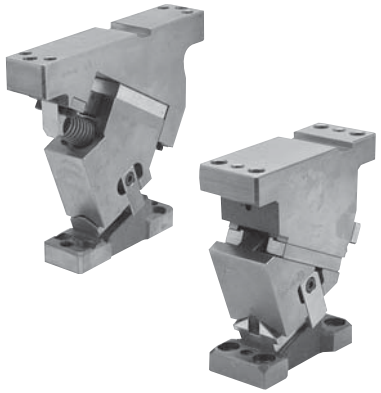
Aerial Cam Unit General Description of UCMSC and UCMSF

FOR PIERCE



● **Features of UCMSC**

- Space saving design with the mount width equal to the cam width and reduction of weight.
- Automatic alignment mechanism of the V-shaped guide.
- Slider is removable from the back. This makes it possible to lay out the parts side by side.
- Available angle is 0˚ to 70˚ at increments of 5˚.

● **Features of UCMSF**

- Space saving design with the mount width equal to the cam width and reduction of weight.
- Automatic alignment mechanism of the V-shaped guide.
- Slider is retractable from the back side. This makes it possible to lay out the parts side by side.
- Available angle is 0˚ to 70˚ at increments of 5˚.
- 2-stage spring type is used.
  The spring force is about twice that of UCMSC.
- Durability in stamping is increased by changing the material of the cam slide guide. It is about 1.4 times that of UCMSC.

■ Performance Specifications

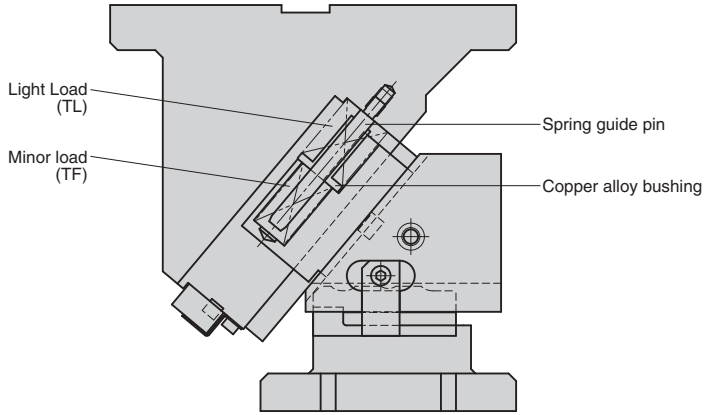
Catalog No.	Mount width	Working angle (increments of 5°)	Working Force kN(tonf)		Spring Force (Final Load) N(kgf)	Shut height
			Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)		
UCMSC	50	0°～70°	19.6 (2.0)	39.2 (4.0)	＊ about 980 (100)	200
	65	0°～70°	19.6 (2.0)	39.2 (4.0)	＊ about 1220 (124)	180(0～45°) 190(50・55°) 210(60～70°)
	80	0°～70°	39.2 (4.0)	78.4 (8.0)	＊ about 1600 (163)	270
	150	0°～70°	88.2 (9.0)	132.3 (13.5)	4607.5 (470.2)	270
UCMSF	80	0°～70°	54.9 (5.6)	109.8 (11.2)	3250.0 (331.4)	270
	150	0°～70°	123.5 (12.6)	185.2 (18.9)	9540.0 (973.4)	270

＊There are some differences depending on the angle.

■Structure of UCMSF

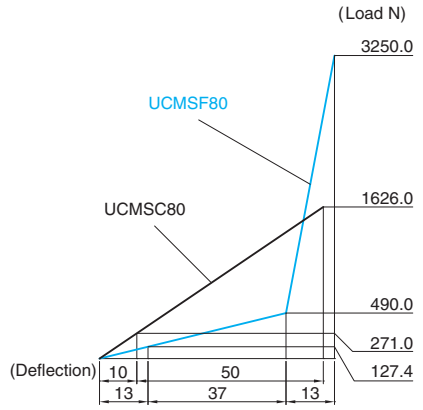
Although UCMSF has the same structure as UCMSC, the 2-stage spring type is used to improve the spring force.

Copper alloy for high pressure (SO#50SP7) is used for the cam slide guide (cam bottom) to increase the force.

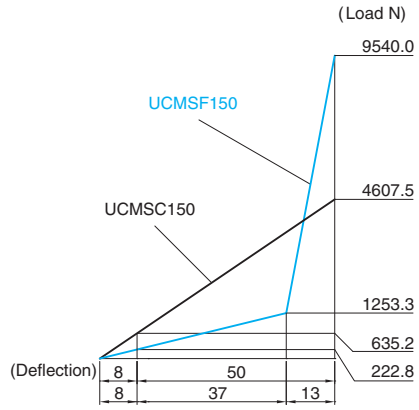


● Comparison of Spring Diagram of UCMSC and UCMSF

[Mount width 80]



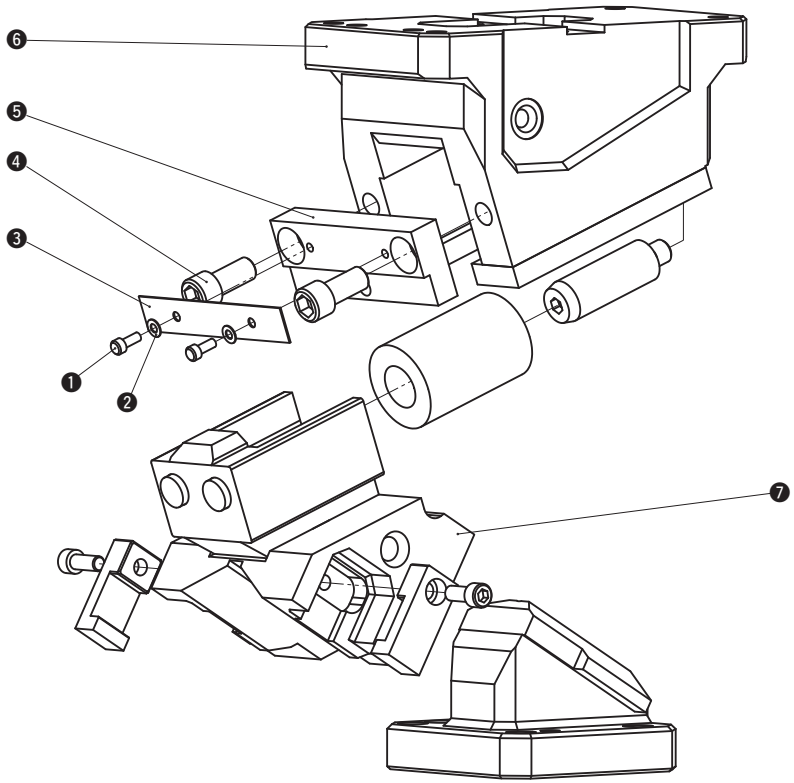
[Mount width 150]



Aerial Cam Unit General Description of UCMSC and UCMSF

FOR PIERCE

■UCMSC150 Structure and Assembly / Disassembly



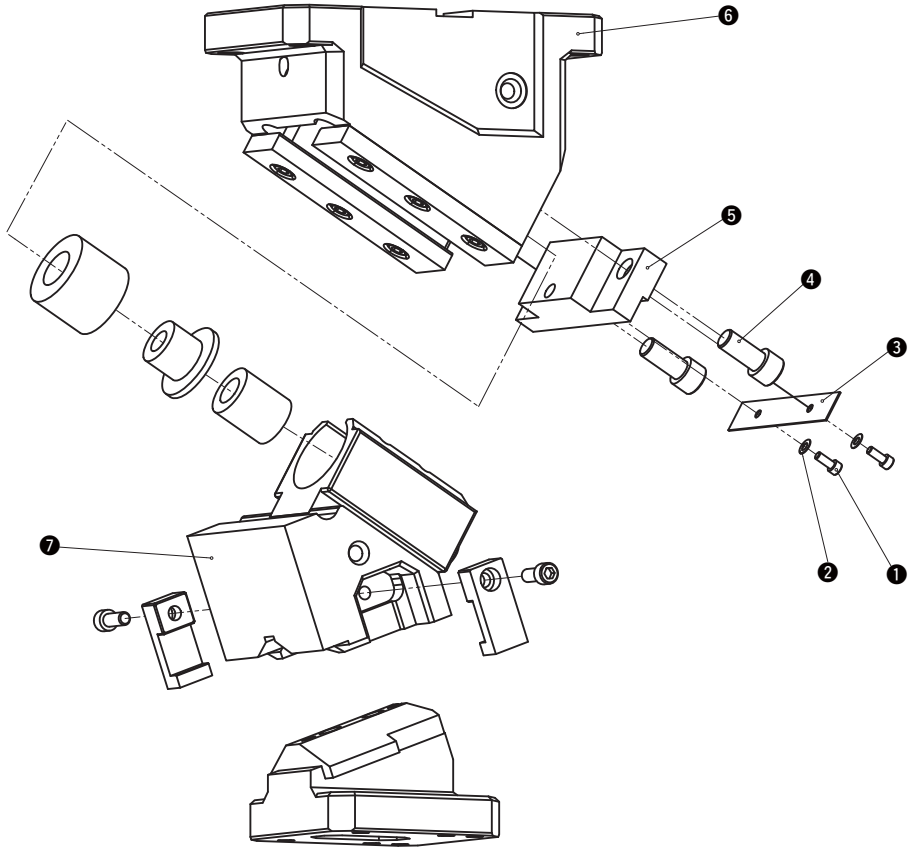
●Disassembly method of UCMSC150

1) Remove hexagon socket head bolt (❶) and washer (❷), and remove safety plate (❸).
2) Remove hexagon socket head bolt (❹) and remove stopper plate (❺).
3) Pull and remove cam slider (❼) from cam holder (❻)to the rear.

●Assembly method of UCMSC150

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.

■UCMSF150 Structure and Assembly / Disassembly



●Disassembly method of UCMSF150

1) Remove hexagon socket head bolt (❶) and washer (❷), and remove safety plate (❸).
2) Remove hexagon socket head bolt (❹) and remove stopper plate (❺).
3) Pull and remove cam slider (❼) from cam holder (❻)to the rear.

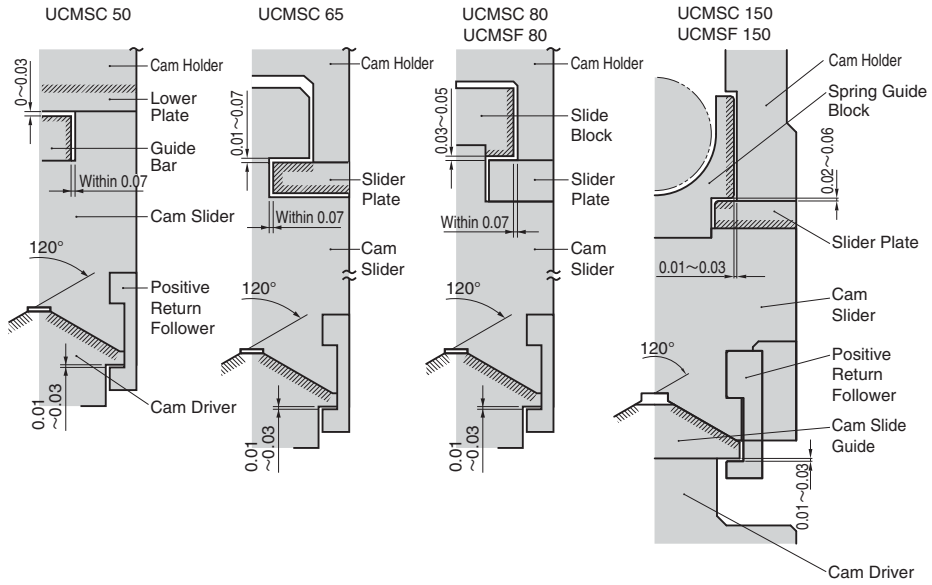
●Assembly method of UCMSF150

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.

Aerial Cam Unit General Description of UCMSC and UCMSF

FOR PIERCE

■Slide Structure and Positive Return Structure



*Oilless System at Hatched Area (copper powder sintered) Area

■General Description of Option

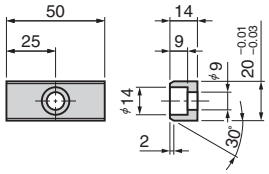
Option Code / Details / Catalog No.		K	TK	SC	WC	S	N12	N16
Details		Key is attached for the cam holder	T-shaped key type is used for both holder and driver.	The mount surface is pulled forward(in increments of 1mm).	The mount surface width is widened to the constant size.	The jig for locking the bottom dead center is accompanied.	The dowel holes for the cam holder and cam driver are changed to ϕ12H7.	The dowel holes for the cam holder and cam driver are changed to ϕ16H7.
UCMSC	50	○	–	○	○	–	○	–
	65	○	–	○	–	–	–	–
	80	○	–	○	○	–	–	○
	150	○	○	–	–	○	–	○
UCMSF	80	○	–	○	○	–	–	○
	150	○	○	–	–	○	–	○

■Option of UCMSC and UCMSF

●Key specification(-K)

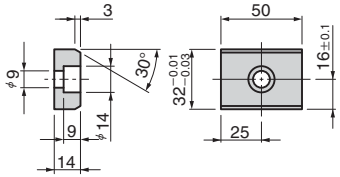
• UCMSC 50/65

LKU20-50
(with 1-M8×15 bolts)

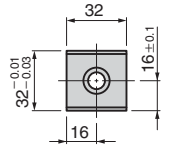


• UCMSC・UCMSF 80/150

For 80
LKU32-50
(with 1-M8×15 bolts)



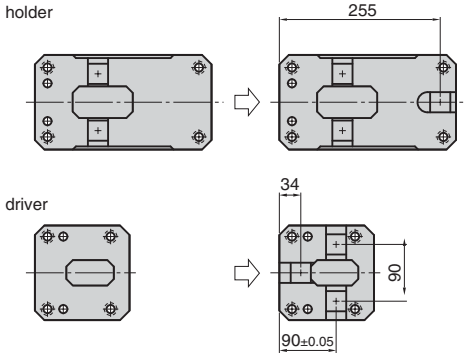
For 150
LKU32-32
(with 1-M8×15 bolts)



●T-shaped key type(-TK)

UCMSC・UCMSF 150

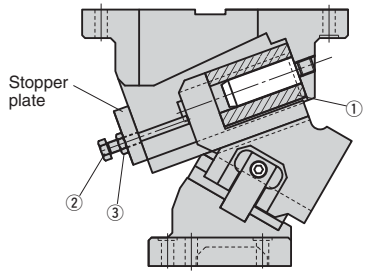
T-shaped key grooves are additionally machined as shown in the figure below.



●Home Position Lock Type(-S)

UCMSC・UCMSF 150

The jig (① Collar ② Bolt ③ Nut) for locking the bottom dead center is accompanied as shown in the figure below. The stopper plate has tapped threads for installation.



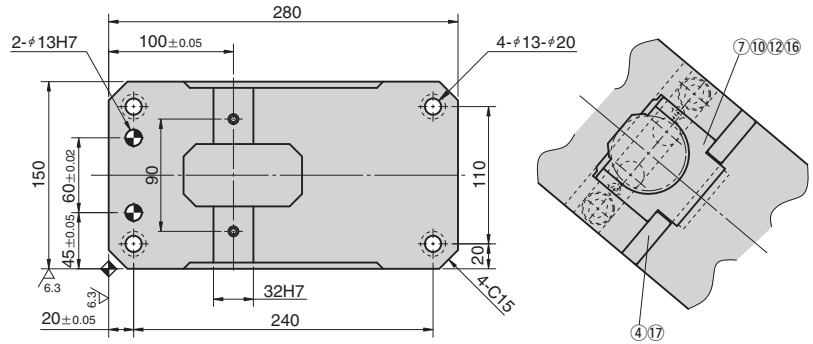
Aerial Cam Unit

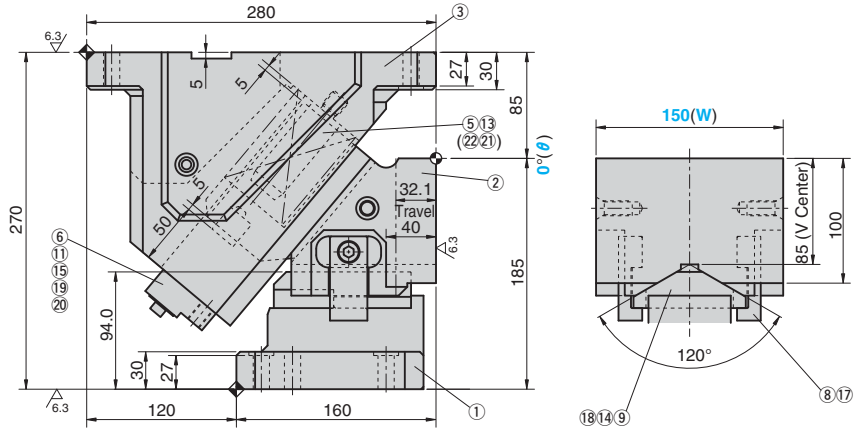
FOR PIERCE

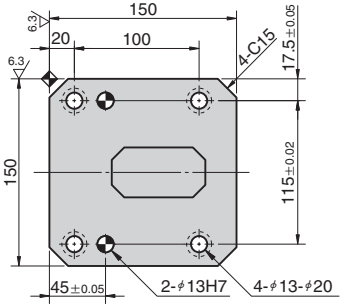
Addition CAD FILE

UCMSC150 – 00
UCMSF150 – 00

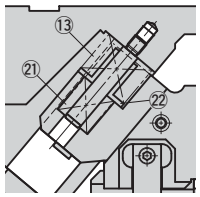
＊This drawing shows UCMSC150



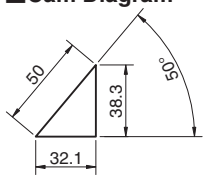




■Spring Specification
for UCMSF150



■Cam Diagram



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load				
32.1	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	45.4	UCMSC	150	00
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	00
UCMSF	150	–	00

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

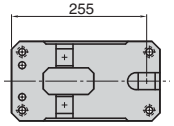
Refer to page 726 for option details.

Order UCMSC150 – 00 – TK

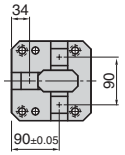
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

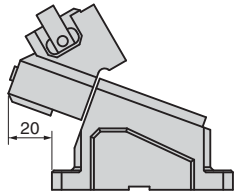
(cam holder)



(cam driver)



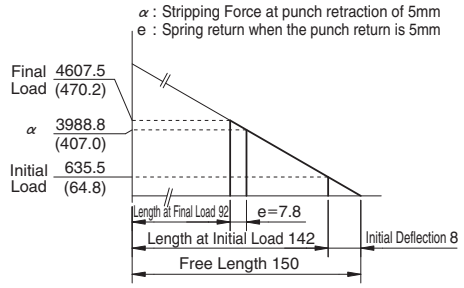
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

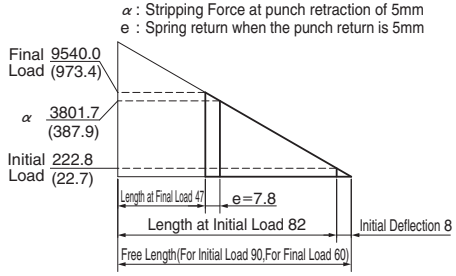
- For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



- For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

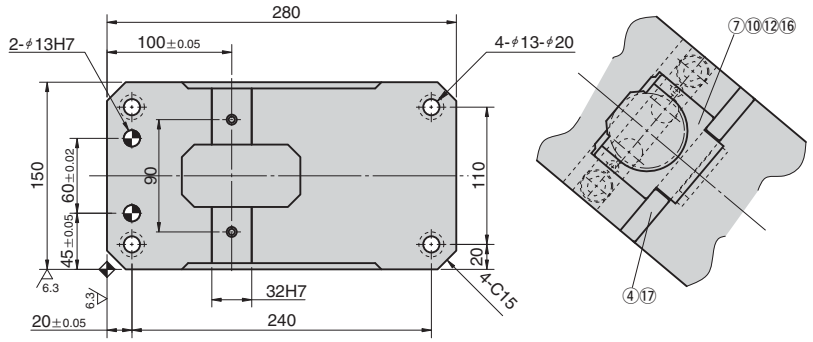
Aerial Cam Unit

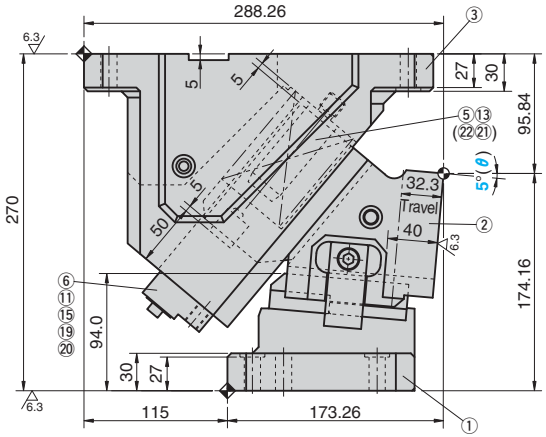
FOR PIERCE

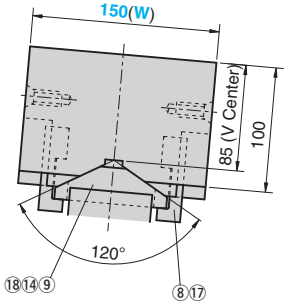
Addition CAD FILE

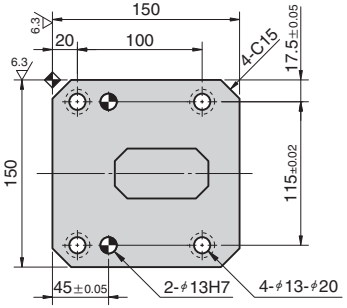
UCMSC150 – 05
UCMSF150 – 05

＊This drawing shows UCMSC150

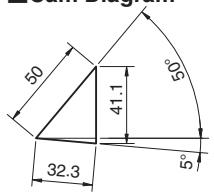




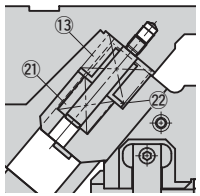




■Cam Diagram



■Spring Specification
for UCMSF150



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load				
32.3	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	45.9	UCMSC	150	05
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	05
UCMSF	150	–	05

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

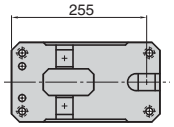
Refer to page 726 for option details.

Order UCMSC150 – 05 – TK

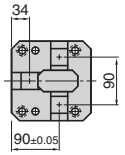
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

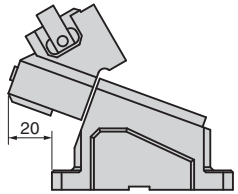
(cam holder)



(cam driver)



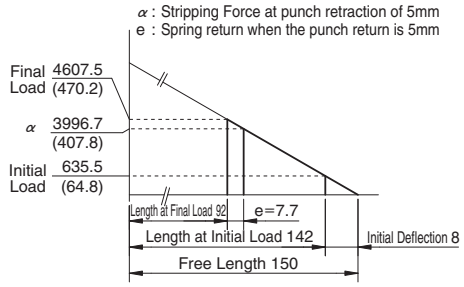
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

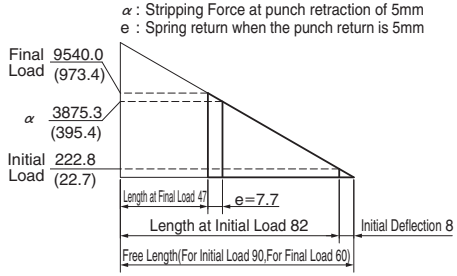
- For UCMSC

•Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



- For UCMSF

•Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

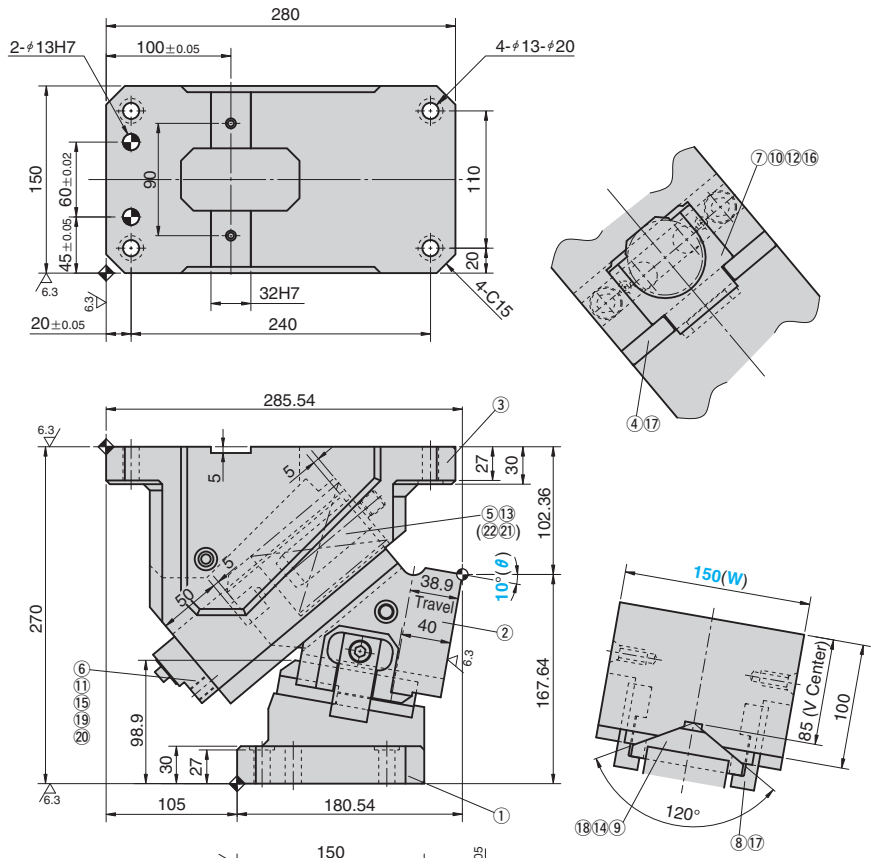
Aerial Cam Unit

FOR PIERCE

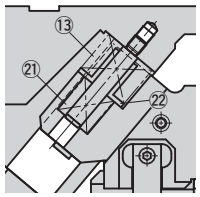
Addition CAD FILE

UCMSC150 – 10
UCMSF150 – 10

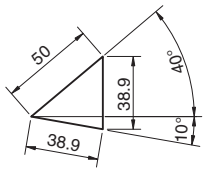
＊This drawing shows UCMSC150



■**Spring Specification**
for UCMSF150



■**Cam Diagram**



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load				
38.9	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	44.4	UCMSC	150	10
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	10
UCMSF	150	–	10

Option

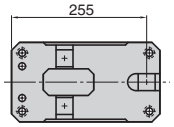
Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

Refer to page 726 for option details.

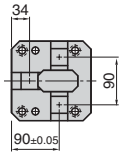
Order UCMSC150 – 10 – TK

Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

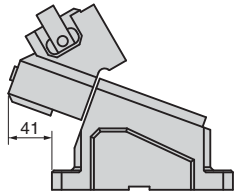
■**TK Option**
(cam holder)



(cam driver)



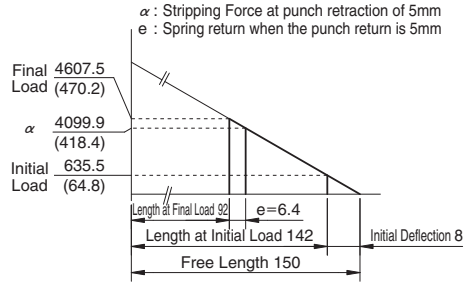
■**Space for removing**



■**Spring Diagram** (Stripping Force at punch retraction of 5mm)

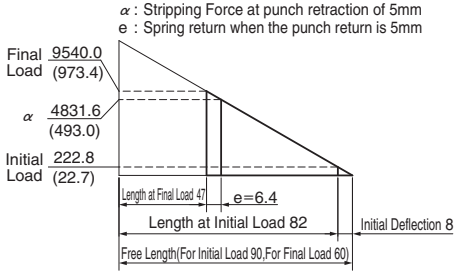
- For UCMSC

•Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



- For UCMSF

•Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

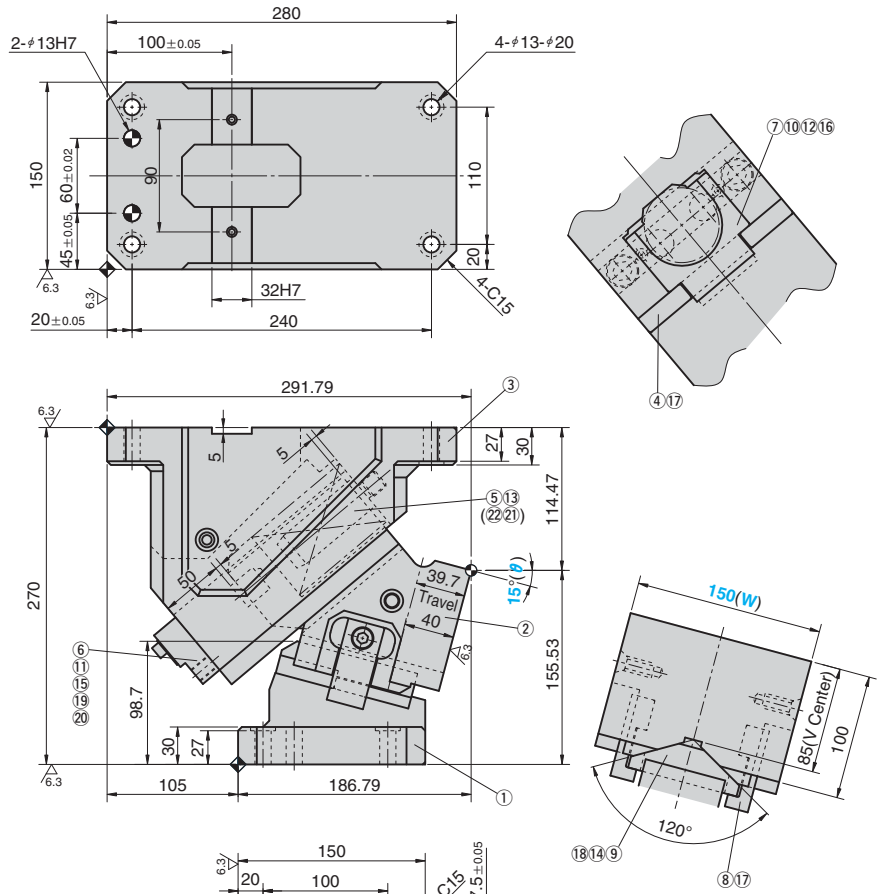
Aerial Cam Unit

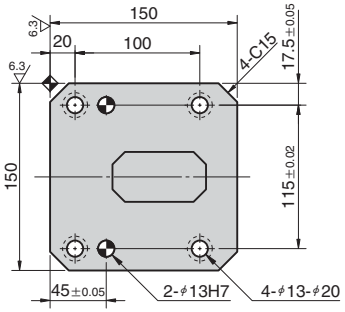
FOR PIERCE

Addition CAD FILE

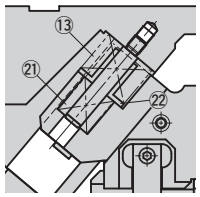
UCMSC150 – 15
UCMSF150 – 15

＊This drawing shows UCMSC150

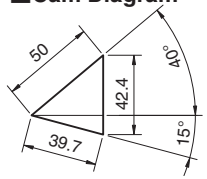




■Spring Specification
for UCMSF150



■Cam Diagram



Travel S	Working Force kN(tonf) Standard Working Force (one million strokes)	Working Force kN(tonf) Allowable Working Force (300,000 strokes)	Spring Force N(kgf) Initial Load	Spring Force N(kgf) Final Load	Total Weight kg	Catalog No.	(W)	(θ)
39.7	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	44.9	UCMSC	150	15
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	15
UCMSF	150	–	15

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

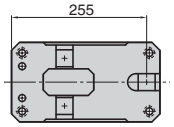
Refer to page 726 for option details.

Order UCMSC150 – 15 – TK

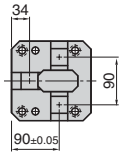
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

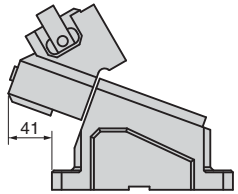
(cam holder)



(cam driver)



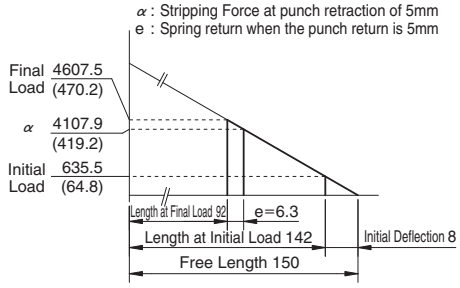
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

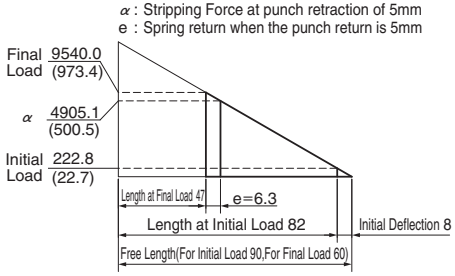
- For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



- For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

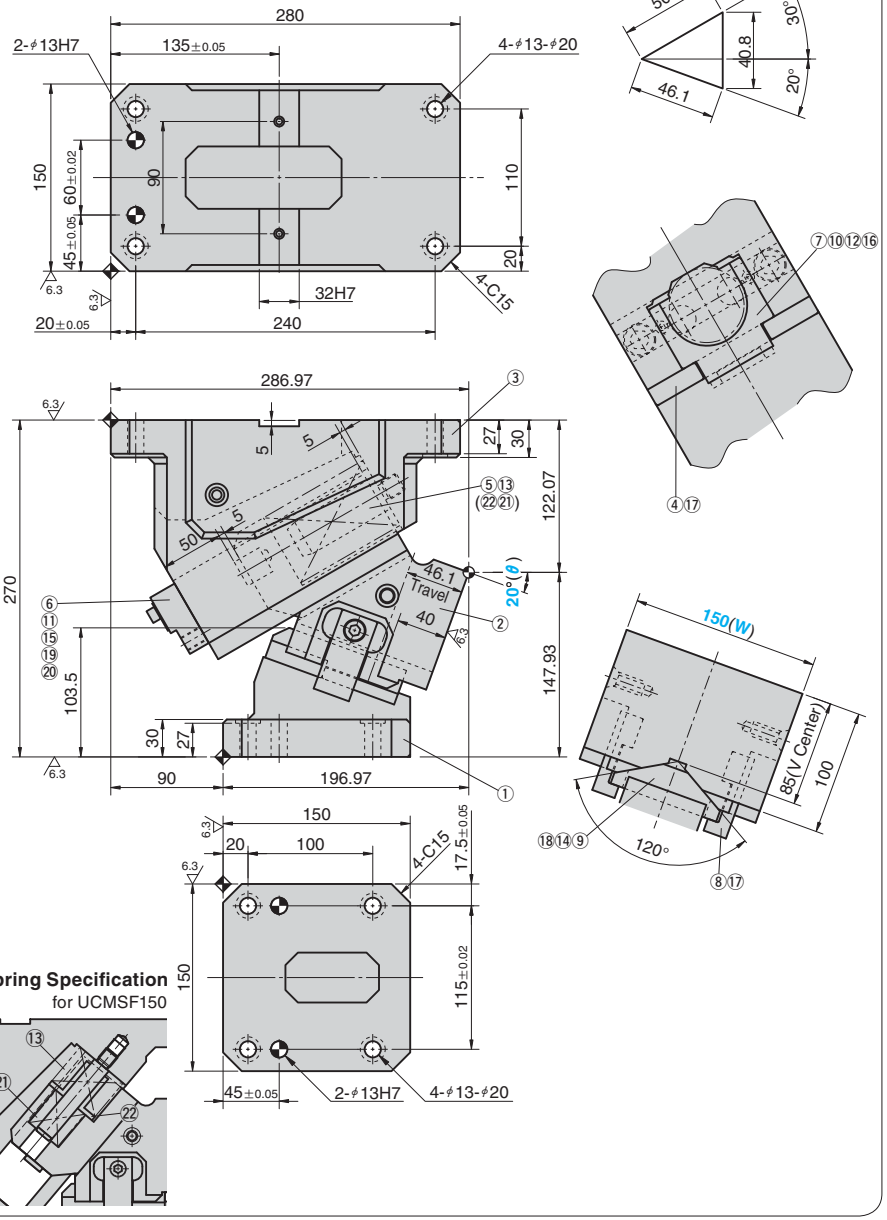
Aerial Cam Unit

FOR PIERCE

Addition CAD FILE

UCMSC150 – 20
UCMSF150 – 20

＊This drawing shows UCMSC150



■Cam Diagram

■Spring Specification
for UCMSF150

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load				
46.1	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	43.2	UCMSC	150	20
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	20
UCMSF	150	–	20

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

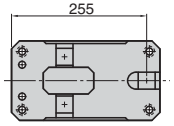
Refer to page 726 for option details.

Order UCMSC150 – 20 – TK

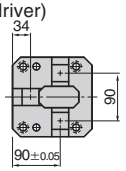
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

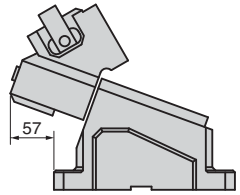
(cam holder)



(cam driver)



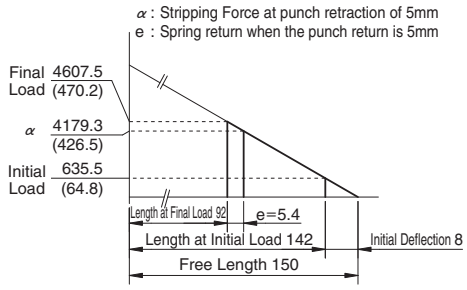
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

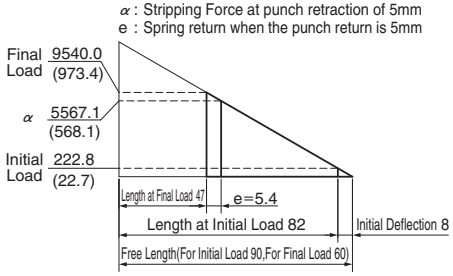
● For UCMSC

●Spring Used TL60-150(1 Piece)
79.44N/mm(8.10kgf/mm)



● For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

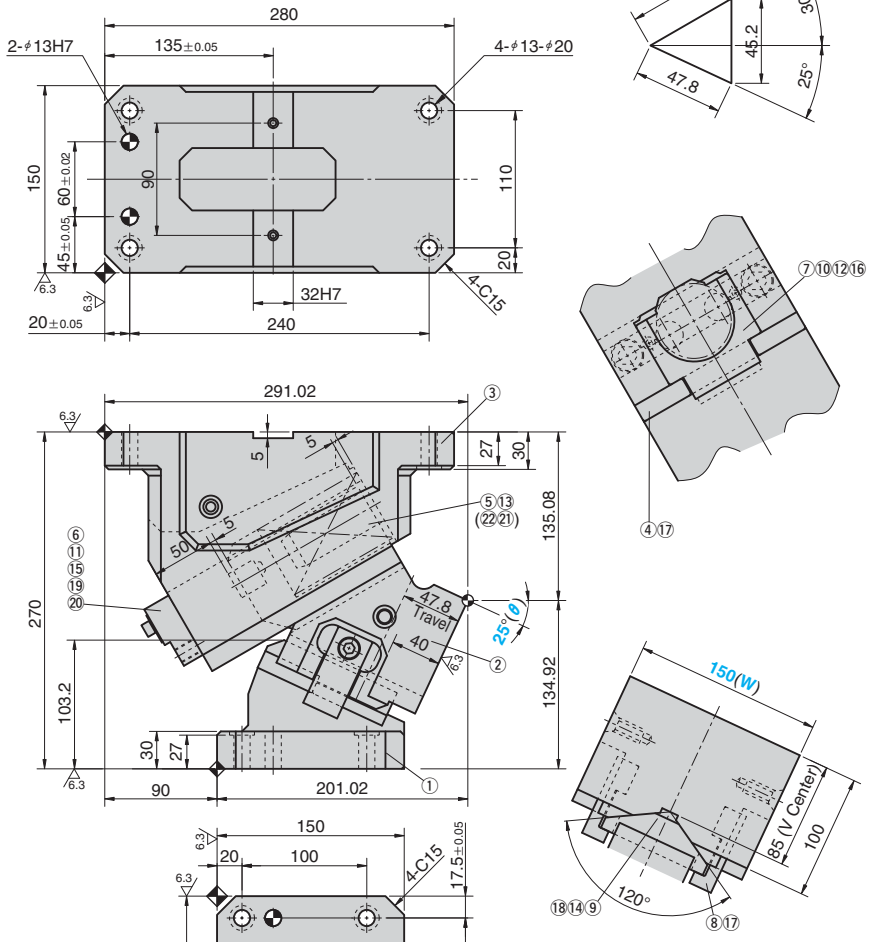
Aerial Cam Unit

FOR PIERCE

Addition CAD FILE

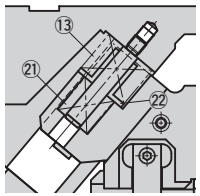
UCMSC150 – 25
UCMSF150 – 25

＊This drawing shows UCMSC150



■Cam Diagram

■Spring Specification
for UCMSF150



Travel S	Working Force kN(tonf) Standard Working Force (one million strokes)	Working Force kN(tonf) Allowable Working Force (300,000 strokes)	Spring Force N(kgf) Initial Load	Spring Force N(kgf) Final Load	Total Weight kg	Catalog No.	(W)	(θ)
47.8	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	43.7	UCMSC	150	25
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	25
UCMSF	150	–	25

Option

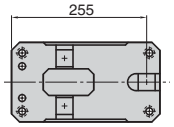
Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

Refer to page 726 for option details.

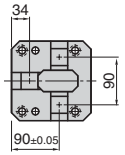
Order UCMSC150 – 25 – TK

Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

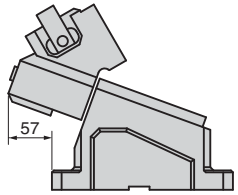
■TK Option
(cam holder)



(cam driver)



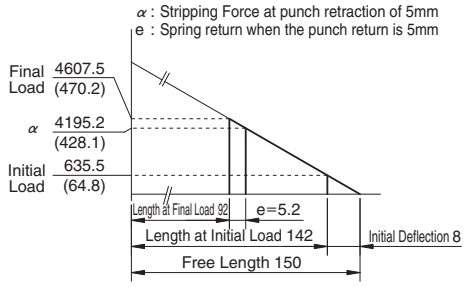
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

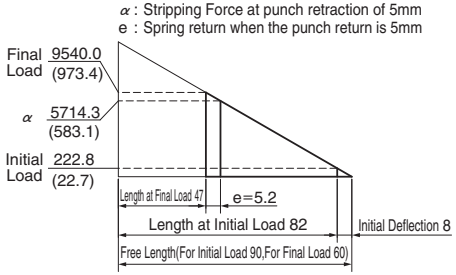
● For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



● For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

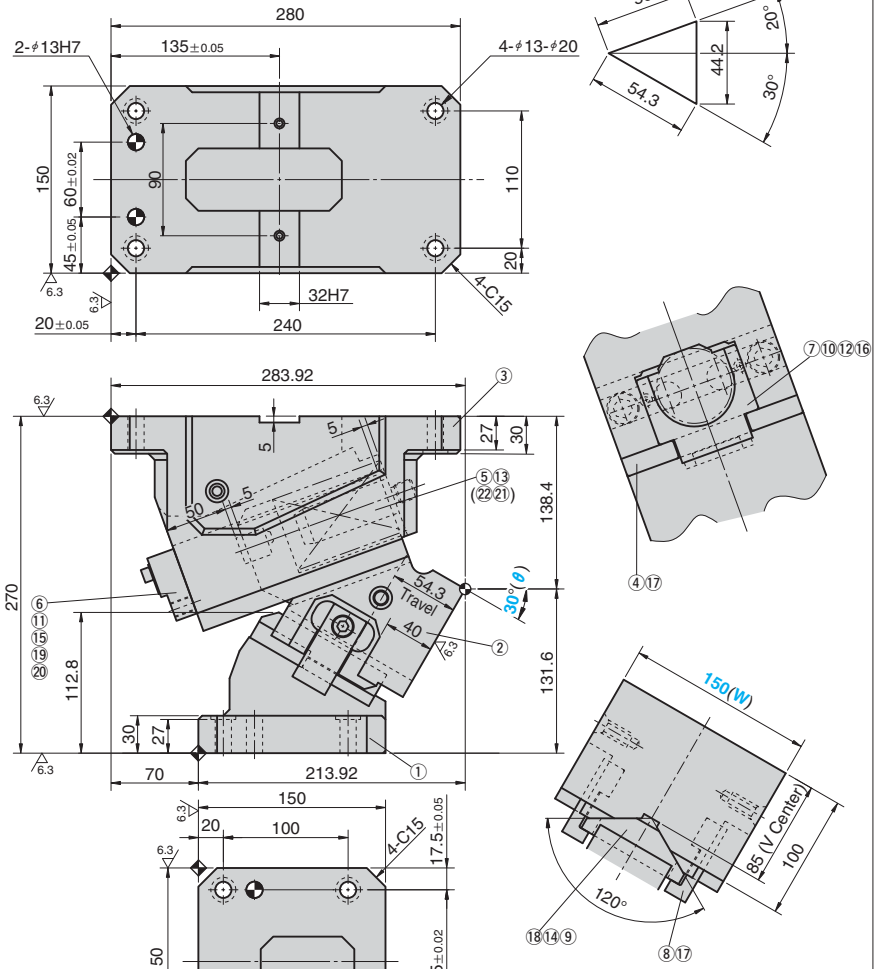
Aerial Cam Unit

FOR PIERCE

Addition CAD FILE

UCMSC150 – 30
UCMSF150 – 30

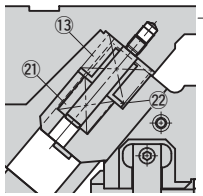
＊This drawing shows UCMSC150



■Cam Diagram

■Spring Specification

for UCMSF150



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load				
54.3	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	42.2	UCMSC	150	30
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	30
UCMSF	150	–	30

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to ϕ16H7.

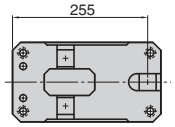
Refer to page 726 for option details.

Order UCMSC150 – 30 – TK

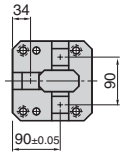
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

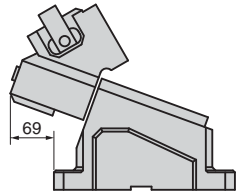
(cam holder)



(cam driver)



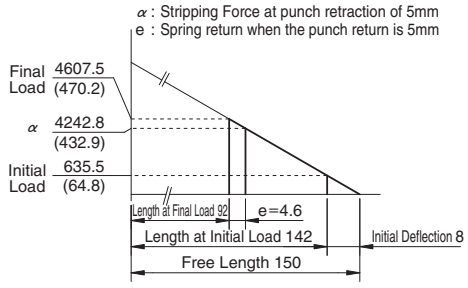
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

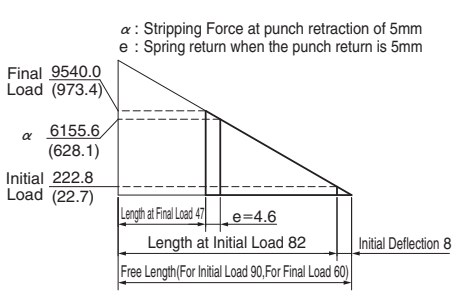
- For UCMSC

•Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



- For UCMSF

•Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

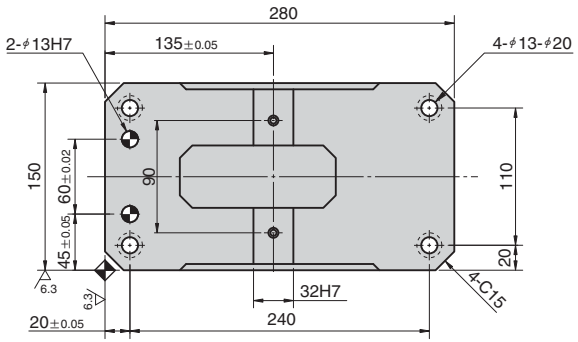
Aerial Cam Unit

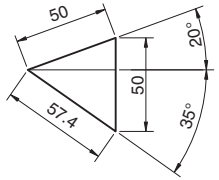
FOR PIERCE

Addition CAD FILE

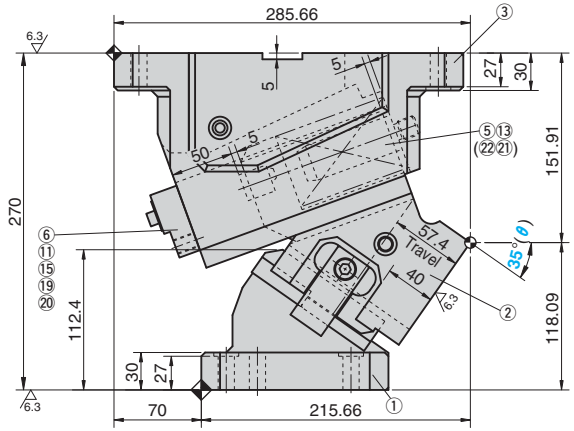
UCMSC150 – 35
UCMSF150 – 35

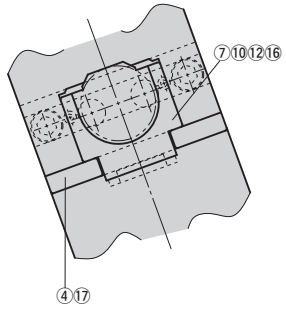
＊This drawing shows UCMSC150

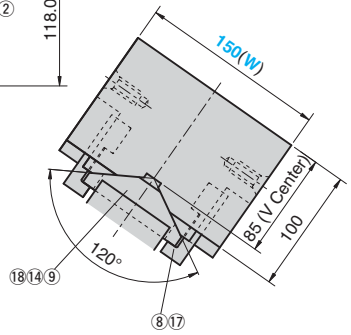


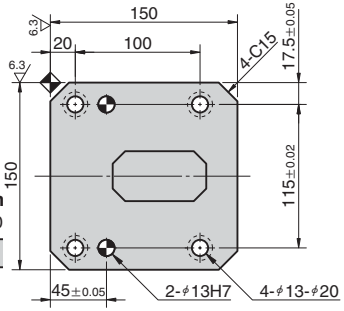


■Cam Diagram

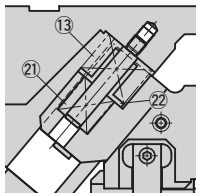








■Spring Specification
for UCMSF150



Travel S	Working Force kN(tonf) Standard Working Force (one million strokes)	Working Force kN(tonf) Allowable Working Force (300,000 strokes)	Spring Force N(kgf) Initial Load	Spring Force N(kgf) Final Load	Total Weight kg	Catalog No.	(W)	(θ)
57.4	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	42.7	UCMSC	150	35
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	35
UCMSF	150	–	35

Option

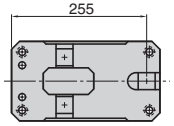
Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

Refer to page 726 for option details.

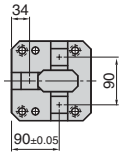
Order UCMSC150 – 35 – TK

Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

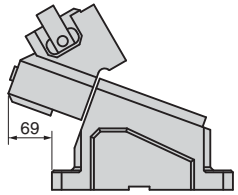
■TK Option
(cam holder)



(cam driver)



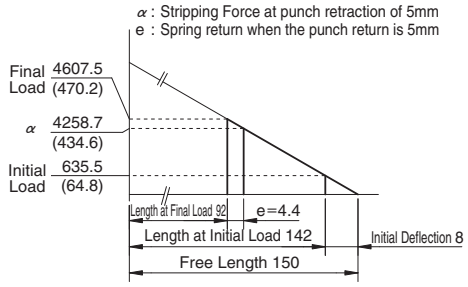
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

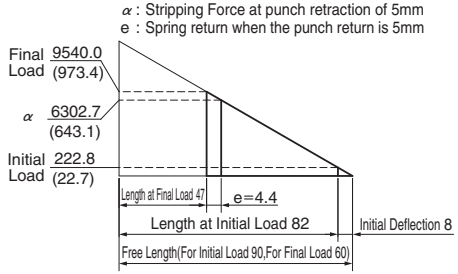
● For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



● For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

Aerial Cam Unit

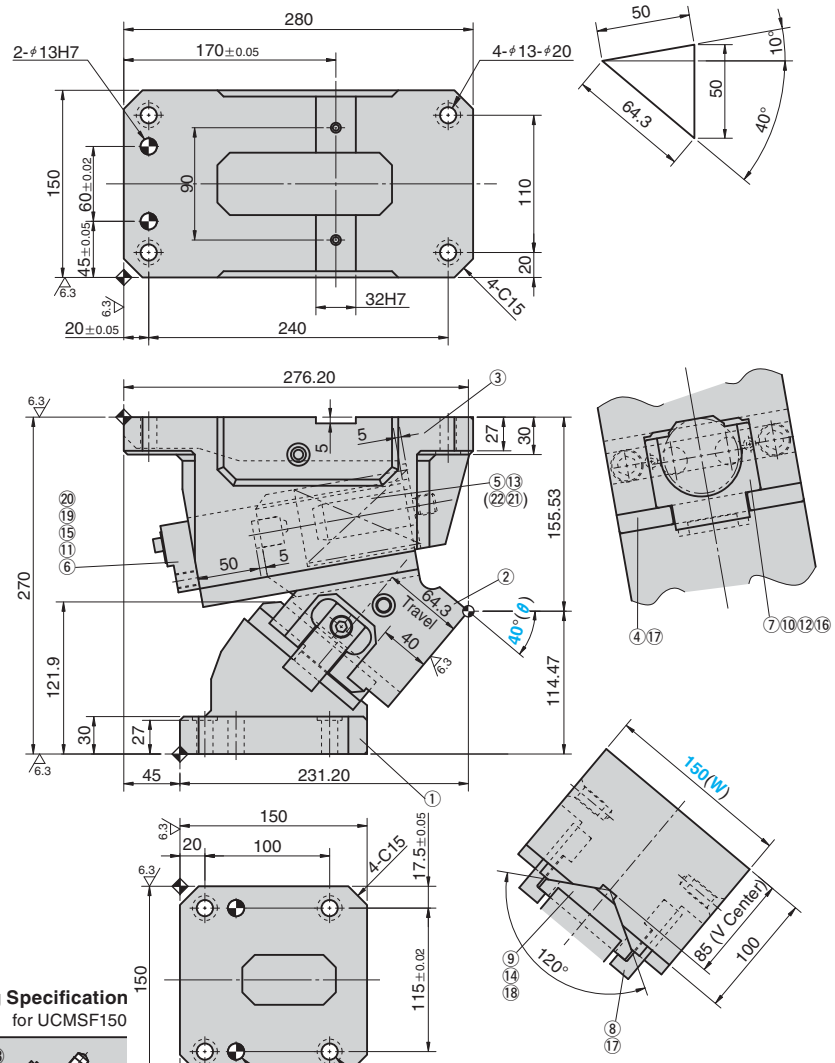
FOR PIERCE

Addition CAD FILE

UCMSC150 – 40
UCMSF150 – 40

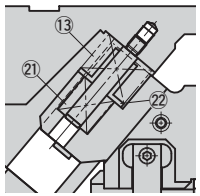
＊This drawing shows UCMSC150

■Cam Diagram



■Spring Specification

for UCMSF150



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load				
64.3	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	41.0	UCMSC	150	40
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	40
UCMSF	150	–	40

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

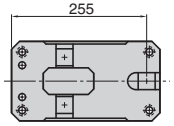
Refer to page 726 for option details.

Order UCMSC150 – 40 – TK

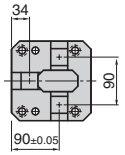
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

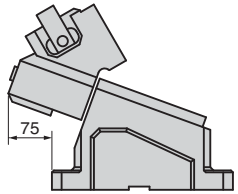
(cam holder)



(cam driver)



■Space for removing

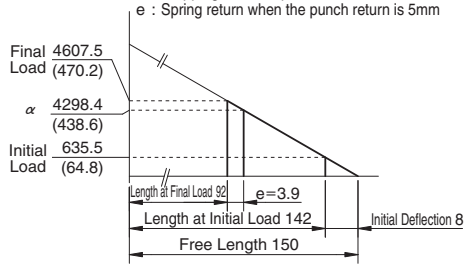


■Spring Diagram (Stripping Force at punch retraction of 5mm)

- For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)

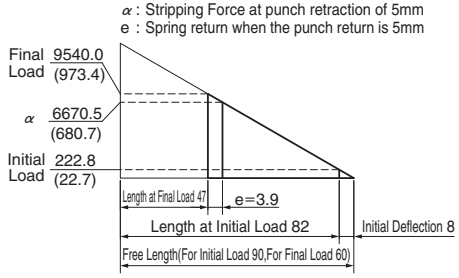
α : Stripping Force at punch retraction of 5mm
e : Spring return when the punch return is 5mm



- For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)

α : Stripping Force at punch retraction of 5mm
e : Spring return when the punch return is 5mm



Refer to page 849 for the table of components.

Aerial Cam Unit

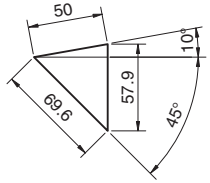
FOR PIERCE

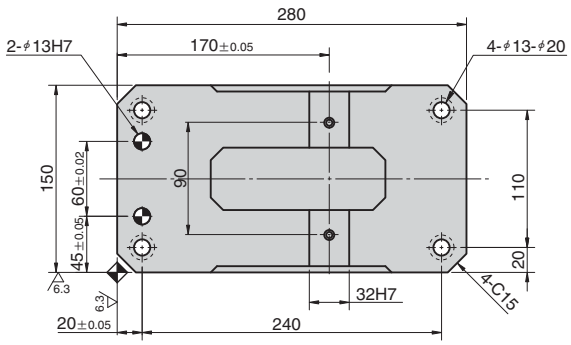
Addition CAD FILE

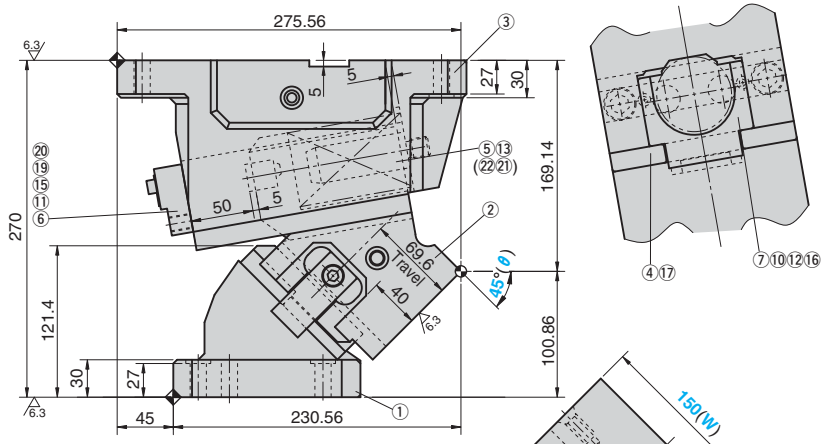
UCMSC150 – 45
UCMSF150 – 45

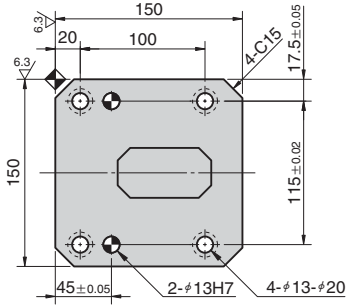
＊This drawing shows UCMSC150

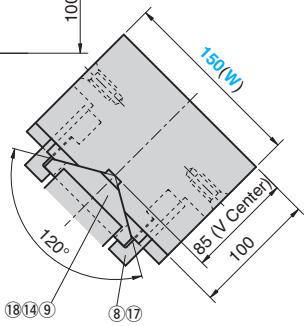
■Cam Diagram





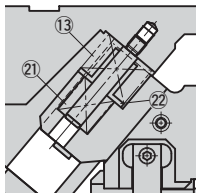






■Spring Specification

for UCMSF150



Travel S	Working Force kN(tonf) Standard Working Force (one million strokes)	Working Force kN(tonf) Allowable Working Force (300,000 strokes)	Spring Force N(kgf) Initial Load	Spring Force N(kgf) Final Load	Total Weight kg	Catalog No.	(W)	(θ)
69.6	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	41.4	UCMSC	150	45
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	45
UCMSF	150	–	45

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to ϕ16H7.

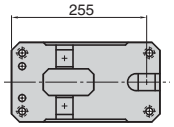
Refer to page 726 for option details.

Order UCMSC150 – 45 – TK

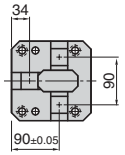
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

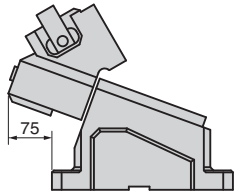
(cam holder)



(cam driver)



■Space for removing

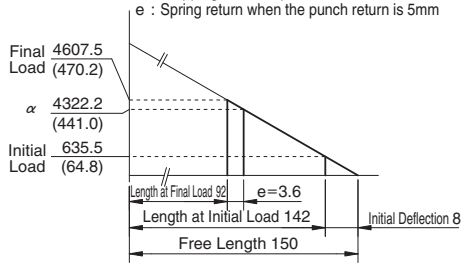


■Spring Diagram (Stripping Force at punch retraction of 5mm)

- For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)

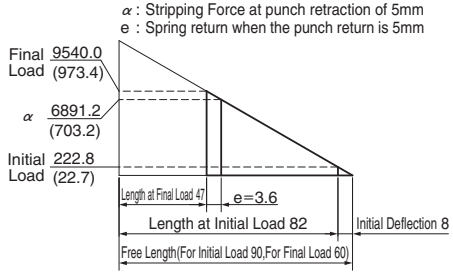
α : Stripping Force at punch retraction of 5mm
e : Spring return when the punch return is 5mm



- For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)

α : Stripping Force at punch retraction of 5mm
e : Spring return when the punch return is 5mm



Refer to page 849 for the table of components.

Aerial Cam Unit

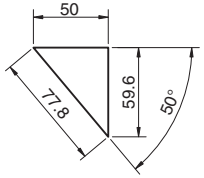
FOR PIERCE

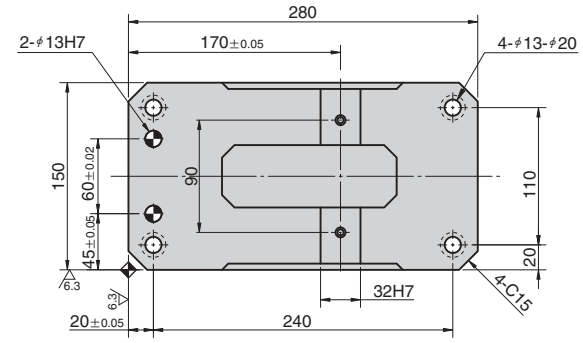
Addition CAD FILE

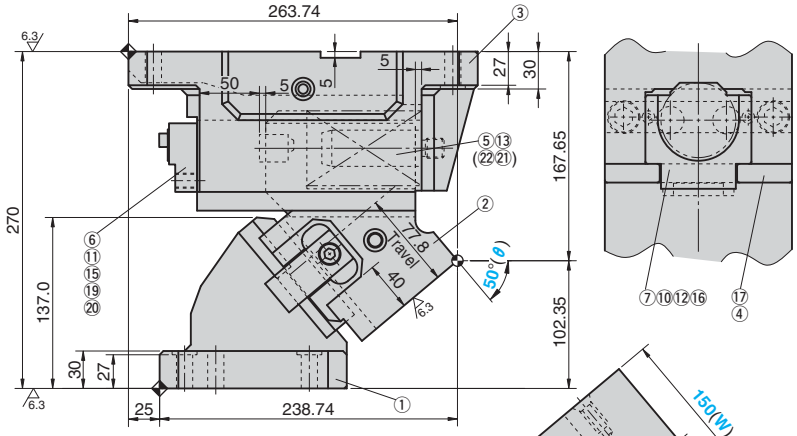
UCMSC150 – 50
UCMSF150 – 50

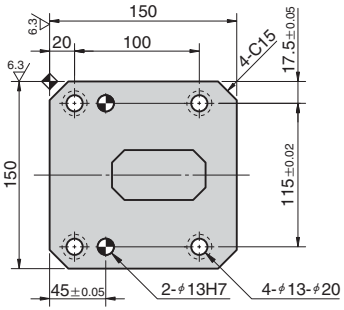
＊This drawing shows UCMSC150

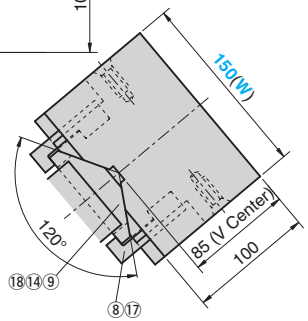
■Cam Diagram



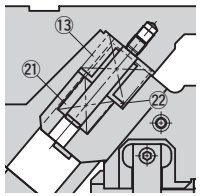








■Spring Specification
for UCMSF150



Travel S	Working Force kN(tonf) Standard Working Force (one million strokes)	Working Force kN(tonf) Allowable Working Force (300,000 strokes)	Spring Force N(kgf) Initial Load	Spring Force N(kgf) Final Load	Total Weight kg	Catalog No.	(W)	(θ)
77.8	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	40.5	UCMSC	150	50
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	50
UCMSF	150	–	50

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

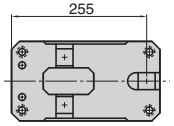
Refer to page 726 for option details.

Order UCMSC150 – 50 – TK

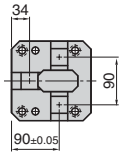
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

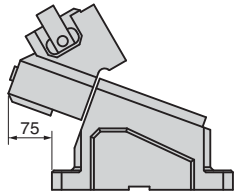
(cam holder)



(cam driver)



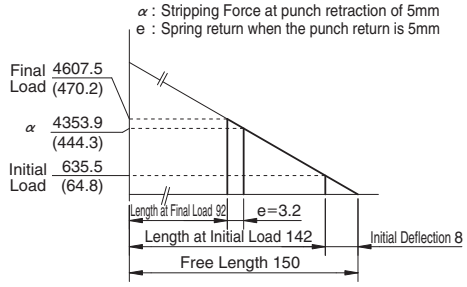
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

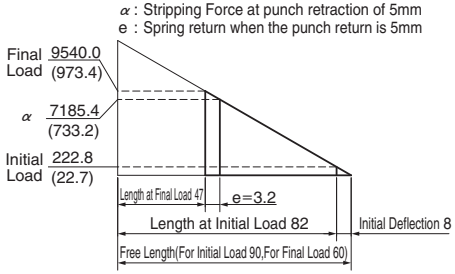
- For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



- For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

Aerial Cam Unit

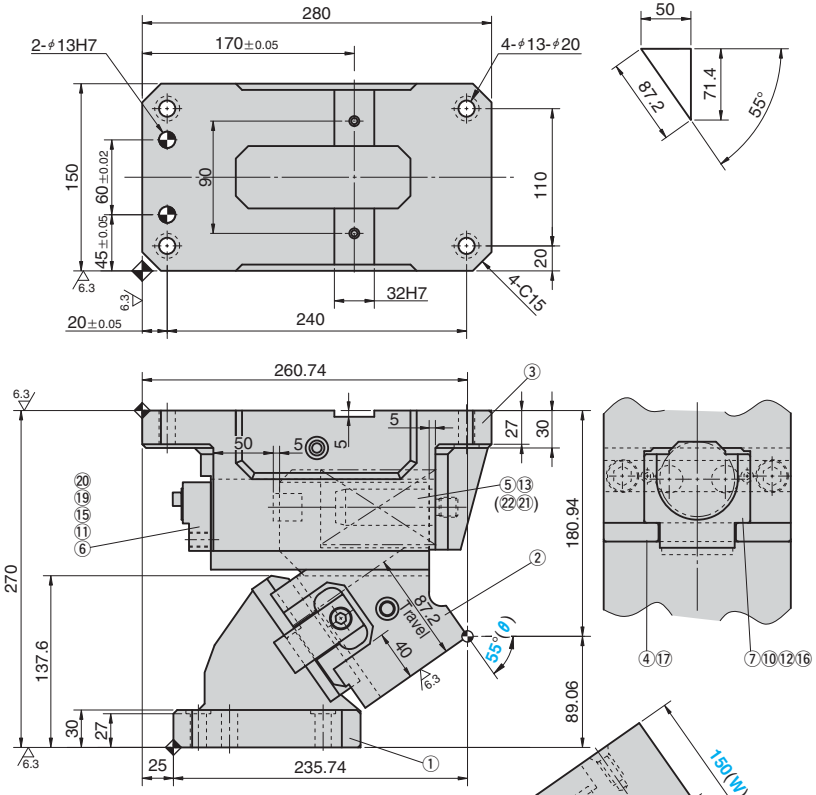
FOR PIERCE

Addition CAD FILE

UCMSC150 – 55
UCMSF150 – 55

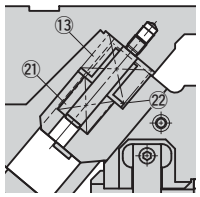
＊This drawing shows UCMSC150

■Cam Diagram



■Spring Specification

for UCMSF150



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load				
87.2	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	40.9	UCMSC	150	55
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	55
UCMSF	150	–	55

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to ϕ16H7.

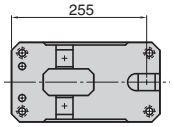
Refer to page 726 for option details.

Order UCMSC150 – 55 – TK

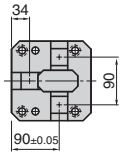
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

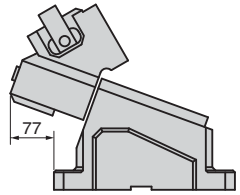
(cam holder)



(cam driver)



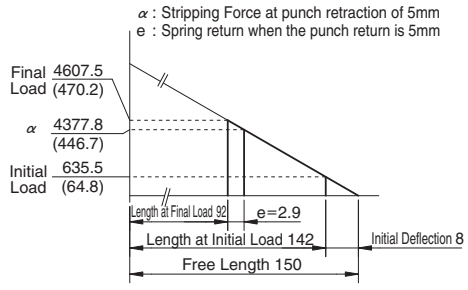
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

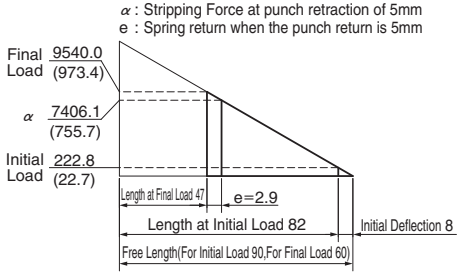
- For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



- For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

Aerial Cam Unit

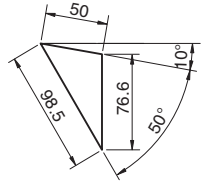
FOR PIERCE

Addition CAD FILE

UCMSC150 – 60
UCMSF150 – 60

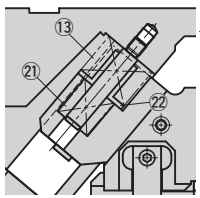
＊This drawing shows UCMSC150

■Cam Diagram



■Spring Specification

for UCMSF150



Travel S	Working Force kN(tonf) Standard Working Force (one million strokes)	Working Force kN(tonf) Allowable Working Force (300,000 strokes)	Spring Force N(kgf) Initial Load	Spring Force N(kgf) Final Load	Total Weight kg	Catalog No.	(W)	(θ)
98.5	88.2 (9.0)	132.3 (13.5)	635.5 (64.8)	4607.5 (470.2)	41.5	UCMSC	150	60
	123.5 (12.6)	185.2 (18.9)	222.8 (22.7)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	60
UCMSF	150	–	60

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

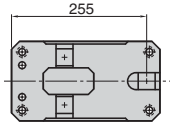
Refer to page 726 for option details.

Order UCMSC150 – 60 – TK

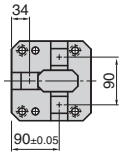
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

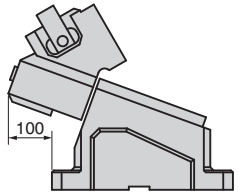
(cam holder)



(cam driver)



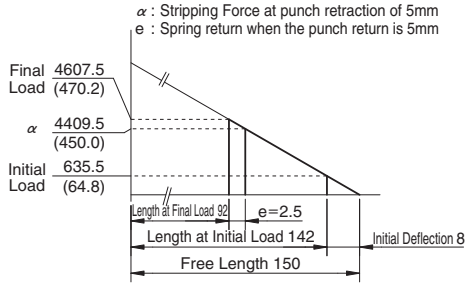
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

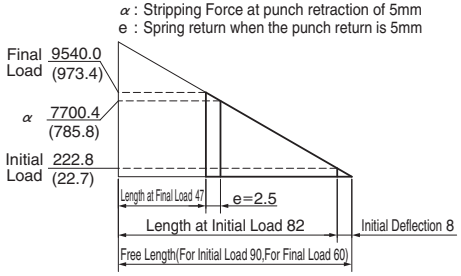
- For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



- For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

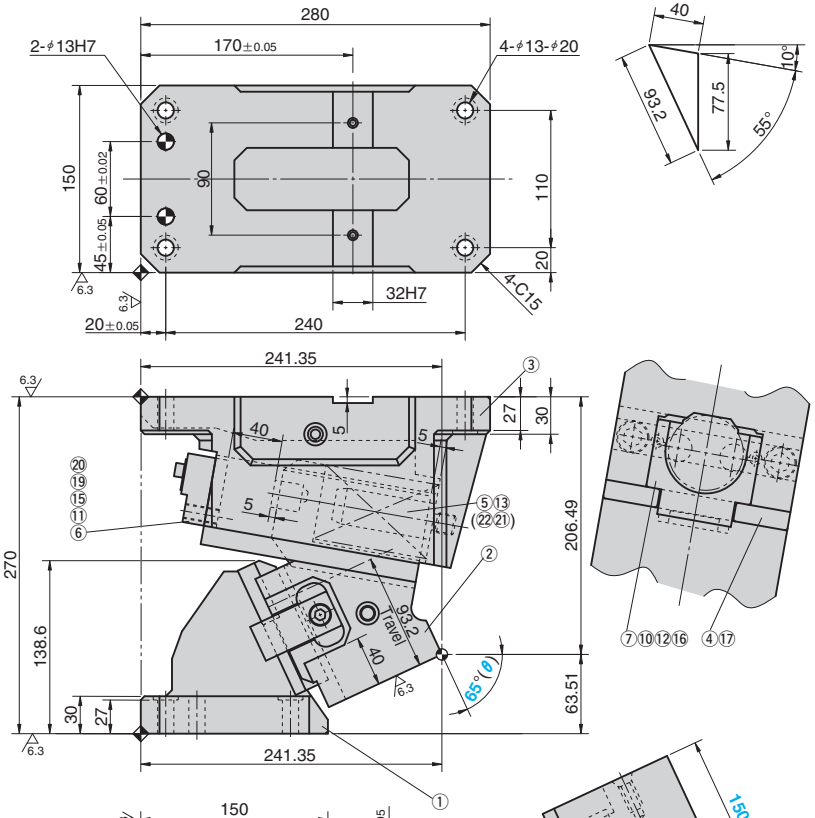
Aerial Cam Unit

FOR PIERCE

Addition CAD FILE

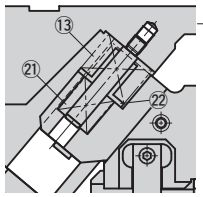
UCMSC150 – 65
UCMSF150 – 65

＊This drawing shows UCMSC150



■Cam Diagram

■Spring Specification
for UCMSF150



Travel S	Working Force kN(tonf) Standard Working Force (one million strokes)	Working Force kN(tonf) Allowable Working Force (300,000 strokes)	Spring Force N(kgf) Initial Load	Spring Force N(kgf) Final Load	Total Weight kg	Catalog No.	(W)	(θ)
93.2	88.2 (9.0)	132.3 (13.5)	1429.2 (145.8)	4607.5 (470.2)	42.2	UCMSC	150	65
	123.5 (12.6)	185.2 (18.9)	501.3 (51.2)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	65
UCMSF	150	–	65

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to φ16H7.

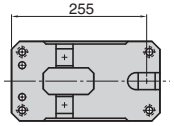
Refer to page 726 for option details.

Order UCMSC150 – 65 – TK

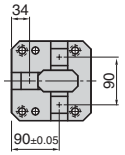
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

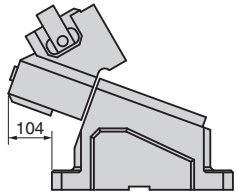
(cam holder)



(cam driver)



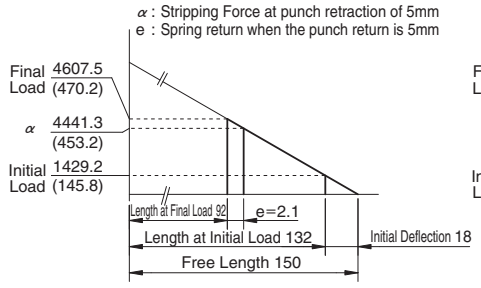
■Space for removing



■Spring Diagram (Stripping Force at punch retraction of 5mm)

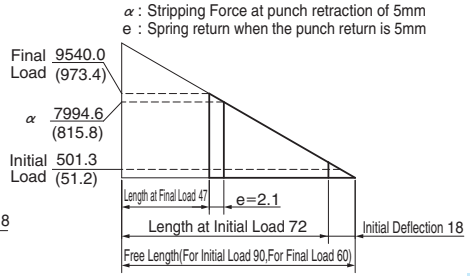
● For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



● For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

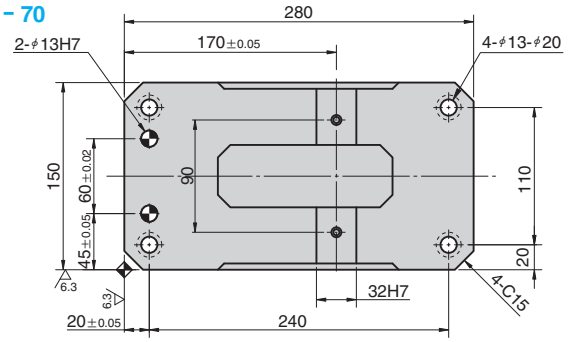
Aerial Cam Unit

FOR PIERCE

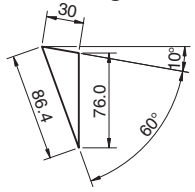
Addition CAD FILE

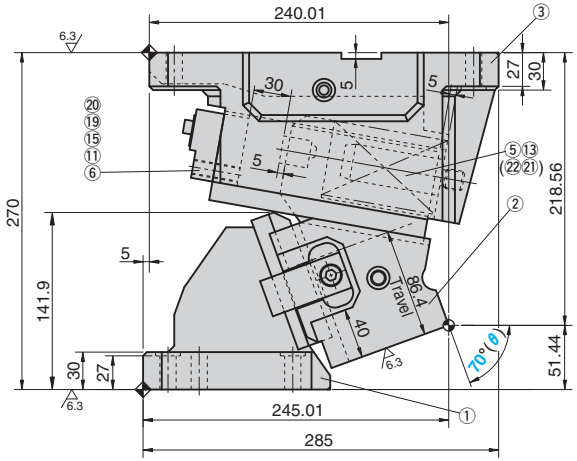
UCMSC150 – 70
UCMSF150 – 70

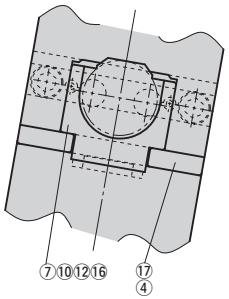
＊This drawing shows UCMSC150

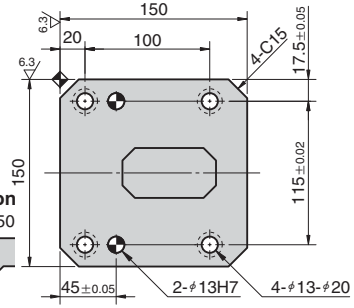


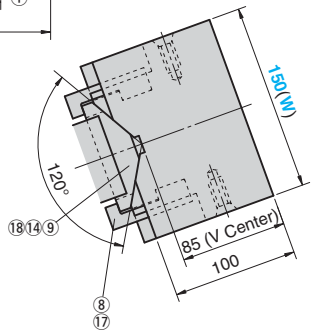
■Cam Diagram



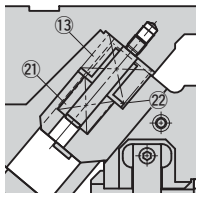








■Spring Specification
for UCMSF150



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load				
86.4	88.2 (9.0)	132.3 (13.5)	2223.2 (226.8)	4607.5 (470.2)	43.5	UCMSC	150	70
	123.5 (12.6)	185.2 (18.9)	779.8 (79.6)	9540.0 (973.4)		UCMSF		

Order

Catalog No.	(W)	–	(θ)
UCMSC	150	–	70
UCMSF	150	–	70

Option

Option Code	Specification
K	Dedicated key is attached for cam driver.
TK	Dedicated key is attached for cam holder (T-shaped) and cam driver.
S	Home Position Bolt / Nut / Collar are included.
N16	The dowel pin holes for the cam holder and cam driver are changed to ϕ16H7.

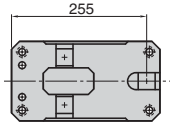
Refer to page 726 for option details.

Order UCMSC150 – 70 – TK

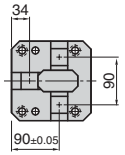
Refer to page 551 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finish hole) for retainer.

■TK Option

(cam holder)



(cam driver)



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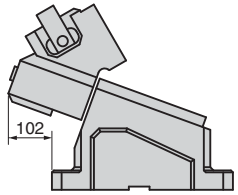
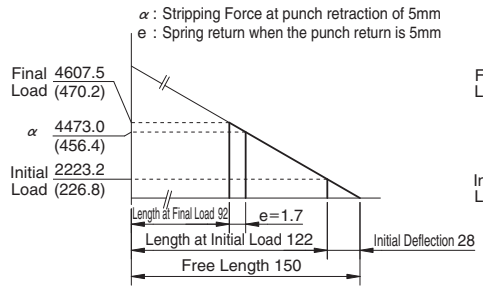


■Spring Diagram (Stripping Force at punch retraction of 5mm)

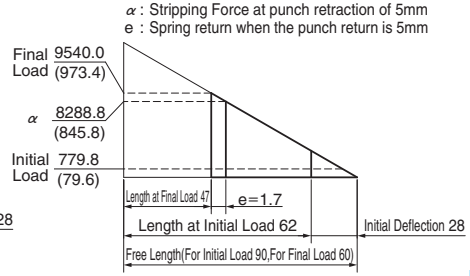
● For UCMSC

●Spring Used TL60-150(1 Piece) 79.44N/mm(8.10kgf/mm)



● For UCMSF

●Spring Used
For Initial Load TF40-90(1 Piece) 27.85N/mm(2.84kgf/mm)
For Final Load TH60-60(1 Piece) 736.11N/mm(75.06kgf/mm)



Refer to page 849 for the table of components.

Aerial Cam Unit Table of Components UCMSC and UCMSF 150

FOR PIERCE

■Table of Components UCMSC150

No.	Description	Qty	Material and Remark
①	Cam Driver	1	FC250
②	Cam Slider	1	FC250
③	Cam Holder	1	FC250
④	Slide Plate	2	Bronze with Graphite (SO#50 SP2)
⑤	Spring Guide Pin	1	SCM435
⑥	Stopper Plate	1	SS400(1020)
⑦	Spring Guide Block	1	FCD450 with Graphite
⑧	Positive Return Follower	2	S45C(1045)
⑨	Cam Slide Guide	1	Bronze with Graphite (SO#50 SP2)
⑩	Key	1	S45C(1045)
⑪	Safety Plate	1	SS400(1020)
⑫	Stopper	2	Urethane
⑬	Coil Spring	1	TL60-150
⑭	Dowel Pin with Female Thread	2	SUJ2 ϕ10×40
⑮	Coned Disc Spring	2	M6
⑯	Hexagon Socket Head Bolt	4	SCM435 M12×30
⑰	Hexagon Socket Head Bolt	8	SCM435 M10×25
⑱	Hexagon Socket Head Bolt	2	SCM435 M10×35
⑲	Hexagon Socket Head Bolt	2	SCM435 M16×35
⑳	Hexagon Socket Head Bolt	2	SCM435 M6×15

■Table of Components UCMSF150

No.	Description	Qty	Material and Remark
①	Cam Driver	1	FC250
②	Cam Slider	1	FC250
③	Cam Holder	1	FC250
④	Slide Plate	2	Bronze with Graphite(SO#50 SP2)
⑤	Spring Guide Pin	1	SCM435
⑥	Stopper Plate	1	SS400(1020)
⑦	Spring Guide Block	1	FCD450 with Graphite
⑧	Positive Return Follower	2	S45C(1045)
⑨	Cam Slide Guide	1	Bronze with Graphite(SO#50 SP7)
⑩	Key	1	S45C(1045)
⑪	Safety Plate	1	SS400(1020)
⑫	Stopper	2	Urethane ϕ22×23
⑬	Coil Spring	1	TH60-60
⑭	Dowel Pin with Female Thread	2	SUJ2 ϕ10×40
⑮	Coned Disk Spring	2	M6
⑯	Hexagonal Socket Head Bolt	4	SCM435 M12×30
⑰	Hexagonal Socket Head Bolt	8	SCM435 M10×25
⑱	Hexagonal Socket Head Bolt	2	SCM435 M10×35
⑲	Hexagonal Socket Head Bolt	2	SCM435 M16×35
⑳	Hexagonal Socket Head Bolt	2	SCM435 M6×15
㉑	Coil Spring	1	TF40-90
㉒	Bushing	1	Bronze with Graphite(SO#50 SP2)