

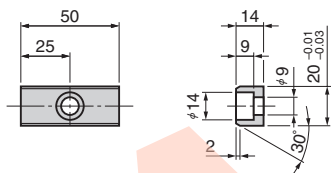
- Highly rigid structure with the overseas automobile manufacturer specification
- 50, 65, 80, 150, 200mm and 300mm are available for the mounting width.
- Angle 0° to 65° increments of 5° is available.  
(For 65 mm wide, angle 20° to 60° is in increments of 10°).
- ISO springs are used.

### Option for UCMSG

#### Metric Key Specification(-K)

##### UCMSG50/65

LKU20-50 (with 3-M8 × 15 bolts)

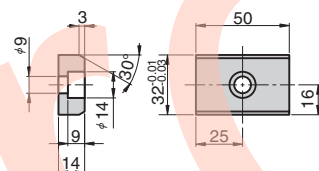


##### UCMSG80

LKU32-50 (with 3-M8 × 15 bolts)

##### UCMSG150/200/300

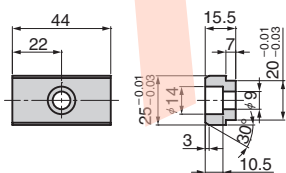
LKU32-50 (with 6-M8 × 15 bolts)



#### Metric Key Specification(-KA)

##### UCMSG50

LKA25-20-44 (with 3-M8 × 15 bolts)

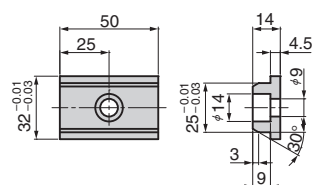


##### UCMSG80

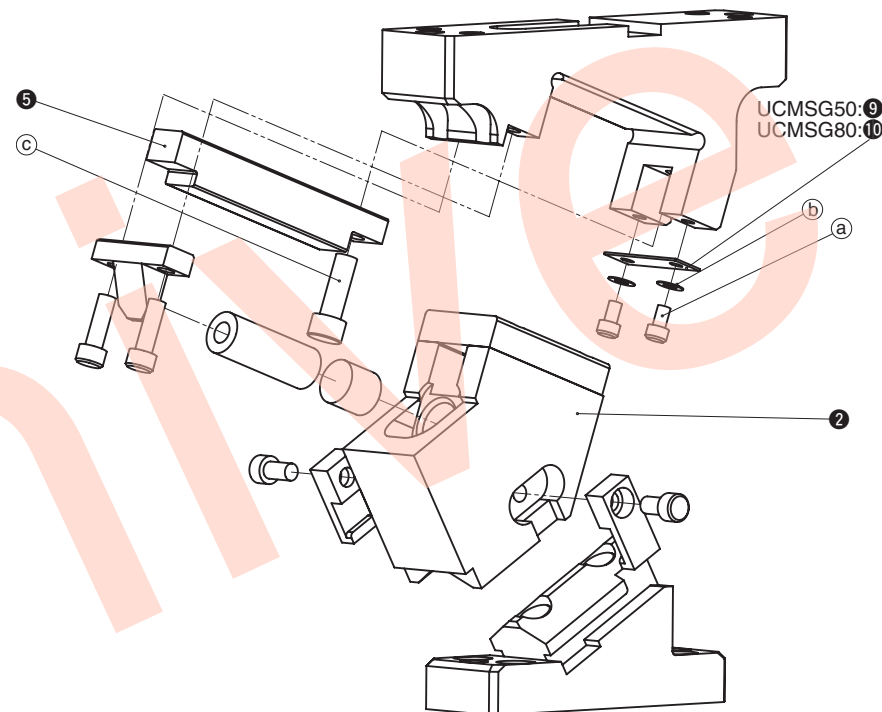
LKE25-32-50 (with 3-M8 × 15 bolts)

##### UCMSG150/200/300

LKE25-32-50 (with 6-M8 × 15 bolts)



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



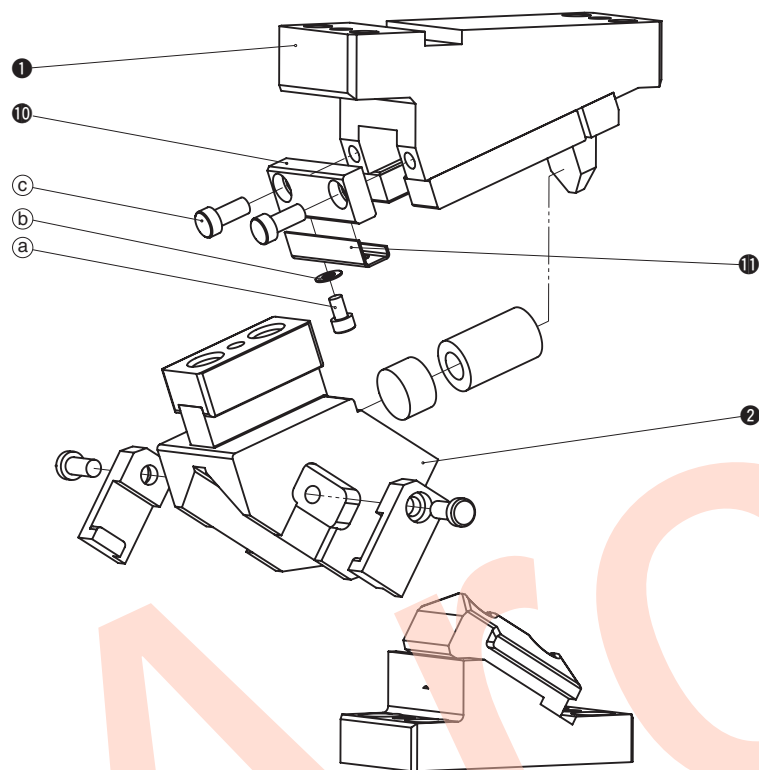
#### Disassembly method of UCMSG50 (same for UCMSG80)

- 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



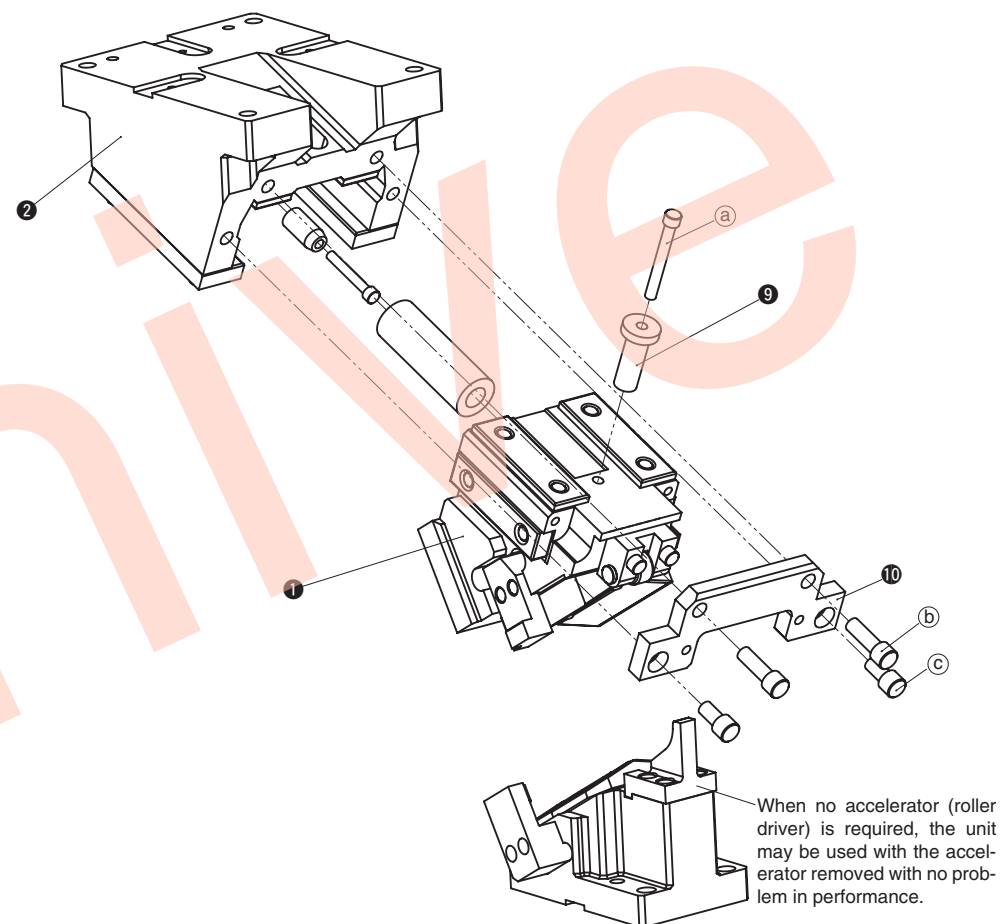
#### ●Disassembly method of UCMSG65

- 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

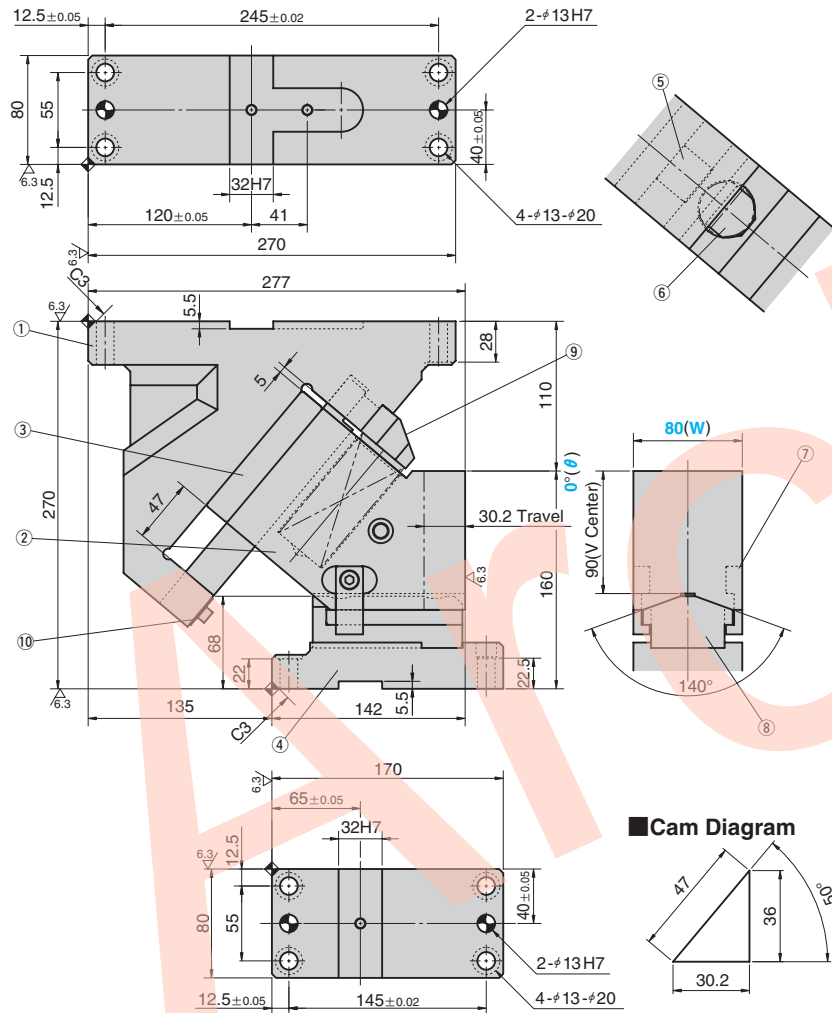
- 1) Loosen hexagon socket head bolt (a) and remove hanger bolt sleeve (9).
- 2) Loosen hexagon socket head bolt (b, c) and remove backup plate (10).
- 3) Pull cam slider (1) from cam holder (2) to the rear.

#### ●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.

#### UCMSG80-00



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
30.2	49.0 (5.0)	98.0 (10.0)	296.1 (30.2)	1842.4 (187.6)	2485 (253.6)	34.0	UCMSG	80	00



Order

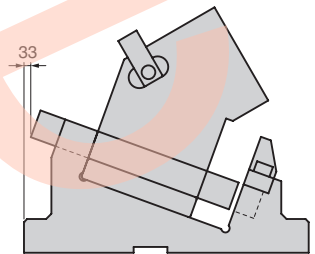
Catalog No.	(W)	—	(θ)
UCMSG	80	—	00



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

■Space for removing



Order

UCMSG80-00-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.

#### Table of Components

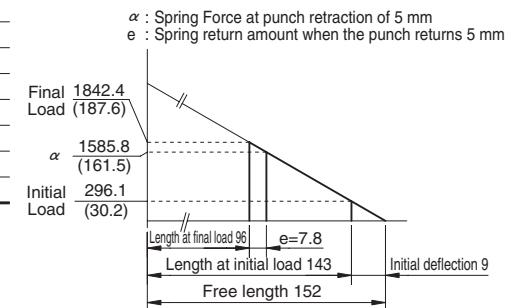
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-152
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)



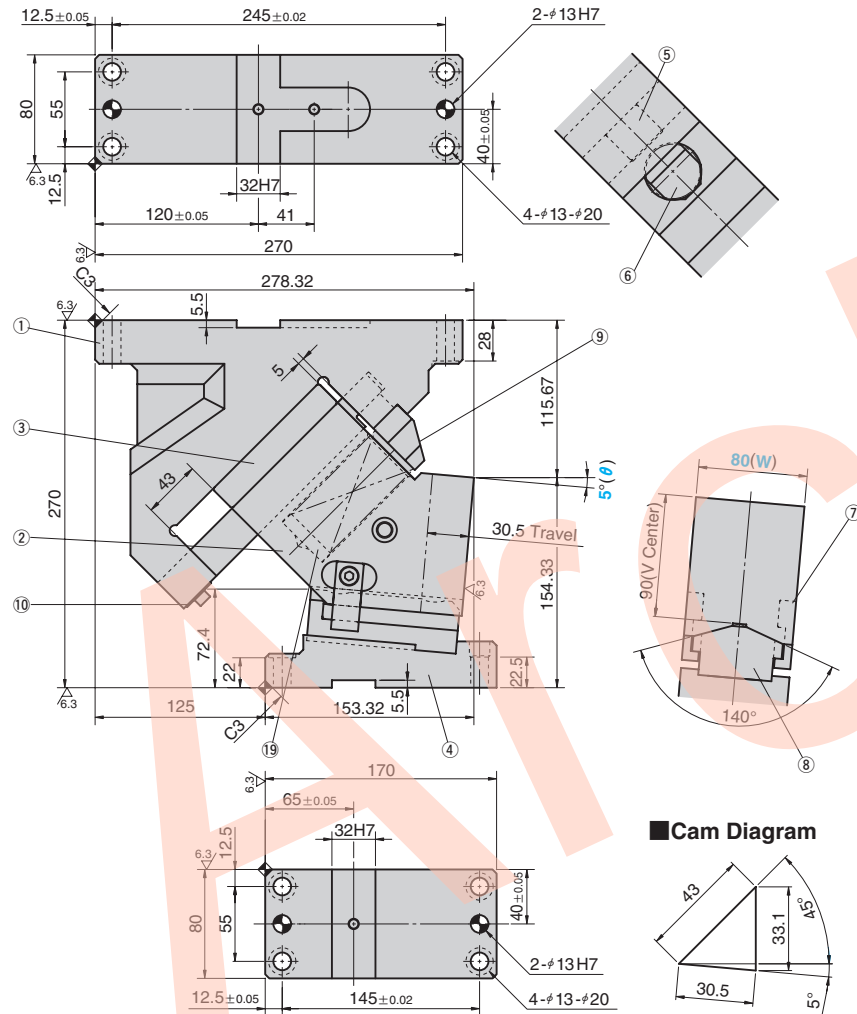
Bolts for assembly are not indicated.

#### Spring Diagram

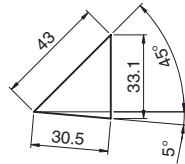
- Spring used TJL40-152 (1 piece)
- Spring constant 32.9N/mm (3.35kgf/mm)
- Guideline of spring durability 300,000 strokes



## UCMSG80 – 05



### ■ Cam Diagram



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
30.5	49.0 (5.0)	98.0 (10.0)	324.0 (33.0)	1872.0 (190.8)	2521 (257.2)	32.0	UCMSG	80	05



## Order

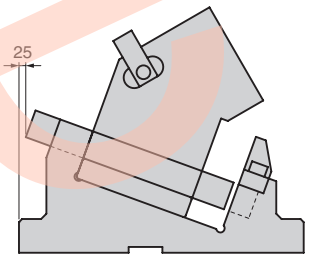
Catalog No.	(W)	—	(θ)
UCMSG	80	—	05



**Option**

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to #12.


■Space for removing



Order

UCMSG80 – 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.

## ■ Table of Components

No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-139
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



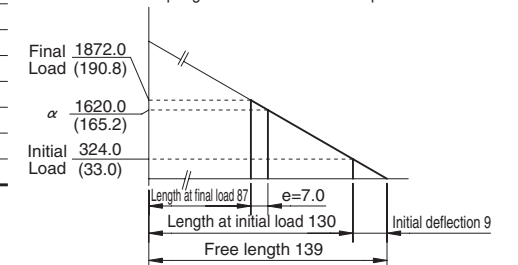
 Bolts for assembly are not indicated.

## ■ Spring Diagram

- Spring used TJL40-139 (1 piece)
- Spring constant 36.0N/mm (3.67kgf/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



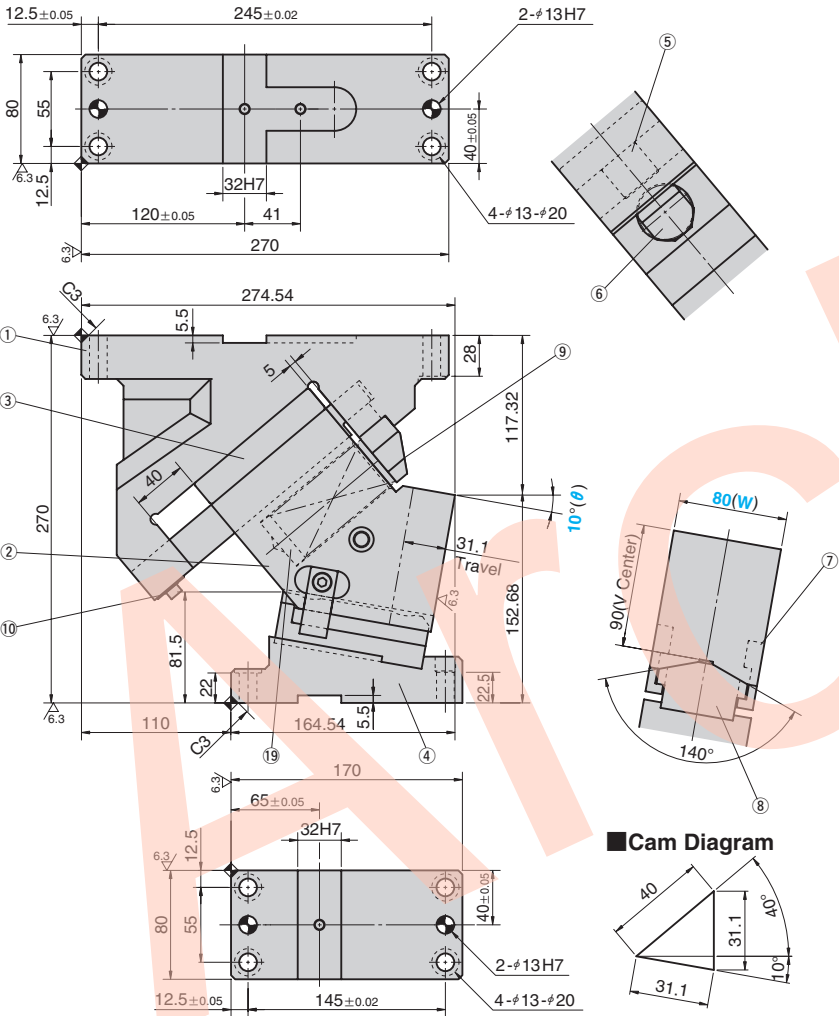
# Aerial Cam Unit

FOR PIERCE

CAD  
FILE

Cam Unit

UCMSG80 - 10



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
31.1	49.0 (5.0)	98.0 (10.0)	432.0 (44.0)	1872.0 (190.8)	2514 (256.5)	32.0	UCMSG	80	10



Order

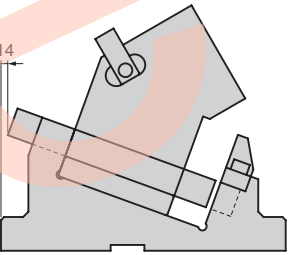
Catalog No. (W) - (θ)  
UCMSG 80 - 10



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

■Space for removing



Order

UCMSG80 - 10 - K



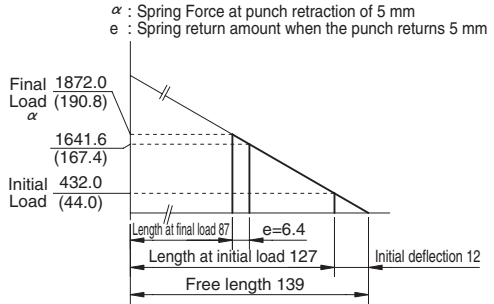
For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 561. For detailed specification of the key, refer to page 1259.

## Table of Components

No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-139
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)

## Spring Diagram

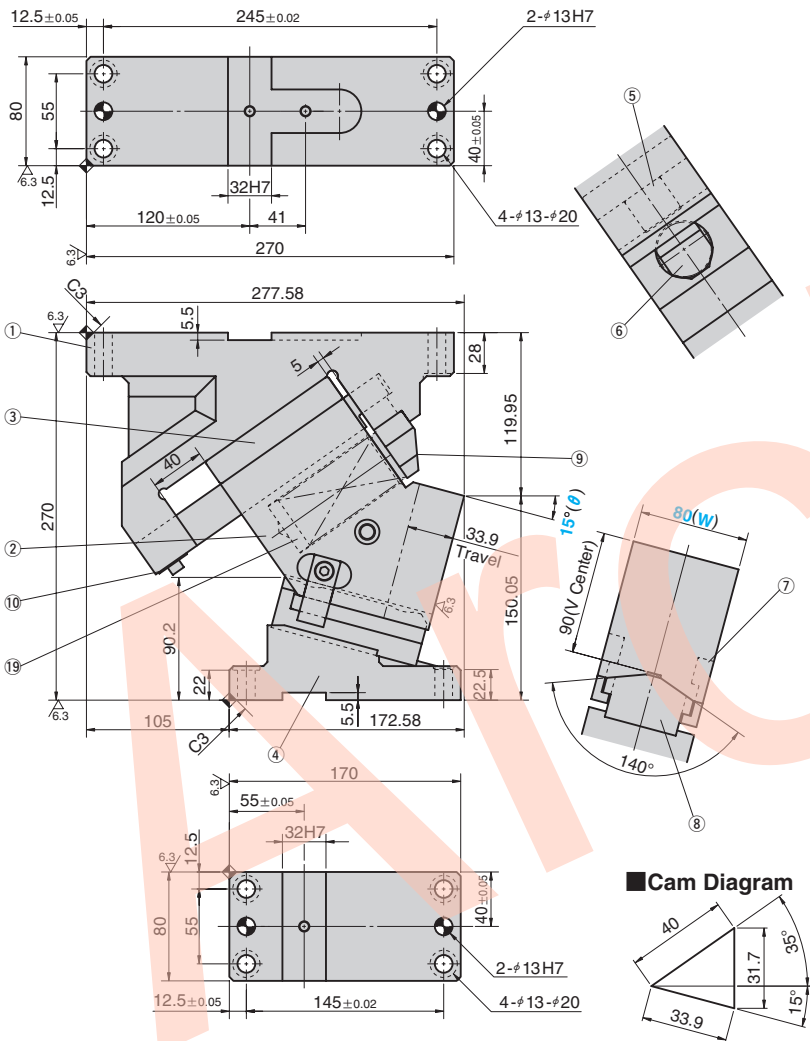
- Spring used TJL40-139 (1 piece)
- Spring constant 36.0N/mm (3.67kgf/mm)
- Guideline of spring durability 300,000 strokes



Bolts for assembly are not indicated.



### UCMSG80 - 15



■Cam Diagram

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
33.9	49.0 (5.0)	98.0 (10.0)	432.0 (44.0)	1872.0 (190.8)	2507 (255.8)	32.0	UCMSG	80	15



Order

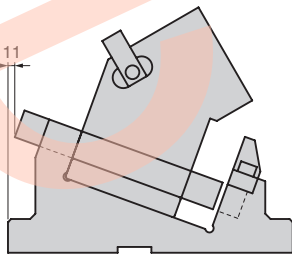
Catalog No. (W) - (θ)  
**UCMSG 80 - 15**



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

■Space for removing



Order

**UCMSG80 - 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.

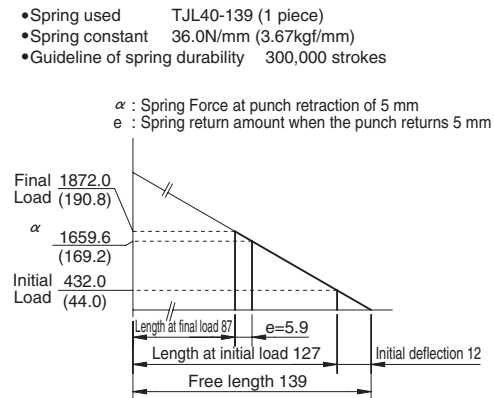
■Table of Components

No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-139
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)

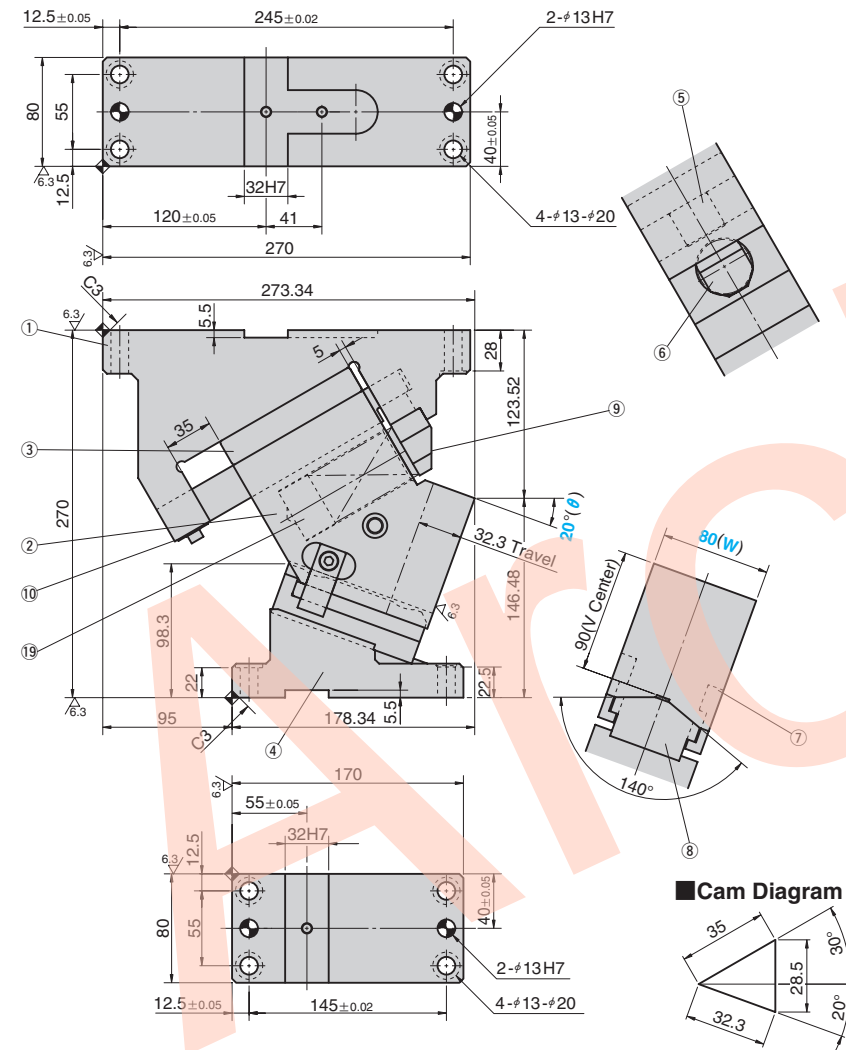


Bolts for assembly are not indicated.

■Spring Diagram



## UCMSG80-20



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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	49.0 (5.0)	98.0 (10.0)	391.5 (39.9)	1914.0 (194.9)	2553 (260.5)	32.0	UCMSG	80	20



Order



Option

Catalog No. (W) - (θ)  
**UCMSG 80 - 20**

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.



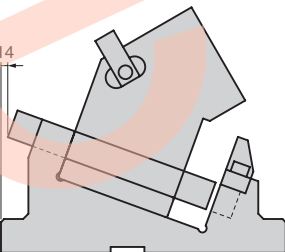
Order

**UCMSG80-20-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



### Table of Components

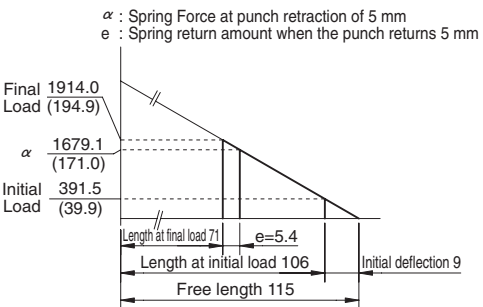
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



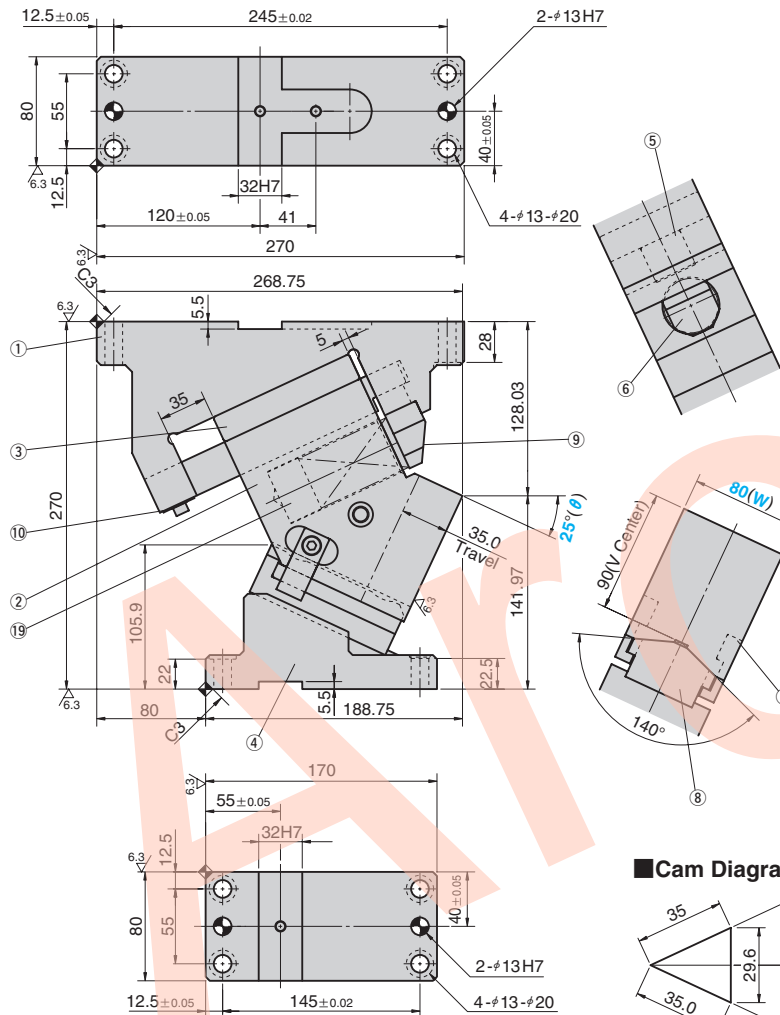
Bolts for assembly are not indicated.

### Spring Diagram

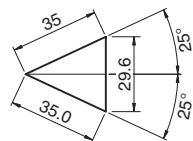
- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes



## UCMSG80 - 25



Cam Diagram



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
35.0	49.0 (5.0)	98.0 (10.0)	391.5 (39.9)	1914.0 (194.9)	2546 (259.8)	30.0	UCMSG	80	25



Order

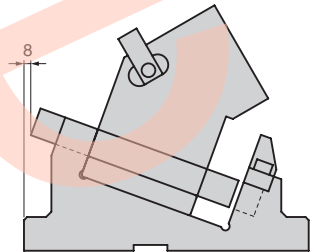
Catalog No.	(W)	—	(θ)
UCMSG	80	—	25



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

Space for removing



Order

UCMSG80 - 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.

Table of Components

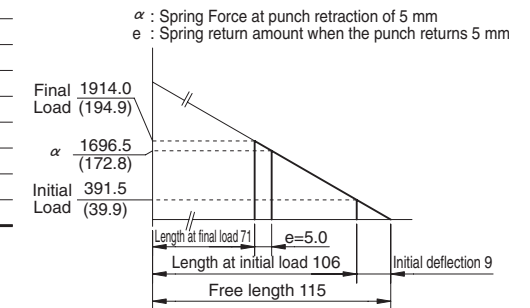
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



Bolts for assembly are not indicated.

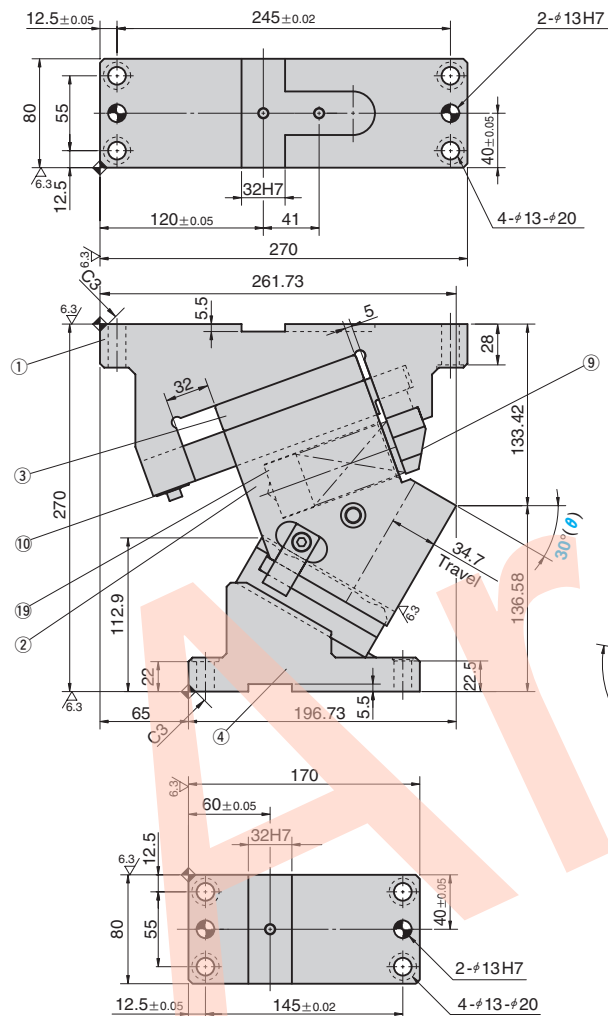
Spring Diagram

- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes

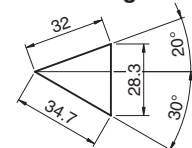




#### UCMSG80 - 30



#### Cam Diagram



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
34.7	49.0 (5.0)	98.0 (10.0)	522.0 (53.2)	1914.0 (194.9)	2538 (259.0)	30.0	UCMSG	80	30



Order

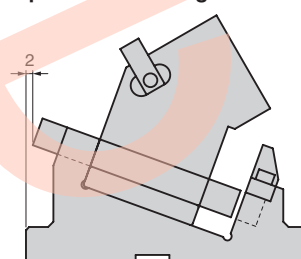
Catalog No.	(W)	(θ)
UCMSG	80	30



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

#### Space for removing



Order

UCMSG80 - 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.

#### Table of Components

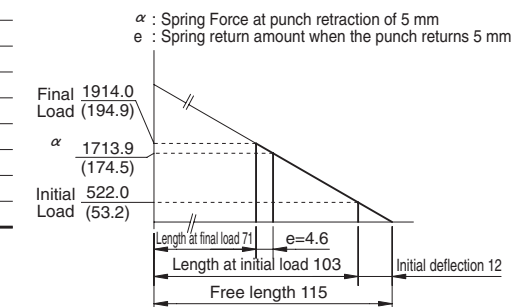
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



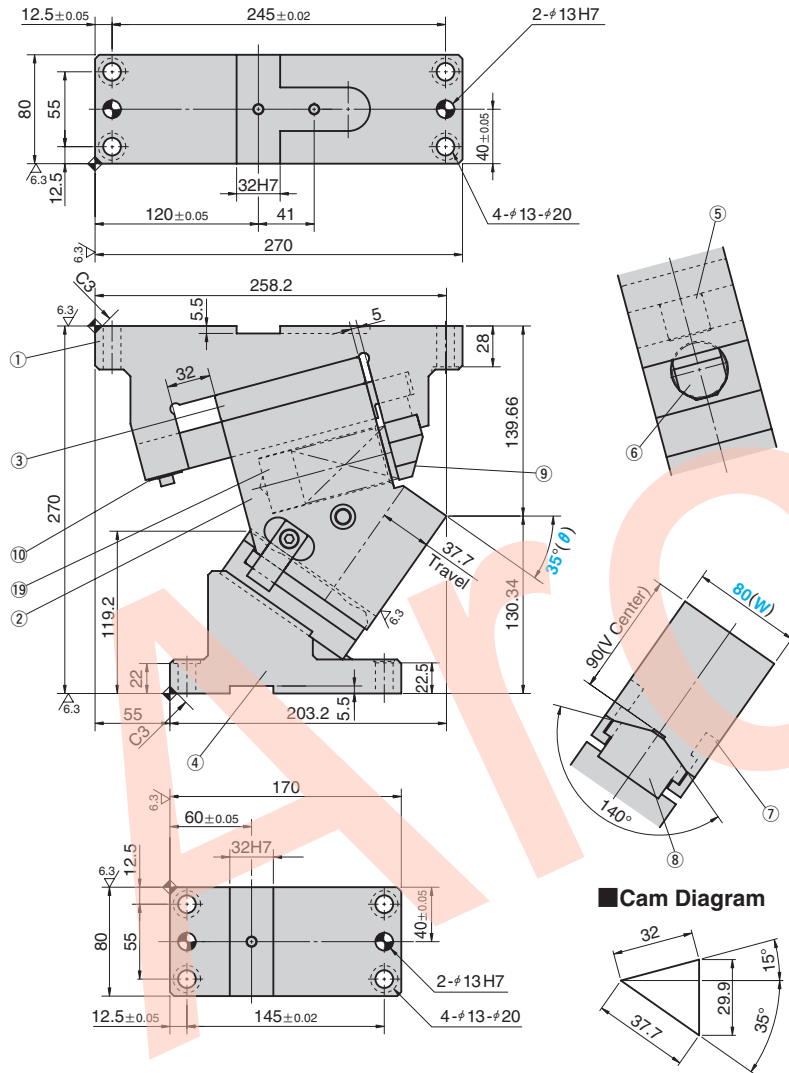
Bolts for assembly are not indicated.

#### Spring Diagram

- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes



#### UCMSG80 - 35



■Cam Diagram

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
37.7	49.0 (5.0)	98.0 (10.0)	522.0 (53.2)	1914.0 (194.9)	2531 (258.2)	30.0	UCMSG	80	35



Order

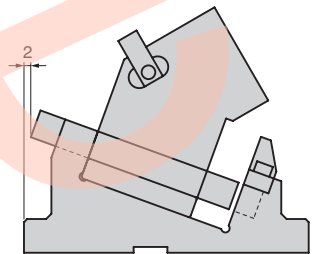
Catalog No.	(W)	—	(θ)
UCMSG	80	—	35



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

■Space for removing



Order

UCMSG80 - 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.

■Table of Components

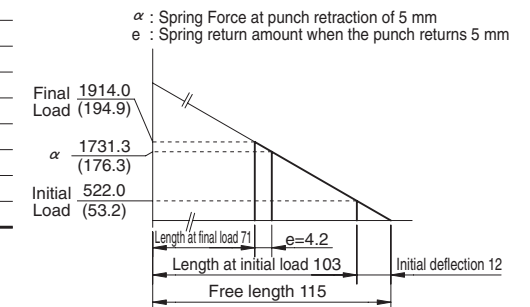
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



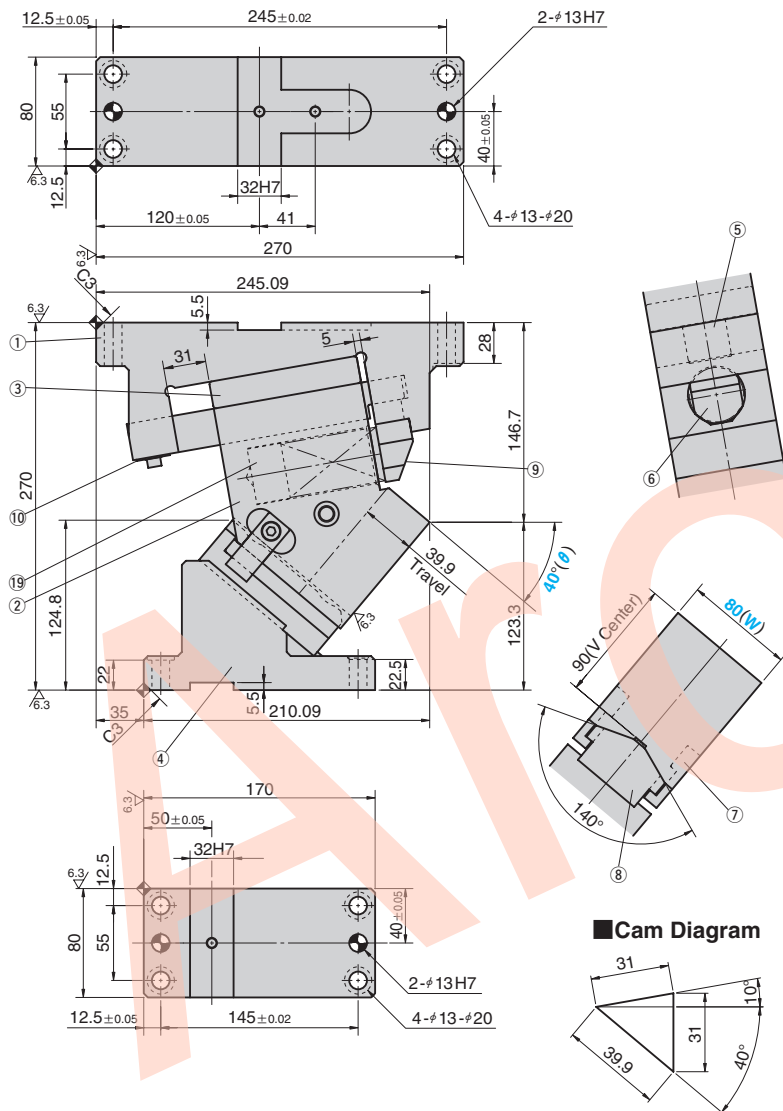
Bolts for assembly are not indicated.

■Spring Diagram

- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes



#### UCMSG80 - 40



■Cam Diagram

Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
39.9	49.0 (5.0)	98.0 (10.0)	565.5 (57.6)	1914.0 (194.9)	2523 (257.5)	29.0	UCMSG	80	40



Order

Catalog No.	(W)	—	(θ)
UCMSG	80	—	40



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.



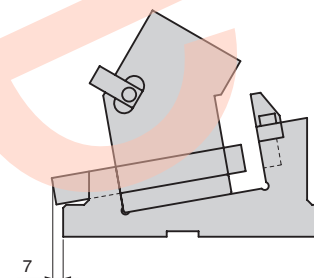
Order

UCMSG80 - 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.

■Space for removing



■Table of Components

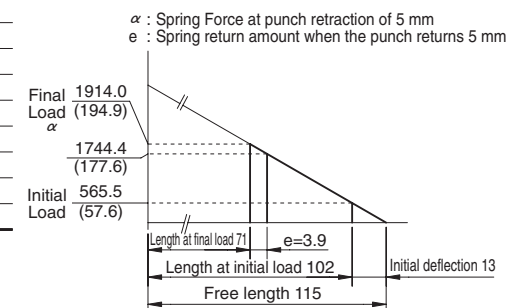
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



Bolts for assembly are not indicated.

■Spring Diagram

- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes

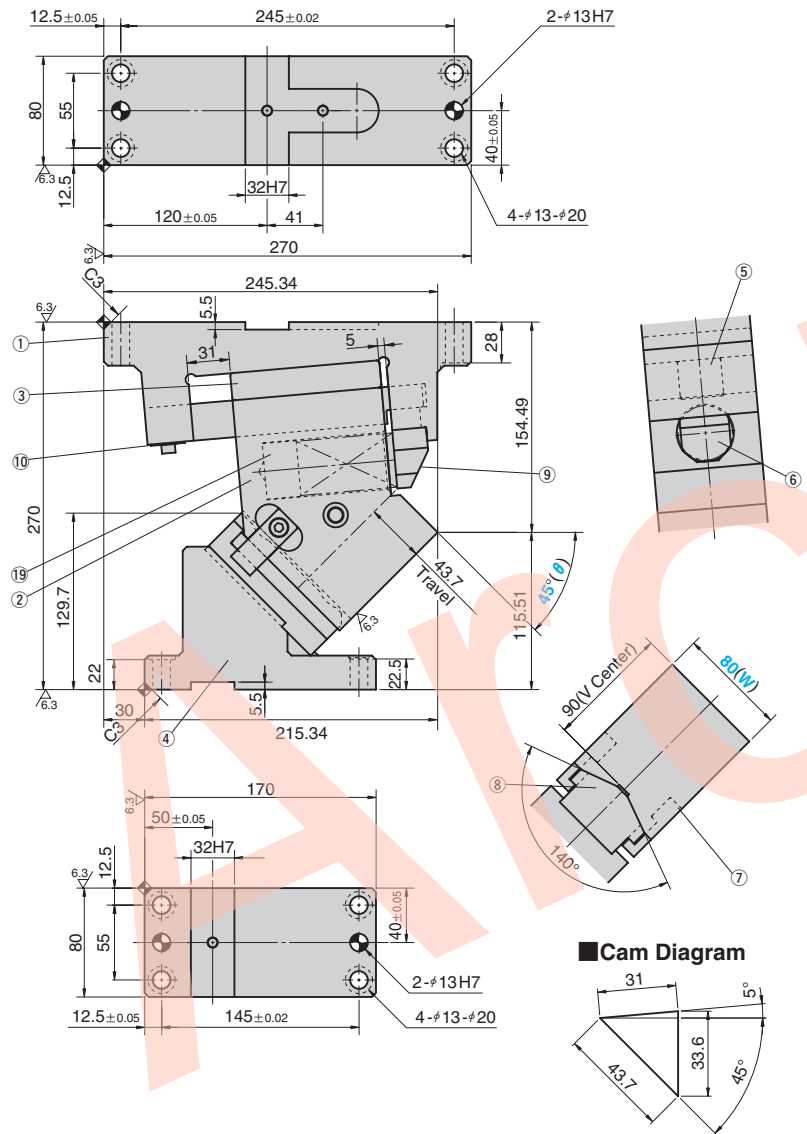


# Aerial Cam Unit

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## UCMSG80 - 45



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
43.7	49.0 (5.0)	98.0 (10.0)	565.5 (57.6)	1914.0 (194.9)	2515 (256.7)	29.0	UCMSG	80	45



Order

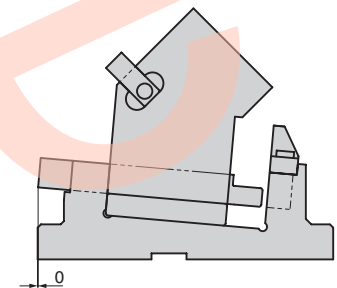
Catalog No.	(W)	—	(θ)
UCMSG	80	—	45



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

■Space for removing



Order

UCMSG80 - 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.

### Table of Components

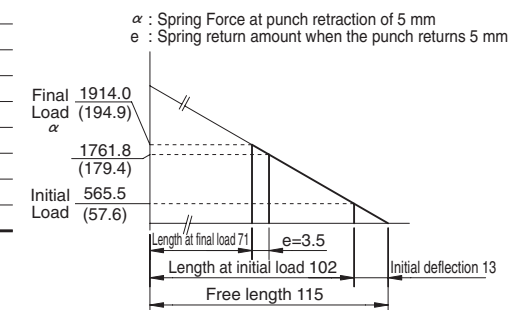
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



Bolts for assembly are not indicated.

### Spring Diagram

- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes



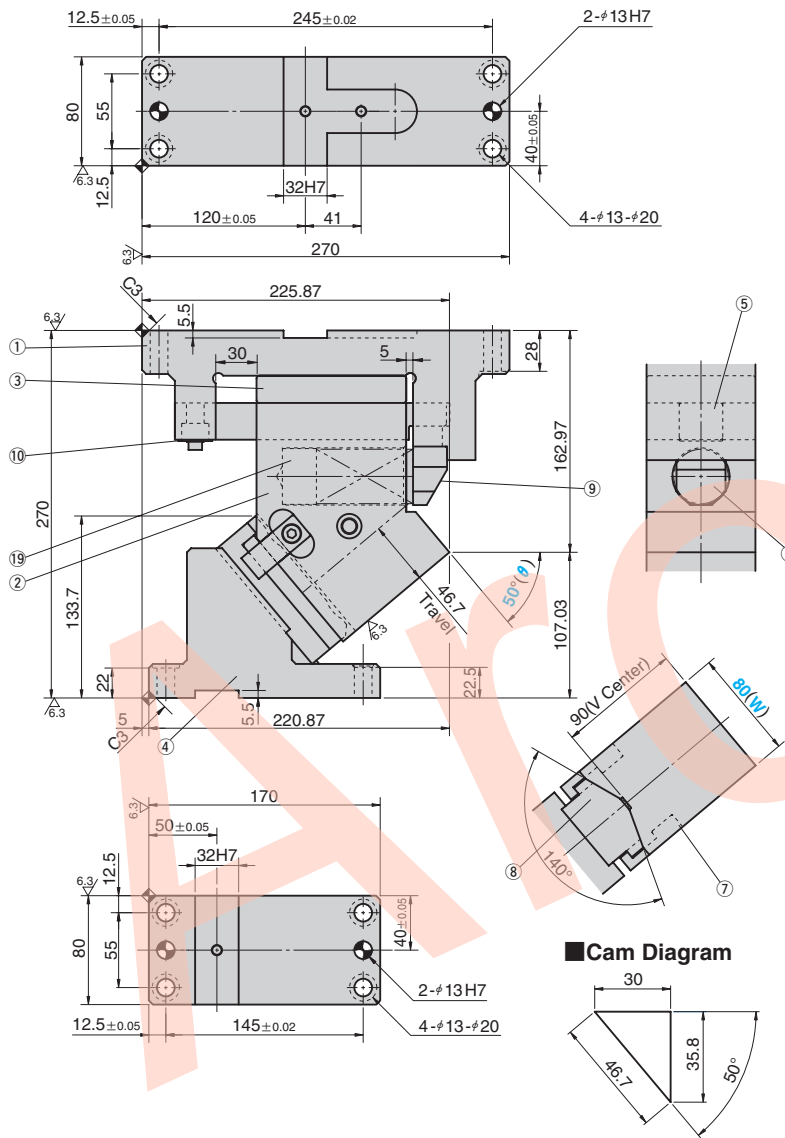
# Aerial Cam Unit

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Cam Unit

## UCMSG80 - 50



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
46.7	49.0 (5.0)	98.0 (10.0)	609.0 (62.0)	1914.0 (194.9)	2508 (255.9)	30.0	UCMSG	80	50



Order

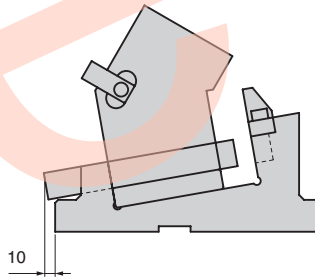
Catalog No. (W) - (θ)  
UCMSG 80 - 50



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

■Space for removing



Order

UCMSG80 - 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

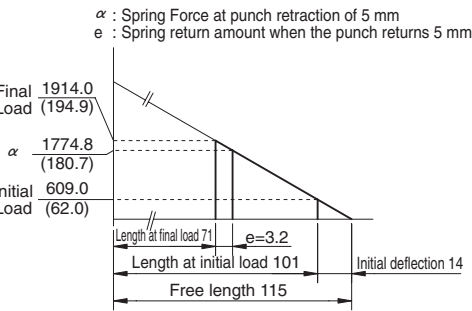
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



Bolts for assembly are not indicated.

### Spring Diagram

- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes



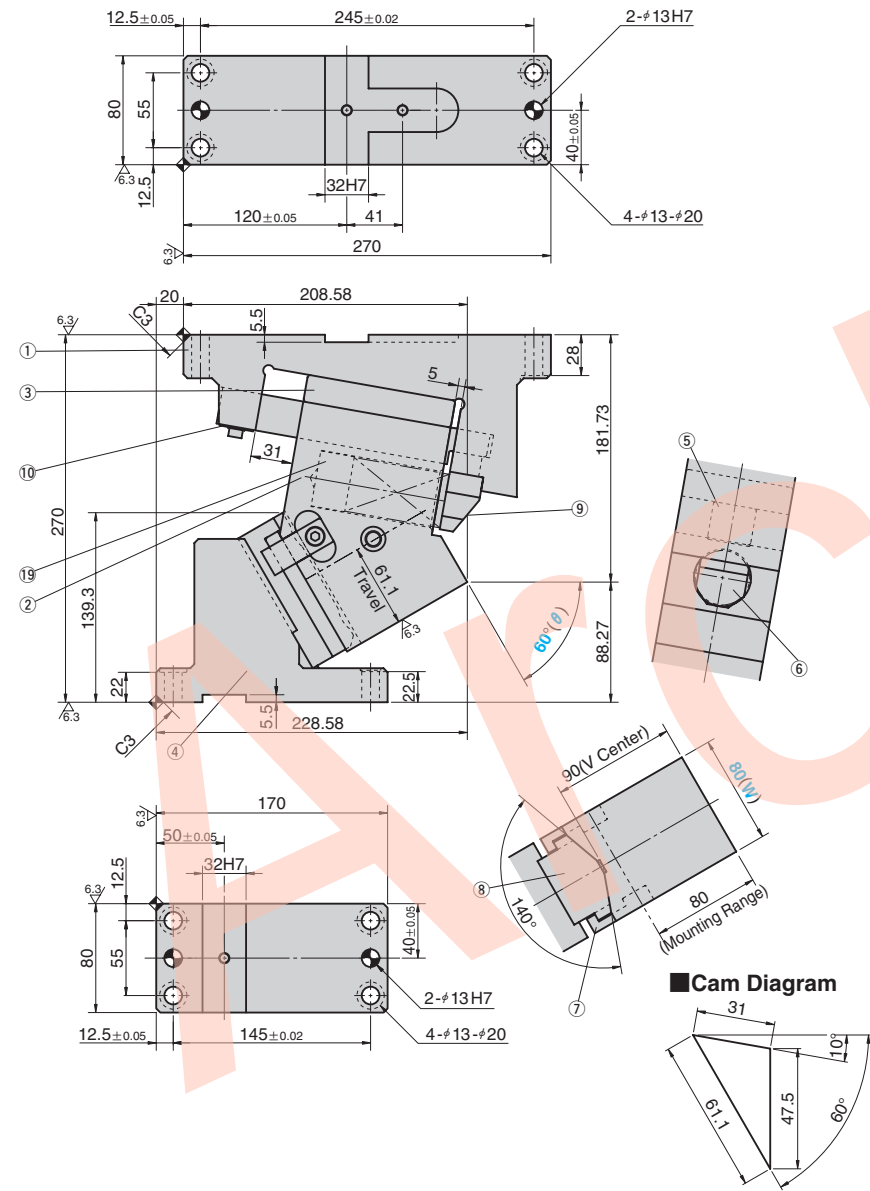


A diagram showing a cross-section of a ship's hull. A vertical line represents the centerline. A horizontal line extends from the centerline to the right, labeled with a dimension of 31. A vertical line segment is labeled with a dimension of 41.4. A diagonal line segment is labeled with a dimension of 53.8. The angle between the vertical centerline and the diagonal line is labeled 55°. The angle between the horizontal line and the diagonal line is labeled 5°.

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## 1336

### UCMSG80 - 60



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
61.1	49.0 (5.0)	98.0 (10.0)	565.5 (57.6)	1914.0 (194.9)	2493 (254.4)	31.0	UCMSG	80	60



Order

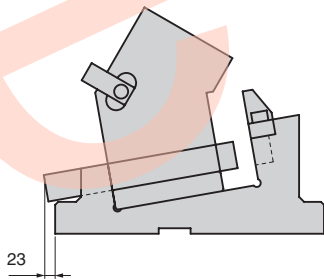
Catalog No. **UCMSG** (W) **80** - (θ) **60**



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

■Space for removing



Order

**UCMSG80 - 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.

### Table of Components

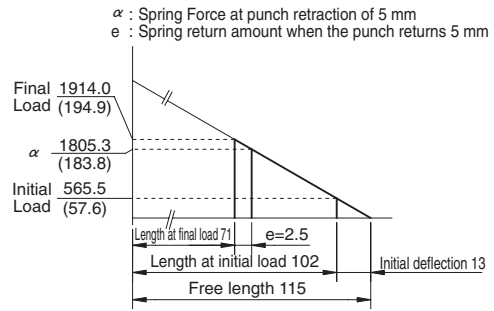
No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



Bolts for assembly are not indicated.

### Spring Diagram

- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes

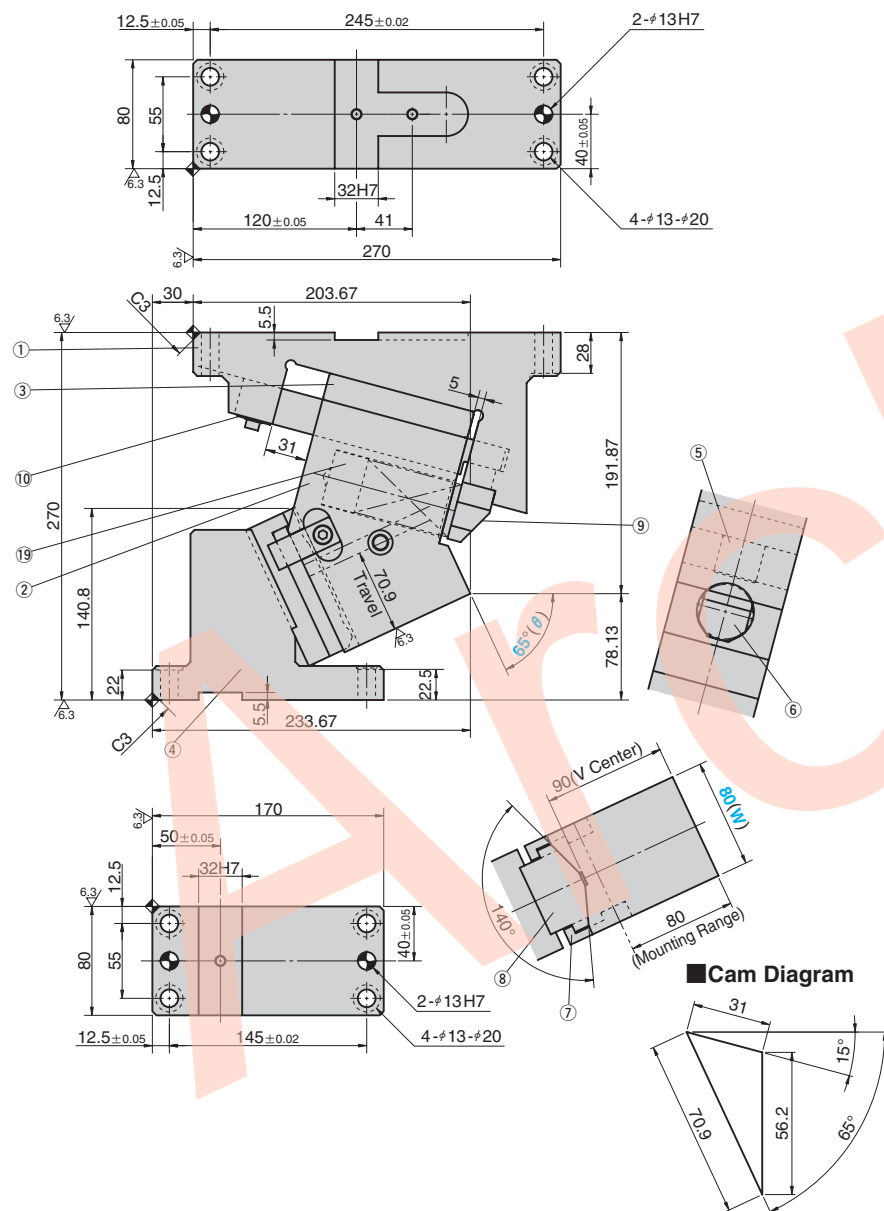


# Aerial Cam Unit

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## UCMSG80 - 65



Travel S	Working Force kN(tonf)		Spring Force N(kgf)		Return 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					
70.9	49.0 (5.0)	98.0 (10.0)	565.5 (57.6)	1914.0 (194.9)	2483 (253.4)	32.0	UCMSG	80	65



Order

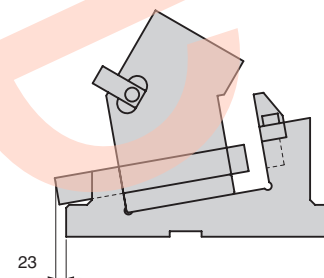
Catalog No. (W) - (θ)  
**UCMSG 80 - 65**



Option

Option Code	Specification
K	A metric key is attached. (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.)
N12	Dowel pin holes of cam holder and cam driver are changed to φ12.

■Space for removing



Order

**UCMSG80 - 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.

### Table of Components

No.	Description	Qty	Material and Remark
①	Cam Holder	1	FCD450
②	Cam Slider	1	S45C(1045)
③	Lower Slider	1	Bronze with Graphite
④	Cam Driver	1	FC250
⑤	Guide Bar	1	SCM440 with Graphite
⑥	Coil Spring	1	TJL40-115
⑦	Positive Return Follower	2	S45C(1045)
⑧	Slide Guide	1	Bronze with Graphite
⑨	Spring Block	1	SS400(1020)
⑩	Safety Plate	1	SS400(1020)
⑪	Spacer	1	SS400(1020)



Bolts for assembly are not indicated.

### Spring Diagram

- Spring used TJL40-115 (1 piece)
- Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes

