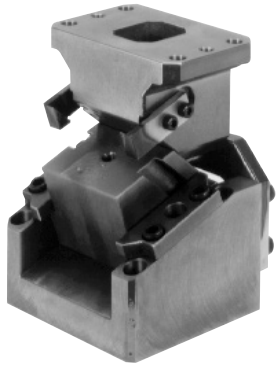
# SKCA [Overview]

## Product Information

- Mount face widths 52, 65, 100, 150, 200, 250, and 300 mm.
- Working angles from 0° to 20° in 5° increments for 65, 100, and 150 mm.
- Mount face widths of 52, 200, 250, and 300 mm are available with an angle of 0°.
- Gas Spring is available in 65, 100, 150, and 200 mm width and 0°.
- The Box-type holder provides high rigidity.



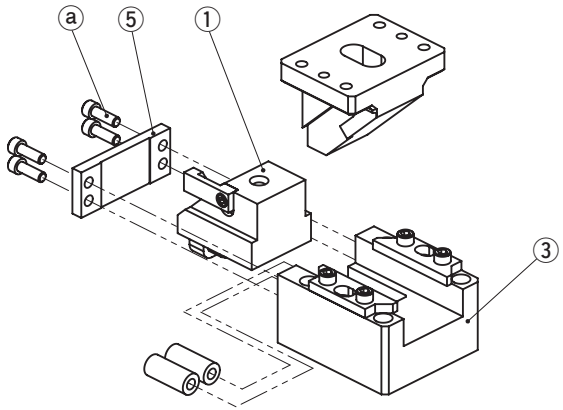
### ■Gas Spring Specifications

| Mount face | | Working Angle | Travel | Working Force [kN (tonf)] | | Spring Force N (kgf) |
|---|---|---|---|---|---|---|
| W | H | | | Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | |
| 65 | 70 | 00 | 38 | 19.6 (2.0) | 39.2 (4.0) | 667 (69.1) |
| 100 | 100 | 00 | 40 | 29.4 (3.0) | 58.8 (6.0) | 1111 (113.4) |
| 150 | 100 | 00 | 40 | 58.8 (6.0) | 88.2 (9.0) | 2051 (209.3) |
| 200 | 110 | 00 | 40 | 78.4 (8.0) | 117.6 (12.0) | 2733 (278.9) |

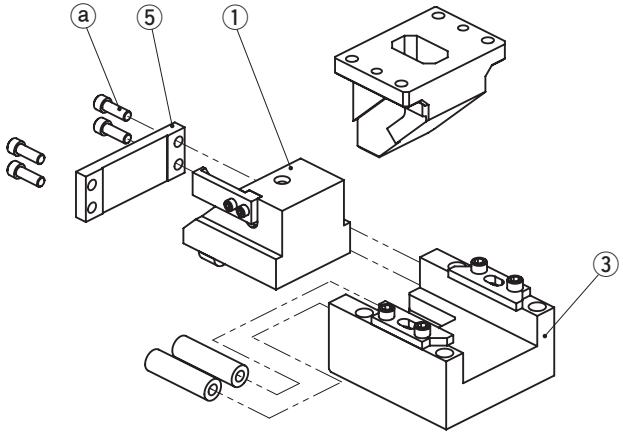
### ■Coil Spring Specifications

| Mount face | | Working Angle | Travel | Working Force [kN (tonf)] | |
|---|---|---|---|---|---|
| W | H | | | Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes |
| 52 | 65 | 00 | 25 | 14.7 ( 1.5) | 29.4 ( 3.0) |
| | | | 40 | | |
| | | | 60 | | |
| 65 | 70 | 00 | 40 | 19.6 ( 2.0) | 39.2 ( 4.0) |
| | | | 60 | | |
| | | 05 | 45 | | |
| | | | 70 | | |
| | | 10 | 45 | | |
| | | | 70 | | |
| | | 15 | 45 | | |
| | | | 70 | | |
| | | 20 | 45 | | |
| | | | 70 | | |
| 100 | 100 | 00 | 40 | 29.4 ( 3.0) | 58.8 ( 6.0) |
| | | | 60 | | |
| | | | 80 | | |
| | 90 | 05 | 45 | 39.2 ( 4.0) | 78.4 ( 8.0) |
| | | | 70 | | |
| | | 10 | 45 | | |
| | | | 70 | | |
| | | 15 | 45 | | |
| | | | 70 | | |
| | | 20 | 45 | | |
| | | | 70 | | |
| 150 | 100 | 00 | 40 | 58.8 ( 6.0) | 88.2 ( 9.0) |
| | | | 60 | | |
| | | 05 | 45 | 64.7 ( 6.6) | 98.0 (10.0) |
| | | | 70 | | |
| | | 10 | 45 | | |
| | | | 70 | | |
| | | 15 | 45 | | |
| | | | 70 | | |
| | | 20 | 45 | | |
| | | | 70 | | |
| 200 | 110 | 00 | 40 | 78.4 ( 8.0) | 117.6 (12.0) |
| | | | 60 | | |
| 250 | 130 | 00 | 40 | 98.0 (10.0) | 147.0 (15.0) |
| | | | 60 | | |
| 300 | | 00 | 40 | 117.6 (12.0) | 176.4 (18.0) |
| | | | 60 | | |

## ■SKCA52, 65 Assembly Instructions



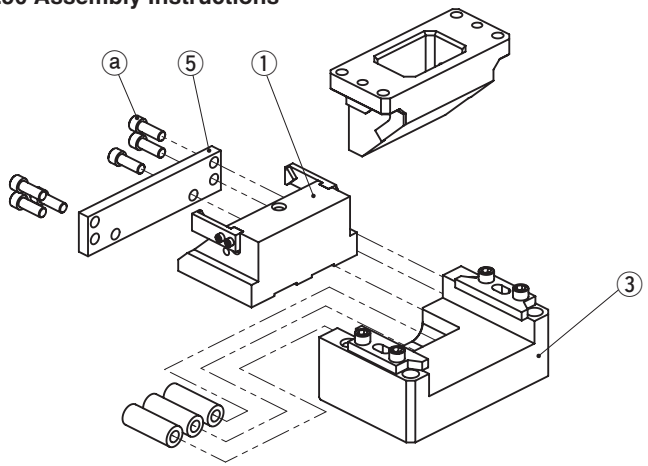

## ■SKCA100, 150 Assembly Instructions



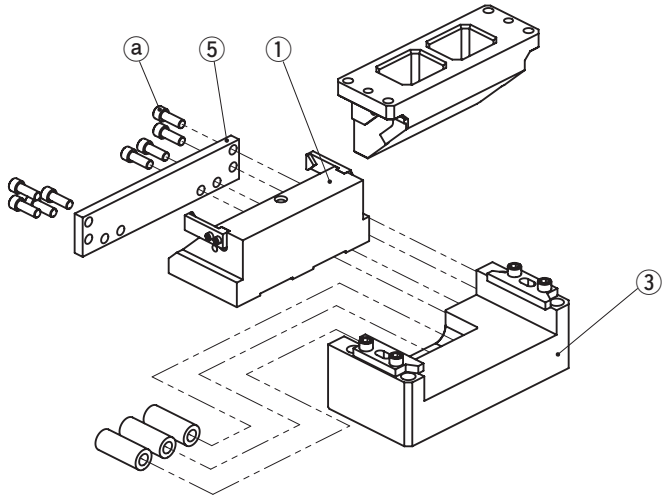

● Disassembly

1) Remove Hexagon Socket Head Bolts (ⓐ), to pull out Stopper Plate (⑤).
2) Pull out and remove Cam Slider (①) from Cam Holder (③) to the rear.

## ■SKCA200, 250 Assembly Instructions




## ■SKCA300 Assembly Instructions

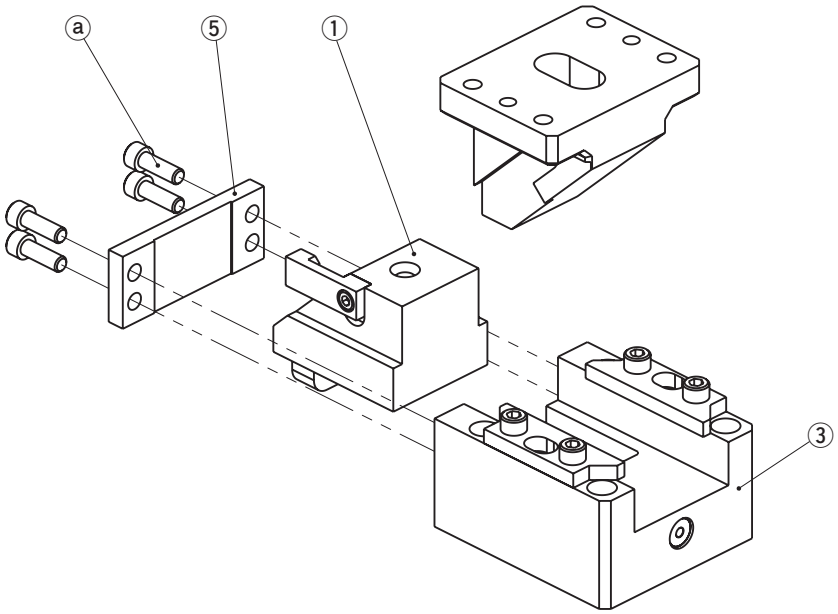



● Assembly

Assembly is the reverse procedure of disassembly.

- Ensure that all parts are clean, particularly the sliding components to which a small amount of lubricant is applied and is then placed in position.
- Take care that the respective tolerances are observed when assembling Cam Slider and Cam Holder, which also should be identified by the same serial number.
- Make sure that all bolts are tighten to the recommended torque after assembly and disassembly.

## ■SKCA65, 100, 150 Assembly Instructions (Gas Spring)




● Disassembly

1) Remove Hexagon Socket Head Bolts (ⓐ), to pull out Stopper Plate (⑤).
2) Pull out and remove Cam Slider (①) from Cam Holder (③) to the rear.

● Assembly

Assembly is the reverse procedure of disassembly.

- Ensure that all parts are clean, particularly the sliding components to which a small amount of lubricant is applied and is then placed in position.
- Take care that the respective tolerances are observed when assembling Cam Slider and Cam Holder, which also should be identified by the same serial number.
- Make sure that all bolts are tighten to the recommended torque after assembly and disassembly.

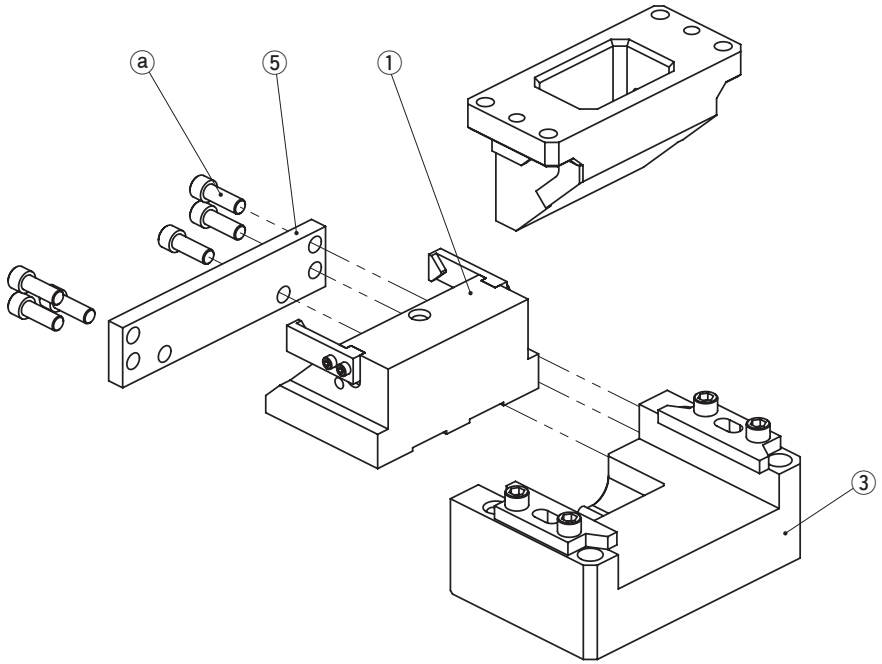
⚠ Gas Spring

Please contact your local sales representative if you prefer to use a gas spring not specified in our catalog. For use and maintenance of gas spring, please contact the manufacturer directly.





## ■SKCA200 Assembly Instructions (Gas Spring)




● Disassembly

1) Remove Hexagon Socket Head Bolts (ⓐ), to pull out Stopper Plate (⑤).
2) Pull out and remove Cam Slider (①) from Cam Holder (③) to the rear.

● Assembly

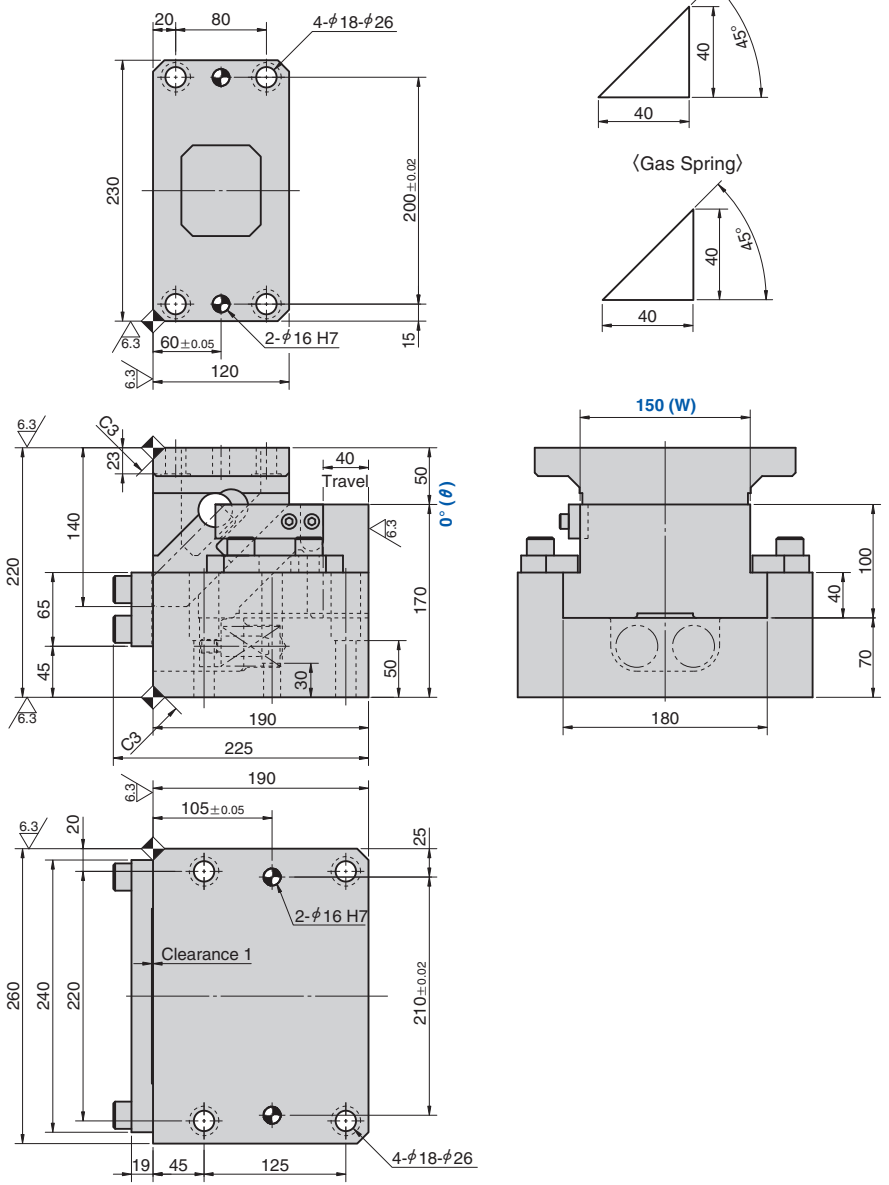
Assembly is the reverse procedure of disassembly.

- Ensure that all parts are clean, particularly the sliding components to which a small amount of lubricant is applied and is then placed in position.
- Take care that the respective tolerances are observed when assembling Cam Slider and Cam Holder, which also should be identified by the same serial number.
- Make sure that all bolts are tighten to the recommended torque after assembly and disassembly.

⚠ Gas Spring

Please contact your local sales representative if you prefer to use a gas spring not specified in our catalog. For use and maintenance of gas spring, please contact the manufacturer directly.

## SKCA150-00-40




● Cam Diagram
〈Coil Spring〉




〈Gas Spring〉







| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S | Spring Type PS |
|---|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | | |
| 58.8 (6.0) | 88.2 (9.0) | 306.9 (31.4) | 1841.3 (188.2) | 14.3 | 63.0 | SKCA | 150 | 00 | 40 | No Code (Coil Spring) NISO |
| | | — | 2051 (209.3) | | | | | | | GK NGK GD NGD GS NGS |

No Code: Coil Spring GK: Gas Spring (KALLER) GD: Gas Spring (DADCO) GS: Gas Spring (SDT)
NGK/NGD/NGS: Without Gas Spring NISO: Without Coil Spring Parts for spring assembly are included.

Order

| Catalog No. | W | — | θ | — | S | — | PS | — | Option |
|---|---|---|---|---|---|---|---|---|---|
| SKCA | 150 | — | 00 | — | 40 | — | GK | | |
| SKCA | 150 | — | 00 | — | 40 | — | NGK | | |
| SKCA | 150 | — | 00 | — | 40 | — | GK | — | NF |

Option

| Option Code | Specification |
|---|---|
| NF | Nitrogen gas not charged. |

Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

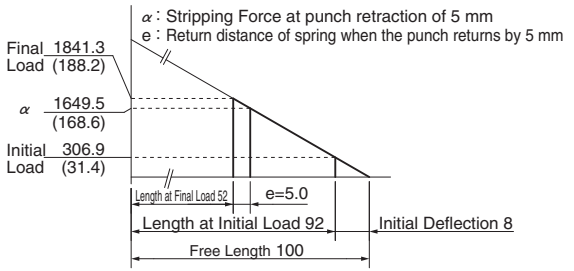
### ■Spring Specification

| No. | PS | Spring Model | Qty | Remark |
|---|---|---|---|---|
| 8 | No Code | TF35-100 | 2 | Coil Spring 19.18 N/mm (1.96 kgf/mm) |
| | GK | M2-50-Red | 1 | Gas Spring (KALLER) |
| | GD | C.180.050.BK.135 | 1 | Gas Spring (DADCO) |
| | GS | SFNA.150.50 | 1 | Gas Spring (SDT) |

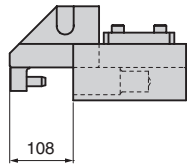
Gas filling pressure: 18 MPa
Life expectancy of Coil Spring is approximately 300,000 strokes.

### ■Spring Diagram

・Spring Model TF35-100 (2 pieces)



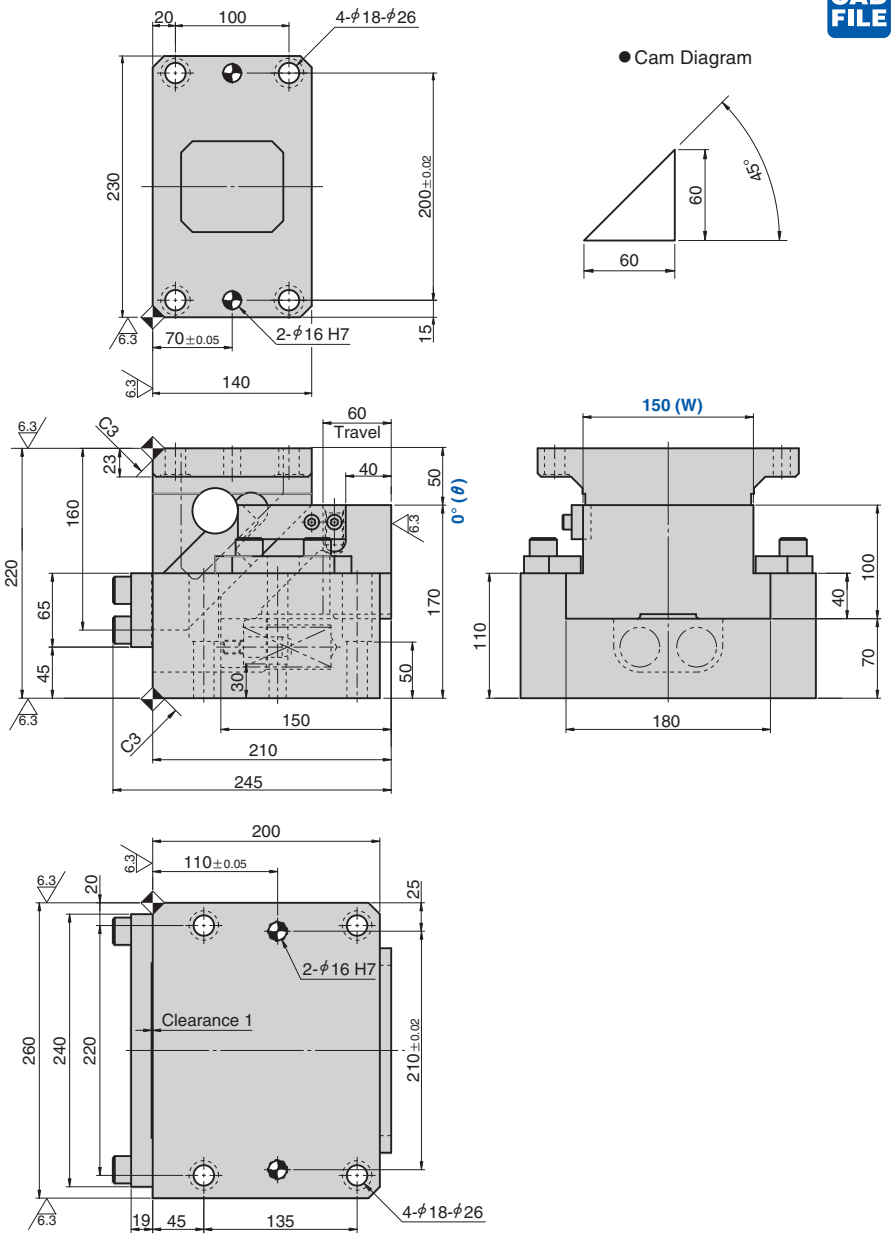

### ■Rear Removal Space




Refer to page 1033, 1034 for Table of Components.

## SKCA150-00-60

CAD FILE




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 58.8 (6.0) | 88.2 (9.0) | 332.5 (33.8) | 1867.3 (189.8) | 14.3 | 69.0 | SKCA | 150 | 00 | 60 |

Order

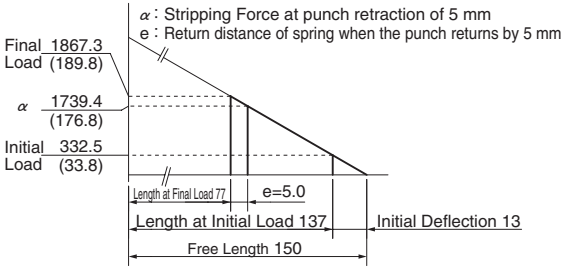
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 00 | – | 60 |

Option

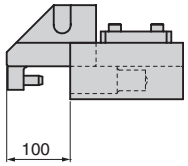
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-150 (2 pieces)
- Spring constant 12.79 N/mm (1.30 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.



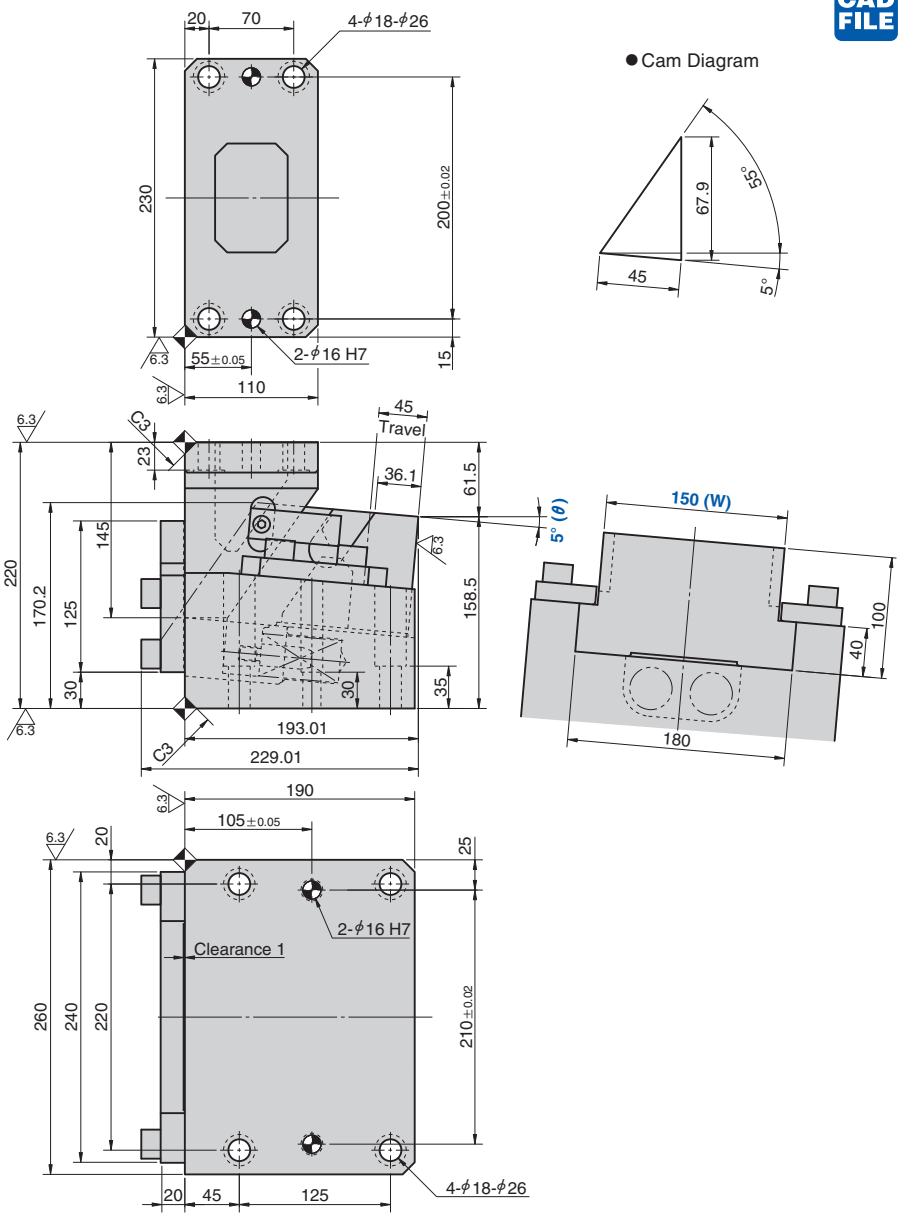

### ■Rear Removal Space




Refer to page 1033 for Table of Components.

## SKCA150-05-45

CAD FILE




● Cam Diagram




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 64.7 (6.6) | 98.0 (10.0) | 429.5 (43.7) | 1810.1 (184.1) | 16.0 | 62.0 | SKCA | 150 | 05 | 45 |

Order

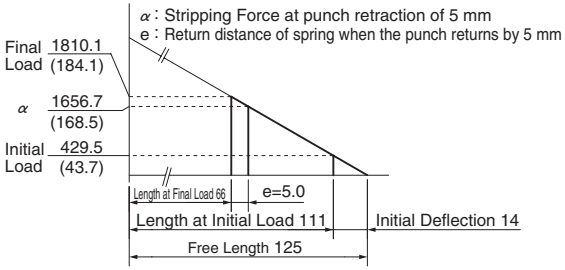
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 05 | – | 45 |

Option

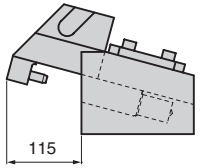
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-125 (2 pieces)
- Spring constant 15.34 N/mm (1.56 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.



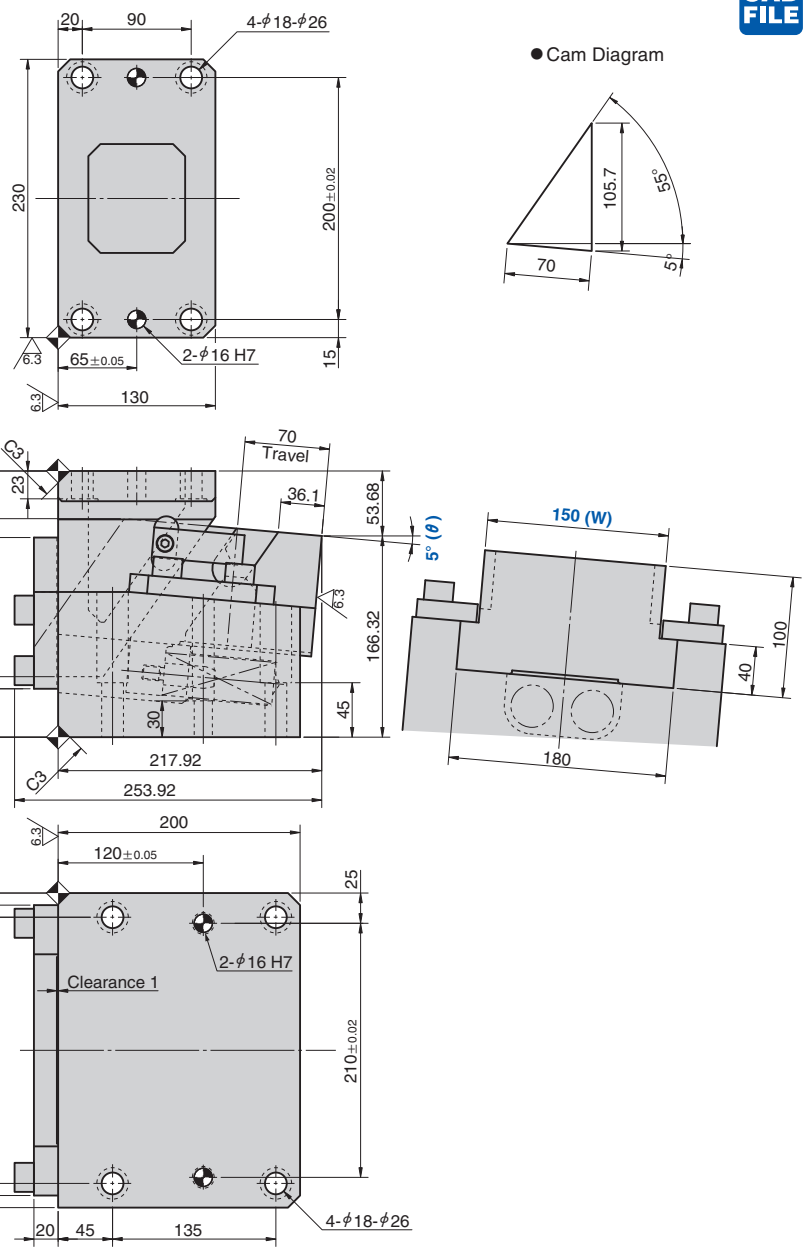

### ■Rear Removal Space




Refer to page 1033 for Table of Components.

## SKCA150-05-70

CAD FILE




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 64.7 (6.6) | 98.0 (10.0) | 306.9 (31.4) | 1841.3 (188.2) | 16.0 | 73.0 | SKCA | 150 | 05 | 70 |

Order

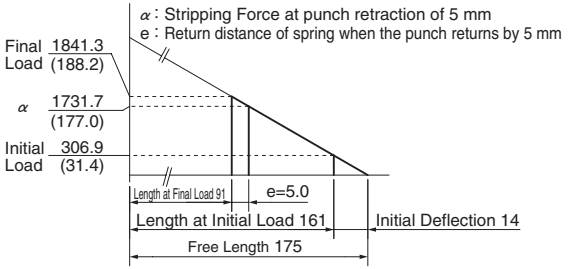
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 05 | – | 70 |

Option

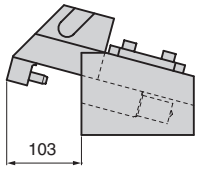
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-175 (2 pieces)
- Spring constant 10.96 N/mm (1.12 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.



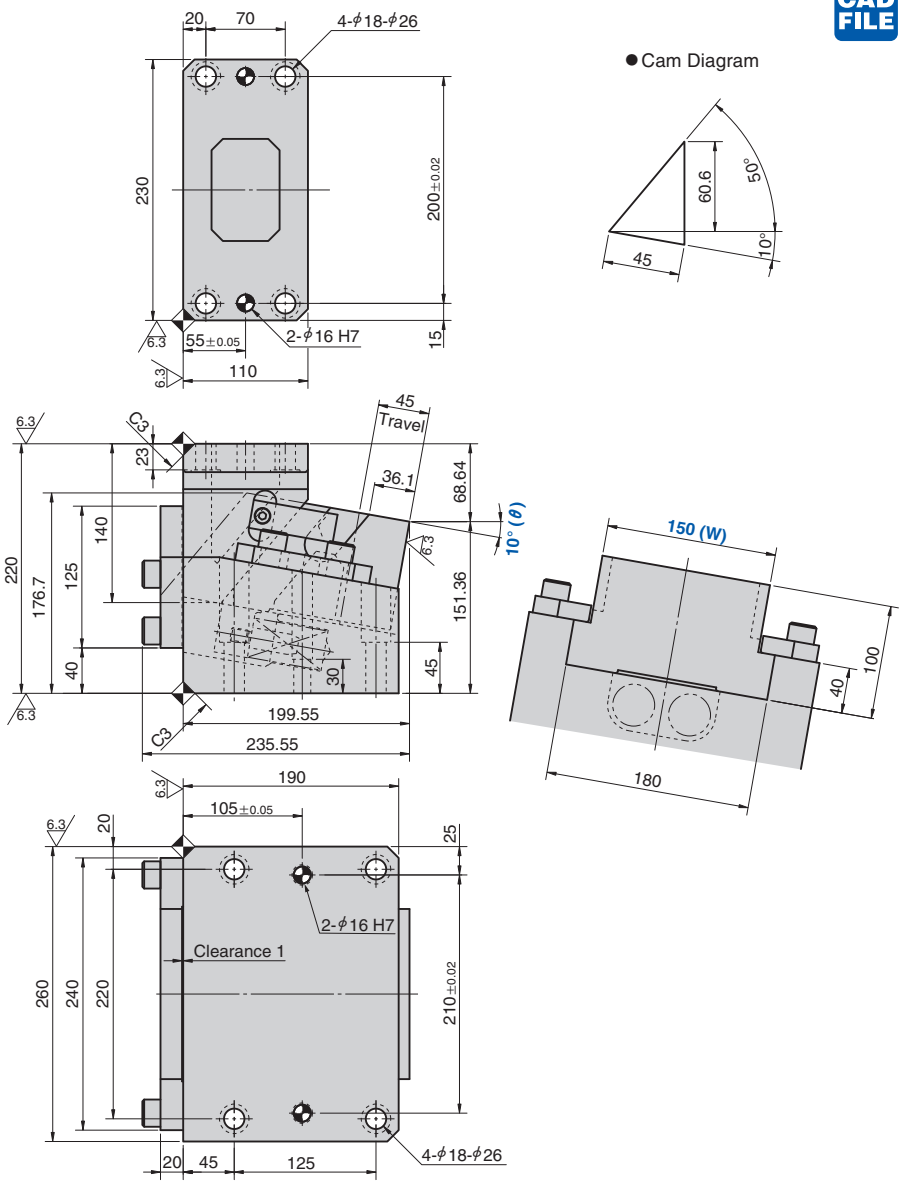

### ■Rear Removal Space




Refer to page 1033 for Table of Components.

## SKCA150-10-45

CAD FILE




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 64.7 (6.6) | 98.0 (10.0) | 429.5 (43.7) | 1810.1 (184.1) | 16.0 | 63.0 | SKCA | 150 | 10 | 45 |

Order

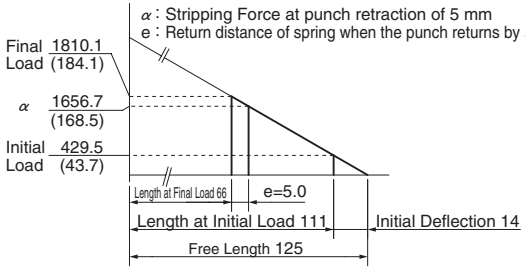
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 10 | – | 45 |

Option

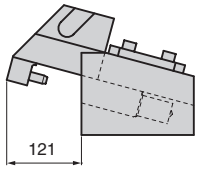
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-125 (2 pieces)
- Spring constant 15.34 N/mm (1.56 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.



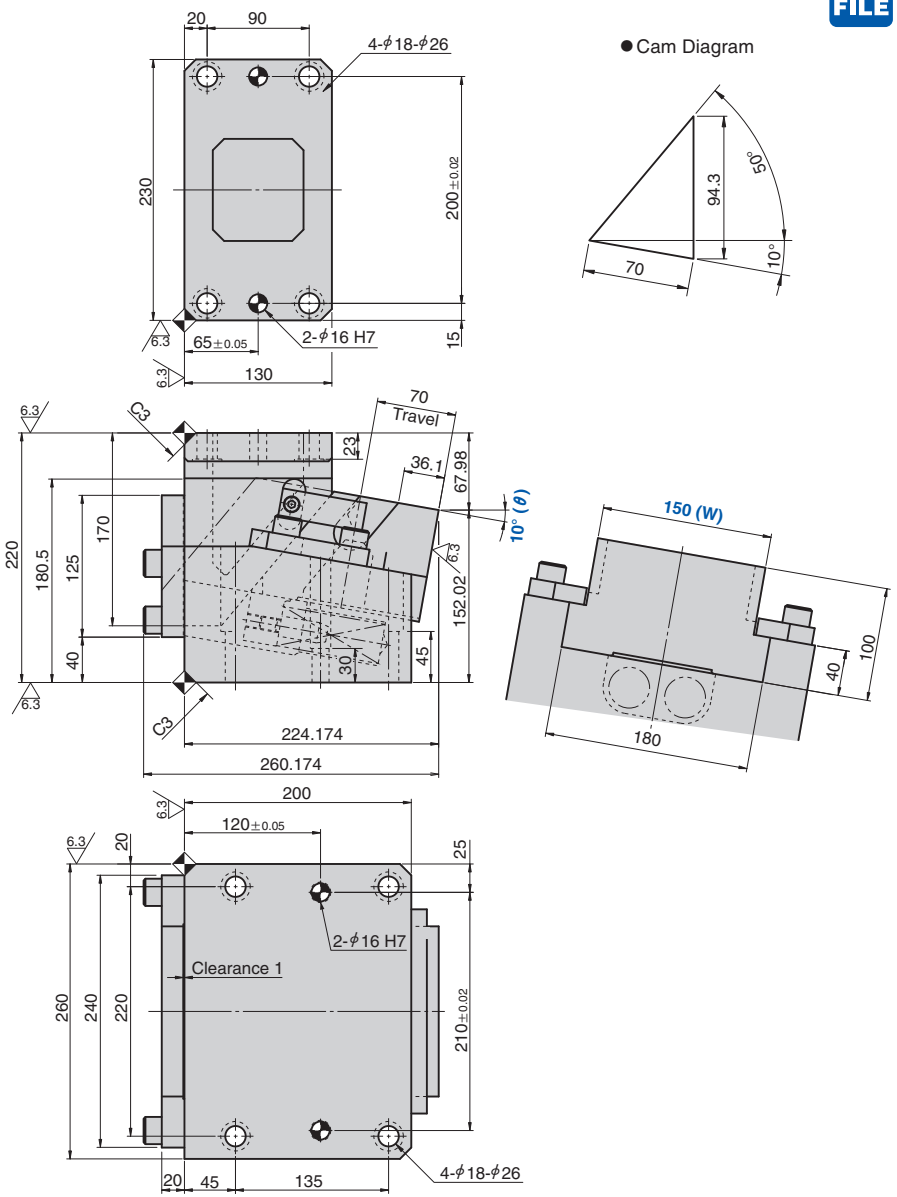

### ■Rear Removal Space




Refer to page 1033 for Table of Components.

## SKCA150-10-70

CAD FILE




● Cam Diagram




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 64.7 (6.6) | 98.0 (10.0) | 306.9 (31.4) | 1841.3 (188.2) | 16.0 | 73.0 | SKCA | 150 | 10 | 70 |

Order

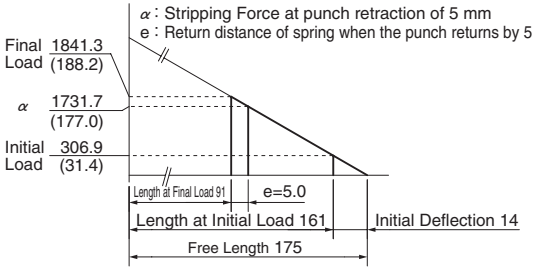
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 10 | – | 70 |

Option

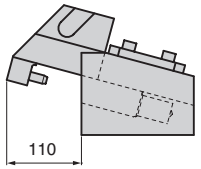
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-175 (2 pieces)
- Spring constant 10.96 N/mm (1.12 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.



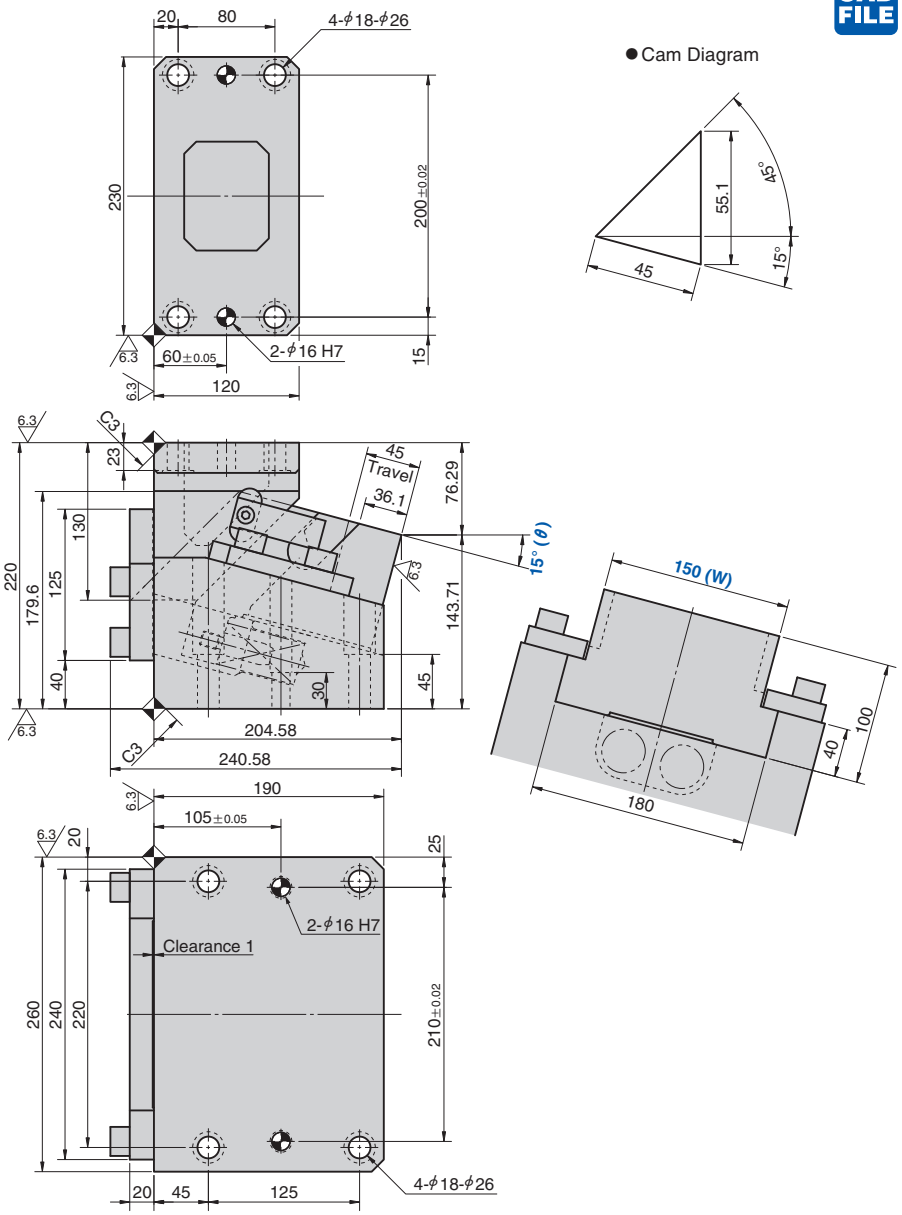

### ■Rear Removal Space




Refer to page 1033 for Table of Components.

## SKCA150-15-45

CAD FILE




● Cam Diagram




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 64.7 (6.6) | 98.0 (10.0) | 429.5 (43.7) | 1810.1 (184.1) | 16.0 | 65.0 | SKCA | 150 | 15 | 45 |

Order

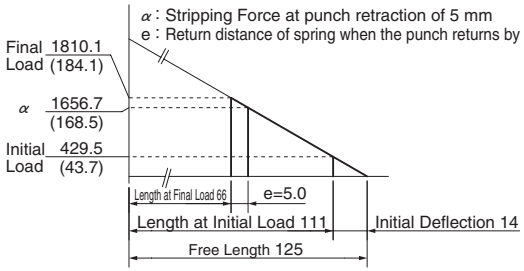
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 15 | – | 45 |

Option

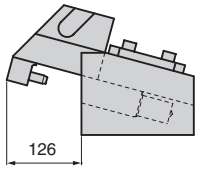
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-125 (2 pieces)
- Spring constant 15.34 N/mm (1.56 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.

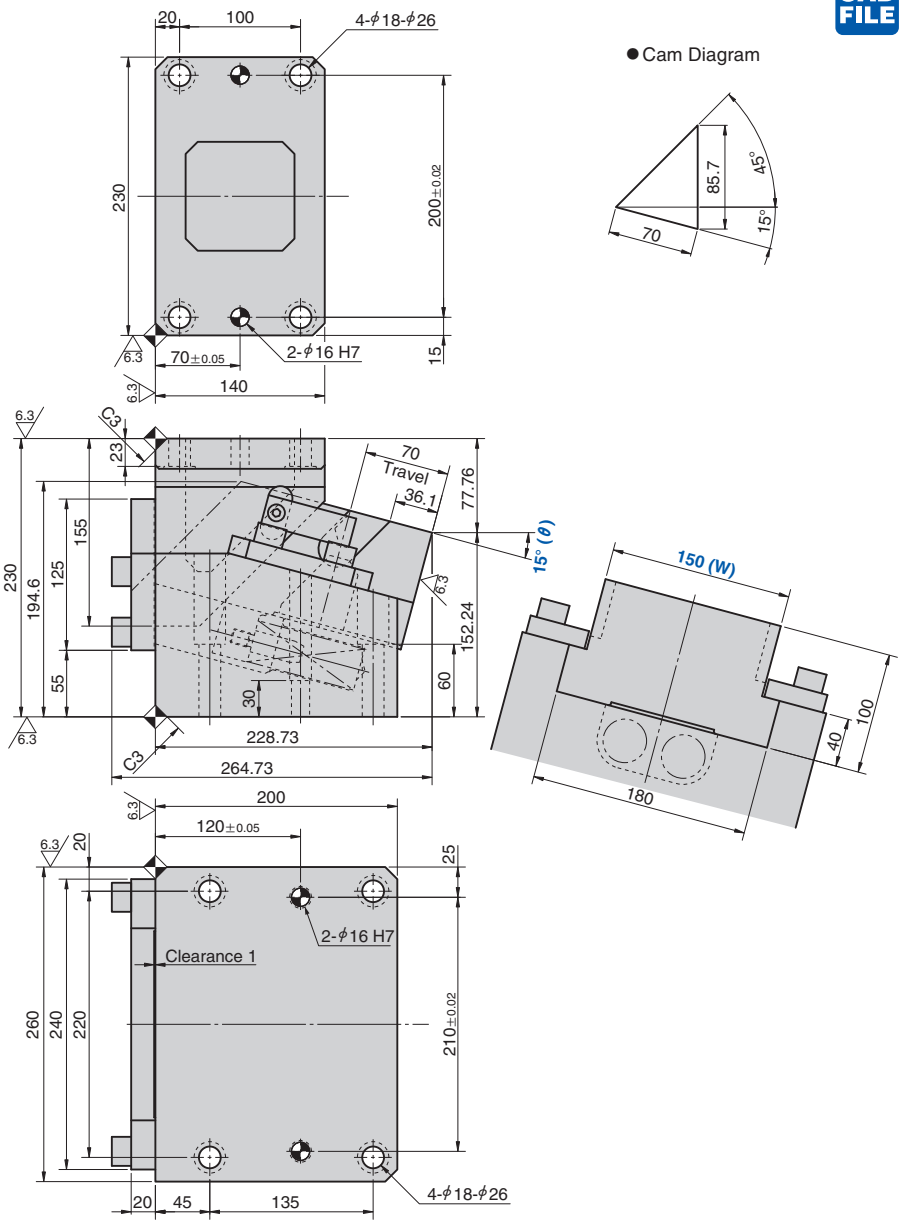



### ■Rear Removal Space




Refer to page 1033 for Table of Components.

## SKCA150-15-70




● Cam Diagram




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 64.7 (6.6) | 98.0 (10.0) | 306.9 (31.4) | 1841.3 (188.2) | 16.0 | 77.0 | SKCA | 150 | 15 | 70 |

Order

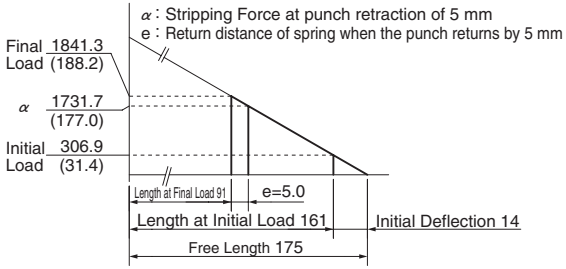
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 15 | – | 70 |

Option

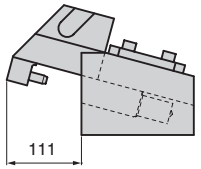
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-175 (2 pieces)
- Spring constant 10.96 N/mm (1.12 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.



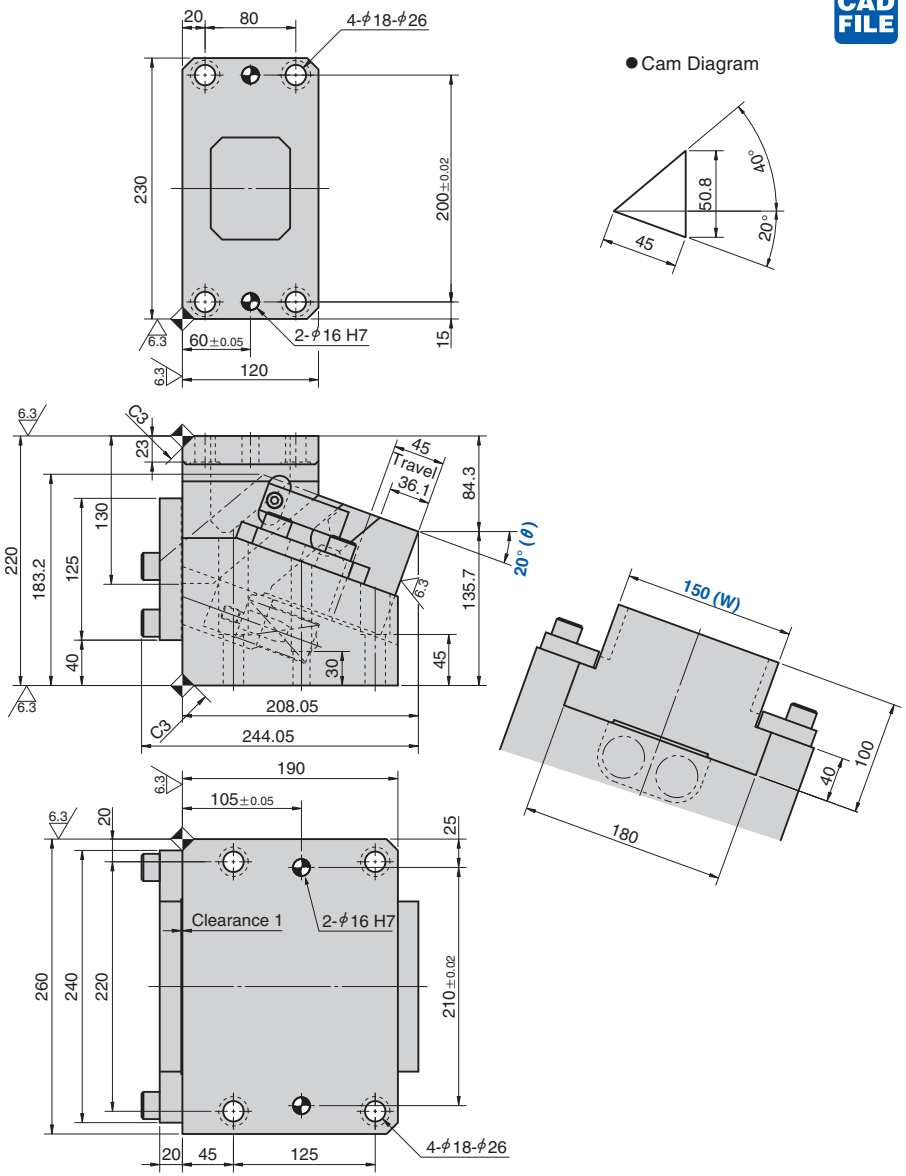

### ■Rear Removal Space




Refer to page 1033 for Table of Components.

## SKCA150-20-45

CAD FILE




● Cam Diagram




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 64.7 (6.6) | 98.0 (10.0) | 429.5 (43.7) | 1810.1 (184.1) | 16.0 | 66.0 | SKCA | 150 | 20 | 45 |

Order

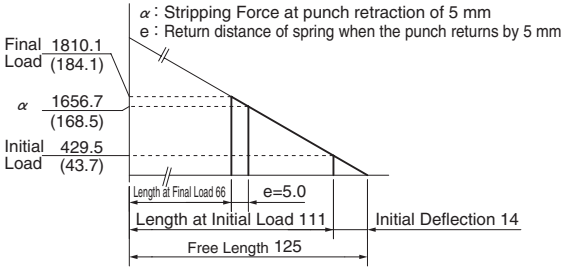
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 20 | – | 45 |

Option

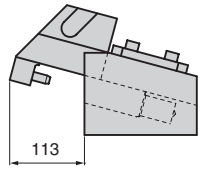
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-125 (2 pieces)
- Spring constant 15.34 N/mm (1.56 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.

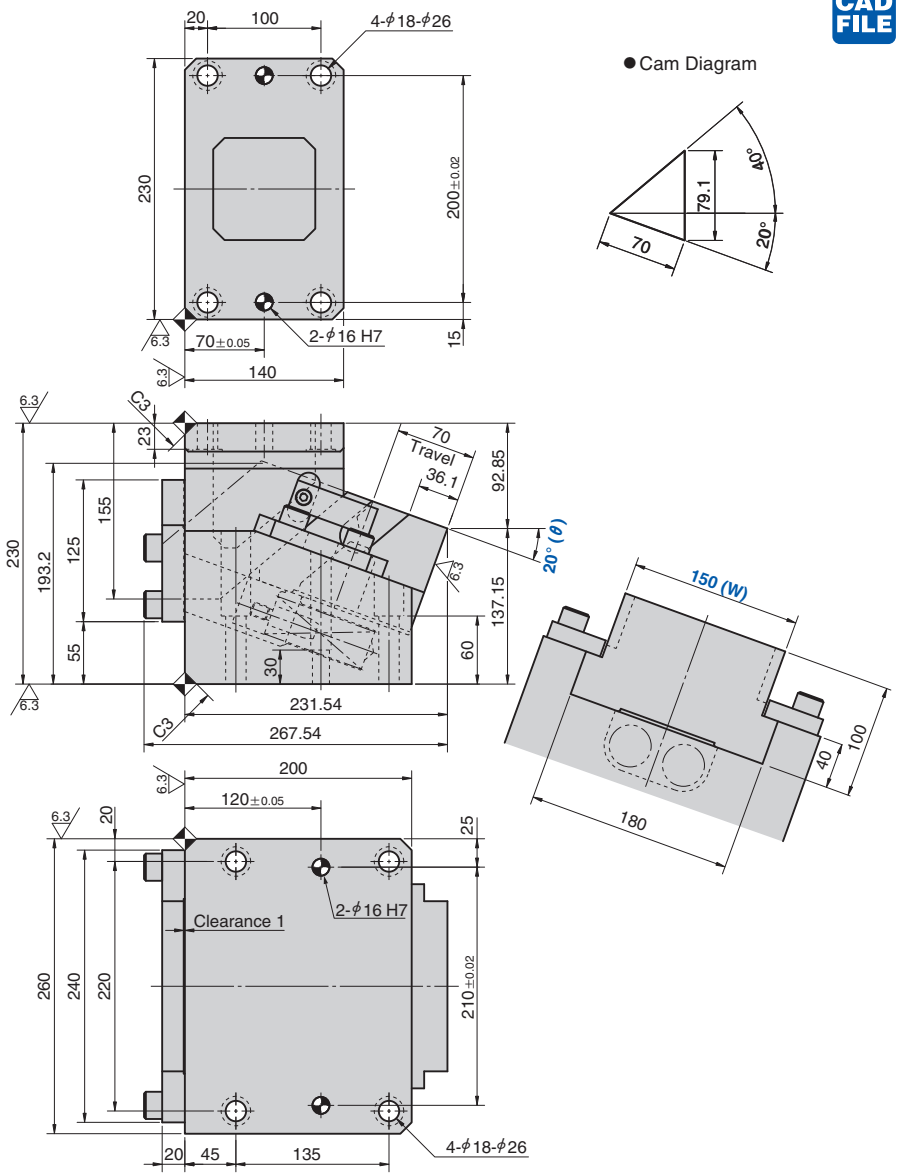



### ■Rear Removal Space




Refer to page 1033 for Table of Components.

## SKCA150-20-70




● Cam Diagram




| Working Force [kN (tonf)] | | Spring Force N (kgf) | | Cam Slider Weight kg | Total Weight kg | Catalog No. | W | θ | Travel S |
|---|---|---|---|---|---|---|---|---|---|
| Standard Working Force 1,000,000 strokes | Allowable Working Force 300,000 strokes | Initial Load | Final Load | | | | | | |
| 64.7 (6.6) | 98.0 (10.0) | 306.9 (31.4) | 1841.3 (188.2) | 16.0 | 75.0 | SKCA | 150 | 20 | 70 |

Order

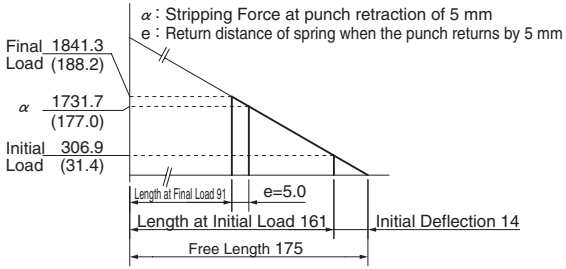
| Catalog No. | W | – | θ | – | S |
|---|---|---|---|---|---|
| SKCA | 150 | – | 20 | – | 70 |

Option

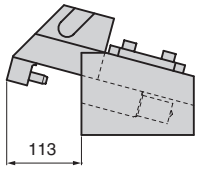
Refer to page 377 for the machining details of tapped holes and dowel holes for retainer mounting.

### ■Spring Diagram

- Spring Model TF35-175 (2 pieces)
- Spring constant 10.96 N/mm (1.12 kgf/mm)
- Life expectancy of Coil Spring is approximately 300,000 strokes.




### ■Rear Removal Space

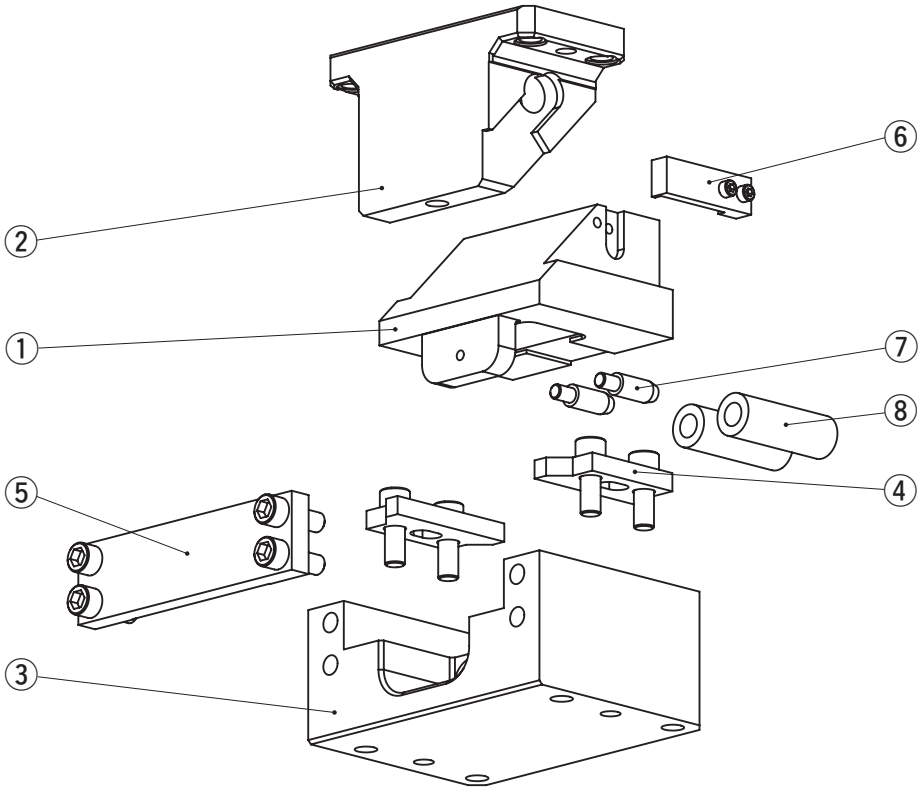



Refer to page 1033 for Table of Components.

# SKCA [Table of Components]

## Die Mounted Cam Unit

**SKCA150** (Coil Spring)



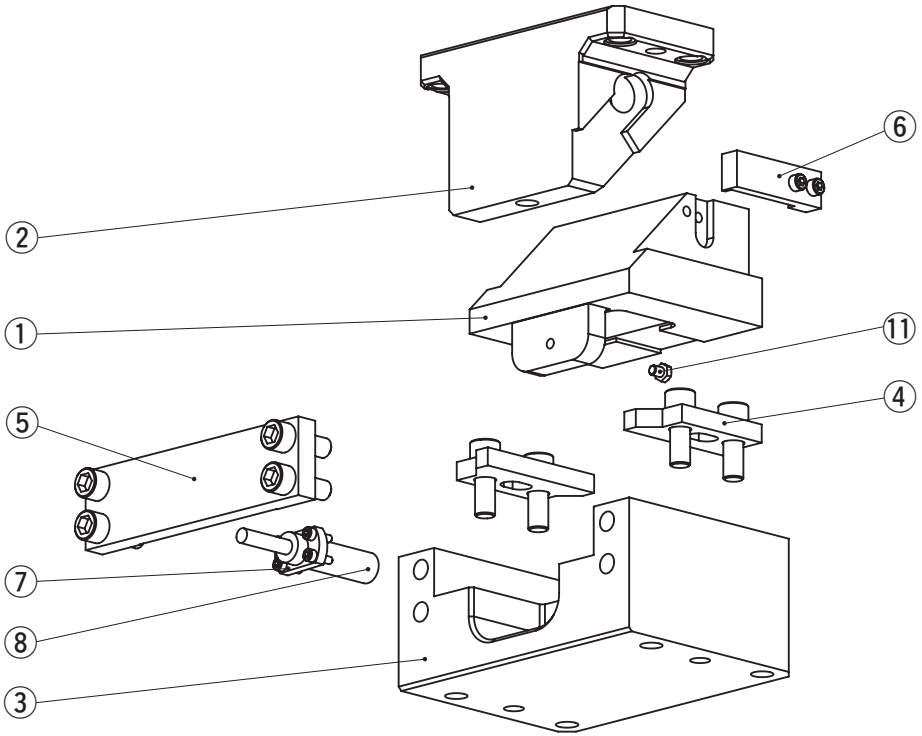

| No. | Description | Qty | Material and Remark |
|---|---|---|---|
| 1 | Cam Slider | 1 | Cast Iron with Graphite |
| 2 | Cam Driver | 1 | Cast Iron with Graphite |
| 3 | Cam Holder | 1 | Cast Iron |
| 4 | Upper Plate | 2 | Copper Powder Sintered |
| 5 | Stopper Plate | 1 | Steel |
| 6 | Positive Return Follower | 1 | Steel |
| 7 | Spring Guide Pin | 2 | $\phi$18x60 |
| 8 | Coil Spring | 2 | TF35-100 40st |
| 8 | Coil Spring | 2 | TF35-125 45st |
| 8 | Coil Spring | 2 | TF35-150 60st |
| 8 | Coil Spring | 2 | TF35-175 70st |

Bolts, nuts, dowels, and washers for assembly are not indicated.





**SKCA150** (Gas Spring)




| No. | Description | Qty | Material and Remark |
|---|---|---|---|
| 1 | Cam Slider | 1 | Cast Iron with Graphite |
| 2 | Cam Driver | 1 | Cast Iron with Graphite |
| 3 | Cam Holder | 1 | Cast Iron |
| 4 | Upper Plate | 2 | Copper Powder Sintered |
| 5 | Stopper Plate | 1 | Steel |
| 6 | Positive Return Follower | 1 | Steel |
| 7 | Mounting Plate | 1 | Gas Spring specification only |
| 8 | Spring | — | Refer to the Spring Specification. |
| 11 | Stop Pin | 1 | Gas Spring specification only |

Bolts, nuts, dowels, and washers for assembly are not indicated.

# Cam Units [Overview]

## Information

### ■Tapped Hole and Dowel Hole (Prepared Hole, Finish) Machining for Retainer Mounting

**Instruction method for machining**

Indicate the tapped hole diameter and the dowel hole (or prepared hole) diameter with the XY coordinates.

**To indicate the coordinates**

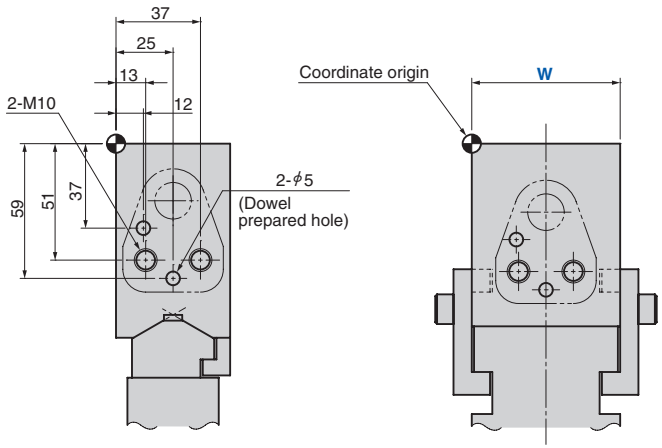
- The origin is positioned at the upper left corner of the mount face. (However, machining uses our machining datum as the reference.)
- Indication symbol

  **–M**···Tapped hole, **–N**···Dowel prepared hole, **–K**···Dowel finish hole

**Machining standard**

- Tapped holes and dowel prepared holes are machined to general tolerances.
- The hole depth is 2.5 times the diameter for both tapped holes and dowel holes. The dowel pilot hole is processed for 2 times the diameter.
- The dowel hole spacing is machined to the tolerance of ±0.02.The hole tolerance is H7.

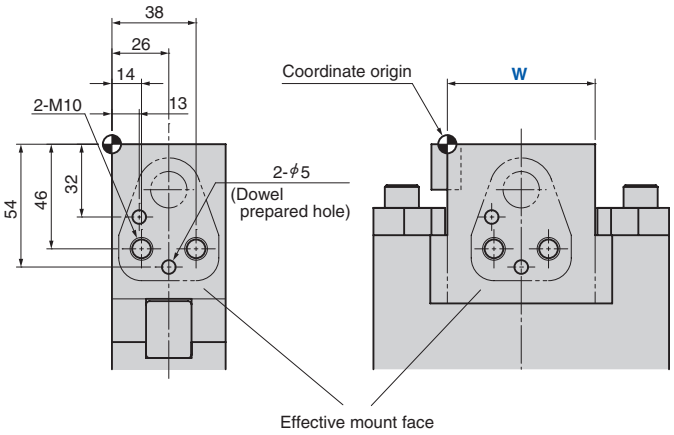
〈Example of Aerial Cam Unit〉




Order

| Catalog No. | W | – | θ | – Additional Machining |
|---|---|---|---|---|
| SACE | 52 | – | 00 | – M10 – X (13.0) – Y (–51.0) |
| | | | | – M10 – X (37.0) – Y (–51.0) |
| | | | | – K5.0 – X (12.0) – Y (–37.0) |
| | | | | – K5.0 – X (25.0) – Y (–59.0) |

〈Example of Die Mounted Cam Unit〉




Order

| Catalog No. | W | – | θ | – | S | – Additional Machining |
|---|---|---|---|---|---|---|
| CMSD | 52 | – | 00 | – | 55 | – M10 – X (14.0) – Y (–46.0) |
| | | | | | | – M10 – X (38.0) – Y (–46.0) |
| | | | | | | – K5.0 – X (13.0) – Y (–32.0) |
| | | | | | | – K5.0 – X (26.0) – Y (–54.0) |

### ■Other machining

Please give instructions on a separate drawing for drilling or cutting other than tapped holes and dowel holes.