                                    |                             |      |                                |                          |                                |   |                                   |                                    |                      |  |                |  |  |
| S                        | Chamfered and R-honed   | S01525                | 0.15mm × 25° chamfered and R-honed |                             |      |                                |                          |                                |   |                                   |                                    |                      |  |                |  |  |
| T                        | Chamfered   | T02025                | 0.20mm × 25° chamfered             |                             |      |                                |                          |                                |   |                                   |                                    |                      |  |                |  |  |
|                          |   |                       |                                    | K                           |      | S                              |                          | H                              |   |                                   |                                    |                      |  |                |  |  |
| Insert                   | Description   | Edge preparation type | No. of edges                       | Dimension (mm)              |      |                                |                          | Ceramic                        |   |                                   | Applicable toolholder              |                      |  |                |  |  |
|                          |   |                       |                                    | IC                          | S    | D1                             | RE                       | PVD                            | - |                                   |                                    |                      |  |                |  |  |
|                          | DNGA 150404S01525<br>150408S01525                                 | S01525                | 4                                  | 12.7                        | 4.76 | 5.16                           | 0.4<br>0.8               | ●<br>●                         |   |                                   | D13~D17<br>F118, F130<br>F132~F134 |                      |  |                |  |  |
|                          | DNGA 150404S02025<br>150408S02025                                 | S02025                | 4                                  | 12.7                        | 4.76 | 5.16                           | 0.4<br>0.8               | ●<br>●                         |   |                                   |                                    |                      |  |                |  |  |
|                          | DNGA 150404T02025<br>150408T02025<br>150412T02025                 | T02025                | 4                                  | 12.7                        | 4.76 | 5.16                           | 0.4<br>0.8<br>1.2        | ●<br>●<br>●                    |   |                                   |                                    |                      |  |                |  |  |
|                          | DNGA 150408S03030   | S03030                | 4                                  | 12.7                        | 4.76 | 5.16                           | 0.8                      | ●                              |   |                                   |                                    |                      |  |                |  |  |
|                          | DNGA 150604T02025<br>150608T02025<br>150612T02025                 | T02025                | 4                                  | 12.7                        | 6.35 | 5.16                           | 0.4<br>0.8<br>1.2        | ●<br>●<br>●                    |   |                                   |                                    | D13~D17<br>F118      |  |                |  |  |
|                          | DNGN 150704S01525<br>150708S01525<br>150712S01525                 | S01525                | 4                                  | 12.7                        | 7.94 | -                              | 0.4<br>0.8<br>1.2        | ●<br>●<br>●                    |   |                                   | D50                                |                      |  |                |  |  |
|                          | DNGN 150708S02025   | S02025                | 4                                  | 12.7                        | 7.94 | -                              | 0.8                      | ●                              |   |                                   |                                    |                      |  |                |  |  |
|                          | DNGN 150704T02025<br>150708T02025<br>150712T02025<br>150716T02025 | T02025                | 4                                  | 12.7                        | 7.94 | -                              | 0.4<br>0.8<br>1.2<br>1.6 | ●<br>●<br>●<br>●               |   |                                   |                                    |                      |  |                |  |  |

● : Standard item

B114

75° Rhombic

How to read pages of "Turning inserts" See page B15

| Cutting edge preparation  |                       |              |                                    | Gray cast iron (with scale) |  | Gray cast iron (without scale) |  | Nodular cast iron (with scale) |  | Nodular cast iron (without scale) |  | Heat-resistant alloy |          | Hard materials |                       |             |  |
|---|-----------------------|--------------|------------------------------------|-----------------------------|--|--------------------------------|--|--------------------------------|--|-----------------------------------|--|----------------------|----------|----------------|-----------------------|-------------|--|
| Symbol  | Specification         | Example      |                                    |                             |  |                                |  |                                |  |                                   |  |                      |          |                |                       |             |  |
| S   | Chamfered and R-honed | S01525       | 0.15mm × 25° chamfered and R-honed |                             |  |                                |  |                                |  |                                   |  |                      |          |                |                       |             |  |
| T   | Chamfered             | T02025       | 0.20mm × 25° chamfered             |                             |  |                                |  |                                |  |                                   |  |                      |          |                |                       |             |  |
|   |                       |              |                                    | Description                 |  | Edge preparation type          |  | No. of edges                   |  | Dimension (mm)                    |  |                      | Cera-mic |                | Applicable toolholder |             |  |
|   |                       |              |                                    |                             |  |                                |  |                                |  |                                   |  |                      |          |                |                       |             |  |
| ENGN  |                       | 130708S01525 |                                    | S01525                      |  | 4                              |  | 12.7                           |  | 7.94                              |  | 0.8                  |          | ●              |                       | D51<br>F145 |  |
| ENGN  |                       | 130704T02025 |                                    | T02025                      |  | 4                              |  | 12.7                           |  | 7.94                              |  | 0.4                  |          | ●              |                       |             |  |
|   |                       | 130708T02025 |                                    |                             |  |                                |  |                                |  |                                   |  | 0.8                  |          | ●              |                       |             |  |
|   |                       | 130712T02025 |                                    |                             |  |                                |  |                                |  |                                   |  | 1.2                  |          | ●              |                       |             |  |
|   |                       | 130716T02025 |                                    |                             |  |                                |  |                                |  |                                   |  | 1.6                  |          | ●              |                       |             |  |
|   |                       | 130720T02025 |                                    |                             |  |                                |  |                                |  |                                   |  | 2                    |          | ●              |                       |             |  |



Turning indexable inserts

● : Standard item

Round

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Negative



Ceramic




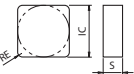
| Cutting edge preparation |                       |                       |                                    | Material compatibility      |                                |                                |                                   |                      |                |         |                       |            |  | Applicable toolholder |   |
|--------------------------|-----------------------|-----------------------|------------------------------------|-----------------------------|--------------------------------|--------------------------------|-----------------------------------|----------------------|----------------|---------|-----------------------|------------|--|-----------------------|---|
| Symbol                   | Specification         | Example               |                                    | Gray cast iron (with scale) | Gray cast iron (without scale) | Nodular cast iron (with scale) | Nodular cast iron (without scale) | Heat-resistant alloy | Hard materials | Ceramic |                       |            |  |                       |   |
| E                        | R-honed               | E005                  | R0.05mm honed                      |                             |                                |                                |                                   |                      |                | -       |                       |            |  |                       | K |
| K                        | Double chamfered      | K15015                | 1.5mm x 15° chamfered              |                             |                                |                                |                                   |                      |                | -       |                       |            |  |                       |   |
| S                        | Chamfered and R-honed | S01525                | 0.15mm x 25° chamfered and R-honed |                             |                                |                                |                                   |                      |                | -       |                       |            |  |                       |   |
| T                        | Chamfered             | T02025                | 0.20mm x 25° chamfered             |                             |                                |                                |                                   |                      |                | -       |                       |            |  |                       |   |
|                          |                       |                       |                                    |                             |                                |                                |                                   |                      |                | -       |                       |            |  |                       | S |
|                          |                       |                       |                                    |                             |                                |                                |                                   |                      |                | -       |                       |            |  |                       | H |
| Insert                   | Description           | Edge preparation type | Dimension (mm)                     |                             | Ceramic                        |                                |                                   |                      |                |         | Applicable toolholder |            |  |                       |   |
|                          |                       |                       | IC                                 | S                           | PVD                            |                                |                                   |                      |                |         |                       |            |  |                       |   |
|                          |                       |                       |                                    |                             | Al6N                           | PT600M                         | Ag5                               | K56015               | K56030         | K56040  | K56050                |            |  |                       |   |
|                          | RNGN 090300T01020     | T01020                | 9.525                              | 3.18                        |                                |                                |                                   | ●                    |                |         |                       | D61        |  |                       |   |
|                          | RNGN 090400S01525     | S01525                | 9.525                              | 4.76                        | ●                              |                                |                                   |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 090400S02025     | S02025                | 9.525                              | 4.76                        |                                | ●                              |                                   |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 090400T02025     | T02025                | 9.525                              | 4.76                        |                                | ●                              | ●                                 |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 120400E003       | E003                  | 12.7                               | 4.76                        |                                |                                |                                   | ●                    |                |         |                       | D58<br>D61 |  |                       |   |
|                          | RNGN 120400T01020     | T01020                | 12.7                               | 4.76                        |                                |                                |                                   | ●                    |                |         |                       |            |  |                       |   |
|                          | RNGN 120400S01525     | S01525                | 12.7                               | 4.76                        | ●                              |                                |                                   |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 120400S02025     | S02025                | 12.7                               | 4.76                        |                                | ●                              |                                   |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 120400T02025     | T02025                | 12.7                               | 4.76                        |                                | ●                              | ●                                 | ●                    |                |         | ●                     |            |  |                       |   |
|                          | RNGN 120700E003       | E003                  | 12.7                               | 7.94                        |                                |                                |                                   | ●                    |                |         |                       |            |  |                       |   |
|                          | RNGN 120700E005       | E005                  | 12.7                               | 7.94                        |                                |                                |                                   |                      |                | ●       |                       |            |  |                       |   |
|                          | RNGN 120700T01020     | T01020                | 12.7                               | 7.94                        |                                |                                |                                   | ●                    | ●              |         | ●                     |            |  |                       |   |
|                          | RNGN 120700K15015     | K15015                | 12.7                               | 7.94                        |                                | ●                              |                                   |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 120700S01525     | S01525                | 12.7                               | 7.94                        | ●                              |                                |                                   |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 120700S02025     | S02025                | 12.7                               | 7.94                        |                                | ●                              |                                   |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 120700T02025     | T02025                | 12.7                               | 7.94                        |                                | ●                              | ●                                 | ●                    |                |         | ●                     |            |  |                       |   |
|                          | RNGN 150700S01525     | S01525                | 15.875                             | 7.94                        | ●                              |                                |                                   |                      |                |         |                       | D58        |  |                       |   |
|                          | RNGN 150700S02025     | S02025                | 15.875                             | 7.94                        |                                | ●                              |                                   |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 150700T02025     | T02025                | 15.875                             | 7.94                        |                                |                                | ●                                 |                      |                |         |                       |            |  |                       |   |
|                          | RNGN 190700E003       | E003                  | 19.05                              | 7.94                        |                                |                                |                                   | ●                    |                |         |                       |            |  |                       |   |
|                          | RNGN 190700T01020     | T01020                | 19.05                              | 7.94                        |                                |                                |                                   | ●                    | ●              |         |                       |            |  |                       |   |

● : Standard item

B116

90° Square

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| Cutting edge preparation  |               |  | Material compatibility      |                                |                                |                                   |                      |                               |         |      |        |     | Applicable toolholder |        |        |        |      |                       |
|---|---------------|--|-----------------------------|--------------------------------|--------------------------------|-----------------------------------|----------------------|-------------------------------|---------|------|--------|-----|-----------------------|--------|--------|--------|------|-----------------------|
| Symbol  | Specification | Example  | Gray cast iron (with scale) | Gray cast iron (without scale) | Nodular cast iron (with scale) | Nodular cast iron (without scale) | Heat-resistant alloy | Hard materials                | Ceramic |      |        |     |                       |        |        |        |      |                       |
|   |               |  | Edge preparation type       | No. of edges                   | Dimension (mm)                 |                                   |                      |                               | Ceramic |      |        |     |                       |        |        |        |      |                       |
|   |               |  |                             |                                | IC                             | S                                 | D1                   | RE                            | CVD     | PVD  | -      |     |                       |        |        |        |      |                       |
|   |               |  |                             |                                |                                |                                   |                      |                               | CS7050  | Ag6N | PT600M | Ag5 | KA30                  | KS6015 | KS6040 | KS6050 | KT66 |                       |
|       | SNGA          | 120408S01525<br>120412S01525   | S01525                      | 8                              | 12.7                           | 4.76                              | 5.16                 | 0.8<br>1.2                    | ●       |      |        |     |                       |        |        |        |      | D19~D21<br>F136       |
|   | SNGA          | 120408S02025<br>120412S02025   | S02025                      | 8                              | 12.7                           | 4.76                              | 5.16                 | 0.8<br>1.2                    | ●       | ●    |        |     |                       |        |        |        |      |                       |
|   | SNGA          | 120408T02025<br>120412T02025<br>120416T02025                                 | T02025                      | 8                              | 12.7                           | 4.76                              | 5.16                 | 0.8<br>1.2<br>1.6             | ●       | ●    | ●      | ●   | ●                     | ●      |        |        |      |                       |
|   | SNMA          | 120408S03030   | S03030                      | 8                              | 12.7                           | 4.76                              | 5.16                 | 0.8                           | ●       |      |        |     |                       |        |        |        |      |                       |
|   | SNGN          | 120408T00520   | T00520                      | 8                              | 12.7                           | 4.76                              | -                    | 0.8                           |         | ●    |        |     |                       |        |        |        |      | D52~D54<br>D63<br>D64 |
|   | SNGN          | 120412T01020   | T01020                      | 8                              | 12.7                           | 4.76                              | -                    | 1.2                           |         |      |        |     |                       | ●      |        |        |      |                       |
|   | SNGN          | 120408S01025<br>120412S01025<br>120416S01025<br>120420S01025                 | S01025                      | 8                              | 12.7                           | 4.76                              | -                    | 0.8<br>1.2<br>1.6<br>2        |         |      |        | ●   | ●                     | ●      | ●      |        |      |                       |
|   | SNGN          | 120408S01525<br>120412S01525<br>120416S01525                                 | S01525                      | 8                              | 12.7                           | 4.76                              | -                    | 0.8<br>1.2<br>1.6             | ●       | ●    | ●      |     |                       |        |        |        |      |                       |
|   | SNGN          | 120408S02025<br>120412S02025<br>120416S02025                                 | S02025                      | 8                              | 12.7                           | 4.76                              | -                    | 0.8<br>1.2<br>1.6             | ●       | ●    | ●      |     |                       |        |        |        |      |                       |
|   | SNGN          | 120404T02025<br>120408T02025<br>120412T02025<br>120416T02025<br>120420T02025 | T02025                      | 8                              | 12.7                           | 4.76                              | -                    | 0.4<br>0.8<br>1.2<br>1.6<br>2 | ●       | ●    | ●      | ●   | ●                     | ●      | ●      | ●      | ○    |                       |
|   | SNGN          | 120416S03030   | S03030                      | 8                              | 12.7                           | 4.76                              | -                    | 1.6                           | ●       |      |        |     |                       |        |        |        |      |                       |
|   | SNGN          | 120704S01525<br>120708S01525<br>120712S01525<br>120716S01525<br>120720S01525 | S01525                      | 8                              | 12.7                           | 7.94                              | -                    | 0.4<br>0.8<br>1.2<br>1.6<br>2 | ●       | ●    | ●      |     |                       |        |        |        |      |                       |
|   | SNGN          | 120708S02025<br>120712S02025<br>120716S02025<br>120720S02025                 | S02025                      | 8                              | 12.7                           | 7.94                              | -                    | 0.8<br>1.2<br>1.6<br>2        | ●       | ●    | ●      |     |                       |        |        |        |      |                       |
|   | SNGN          | 120704T02025<br>120708T02025<br>120712T02025<br>120716T02025<br>120720T02025 | T02025                      | 8                              | 12.7                           | 7.94                              | -                    | 0.4<br>0.8<br>1.2<br>1.6<br>2 | ●       | ●    | ●      | ●   | ●                     | ●      | ●      |        |      |                       |
|   | SNMN          | 120716T02025   | T02025                      | 8                              | 12.7                           | 7.94                              | -                    | 1.6                           |         | ●    |        |     |                       |        |        |        |      |                       |
|   | SNGN          | 150712T02025<br>150716T02025   | T02025                      | 8                              | 15.875                         | 7.94                              | -                    | 1.2<br>1.6                    |         | ●    | ●      |     |                       |        |        |        |      |                       |

● : Standard item ○ : Check availability



Turning indexable inserts

60° Triangle

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Negative



Ceramic

| Cutting edge preparation |                       |   | Material compatibility      |                                |                                |                                   |                      |                   |        |        |        |        | Applicable toolholder |        |        |   |   |
|--------------------------|-----------------------|---|-----------------------------|--------------------------------|--------------------------------|-----------------------------------|----------------------|-------------------|--------|--------|--------|--------|-----------------------|--------|--------|---|---|
| Symbol                   | Specification         | Example   | Gray cast iron (with scale) | Gray cast iron (without scale) | Nodular cast iron (with scale) | Nodular cast iron (without scale) | Heat-resistant alloy | Hard materials    | PT600M | AG5    | KA30   | KS6015 |                       | KS6050 | KT66   |   |   |
| Symbol                   | Specification         | Example   | IC                          | S                              | D1                             | RE                                | AG6N                 | PT600M            | AG5    | KA30   | KS6015 | KS6050 | KT66                  |        |        |   |   |
| S                        | Chamfered and R-honed | S01525 0.15mm × 25° chamfered and R-honed         |                             |                                |                                |                                   |                      |                   |        |        |        |        |                       |        |        |   |   |
| T                        | Chamfered             | T02025 0.20mm × 25° chamfered                     |                             |                                |                                |                                   |                      |                   |        |        |        |        |                       |        |        |   |   |
| Insert                   |                       |   | Dimension (mm)              |                                |                                |                                   | Ceramic              |                   |        |        |        |        | Applicable toolholder |        |        |   |   |
| Description              |                       |   | Edge preparation type       | No. of edges                   | IC                             | S                                 | D1                   | RE                | AG6N   | PT600M | AG5    | KA30   |                       | KS6015 | KS6050 | KT66  |   |
|                          |                       | TNGA 160408T00520                                 | T00520                      | 6                              | 9.525                          | 4.76                              | 3.81                 | 0.8               |        |        |        |        |                       |        |        | D22~D25<br>D27<br>D28<br>F120<br>F137<br>F138 |   |
|                          |                       | TNGA 160404S01525<br>160408S01525<br>160412S01525 | S01525                      | 6                              | 9.525                          | 4.76                              | 3.81                 | 0.4<br>0.8<br>1.2 | ●      |        |        |        |                       |        |        |   |   |
|                          |                       | TNGA 160404S02025<br>160408S02025<br>160412S02025 | S02025                      | 6                              | 9.525                          | 4.76                              | 3.81                 | 0.4<br>0.8<br>1.2 | ●      |        |        |        |                       |        |        |   |   |
|                          |                       | TNGA 160404T02025<br>160408T02025<br>160412T02025 | T02025                      | 6                              | 9.525                          | 4.76                              | 3.81                 | 0.4<br>0.8<br>1.2 | ●      | ●      |        |        | ●                     | ●      | ○      |   | ○ |
|                          |                       | TNGA 160408S03030                                 | S03030                      | 6                              | 9.525                          | 4.76                              | 3.81                 | 0.8               | ●      |        |        |        |                       |        |        |   |   |
|                          |                       | TNGN 110304T00520<br>110308T00520<br>110312T00520 | T00520                      | 6                              | 6.35                           | 3.18                              | -                    | 0.4<br>0.8<br>1.2 | ●      | ●      |        |        |                       |        |        | D66<br>F146<br><br><br><br><br>D56            |   |
|                          |                       | TNGN 160404T00520<br>160408T00520<br>160412T00520 | T00520                      | 6                              | 9.525                          | 4.76                              | -                    | 0.4<br>0.8<br>1.2 | ●      | ●      |        |        |                       |        |        |   |   |
|                          |                       | TNGN 160404S01025<br>160408S01025<br>160412S01025 | S01025                      | 6                              | 9.525                          | 4.76                              | -                    | 0.4<br>0.8<br>1.2 | ●      |        |        |        |                       |        |        |   |   |
|                          |                       | TNGN 160404S01525<br>160408S01525<br>160412S01525 | S01525                      | 6                              | 9.525                          | 4.76                              | -                    | 0.4<br>0.8<br>1.2 | ●      |        |        |        |                       |        |        |   |   |
|                          |                       | TNGN 160404S02025<br>160408S02025<br>160412S02025 | S02025                      | 6                              | 9.525                          | 4.76                              | -                    | 0.4<br>0.8<br>1.2 | ●      |        |        |        |                       |        |        |   |   |
|                          |                       | TNGN 160404T02025<br>160408T02025<br>160412T02025 | T02025                      | 6                              | 9.525                          | 4.76                              | -                    | 0.4<br>0.8<br>1.2 | ●      | ●      |        |        | ●                     | ●      |        |   |   |
|                          |                       | TNGN 160704T02025<br>160708T02025<br>160712T02025 | T02025                      | 6                              | 9.525                          | 7.94                              | -                    | 0.4<br>0.8<br>1.2 | ●      |        |        |        |                       |        |        |   |   |

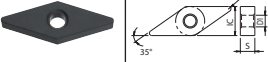
● : Standard item ○ : Check availability

B118



35° Rhombic

How to read pages of "Turning inserts" See page B15

| Cutting edge preparation  |               |  | Material compatibility      |                                |                                |                                   |                      |                   |             |        |     |      | Applicable toolholder |
|---|---------------|--|-----------------------------|--------------------------------|--------------------------------|-----------------------------------|----------------------|-------------------|-------------|--------|-----|------|-----------------------|
| Symbol  | Specification | Example                                      | Gray cast iron (with scale) | Gray cast iron (without scale) | Nodular cast iron (with scale) | Nodular cast iron (without scale) | Heat-resistant alloy | Hard materials    | Ceramic     |        |     |      |                       |
|   |               |  | Edge preparation type       | No. of edges                   | Dimension (mm)                 |                                   |                      |                   | Ceramic     |        |     |      |                       |
|   |               |  |                             |                                | IC                             | S                                 | D1                   | RE                | PVD         |        | -   |      |                       |
|   |               |  |                             |                                |                                |                                   |                      |                   | AG6N        | PT600M | AG5 | KT66 |                       |
|  | VNGA          | 160404S01525<br>160408S01525                 | S01525                      | 4                              | 9.525                          | 4.76                              | 3.81                 | 0.4<br>0.8        | ●<br>●      |        |     |      | D30~D39               |
|   | VNGA          | 160404S02025<br>160408S02025                 | S02025                      | 4                              | 9.525                          | 4.76                              | 3.81                 | 0.4<br>0.8        | ●<br>●      |        |     |      |                       |
|   | VNGA          | 160404T02025<br>160408T02025<br>160412T02025 | T02025                      | 4                              | 9.525                          | 4.76                              | 3.81                 | 0.4<br>0.8<br>1.2 | ●<br>●<br>● | ○<br>○ |     |      |                       |
|   | VNMA          | 160408S01525                                 | S01525                      | 4                              | 9.525                          | 4.76                              | 3.81                 | 0.8               | ●           |        |     |      |                       |

● : Standard item ○ : Check availability



Turning indexable inserts

Round

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Positive



Ceramic

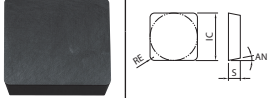
| Cutting edge preparation |                   |                       |                        | Gray cast iron (with scale)       |           |         | K                     |
|--------------------------|-------------------|-----------------------|------------------------|-----------------------------------|-----------|---------|-----------------------|
| Symbol                   | Specification     | Example               |                        | Gray cast iron (without scale)    |           |         |                       |
| E                        | R-honed           | E003                  | R0.03mm honed          | Nodular cast iron (with scale)    |           |         |                       |
| T                        | Chamfered         | T01020                | 0.10mm x 20° chamfered | Nodular cast iron (without scale) |           |         |                       |
|                          |                   |                       |                        | Heat-resistant alloy              |           |         | S                     |
|                          |                   |                       |                        | Hard materials                    |           |         | H                     |
| Insert                   | Description       | Edge preparation type | Dimension (mm)         |                                   | Angle (°) | Ceramic | Applicable toolholder |
|                          |                   |                       | IC                     | S                                 | AN        |         |                       |
|                          | RPGN 090300E003   | E003                  | 9.525                  | 3.18                              | 11        | ●       |                       |
|                          | RPGN 090300T01020 | T01020                | 9.525                  | 3.18                              | 11        | ●       |                       |
|                          | RPGN 120400E003   | E003                  | 12.7                   | 4.76                              | 11        | ●       |                       |
|                          | RPGN 120400T01020 | T01020                | 12.7                   | 4.76                              | 11        | ●       |                       |

● : Standard item

B120

Square

How to read pages of "Turning inserts" See page B15

| Cutting edge preparation  |                                   |                       |                                    | Gray cast iron (with scale) |      | Gray cast iron (without scale) |           | Nodular cast iron (with scale) |        | Nodular cast iron (without scale) |   | Heat-resistant alloy |  | Hard materials |  |  |
|---|-----------------------------------|-----------------------|------------------------------------|-----------------------------|------|--------------------------------|-----------|--------------------------------|--------|-----------------------------------|---|----------------------|--|----------------|--|--|
| Symbol  | Specification                     | Example               |                                    |                             |      |                                |           |                                |        |                                   |   |                      |  |                |  |  |
| S   | Chamfered and R-honed             | S00820                | 0.08mm × 20° chamfered and R-honed |                             |      |                                |           |                                |        |                                   |   |                      |  |                |  |  |
| T   | Chamfered                         | T00820                | 0.08mm × 20° chamfered             |                             |      |                                |           |                                |        |                                   |   |                      |  |                |  |  |
| Insert  | Description                       | Edge preparation type | No. of edges                       | Dimension (mm)              |      |                                | Angle (°) | Cera-mic                       |        | Applicable toolholder             |   |                      |  |                |  |  |
|   |                                   |                       |                                    | IC                          | S    | RE                             |           | AN                             | PVD    |                                   | - |                      |  |                |  |  |
|  | SPGN 090308S00820                 | S00820                | 4                                  | 9.525                       | 3.18 | 0.8                            | 11        | ●                              | -      | F112                              |   |                      |  |                |  |  |
|   | SPGN 090308T00820                 | T00820                | 4                                  | 9.525                       | 3.18 | 0.8                            | 11        | ●                              | -      |                                   |   |                      |  |                |  |  |
|   | SPGN 120308S00820                 | S00820                | 4                                  | 12.7                        | 3.18 | 0.8                            | 11        | ●                              | -      |                                   |   |                      |  |                |  |  |
|   | SPGN 120308T00820<br>120312T00820 | T00820                | 4                                  | 12.7                        | 3.18 | 0.8<br>1.2                     | 11        | ●<br>●                         | -<br>- |                                   |   |                      |  |                |  |  |

● : Standard item



Turning indexable inserts

Triangle

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

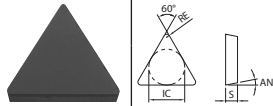
Chip breakers

Positive



Ceramic

| Cutting edge preparation |                       |   | Edge preparation type |              | Dimension (mm) |   |    | Angle (°) | Ceramic |   |  | Applicable toolholder |
|--------------------------|-----------------------|---|-----------------------|--------------|----------------|---|----|-----------|---------|---|--|-----------------------|
| Symbol                   | Specification         | Example                                   |                       | No. of edges | IC             | S | RE | AN        | PVD     | - |  |                       |
| S                        | Chamfered and R-honed | S00820 0.08mm × 20° chamfered and R-honed |                       |              |                |   |    |           |         |   |  | F113                  |
| T                        | Chamfered             | T00820 0.08mm × 20° chamfered             |                       |              |                |   |    |           |         |   |  |                       |
|                          |                       |   |                       |              |                |   |    |           |         |   |  |                       |
|                          |                       |   |                       |              |                |   |    |           |         |   |  |                       |
|                          |                       |   |                       |              |                |   |    |           |         |   |  |                       |
|                          |                       |   |                       |              |                |   |    |           |         |   |  |                       |


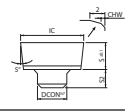
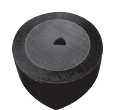
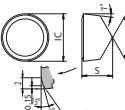
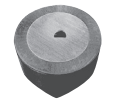
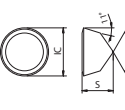


● : Standard item

B122

Inserts for high hardened roll

How to read pages of "Turning inserts" See page B15

| Cutting edge preparation  |   |                       | Material                       |       |   |      |     |                                   |        |        |      |                       | Applicable toolholder |
|---|---|-----------------------|--------------------------------|-------|---|------|-----|-----------------------------------|--------|--------|------|-----------------------|-----------------------|
| Symbol  | Specification   | Example               | Gray cast iron (with scale)    |       |   |      |     | Nodular cast iron (with scale)    |        |        |      |                       | K                     |
|   |   |                       | Gray cast iron (without scale) |       |   |      |     | Nodular cast iron (without scale) |        |        |      |                       |                       |
|   |   |                       | Heat-resistant alloy           |       |   |      |     | Hard materials                    |        |        |      |                       | S                     |
|   |   |                       |                                |       |   |      |     |                                   |        |        |      |                       | H                     |
| Insert  | Description   | Edge preparation type | Dimension (mm)                 |       |   |      |     | Ceramic                           |        |        |      | Applicable toolholder |                       |
|   |   |                       | IC                             | DCON  | S | S2   | CHW | PVD                               |        |        |      |                       |                       |
|   |   |                       |                                |       |   |      |     | PT600M                            | K56030 | K56040 | KT66 |                       |                       |
|    |    | RBG 16K20003          | K20003                         | 16    | 8 | 8    | 5   | 0.2                               | ●      |        |      |                       | -                     |
|    |    | RCGX 060600E005       | E005                           | 6.35  | - | 6.35 | -   | -                                 | ●      |        |      |                       | -                     |
|   |   | RCGX 060600T01020     | T01020                         | 6.35  | - | 6.35 | -   | -                                 | ●      | ●      |      |                       | -                     |
|   |   | RCGX 090700T01020     | T01020                         | 9.525 | - | 8    | -   | -                                 | ●      | ●      |      |                       | -                     |
|   |   | RCGX 090700P20015     | P20015                         | 9.525 | - | 8    | -   | -                                 | ●      |        | ○    |                       | -                     |
|   |   | RCGX 120700E003       | E003                           | 12.7  | - | 8    | -   | -                                 | ●      |        |      |                       | -                     |
|   |   | RCGX 120700T01020     | T01020                         | 12.7  | - | 8    | -   | -                                 | ●      |        |      |                       | -                     |
|   |   | RCGX 120700P20015     | P20015                         | 12.7  | - | 8    | -   | -                                 | ●      |        |      |                       | -                     |
|  |  | RPGX 060600E003       | E003                           | 6.35  | - | 6.35 | -   | -                                 | ●      |        |      |                       | -                     |
|   |   | RPGX 060600T01020     | T01020                         | 6.35  | - | 6.35 | -   | -                                 | ●      |        |      |                       | -                     |
|   |   | RPGX 090700E003       | E003                           | 9.525 | - | 8    | -   | -                                 | ●      |        |      |                       | -                     |
|   |   | RPGX 090700T01020     | T01020                         | 9.525 | - | 8    | -   | -                                 | ●      |        |      |                       | -                     |
|   |   | RPGX 120700E003       | E003                           | 12.7  | - | 8    | -   | -                                 | ●      |        |      |                       | -                     |

● : Standard item ○ : Check availability



Turning indexable inserts

Grooving inserts

How to read pages of "Turning inserts" See page B15

B



Turning indexable inserts

Chip breakers

Grooving

C

D

R

S

T

V

W

Ceramic

| Cutting edge preparation |                       |                       |                                    | Material                    |                                |                                |                                   |                      |                |         |        | Ceramic |  | Applicable toolholder |
|--------------------------|-----------------------|-----------------------|------------------------------------|-----------------------------|--------------------------------|--------------------------------|-----------------------------------|----------------------|----------------|---------|--------|---------|--|-----------------------|
| Symbol                   | Specification         | Example               |                                    | Gray cast iron (with scale) | Gray cast iron (without scale) | Nodular cast iron (with scale) | Nodular cast iron (without scale) | Heat-resistant alloy | Hard materials | PVD     | -      |         |  |                       |
| S                        | Chamfered and R-honed | S01020                | 0.10mm × 20° chamfered and R-honed |                             |                                |                                |                                   |                      |                |         |        |         |  |                       |
| T                        | Chamfered             | T01020                | 0.10mm × 20° chamfered             |                             |                                |                                |                                   |                      |                |         |        |         |  |                       |
| Insert                   | Description           | Edge preparation type | No. of edges                       | Dimension (mm)              |                                |                                |                                   | Tolerance (mm)       |                | Ceramic |        |         |  |                       |
|                          |                       |                       |                                    | CW                          | S                              | RE                             | INSL                              | CW min.              | CW max.        | Ag6N    | PI600M | Ag5     |  |                       |
|                          | GH 4020-05            | S01020<br>T01020      | 2                                  | 4                           | 7.5                            | 0.5                            | 20                                | -0.05                | +0.05          | ●       | ●      | ●       |  |                       |
|                          | GH 5020-05            | S01020<br>T01020      | 2                                  | 5                           | 7.5                            | 0.5                            | 20                                | -0.05                | +0.05          | ●       | ●      | ●       |  |                       |
|                          | GH 6020-05            | T01020                | 2                                  | 6                           | 7.5                            | 0.5                            | 20                                | -0.05                | +0.05          |         | ●      |         |  |                       |
|                          | GH 7020-05            | T01020                | 2                                  | 7                           | 7.5                            | 0.5                            | 20                                | -0.05                | +0.05          |         | ●      |         |  |                       |

● : Standard item

B124