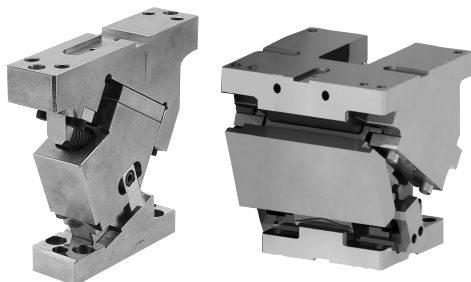


# Aerial Cam Unit General Description of UCMSG

## FOR PIERCE AND FLANGE



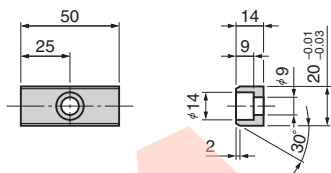
- Highly rigid structure with the overseas automobile manufacturer specification
- 50, 65, 80, 150, 200mm and 300mm are available for the mounting width.
- Angle 0° to 65° increments of 5° is available.  
(For 65 mm wide, angle 20° to 60° is in increments of 10°).
- ISO springs are used.

### Option for UCMSG

#### Metric Key Specification(-K)

##### UCMSG50/65

LKU20-50 (with 3-M8 × 15 bolts)

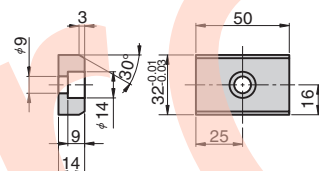


##### UCMSG80

LKU32-50 (with 3-M8 × 15 bolts)

##### UCMSG150/200/300

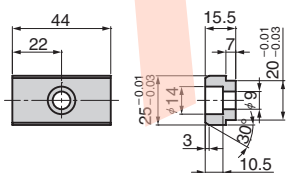
LKU32-50 (with 6-M8 × 15 bolts)



#### Metric Key Specification(-KA)

##### UCMSG50

LKA25-20-44 (with 3-M8 × 15 bolts)

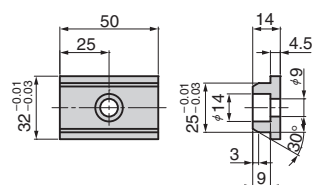


##### UCMSG80

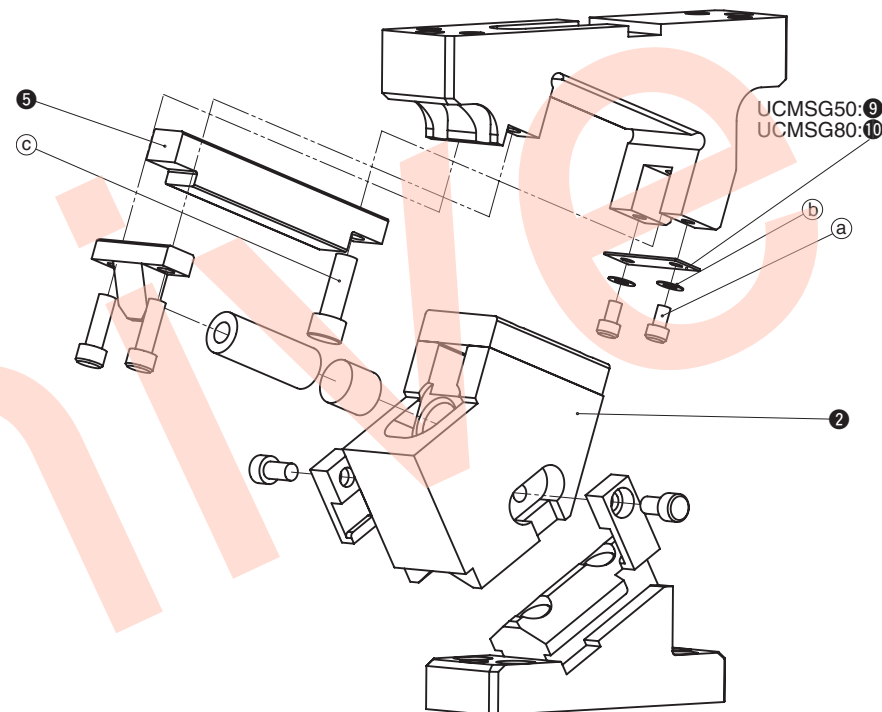
LKE25-32-50 (with 3-M8 × 15 bolts)

##### UCMSG150/200/300

LKE25-32-50 (with 6-M8 × 15 bolts)



### UCMSG50 (UCMSG80) Structure and Assembly / Disassembly



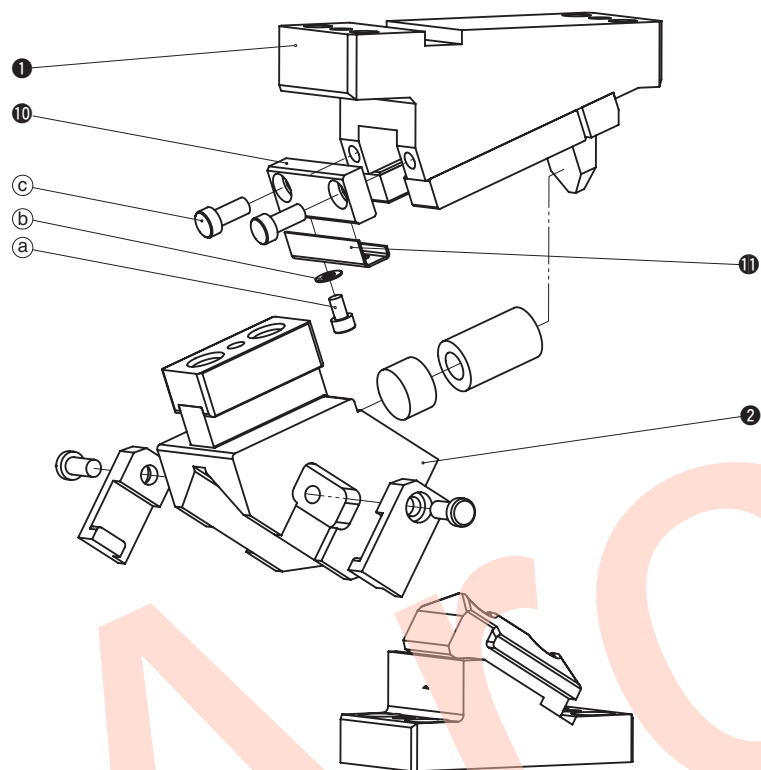
#### Disassembly method of UCMSG50 (same for UCMSG80)

- 1) Remove hexagon socket head bolt (a) and washer (b) and remove safety plate (UCMSG50:9 UCMSG80:10).
- 2) Remove hexagon socket head bolt (c).
- 3) Shift guide bar (5) to the back then remove cam slider (2) from cam holder.

#### Assembly method of UCMSG50 (same for UCMSG80)

- 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

### ■ UCMSG65 Structure and Assembly / Disassembly



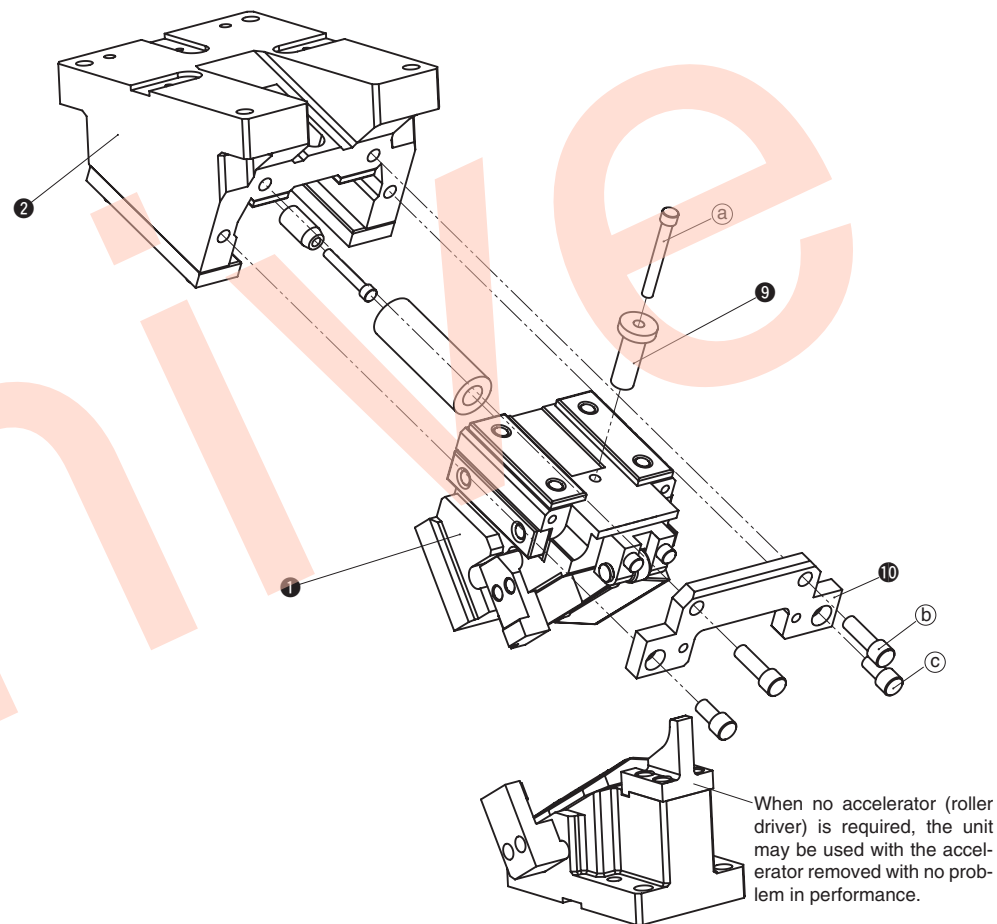
#### ● Disassembly method of UCMSG65

- 1) Remove hexagon socket head bolt (a) and washer (b), and remove safety plate (11).
- 2) Loosen hexagon socket head bolt (c). Remove stopper plate (10).
- 3) Pull cam slider (1) from cam holder (2) to the rear.

#### ● Assembly method of UCMSG65

- 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

### ■ UCMSG150, 200, 300 Structure and Assembly / Disassembly



#### ● Disassembly method of UCMSG150, 200, 300

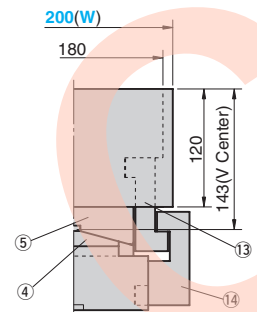
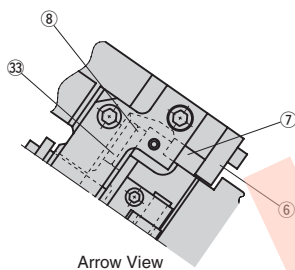
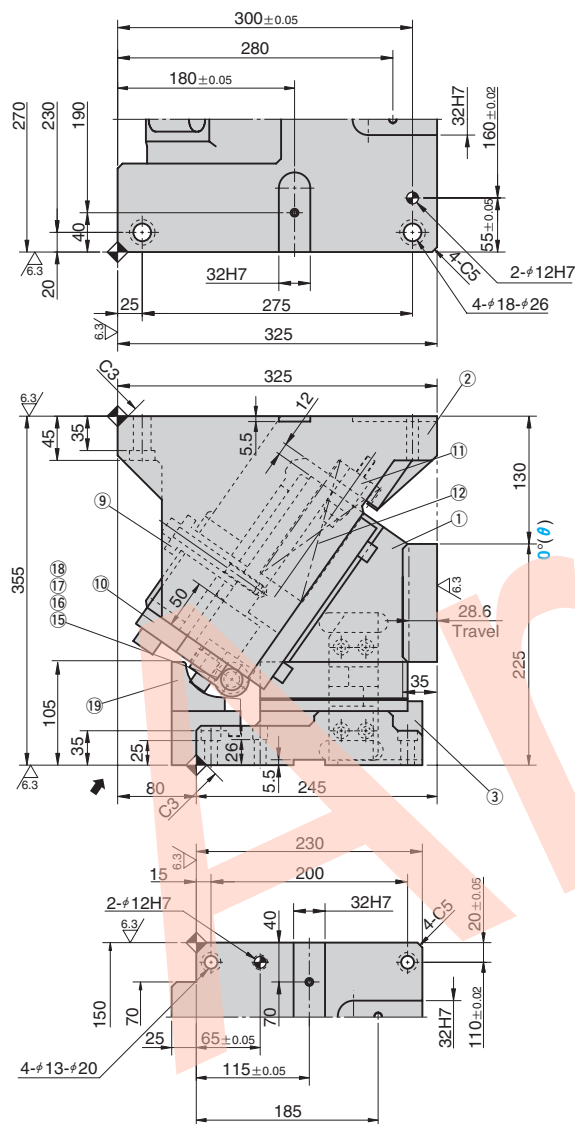
- 1) Loosen hexagon socket head bolt (a) and remove hanger bolt sleeve (9).
- 2) Loosen hexagon socket head bolt (b, c) and remove backup plate (10).
- 3) Pull cam slider (1) from cam holder (2) to the rear.

#### ● Assembly method of UCMSG150, 200, 300

- 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 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

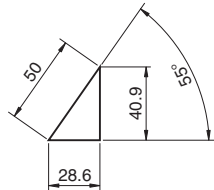
When no accelerator (roller driver) is required, the unit may be used with the accelerator removed with no problem in performance.

### UCMSG200 - 00



▲ 13 and 14 positive returns are one side only.

#### Cam Diagram



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
28.6	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10528 (1074.2)	44.0	129.7	UCMSG	200	00



Order

Catalog No. (W) - (θ)  
**UCMSG 200 - 00**



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



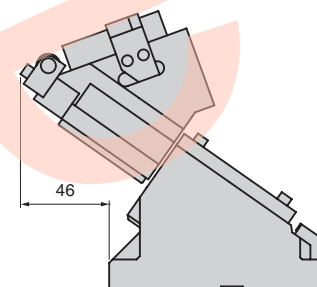
Order

**UCMSG200 - 00 - K**



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

#### Space for removing



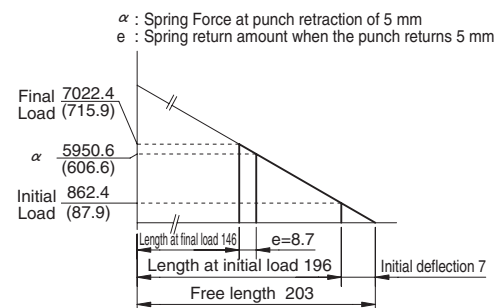
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

#### Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

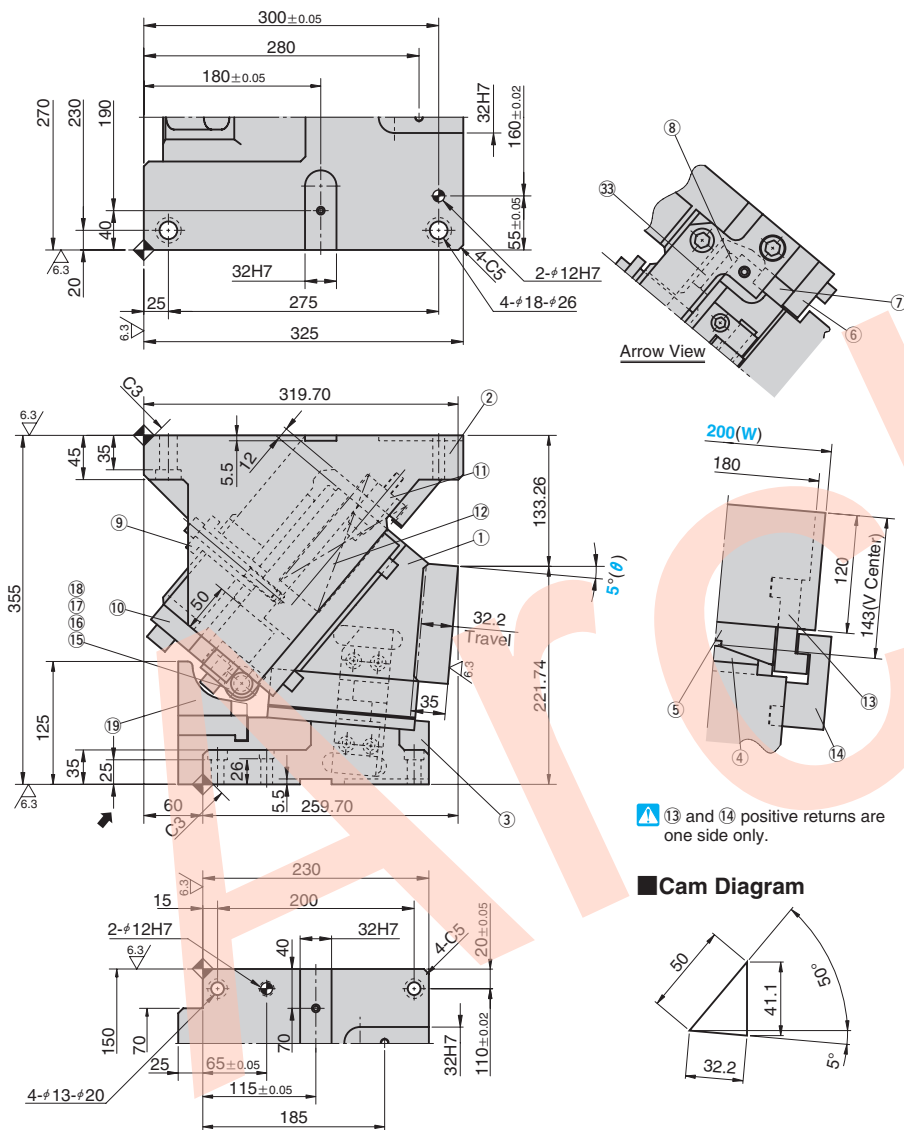
#### Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.

### UCMSG200 - 05



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
32.2	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10488 (1070.2)	44.0	126.6	UCMSG	200	05



Order

Catalog No. (W) - (θ)  
**UCMSG 200 - 05**



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



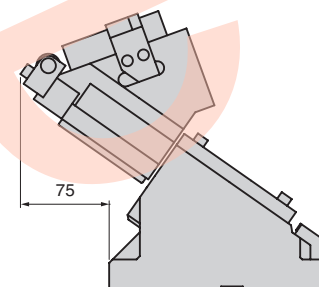
Order

**UCMSG200 - 05 - K**



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

### Space for removing



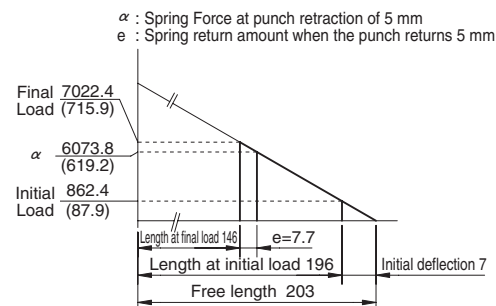
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

### Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

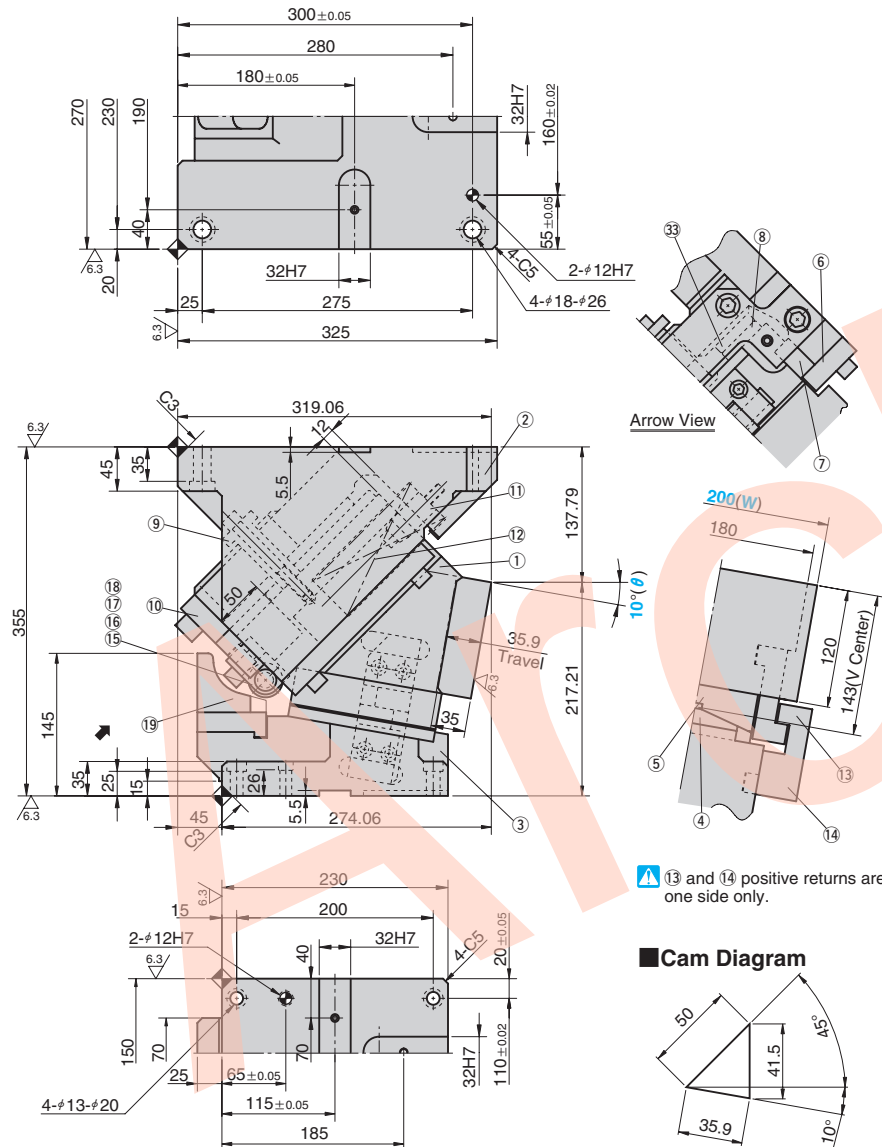
### Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



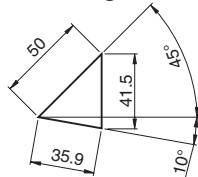
Bolts for assembly are not indicated.

### UCMSG200 - 10



13 and 14 positive returns are one side only.

#### Cam Diagram



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
35.9	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10446 (1065.9)	44.0	124.8	UCMSG	200	10



Order

Catalog No. **UCMSG** (W) **200** - (θ) **10**



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



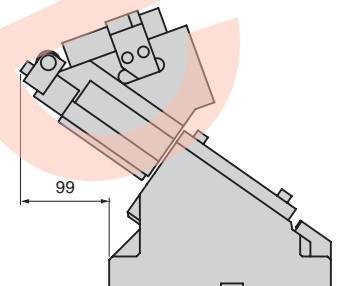
Order

**UCMSG200 - 10 - K**



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

#### Space for removing



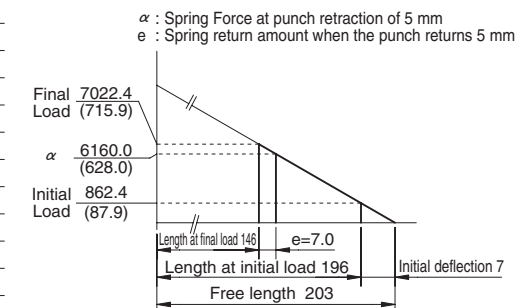
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

#### Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

#### Spring Diagram

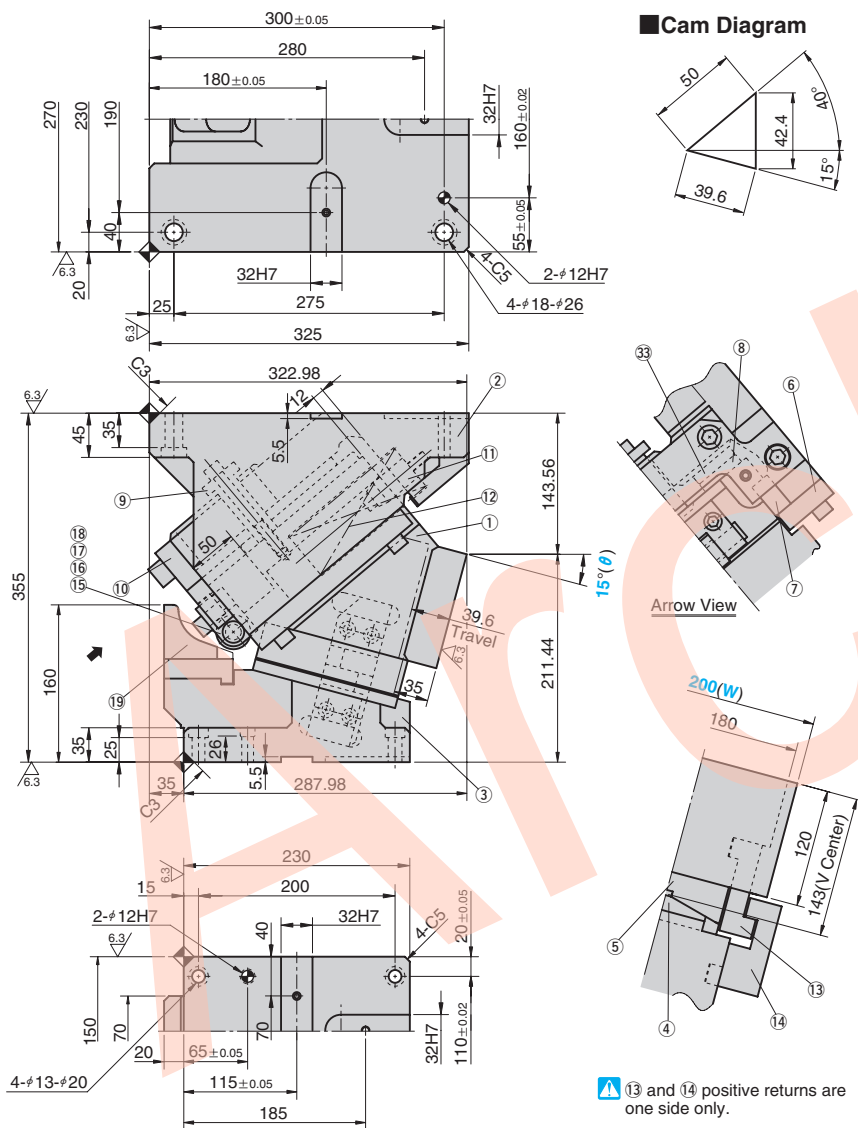
- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.



### UCMSG200 - 15



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
39.6	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10401 (1061.3)	44.0	127.4	UCMSG	200	15



Order

Catalog No. (W) - (θ)  
**UCMSG 200 - 15**



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



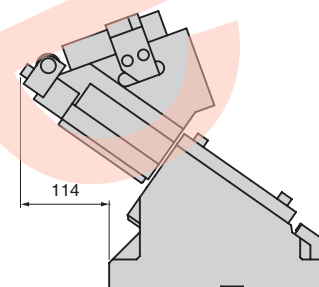
Order

**UCMSG200 - 15 - K**



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

### Space for removing



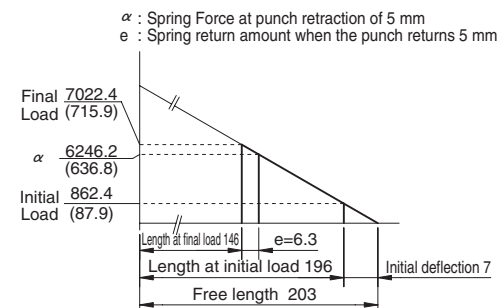
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

### Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

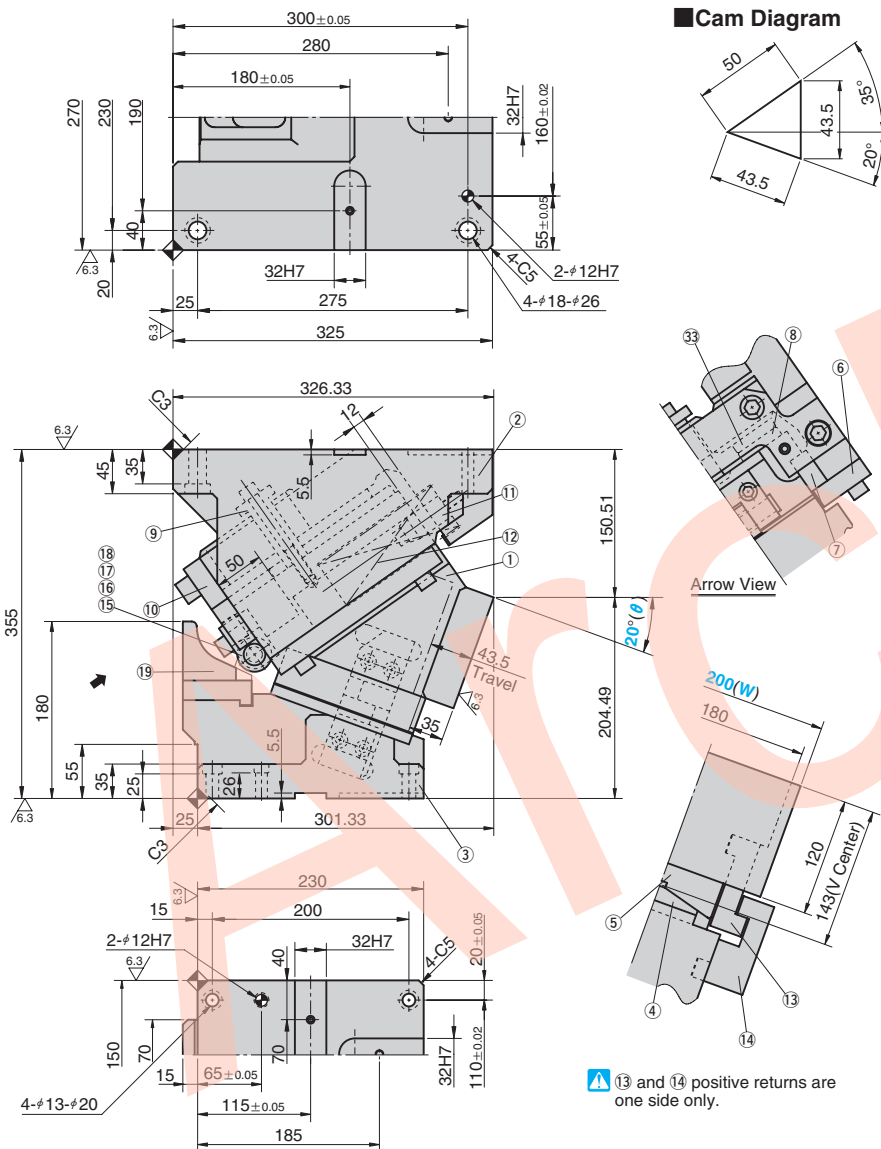
### Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.

### UCMSG200 - 20



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
43.5	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10353 (1056.4)	44.0	123.2	UCMSG	200	20



Order

Catalog No. **UCMSG** (W) **200** - (θ) **20**



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



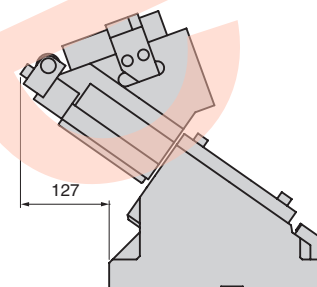
Order

**UCMSG200 - 20 - K**



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

### Space for removing



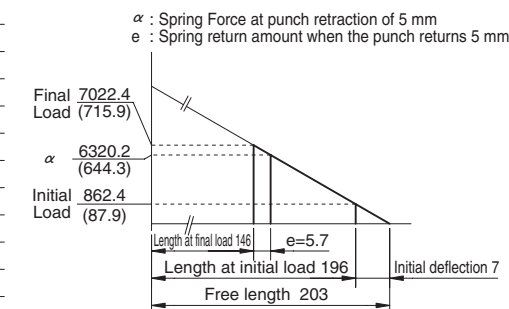
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

### Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

### Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



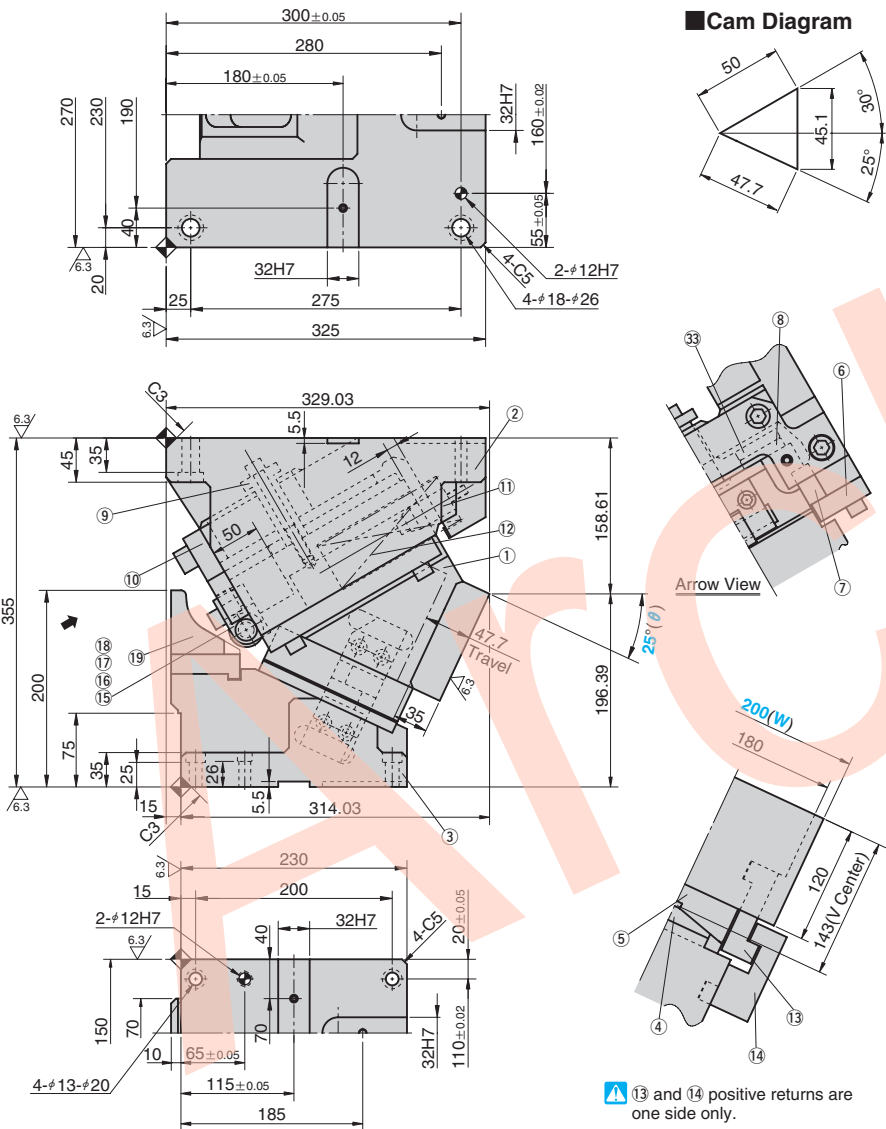
Bolts for assembly are not indicated.

# Aerial Cam Unit

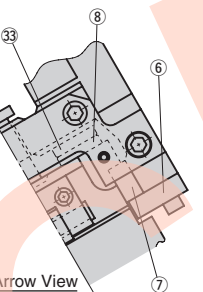
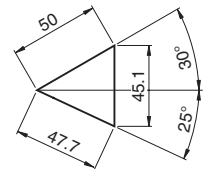
FOR PIERCE AND FLANGE

CAD  
FILE

UCMSG200 - 25



Cam Diagram



13 and 14 positive returns are one side only.

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
47.7	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10303 (1051.3)	44.0	123.0	UCMSG	200	25



Order

Catalog No. (W) - (θ)  
UCMSG 200 - 25



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to φ13.



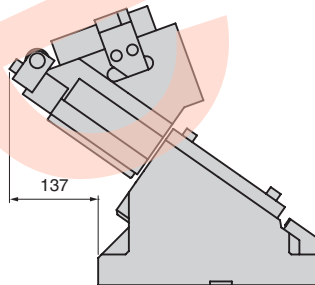
Order

UCMSG200 - 25 - K



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

Space for removing



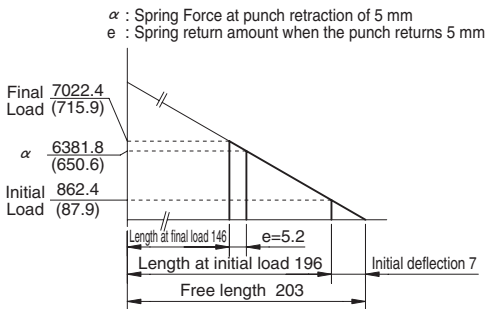
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

Spring Diagram

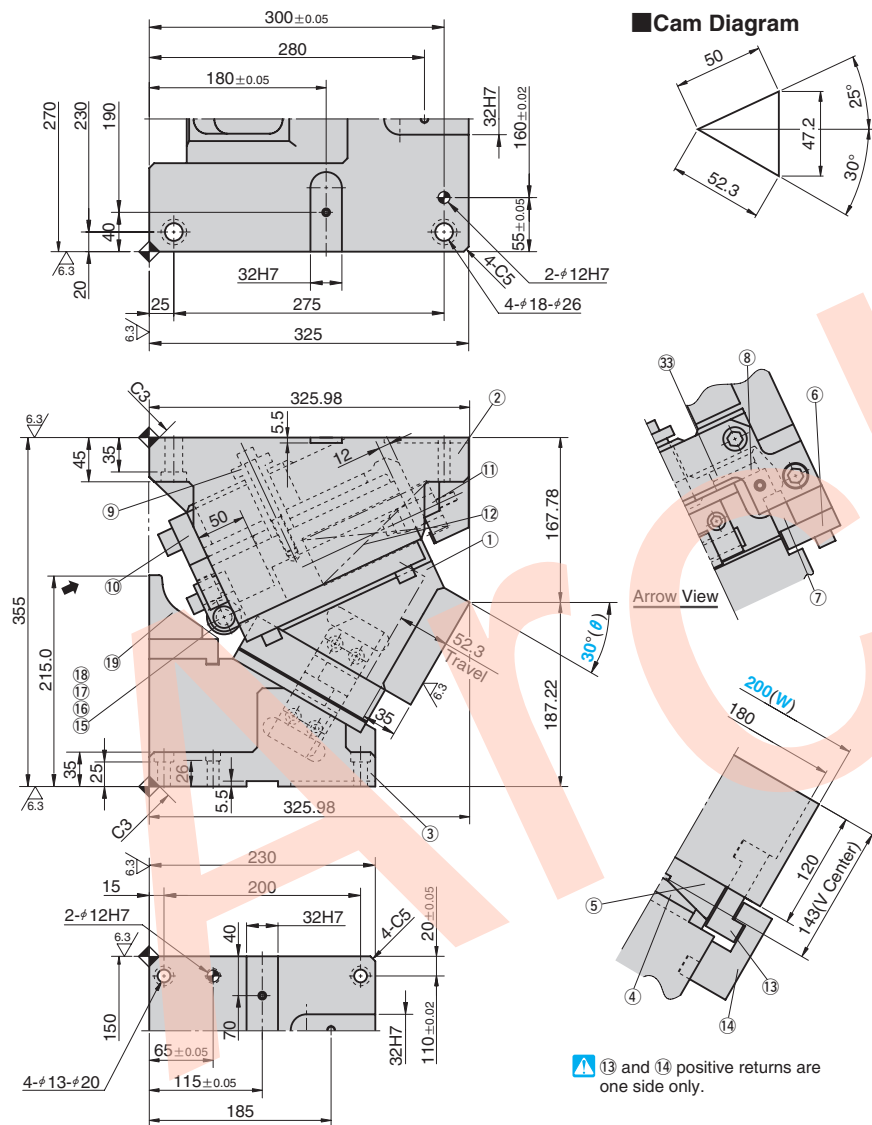
- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



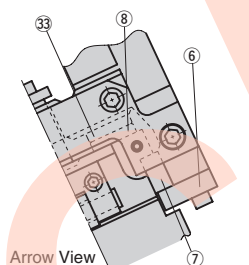
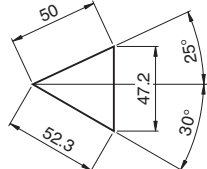
Bolts for assembly are not indicated.



### UCMSG200 - 30



Cam Diagram



13 and 14 positive returns are one side only.

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
52.3	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10251 (1046.0)	44.0	121.7	UCMSG	200	30



Order

Catalog No. (W) - (θ)  
UCMSG 200 - 30



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



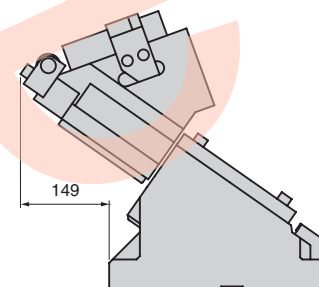
Order

UCMSG200 - 30 - K



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

Space for removing



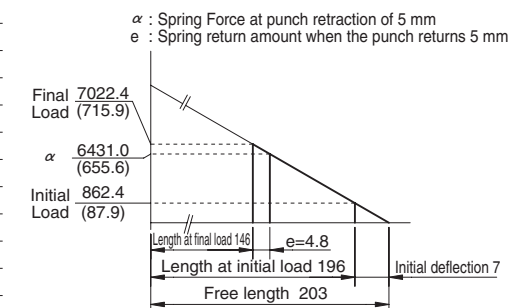
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



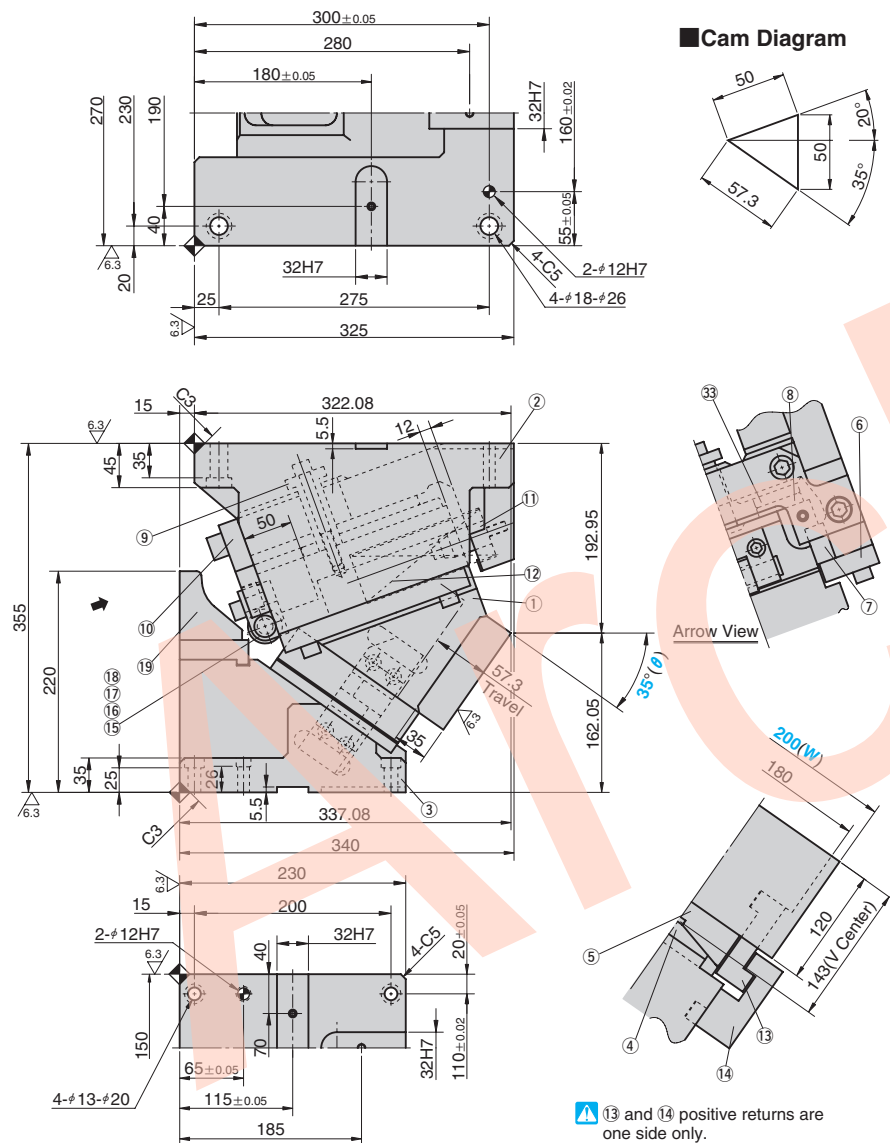
Bolts for assembly are not indicated.

# Aerial Cam Unit

FOR PIERCE AND FLANGE

CAD  
FILE

UCMSG200 - 35



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
57.3	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10198 (1040.6)	44.0	125.3	UCMSG	200	35



Order

Catalog No. (W) - (θ)  
UCMSG 200 - 35



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to φ13.



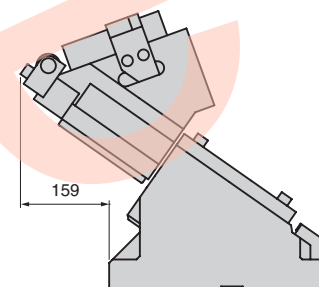
Order

UCMSG200 - 35 - K



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

## Space for removing



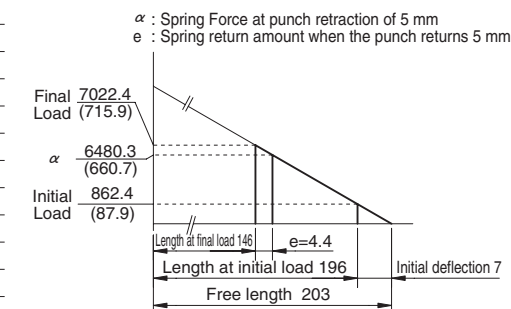
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

## Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

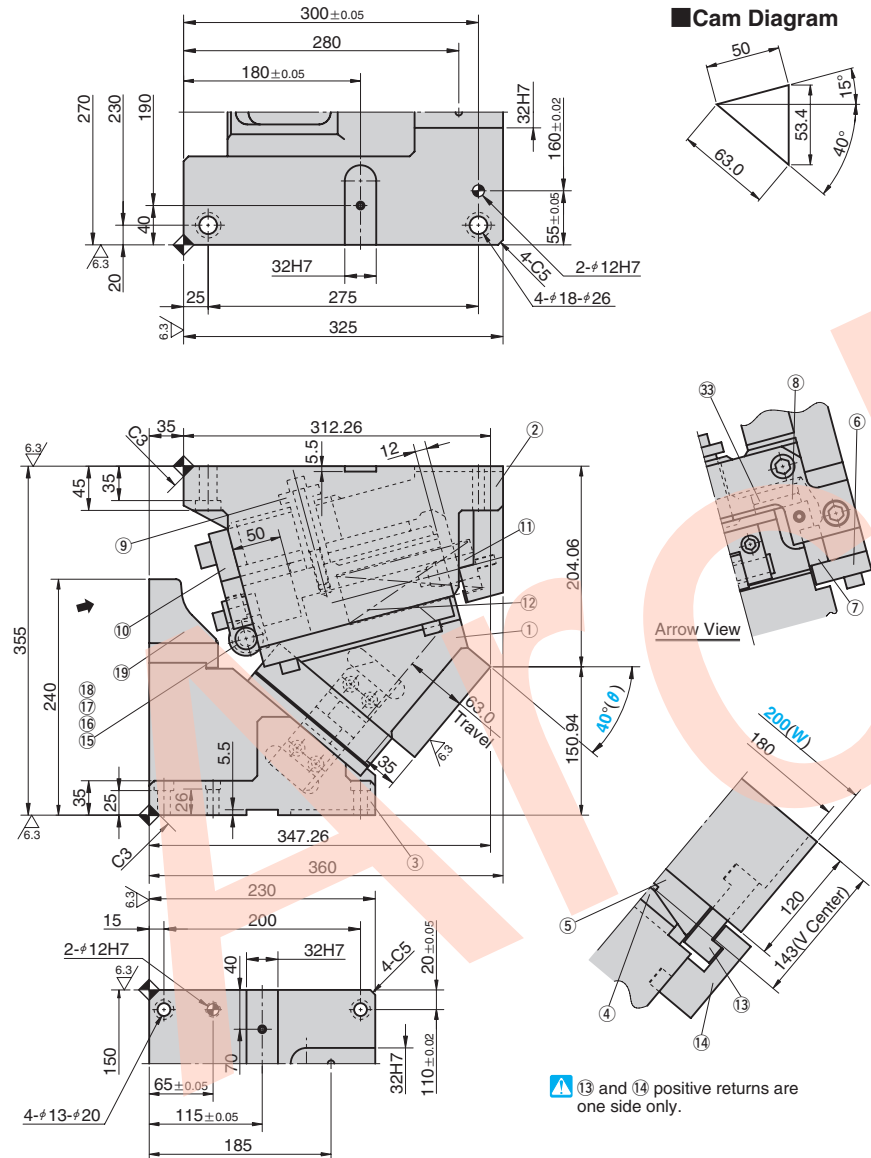
## Spring Diagram


- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.

## UCMSG200 – 40



 ⑬ and ⑭ positive returns are one side only.

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
63.0	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10144 (1035.1)	44.0	126.8	UCMSG	200	40



## Order

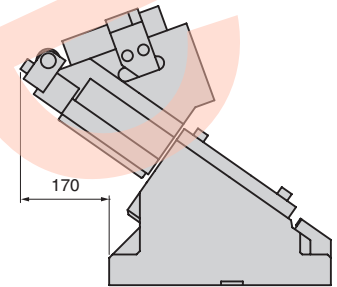
Catalog No.	(W)	—	(θ)
UCMSG	200	—	40



**Option**

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.

■Space for removing




※ This assumes that the (9) Hanger Bolt Sleeve is removed.



Order

UCMSG200 – 40 – K



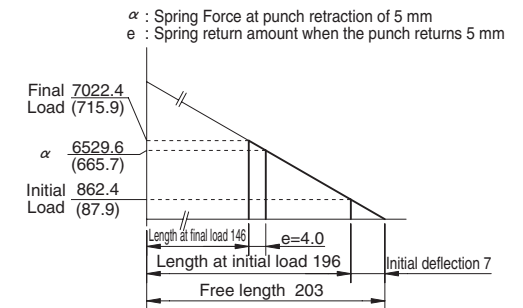
 For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

## ■ Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

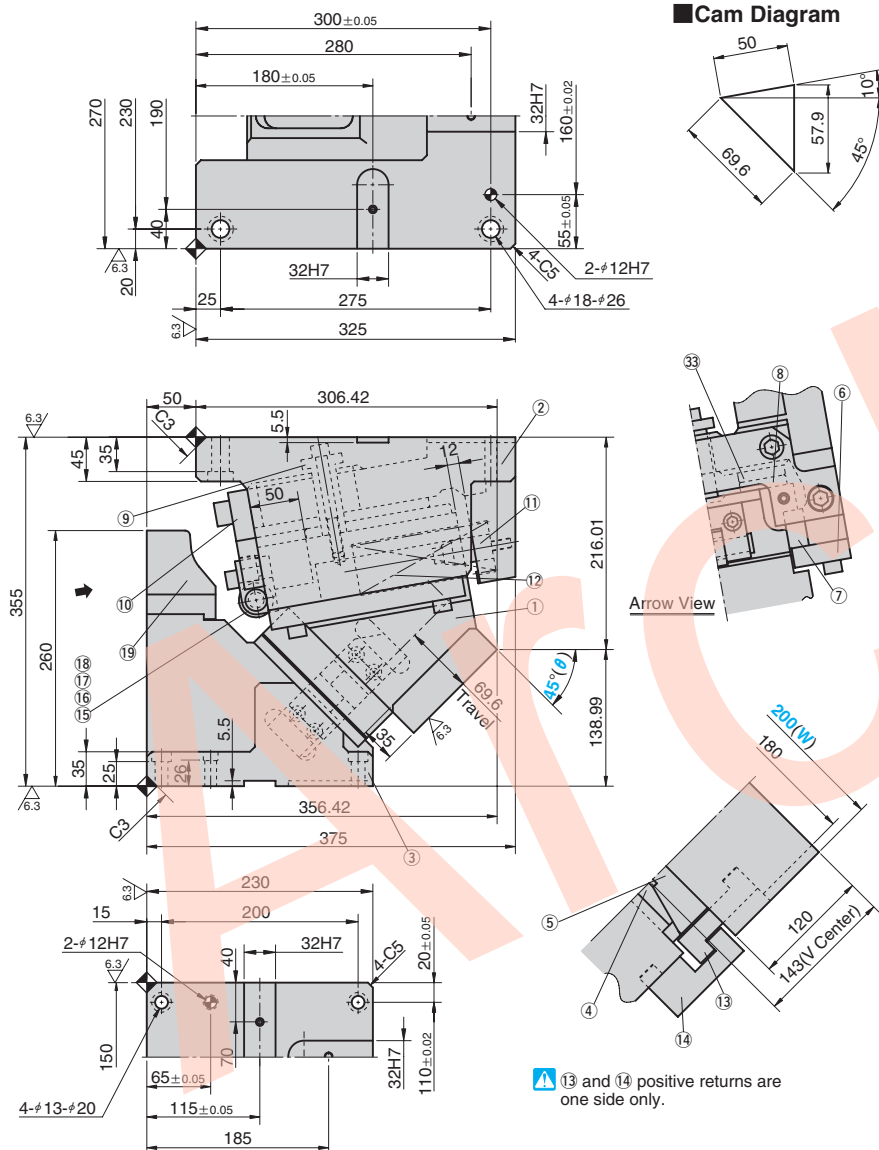
### ■ Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes

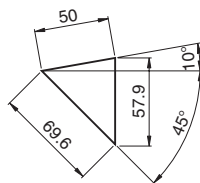


■ Bolts for assembly are not indicated.

### UCMSG200 - 45



Cam Diagram



Arrow View

13 and 14 positive returns are one side only.

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
69.6	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10090 (1029.6)	44.0	127.9	UCMSG	200	45



Order

Catalog No. (W) - (θ)  
UCMSG 200 - 45



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



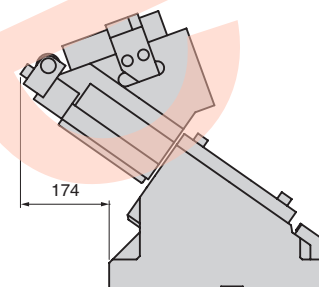
Order

UCMSG200 - 45 - K



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

Space for removing



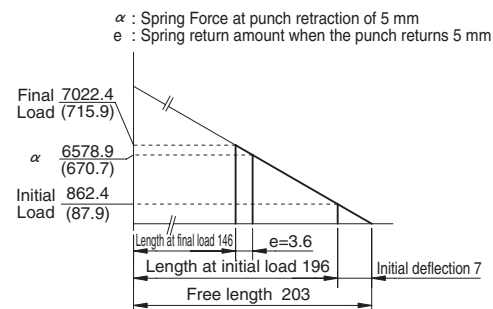
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

Spring Diagram

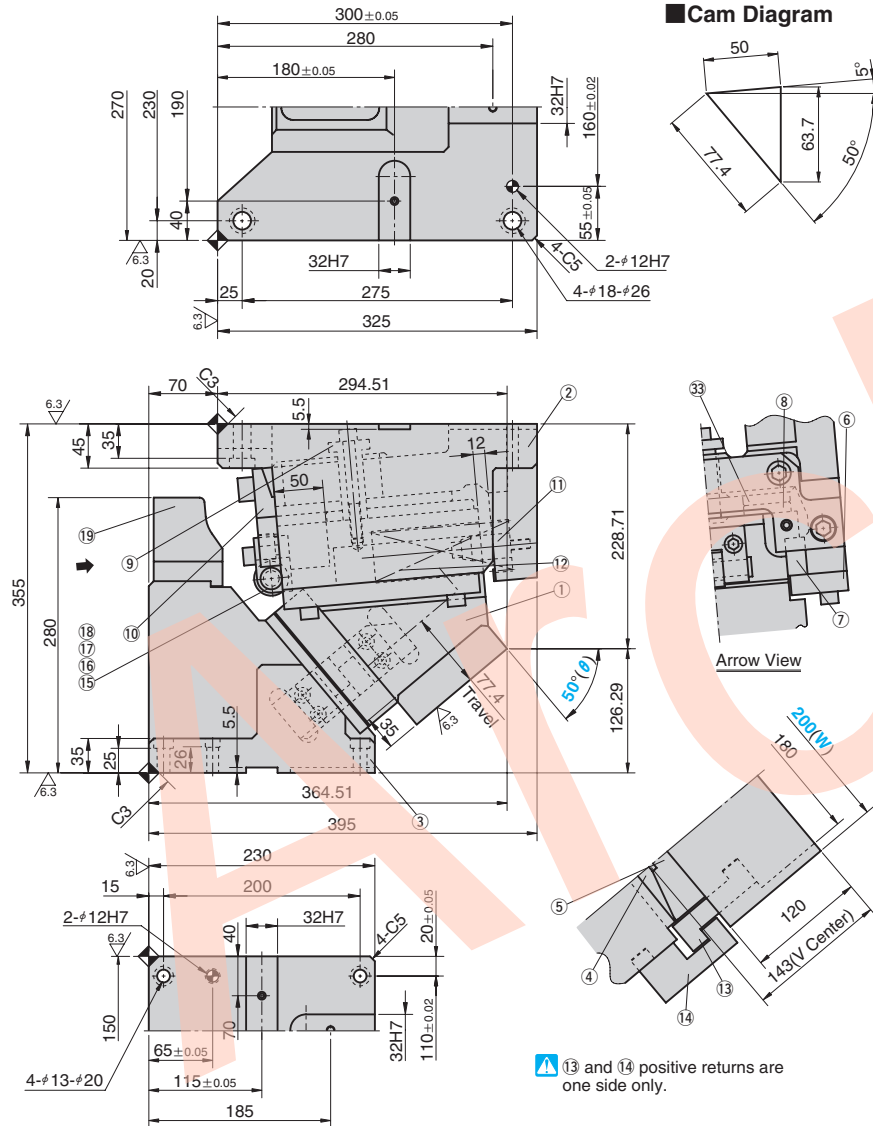
- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.

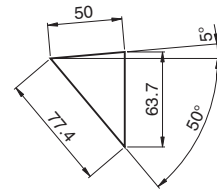


## UCMSG200 – 50



 ⑬ and ⑭ positive returns are one side only.

### ■ Cam Diagram



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
77.4	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	10035 (1024.0)	44.0	129.8	UCMSG	200	50



Order

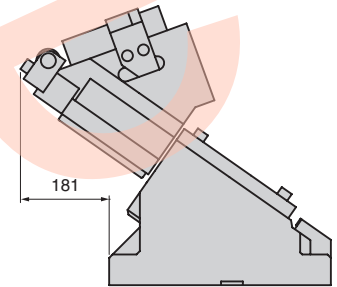
Catalog No.	(W)	—	(θ)
UCMSG	200	—	50



## Optic

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.

■Space for removing




※ This assumes that the (9) Hanger Bolt Sleeve is removed.



Order

**UCMSG200 – 50 – K**



 For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

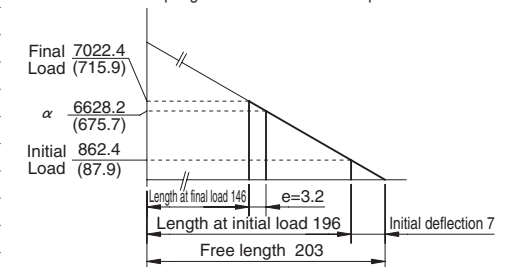
## ■ Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

### ■ Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes

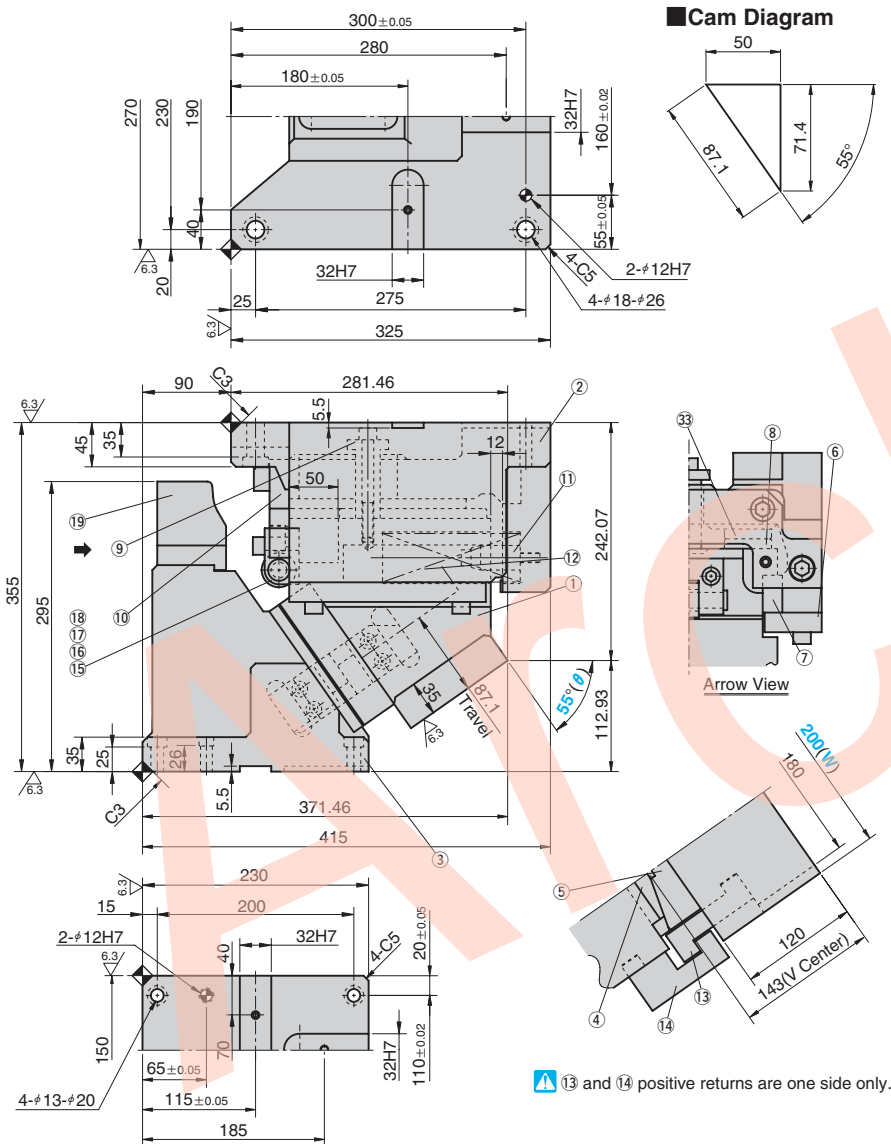
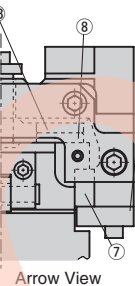
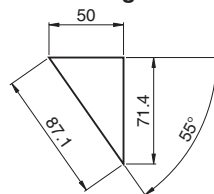
$\alpha$  : Spring Force at punch retraction of 5 mm  
e : Spring return amount when the punch returns 5 mm



 Bolts for assembly are not indicated.



### UCMSG200 - 55


**Cam Diagram**

**Arrow View**

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
87.1	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	9981 (1018.5)	44.0	132.6	UCMSG	200	55

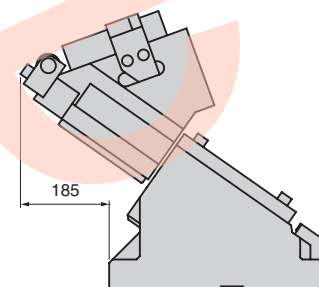

**Order**
**Catalog No.** **(W)** - **(θ)**  
**UCMSG 200 - 55**

**Option**

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to φ13.


**Order**
**UCMSG200 - 55 - K**


For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

**Space for removing**


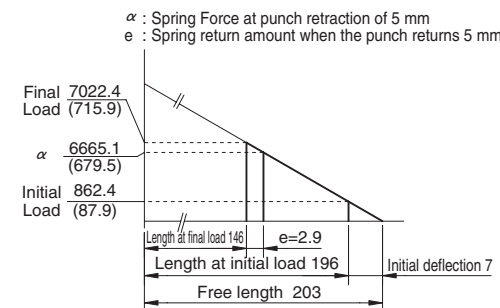
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

**Table of Components**

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
㉓	Lower Plate B	4	S45C(1045)

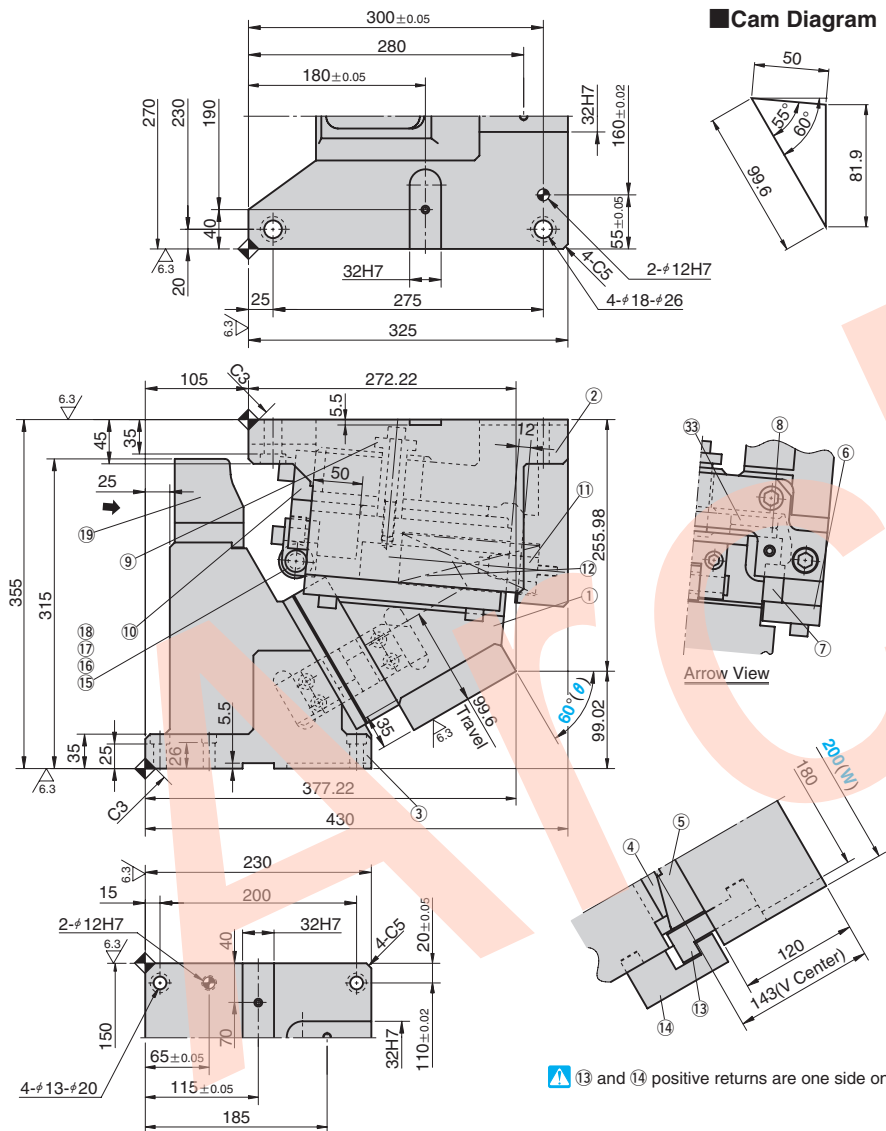
**Spring Diagram**

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.

### UCMSG200 - 60



Cam Diagram

Arrow View

13 and 14 positive returns are one side only.

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
99.6	147.0 (15.0)	294.0 (30.0)	862.4 (87.9)	7022.4 (715.9)	9927 (1013.0)	44.0	135.1	UCMSG	200	60



Order

Catalog No. (W) - (θ)  
UCMSG 200 - 60



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



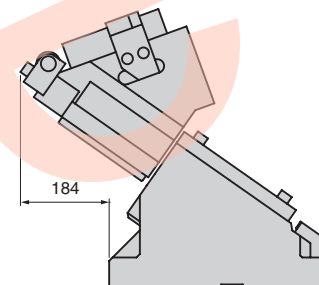
Order

UCMSG200 - 60 - K



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

Space for removing



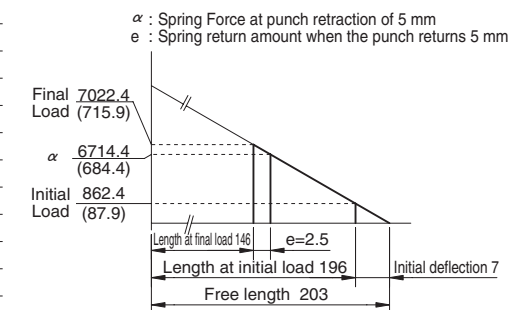
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
㉓	Lower Plate B	4	S45C(1045)

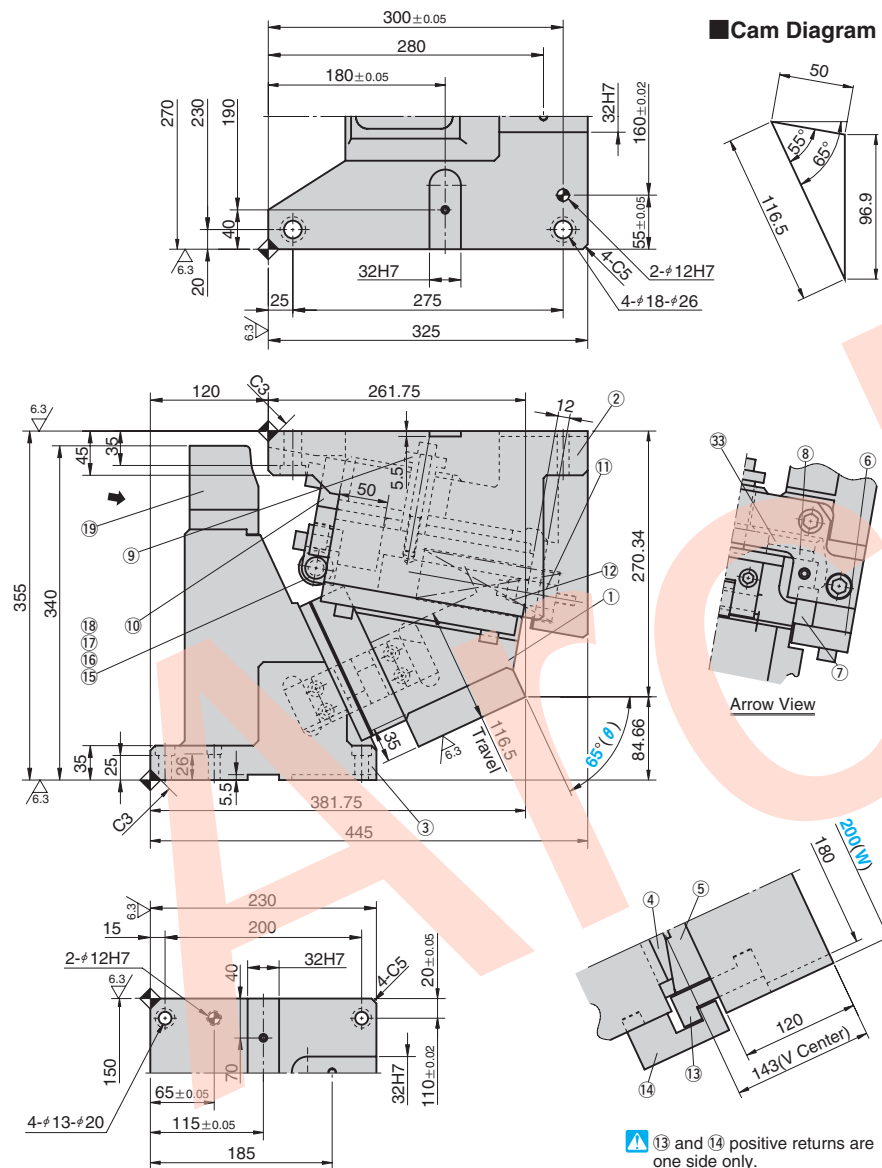
Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.

### UCMSG200 - 65



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return Force N(kgf)	Slider Weight kg	Total Weight kg	Catalog No.	(W)	(θ)
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load						
116.5	147.0 (15.0)	294.4 (30.0)	862.4 (87.9)	7022.4 (715.9)	9875 (1007.6)	44.0	138.9	UCMSG	200	65



Order

Catalog No. (W) - (θ)  
**UCMSG 200 - 65**



Option

Option Code	Specification
K	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
KA	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	The dowel holes for the cam holder and cam driver are changed to #13.



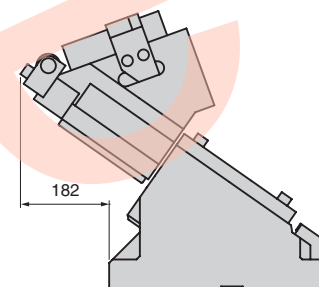
Order

**UCMSG200 - 65 - K**



For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

### Space for removing



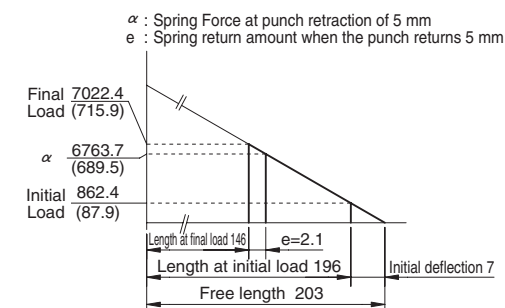
※ This assumes that the (9) Hanger Bolt Sleeve is removed.

### Table of Components

No.	Description	Qty	Material and Remark
①	Cam Slider	1	FC250
②	Cam Holder	1	FC250
③	Cam Driver	1	FC250
④	Cam Slide Guide	1	S45C(1045)
⑤	Cam Slide Guide	1	Bronze with Graphite
⑥	Upper Plate	2	S45C(1045)
⑦	Cam Slide Plate	2	Bronze with Graphite
⑧	Lower Plate A	2	Bronze with Graphite
⑨	Hanger Bolt Sleeve	1	S45C(1045)
⑩	Stopper Plate	1	SS400(1020)
⑪	Spring Guide Pin	1	FC250
⑫	Coil Spring	1	TJH50-203
⑬	Driver for Positive Return	1	Bronze with Graphite
⑭	Positive Return Follower	1	S45C(1045)
⑮	Roller	1	S45C(1045)
⑯	Shaft	1	S45C(1045)
⑰	Roller Bracket	1	S45C(1045)
⑱	Bushing	1	SOB16-22-20
⑲	Roller Driver	1	S45C(1045)
⑳	Lower Plate B	4	S45C(1045)

### Spring Diagram

- Spring used TJH50-203 (1 piece)
- Spring constant 123.2N/mm(12.56kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.