Die Mounted Cam Unit  General Description of CMSD

FOR PIERCE

Mounting width are 52mm and 90mm.
Structure to ease removal of spring
Available angle is 0° to 20°(52 in width), 0° to 15°(90 in width) and the travel is 55mm.

CMSD Structure and Assembly / Disassembly

1) Remove hexagon socket head bolt (a) and pull guide bar (t) from cam holder (w) 30 mm to the rear. Remove the guide bar and cam slide (tqr).
2) Pull and remove the guide bar from the cam slider.

Assembly method of CMSD
1) Assemble components in the reverse order of disassembly.
2) Make sure that there is no foreign matter on the sliding area and assemble components.
3) The clearance between the guide bar/cam slider and the cam holder is controlled. Match the stamped serial number on the holder and slider before assembly.
4) When cam is disassembled and then reassembled, please do not forget to assemble all bolts provided.

CMSD Specifications

<table>
<thead>
<tr>
<th>Mounting Surface</th>
<th>Woring Angle</th>
<th>Travel</th>
<th>Working Force kN(tonf)</th>
<th>Spring Force N(kgf)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>W</td>
<td>H</td>
<td>Standard Working Force (one million strokes)</td>
<td>Allowable Working Force (300,000 strokes)</td>
</tr>
<tr>
<td>52</td>
<td>00</td>
<td></td>
<td>19.6(2.0)</td>
<td>39.2(4.0)</td>
</tr>
<tr>
<td>52</td>
<td>15</td>
<td>10</td>
<td>38.2(3.9)</td>
<td>76.4(7.8)</td>
</tr>
</tbody>
</table>

Option of CMSD

- Key Specification(-K)

CMSD52
LKU20-50(with 2-M8×15 bolts)

CMSD90
LKU32-50(with 2-M8×15 bolts)
Die Mounted Cam Unit

FOR PIERCE

For detailed specification of the key, refer to page 1713.

Dedicated key is attached.
(It is not assembled to the main unit.)

Order
Catalog No. (W) (K) S
CMSD 52 00 55

Refer to page 559 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

Table of Components

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Qty.</th>
<th>Material and Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cam Slider</td>
<td>1</td>
<td>FC250</td>
</tr>
<tr>
<td>2</td>
<td>Cam Holder</td>
<td>1</td>
<td>FC250</td>
</tr>
<tr>
<td>3</td>
<td>Cam Driver</td>
<td>1</td>
<td>FC250 with Graphite</td>
</tr>
<tr>
<td>4</td>
<td>Cam Lower Slider</td>
<td>1</td>
<td>FC250 with Graphite</td>
</tr>
<tr>
<td>5</td>
<td>Guide Bar</td>
<td>1</td>
<td>SCM440 with Graphite</td>
</tr>
<tr>
<td>6</td>
<td>Cam Positive Return</td>
<td>1</td>
<td>SAE51045</td>
</tr>
<tr>
<td>7</td>
<td>Coil Spring</td>
<td>1</td>
<td>SWOSC-V SW55-150</td>
</tr>
<tr>
<td>8</td>
<td>Stopper</td>
<td>1</td>
<td>Urethane PCU20</td>
</tr>
<tr>
<td>9</td>
<td>Spring Plug</td>
<td>2</td>
<td>SAE1065 NH8</td>
</tr>
</tbody>
</table>

Bolts for assembly are not indicated.

Spring Diagram
(Stroking force at punch retraction of 5mm)
- Spring used SWOS-V SW55-150 (1 piece)
- Spring constant 948N/mm (0.97kgf/mm)
- Guideline of spring durability 500,000 strokes

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Die Mounted Cam Unit

FOR PIERCE

For detailed specification of the key, refer to page 1713.

CAM UNIT

16
1718

Key Specification

(Quantity: 2)

K
SC
WC

Dedicated key is attached.

(It is not assembled to the main unit.)

Order

Catalog No. (W) (Ø) S

Option

Code Specification

SC
WC

The mounting surface is extended forward in the range of 0 to 65 mm
(at increments of 1 mm).

The mounting surface width (W) is changed within the range 53 mm -
100 mm (1 mm increments).

Order

CMSD52 - 05 - 55 - SC5 - WC
CMSD52 - 05 - 55 - SC25

Refer to page 559 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

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<td>Cam Driver</td>
<td>1</td>
<td>FC250 with Graphite</td>
</tr>
<tr>
<td>4</td>
<td>Cam Lower Slider</td>
<td>1</td>
<td>FC250 with Graphite</td>
</tr>
<tr>
<td>5</td>
<td>Guide Bar</td>
<td>1</td>
<td>SCM440 with Graphite</td>
</tr>
<tr>
<td>6</td>
<td>Cam Positive Return</td>
<td>1</td>
<td>S45C (1045)</td>
</tr>
<tr>
<td>7</td>
<td>Coil Spring</td>
<td>1</td>
<td>SWOSC-V SW526-150</td>
</tr>
<tr>
<td>8</td>
<td>Stopper</td>
<td>1</td>
<td>Urethane PCU20</td>
</tr>
<tr>
<td>9</td>
<td>Spring Plug</td>
<td>2</td>
<td>SAE1065 Ni8</td>
</tr>
</tbody>
</table>

Bolts for assembly are not indicated.

Spring Diagram

(Striping Force at punch retraction of 5mm)

- Spring used SWS26-150 (1 piece)
- Spring constant 9.48N/mm (0.97kgf/mm)
- Guideline of spring durability 500,000 strokes

Spring return when the punch return is 5mm

For detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

Spring Diagram

(Striping Force at punch retraction of 5mm)

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- Spring used SWS26-150 (1 piece)
- Spring constant 9.48N/mm (0.97kgf/mm)
- Guideline of spring durability 500,000 strokes

Spring return when the punch return is 5mm
**Die Mounted Cam Unit**

**FOR PIERCE**

### Table of Components

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<tr>
<td>3</td>
<td>Cam Driver</td>
<td>1</td>
<td>FC250 with Graphite</td>
</tr>
<tr>
<td>4</td>
<td>Cam Lower Slider</td>
<td>1</td>
<td>SCM440 with Graphite</td>
</tr>
<tr>
<td>5</td>
<td>Slide Bar</td>
<td>1</td>
<td>SAE1065 NH8</td>
</tr>
<tr>
<td>6</td>
<td>Cam Positive Return</td>
<td>1</td>
<td>SWOSC-V SW326-150</td>
</tr>
<tr>
<td>7</td>
<td>Stopper</td>
<td>1</td>
<td>urethane PC20</td>
</tr>
<tr>
<td>8</td>
<td>Spring Plug</td>
<td>2</td>
<td>SAE1065 NH8</td>
</tr>
</tbody>
</table>

### Spring Diagram

- **Spring Force**: SW326-150 (1 piece)
- **Spring constant**: 9.48N/mm (0.97kgf/mm)
- **Guideline of spring durability**: 500,000 strokes

**For detailed specification of the key, refer to page 1713.**

**Space for removing**

Refer to page 559 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

### Specification

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Specification</th>
</tr>
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<tbody>
<tr>
<td>K</td>
<td>Dedicated key is attached. (It is not assembled to the main unit.)</td>
</tr>
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<td>SC</td>
<td>The mounting surface is extended forward in the range of 0 to 65 mm (at increments of 1 mm).</td>
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<td>The mounting surface width (W) is changed within the range 53 mm - 100 mm (1 mm increments).</td>
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### Spring Force N(tonf) and Initial Load N(tonf)

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Spring Force</th>
<th>Initial Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC5</td>
<td>19.6 N(tonf)</td>
<td>85.3 N(tonf)</td>
</tr>
<tr>
<td>WC</td>
<td>20.0 N(tonf)</td>
<td>86.7 N(tonf)</td>
</tr>
</tbody>
</table>

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For detailed specifications of the tapped holes and dowel pin holes (prepared hole, finish hole) for retainer, refer to page 559.

For detailed specification of the key, refer to page 1713.

Bolts for assembly are not indicated.

Table of Components

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<tr>
<td>6</td>
<td>Cam Positive Return</td>
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<td>S40C(1045)</td>
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<tr>
<td>7</td>
<td>Coil Spring</td>
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<td>SWOSC-V SWS26-150</td>
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<tr>
<td>8</td>
<td>Stopper</td>
<td>1</td>
<td>Urethane PCU20</td>
</tr>
<tr>
<td>9</td>
<td>Spring Plug</td>
<td>2</td>
<td>SAE1065 NH8</td>
</tr>
</tbody>
</table>

Spring Diagram (Springing Force at punch retraction of 5mm)

- Spring used: SWS26-150 (1 piece)
- Spring constant: 5.48N/mm (0.97kgf/mm)
- Guideline of spring durability: 500,000 strokes

- Stripping Force at punch retraction of 5mm
  - \( z \) = 5.0
- Length at initial load 141
- Initial Load 85.3 (8.7)
- Final Load 140.8 (62.0)
Die Mounted Cam Unit

For detailed specification of the key, refer to page 1713.

■Space for removing

Refer to page 559 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■Table of Components

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<td>3</td>
<td>Cam Driver</td>
<td>1</td>
<td>FC250 with Graphite</td>
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<td>4</td>
<td>Cam Lower Slider</td>
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<td>SCM440 with Graphite</td>
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<td>Guide Bar</td>
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<td>Cam Positive Return</td>
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<td>S45C1045</td>
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<tr>
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<td>Stopper</td>
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<td>Urethane PCU20</td>
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<tr>
<td>8</td>
<td>Spring Plug</td>
<td>2</td>
<td>SA1065 NHB</td>
</tr>
</tbody>
</table>

■Spring Diagram

(Shipping Force at punch retraction of 5mm)
- Spring used SW526-150 (1 piece)
- Spring constant 9.48N/mm (0.97kgf/mm)
- Guideline of spring durability 500,000 strokes

- Stripping Force at punch retraction of 5mm
- Spring return when the punch return is 5mm

Bolts for assembly are not indicated.

■Order

Order CMSD52 - 20 - 55 - SC5 - WC
Order CMSD52 - 20 - 55 - SC25

Spring Diagram

For detailed specification of the key, refer to page 1713.