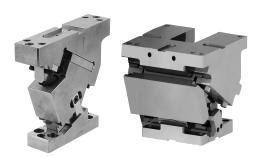


Aerial Cam Unit General Description of UCMSG

FOR PIERCE AND FLANGE

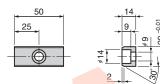


- Highly rigid structure with the overseas automobile manufacturer specification
- ●50, 65, 80, 150, 200mm and 300mm are available for the mounting width.
- Angle 0° to 65° increments of 5° is available.
 (For 65 mm wide, angle 20° to 60° is in increments of 10°).
- ●ISO springs are used.

■ Option for UCMSG

Metric Key Specification(-K)
 UCMSG50/65

LKU20-50 (with 3-M8 \times 15 bolts)

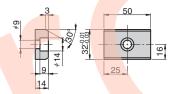


UCMSG80

LKU32-50 (with 3-M8 imes 15 bolts)

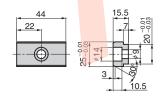
UCMSG150/200/300

LKU32-50 (with $6-M8 \times 15$ bolts)



Metric Key Specification(-KA) UCMSG50

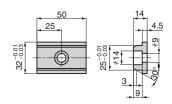
LKA25-20-44 (with 3-M8 \times 15 bolts)



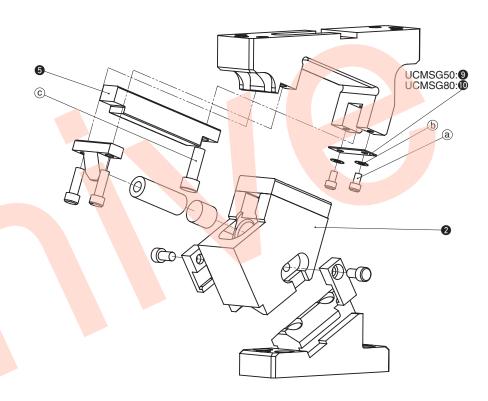
UCMSG80

LKE25-32-50 (with 3-M8 × 15 bolts) UCMSG150/200/300

LKE25-32-50 (with 6-M8 \times 15 bolts)



■UCMSG50 (UCMSG80) Structure and Assembly / Disassembly



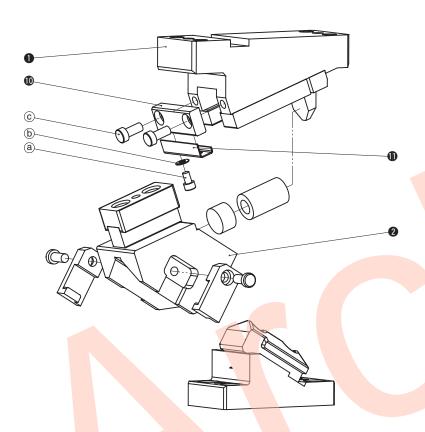
- Disassembly method of UCMSG50 (same for UCMSG80)
 - 1) Remove hexagon socket head bolt (ⓐ) and washer (ⓑ) and remove safety plate (UCMSG50: ① UCMSG80: ①).
 - 2) Remove hexagon socket head bolt (©).
 - 3) Shift guide bar (5) to the back then remove cam slider (2) from cam holder.
- Assembly method of 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



Aerial Cam Unit General Description of UCMSG

FOR PIERCE AND FLANGE

■UCMSG65 Structure and Assembly / Disassembly



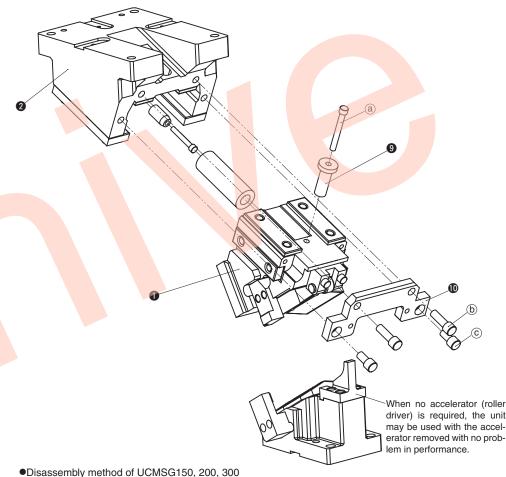
Disassembly method of UCMSG65

- 1) Remove hexagon socket head bolt (a) and washer (b), and remove safety plate (1).
- 2) Loosen hexagon socket head bolt (©). 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



- 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

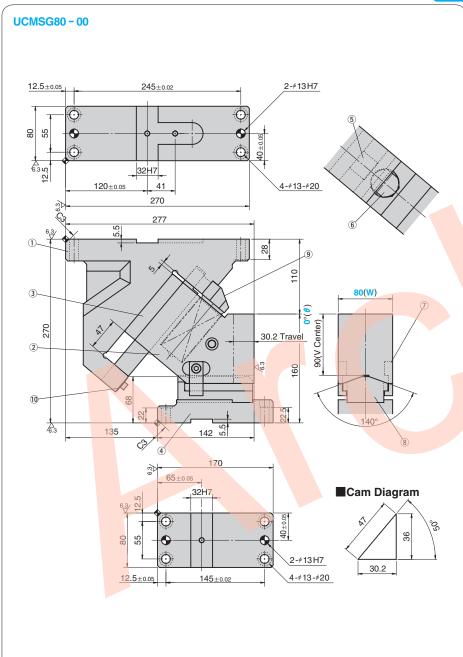
- 1) Assemble components in the reverse order of disassembly.
- Make sure that there is no foreign matter on the sliding area and assemble components.
- The clearance between the cam slider and the cam holder is controlled. Match the stamped serial number on the holder and slider before assembly.
- · When cam is disassembled and then reassembled, please do not forget to assemble all bolts provided

UCMSG 50



FOR PIERCE





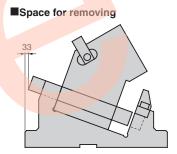
Tuesda	Working Fo	king Force kN(tonf) Spring Force N(kgf) Return		Total					
	Standard Working Force (one million strokes)		Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
30.2	49.0 (5.0)	98.0 (10.0)	296.1 (30.2)	1842.4 (187.6)	2485 (253.6)	34.0	UCMSG	80	00



Catalog No. (W) (θ) **UCMSG** 00



Option Code	Specifica	ation		
K	A metric key is atta (It is not assembled			it.)
KA	Metric dedicated key for both cam holde (It is not assembled	r and	driver.	
N12	Dowel pin holes of cam driver are char			nd





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)

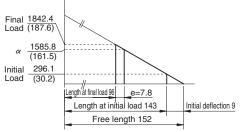
Bolts for assembly are not indicated.

■Spring Diagram

•Spring used TJL40-152 (1 piece) •Spring constant 32.9N/mm (3.35kgf/mm)

• Guideline of spring durability 300,000 strokes

 α : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm

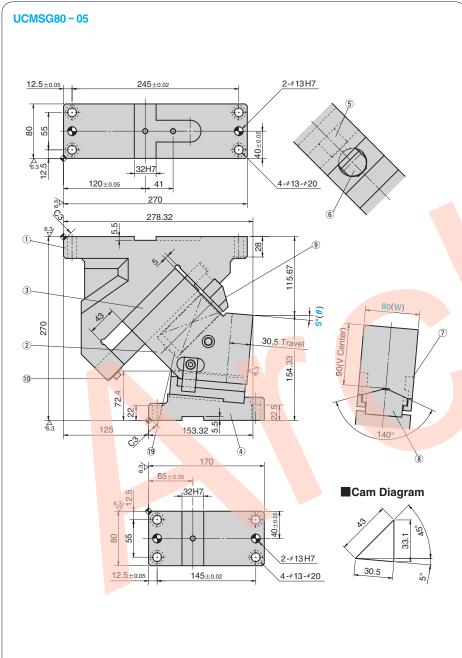


UCMSG



FOR PIERCE





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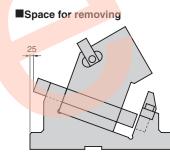
Traval	Working Force kN(tonf) Spring Force N(kgf) Return Total		Total						
	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
30.5	49.0 (5.0)	98.0 (10.0)	324.0 (33.0)	1872.0 (190.8)	2521 (257.2)	32.0	UCMSG	80	05



Catalog No. (W) (θ) **UCMSG** 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





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.

cam driver are changed to \$12.

■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)
19	Spacer	1	SS400(1020)

A 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

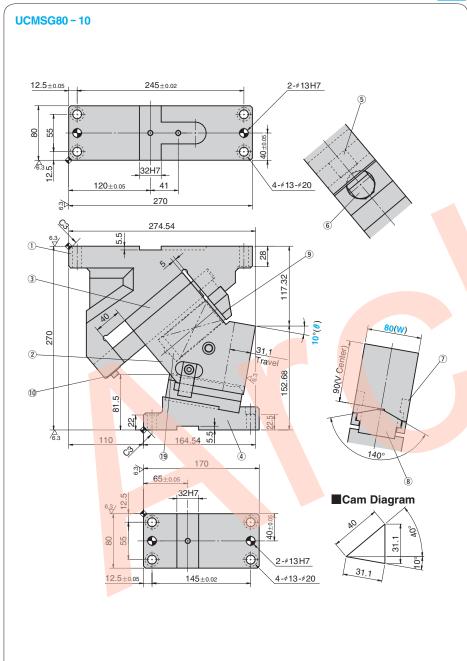
 α : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm Final 1872.0 Load (190.8) $\alpha \frac{1620.0}{(165.2)}$ Initial 324.0 Load (33.0) ength at final load 87 e=7.0 Length at initial load 130 Initial deflection 9 Free length 139

UCMSG



FOR PIERCE

CAD FILE



Tuesda	Working Fo	rce kN(tonf)	Spring Fo	rce N(kgf)	Return	Total			
		Allowable Working Force (300,000 strokes)	Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
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

 (θ)

10

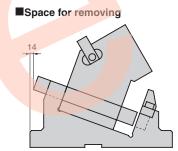


Order

Catalog No. (W) -



Option Code	Specifica	ation	
K	A metric key is atta (It is not assembled		
КА	Metric dedicated k for both cam holde (It is not assembled	r and	driver.
N12	Dowel pin holes of cam driver are char		





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)	
19	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

A: Spring Force at punch retraction of 5 mm
e: Spring Force at punch retraction of 5 mm
e: Spring return amount when the punch returns 5 mm

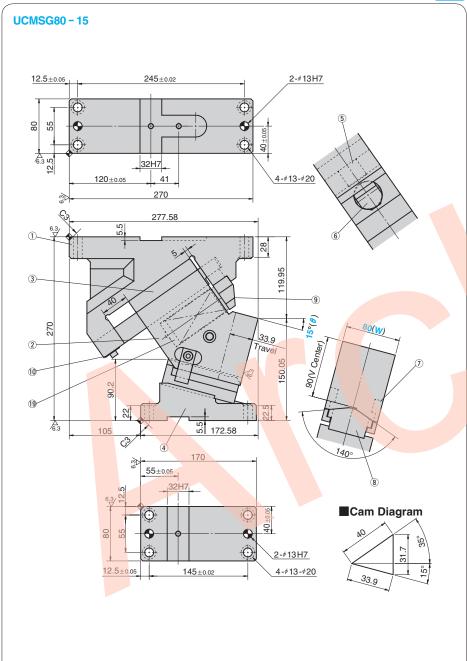
Final 1872.0
Load (190.8)

A 1641.6
(167.4)
Initial 432.0
Load (44.0)
Length at lintial load 127
Length at initial load 127
Free length 139



FOR PIERCE

CAD FILE



ı	Tuesda	Working Force kN(tonf) Spring Force N(kgf)			Return	Total				
		Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
	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



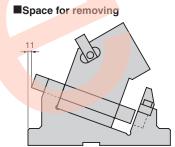
Order

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



Option	Option Code	Specific	ation		
	K	A metric key is atta (It is not assembled			
		Metric dedicated k	ey is	attached	
	KA	for both cam holde			
		(It is not assembled	to the	main unit.)	

er. in unit.) Dowel pin holes of cam holder and N12 cam driver are changed to \$12.





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)
19	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

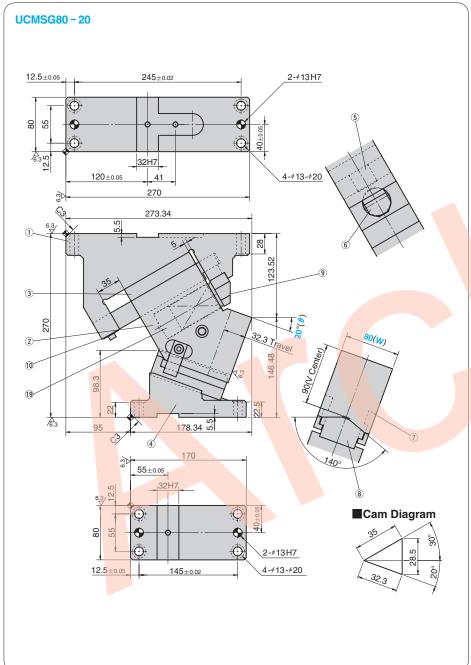
lpha : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm Final 1872.0 Load (190.8) 1659.6 (169.2) Initial 432.0 Load (44.0) Length at final load 87 e=5.9 Length at initial load 127 Initial deflection 12 Free length 139

UCMSG



FOR PIERCE





Traval	Working Fo	Working Force kN(tonf) Spring Force N(kgf) Return		Total					
		Allowable Working Force (300,000 strokes)		Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
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

 (θ)

20

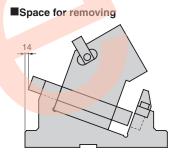


Order

Catalog No. (W) - UCMSG 80 -



Option Code	Specificati	on		
K	A metric key is attach (It is not assembled to		main un	it.)
KA	Metric dedicated key for both cam holder a (It is not assembled to	and	driver.	
N12	Dowel pin holes of cam driver are change			nd





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.

■ Table of Components

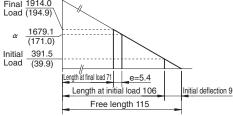
	abio or compensi		
No.	Description	Qty	Material and Remark
1	Cam Holder	1	FCD450
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	Bronze with Graphite
4	Cam Driver	1	FC250
(5)	Guide Bar	1	SCM440 with Graphite
6	Coil Spring	1	TJL40-115
7	Positive Return Follower	2	S45C(1045)
8	Slide Guide	1	Bronze with Graphite
9	Spring Block	1	SS400(1020)
10	Safety Plate	1	SS400(1020)
19	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
- α : Spring Force at punch retraction of 5 mm
 e : Spring return amount when the punch returns 5 mm

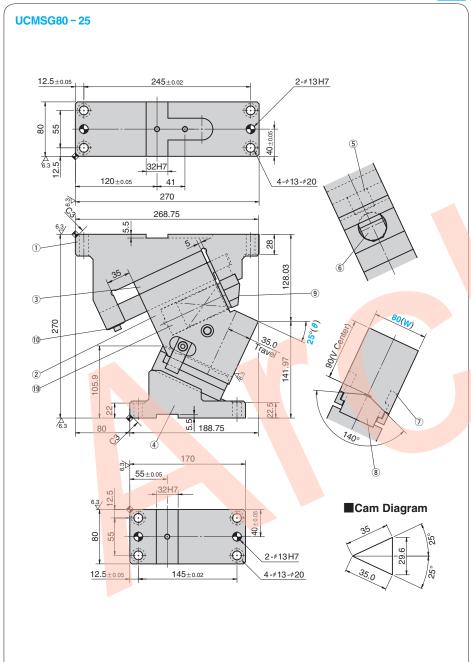
 Final 1914.0 Load (194.9)





FOR PIERCE

CAD FILE



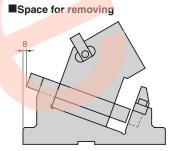
Tuesd	Working Fo	rce kN(tonf)	Spring Fo	rce N(kgf)	Return	Total			
	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
35.0	49.0 (5.0)	98.0 (10.0)	391.5 (39.9)	1914.0 (194.9)	2546 (259.8)	30.0	UCMSG	80	25



Catalog No. (W) (θ) **UCMSG** 25



Option Code	Specification	on		
K	A metric key is attache (It is not assembled to		main ur	nit.)
KA	Metric dedicated key for both cam holder a (It is not assembled to	nd o	driver.	
N12	Dowel pin holes of car cam driver are change			nd





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)		
19	Spacer	1	SS400(1020)		

A Bolts for assembly are not indicated.

■Spring Diagram

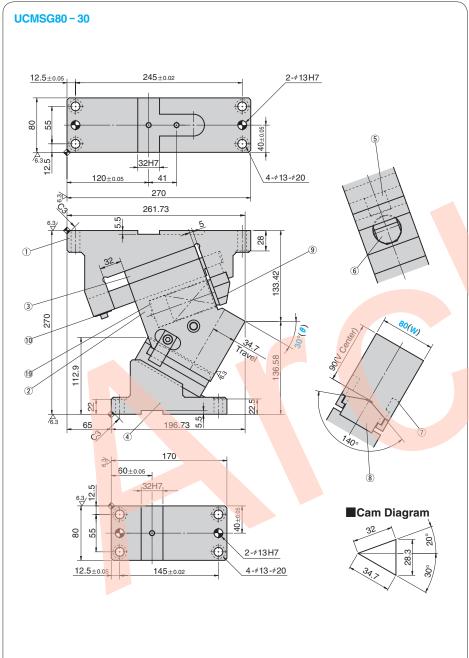
- •Spring used TJL40-115 (1 piece)
- •Spring constant 43.5N/mm (4.43kgf/mm)
- Guideline of spring durability 300,000 strokes
 - α : Spring Force at punch retraction of 5 mm e: Spring return amount when the punch returns 5 mm
- Final <u>1</u>914.0 Load (194.9) $\alpha = \frac{1696.5}{(172.8)}$ Initial 391.5 Load (39.9) Length at final load 71 e=5.0 Length at initial load 106 Initial deflection 9 Free length 115

UCMSG



FOR PIERCE





Travel	Working Fo	rce kN(tonf)	Spring Fo	rce N(kgf)	Return	Total			
S	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
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

 (θ)

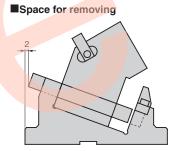
30



Catalog No. (W) **UCMSG**



Option Code	Specific <mark>ation</mark>
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.





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)
19	Spacer	1	SS400(1020)

A 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

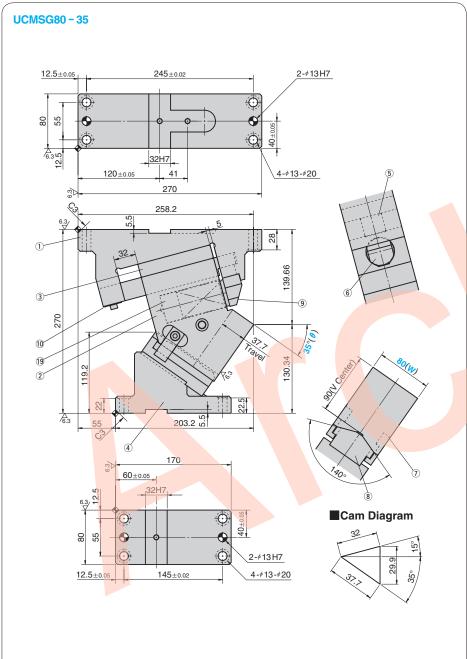
α: Spring Force at punch retraction of 5 mm e: Spring return amount when the punch returns 5 mm Final <u>191</u>4.0 Load (194.9) α <u>1713.9</u> (174.5) Initial 522.0 Load (53.2) ength at final load 71 e=4.6 Length at initial load 103 Initial deflection 12 Free length 115

UCMSG



FOR PIERCE





ı	Travel	Working Force kN(tonf) Spring Force N(kgf)			Return	Total				
	S	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
	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

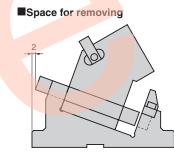


Order

Catalog No. (W) - (θ)
UCMSG 80 - 35



_			
Option	Option Code	Specification	1
	K	A metric key is attached (It is not assembled to the	
	КА	Metric dedicated key is for both cam holder an (It is not assembled to the	d driver.
	N12	Dowel pin holes of cam cam driver are changed	





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

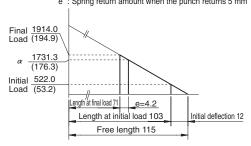
_			
No.	Description	Qty	Material and Remark
1	Cam Holder	1	FCD450
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	Bronze with Graphite
4	Cam Driver	1	FC250
(5)	Guide Bar	1	SCM440 with Graphite
6	Coil Spring	1	TJL40-115
7	Positive Return Follower	2	S45C(1045)
8	Slide Guide	1	Bronze with Graphite
9	Spring Block	1	SS400(1020)
10	Safety Plate	1	SS400(1020)
19	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

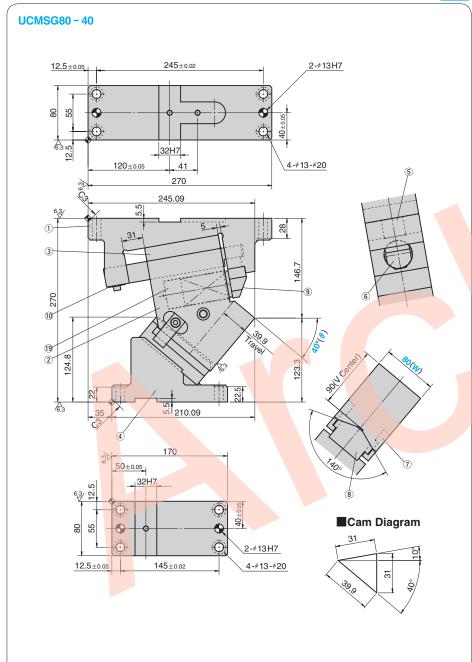
lpha : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm





FOR PIERCE

CAD FILE



	Tuesda	Working Force kN(tonf) Spring Force N(kgf)		Return	Total					
	Travel S	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
	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

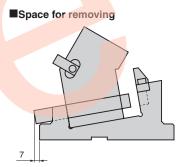
 (θ)



Catalog No. **UCMSG**

(W)

Option Code	Specific			
K	A metric key is atta (It is not assembled			it.)
KA	Metric dedicated k for both cam holde (It is not assembled	r and	driver.	
N12	Dowel pin holes of cam driver are cha			nd





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.

■Table of Components

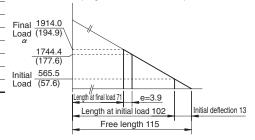
No.	Description	Qty	Material and Remar
1	Cam Holder	1	FCD450
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	Bronze with Graphite
4	Cam Driver	1	FC250
(5)	Guide Bar	1	SCM440 with Graphite
6	Coil Spring	1	TJL40-115
7	Positive Return Follower	2	S45C(1045)
8	Slide Guide	1	Bronze with Graphite
9	Spring Block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

A Bolts for assembly are not indicated.

■Spring Diagram

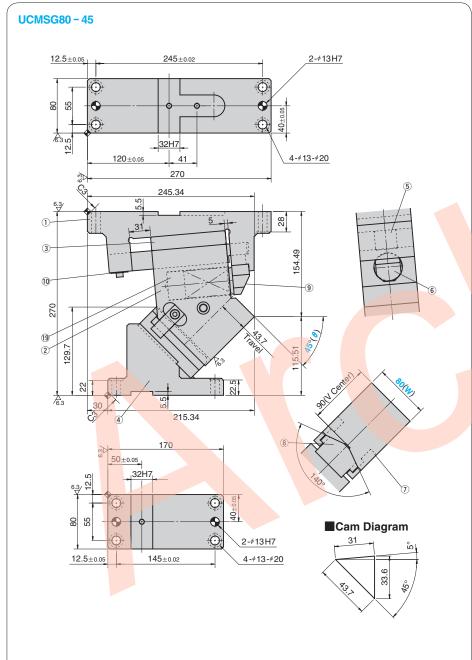
•Spring used TJL40-115 (1 piece) •Spring constant 43.5N/mm (4.43kgf/mm) • Guideline of spring durability 300,000 strokes

 α : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm



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	Tuesda	Working Force kN(tonf) Spring Force N(kgf)		Return	Total					
	Travel S	Standard Working Force (one million strokes)		Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
	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

 (θ)

45



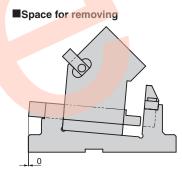
Order

Catalog No. (W) **UCMSG**

	Option
--	--------

Option	Option Code	
	K	A metric k (It is not as
		NA - Aut - at -

Option Code	Specifica		
K	A metric key is atta (It is not assembled		main unit.
KA	Metric dedicated keeps for both cam holde (It is not assembled	r and	driver.
N12	Dowel pin holes of cam driver are char		





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	Lower Slider		S45C(1045)
3			Bronze with Graphite
4			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		SS400(1020)
10	Safety Plate	1	SS400(1020)
19	Spacer	1	SS400(1020)

A Bolts for assembly are not indicated.

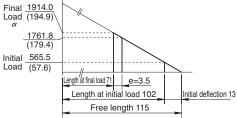
■Spring Diagram

 Spring used TJL40-115 (1 piece)

•Spring constant 43.5N/mm (4.43kgf/mm)

• Guideline of spring durability 300,000 strokes

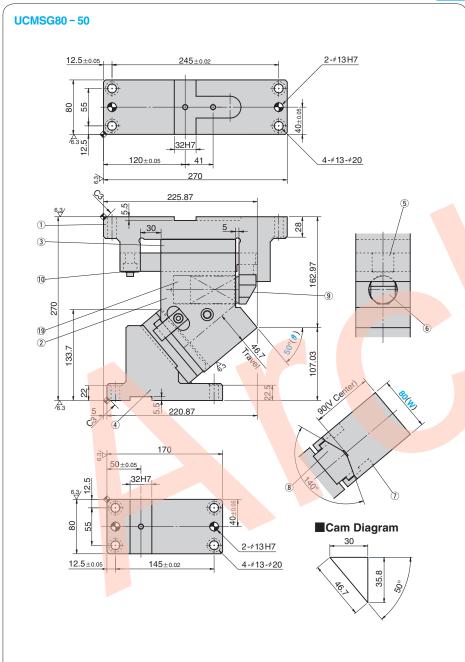
 α : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm Final <u>191</u>4.0 Load (194.9)



UCMSG

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CAD FILE



	Travel	Working Force kN(tonf) Spring Force N(kgf) Return Total		Total	Total					
	S	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
	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

 (θ)

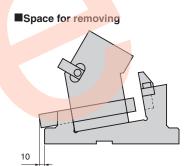
50



Catalog No. (W) **UCMSG**



				_			
Option Code	Specifica	Specification					
K	A metric key is atta			it.)			
КА	Metric dedicated keep for both cam holde (It is not assembled	r and	driver.				
N12	Dowel pin holes of cam driver are char			nd			





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

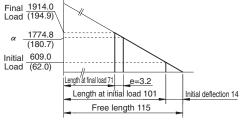
No.	Description	Qty	Material and Remark
1	Cam Holder	1	FCD450
2	Cam Slider Lower Slider Cam Driver		S45C(1045)
3			Bronze with Graphite
4			FC250
(5)	Guide Bar	1	SCM440 with Graphite
6	Coil Spring	1	TJL40-115
7	Positive Return Follower	2	S45C(1045)
8	Slide Guide	1	Bronze with Graphite
9	9 Spring Block		SS400(1020)
10	Safety Plate	1	SS400(1020)
19	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

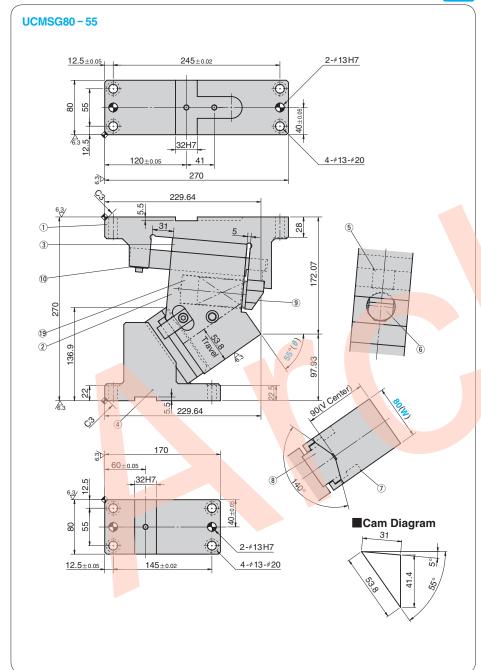
α: Spring Force at punch retraction of 5 mm e: Spring return amount when the punch returns 5 mm



UCMSG

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CAD FILE



	Travel	Working Force kN(tonf) Spring Force N(kgf)			Return	Total				
	S		Allowable Working Force (300,000 strokes)		Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
	53.8	49.0 (5.0)	98.0 (10.0)	565.5 (57.6)	1914.0 (194.9)	2500 (255.1)	30.0	UCMSG	80	55

55

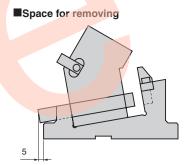


Catalog No. (W) (θ) **UCMSG**



	Option

Option Code	Specific <mark>ation </mark>	on		
K	A metric key is attach (It is not assembled to		main un	it.)
KA	Metric dedicated key for both cam holder a (It is not assembled to	and	driver.	
N12	Dowel pin holes of ca cam driver are change			nd





UCMSG80 - 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.

■Table of Components

No.	Description	Qty	Material and Remar
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)
19	Spacer	1	SS400(1020)

Bolts for assembly are not indicated.

■Spring Diagram

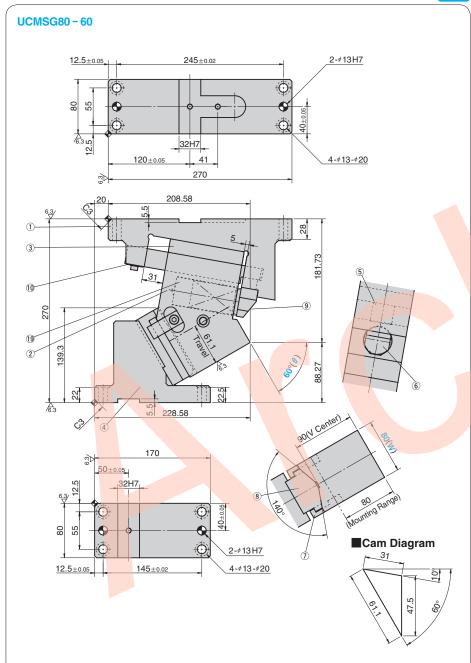
TJL40-115 (1 piece) Spring used •Spring constant 43.5N/mm (4.43kgf/mm) • Guideline of spring durability 300,000 strokes

 α : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm Final 1914.0 Load (194.9) α (182.1) Initial 565.5 Load (57.6) Length at final load 71 e=2.9 Length at initial load 102 Initial deflection 13 Free length 115

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CAD FILE



Tuesda	Working Fo	rce kN(tonf)	Spring Fo	rce N(kgf)	Return	Total			
	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
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

 (θ)

60



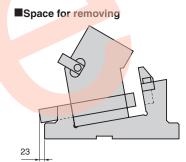
Order

Catalog No. (W) **UCMSG**



	Option

Option Code	Specifica	tion	
K	A metric key is attactle (It is not assembled		main unit
KA	Metric dedicated ke for both cam holde (It is not assembled	r and	driver.
N12	Dowel pin holes of cam driver are char		





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)
19	Spacer	1	SS400(1020)

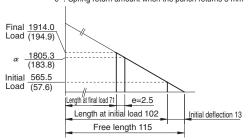
Bolts for assembly are not indicated.

■Spring Diagram

TJL40-115 (1 piece) Spring used •Spring constant 43.5N/mm (4.43kgf/mm)

•Guideline of spring durability 300,000 strokes

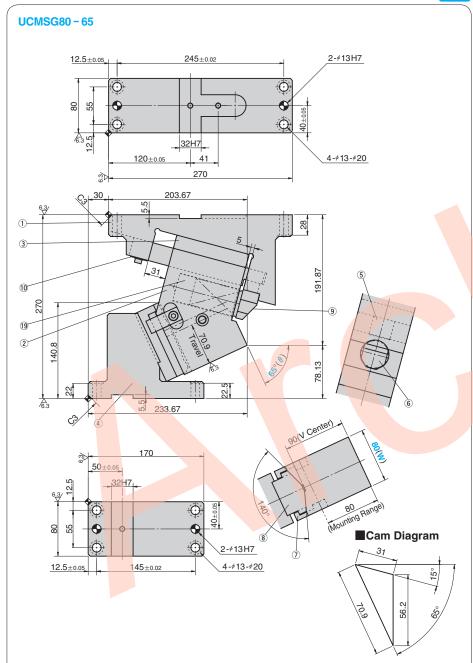
 α : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm



UCMSG

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CAD FILE



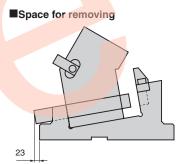
Tuescal	Working Fo	rce kN(tonf)	Spring Fo	rce N(kgf)	Return	Total			
Travel S	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
70.9	49.0 (5.0)	98.0 (10.0)	565.5 (57.6)	1914.0 (194.9)	2483 (253.4)	32.0	UCMSG	80	65



Catalog No. (W) (θ) **UCMSG** 65



otion	Option Code	Specifica	ation		
	K	A metric key is atta (It is not assembled			it.
	КА	Metric dedicated ke for both cam holde (It is not assembled	r and	driver.	
	N12	Dowel pin holes of cam driver are char			nd





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

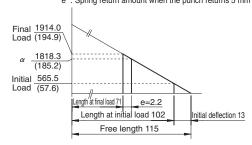
No.	Description	Qty	Material and Remar
1	Cam Holder	1	FCD450
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	Bronze with Graphite
4	Cam Driver	1	FC250
(5)	Guide Bar	1	SCM440 with Graphite
6	Coil Spring	1	TJL40-115
7	Positive Return Follower	2	S45C(1045)
8	Slide Guide	1	Bronze with Graphite
9	Spring Block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

M 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

Spring Force at punch retraction of 5 mm
 Spring return amount when the punch returns 5 mm



UCMSG