

# SPARE PARTS



P

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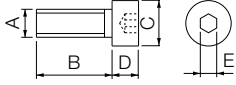
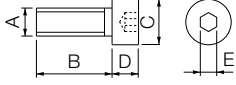
**Screws / Bolts**

| Drawing | Part Number         | Dimension (in) |       |       |       |       |   | Angle (°) |   | Torque (N • m) | Notes             |
|---------|---------------------|----------------|-------|-------|-------|-------|---|-----------|---|----------------|-------------------|
|         |                     | A              | B     | C     | D     | E     | F | α         | θ |                |                   |
|         | <b>HH 3/8-1.25H</b> | 3/8-24 UNF     | 1.250 | 0.550 | 0.375 | 0.312 | - | -         | - | -              | With Coolant Hole |
|         | <b>1/2-1.25H</b>    | 1/2-20 UNF     |       | 0.750 | 0.500 | 0.375 |   |           |   |                |                   |
|         | <b>3/4-2.3H</b>     | 3/4-16 UNF     | 1.500 | 1.120 | 0.750 | 0.625 |   |           |   |                |                   |
|         | <b>HH 1/4-0.75</b>  | 1/4-28 UNF     | 0.750 | 0.375 | 0.250 | 0.188 | - | -         | - | -              | -                 |
|         | <b>3/8-1.25</b>     | 3/8-24 UNF     | 1.250 | 0.550 | 0.375 | 0.312 |   |           |   |                |                   |
|         | <b>3/8-1.5</b>      | 3/8-24 UNF     | 1.500 |       |       |       |   |           |   |                |                   |
|         | <b>1/2-1.25</b>     | 1/2-20 UNF     | 1.250 | 0.750 | 0.500 | 0.375 |   |           |   |                |                   |
|         | <b>3/4-2.3</b>      | 3/4-16 UNF     | 1.500 | 1.120 | 0.750 | 0.625 |   |           |   |                |                   |

| Drawing | Part Number       | Dimension (mm) |      |       |       |      |      | Angle (°) |     | Torque (N • m) | Notes                    |
|---------|-------------------|----------------|------|-------|-------|------|------|-----------|-----|----------------|--------------------------|
|         |                   | A              | B    | C     | D     | E    | F    | α         | θ   |                |                          |
|         | <b>AJ -6X38</b>   | M6X1.0         | 38.0 | 6.0   | 10.0  | 3.0  | 3.0  | -         | -   | -              | -                        |
|         | <b>-8X44-9.5</b>  | M8X1.25        | 44.0 | 9.5   | 6.0   | 4.0  | 4.0  | -         | -   |                |                          |
|         | <b>-10X46</b>     | M10X1.5        | 46.0 | 11.5  | 8.0   | 5.0  | 5.0  | -         | -   |                |                          |
|         | <b>AJ -519TR</b>  | M5X0.8         | 19   | 10    | -     | T15  | -    | -         | 40° | -              | -                        |
|         | <b>BH 3X6</b>     | M3X0.5         | 6.0  | -     | 1.7   | 2.0  | -    | -         | -   | -              | -                        |
|         | <b>3X12</b>       | M3X0.5         | 12.0 | -     | 1.7   | 2.0  | -    | -         | -   |                |                          |
|         | <b>6X25</b>       | M6X1.0         | 25.0 | -     | 3.3   | 4.0  | -    | -         | -   |                |                          |
|         | <b>8X30</b>       | M8X1.25        | 30.0 | -     | 4.4   | 5.0  | -    | -         | -   |                |                          |
|         | <b>BH 6X10TR</b>  | M6X1.0         | 10.0 | 12.0  | 5.0   | -    | T25  | -         | -   | 6.5            | -                        |
|         | <b>CP 8X15TL</b>  | M8X1.25        | 15.0 | 15.0  | -     | -    | T25  | -         | -   | 6.0            | L Shows Left-hand Thread |
|         | <b>8X23TL</b>     |                | 23.0 |       |       |      |      |           |     |                |                          |
|         | <b>CS -2D</b>     | M4X0.7         | 21.5 | 6.4   | 3.5   | 2.5  | 2.0  | -         | -   | 1.7            | -                        |
|         | <b>-3D</b>        | M5X0.8         | 22.0 | 8.0   | 4.0   | 3.0  | 2.5  | -         | -   | 3.9            |                          |
|         | <b>-5D</b>        | M5X0.8         | 28.0 | 8.0   | 4.0   | 3.0  | 2.5  | -         | -   | 3.0            |                          |
|         | <b>CS -3D-TR</b>  | M5X0.8         | 22.0 | 8.0   | 4.0   | T15  | T15  | -         | -   | 3.9            | -                        |
|         | <b>GS -50</b>     | M5X0.8         | 13.0 | 7.5   | -     | 3.0  | -    | -         | 82° | -              | -                        |
|         | <b>HF 16X40HA</b> | M16X2.0        | 24.0 | 40.0  | 16.0  | 12.0 | 10.0 | -         | -   | -              | With Coolant Hole        |
|         | <b>20X53H</b>     | M20X2.5        | 35.0 | 43.0  | 18.0  | 14.0 |      |           |     |                |                          |
|         | <b>20X53HA</b>    |                | 33.0 | 50.0  | 20.0  |      |      |           |     |                |                          |
|         | <b>24X60H</b>     | M24X3.0        | 40.5 | 65.0  | 19.5  | 17.0 |      |           |     |                |                          |
|         | <b>24X60HA</b>    |                | 36.0 |       | 24.0  |      |      |           |     |                |                          |
|         | <b>HF 16X40S</b>  | M16X2.0        | 29.0 | 40.00 | 11.00 | 14.0 | 10.0 | -         | -   | -              | -                        |

P  
SPARE PARTS

**Screws / Bolts**

| Drawing   | Part Number | Dimension (mm) |       |      |      |      |   | Angle (°) |   | Torque (N•m) | Notes |
|---|-------------|----------------|-------|------|------|------|---|-----------|---|--------------|-------|
|   |             | A              | B     | C    | D    | E    | F | α         | θ |              |       |
|    | HH 3X6      | M3X0.5         | 6.0   | 5.5  | 3.0  | 2.5  | - | -         | - |              |       |
|   | 3X12        |                | 12.0  |      |      |      |   |           |   |              |       |
|   | HH 4X16     | M4X0.7         | 16.0  | 7.0  | 4.0  | 3.0  | - | -         | - |              |       |
|   | HH 5X15     | M5X0.8         | 15.0  | 8.5  | 5.0  | 4.0  | - | -         | - |              |       |
|   | 5X16        |                | 16.0  |      |      |      |   |           |   |              |       |
|   | 5X20        |                | 20.0  |      |      |      |   |           |   |              |       |
|   | 5X25        |                | 25.0  |      |      |      |   |           |   |              |       |
| 5X30  | 30.0        |                |       |      |      |      |   |           |   |              |       |
|  | HH 6X12     | M6X1.0         | 12.0  | 10.0 | 6.0  | 5.0  | - | -         | - |              |       |
|   | 6X16        |                | 16.0  |      |      |      |   |           |   |              |       |
|   | 6X16A       |                | 16.0  |      |      |      |   |           |   |              |       |
|   | 6X18        |                | 18.0  |      |      |      |   |           |   |              |       |
|   | 6X18A       |                | 18.0  |      |      |      |   |           |   |              |       |
|   | 6X20        |                | 20.0  |      |      |      |   |           |   |              |       |
|   | 6X25        |                | 25.0  |      |      |      |   |           |   |              |       |
|   | 6X30        |                | 30.0  |      |      |      |   |           |   |              |       |
|   | HH 8X20     | M8X1.25        | 20.0  | 13.0 | 8.0  | 6.0  | - | -         | - |              |       |
|   | 8X25        |                | 25.0  |      |      |      |   |           |   |              |       |
|   | HH 10X25    | M10X1.5        | 25.0  | 16.0 | 10.0 | 8.0  | - | -         | - |              |       |
|   | 10X30       |                | 30.0  |      |      |      |   |           |   |              |       |
|   | 10X30M      |                | 30.0  |      |      |      |   |           |   |              |       |
|   | 10X30S      |                | 30.0  |      |      |      |   |           |   |              |       |
|   | 10X35       |                | 35.0  |      |      |      |   |           |   |              |       |
|   | 10X40       |                | 40.0  |      |      |      |   |           |   |              |       |
|   | HH 12X25    | M12X1.75       | 25.0  | 18.0 | 12.0 | 10.0 | - | -         | - |              |       |
|   | 12X35       |                | 35.0  |      |      |      |   |           |   |              |       |
|   | 12X35M      |                | 35.0  |      |      |      |   |           |   |              |       |
|   | 12X40       |                | 40.0  |      |      |      |   |           |   |              |       |
|   | 12X55       |                | 55.0  |      |      |      |   |           |   |              |       |
|   | 12X65       |                | 65.0  |      |      |      |   |           |   |              |       |
|   | 12X80       |                | 80.0  |      |      |      |   |           |   |              |       |
|   | 12X85       |                | 85.0  |      |      |      |   |           |   |              |       |
|   | 12X100      |                | 100.0 |      |      |      |   |           |   |              |       |
|   | 12X110      |                | 110.0 |      |      |      |   |           |   |              |       |
|   | 12X120      |                | 120.0 |      |      |      |   |           |   |              |       |
|   | 12X130      |                | 130.0 |      |      |      |   |           |   |              |       |
|   | 12X140      | 140.0          |       |      |      |      |   |           |   |              |       |
|   | 12X150      | 150.0          |       |      |      |      |   |           |   |              |       |
|   | HH 16X35    | M16X2.0        | 35.0  | 24.0 | 16.0 | 14.0 | - | -         | - |              |       |
|   | 16X40       |                | 40.0  |      |      |      |   |           |   |              |       |
|   | 16X45       |                | 45.0  |      |      |      |   |           |   |              |       |
| 16X65   | 65.0        |                |       |      |      |      |   |           |   |              |       |
| 16X90   | 90.0        |                |       |      |      |      |   |           |   |              |       |
| 16X110  | 110.0       |                |       |      |      |      |   |           |   |              |       |
| 16X130  | 130.0       |                |       |      |      |      |   |           |   |              |       |
| HH 20X40  | M20X2.5     | 40.0           | 30.0  | 20.0 | 17.0 | -    | - | -         |   |              |       |
| 20X53   |             | 53.0           |       |      |      |      |   |           |   |              |       |
| 20X55   |             | 55.0           |       |      |      |      |   |           |   |              |       |
| 20X75   |             | 75.0           |       |      |      |      |   |           |   |              |       |
| 20X90   |             | 90.0           |       |      |      |      |   |           |   |              |       |
| 20X110  |             | 110.0          |       |      |      |      |   |           |   |              |       |
| 20X120  |             | 120.0          |       |      |      |      |   |           |   |              |       |
| 20X140  |             | 140.0          |       |      |      |      |   |           |   |              |       |
| 20X150  |             | 150.0          |       |      |      |      |   |           |   |              |       |
| 20X170  |             | 170.0          |       |      |      |      |   |           |   |              |       |
| HH 24X40  | M24X3.0     | 40.0           | 36.0  | 24.0 | 19.0 | -    | - | -         |   |              |       |
| 24X60   |             | 60.0           |       |      |      |      |   |           |   |              |       |
| 24X75   |             | 75.0           |       |      |      |      |   |           |   |              |       |
| 24X90   |             | 90.0           |       |      |      |      |   |           |   |              |       |
| 24X110  |             | 110.0          |       |      |      |      |   |           |   |              |       |
| 24X120  |             | 120.0          |       |      |      |      |   |           |   |              |       |
| 24X140  |             | 140.0          |       |      |      |      |   |           |   |              |       |
| 24X150  |             | 150.0          |       |      |      |      |   |           |   |              |       |
| 24X170  | 170.0       |                |       |      |      |      |   |           |   |              |       |

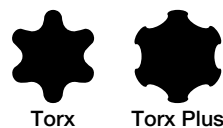
|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
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**Screws / Bolts**

| Drawing         | Part Number        | Dimension (mm) |         |        |      |      |     | Angle (°) |   | Torque (N • m) | Notes  |     |     |
|-----------------|--------------------|----------------|---------|--------|------|------|-----|-----------|---|----------------|--|-----|-----|
|                 |                    | A              | B       | C      | D    | E    | F   | α         | θ |                |  |     |     |
|                 | <b>HH 4X12</b>     | M4X0.7         | 10.0    | 7.0    | 4.0  | 3.0  | 2.0 | -         | - | -              | -  |     |     |
|                 | <b>HH 8X25H</b>    | M8X1.25        | 25.0    | 13.0   | 8.0  | 5.0  | -   | -         | - | -              | With Coolant Hole  |     |     |
|                 | <b>10X30H</b>      | M10X1.5        | 30.0    | 16.0   | 10.0 | 6.0  |     |           |   |                |  |     |     |
|                 | <b>10X35HK</b>     |                | 35.0    |        |      |      |     |           |   |                |  |     |     |
|                 | <b>12X35H</b>      | M12X1.75       | 35.0    | 18.0   | 12.0 | 8.0  |     |           |   |                |  |     |     |
|                 | <b>12X35HK</b>     |                |         |        |      |      |     |           |   |                |  |     |     |
|                 | <b>16X52H</b>      | M16X2.0        | 36.0    | 24.0   | 16.0 | 12.0 |     |           |   |                |  |     |     |
|                 | <b>HS 3X4P</b>     | M3X0.5         | 3.9     | -      | -    | 1.5  | -   | -         | - | 1.0            | HS4X4P and HS6X4P Have a Flat Edge<br>Clamp Screw Equivalent to JIS B-1177 |     |     |
|                 | <b>3X4</b>         |                | 4.0     |        |      |      |     |           |   |                |  |     |     |
|                 | <b>3X8</b>         |                | 8.0     |        |      |      |     |           |   |                |  |     |     |
|                 | <b>3X12</b>        |                | 12.0    |        |      |      |     |           |   |                |  |     |     |
|                 | <b>3X16</b>        |                | 16.0    |        |      |      |     |           |   |                |  |     |     |
|                 | <b>HS 4X4P</b>     | M4X0.7         | 3.9     | -      | -    | 2.0  | -   | -         | - | 2.0            |  |     |     |
|                 | <b>4X4</b>         |                | 4.0     |        |      |      |     |           |   |                |  |     |     |
|                 | <b>HS 5X5</b>      | M5X0.8         | 5.0     | -      | -    | 2.5  | -   | -         | - | 3.0            |  |     |     |
|                 | <b>HS 6X4P</b>     | M6X0.75        | 3.9     | -      | -    | -    | -   | -         | - | -              |  | 4.0 |     |
|                 | <b>6x4</b>         |                | 4.0     |        |      |      |     |           |   |                |  |     |     |
|                 | <b>6X6</b>         | M6X1.0         | 6.0     | -      | -    | 3.0  | -   | -         | - | -              |  | -   |     |
|                 | <b>6X8T</b>        |                | 8.0     |        |      |      |     |           |   |                |  |     |     |
|                 | <b>6X14</b>        |                | 14.0    |        |      |      |     |           |   |                |  |     |     |
|                 | <b>6X22</b>        |                | 22.0    |        |      |      |     |           |   |                |  |     |     |
|                 | <b>HS 8X8</b>      | M8X1.25        | 8.0     | -      | -    | 4.0  | -   | -         | - | -              |  | -   |     |
|                 | <b>8X10</b>        |                | 10.0    |        |      |      |     |           |   |                |  |     |     |
|                 | <b>8X12</b>        |                | 12.0    |        |      |      |     |           |   |                |  |     |     |
|                 | <b>HS 10X10</b>    | M10X1.5        | 10.0    | -      | -    | 5.0  | -   | -         | - | -              |  | -   |     |
|                 | <b>10X16</b>       |                | 16.0    |        |      |      |     |           |   |                |  |     |     |
|                 | <b>HS 12X10</b>    | M12X1.75       | 10.0    | -      | -    | 6.0  | -   | -         | - | -              |  | -   |     |
| <b>12X12</b>    | 12.0               |                |         |        |      |      |     |           |   |                |  |     |     |
| <b>12X16</b>    | 16.0               |                |         |        |      |      |     |           |   |                |  |     |     |
| <b>12X18</b>    | 18.0               |                |         |        |      |      |     |           |   |                |  |     |     |
| <b>12X20</b>    | 20.0               |                |         |        |      |      |     |           |   |                |  |     |     |
| <b>12X25</b>    | 25.0               |                |         |        |      |      |     |           |   |                |  |     |     |
| <b>12X30</b>    | 30.0               |                |         |        |      |      |     |           |   |                |  |     |     |
| <b>12X35</b>    | 35.0               |                |         |        |      |      |     |           |   |                |  |     |     |
| <b>HS 16X10</b> | M16X2.0            | 10.0           | -       | -      | 8.0  | -    | -   | -         | - | -              |  |     |     |
| <b>16X12</b>    |                    | 12.0           |         |        |      |      |     |           |   |                |  |     |     |
| <b>16X18</b>    |                    | 18.0           |         |        |      |      |     |           |   |                |  |     |     |
| <b>16X20</b>    |                    | 20.0           |         |        |      |      |     |           |   |                |  |     |     |
|                 | <b>HS -2524TRP</b> | M2.5X0.35      | 2.4     | -      | -    | -    | 5IP | -         | - | -              | 0.4  |     |     |
|                 | <b>-2534TRP</b>    |                | 3.4     |        |      |      |     |           |   |                |  |     |     |
|                 | <b>-3048TRP</b>    | M3X0.5         | 4.8     |        |      |      |     |           |   |                |  | 6IP | 0.5 |
|                 | <b>-4067TRP</b>    | M4X0.7         | 6.7     |        |      |      |     |           |   |                |  | 7IP | 0.8 |
|                 |                    |                |         |        |      |      |     |           |   |                |  |     |     |
|                 | <b>HSB 4X8%</b>    | M4X0.7         | 8.0     | R2.0   | -    | 2.0  | -   | -         | - | 2.0            | R Shows Right-hand Thread<br>L Shows Left-hand Thread                      |     |     |
|                 | <b>LS -03</b>      | M5X0.8         | 10.0    | M5X0.8 | -    | 2.0  | -   | -         | - | 2.0            | -  |     |     |
|                 | <b>-03S</b>        |                | 12.2    |        |      | 2.5  |     |           |   | 3.0            |  |     |     |
|                 | <b>LS -03N</b>     | M5X0.8         | 9.7     | M5X0.8 | -    | 2.0  | -   | -         | - | 2.0            |  |     |     |
|                 | <b>-03SN</b>       |                | 12.0    |        |      | 2.5  |     |           |   | 3.0            |  |     |     |
| <b>W 10X31</b>  | M10X1.0            | 31.0           | M10X1.5 | -      | 5    | -    | -   | -         | - | -              |  |     |     |
|                 | <b>LS -05</b>      | M5X0.8         | 15.5    | M5X0.8 | -    | 2.0  | 2.0 | -         | - | 2.0            | -  |     |     |

**Reference**

Torx and Torx Plus have different cross-sections.



Torx

Torx Plus

**Screws / Bolts**

| Drawing    | Part Number | Dimension (mm) |           |        |     |      |      | Angle (°) |     | Torque (N•m) | Notes  |     |     |     |   |     |
|------------|-------------|----------------|-----------|--------|-----|------|------|-----------|-----|--------------|--|-----|-----|-----|---|-----|
|            |             | A              | B         | C      | D   | E    | F    | α         | θ   |              |  |     |     |     |   |     |
|            | LS -1       | M6X1.0         | 17.0      | 6.0    | -   | 2.5  | 2.5  | -         | -   | 3.0          | N : Silver Coated                                  |     |     |     |   |     |
|            | -1N         |                | 14.2      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -1S         |                | 14.2      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -1SN        |                | 14.2      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -1T         | 21.0           |           |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | LS -2       | M8X1.0         | 20.0      | 8.0    | -   | 3.0  | 3.0  | -         | -   | 4.0          |  |     |     |     |   |     |
|            | -2N         |                | 22.0      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -3          |                | 22.0      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -4          |                | 24.0      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -4N         |                |           |        |     |      |      |           |     |              |  |     |     |     |   |     |
| -5         | M10X1.0     | 29             | 10        | -      | 4   | 4    | -    | -         | -   |              |  |     |     |     |   |     |
|            | LS -1P      | M6X1.0         | 16.5      | 6.0    | -   | 10IP | 10IP | -         | -   | 2.0          | OOIP Shows Torx Plus                               |     |     |     |   |     |
|            | -2P         | M8X1.0         | 18.2      | 8.0    | -   | 15IP | 15IP | -         | -   | 3.5          |  |     |     |     |   |     |
|            | -3P         |                | 21.8      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | LS -11      | M6X1.0         | 9.5       | -      | -   | 3.0  | -    | -         | -   | -            |  |     |     |     |   |     |
|            | -15         |                | 12.5      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | M 3X8       | M3X0.5         | 8.0       | 5.5    | 2.0 | -    | -    | -         | -   | -            | Flat Fillister Head Screw Equivalent to JIS B-1101 |     |     |     |   |     |
|            | 3X12        |                | 12.0      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            | 4X10        | M4X0.7         | 10.0      | 7.0    | 2.6 | -    | -    | -         | -   | -            |  |     |     |     |   |     |
|            | SB -1TR     | M2X0.4         | 5.3       | 3.8    | -   | -    | T6   | 82°       | -   | 0.5          | R Shows Right-hand Thread                          |     |     |     |   |     |
|            | -2TR        | M2.5X0.45      | 6.2       | 4.5    |     |      | T8   |           |     | 1.2          |  |     |     |     |   |     |
|            | -3TR        | M3X0.5         | 7.2       | 4.8    |     |      | T10  |           |     | 2.0          |  |     |     |     |   |     |
|            | -3STR       |                | 6.4       | 5.2    |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -3.5TR      | M3.5X0.6       | 9.3       | 5.6    |     |      | T15  |           |     | 3.5          |  |     |     |     |   |     |
|            | -4TR        | M4X0.7         | 7.7       | 5.8    |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -5TR        | M5X0.8         | 20.0      | 8.7    |     |      | T20  |           |     | 90°          |  | 4.5 |     |     |   |     |
|            | -2290TR     | M2.2X0.45      | 9.2       | 2.8    |     |      |      |           |     | T6           |  | 0.5 |     |     |   |     |
|            | -25100TR    | M2.5X0.45      | 10.0      | 3.5    |     |      | T7   |           |     | 60°          |  | 0.8 |     |     |   |     |
|            | -40115TR    | M4X0.7         | 11.5      | 5.5    |     |      |      |           |     |              |  | T15 | 3.5 |     |   |     |
|            | -5070TR     |                | 7.0       |        |     |      | T20  |           |     | 60°          |  | 4.5 |     |     |   |     |
|            | -5090TR     | M5X0.8         | 9.0       | 6.8    |     |      |      |           |     |              |  |     |     |     |   |     |
|            | -50120TR    |                | 12.0      |        |     |      |      |           |     |              |  |     |     |     |   |     |
|            |             | SB -1635TR     | M1.6X0.35 | 3.3    |     |      | 2.6  |           |     | -            |  | -   | T6  | 60° | - | 0.5 |
| SB -1STR   |             | 5.0            |           | 3.1    | T6  |      |      |           |     |              |  |     |     |     |   |     |
| -1840TRP   |             | 4.0            |           | 2.5    | 6IP | 55°  |      |           |     |              |  |     |     |     |   |     |
| -2035TR    |             | 3.7            |           | 3.0    | T6  | 60°  |      |           |     |              |  |     |     |     |   |     |
| -2035TRG   |             | 3.5            |           |        |     |      |      |           |     |              |  |     |     |     |   |     |
| -2037TRP   |             | 3.7            |           | 2.7    | 6IP | 55°  |      |           |     |              |  |     |     |     |   |     |
| -2040TR    |             | 3.8            |           | 3.0    | T6  | 60°  |      |           |     |              |  |     |     |     |   |     |
| -2040TRG   |             | 4.0            |           |        |     |      |      |           |     |              |  |     |     |     |   |     |
| -2041TRP   |             | 4.1            |           | 2.7    | 6IP | 60°  |      |           |     |              |  |     |     |     |   |     |
| -2042TRG   |             | 4.1            |           | 2.7    |     |      |      |           |     |              |  |     |     |     |   |     |
| -2045TR    |             | 4.3            |           |        | T6  | 60°  |      |           |     |              |  |     |     |     |   |     |
| -2045TRN   |             |                |           | 2.8    |     |      |      |           |     |              |  |     |     |     |   |     |
| -2050TR    |             | 4.8            |           | 3.0    | T6  | 60°  |      |           |     |              |  |     |     |     |   |     |
| -2060TR    |             | 5.8            |           | 3.5    | T8  | 60°  | 1.2  |           |     |              |  |     |     |     |   |     |
| -2080TR    |             | 8.3            |           | 2.8    | T6  | 60°  | 0.5  |           |     |              |  |     |     |     |   |     |
| SB -2250TR |             | M2.2X0.45      |           | 5.1    | 3.1 | T7   | 60°  | 0.8       |     |              |  |     |     |     |   |     |
| -2255TR    |             | 5.5            |           | 3.5    |     |      |      |           |     |              |  |     |     |     |   |     |
| -2260TR    |             | 5.8            |           | 3.1    |     |      |      |           |     |              |  |     |     |     |   |     |
| -2260T%    |             | 6.8            |           | 3.2    |     |      |      |           |     |              |  |     |     |     |   |     |
| SB -2545TR |             | M2.5X0.45      |           | 4.6    | 3.5 | -    | -    | T8        | 60° |              | 1.2  |     |     |     |   |     |
| -2555TRG   |             |                |           | 5.4    |     |      |      |           |     |              |  |     |     |     |   |     |
| -2555TRP   |             |                |           | 5.5    |     |      |      |           |     |              |  |     |     |     |   |     |
| -2560TR    |             |                |           | 5.7    |     |      |      |           |     |              |  |     |     |     |   |     |
| -2570TR    |             |                |           | 6.8    |     |      |      |           |     |              |  |     |     |     |   |     |
| SB -3060TR |             |                |           | M3X0.5 |     |      |      |           |     |              |  |     | 5.3 |     |   |     |
| -3060TRG   |             | 5.9            |           |        |     |      |      |           |     |              |  |     |     |     |   |     |
| -3060TRP   |             | 6.0            |           |        |     |      |      |           |     |              |  |     |     |     |   |     |
| -3065TRP   |             | 6.5            |           |        | 4.0 | 8IP  | 1.2  |           |     |              |  |     |     |     |   |     |
| -3070TRG   |             | 4.2            | T10       |        |     |      |      |           |     |              |  |     |     |     |   |     |
| -3070TR%   | 7.0         | 4.0            | T8        |        | 1.2 |      |      |           |     |              |  |     |     |     |   |     |
| -3070TRP   |             | 4.2            | 10IP      |        | 55° | 2.0  |      |           |     |              |  |     |     |     |   |     |
| -3076TRP   | 7.6         | 3.9            |           |        |     |      |      |           |     |              |  |     |     |     |   |     |
| -3080TR    | 8.0         | 4.2            | T10       |        | 60° |      |      |           |     |              |  |     |     |     |   |     |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| <b>SPARE PARTS</b>   | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

**Screws / Bolts**

| Drawing            | Part Number        | Dimension (mm) |      |      |   |      |      | Angle (°) |     | Torque (N • m)            | Notes   |     |      |     |      |     |     |
|--------------------|--------------------|----------------|------|------|---|------|------|-----------|-----|---------------------------|---|-----|------|-----|------|-----|-----|
|                    |                    | A              | B    | C    | D | E    | F    | α         | θ   |                           |   |     |      |     |      |     |     |
| <p>SB-40125TRN</p> | <b>SB -3573TRP</b> | M3.5X0.6       | 7.3  | 5.0  | - | -    | 10IP | -         | 60° | 2                         | R Shows Right-hand Thread<br>○○IP Shows Torx Plus |     |      |     |      |     |     |
|                    | <b>-3580TR</b>     |                | 8.0  | 5.3  |   |      | T15  |           |     | 3.5                       |   |     |      |     |      |     |     |
|                    | <b>-3590TRP</b>    |                | 9.0  |      |   |      | 15IP |           |     | 4.0                       |   |     |      |     |      |     |     |
|                    | <b>-3592TR</b>     |                | 9.2  | 5.1  |   |      | T10  |           |     | 2.0                       |   |     |      |     |      |     |     |
|                    | <b>SB -4050TRN</b> | M4X0.5         | 4.6  | 5.1  | - | -    | T10  | 57°       | 2.0 |                           |   |     |      |     |      |     |     |
|                    | <b>-4060TR</b>     | M4X0.7         | 5.9  | 5.5  |   |      | -    | -         | T15 | 60°                       |   | 3.5 |      |     |      |     |     |
|                    | <b>-4065TR</b>     |                | 6.7  |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>-4070TRG</b>    |                | 7.0  |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>-4070TRN</b>    |                | 7.7  |      |   |      |      |           |     |                           |   |     | 5.4  |     |      |     |     |
|                    | <b>-4070TRS</b>    | 6.7            | -    | -    |   |      | T10  | 2.0       |     |                           |   |     |      |     |      |     |     |
|                    | <b>-4075TRP</b>    | 7.5            |      |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>-4082TPR</b>    | 8.2            | 5.5  | 15IP |   |      | -    | -         | T15 | -                         |   | 3.5 |      |     |      |     |     |
|                    | <b>-4085TR</b>     | M4X0.7         | 8.5  | 5.7  |   |      |      |           |     |                           |   |     | 15IP |     |      |     |     |
|                    | <b>-4085TRP</b>    |                |      |      |   |      |      |           |     |                           |   |     |      | 9.0 | 5.5  |     |     |
|                    | <b>-4090TRP</b>    | 12.0           | 5.1  | T15  |   |      |      |           |     |                           |   |     | 50°  |     |      |     |     |
|                    | <b>-4090TRPN</b>   | 12.5           | 5.2  |      |   |      |      |           |     |                           |   |     | 60°  |     |      |     |     |
|                    | <b>-40120TR</b>    | 14.0           | 5.5  |      |   |      |      |           |     |                           |   |     | 75°  |     |      |     |     |
|                    | <b>-40140TR</b>    | 14.0           | 6.7  |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>SB -4570TRN</b> | M4.5X0.5       | 6.8  | 6.0  |   |      |      |           |     |                           |   |     | -    | -   | T10  | 57° | 2.0 |
|                    | <b>-45130TR</b>    | M4.5X0.75      | 13.0 | 6.6  |   |      |      |           |     |                           |   |     | -    | -   | 20IP | 55° | 4.5 |
|                    | <b>SB -5085TR</b>  | M5X0.8         | 8.5  | 6.8  | - | -    |      |           |     |                           |   |     | T20  | 50° | 4.5  |     |     |
|                    | <b>-50120TRP</b>   |                | 12.0 | 6.8  |   |      | 20IP | 60°       | 4.5 |                           |   |     |      |     |      |     |     |
|                    | <b>-50120TRPH</b>  |                |      |      |   |      | 15IP | 3.5       |     |                           |   |     |      |     |      |     |     |
|                    | <b>-50120TRS</b>   |                | 13.7 | 9.7  |   |      | T20  | 70°       | 4.5 |                           |   |     |      |     |      |     |     |
| <b>-50137K</b>     | 14.0               |                | 7.3  | T15  |   |      | 50°  | 3.5       |     |                           |   |     |      |     |      |     |     |
| <b>-50140TR</b>    |                    |                |      | 20IP |   |      | 4.5  |           |     |                           |   |     |      |     |      |     |     |
| <b>-50140TRP</b>   |                    |                |      | T25  |   |      | 6.0  |           |     |                           |   |     |      |     |      |     |     |
| <b>SB -60120TR</b> | M6X1.0             | 12.0           | 8.5  | -    | - | 20IP | 60°  | 4.5       |     |                           |   |     |      |     |      |     |     |
| <b>-60130TRP</b>   |                    | 13.0           |      |      |   | 6.0  |      |           |     |                           |   |     |      |     |      |     |     |
| <b>-60200TRP</b>   |                    | 20.0           |      |      |   | 6.0  |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>SB -4070TRW</b> | M4X0.7         | 6.7  | 5.5  | - | -    | T8   | 60°       | 1.2 | R Shows Right-hand Thread |   |     |      |     |      |     |     |
|                    | <b>-4590TRWN</b>   | M4.5X0.75      | 9.3  | 5.6  |   |      | T10  | 57°       | 2.0 |                           |   |     |      |     |      |     |     |
|                    | <b>SC -30067</b>   | M3X0.35        | 6.7  | 4.4  | - | -    | T8   | 60°       | 1.2 | -                         |   |     |      |     |      |     |     |
|                    | <b>-35085</b>      | M3.5X0.35      | 8.5  | 5.7  |   |      | T10  |           | 2.0 |                           |   |     |      |     |      |     |     |
|                    | <b>-40100</b>      | M4X0.5         | 10.0 | 6.0  |   |      | T15  |           | 3.5 |                           |   |     |      |     |      |     |     |
|                    | <b>-50130</b>      | M5X0.5         | 13.0 | 6.6  |   |      | T20  |           | 4.5 |                           |   |     |      |     |      |     |     |
|                    | <b>-60160</b>      | M6X0.75        | 16.0 | 8.0  |   |      | T25  |           | 6.0 |                           |   |     |      |     |      |     |     |
|                    | <b>-60210</b>      |                | 21.0 | 9.6  |   |      | T30  |           | 8.0 |                           |   |     |      |     |      |     |     |
|                    | <b>SCR -01</b>     | M2.5X0.45      | 6.6  | 3.6  | - | -    | T7   | 60°       | 0.8 | -                         |   |     |      |     |      |     |     |
|                    | <b>-03</b>         | M3X0.5         | 8.4  | 4.6  |   |      | T9   |           | 1.6 |                           |   |     |      |     |      |     |     |
|                    | <b>-04</b>         | M2.5X0.45      | 4.6  | 3.6  |   |      | -    |           | -   |                           | T7  |     |      |     |      |     |     |
|                    | <b>-05</b>         |                |      |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>-16</b>         | M3.5X0.6       | 6.9  | 5.0  |   |      | -    |           | -   |                           | T10   |     |      |     |      |     |     |
|                    | <b>-30</b>         |                |      |      |   |      |      |           |     |                           |   | 8.9 |      |     |      |     |     |
|                    | <b>SE -3070TRP</b> | M3X0.5         | 7.0  | 4.3  | - | -    | 9IP  | 43°       | 1.7 | ○○IP Shows Torx Plus      |   |     |      |     |      |     |     |
|                    | <b>-40050TRN</b>   | M4X0.7         | 5.0  | 5.0  |   |      | -    |           | -   |                           | T15   |     |      |     |      |     |     |
|                    | <b>-40055TR</b>    |                | 5.5  |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>-40068TR</b>    |                | 6.8  |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>-40080TR</b>    |                | 8.0  |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>-40090TR</b>    |                | 9.0  |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |
|                    | <b>-40100TR</b>    |                | 10.0 |      |   |      |      |           |     |                           |   |     |      |     |      |     |     |

P  
SPARE PARTS

**Screws / Bolts**

| Drawing | Part Number        | Dimension (mm) |        |         |           |        |     | Angle (°) |     | Torque (N•m) | Notes   |
|---------|--------------------|----------------|--------|---------|-----------|--------|-----|-----------|-----|--------------|---|
|         |                    | A              | B      | C       | D         | E      | F   | α         | θ   |              |   |
|         | <b>SE -40120TR</b> | M4X0.7         | 12.0   | 5.6     | -         | -      | -   | T15       | -   | 3.5          | -   |
|         | <b>-50125TR</b>    | M5X0.8         | 12.5   | 6.8     | -         | -      | -   | T20       | 60° | 4.5          |   |
|         | <b>SH -50150TR</b> | M5X0.8         | 15.1   | 7.3     | 3.1       | -      | -   | T20       | -   | 4.5          | -   |
|         | <b>SP 3X4</b>      | M3X0.5         | 4.0    | 4.0     | -         | -      | -   | 90°       | -   | -            | With Additional Machining Below the Fillister Head<br><br>Cross Recessed Flat Head Screw equivalent to JIS...B-1111 |
|         | <b>3X6</b>         |                | 6.0    | -       | -         | -      |     |           |     |              |   |
|         | <b>3X8</b>         |                | 8.0    | 6.0     | -         | -      |     |           |     |              |   |
|         | <b>3X10</b>        |                | 10.0   | -       | -         | -      |     |           |     |              |   |
|         | <b>SP 4X9</b>      | M4X0.7         | 9.0    | 5.6     | -         | 2.0    | -   | -         | 90° | -            | -   |
|         | <b>SP 8X35</b>     | M8X1.25        | 35.0   | 11.0    | 4.4       | 5.0    | -   | -         | 90° | -            | -   |
|         | <b>SPW -6045</b>   | M6X0.75        | 9.0    | 7.5     | M4.5X0.75 | 4.5    | -   | -         | -   | -            | A Shows External<br>D Shows Internal<br>External and Internal Threads are Both Right-hand Threads                   |
|         | <b>-7050</b>       | M7X0.75        | 9.0    | 8.8     | M5X0.8    | 5.0    | -   | -         | -   |              |   |
|         | <b>SS -4N</b>      | M5.5X0.5       | 8.5    | 6.6     | M4X0.7    | 4.0    | -   | -         | -   |              |   |
|         | <b>SV -60136R</b>  | M6X1.0         | 13.6   | 6.3     | -         | 4.0    | -   | -         | -   | -            | Hexagon Socket  |
|         | <b>-60136TR</b>    |                |        |         |           | -      | T20 | -         | 6°  | 4.5          | Torx  |
|         | <b>TH 8X15</b>     | M8X1.25        | 20.0   | 8.5     | -         | 4.0    | -   | -         | -   | -            | -   |
|         | <b>W 6X17</b>      | M6X1.0         | 17.0   | -       | -         | -      | T20 | -         | -   | 4.5          | -   |
|         | <b>6X18N</b>       |                | 18.0   | -       | -         | -      | T15 | -         | -   | 3.5          |   |
|         | <b>8X16</b>        |                | 16.0   | -       | -         | -      | T25 | -         | -   | 6.0          |   |
|         | <b>W 6X18</b>      | M6X1.0         | 17.5   | -       | -         | 3.0    | -   | -         | -   | -            | -   |
|         | <b>6X20</b>        | M6X1.0         | 20.5   | -       | -         | -      | -   | -         | -   | -            |   |
|         | <b>8X18</b>        | M8X1.25        | 18.0   | -       | -         | 4.0    | -   | -         | -   | -            |   |
|         | <b>*8X21</b>       | M8X1.0         | 21.0   | -       | -         | -      | -   | -         | -   | -            |   |
|         | <b>W 10X31</b>     | M10X1.0        | 31.0   | M10X1.5 | -         | 5.0    | -   | -         | -   | -            | -   |
|         | <b>XNS 610</b>     | 3/8-24UNF      | 1.250" | 0.500"  | -         | 0.188" | -   | -         | -   | -            | Differential Screw  |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| SPARE PARTS          | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

**Pins**

| Drawing | Part Number | Dimension (mm) |      |      |   |     |   | Angle (°) |     | Notes |
|---------|-------------|----------------|------|------|---|-----|---|-----------|-----|-------|
|         |             | A              | B    | C    | D | E   | F | α         | θ   |       |
|         | LL -03      | 7.8            | 6.3  |      |   |     |   |           |     |       |
|         | -03N        |                |      |      |   |     |   |           |     |       |
|         | -03S        | 11.1           | 8.9  | -    | - | -   | - | -         | -   | -     |
|         | -03SN       |                |      |      |   |     |   |           |     |       |
|         | -03T        | 8.3            | 8.9  |      |   |     |   |           |     |       |
| -03TN   |             |                |      |      |   |     |   |           |     |       |
|         | LL -05C     | 10.7           | 11.7 |      |   |     |   | 12°       |     |       |
|         | -1C         | 13.0           | 13.3 | -    | - | -   | - | 14°       | -   | -     |
|         | -1CN        |                |      |      |   |     |   |           |     |       |
|         | -2C         | 18.8           | 17.6 |      |   |     |   | 14°       |     |       |
|         | LL -1       | 10.3           | 12.0 |      |   |     |   |           |     |       |
|         | -1K         | 10.0           | 12.0 |      |   |     |   |           |     |       |
|         | -1N         | 10.3           | 12.0 |      |   |     |   |           |     |       |
|         | -1D         | 12.3           | 12.0 |      |   |     |   |           |     |       |
|         | -1DN        |                |      |      |   |     |   |           |     |       |
|         | -2          | 13.5           | 13.0 |      |   |     |   |           |     |       |
|         | -2K         | 13.3           | 13.2 |      |   |     |   |           |     |       |
|         | -2N         | 13.5           | 13.0 | -    | - | -   | - | -         | -   | -     |
|         | -3          | 16.4           | 13.0 |      |   |     |   |           |     |       |
|         | -3K         | 16.0           | 14.8 |      |   |     |   |           |     |       |
|         | -3N         | 16.4           | 13.0 |      |   |     |   |           |     |       |
|         | -4          | 16.4           | 14.7 |      |   |     |   |           |     |       |
|         | -5          | 17.1           | 16.7 |      |   |     |   |           |     |       |
| -5N     | 17.1        | 16.7           |      |      |   |     |   |           |     |       |
| -6      | 20.7        | 21.0           |      |      |   |     |   |           |     |       |
|         | LP -2S      | 3.65           | 20.0 | -    | - | -   | - | -         | -   | -     |
|         | -6S         | 3.65           | 25.0 |      |   |     |   |           |     |       |
|         | LPA -11     |                | 11.0 |      |   |     |   |           |     |       |
|         | -13         | 2.8            | 13.0 | 4.2  | - | -   | - | -         | 60° |       |
|         | -17         |                | 17.0 |      |   |     |   |           |     |       |
|         | LPF -11     |                | 11.0 |      |   |     |   |           |     |       |
|         | -1113       | 2.5            | 13.0 | 3.5  | - | -   | - | -         | 60° |       |
|         | -1117       |                | 17.0 |      |   |     |   |           |     |       |
|         | -13         | 3.8            | 13.0 | 5.5  | - | -   | - | -         |     |       |
| -17     |             | 17.0           |      |      |   |     |   |           |     |       |
|         | PP -4       | 4.6            | 14.0 | 5.5  | - | 3.0 | - | -         | -   | -     |
|         | TS -3S      | M5X0.8         | 15.0 | 3.60 | - | 2.0 | - | -         | -   | -     |
|         | WP -1S      | M5X0.8         | 18.0 | 3.65 | - | -   | - | -         | -   | -     |
|         | WP 5X15     | M5X0.8         | 15.0 | 5.0  | - | -   | - | -         | -   | -     |
|         | WP 5X11     | M5X0.8         | 10.5 | 5.0  | - | 2.0 | - | -         | -   | -     |
|         | LSP -1      | 5.0            | 5.3  |      |   |     |   |           |     |       |
|         | -2          | 6.5            | 5.6  |      |   |     |   |           |     |       |
|         | -3          | 8.25           | 7.9  |      |   |     |   |           |     |       |
|         | -4          | 9.5            | 10.0 |      |   |     |   |           |     |       |
|         | LSP -2K     | 5.1            | 5.2  |      |   |     |   |           |     |       |
|         | -3K         | 6.7            | 5.7  |      |   |     |   |           |     |       |
|         | P -03       | 2.8            | 1.95 |      |   |     |   |           |     |       |
|         | -03S        | 3.5            | 1.95 |      |   |     |   |           |     |       |

P  
SPARE PARTS



**Shims**

| Drawing | Part Number     | Dimension (mm) |      |      |     |     |      | Angle (°) |          | Notes  |
|---------|-----------------|----------------|------|------|-----|-----|------|-----------|----------|--|
|         |                 | A              | B    | C    | D   | E   | F    | $\alpha$  | $\theta$ |  |
|         | <b>DC -42</b>   | 12.0           | 3.2  | 1.2  | 6.0 | 4.4 | R1.2 | -         | -        | Shim Screw : SB-4085TR   |
|         | <b>-44</b>      | 12.55          | 5.0  | 1.5  |     |     | R0.8 |           |          |  |
|         | <b>DC -44-C</b> | 12.55          | 5    | 1.5  | 6   | 4.4 | -    | -         | -        | Shim Screw : SB-4085TR   |
|         | <b>DD -42</b>   | 12.55          | 3.2  | 1.2  | 6.0 | 4.4 | R1.2 | -         | -        | Shim Screw : SB-4085TR   |
|         | <b>-42-16</b>   |                |      |      |     |     | R1.6 |           |          |  |
|         | <b>-43</b>      |                | 3.4  | 1.3  |     |     | R0.8 |           |          |  |
|         | <b>-44</b>      |                | 5.0  | 1.5  |     |     | R0.8 |           |          |  |
|         | <b>DS -42</b>   | 12.0           | 3.2  | 1.2  | 6.0 | 4.4 | R1.2 | -         | -        | Shim Screw : SB-4085TR   |
|         | <b>-44</b>      | 12.55          | 5.0  | 1.5  |     |     | R0.8 |           |          |  |
|         | <b>DT -32</b>   | 8.63           | 3.2  | 0.95 | 5.0 | 3.4 | R1.6 | 3°        | -        | Shim Screw : SB-3080TR   |
|         | <b>-42</b>      | 12.46          |      | 1.2  | 6.0 | 4.4 | R1.2 | -         |          | Shim Screw : SB-4085TR   |
|         | <b>DV -33</b>   | 9.40           | 3.5  | 1.2  | 6.0 | 4.4 | R1.0 | -         | -        | Shim Screw : SB-4085TR   |
|         | <b>DW -42</b>   | 11.5           | 3.2  | 1.2  | 6.0 | 4.4 | R1.2 | 4°        | -        | Shim Screw : SB-4085TR   |
|         | <b>-44</b>      | 12.65          | 5.0  | 1.5  |     |     | R0.8 | -         |          |  |
|         | <b>556 C%L</b>  | 34.0           | 10.0 | 12.7 | 5.6 | 5.0 | R1.6 | 0°        | 55°      | R Shows Right-hand Thread<br>L Shows Left-hand Thread<br>Shim Screw : HH5X16 |
|         | <b>KPS -42</b>  | 11.5           | 3.2  | 2.0  | 7.2 | 3.2 | C1.0 | 7°        | -        | Shim Screw : SP3X8   |
|         | <b>KPT -32</b>  | 8.0            | 3.2  | 1.9  | 7.0 | 3.2 | R0.4 | 11°       | -        | Shim Screw : SP3X8<br>SP3X10   |
|         | <b>-42</b>      | 10.5           | 3.2  | 1.9  | 7.0 | 3.2 | R0.8 | 11°       |          |  |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| <b>SPARE PARTS</b>   | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

Shims

| Drawing       | Part Number      | Dimension (mm) |     |     |       |      |      | Angle (°) |          | Notes   |
|---------------|------------------|----------------|-----|-----|-------|------|------|-----------|----------|---|
|               |                  | A              | B   | C   | D     | E    | F    | $\alpha$  | $\theta$ |   |
|               | <b>KVN -32</b>   | 9.52           | 3.2 | 2.1 | 7.6   | 5.5  | R0.8 | -         | -        | Lock Pin : LP-6S<br>LP-2S   |
|               | <b>LC -32</b>    | 9.47           | 2.4 | 1.3 | 6.18  | 4.68 | R0.8 | -         | -        | Shim Pin : LSP-1  |
|               | <b>-32N</b>      |                |     |     |       |      |      |           |          |   |
|               | <b>-4K</b>       | 11.7           | 3.2 | 1.4 | 8.1   | 6.73 | R0.8 | -         | -        | Shim Pin : LSP-3K   |
|               | <b>-42</b>       | 12.65          | 3.2 | 1.5 | 8.01  | 6.28 | R0.8 | -         | -        | Shim Pin : LSP-2  |
|               | <b>-42N-20</b>   |                |     |     |       |      | R2.0 |           |          |   |
|               | <b>-53</b>       | 15.9           | 4.8 | 1.7 | 10.0  | 8.0  | R1.2 | -         | -        | Shim Pin : LSP-3  |
|               | <b>-53N</b>      | 19             | 4.8 | 2   | 11.61 | 9.3  | R1.6 | -         | -        | Shim Pin : LSP-4  |
|               | <b>-63</b>       |                |     |     |       |      |      |           |          |   |
|               | <b>LC -42N-C</b> | 12.65          | 3.2 | 1.5 | 8.01  | 6.28 | -    | -         | -        | Shim Pin : LSP-2  |
|               | <b>-53N-C</b>    | 15.9           | 4.8 | 1.7 | 10    | 8    | -    | -         | -        | Shim Pin : LSP-3  |
|               | <b>-63-C</b>     | 19             | 4.8 | 2   | 11.61 | 9.3  | -    | -         | -        | Shim Pin : LSP-4  |
|               | <b>LC -42%L</b>  | 12.65          | 3.2 | 1.5 | 8.01  | 6.28 | R0.8 | 10°       | -        | R Shows Right-hand Thread<br>L Shows Left-hand Thread<br>Shim Pin : LSP-2 |
|               | <b>-42N%L</b>    |                |     |     |       |      | R2.0 |           |          |   |
|               | <b>-42N%L-20</b> |                |     |     |       |      | R2.0 |           |          |   |
|               | <b>LD -32</b>    | 9.47           | 2.4 | 1.3 | 6.18  | 4.68 | R0.8 | -         | -        | Shim Pin : LSP-1  |
|               | <b>-32N</b>      |                |     |     |       |      |      |           |          |   |
|               | <b>-4K</b>       | 11.7           | 3.2 | 1.4 | 8.1   | 6.73 | R0.8 | -         | -        | Shim Pin : LSP-3K   |
|               | <b>-4K43</b>     |                | 4.8 | 3.0 | 8.3   | 6.60 | R1.2 |           |          |   |
|               | <b>-42</b>       | 12.65          | 3.2 | 1.5 | 8.01  | 6.28 | R0.8 | -         | -        | Shim Pin : LSP-2  |
|               | <b>-42-20</b>    |                |     |     |       |      | R2.0 |           |          |   |
|               | <b>-43</b>       | 12.65          | 4.8 | 3.1 | 8.5   | 6.28 | R0.8 | -         | -        | Shim Pin : LSP-2  |
| <b>-43-20</b> | R2.0             |                |     |     |       |      |      |           |          |   |
|               | <b>LR -80</b>    | 9.47           | 3.2 | 1.3 | 6.25  | 4.75 | -    | -         | -        | Shim Pin : LSP-1  |
|               | <b>-81</b>       | 12.65          | 3.2 | 1.5 | 8.01  | 6.28 | -    | -         | -        | Shim Pin : LSP-2  |
|               | <b>LR -10C</b>   | 8.5            | 3.2 | 6.3 | 6.3   | 4.7  | -    | -         | -        | Shim Pin : LSP-1  |
|               | <b>-12C</b>      | 10.0           | 3.2 | 6.3 | 6.3   | 4.7  | -    | -         | -        | Shim Pin : LSP-1  |
|               | <b>-16C</b>      | 13.6           | 3.2 | 7.9 | 8.01  | 6.28 | -    | -         | -        | Shim Pin : LSP-2  |
|               | <b>LS -32</b>    | 9.47           | 3.2 | 1.3 | 6.18  | 4.68 | R0.8 | -         | -        | Shim Pin : LSP-1  |
|               | <b>-42</b>       | 12.65          | 3.2 | 1.5 | 8.01  | 6.28 | R0.8 | -         | -        | Shim Pin : LSP-2  |

P  
SPARE PARTS

Shims

| Drawing | Part Number          | Dimension (mm) |      |      |      |      |              | Angle (°) |          | Notes   |
|---------|----------------------|----------------|------|------|------|------|--------------|-----------|----------|---|
|         |                      | A              | B    | C    | D    | E    | F            | $\alpha$  | $\theta$ |   |
|         | LT -3K               | 8.53           | 2.7  | 1.0  | 6.1  | 5.13 | R0.8         | -         | -        | Shim Pin : LSP-2K   |
|         | -32                  | 9.47           | 2.7  | 1.3  | 6.18 | 4.68 | R0.8         | -         | -        | Shim Pin : LSP-1  |
|         | -32N                 |                |      |      |      |      | R2.0         |           |          |   |
|         | -32N-20              |                |      |      |      |      | R2.0         |           |          |   |
|         | -42                  | 12.65          | 3.2  | 1.5  | 8.01 | 6.28 | R0.8         | -         | -        | Shim Pin : LSP-2  |
|         | -42N                 |                |      |      |      |      | R2.0         |           |          |   |
|         | LW -32               | 9.47           | 2.4  | 1.3  | 6.18 | 4.68 | R0.8         | -         | -        | Shim Pin : LSP-1  |
|         | -32N                 |                |      |      |      |      |              |           |          |   |
|         | -42                  | 12.65          | 3.2  | 1.5  | 8.01 | 6.28 | R0.8         | -         | -        | Shim Pin : LSP-2  |
|         | -42N                 |                |      |      |      |      |              |           |          |   |
|         | LW -42 $\frac{1}{2}$ | 12.65          | 3.2  | 1.5  | 8.01 | 6.28 | R0.8         | 10°       | -        | R Shows Right-hand Thread<br>L Shows Left-hand Thread<br>Shim Pin : LSP-2 |
|         | -42N $\frac{1}{2}$   |                |      |      |      |      |              |           |          |   |
|         | MFPN -45             | 17.07          | 3.5  | 1.95 | 9.8  | 7.18 | R3.5         | -         | -        | Shim Screw : SPW-7050   |
|         | MFWN -90             | 15.25          | 4.0  | 2.5  | 9.44 | 7.25 | R3.0<br>R4.0 | -         | -        | Shim Screw : SPW-7050   |
|         | MSD -42              | 10.7           | 3.2  | 1.85 | 7.0  | 3.3  | -            | 20°       | 45°      | Shim Screw : SP3X8  |
|         | MSE -4245S           | 10.3           | 3.2  | 2.0  | 6.0  | 5.0  | -            | 20°       | 45°      | Shim Screw : SP4X9  |
|         | MSE -4215            | 10.53          | 3.2  | 1.5  | 6.4  | 3.4  | -            | 25°       | 15°      | Shim Screw : SP3X8  |
|         | -4245                | 10.53          | 3.2  | 1.5  | 6.4  | 3.4  | -            | 25°       | 45°      | Shim Screw : SP3X8  |
|         | MSO -4T245           | 10.0           | 2.0  | 4.7  | 6.4  | 4.8  | -            | 27°       | 45°      | Shim Screw : SP3X6  |
|         | MSO -5200            | 12.6           | 3.18 | 1.8  | 8.27 | 6.66 | R0.8         | 15°       | -        | Shim Screw : SPW-6045   |
|         | MSP -42              | 11.3           | 3.2  | 1.85 | 7.0  | 3.3  | -            | 15°       | 15°      | Shim Screw : SP3X8  |
|         | MTE -42              | 9.8            | 3.2  | -    | 6.4  | 3.4  | -            | 25°       | -        | Shim Screw : SP3X8  |
|         | MVN -32              | 9.52           | 3.2  | 2.1  | 7.4  | 6.5  | R0.8         | -         | -        | Lock Pin : TS-3S  |

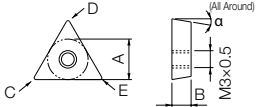
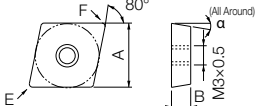
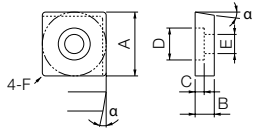
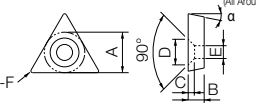
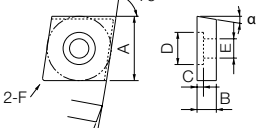
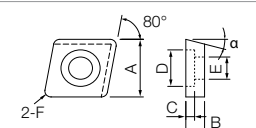
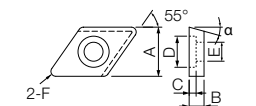
|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| <b>SPARE PARTS</b>   | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

Shims

| Drawing | Part Number | Dimension (mm) |      |      |      |      |      | Angle (°) |          | Notes                  |                    |
|---------|-------------|----------------|------|------|------|------|------|-----------|----------|------------------------|--------------------|
|         |             | A              | B    | C    | D    | E    | F    | $\alpha$  | $\theta$ |                        |                    |
|         | PD -42      | 12.7           | 3.2  | 1.7  | 6.0  | 8.4  | 0.8  | 12°       | -        | Shim Screw : SB-2050TR |                    |
|         | SP -129     | 9.52           | 9.52 | R0.8 | R1.6 | R1.2 | R1.6 | -         | -        | Shim Screw : HH3X12    |                    |
|         | SP -141     | 12.7           | 4.0  | 2.4  | 6.2  | 3.3  | R1.2 | -         | -        | Shim Screw : M3X8      |                    |
|         | -143        | 12.7           | 7.2  | 2.4  | 6.2  | 3.3  | R1.2 | -         | -        | Shim Screw : M3X12     |                    |
|         | -162        | 15.8           | 6.0  | 3.4  | 8.0  | 4.4  | R1.5 | -         | -        | Shim Screw : M4X10     |                    |
|         | SP -148     | 12.7           | 8.8  | 2.4  | 6.2  | 3.3  | R1.2 | -         | -        | Shim Screw : BH3X12    |                    |
|         | SP -219     | 6.35           | 9.52 | R0.8 | R1.2 | R1.6 | -    | -         | -        | Shim Screw : HH3X12    |                    |
|         | SP -221     | 9.52           | 4.0  | 2.5  | 6.5  | 3.5  | R1.2 | -         | -        | Shim Screw : M3X8      |                    |
|         | -223        | 9.52           | 7.2  | 2.5  | 6.5  | 3.5  | R1.2 | -         | -        | Shim Screw : M3X12     |                    |
|         | SP -342     | 12.7           | 6.0  | 2.5  | 6.5  | 3.5  | R1.2 | -         | 75°      | Shim Screw : M3X8      |                    |
|         | -441        | 12.7           | 4.0  | 2.5  | 6.2  | 3.3  | R0.8 | -         | 80°      | Shim Screw : M3X8      |                    |
|         | -443        | 12.7           | 7.2  | 2.5  | 6.2  | 3.3  | R0.8 | -         | 80°      | Shim Screw : M3X12     |                    |
|         | -454        | 15.7           | 8.0  | 3.4  | 8.0  | 4.5  | R1.6 | -         | 80°      | Shim Screw : M4X10     |                    |
|         | SP -429     | 9.52           | 9.52 | -    | -    | -    | R1.2 | -         | -        | Shim Screw : HH3X12    |                    |
|         | SP -521     | 10.0           | 4.0  | 2.5  | 6.2  | 3.3  | R1.0 | -         | -        | Shim Screw : M3X8      |                    |
|         | -523        |                | 7.2  |      |      |      |      |           |          |                        | Shim Screw : M3X12 |
|         | -541        | 12.7           | 4.0  | 2.5  | 6.2  | 3.3  | R1.2 | -         | -        | Shim Screw : M3X8      |                    |
|         | -543        |                | 7.2  |      |      |      |      |           |          |                        | Shim Screw : M3X12 |
|         | SP -826     | 9.52           | 7.9  | -    | -    | -    | -    | -         | -        | Shim Screw : HH3X12    |                    |
|         | -829        | 9.52           | 9.52 | -    | -    | -    | -    | -         | -        |                        |                    |
|         | SP -841     | 12.7           | 4.0  | 2.4  | 6.2  | 3.3  | -    | -         | -        | Shim Screw : M3X8      |                    |
|         | -843        | 12.7           | 7.2  | 2.4  | 6.2  | 3.3  | -    | -         | -        | Shim Screw : M3X12     |                    |
|         | -849        | 12.7           | 8.8  | 2.4  | 6.2  | 3.3  | -    | -         | -        | Shim Screw : BH3X12    |                    |
|         | -861        | 15.8           | 6.0  | 3.4  | 8.0  | 4.4  | -    | -         | -        | Shim Screw : M4X10     |                    |
|         | SP -130A    | 9.52           | 3.2  | -    | R0.4 | R0.8 | R1.2 | 8°        | -        | Shim Screw : BH3X12    |                    |

P  
SPARE PARTS

**Shims**

| Drawing   | Part Number | Dimension (mm) |     |      |      |      |      | Angle (°) |          | Notes               |
|---|-------------|----------------|-----|------|------|------|------|-----------|----------|---------------------|
|   |             | A              | B   | C    | D    | E    | F    | $\alpha$  | $\theta$ |                     |
|    | SP -210A    | 6.35           | 3.2 | R0.4 | R0.8 | R1.2 | -    | 8°        | -        | Shim Screw : BH3X6  |
|    | SP -420A    | 9.52           | 3.2 | -    | -    | R0.8 | R1.2 | 8°        | -        | Shim Screw : BH3X6  |
|    | SP -141P    | 12.7           | 4.0 | 2.4  | 6.2  | 3.3  | R1.2 | 7°        | -        | Shim Screw : M3X8   |
|   | -143P       | 12.7           | 7.2 | 2.4  | 6.2  | 3.3  | R1.2 | 7°        | -        | Shim Screw : M3X12  |
|    | SP -230P    | 8.3            | 3.2 | 2.0  | 7.2  | 3.2  | R0.5 | 7°        | -        | Shim Screw : SP3X10 |
|    | SP -341P    | 12.6           | 4.0 | 2.5  | 6.5  | 3.5  | R1.2 | 7°        | -        | Shim Screw : M3X8   |
|   | SP -441P    | 12.7           | 4.0 | 2.5  | 6.2  | 3.3  | R1.2 | 11°       | -        | Shim Screw : M3X8   |
|   | -443P       | 12.7           | 7.2 | 2.5  | 6.2  | 3.3  | R1.2 | 11°       | -        | Shim Screw : M3X12  |
|  | SP -521P    | 10.0           | 4.0 | 2.5  | 6.2  | 3.3  | R1.2 | 11°       | -        | Shim Screw : M3X8   |
|   | -523P       | 10.0           | 7.2 | 2.5  | 6.2  | 3.3  | R1.2 | 11°       | -        | Shim Screw : M3X12  |

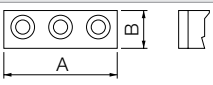
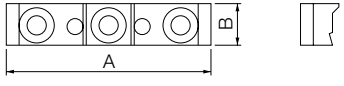
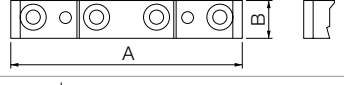
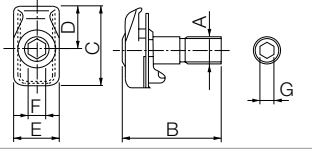
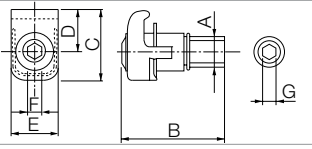
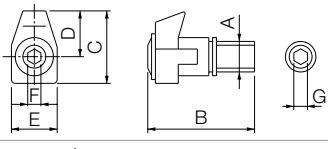
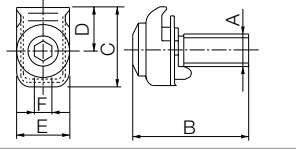
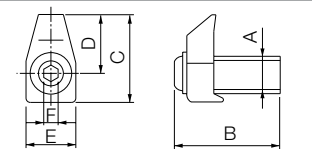
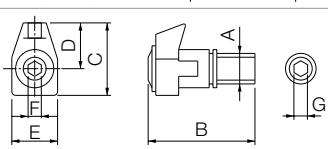
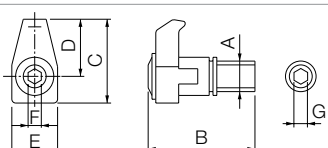
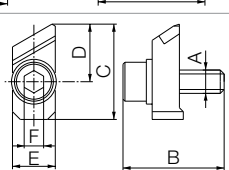
|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| <b>SPARE PARTS</b>   | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

**Shims / Cartridges**

| Drawing | Part Number      | Dimension (mm) |      |      |      |      |      | Angle (°) |     | Notes                                   |
|---------|------------------|----------------|------|------|------|------|------|-----------|-----|---|
|         |                  | A              | B    | C    | D    | E    | F    | α         | θ   |   |
|         | <b>SP -RC</b>    | 12.6           | 3.0  | -    | 7.35 | 3.35 | -    | -         | -   | Shim Screw : SP3X8                      |
|         | <b>SVN -32</b>   | 8.0            | 3.2  | 1.5  | 3.1  | 2.3  | R0.4 | -         | -   | Shim Screw : SB-2050TR                  |
|         | <b>SVN -32N</b>  | 8.2            | 3.2  | 1.5  | 7.0  | 5.9  | R0.6 | -         | -   | Shim Screw : SS-4N                      |
|         | <b>SVN -32S</b>  | 8.2            | 3.2  | 1.5  | 7    | 5.9  | R0.2 | -         | -   | Shim Screw : SS-4N<br>1-corner use only |
|         | <b>TN -32</b>    | 9.52           | 3.2  | 6.5  | 7.0  | 4.2  | R0.4 | -         | -   | Shim Screw : SP3X8                      |
|         | <b>-43</b>       | 12.70          | 3.2  | 8.1  | 7.0  | 4.2  | R0.5 | -         | -   |   |
|         | <b>TNW -32</b>   | 9.52           | 3.2  | 4.8  | 7.0  | 4.2  | -    | -         | -   | Shim Screw : SP3X8                      |
|         | <b>WTN -33</b>   | 9.52           | 4.76 | 2.5  | 7.0  | 5.3  | R0.8 | -         | -   | Shim Pin : WP-1S                        |
|         | <b>-33-20</b>    |                |      |      |      |      | R2.0 |           |     |   |
|         | <b>WWN -42</b>   | 12.7           | 3.0  | 1.4  | 7.0  | 5.3  | R1.2 | -         | -   | Shim Pin : WP5X15                       |
|         | <b>WWP -42</b>   | 12.7           | 3.0  | 1.5  | 8.3  | 5.3  | R1.2 | 11°       | -   | Shim Pin : WP5X11                       |
|         | <b>-42-16</b>    |                |      |      |      |      | R1.6 |           |     |   |
|         | <b>MAP -2216</b> | -              | 9.0  | 11.0 | 19.8 | -    | -    | 20°       | -   | Clamp Screw : SB-40140TR                |
|         | <b>MAP -2506</b> | -              | 9.5  | 14.9 | 20   | -    | -    | 5°        | -   | Clamp Screw : SB-40140TR                |
|         | <b>LSD -445R</b> | 12.7           | 13.0 | 20.0 | 26.5 | -    | -    | 20°       | 45° | Dimension A shows Insert I.D.           |
|         | <b>LSE -445R</b> | 12.7           | 13.0 | 19.5 | 26.0 | -    | -    | 20°       | 45° |   |
|         | <b>LSO -445R</b> | 13.494         | 12.0 | 21.3 | 23.5 | -    | -    | 27°       | 45° |   |
|         | <b>LSP -415R</b> | 12.7           | 13.0 | 18.0 | 26.0 | -    | -    | 15°       | 15° |   |
|         | <b>LTE -490R</b> | 12.7           | 12.0 | 17.0 | 30.0 | -    | -    | 15°       | -   | Dimension A shows Insert I.D.           |

P  
SPARE PARTS

**Clamp Sets**

| Drawing   | Part Number     | Dimension (mm) |      |      |       |      |     |     | Notes  |
|---|-----------------|----------------|------|------|-------|------|-----|-----|--|
|   |                 | A              | B    | C    | D     | E    | F   | G   |  |
|    | <b>BCS -1</b>   | 64.0           | 13.0 | -    | -     | -    | -   | -   | -  |
|   | <b>-5</b>       | 48.0           | 16.5 | -    | -     | -    | -   | -   |  |
|    | <b>BCS -2</b>   | 74.0           | 15.0 | -    | -     | -    | -   | -   | -  |
|   | <b>-3</b>       | 88.0           | 16.0 | -    | -     | -    | -   | -   |  |
|    | <b>BCS -4</b>   | 98.0           | 16.0 | -    | -     | -    | -   | -   | -  |
|    | <b>CE -010</b>  | M8X1.25        | 28.0 | 24.0 | 12.8  | 13.0 | 4.0 | 4.0 | G : Indicates hexagon hole two side widths of back side of bolts |
|   | <b>-220</b>     |                |      | 27.0 | 15.8  | 15.0 |     |     |  |
|    | <b>CE -020</b>  | M8X1.25        | 30.0 | 17.0 | 10.5  | 12.7 | 4.0 | 4.0 | G : Indicates hexagon hole two side widths of back side of bolts |
|    | <b>CE -030</b>  | M8X1.25        | 30.0 | 19.0 | 12.5  | 12.7 | 4.0 | 4.0 | G : Indicates hexagon hole two side widths of back side of bolts |
|   | <b>-040</b>     |                |      | 22.5 | 16.0  |      |     |     |  |
|   | <b>CE -320</b>  | M6X1.0         | 24.5 | 18.2 | 9.7   | 12.7 | 4.0 | -   | -  |
|  | <b>CE -360S</b> | M6X1.0         | 16.0 | 18.0 | 10.55 | 12.4 | 4.0 | -   | -  |
|  | <b>CE -030A</b> | M8X1.25        | 30.0 | 20.0 | 13.7  | 12.7 | 4.0 | -   | G : Indicates hexagon hole two side widths of back side of bolts |
|  | <b>CE -410</b>  | M8X1.25        | 30.0 | 26.0 | 19.5  | 12.7 | 4.0 | 4.0 | G : Indicates hexagon hole two side widths of back side of bolts |
|   | <b>-430</b>     |                |      | 29.0 | 22.5  |      |     |     |  |
|  | <b>CP -RC%</b>  | M6X1.0         | 20.0 | 24.5 | 14.8  | 11.0 | 5.0 | -   | R Shows Right-hand Thread<br>L Shows Left-hand Thread            |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| SPARE PARTS          | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

**Clamp Sets**

| Drawing | Part Number       | Dimension (mm) |      |      |      |      |     |      | Notes   |
|---------|-------------------|----------------|------|------|------|------|-----|------|---|
|         |                   | A              | B    | C    | D    | E    | F   | G    |   |
|         | <b>CPS -1</b>     | M3X0.5         | 9.0  | 10.0 | 5.2  | 5.5  | 2.0 | -    | -   |
|         | <b>CPS -2</b>     | M5X0.8         | 14.5 | 14.0 | 8.5  | 6.8  | 2.5 | 2.5  | G : Indicates hexagon hole two side widths of back side of bolts  |
|         | <b>-2P</b>        |                | 18.0 |      |      |      |     |      |   |
|         | <b>-3</b>         | M6X1.0         | 19.0 | 16.5 | 10.0 | 8.8  | 3.0 | 3.0  |   |
|         | <b>CPS -2S</b>    | M5X0.8         | 13.5 | 14.0 | 8.5  | 6.8  | T15 | 2.0  | G : Indicates hexagon hole two side widths of back side of bolts  |
|         | <b>-2TR</b>       |                | 15.0 |      |      |      |     |      |   |
|         | <b>CPS -4V</b>    | M4X0.7         | 8.9  | 11.3 | 7.3  | 8.0  | T10 | -    | G : Indicates hexagon hole two side widths of back side of bolts  |
|         | <b>-5F</b>        | M5X0.8         | 11.3 | 12.7 | 7.5  | 10.3 | T15 | 2.5  |   |
|         | <b>-5S</b>        |                | 18.0 | 15.0 | 9.5  | 11.0 |     | 2.0  |   |
|         | <b>-5V</b>        |                | 13.5 | 12.7 | 7.5  | 10.3 | 2.5 |      |   |
|         | <b>CPS -6F</b>    | M6X1.0         | 16.5 | 15.6 | 9.5  | 12.2 | 3.0 | -    | G : Indicates hexagon hole two side widths of back side of bolts  |
|         | <b>-6M</b>        |                |      | 17.5 | 11.0 | 13.0 |     |      |   |
|         | <b>-6S</b>        |                |      | 18.5 | 18.0 | 12.0 |     | 12.0 |   |
|         | <b>-6V</b>        |                |      | 15.6 | 9.5  | 12.2 |     |      |   |
|         | <b>-8V</b>        | M8X1.25        | 24.0 | 20.8 | 13.0 | 15.5 | 4.0 | 4.0  |   |
|         | <b>CPS -5E</b>    | M5X0.8         | 13.5 | 17.5 | 12.0 | 9.0  | T15 | 2.5  | G : Indicates hexagon hole two side widths of back side of bolts  |
|         | <b>CPS -5%</b>    | M5X0.8         | 18.0 | 17.5 | 12.0 | 9.0  | 2.5 | 2.5  | G : Indicates hexagon hole two side widths of back side of bolts<br>R Shows Right-hand Thread<br>L Shows Left-hand Thread |
|         | <b>LGBA-16% S</b> | M5X0.8         | 15.0 | 16.1 | 11.2 | 9.85 | T15 | 2.0  | G : Indicates hexagon hole two side widths of back side of bolts<br>R Shows Right-hand Thread<br>L Shows Left-hand Thread |
|         | <b>-22% S</b>     |                |      | 17.6 | 12.7 |      |     |      |   |
|         | <b>WCS -1N</b>    | M6X1.0         | 21.0 | 15.7 | -    | 15.0 | 3.0 | -    | -   |
|         | <b>WCS -8</b>     | M6X1.0         | 21.0 | 19.4 | -    | 15.0 | 3.0 | -    | -   |

P  
SPARE PARTS



■ Clamps

| Drawing | Part Number     | Dimension (mm) |       |      |      |                            |      | Angle (°) |          | Notes                                   |
|---------|-----------------|----------------|-------|------|------|----------------------------|------|-----------|----------|---|
|         |                 | A              | B     | C    | D    | E                          | F    | $\alpha$  | $\theta$ |   |
|         | <b>C 08R</b>    | 7.6            | 8.7   | 8.9  | 3.6  | M5X0.8<br>(L-hand Thread)  | -    | 10°       | -        | Clamp Screw : W6X18N                    |
|         | <b>C 09N</b>    | 6.0            | 9.0   | 9.8  | 5.3  | M6X1.0<br>(L-hand Thread)  | -    | 10°       | -        | Clamp Screw : W6X18N                    |
|         | <b>C 17R</b>    | 12.2           | 20.0  | 14.3 | 8.5  | M8X1.25<br>(L-hand Thread) | -    | 12°       | -        | Clamp Screw : W6X18N                    |
|         | <b>C 20R</b>    | 15.1           | 15.5  | 15.0 | 7.5  | 5.3                        | -    | 10°       | -        | Clamp Screw : TX8X15                    |
|         | <b>CH -20R</b>  | 13.1           | 15.5  | 14.8 | 7.5  | 5.3                        | -    | 10°       | -        | Clamp Screw : TX8X15                    |
|         | <b>C 25R</b>    | 13.2           | 15.5  | 15.0 | 7.5  | 5.3                        | -    | 10°       | -        | Clamp Screw : TX8X15                    |
|         | <b>CE -111</b>  |                |       |      |      | 3.0                        |      | -         | -        | Right-hand                              |
|         | <b>-121</b>     | 35.0           | 25.0  | 10.0 | 8.0  |                            | 10.0 |           |          | Left-hand                               |
|         | <b>-131</b>     |                |       |      |      | 4.5                        |      | -         | -        | Right-hand                              |
|         | <b>-141</b>     |                |       |      |      |                            |      |           |          | Left-hand                               |
|         | <b>CGA -3%</b>  | 24.0           | 17.66 | 12.0 | 6.2  | 1.9                        | 11.0 | -         | -        | R Shows Right-hand<br>L Shows Left-hand |
|         | <b>-4%</b>      | 24.0           | 17.66 | 12.0 | 6.2  | 2.9                        | 11.0 | -         | -        |   |
|         | <b>-5%</b>      | 27.5           | 18.66 | 12.0 | 6.2  | 3.9                        | 14.5 | -         | -        |   |
|         | <b>CGB %</b>    | 19.0           | 14.0  | 8.2  | 6.35 | 9.5                        | -    | -         | -        | R Shows Right-hand<br>L Shows Left-hand |
|         | <b>CGH -1%</b>  |                |       |      |      | 3.0                        |      |           |          | R Shows Right-hand<br>L Shows Left-hand |
|         | <b>-2%</b>      | 25.0           | 22.0  | 8.0  | 6.05 |                            | 5.5  |           |          |   |
|         | <b>-3%</b>      | 30.0           | 23.0  | 8.5  |      |                            | 6.0  | 7.0       |          |   |
|         | <b>CGIA -3R</b> |                |       | 10.5 |      | 1.8                        |      |           |          | -                                       |
|         | <b>-4R</b>      | 10.7           | 17.0  | 11.5 | 5.2  | 2.5                        | 2.0  |           |          |   |
|         | <b>-5R</b>      | 15.7           |       | 10.5 |      | 3.5                        | 7.0  |           |          |   |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| <b>SPARE PARTS</b>   | <b>P</b> |
| TECHNICAL            | <b>R</b> |
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**Clamps / Chipbreakers**

| Drawing | Part Number   | Dimension (mm) |       |      |                            |      |   | Angle (°) |          | Notes      |
|---------|---------------|----------------|-------|------|----------------------------|------|---|-----------|----------|------------|
|         |               | A              | B     | C    | D                          | E    | F | $\alpha$  | $\theta$ |            |
|         | CP -2D        |                | 10.0  | 21.6 |                            | 10.4 |   |           |          |            |
|         | -3D           | -              | 12.0  | 27.6 | -                          | 14.0 | - | -         | -        | -          |
|         | -5D           |                | 13.0  | 32.0 |                            |      |   |           |          |            |
|         | CP -2D%/-JCT  | -              | 13.5  | 25.3 | -                          | 21.5 | - | -         | -        |            |
|         | CP -3D-%/-JCT |                |       | 26.4 |                            | 17.9 |   |           |          |            |
|         | -4D-%/-JCT    | -              | 13.1  | 28.4 | -                          | 18.2 | - | -         | -        |            |
|         | -5D-JCT       |                |       | 31.9 |                            | 21.5 |   |           |          |            |
|         | CP -8TE       | 17.9           | 12.0  | 12.0 | M8X1.25<br>(L-hand Thread) | 10.0 | - | 15°       | -        | -          |
|         | CP -8W        | 20.9           | 12.0  | 8.0  | M8X1.25<br>(L-hand Thread) | 13.0 | - | 3°        | -        | -          |
|         | CB -11        | 11.5           | 12.7  | 3.5  | -                          | -    | - | -         | -        |            |
|         | -51           | 16.0           | 15.6  | 3.5  | -                          | -    | - | -         | -        |            |
|         | CB -12        | 14.0           | 12.7  | 3.5  | -                          | -    | - | -         | -        | Right-hand |
|         | -13           | 14.0           | 12.7  | 3.5  | -                          | -    | - | -         | -        | Left-hand  |
|         | CB -14        | 18.51          | 12.7  | 3.5  | -                          | -    | - | -         | -        | Right-hand |
|         | -15           | 18.51          | 12.7  | 3.5  | -                          | -    | - | -         | -        | Left-hand  |
|         | CB -16        | 18.0           | 12.7  | 3.5  | -                          | -    | - | -         | -        |            |
|         | -17           | 21.0           | 15.6  | 3.5  | -                          | -    | - | -         | -        |            |
|         | CB -S3220     | 7.94           | 7.94  | 1.0  | 2.0                        | -    | - | -         | -        |            |
|         | -S4220        | 11.12          | 11.12 | 2.0  | 2.0                        | -    | - | -         | -        |            |
|         | CB -T2212     | 7.48           | -     | 1.5  | 1.2                        | -    | - | -         | -        |            |
|         | -T3220        | 10.87          | -     | 2.0  | 2.0                        | -    | - | -         | -        |            |

P  
SPARE PARTS

Wrenches

| Drawing | Part Number | Dimension (mm) |        |    |     |      |      | Angle (°) |   | Notes   |                      |
|---------|-------------|----------------|--------|----|-----|------|------|-----------|---|---|----------------------|
|         |             | A              | B      | C  | D   | E    | F    | α         | θ |   |                      |
|         | DT -7       | 44             | 16     | -  | 114 | -    | T7   | -         | - | Torx  |                      |
|         | DT -8       | 70             | 26     | -  | 150 | -    | T8   | -         | - |   |                      |
|         | DT -10      | 70             | 29     | -  | 160 | -    | T10  | -         | - | Torx  |                      |
|         | DT -15      | 70             | 32     | -  | 170 | -    | T15  | -         | - |   |                      |
|         | DT -20      | 90             | 32     | -  | 190 | -    | T20  | -         | - |   |                      |
|         | DT -25      | 82             | 36     | -  | 190 | -    | T25  | -         | - |   |                      |
|         | DTM -6      | 40             | 17     | -  | 115 | -    | T6   | -         | - | Torx<br>Top of Wrench is Magnetized                 |                      |
|         | DTM -7      | 44             | 17     | -  | 119 | -    | T7   | -         | - |   |                      |
|         | DTM -8      | 70             | 24     | -  | 150 | -    | T8   | -         | - |   |                      |
|         | DTM -10     | 70             | 28     | -  | 167 | -    | T10  | -         | - |   |                      |
|         | DTM -15     | 70             | 31     | -  | 174 | -    | T15  | -         | - |   |                      |
|         | DTP -6      | 73             | 23     | -  | 150 | -    | 6IP  | -         | - | OOIP Shows Torx Plus                                |                      |
|         | DTP -7      | 73             | 23     | -  | 150 | -    | 7IP  | -         | - |   |                      |
|         | DTP -9      | 61             | 30     | -  | 174 | -    | 9IP  | -         | - |   |                      |
|         | DTP -15     | 81             | 33     | -  | 186 | -    | 15IP | -         | - |   |                      |
|         | DTP -20     | 100            | 33     | -  | 206 | -    | 20IP | -         | - |   |                      |
|         | DTPM -8     | 70             | 24     | -  | 150 | -    | 8IP  | -         | - | OOIP Shows Torx Plus<br>Top of Wrench is Magnetized |                      |
|         | DTPM -10    | 70             | 28     | -  | 165 | -    | 10IP | -         | - |   |                      |
|         | DTPM -15    | 70             | 31     | -  | 174 | -    | 15IP | -         | - |   |                      |
|         | FH -2       | 40             | 20     | -  | 71  | 2.0  | -    | -         | - | Hexagon   |                      |
|         | FH -2.5     | 45             | 20     | -  | 76  | 2.5  | -    | -         | - |   |                      |
|         | FT -6       | 35             | 15     | -  | 65  | -    | T6   | -         | - | Torx  |                      |
|         | FT -7       | 34             | 15     | -  | 62  | -    | T7   | -         | - |   |                      |
|         | FT -8       | 40             | 20     | -  | 74  | -    | T8   | -         | - |   |                      |
|         | FT -10      | 40             | 20     | -  | 74  | -    | T10  | -         | - |   |                      |
|         | FT -15      | 45             | 25     | 10 | 80  | -    | T15  | -         | - | Torx  |                      |
|         | FTP -5      | -              | -      | -  | -   | -    | 5IP  | -         | - | OOIP Shows Torx Plus                                |                      |
|         | FTP -6      | 34             | 15     | -  | 62  | -    | 6IP  | -         | - |   |                      |
|         | FTP -7      | 34             | 15     | -  | 62  | -    | 7IP  | -         | - |   |                      |
|         | LTP -10     | 51             | 17     | -  | -   | -    | 10IP | -         | - | OOIP Shows Torx Plus                                |                      |
|         | LTP -15     | 54             | 18     | -  | -   | -    | 15IP | -         | - |   |                      |
|         | LTW -8SS    | 43             | 6      | -  | -   | -    | T8   | -         | - | Torx  |                      |
|         | LTW -10S    | 62             | 10     | -  | -   | -    | T10  | -         | - |   |                      |
|         | LTW -10SS   | 47             | 7      | -  | -   | -    | T10  | -         | - |   |                      |
|         | LTW -15S    | 62             | 10     | -  | -   | -    | T15  | -         | - |   |                      |
|         | LTW -20     | 58             | 19     | -  | -   | -    | T20  | -         | - |   |                      |
|         | LTW -25     | 65             | 20     | -  | -   | -    | T25  | -         | - |   |                      |
|         | LW -1.5     | 45             | 14     | -  | -   | 1.5  | -    | -         | - | Hexagon   |                      |
|         | LW -2       | 50             | 16     | -  | -   | 2.0  | -    | -         | - |   |                      |
|         | LW -2.5     | 56             | 18     | -  | -   | 2.5  | -    | -         | - |   |                      |
|         | LW -3       | 63             | 20     | -  | -   | 3.0  | -    | -         | - |   |                      |
|         | LW -4       | 70             | 25     | -  | -   | 4.0  | -    | -         | - |   |                      |
|         | LW -4.5     | 78             | 26     | -  | -   | 4.5  | -    | -         | - |   |                      |
|         | LW -5       | 80             | 28     | -  | -   | 5.0  | -    | -         | - |   |                      |
|         | LW -6       | 90             | 32     | -  | -   | 6.0  | -    | -         | - |   |                      |
|         | LW -8       | 109            | 36     | -  | -   | 8.0  | -    | -         | - |   |                      |
|         | LW -10      | 112            | 40     | -  | -   | 10.0 | -    | -         | - |   |                      |
|         | LW -14      | 140            | 56     | -  | -   | 14.0 | -    | -         | - |   |                      |
|         | LW -17      | 160            | 63     | -  | -   | 17.0 | -    | -         | - |   |                      |
|         | LW -19      | 180            | 70     | -  | -   | 19.0 | -    | -         | - |   |                      |
|         | LW -25IP    | 2.500*         | 0.813* | -  | -   | -    | 25IP | -         | - |   | OOIP Shows Torx Plus |

|                      |   |
|----------------------|---|
| INSERT GRADES        | A |
| TURNING INSERTS      | B |
| GEN/PCD INSERTS      | C |
| TURNING HOLDERS      | D |
| SMALL TOOLS          | E |
| BORING               | F |
| GROOVING             | G |
| CUT-OFF              | H |
| THREADING            | J |
| DRILLING             | K |
| MILLING              | M |
| QUICK CHANGE TOOLING | N |
| SPARE PARTS          | P |
| TECHNICAL            | R |
| INDEX                | T |

■ Wrenches / Springs / Nuts / Punches / Other

| Drawing | Part Number | Dimension (mm) |     |     |     |      |       | Angle (°) |                      | Notes          |
|---------|-------------|----------------|-----|-----|-----|------|-------|-----------|----------------------|----------------|
|         |             | A              | B   | C   | D   | E    | F     | α         | θ                    |                |
|         | TH -4       | -              | 80  | -   | 83  | 4.0  | -     | -         | -                    | Hexagon        |
|         | TT -15      | -              | 70  | -   | 118 | -    | T15   | -         | -                    | Torx           |
|         | TT -25      | -              | 70  | -   | 69  | -    | T25   | -         | -                    |                |
|         | TT -25L     | -              | 80  | -   | 145 | -    | T25   | -         | -                    |                |
|         | TT -30      | -              | 80  | -   | 110 | -    | T30   | -         | -                    |                |
|         | TTC -20     | -              | 98  | -   | 130 | -    | T20   | -         | -                    | Torx           |
|         | TTC -25     | -              | 98  | -   | 130 | -    | T25   | -         | -                    |                |
| TTP -20 | -           | 70             | -   | 138 | -   | 20IP | -     | -         | OOIP Shows Torx Plus |                |
|         | TTW -15     | -              | 80  | -   | 125 | -    | T15   | -         | -                    | Torx           |
|         | LTK -5      | 70             | 30  | -   | -   | -    | -     | -         | -                    |                |
|         | SP -2D      | 8.5            | 5.6 | -   | -   | -    | -     | -         | -                    | Spring         |
|         | SP -3D      | 12.0           | 7.0 | -   | -   | -    | -     | -         | -                    |                |
|         | SP -5       | 12.0           | 6.7 | -   | -   | -    | -     | -         | -                    |                |
|         | SP -5D      | 12.0           | 7.2 | -   | -   | -    | -     | -         | -                    |                |
|         | SP -6       | 12.0           | 7.7 | -   | -   | -    | -     | -         | -                    |                |
|         | SP -8       | 11.0           | 9.7 | -   | -   | -    | -     | -         | -                    |                |
|         | W -6        | 11.5           | 1.6 | 6.4 | -   | -    | -     | -         | -                    | Washer         |
|         | W 6-14      | 11.5           | 1.4 | 6.4 | -   | -    | -     | -         | -                    |                |
|         | W -8        | 15.5           | 1.6 | 8.4 | -   | -    | -     | -         | -                    |                |
|         | WB -5       | 10.0           | 1.0 | 5.3 | -   | -    | -     | -         | -                    | Washer (Brass) |
| WB -6   | 11.5        | 1.6            | 6.4 | -   | -   | -    | -     | -         |                      |                |
| WB -8   | 15.5        | 1.6            | 8.4 | -   | -   | -    | -     | -         |                      |                |
|         | WSP -1      | 15.1           | 4.0 | 3.5 | 2.5 | -    | R1.25 | -         | -                    | Spacer         |

P  
SPARE PARTS

■ Wrenches / Springs / Nuts / Punches / Other

| Drawing | Part Number         | Dimension (mm) |      |      |      |        |      | Angle (°) |   | Notes        |
|---------|---------------------|----------------|------|------|------|--------|------|-----------|---|--------------|
|         |                     | A              | B    | C    | D    | E      | F    | α         | θ |              |
|         | <b>DN 10</b>        | 6.2            | 5.1  | 4.5  | 5.7  | 2.6    | 4.0  | -         | - | Nozzle       |
|         | <b>20</b>           | 10.1           | 7.7  | 7.0  | 9.6  | M4X0.7 | 6.0  | -         | - |              |
|         | <b>GP -1</b>        | PT1/8          | 7.0  | -    | -    | 5.0    | -    | -         | - | Plug         |
|         | <b>-2</b>           | PT1/4          | 9.0  | -    | -    | 6.0    | -    | -         | - |              |
|         | <b>WN -1</b>        | M5X8           | 10.0 | 7.0  | -    | 3.0    | -    | -         | - | Nut          |
|         | <b>PC -1</b>        | 60.0           | 8.5  | -    | -    | -      | -    | -         | - | Punch        |
|         | <b>-2</b>           | 62.2           | 10.0 | -    | -    | -      | -    | -         | - |              |
|         | <b>CL 63-1</b>      | M18X1.0        | 36.5 | 12   | -    | 6.0    | -    | -         | - | Coolant Pipe |
|         | <b>100-1</b>        | M24X1.5        | 44.0 | 16.0 | -    | 8.0    | -    | -         | - |              |
|         | <b>HH 12X35HC</b>   | M12X1.75       | 35.0 | 42.5 | 16.4 | 8.0    | 18.0 | -         | - | Coolant Bolt |
|         | <b>HF 16X44HC</b>   | M16X2.0        | 30.0 | 62.5 | 14.4 | 12.0   | 40.0 | -         | - |              |
|         | <b>16X48HC</b>      | M16X2.0        |      |      | 18.4 |        |      |           |   |              |
|         | <b>CC -125-MFAH</b> | 87.5           | 11.4 | 53.0 | -    | -      | -    | -         | - | Coolant Plug |
|         | <b>-160-MFAH</b>    | 122.5          | 12.4 | 70.0 | -    | -      | -    | -         | - |              |
|         | <b>CC -200-MFAH</b> | 162.5          | 14.4 | -    | -    | -      | -    | -         | - | Coolant Plug |
|         | <b>-250-MFAH</b>    | 212.5          | -    | -    | -    | -      | -    | -         | - |              |
|         | <b>-315-MFAH</b>    | 277.5          | -    | -    | -    | -      | -    | -         | - |              |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| <b>SPARE PARTS</b>   | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

**■ Toolholders for Ceramic Tools**

| Part Number          |       |     | Spare Parts |            |       |        |
|----------------------|-------|-----|-------------|------------|-------|--------|
|                      |       |     | Lever       | Lock Screw | Punch | Wrench |
| PTGN <sup>®</sup> /L | 1212F | -11 | LL-03N      | LS-03N     | P-03  | FH-2   |
|                      | ..... | -11 | LL-03TN     | LS-03SN    | P-03S | FH-2.5 |
| PTFN <sup>®</sup> /L | 1212F | -11 | LL-03N      | LS-03N     | P-03  | FH-2   |
|                      | ..... | -11 | LL-03TN     | LS-03SN    | P-03S | FH-2.5 |

**■ Toolholders for Ceramic Tools**

| Part Number          |       |     | Spare Parts |           |        |                    |                  |
|----------------------|-------|-----|-------------|-----------|--------|--------------------|------------------|
|                      |       |     | Chipbreaker | Clamp Set | Wrench | Shim               | Shim Screw       |
| CCLNR                | 2525M | -16 | CB-17       | CE-220    | LW-4   | SP-454             | M4X10            |
| CS-N <sup>®</sup> /L | ..... | -12 | CB-11       | CE-020    | LW-4   | SP-141<br>*(SP143) | M3X8<br>*(M3X12) |
| CSKN <sup>®</sup> /L | ..... | -12 | CB-11       | CE-020    | LW-4   | SP-141<br>*(SP143) | M3X8<br>*(M3X12) |
| CSYN <sup>®</sup> /L | ..... | -12 | CB-11       | CE-020    | LW-4   | SP-141<br>*(SP143) | M3X8<br>*(M3X12) |
| CSSN <sup>®</sup> /L | ..... | -12 | CB-11       | CE-020    | LW-4   | SP-141<br>*(SP143) | M3X8<br>*(M3X12) |

\* Shim & Shim Screw : When using SN□□415 insert, purchase spare parts in ( ) separately.

| Part Number          |       |       | Spare Parts |        |        |            |
|----------------------|-------|-------|-------------|--------|--------|------------|
|                      |       |       | Clamp Set   | Wrench | Shim   | Shim Screw |
| CCLN <sup>®</sup> /L | ..... | -12GX | CE-410      | LW-4   | SP-441 | M3X8       |
| CDHN <sup>®</sup> /L | ..... | -12GX | CE-410      | LW-4   | SP-521 | M3X8       |
|                      |       | -15GX | CE-430      |        | SP-541 |            |
| CDJN <sup>®</sup> /L | ..... | -12GX | CE-410      | LW-4   | SP-521 | M3X8       |
|                      |       | -15GX | CE-430      |        | SP-541 |            |
| CSRN <sup>®</sup> /L | ..... | -12GX | CE-410      | LW-4   | SP-141 | M3X8       |
|                      |       | -15GX |             |        | SP-162 | M4X10      |
| CSDNN                | ..... | -12GX | CE-410      | LW-4   | SP-141 | M3X8       |
|                      |       | -15GX |             |        | SP-162 | M4X10      |
| CSSN <sup>®</sup> /L | ..... | -12GX | CE-410      | LW-4   | SP-141 | M3X8       |
|                      |       | -15GX |             |        | SP-162 | M4X10      |
| CS-N <sup>®</sup> /L | ..... | -12GX | CE-410      | LW-4   | SP-141 | M3X8       |
|                      |       | -15GX |             |        | SP-162 | M4X10      |
| CSKN <sup>®</sup> /L | ..... | -12GX | CE-410      | LW-4   | SP-141 | M3X8       |
|                      |       | -15GX |             |        | SP-162 | M4X10      |
| CSYN <sup>®</sup> /L | ..... | -12GX | CE-410      | LW-4   | SP-141 | M3X8       |
|                      |       | -15GX |             |        | SP-162 | M4X10      |

**■ Toolholders for Solid CBN Tools**

| Part Number          |       |      | Spare Parts |        |                    |            |
|----------------------|-------|------|-------------|--------|--------------------|------------|
|                      |       |      | Clamp Set   | Wrench | Shim               | Shim Screw |
| CCLN <sup>®</sup> /L | ..... | -09A | CE-030A     | LW-4   | SP-429             | HH3X12     |
| CSRN <sup>®</sup> /L | 2525M | -09A | CE-030A     | LW-4   | SP-129             | HH3X12     |
|                      |       | -12A |             |        | SP-148<br>(SP-143) | BH3X12     |
| CSKN <sup>®</sup> /L | 2525M | -09A | CE-030A     | LW-4   | SP-129             | HH3X12     |
|                      |       | -12A |             |        | SP-148<br>(SP-143) | BH3X12     |
| CSYN <sup>®</sup> /L | 2525M | -09A | CE-030A     | LW-4   | SP-129             | HH3X12     |
|                      |       | -12A |             |        | SP-148<br>(SP-143) | BH3X12     |
| CSDNN                | ..... | -09A | CE-040      | LW-4   | SP-129             | HH3X12     |
|                      |       | -12A |             |        | SP-148<br>(SP-143) | BH3X12     |
| CTUN <sup>®</sup> /L | ..... | -11A | CE-030A     | LW-4   | SP-219             | HH3X12     |

P  
SPARE PARTS

**■ Toolholders for Bearing Machining**

| Part Number          | Spare Parts |            |        |          |       |        |  |
|----------------------|-------------|------------|--------|----------|-------|--------|--|
|                      | Lever       | Lock Screw | Shim   | Shim Pin | Punch | Wrench |  |
| PRGC%<br>..... -12BE | LL-1CN      | LS-1N      | LR-12C | LSP-1    | PC-1  | FH-2.5 |  |
|                      | LL-2C       | LS-1T      | LR-16C | LSP-2    | PC-2  | FH-2.5 |  |
| PRGC%<br>..... -12BF | LL-1CN      | LS-1N      | LR-12C | LSP-1    | PC-1  | FH-2.5 |  |
|                      | LL-2C       | LS-1T      | LR-16C | LSP-2    | PC-2  | FH-2.5 |  |

**■ Toolholders for Back Turning**

| Part Number  | Spare Parts |            |             |        |
|--|-------------|------------|-------------|--------|
|  | Anchor Pin  | Lock Screw | Clamp Screw | Wrench |
| AABSR<br>0810K -40F<br>1010.. -40F<br>1212.. -40F<br>1616.. -40F | LPA-11      | HSB4X8R    | -           | FH-2   |
|  | LPA-13      |            |             |        |
|  | LPA-17      |            |             |        |
|  | -           |            |             |        |
| SABSR<br>..... -40F  | -           | -          | SB-3080TR   | FT-10  |
| AABWR<br>0810K -40F<br>1010.. -40F<br>1212.. -40F<br>1616.. -40F | LPA-11      | HSB4X8R    | -           | FH-2   |
|  | LPA-13      |            |             |        |
|  | LPA-17      |            |             |        |
|  | -           |            |             |        |
| SABWR<br>..... -40F  | -           | -          | SB-3080TR   | FT-10  |
| AABWR<br>0810K -50F<br>1010.. -50F<br>1212.. -50F<br>1616.. -50F | LPA-11      | HSB4X8R    | -           | FH-2   |
|  | LPA-13      |            |             |        |
|  | LPA-17      |            |             |        |
|  | -           |            |             |        |
| SABWR<br>..... -50F  | -           | -          | SB-3080TR   | FT-10  |

**■ KTKF**

| Part Number                     | Spare Parts |         |
|---------------------------------|-------------|---------|
|                                 | Clamp Screw | Wrench  |
| KTKF%<br>..... -12<br>..... -16 | SB-4590TRWN | LTW-10S |

**■ External Toolholders (Back Clamp)**

| Part Number   | Spare Parts |            |        |
|---|-------------|------------|--------|
|   | Anchor Pin  | Lock Screw | Wrench |
| ACLC%<br>0810K -06F<br>1010K -06F<br>1010K -09F<br>1212M -09F<br>1616M -09F | LPF-11      | HSB4X8%    | FH-2   |
|   | LPF-13      |            |        |
|   | LPF-17      |            |        |
|   | LPF-11      |            |        |
|   | LPF-13      |            |        |
| ADJC%<br>0810K -07F<br>1010K -07F<br>1010K -11F<br>1212M -11F<br>1616M -11F | LPF-11      | HSB4X8%    | FH-2   |
|   | LPF-13      |            |        |
|   | LPF-17      |            |        |
|   | LPF-11      |            |        |
|   | LPF-13      |            |        |
| ADNCR<br>0810K -07F<br>1010K -07F<br>1010K -11F<br>1212M -11F<br>1616M -11F | LPF-11      | HSB4X8R    | FH-2   |
|   | LPF-13      |            |        |
|   | LPF-17      |            |        |
|   | LPF-11      |            |        |
|   | LPF-13      |            |        |
| AVJB%<br>1010K -11F<br>1212M -11F<br>1616M -11F                             | LPF-11      | HSB4X8%    | FH-2   |
|   | LPF-1113    |            |        |
|   | LPF-1117    |            |        |
| AVVBR<br>1010K -11F<br>1212M -11F<br>1616M -11F                             | LPF-11      | HSB4X8R    | FH-2   |
|   | LPF-1113    |            |        |
|   | LPF-1117    |            |        |

\* Lock Screw: HSB4X8R for R-hand Toolholder, HSB4X8L for L-hand Toolholder.

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| SPARE PARTS          | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

**External Toolholders (Screw Clamp)**

| Part Number | Spare Parts |           |        |
|-------------|-------------|-----------|--------|
|             | Clamp Screw | Wrench    |        |
| SCLC%       | ..... -06   | SB-2570TR | FT-8   |
|             | ..... -09   | SB-4085TR | FT-15  |
|             | ..... -12   | SB-5090TR | LTW-20 |
| SCAC%       | ..... -06   | SB-2570TR | FT-8   |
|             | ..... -09   | SB-4085TR | FT-15  |
|             | 1212F -09FF |           |        |
| SDJC%       | ..... -07F  | SB-2570TR | FT-8   |
|             | ..... -11F  | SB-4085TR | FT-15  |
| SDLC%       | ..... -07FF | SB-2570TR | FT-8   |
|             | ..... -11FF | SB-4085TR | FT-15  |
| SDXC%       | ..... -07   | SB-2570TR | FT-8   |
|             | ..... -11   | SB-4085TR | FT-15  |
| SDNC%       | ..... -07F  | SB-2570TR | FT-8   |
|             | ..... -11F  | SB-4085TR | FT-15  |
| SDNCN       | ..... -07   | SB-2570TR | FT-8   |
|             | ..... -11   | SB-4085TR | FT-15  |
| SDLP%       | ..... -07F  | SB-2570TR | FT-8   |
|             | ..... -11F  | SB-4085TR | FT-15  |
| STGC%       | ..... -8    | SB-2050TR | FT-6   |
| STGP%       | ..... -08   | SB-2050TR | FT-6   |
|             | ..... -11   | SB-3080TR | FT-10  |
|             | ..... -11F  | SB-2570TR | FT-8   |
| SVJB%       | ..... -11F  | SB-2570TR | FT-8   |
| SVLP%       | ..... -08FF | SB-2050TR | FT-6   |
|             | ..... -11FF | SB-2570TR | FT-8   |
|             | ..... -11F  |           |        |
| SVPP%       | ..... -08FF | SB-2050TR | FT-6   |
|             | ..... -11FF | SB-2570TR | FT-8   |
|             | ..... -11   |           |        |
| SYXP%       | ..... -06F  | SB-2050TR | FT-6   |

**External Toolholders (Screw Clamp)**

| Part Number | Spare Parts |             |       |            |        |
|-------------|-------------|-------------|-------|------------|--------|
|             | Clamp Screw | Wrench      | Shim  | Shim Screw | Wrench |
| SVPB%       | ..... -11   | SB-2570TR   | FT-8  | -          | -      |
|             | ..... -16N  | SB-40125TRN | FT-15 | SVN-32N    | SS-4N  |
| SVVBN       | ..... -11   | SB-2570TR   | FT-8  | -          | -      |
|             | ..... -16N  | SB-40125TRN | FT-15 | SVN-32N    | SS-4N  |

**External Toolholders (Top Clamp)**

| Part Number | Spare Parts |        |        |            |              |
|-------------|-------------|--------|--------|------------|--------------|
|             | Clamp Set   | Wrench | Shim   | Shim Screw | Chippbreaker |
| CSBP%       | ..... -09N  | CPS-2P | LW-2.5 | -          | -            |
| CSKP%       | ..... -09N  | CPS-2P | LW-2.5 | -          | -            |
|             | ..... -12N  | CPS-3  | LW-3   | KPS-42     | SP3X8        |
| CSSP%       | ..... -09N  | CPS-2P | LW-2.5 | -          | -            |
|             | ..... -12N  | CPS-3  | LW-3   | KPS-42     | SP3X8        |
| CSDPN       | ..... -12N  | CPS-3  | LW-3   | KPS-42     | SP3X8        |
| CTGP%       | ..... -11N  | CPS-2P | LW-2.5 | -          | -            |
|             | ..... -16N  | CPS-3  | LW-3   | KPT-32     | SP3X8        |
| CTFP%       | ..... -11N  | CPS-2P | LW-2.5 | -          | -            |
|             | ..... -16N  | CPS-3  | LW-3   | KPT-32     | SP3X8        |
| CTTP%       | ..... -11N  | CPS-2P | LW-2.5 | -          | -            |
|             | ..... -16N  | CPS-3  | LW-3   | KPT-32     | SP3X8        |

P  
SPARE PARTS



# PREVIOUS SPARE PART LIST

## EZ Bar PLUS

| Part Number                | Spare Parts |        |
|----------------------------|-------------|--------|
|                            | Clamp Screw | Wrench |
| <b>S045X-SCLCR03-050EZ</b> | SB-1635TR   | FT-6   |
| <b>S060X-SCLCR04-070EZ</b> | SB-2035TR   |        |
| <b>C045X-SCLCR03-050EZ</b> | SB-1635TR   | FT-6   |
| <b>C060X-SCLCR04-070EZ</b> | SB-2035TR   |        |

## Twin Bars

| Part Number             | Spare Parts |         |
|-------------------------|-------------|---------|
|                         | Clamp Screw | Wrench  |
| <b>STW%</b> ..... -15   | SB-3080TR   | LTW-10S |
| <b>STWSR</b> ..... -15T | SB-3080TR   | LTW-10S |

## Swiss IQ Bars

| Part Number   | Spare Parts |        |                      |        |
|---|-------------|--------|----------------------|--------|
|   | Clamp Screw | Wrench | Screw (Side Stopper) | Wrench |
| <b>SVNR</b> 1010H -12<br>1212K -12<br>1616K -12<br>2020K -12<br>2525M -12 | SB-3080TR   | FT-10  | HS3X4                | LW-1.5 |
|   |             |        | HS3X8                |        |
|   |             |        | HS3X12               |        |
|   |             |        | HS3X16               |        |
|   |             |        | SVNSR ..... -12-..   |        |
| <b>S12F-</b> SVNR 12  | SB-3080TR   | FT-10  | HS3X4                | LW-1.5 |
| <b>S14G-</b> SVNR 12  |             |        |                      |        |
| <b>S16H-</b> SVNR 12  |             |        |                      |        |
| <b>S19H-</b> SVNR 12  |             |        |                      |        |
| <b>S19N-</b> SVNR 12  |             |        |                      |        |
| <b>S20H-</b> SVNR 12  |             |        |                      |        |
| <b>S25H-</b> SVNR 12  |             |        |                      |        |
| <b>S25Q-</b> SVNR 12  |             |        |                      |        |
| <b>S...</b> SVNR 12S  | SB-3080TR   | FT-10  | HS3X4                | LW-1.5 |

## Swiss IQ Bars (S...SVN-XN)

| Part Number            | Spare Parts |        |           |
|------------------------|-------------|--------|-----------|
|                        | Clamp Screw | Wrench | Set Screw |
| <b>S...-</b> SVNR 12XN | SB-3080TR   | FT-10  | SP3X4     |

## PSH Sleeve

| Part Number                     | Spare Parts |        |
|---------------------------------|-------------|--------|
|                                 | Clamp Screw | Wrench |
| <b>PSH</b> 02.. -..<br>03.. -.. | HS3x4P      | LW-1.5 |
|                                 |             |        |
| <b>PSH</b> 04.. -..             |             |        |
| 05.. -..                        |             |        |
| 06.. -..                        |             |        |
| 07.. -..                        |             |        |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| CEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| SPARE PARTS          | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

# PREVIOUS SPARE PART LIST

## Boring Bars (Screw Clamp)

| Part Number          | Spare Parts |        |
|----------------------|-------------|--------|
|                      | Clamp Screw | Wrench |
| S10H- SCLC%03-..E    | SB-1635TR   | FT-6   |
| S10J- SCLC%04-..E    | SB-2035TR   |        |
| S08X- SCLC%06-10E    | SB-2545TR   | FT-8   |
| S08X- SCLC%06-10     | SB-2545TR   | FT-8   |
| C...- SCLC%03-..     | SB-1635TR   | FT-6   |
| C...- SCLC%04-..     | SB-2035TR   |        |
| C08L- SCLC%06-10     | SB-2545TR   | FT-8   |
| A08H- SCLC%06-10E    | SB-2545TR   | FT-8   |
| E...- SCLC%06-..     | SB-2545TR   | FT-8   |
| S..M- SCLP%08-..E    | SB-3STR     | FT-10  |
| S...- SCLP%09-..E    | SB-4TR      | FT-15  |
| S..M- SCLP%08-..     | SB-3STR     | FT-10  |
| S...- SCLP%09-..     | SB-4TR      | FT-15  |
| C10N- SCLP%08-..     | SB-3STR     | FT-10  |
| C...- SCLP%09-..     | SB-4TR      | FT-15  |
| A..X- SCLP%08-..E    | SB-3STR     | FT-10  |
| A...- SCLP%09-..E    | SB-4TR      | FT-15  |
| E10N- SCLP%08-12     | SB-3STR     | FT-10  |
| E10N- SCLP%08-12A-.. | SB-3060TR   |        |
| E...- SCLP%09-..     | SB-4TR      | FT-15  |
| S...- SDUC%07-..E    | SB-2560TR   | FT-8   |
| S...- SDUC%11-..E    | SB-4085TR   | FT-15  |
| S...- SDUC%07-..     | SB-2560TR   | FT-8   |
| S...- SDUC%11-..     | SB-4085TR   | FT-15  |
| C...- SDUC%07-..     | SB-2560TR   | FT-8   |
| C...- SDUC%11-..     | SB-4085TR   | FT-15  |
| S...- SDZC%07-..E    | SB-2560TR   | FT-8   |
| S...- SDZC%11-..E    | SB-4085TR   | FT-15  |
| S...- SDZC%07-..     | SB-2560TR   | FT-8   |
| S...- SDZC%11-..     | SB-4085TR   | FT-15  |
| C06J- STLBP%06-08A   | SB-2035TR   | FT-6   |
| E08L- STLP%08-10A    | SB-1TR      |        |
| E08L- STLP%09-10A    | SB-2545TR   | FT-8   |
| E10N- STLP%09-..     |             |        |
| E10N- STLP%11-..     | SB-3060TR   | FT-10  |
| S06H- STUB%06-08E    | SB-1STR     | FT-6   |
| S08K- STUP%08-10E    | SB-1TR      |        |
| S..M- STUP%09-..E    | SB-2TR      | FT-8   |
| S...- STUP%11-..E    | SB-3TR      | FT-10  |
| S..X- STUP%16-..E    | SB-4TR      | FT-15  |
| S06H- STUB%06-08     | SB-1STR     | FT-6   |
| S08K- STUP%08-10     | SB-1TR      |        |
| S..M- STUP%09-..     | SB-2TR      | FT-8   |
| S...- STUP%11-..     | SB-3TR      | FT-10  |
| S25X- STUP%16-32     | SB-4TR      | FT-15  |
| C10L- STUB%06-08     | SB-1STR     | FT-6   |
| C08L- STUP%08-10     | SB-1TR      |        |
| C...- STUP%09-..     | SB-2TR      | FT-8   |
| C...- STUP%11-..     | SB-3TR      | FT-10  |
| C20S- STUP%16-..     | SB-4TR      | FT-15  |
| A08H- STUP%08-10E    | SB-1TR      | FT-6   |
| A..X- STUP%09-..E    | SB-2TR      | FT-8   |
| A...- STUP%11-..E    | SB-3TR      | FT-10  |
| A...- STUP%16-..E    | SB-4TR      | FT-15  |
| E08L- STUP%08-10     | SB-1TR      | FT-6   |
| E...- STUP%09-..     | SB-2TR      | FT-8   |
| E...- STUP%11-..     | SB-3TR      | FT-10  |
| E20S- STUP%16-25     | SB-4TR      | FT-15  |

P  
SPARE PARTS

# PREVIOUS SPARE PART LIST

## ■ Boring Bars (Screw Clamp)

| Part Number            | Spare Parts |        |
|------------------------|-------------|--------|
|                        | Clamp Screw | Wrench |
| S...- SWUB%08-..E      | SB-2050TR   | FT-6   |
| S12M- SWUP%11-14E      | SB-2545TR   | FT-8   |
| S...- SWUP%11-..E      | SB-2560TR   |        |
| S...- SWUP%16-..E      | SB-4065TR   | FT-15  |
| S...- SWUB%06-..       | SB-2040TR   | FT-6   |
| S10J- SWUB%08-..       | SB-2035TR   |        |
| C...- SWUB%06-..       | SB-2035TR   | FT-6   |
| C07K- SWUB%08-..       |             |        |
| C08L- SWUB%08-..       | SB-2050TR   | FT-6   |
| C10N- SWUB%08-..       |             |        |
| C12Q- SWUP%11-14(-./.) | SB-2545TR   | FT-8   |
| C12Q- SWUP%11-16(-./.) | SB-2560TR   |        |
| C16X- SWUP%11-18(-./.) |             |        |
| C...- SWUP%16-..       | SB-4065TR   | FT-15  |
| E...- SWUB%08-..       | SB-2050TR   | FT-6   |
| S16Q- SSKPR09-20       | SB-4TR      | FT-15  |
| S20R- SSKPR09-25       |             |        |
| S25X- SSKPR12-32       | GS-50S      | LW-3   |
| S32S- SSKPR12-40       | GS-50       |        |
| S12M- SYXP%06-12E      | SB-2040TR   | FT-6   |
| S16Q- SYXP%06-16E      | SB-2045TR   |        |

## ■ Boring Bars (Screw Clamp)

| Part Number        | Spare Parts |        |         |            |                         |
|--------------------|-------------|--------|---------|------------|-------------------------|
|                    | Clamp Screw | Wrench | Shim    | Shim Screw | Wrench (for Shim Screw) |
| S12M- SVJP%08-16E  | SB-2050TR   | FT-6   | -       | -          | -                       |
| S...- SVJC%08-..E  |             |        |         |            |                         |
| S...- SVJB%11-..E  | SB-2570TR   | FT-8   | SVN-32N | SS-4N      | LW-4                    |
| S...- SVJB%16-..EN | SB-40125TRN | FT-15  |         |            |                         |
| S32S- SVJB%16-40E  | SB-40115TR  | FT-15  | SVN-32  | SB-2050TR  | FT-6                    |
| S40T- SVJB%16-50E  |             |        |         |            |                         |
| S10M- SVPC%08-16E  | SB-2050TR   | FT-6   | -       | -          | -                       |
| S...- SVPB%11-..E  | SB-2570TR   | FT-8   | SVN-32N | SS-4N      | LW-4                    |
| S...- SVPB%16-..EN | SB-40125TRN | FT-15  |         |            |                         |
| S25X- SVPB%16-34E  | SB-40115TR  | FT-15  | SVN-32  | SB-2050TR  | FT-6                    |
| S32S- SVPB%16-40E  |             |        |         |            |                         |
| S12M- SVUC%08-16E  | SB-2050TR   | FT-6   | -       | -          | -                       |
| S...- SVUB%11-..E  | SB-2570TR   | FT-8   | SVN-32N | SS-4N      | LW-4                    |
| S...- SVUB%16-..EN | SB-40125TRN | FT-15  |         |            |                         |
| S25X- SVUB%16-34E  | SB-40115TR  | FT-15  | SVN-32  | SB-2050TR  | FT-6                    |
| S32S- SVUB%16-40E  |             |        |         |            |                         |
| S12M- SVZC%08-16E  | SB-2050TR   | FT-6   | -       | -          | -                       |
| S...- SVZB%11-..E  | SB-2570TR   | FT-8   | SVN-32N | SS-4N      | LW-4                    |
| S...- SVZB%16-..EN | SB-40125TRN | FT-15  |         |            |                         |
| S25X- SVZB%16-34E  | SB-40115TR  | FT-15  | SVN-32  | SB-2050TR  | FT-6                    |
| S32S- SVZB%16-40E  |             |        |         |            |                         |

## ■ Boring Bars (Top Clamp)

| Part Number       | Spare Parts |           |        |         |            |
|-------------------|-------------|-----------|--------|---------|------------|
|                   | Chipbreaker | Clamp Set | Wrench | Shim    | Shim Screw |
| S12L- CTUP%09-16  | -           | CPS-1     | FH-2   | -       | -          |
| S...- CTUP%11-..  | -           | CPS-2     | FH-2.5 | -       | -          |
| S25X- CTUP%16-34  | -           | CPS-3     | LW-3   | KPT-32  | SP3X10     |
| S32S- CTUP%16-43  |             |           |        |         |            |
| S40X- CTUP%16-50  | *CB-13/12   | CE-320    | LW-4   | SP-230P | SP3X10     |
| S32S- CTUC%16-40  |             |           |        |         |            |
| S...- CCLN%09-..A | -           | CE-360S   | LW-4   | SP-420A | BH3X6      |
| S...- CSKN%09-..A | -           | CE-360S   | LW-4   | SP-130A | BH3X12     |
| S32S- CSKPR12-43  | CPS-3       | -         | LW-3   | KPS-42  | SP3X10     |

\* CB-13 for Right-hand Toolholder, CB-12 for Left-hand Toolholder.

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| SPARE PARTS          | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

**Boring Bars for Ceramic Inserts (Dimple Clamp)**

| Part Number          | Spare Parts |           |        |                         |                    |
|----------------------|-------------|-----------|--------|-------------------------|--------------------|
|                      | Chipbreaker | Clamp Set | Wrench | Shim                    | Clamp Screw        |
| S32S- CCLN% -12-40GX | -           | CE-410    | LW-4   | -                       | -                  |
| S40T- CCLN% -12-50GX |             |           |        | SP-441P                 | M3X8               |
| S32S- CDUN% -12-40GX | -           | CE-410    | LW-4   | -                       | -                  |
| S40T- CDUN% -12-50GX |             |           |        | SP-521P                 | M3X8               |
| S32S- CSKN% -12-40GX | -           | CE-410    | LW-4   | -                       | -                  |
| S40T- CSKN% -12-50GX |             |           |        | SP-141P                 | M3X8               |
| S40T- CSKN% -12-50   | *1 CB-13/12 | CE-320    | LW-4   | SP-141P<br>*2 (SP-143P) | M3X8<br>*2 (M3X12) |

\*1 Right-hand holders take CB-13 and Left-hand holders take CB-12  
 \*2 When using SN□□43.. inserts, please purchase parts in ( ) separately

**Bearing Machining (Boring)**

| Part Number         | Spare Parts |        |
|---------------------|-------------|--------|
|                     | Clamp Screw | Wrench |
| CBSN% 2020B-12 -A20 | -           | CE-410 |
| 2525B-16 -A32       |             |        |

**Bearing Machining (Internal Corner Filleting)**

| Part Number        | Spare Parts |        |
|--------------------|-------------|--------|
|                    | Clamp Screw | Wrench |
| CBSN% ...B-12 -A20 | CP-RC%      | LW-5   |

· Clamp Set: CP-RCR for Right-hand Toolholder, and CP-RCL for Left-hand Toolholder.

**KTGF-F**

| Part Number | Spare Parts |        |        |
|-------------|-------------|--------|--------|
|             | Clamp Screw | Wrench |        |
| PH 02 ...   | HS3X4       | LW-1.5 |        |
|             |             |        | 03 ... |
|             |             |        |        |
| 05 ...      | HS4X4       | LW-2   |        |
|             |             |        | 06 ... |
|             |             |        |        |

**KTGF-F**

| Part Number      | Spare Parts |        |
|------------------|-------------|--------|
|                  | Clamp Screw | Wrench |
| KTGF% ..... -16F | SB-4070TRW  | FT-8   |

**KTG**

| Part Number    | Spare Parts |        |
|----------------|-------------|--------|
|                | Clamp Screw | Wrench |
| KTG% ..... -16 | SB-4TR      | FT-15  |
|                | ..... 22-.. | GS-50  |

**KN91**

| Part Number | Spare Parts |            |        |        |        |       |
|-------------|-------------|------------|--------|--------|--------|-------|
|             | Clamp       | Clamp Bolt | Washer | Spring | Wrench |       |
| KN91% 44 -4 | *CE-111/121 | BH8X30     | W-8    | SP-8   | LW-5   |       |
|             |             |            |        |        |        | 44 -5 |
|             |             |            |        |        |        | 44 -7 |
|             | *CE-131/141 |            |        |        |        |       |

\* KN91%44-4 / 5 ... CE-111 for Right-hand Toolholder, and CE-121 for Left-hand Toolholder.  
 KN91%44-7 ... CE-131 for Right-hand Toolholder, and CE-141 for Left-hand Toolholder.

**KGHS**

| Part Number    | Spare Parts |            |        |        |        |          |
|----------------|-------------|------------|--------|--------|--------|----------|
|                | Clamp       | Clamp Bolt | Washer | Spring | Wrench |          |
| KGHS& ..... -4 | CGH-1       | HH6X25     | W-6    | SP-6   | LW-5   |          |
|                |             |            |        |        |        | ..... -5 |
|                |             |            |        |        |        | ..... -7 |
|                | CGH-2       |            |        |        |        |          |

\* CGH-OR for left-hand holder and CGH-OL for right-hand holder

**KGA**

| Part Number   | Spare Parts |            |        |        |
|---------------|-------------|------------|--------|--------|
|               | Clamp       | Clamp Bolt | Spring | Wrench |
| KGA% ..... -3 | CGA-3&      | HH6X20     | SP-6   | LW-5   |
|               | ..... -4    |            |        |        |
|               | ..... -5    |            |        |        |
|               | CGA-5&      |            |        |        |

\* CGA-OR for right-hand holder and CGA-OL for left-hand holder

P  
SPARE PARTS

# PREVIOUS SPARE PART LIST

## ■ KGD<sup>®</sup>/L...-S

| Part Number            | Spare Parts |                           |        |
|------------------------|-------------|---------------------------|--------|
|                        | Clamp Bolt  | Mounting Bolt (for Blade) | Wrench |
| KGD <sup>®</sup> ...-S | BH6X10TR    | SB-60120TR                | LTW-25 |

## ■ KGM (Small Parts Machining)

| Part Number   | Spare Parts |        |      |  |
|---|-------------|--------|------|--|
|   | Clamp Screw | Wrench |      |  |
| KGM <sup>®</sup> 1212H -3<br>1616H -3<br>2020K -3<br>2525M -3 | SB-5TR      | LTW-20 |      |  |
|   | HH5X16      | LW-4   |      |  |
|   |             | HH5X25 |      |  |
|   |             | HH5X16 | LW-4 |  |
| KGM <sup>®</sup> 2020K -4<br>2525M -4                         | HH5X16      | LW-4   |      |  |
|   | HH5X25      |        |      |  |
| KGM <sup>®</sup> 2020K -5<br>2525M -5<br>3232P -5             | HH5X16      | LW-4   |      |  |
|   | HH5X25      |        |      |  |
|   |             | HH6X25 | LW-5 |  |
| KGM <sup>®</sup> 2525M -8<br>3232P -8                         | HH6X25      | LW-5   |      |  |

## ■ KGM (Small Parts Machining)

| Part Number  | Spare Parts |                |        |                  |
|--|-------------|----------------|--------|------------------|
|  | Clamp Screw | Wrench         |        |                  |
| KGM <sup>®</sup> 0810K - ...<br>1010.. - ...<br>1212.. - 1.5-...<br>1212.. - 2-...<br>1212.. - 2.5-... | SE-40120TR  | LTW-15S        |        |                  |
|  |             | SE-50125TR     | LTW-20 |                  |
|  |             |                |        | 1616.. - 2-...   |
|  |             |                |        | 1616.. - 2.5-... |
|  |             | 1616.. - 3-... |        |                  |

## ■ KGMM / KGMS

| Part Number  | Spare Parts |        |      |  |
|--|-------------|--------|------|--|
|  | Clamp Screw | Wrench |      |  |
| KGMM <sup>®</sup> 1212H-3<br>1616H-3<br>2020K-3<br>2525M-3 | SB-5TR      | LTW-20 |      |  |
|  | HH5X16      | LW-4   |      |  |
|  |             | HH5X25 |      |  |
|  |             | HH5X16 | LW-4 |  |
| KGMS <sup>®</sup> 1212H-3<br>1616H-3<br>2020K-3<br>2525M-3 | SB-5TR      | LTW-20 |      |  |
|  | GS-50       | LW-3   |      |  |
|  | HH5X16      | LW-4   |      |  |
| 2525M-3  | HH5X25      |        |      |  |

## ■ KGDF<sup>®</sup>/L...-S

| Part Number             | Spare Parts |                           |        |
|-------------------------|-------------|---------------------------|--------|
|                         | Clamp Bolt  | Mounting Bolt (for Blade) | Wrench |
| KGDF <sup>®</sup> ...-S | BH6X10TR    | SB-60120TR                | LTW-25 |

## ■ KGM-T

| Part Number   | Spare Parts |        |      |
|---|-------------|--------|------|
|   | Clamp Screw | Wrench |      |
| KGM <sup>®</sup> 2012K-2T17<br>2020K-2T17<br>2525M-2T17               | SB-5TR      | LTW-20 |      |
|   | HH5X16      | LW-4   |      |
|   | HH5X25      |        |      |
| KGM <sup>®</sup> 1616H-3T20<br>2012K-3T20<br>2020K-3T20<br>2525M-3T20 | HH5X16      | LW-4   |      |
|   | SB-5TR      | LTW-20 |      |
|   | HH5X16      | LW-4   |      |
|   | HH5X25      |        |      |
| KGM <sup>®</sup> 2020K-4T20<br>2525M-4T20<br>2525M-4T25               | HH5X16      | LW-4   |      |
|   | HH5X25      |        |      |
|   |             | HH5X25 | LW-4 |
| KGM <sup>®</sup> 2525M-5T25<br>3232P-5T25                             | HH5X25      | LW-4   |      |
|   | HH5X25      | LW-4   |      |
| KGM <sup>®</sup> 2525M-6T30   | HH5X25      | LW-4   |      |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| SPARE PARTS          | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

# PREVIOUS SPARE PART LIST

## KGMU

| Part Number | Spare Parts |        |
|-------------|-------------|--------|
|             | Clamp Screw | Wrench |
| KGMU% 2020K | HH5X16      | LW-4   |
|             | HH5X25      |        |

## KIGH

| Part Number  | Spare Parts |            |        |        |        |
|--------------|-------------|------------|--------|--------|--------|
|              | Clamp       | Clamp Bolt | Washer | Spring | Wrench |
| KIGHR ....-4 | CGH-1L      | HH6X25     | W-6    | SP-6   | LW-5   |
|              |             |            |        |        |        |
|              | CGH-2L      |            |        |        |        |

## KIGM-V

| Part Number    | Spare Parts |        |          |
|----------------|-------------|--------|----------|
|                | Clamp Screw | Wrench |          |
| KIGM% 2016B-3V | GS-50       | LW-3   |          |
|                |             |        | 2520B-3V |
|                | 3225B-3V    | SB-5TR | LTW-20   |
|                | 3225B-4V    | SB-5TR | LTW-20   |
|                | 4032B-4V    |        |          |

## GFVS-AA / GFVT-AA

| Part Number       | Spare Parts |        |
|-------------------|-------------|--------|
|                   | Clamp Set   | Wrench |
| GFVS% ..... -08AA | CPS-5V      | FT-15  |
| GFVT% ..... -08AA | CPS-5V      | FT-15  |

## GIFV

| Part Number      | Spare Parts |        |
|------------------|-------------|--------|
|                  | Clamp Set   | Wrench |
| GIFV% 5032B-502B | CPS-6V      | LW-3   |

## KTKH-S

| Part Number        | Spare Parts      |
|--------------------|------------------|
|                    | Releasing Wrench |
| KTKH% ..... - ...S | LTK-5            |

## KTKH-B

| Part Number        | Spare Parts  |            |              |
|--------------------|--------------|------------|--------------|
|                    | Clamp Screw  | Wrench     |              |
| KTKH% 0808K - ...B | SE-40120TR   | FT-15      |              |
|                    |              |            | 1010K - ...B |
|                    |              |            | 1212M - ...B |
|                    |              |            | 1414M - ...B |
|                    | 1616M - ...B | SE-50125TR | LTW-20       |

## KTTX

| Part Number      | Spare Parts |        |
|------------------|-------------|--------|
|                  | Clamp Screw | Wrench |
| KTTXR ..... -16F | SB-4070TRW  | FT-8   |

# PREVIOUS SPARE PART LIST

## MFPN45

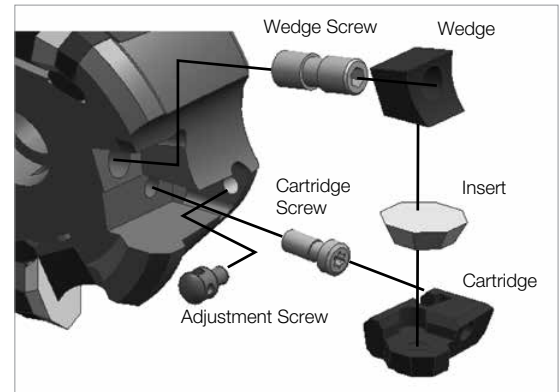
| Part Number                            | Spare Parts |        |                     |
|--|-------------|--------|---------------------|
|  | Clamp Screw | Wrench | Anti-Seize Compound |
| MFPN 45100R-10T-M<br>~<br>45200R-20T-M | SB-40140TRN | DTM-15 | P-37                |

## MOF45

| Part Number  | Spare Parts   |          |                              |
|--|---------------|----------|------------------------------|
|  | ① Clamp Screw | ② Wrench | Arbor Bolt                   |
| MOF 45080R-05-6T<br>45100R-05-.T<br>~<br>45200R-05-..T                         | SB-4082TPR    | DTP-15   | HH12X35                      |
| MOF 45080R-07-5T<br>45100R-07-.T<br>~<br>45200R-07-..T                         | SB-50120TRS   | DTP-15   | HH12X35                      |
| MOF 45040R-05-3T-M<br>45050R-05-4T-M<br>45063R-05-5T-M                         | SB-4082TPR    | DTP-15   | HH8X25<br>HH10X30<br>HH12X35 |
| MOF 45080R-05-6T-M<br>45100R-05-.T-M<br>~<br>45200R-05-..T-M                   | SB-4082TPR    | DTP-15   | -                            |
| MOF 45063R-07-4T-M<br>45080R-07-5T-M<br>45100R-07-.T-M<br>~<br>45200R-07-..T-M | SB-50120TRS   | DTP-15   | HH10X30S<br>HH12X35<br>-     |

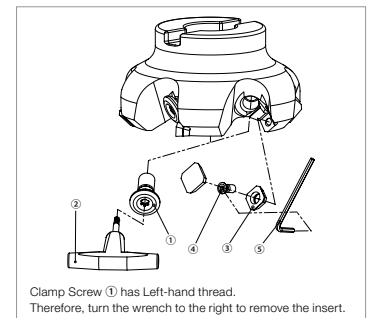
## MOFX45

| Part Number | Cartridge        | Cartridge Screw    | Wedge                  | Wedge Screw |
|-------------|------------------|--------------------|------------------------|-------------|
| MOFX45...   | LOF07R           | SH-50150TR         | WOF07R                 | W8X21       |
| Part Number | Adjustment Screw | Wrench (for Wedge) | Wrench (for Cartridge) |             |
| MOFX45...   | AJ-412           | TH-4               | TTC-20                 |             |



## MSE45 (Face Mills)

| Part Number                       | ① Clamp Screw                  | ② Wrench | ③ Shim    | ④ Clamp Screw | ⑤ Wrench             |
|-----------------------------------|--------------------------------|----------|-----------|---------------|----------------------|
| MSE 45040R-.T-M<br>45050R-.T-M    | CP8X15TL<br>(Left-hand Thread) | TTC-25   | MSE-4245S | SP4X9         | LW-2<br>(Shim Screw) |
| MSE 45080R-.T ~<br>45200R-..T     | CP8X23TL<br>(Left-hand Thread) |          |           |               |                      |
| MSE 45063R-.T-M ~<br>45200R-..T-M |                                |          |           |               |                      |







\* Mounting bolt (SP8X35) is included for MSE45040R-.OT-M.  
 \* Mounting bolt (HH10X30S) is included for MSE45050R-.OT-M and MSE45063R-.OT-M.  
 \* Mounting bolt (HH12X35) is included for MSE45080R-.OT-M and MSE45080R-.OT.







|                      |   |
|----------------------|---|
| INSERT GRADES        | A |
| TURNING INSERTS      | B |
| GEN/PCD INSERTS      | C |
| TURNING HOLDERS      | D |
| SMALL TOOLS          | E |
| BORING               | F |
| GROOVING             | G |
| CUT-OFF              | H |
| THREADING            | J |
| DRILLING             | K |
| MILLING              | M |
| QUICK CHANGE TOOLING | N |
| SPARE PARTS          | P |
| TECHNICAL            | R |
| INDEX                | T |

# PREVIOUS SPARE PART LIST

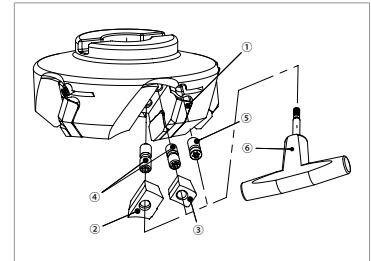
## MSE45 (End Mills)

| Part Number                 | Spare Parts   |   |   |  |
|-----------------------------|---|---|---|--|
|                             | Clamp Set   | Wrench  | Shim  | Shim Screw   |
| MSE 4550<br>4563<br>4580-32 | <br>CPS-6M | <br>LW-3 | <br>MSE-4245 | <br>SP3X8 |

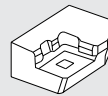




## MSE45-SF (Face Mills)

| Part Number                            | Spare Parts  |   |  |  |   |  |
|--|--|---|--|--|---|--|
|  | ① Cartridge  | ② Clamp   | ③ Clamp  | ④ Clamp Screw  | ⑤ Adjustment Screw  | ⑥ Wrench   |
| MSE 45080R-5T-SF<br>MSE 45125R-7T-M-SF | <br>LSE-445SR | <br>C43R<br>(for Insert) | <br>C44R<br>(for Cartridge) | <br>W6X17 | <br>SV-60136TR | <br>TTC-20 |

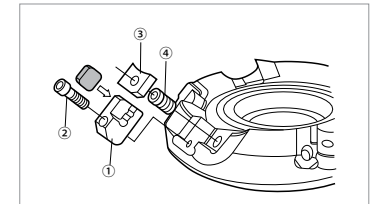
· Arbor Bolt (HH10X30S) is included for MSE45063R-4T-M-SF.  
· Arbor Bolt (HH12X35) is included for MSE45080R-5T-M-SF.







## MSD45 (Face Mills)

| Part Number | Spare Parts   |   |   |   |  |
|-------------|---|---|---|---|--|
|             | ① Cartridge   | ② Clamp Bolt  | ③ Clamp   | ④ Clamp Screw   | Wrench   |
| MSD 45...R  | <br>LSD-445R | <br>HH4X16 | <br>C20R | <br>TH8X15 | <br>TH-4 |






· Mounting bolt (HH12X35) is included for MSD4580R.

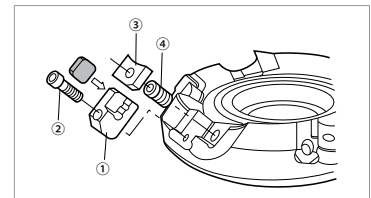


## MSD45 (End Mills)

| Part Number                 | Spare Parts   |   |   |  |
|-----------------------------|---|---|---|--|
|                             | Clamp Set   | Wrench  | Shim  | Shim Screw   |
| MSD 4550<br>4563<br>4580-32 | <br>CPS-445R | <br>LW-3 | <br>MSD-42 | <br>SP3X8 |

## MSO45 (Face Mills)

| Part Number | Spare Parts   |   |   |   |  |
|-------------|---|---|---|---|--|
|             | ① Cartridge   | ② Cartridge Clamp Screw   | ③ Clamp   | ④ Clamp Screw   | Wrench   |
| MSO 45...R  | <br>LSO-445R | <br>HH4X16 | <br>CH-20R | <br>TH8X15 | <br>TH-4 |



## MSO45-S (Face Mills)

| Part Number | Spare Parts |            |        |             |        |
|-------------|-------------|------------|--------|-------------|--------|
|             | Shim        | Shim Screw | Clamp  | Clamp Screw | Wrench |
| MSO 45...-S | MSO-4T245   | SP3X6      | CH-20R | TH8X15      | TH-4   |

## MSO45-09 (Face Mills)

| Part Number   | Spare Parts |        |
|---------------|-------------|--------|
|               | Clamp Screw | Wrench |
| MSO 45...R-09 | SB-3060TR   | DT-10  |


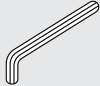
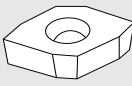

## MSO45-S-09 (End Mills)

| Part Number      | Spare Parts |        |
|------------------|-------------|--------|
|                  | Clamp Screw | Wrench |
| MSO 45...-S32-09 | SB-3060TR   | DT-10  |

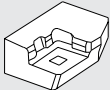






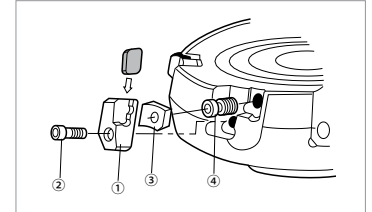
# PREVIOUS SPARE PART LIST

## MSP15 / MSE15 (End Mills)

| Part Number     | Clamp Set   | Wrench  | Shim  | Shim Screw  |
|-----------------|---|---|---|---|
|                 |  |  |  |  |
| <b>MSP 15..</b> | CPS-6M  | LW-3  | MSP-42  | SP3X8   |
| <b>MSE 15..</b> | CPS-6M  | LW-3  | MSE-4215  | SP3X8   |

## MSP15 (Face Mills)

| Part Number       | ① Cartridge   | ② Clamp Bolt  | ③ Clamp   | ④ Clamp Screw   | Wrench  |
|-------------------|---|---|---|---|---|
|                   |  |  |  |  |  |
| <b>MSP 15...R</b> | LSP-415R  | HH4X16  | C25R  | TH8X15  | TH-4  |



\* Mounting bolt (HH12X35) is included with MSP1580R

## MEC (Face Mills)

| Part Number                | Spare Parts |        |
|----------------------------|-------------|--------|
|                            | Clamp Screw | Wrench |
| <b>MEC ...R-11...T(-M)</b> | SB-2555TRG  | DTM-8  |
| <b>...R-11T...T</b>        |             |        |
| <b>...R-17...T(-M)</b>     | SB-4070TRN  | DTM-15 |

## MEC (End Mills)

| Part Number                  | Spare Parts |        |
|------------------------------|-------------|--------|
|                              | Clamp Screw | Wrench |
| <b>MEC ..-W...-1103 (-H)</b> | SB-2555TRG  | DTM-8  |
| <b>..-W...-11T3 (-H)</b>     |             |        |
| <b>..-W...-1704-H</b>        | SB-4070TRN  | DTM-15 |


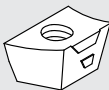



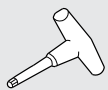

## MECX (Face Mills)

| Part Number               | Spare Parts |        |
|---------------------------|-------------|--------|
|                           | Clamp Screw | Wrench |
| <b>MECX 050R-07-12T-M</b> | SB-2042TRG  | DTM-6  |
| <b>063R-07-14T-M</b>      |             |        |




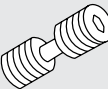

## MECX (End Mills)

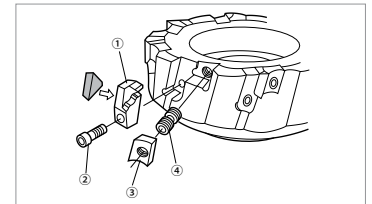
| Part Number              | Spare Parts |        |
|--------------------------|-------------|--------|
|                          | Clamp Screw | Wrench |
| <b>MECX 33-S32-07-6T</b> | SB-2042TRG  | DTM-6  |
| <b>33-S32-200-07-3T</b>  |             |        |

## MTE90-SF


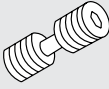



| Part Number         | Cartridge   | Clamp   | Clamp   | Clamp Screw   | Adjustment Screw  | Wrench  | Wrench  |
|---------------------|---|---|---|---|---|---|---|
|                     |  |  |  |  |  |  |  |
| <b>MTE 90...-SF</b> | LTE-490SR   | C91R<br>(for Insert)  | C92R<br>(for Cartridge)   | W8X16   | SV-60136R   | TTC-25  | LW-4<br>(For Adjustment Screw)  |

## MTE90 (Face Mills)

| Part Number       | ① Cartridge   | ② Clamp Bolt  | ③ Clamp   | ④ Clamp Screw   | Wrench  |
|-------------------|---|---|---|---|---|
|                   |  |  |  |  |  |
| <b>MTE 90...R</b> | LTE-490R  | HH4X16  | C17R  | W8X18   | TH-4  |



## MTE90 (End Mills)





| Part Number     | Clamp   | Clamp Screw   | Wrench  | Shim  | Shim Clamp Screw  |
|-----------------|---|---|---|---|---|
|                 |  |  |  |  |  |
| <b>MTE 9050</b> | CP-8TE  | W8X18   | LW-4  | MTE-42  | SP3X8   |
| <b>9063</b>     |   |   |   |   |   |
| <b>9080-32</b>  |   |   |   |   |   |

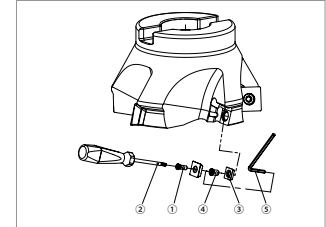
# PREVIOUS SPARE PART LIST

## MFWN (Face Mills)

| Part Number   | Spare Parts |        |                     |
|---|-------------|--------|---------------------|
|   | Clamp Screw | Wrench | Anti-Seize Compound |
| <b>MFWN 90100R-9T-M</b><br>~<br><b>90250R-18T-M</b> | SB-40140TRN | DTM-15 | P-37                |

## MSO90 (Face Mills)

| Part Number | ① Clamp Screw                                      | ② Wrench  | ③ Shim  | ④ Shim Clamp Screw  | ⑤ Wrench  |
|-------------|--|---|---|---|---|
|             | <b>MSO 90...R-15-T</b><br><b>MSO 90...R-15-T-M</b> | <br>SB-45130TR | <br>DTP-20 | <br>MSO-5200 | <br>SPW-6045 |



- Mounting bolts (HH12X35M) are included for MSO90080R-15-OT-M and MSO90080R-15-OT
- Mounting bolts (HH10X30S) are included for MSO90063R-15-OT-M

## MSO90-S (End Mills)

| Part Number                                    | Spare Parts            |                |
|--|------------------------|----------------|
|  | Clamp Screw            | Wrench         |
| <b>MSO 90...-S32-09</b><br><b>90...-S32-15</b> | SB-3080TR<br>SB-5085TR | DT-10<br>DT-20 |

## MSO90-09 (Face Mills)

| Part Number          | Spare Parts |        |
|----------------------|-------------|--------|
|                      | Clamp Screw | Wrench |
| <b>MSO 90...R-09</b> | SB-3060TR   | DT-10  |

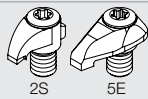

## MEA / MEB

| Part Number              | Spare Parts |        |
|--------------------------|-------------|--------|
|                          | Clamp Screw | Wrench |
| <b>MEA .. -S..(-...)</b> | SB-2560TR   | DT-8   |
| <b>MEB .. -S..</b>       | SB-4085TR   | DT-15  |

## DMC

| Part Number        | Spare Parts |        |
|--------------------|-------------|--------|
|                    | Clamp Screw | Wrench |
| <b>DMC ...-S..</b> | SB-2545TR   | FT-8   |
| <b>0..</b>         | SB-3060TR   | FT-10  |

## MTPS / MTES

| Part Number     | Clamp  | Wrench  |
|-----------------|--|---|
|                 | <br>2S 5E |  |
| <b>MTPS ...</b> | CPS-2S   | FT-15   |
| <b>MTES ...</b> | CPS-5E   |   |

## MEAL

| Part Number        | Spare Parts |        |
|--------------------|-------------|--------|
|                    | Clamp Screw | Wrench |
| <b>MEAL ..-S..</b> | SB-5085TR   | DT-20  |

## MRP-S (End Mills)

| Part Number                  | Spare Parts |        |
|------------------------------|-------------|--------|
|                              | Clamp Screw | Wrench |
| <b>MRP ...-S.. -08(-...)</b> | SB-3060TR   | DT-10  |
| <b>...-S.. -10(-T(-...))</b> | SB-3080TR   | DT-10  |
| <b>...-S.. -12(-T(-...))</b> | SB-4085TR   | DT-15  |
| <b>050-S42 -12(-300)</b>     | SB-40115TR  |        |
| <b>...-S.. -16(-...)</b>     | SB-50120TR  | DT-20  |

## MRP (Face Mills)

| Part Number             | Spare Parts |        |
|-------------------------|-------------|--------|
|                         | Clamp Screw | Wrench |
| <b>MRP ...R -10-T</b>   | SB-3080TR   | DT-10  |
| <b>MRP 050R -12</b>     | SB-40115TR  | DT-15  |
| <b>063R -12</b>         |             |        |
| <b>080R -12</b>         |             |        |
| <b>080R -12-7T</b>      |             |        |
| <b>MRP ...R -16(-T)</b> | SB-50120TR  | DT-20  |
| <b>MRP ...R -20</b>     | SB-60120TR  | DT-25  |

P  
SPARE PARTS

# PREVIOUS SPARE PART LIST

## MHD (Helical End Mills)

| Part Number       | Spare Parts |        |               |               |        |       |
|-------------------|-------------|--------|---------------|---------------|--------|-------|
|                   | Clamp Screw | Wrench | Arbor Bolt    |               | Wrench |       |
|                   |             |        | 1 Front Piece | 2 Front Piece |        |       |
| MHD 32-S32 -SA    | SB-2560TR   | DT-8   | -             | HH8X50        | LW-6   |       |
| 40-S32 -SA        | SB-3080TR   | DT-10  |               | HH8X65        |        |       |
| 40-S42 -SA        |             |        |               | HH12X65       |        | LW-10 |
| 50-S42 -SA        |             |        |               |               |        |       |
| MHD 40-S42 -SB    | SB-3080TR   | DT-10  | HH8X40        | -             | LW-6   |       |
| 50-S42 -SB        |             |        | HH12X40       |               | LW-10  |       |
| MHD 20S-S20 -C    | SB-2560TR   | DT-8   | -             | -             | -      |       |
| 25-S25 -C         |             |        |               |               |        |       |
| 32-S32 -C         |             |        |               |               |        |       |
| 40-S42 -C         |             |        |               |               |        |       |
| 50-S42 -C         | SB-3080TR   | DT-10  |               |               |        |       |
| MHD 32-S32 -A     | SB-2560TR   | DT-8   | HH8X35        | HH8X50        | LW-6   |       |
| 40-S32 -A         | SB-3080TR   | DT-10  | HH8X40        | HH8X65        |        |       |
| 40-S42 -A         |             |        | HH12X40       | HH12X65       |        | LW-10 |
| 50-S42 -A         |             |        |               |               |        |       |
| MHD 32-S32 -A-130 | SB-2560TR   | DT-8   | HH8X35        | HH8X50        | LW-6   |       |
| 40-S32 -A-150     | SB-3080TR   | DT-10  | HH8X40        | HH8X65        | LW-10  |       |
| 50-S42 -A-150     |             |        | HH12X40       | HH12X65       |        |       |
| MHD 40-S42 -B     | SB-3080TR   | DT-10  | HH8X40        | -             | LW-6   |       |
| 50-S42 -B         |             |        | HH12X40       |               | LW-10  |       |
| MHD 32 -F         | SB-2560TR   | DT-8   | -             | -             | -      |       |
| 40 -F             | SB-3080TR   | DT-10  |               |               |        |       |
| 50 -F             |             |        |               |               |        |       |

## MHD (Face Mills and Integral Arbor Type)

| Part Number     | Spare Parts |        |            |        |   |   |
|-----------------|-------------|--------|------------|--------|---|---|
|                 | Clamp Screw | Wrench | Arbor Bolt | Wrench |   |   |
| MHD 63-FMA -SA  | SB-3080TR   | DT-10  | HH16X90    | LW-14  |   |   |
| 80-FMA -SA      |             |        | HH20X110   | LW-17  |   |   |
| 100-FMA -SA     |             |        | HH24X110   | LW-19  |   |   |
| MHD 63-FMA -A   |             |        | HH16X90    | LW-14  |   |   |
| 80-FMA -A       |             |        | HH20X110   | LW-17  |   |   |
| 100-FMA -A      |             |        | HH24X110   | LW-19  |   |   |
| MHD 63-BT50 -SA |             |        | HH16X90    | LW-14  |   |   |
| 80-BT50 -SA     |             |        | HH20X110   | LW-17  |   |   |
| 100-BT50 -SA    |             |        | HH24X110   | LW-19  |   |   |
| MHD 63-BT50 -A  |             |        | HH16X65    | LW-14  |   |   |
| 80-BT50 -A      |             |        | HH20X90    | LW-17  |   |   |
| 100-BT50 -A     |             |        | HH24X90    | LW-19  |   |   |
| MHD 63 -F       |             |        |            |        | - | - |
| 80 -F           |             |        |            |        |   |   |
| 100 -F          |             |        |            |        |   |   |

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| SPARE PARTS          | <b>P</b> |
| TECHNICAL            | <b>R</b> |
| INDEX                | <b>T</b> |

# PREVIOUS SPARE PART LIST

## MHD (Radius Type)

| Part Number  | Spare Parts   |                  |               |                  |               |               |        |         |
|--|---------------|------------------|---------------|------------------|---------------|---------------|--------|---------|
|  | Clamp Screw   |                  | Wrench        |                  | Arbor Bolt    |               | Wrench |         |
|  | For End Blade | For Middle Blade | For End Blade | For Middle Blade | 1 Front Piece | 2 Front Piece |        |         |
| MHD 32-S32 -4RSA<br>40-S32 -5RSA<br>40-S42 -5RSA<br>50-S42 -6RSA | SB-2560TR     | SB-2560TR        | DT-8          | DT-8             | -             | HH8X50        | LW-6   |         |
|  | SB-3080TR     | SB-3080TR        | DT-10         | DT-10            |               | HH8X55        |        |         |
|  |               |                  | DT-15         |                  |               | HH12X55       |        | LW-10   |
|  | SB-4085TR     |                  |               |                  |               |               |        | HH12X65 |
| MHD 32-S32 -A<br>40-S32 -A<br>40-S42 -A<br>50-S42 -A             | SB-2560TR     |                  | DT-8          |                  | -             | HH8X50        | LW-6   |         |
|  | SB-3080TR     |                  | DT-10         |                  |               | HH8X65        |        |         |
|  |               |                  |               |                  |               | HH12X65       | LW-10  |         |
|  |               |                  |               |                  |               |               |        |         |
| MHD 32 -F<br>40 -F<br>50 -F                                      | SB-2560TR     |                  | DT-8          |                  | -             |               |        |         |
|  | SB-3080TR     |                  | DT-10         |                  |               |               |        |         |
|  |               |                  |               |                  |               |               |        |         |
| MHD 32 -4RF<br>40 -5RF<br>50 -6RF                                | SB-2560TR     | SB-2560TR        | DT-8          | DT-8             | -             |               |        |         |
|  | SB-3080TR     | SB-3080TR        | DT-10         | DT-10            |               |               |        |         |
|  | SB-4085TR     |                  | DT-15         |                  |               |               |        |         |

## MGI

| Part Number | Spare Parts |        |
|-------------|-------------|--------|
|             | Clamp Set   | Wrench |
| MGI ...-1C  | CPS-6F      | LW-3   |

## MVG


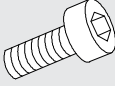
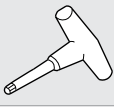
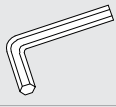
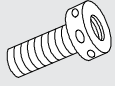
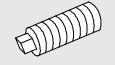
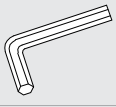
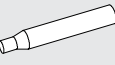
| Part Number | Spare Parts |        |
|-------------|-------------|--------|
|             | Clamp Set   | Wrench |
| MVG ...     | CPS-6V      | LW-3   |

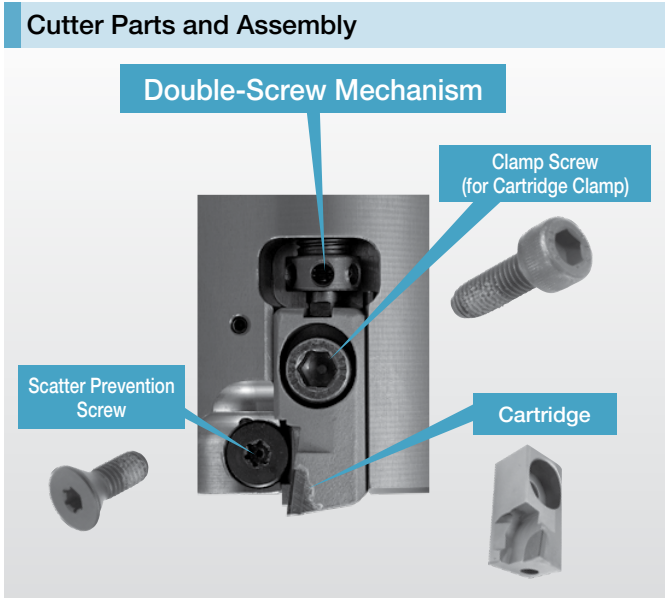
## Blank Tool


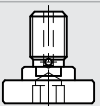
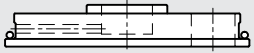
| Part Number     | Spare Parts  |
|-----------------|--------------|
|                 | Coolant Pipe |
| T63H- BL...-... | CL63-1       |

# PREVIOUS SPARE PART LIST

## HS-MFAL

| Part Number      | ① Scatter Prevention Screw | ② Clamp Screw   | ③ Wrench  | ④ Wrench  | ⑤ Adjustment Screw A  | ⑥ Adjustment Screw B  | ⑦ Wrench   | ⑧ Adjustment Wrench   | ⑨ Balance Screw   |
|------------------|----------------------------|---|---|---|---|---|--|---|---|
|                  |                            |  |  |  |  |  |  |  |  |
| HS-MFAL 063R-... |                            | HH6X16A   |   |   |   |   |  |   |   |
| 080R-...         | SB-50137K                  | HH6X18A   | TTC-20  | LW-5  | AJ-816  | AJ-519  | LW-2.5   | AW-3L   | HS6X8T  |
| 250R-...         | for Cartridge Clamp        |   |   |   |   |   |  |   |   |



| Part Number          | Spare Parts   |  |   |
|----------------------|---|--|---|
|                      | Arbor Mounting Bolt (Standard Accessory)  | Arbor Mounting Bolt with Coolant Hole (Sold Separately)                              | Coolant Hole Cover (Sold Separately)  |
|                      |  |  |  |
| HS-MFAL 080R-6T-SF   | HH12X35HK   | -  |   |
| 100R-6T-SF           |   | HF16X40HA  |   |
| 125R-8T-SF           |   | HF20X53HA  |   |
| 160R-12T-SF          | -   | HF24X60HA  |   |
| 200R-14T-SF          |   |  | CC-200  |
| 250R-18T-SF          |   |  | CC-250  |
| HS-MFAL 063R-4T-M-SF | HH10X35HK   |  |   |
| 080R-6T-M-SF         | HH12X35HK   |  |   |
| 100R-6T-M-SF         |   | HF16X40HA  |   |
| 125R-8T-M-SF         |   | HF20X53HA  |   |
| 160R-12T-M-SF        | -   |  |   |
| 200R-14T-M-SF        |   |  | CC-200  |
| 250R-18T-M-SF        |   |  | CC-250  |

• For HS-MFAL100R to 250R, when using coolant-through, please use arbor mounting bolt with coolant hole HF...HA (sold separately)

|                      |          |
|----------------------|----------|
| INSERT GRADES        | <b>A</b> |
| TURNING INSERTS      | <b>B</b> |
| GEN/PCD INSERTS      | <b>C</b> |
| TURNING HOLDERS      | <b>D</b> |
| SMALL TOOLS          | <b>E</b> |
| BORING               | <b>F</b> |
| GROOVING             | <b>G</b> |
| CUT-OFF              | <b>H</b> |
| THREADING            | <b>J</b> |
| DRILLING             | <b>K</b> |
| MILLING              | <b>M</b> |
| QUICK CHANGE TOOLING | <b>N</b> |
| SPARE PARTS          | <b>P</b> |
| TECHNICAL            | <b>R</b> |
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