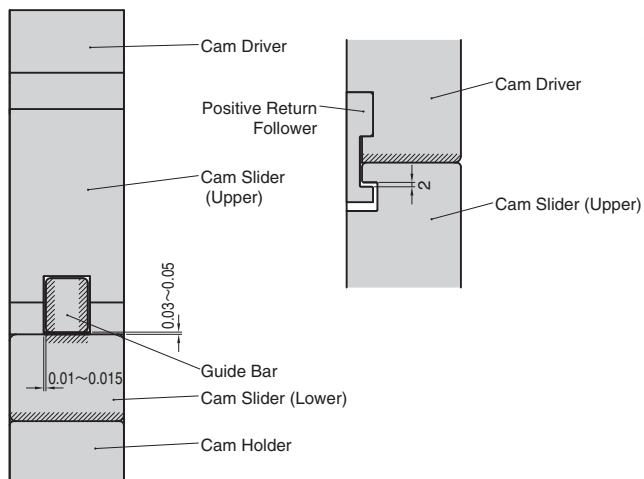


- Mount width are 52 and 90.
- Structure to ease removal of spring
- Available angle is 0° to 20°(52 in width) , 0° to 15°(90 in width) and the travel is 55mm.

Slide Structure and Positive Return Structure



- Sliding system by Guide Bar, Clearance between Cam Slider and Guide Bar is 0.01~0.015 on one side.

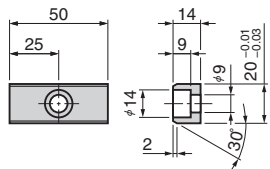
*Oilless System at Hatched Area

Option of CMSD

Key Specification(-K)

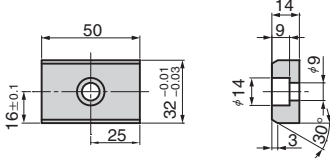
CMSD52

LKU20-50(with 2-M8×15 bolts)

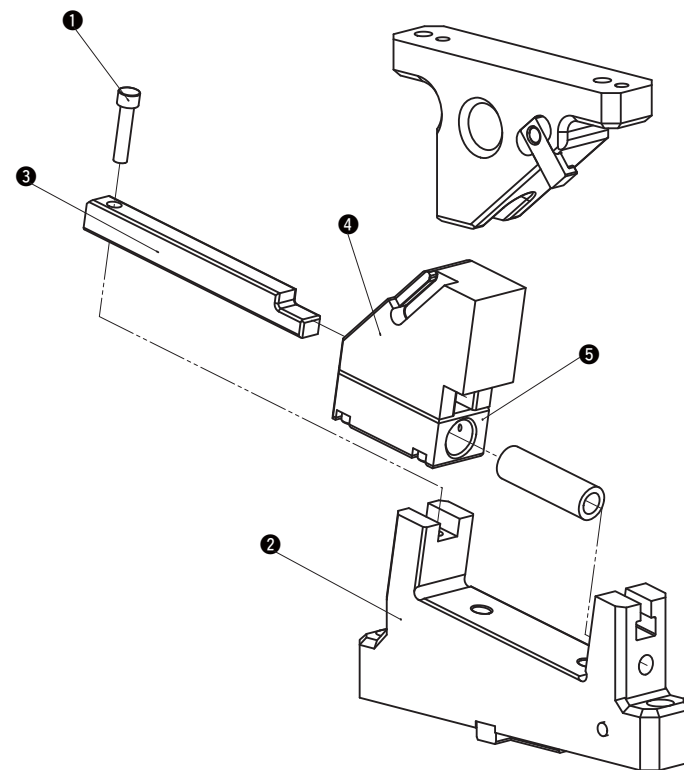


CMSD90

LKU32-50(with 2-M8×15 bolts)



CMSD Structure and Assembly / Disassembly



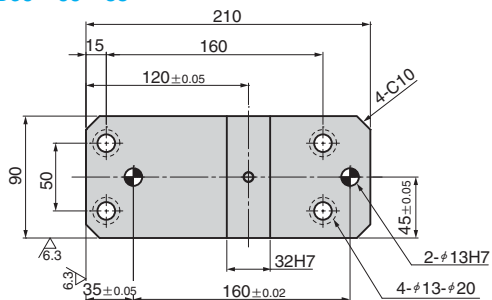
Disassembly method of CMSD

- 1) Remove hexagon socket head bolt (1) and pull guide bar (3) from cam holder (2) 30 mm to the rear. Remove the guide bar and cam slider(3 4 5).
- 2) Pull and remove the guide bar from the cam slider.

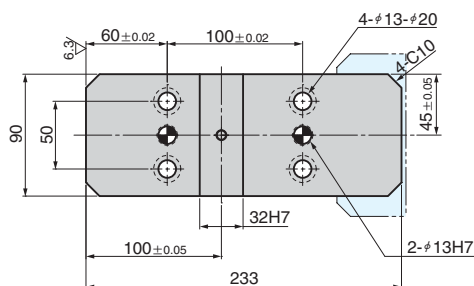
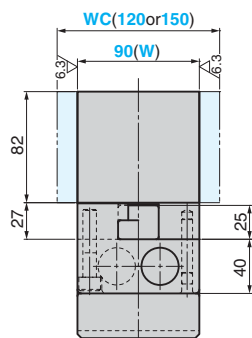
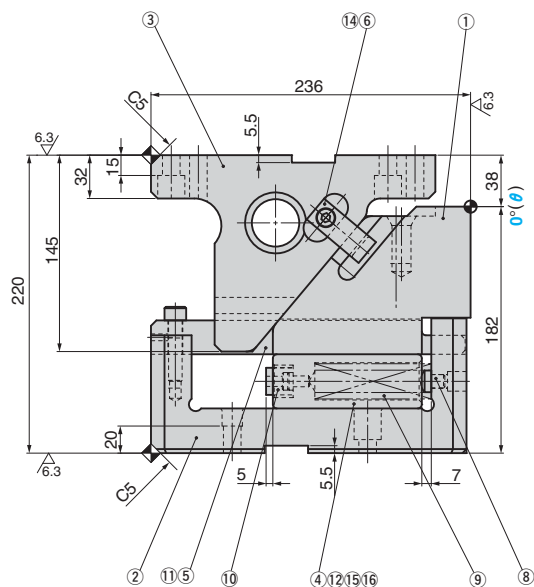
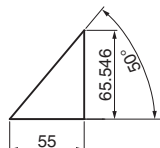
Assembly method of CMSD

- 1) Assemble components in the reverse order of disassembly.
 - Make sure that there is no foreign matter on the sliding area and assemble components.
 - 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.
 - When cam is disassembled and then reassembled, please do not forget to assemble all bolts provided

CMSD90 - 00 - 55



Cam Diagram



Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)	Travel S
Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load					
38.2 (3.9)	76.4 (7.8)	170.6 (17.5)	1213.4 (124.2)	24.9	CMSD	90	00	55



Order

Catalog No. (W) - (θ) - S
CMSD 90 - 00 - 55

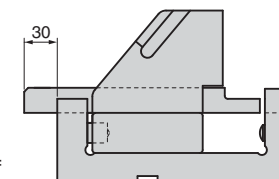


Option

Option Code	Specification
K	Dedicated key is attached. (It is not assembled to the main unit.)
WC	The mount width is changed to 120 or 150. WC120 or WC150 to be ordered.

For detailed specification of the key, refer to page 1555.

Space for removing



Position of piercing center to be set within cam width.



Order CMSD90 - 00 - 55 - WC120
CMSD90 - 00 - 55 - K



Refer to page 552 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

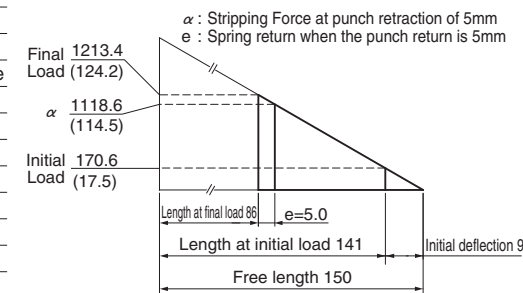
Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider(Upper)	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250 with Graphite
④	Cam Slider(Lower)	1	FC250 with Graphite
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Positive Return Follower	2	S45C(1045)
⑧	Spring Guide Pin	2	S45C(1045)
⑨	Coil Spring	2	SWS26-150
⑩	Stopper	2	Urethane
⑪	Hexagon Socket Head Bolt	1	SCM435 M10×45
⑫	Hexagon Socket Head Bolt	4	SCM435 M10×50
⑭	Hexagon Socket Brazier Head Bolt	2	SCM435 LCS8-18
⑮	Dowel Pin with Female Thread	2	SUJ2 φ8×40
⑯	Spring Plug	2	SAE1065 NH8

Spring Diagram

(Stripping Force at punch retraction of 5mm)

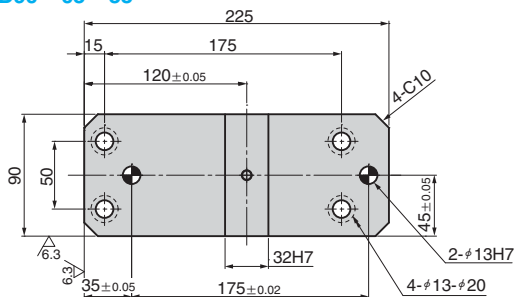
- Spring used SWS26-150 (2 piece)
- Spring constant 9.48N/mm(0.97kgf/mm)



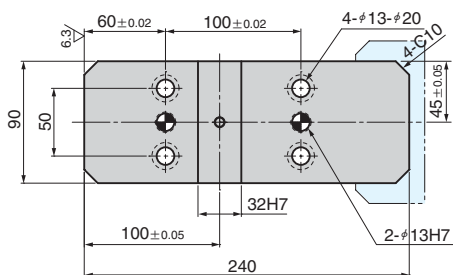
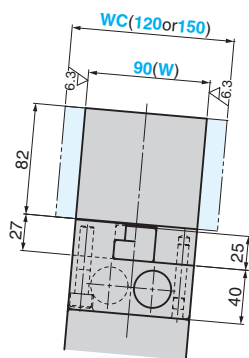
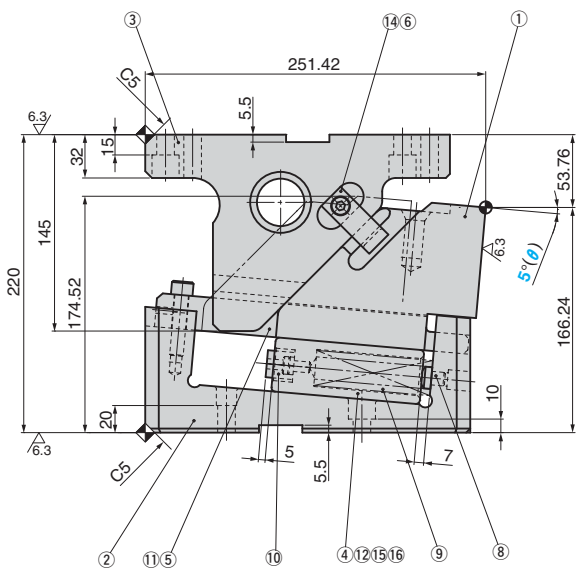
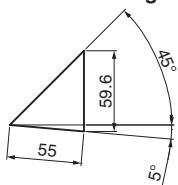
N12

The dowel pin holes for the cam holder and cam driver are changed to φ12H7.

CMSD90 - 05 - 55



Cam Diagram



Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)	Travel S
Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load					
38.2 (3.9)	76.4 (7.8)	170.6 (17.5)	1213.4 (124.2)	25.9	CMSD	90	05	55



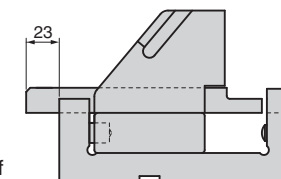
Order **Catalog No.** **(W)** - **(θ)** - **S**
CMSD 90 - 05 - 55



Option Code	Specification
K	Dedicated key is attached. (It is not assembled to the main unit.)
WC	The mount width is changed to 120 or 150. WC120 or WC150 to be ordered.

For detailed specification of the key, refer to page 1555.

Space for removing



Position of piercing center to be set within cam width.



Order **CMSD90 - 05 - 55 - WC120**
CMSD90 - 05 - 55 - K

Refer to page 552 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

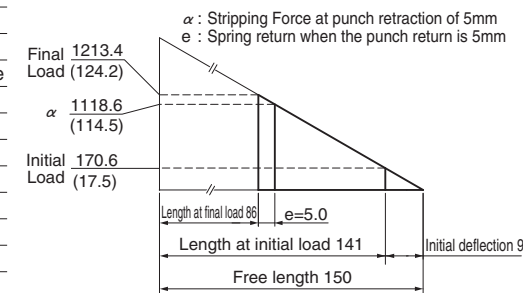
Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider(Upper)	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250 with Graphite
④	Cam Slider(Lower)	1	FC250 with Graphite
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Positive Return Follower	2	S45C(1045)
⑧	Spring Guide Pin	2	S45C(1045)
⑨	Coil Spring	2	SWS26-150
⑩	Stopper	2	Urethane
⑪	Hexagon Socket Head Bolt	1	SCM435 M10×45
⑫	Hexagon Socket Head Bolt	4	SCM435 M10×50
⑭	Hexagon Socket Brazier Head Bolt	2	SCM435 LCS8-18
⑮	Dowel Pin with Female Thread	2	SUJ2 φ8×40
⑯	Spring Plug	2	SAE1065 NH8

Spring Diagram

(Stripping Force at punch retraction of 5mm)

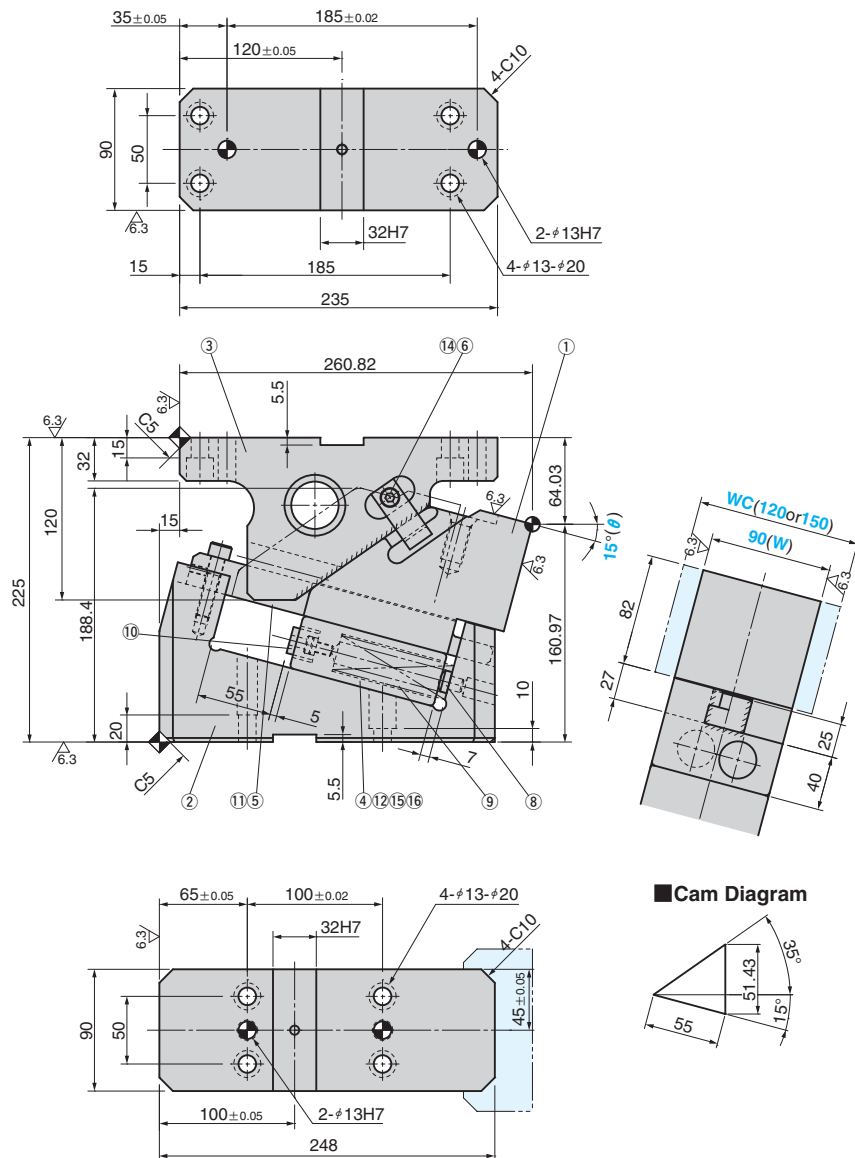
- Spring used SWS26-150 (2 piece)
- Spring constant 9.48N/mm(0.97kgf/mm)



N12

The dowel pin holes for the cam holder and cam driver are changed to #12H7.

CMSD90 - 15 - 55



Cam Diagram

Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)	Travel S
Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load					
38.2 (3.9)	76.4 (7.8)	170.6 (17.5)	1213.4 (124.2)	29.3	CMSD	90	15	55



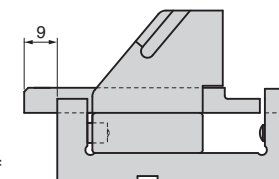
Order **Catalog No.** **(W)** - **(θ)** - **S**
CMSD **90** - **15** - **55**



Option Code	Specification
K	Dedicated key is attached. (It is not assembled to the main unit.)
WC	The mount width is changed to 120 or 150. WC120 or WC150 to be ordered.

For detailed specification of the key, refer to page 1555.

Space for removing



Position of piercing center to be set within cam width.



Order **CMSD90 - 15 - 55 - WC120**
CMSD90 - 15 - 55 - K

Refer to page 552 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

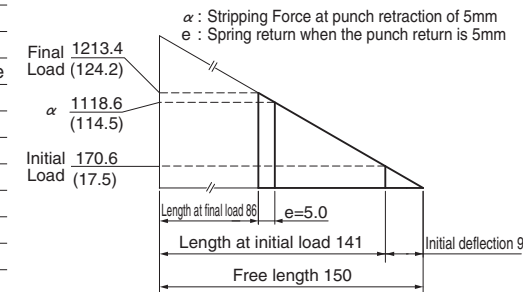
Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider(Upper)	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250 with Graphite
④	Cam Slider(Lower)	1	FC250 with Graphite
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Positive Return Follower	2	S45C(1045)
⑧	Spring Guide Pin	2	S45C(1045)
⑨	Coil Spring	2	SWS26-150
⑩	Stopper	2	Urethane
⑪	Hexagon Socket Head Bolt	1	SCM435 M10×45
⑫	Hexagon Socket Head Bolt	4	SCM435 M10×50
⑭	Hexagon Socket Brazier Head Bolt	2	SCM435 LCS8-18
⑮	Dowel Pin with Female Thread	2	SUJ2 φ8×40
⑯	Spring Plug	2	SAE1065 NH8

Spring Diagram

(Stripping Force at punch retraction of 5mm)

- Spring used SWS26-150 (2 piece)
- Spring constant 9.48N/mm(0.97kgf/mm)



N12

The dowel pin holes for the cam holder and cam driver are changed to φ12H7.