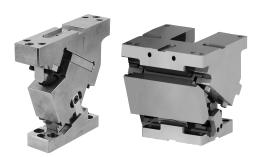


Aerial Cam Unit General Description of UCMSG

FOR PIERCE AND FLANGE

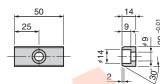


- Highly rigid structure with the overseas automobile manufacturer specification
- ●50, 65, 80, 150, 200mm and 300mm are available for the mounting width.
- Angle 0° to 65° increments of 5° is available.
 (For 65 mm wide, angle 20° to 60° is in increments of 10°).
- ●ISO springs are used.

■ Option for UCMSG

Metric Key Specification(-K)
 UCMSG50/65

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

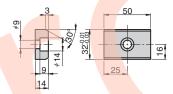


UCMSG80

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

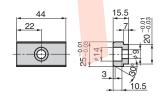
UCMSG150/200/300

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



Metric Key Specification(-KA) UCMSG50

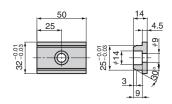
LKA25-20-44 (with 3-M8 \times 15 bolts)



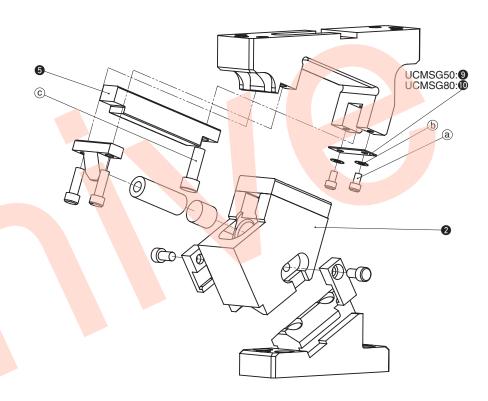
UCMSG80

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



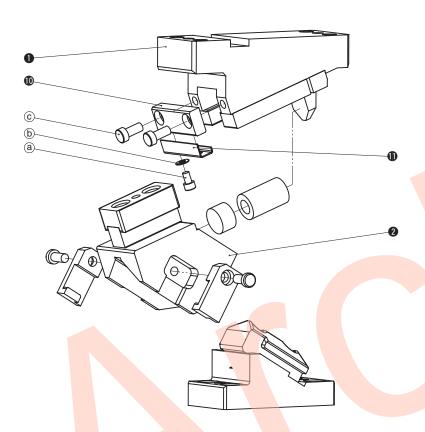
- Disassembly method of UCMSG50 (same for UCMSG80)
 - 1) Remove hexagon socket head bolt (ⓐ) and washer (ⓑ) and remove safety plate (UCMSG50: ① UCMSG80: ①).
 - 2) Remove hexagon socket head bolt (©).
 - 3) Shift guide bar (5) to the back then remove cam slider (2) from cam holder.
- Assembly method of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



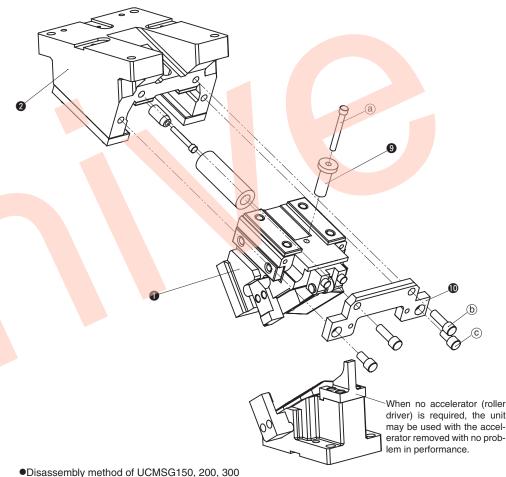
Disassembly method of UCMSG65

- 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

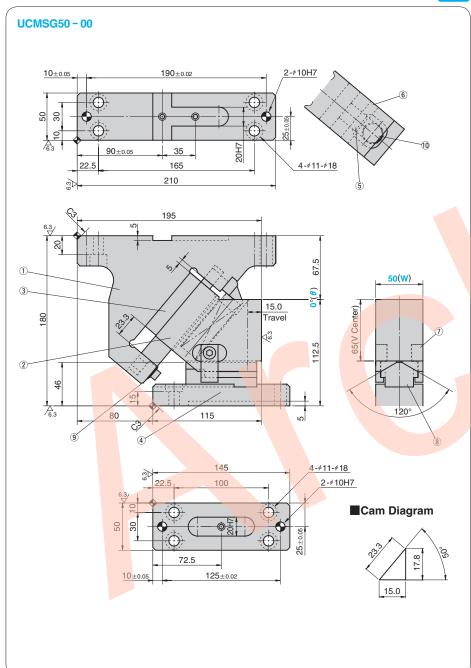
- 1) Assemble components in the reverse order of disassembly.
- Make sure that there is no foreign matter on the sliding area and assemble components.
- The clearance between the cam slider and the cam holder is controlled. Match the stamped serial number on the holder and slider before assembly.
- ·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

UCMSG 50



FOR PIERCE

CAD FILE



	Travel S	Working Fo	. ,	Spring Force N(kgf)		Return	Total			
		Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
	15.0	29.4 (3.0)	58.8 (6.0)	184.2 (18.8)	1097.6 (111.7)	1503 (153.4)	10.6	UCMSG	50	00

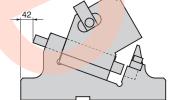
00



Catalog No. **UCMSG**

(W) (θ) **50**

Option Code	Specific <mark>ation</mark>
K	A metric key is attached. (It is not assembled to the main unit.)
КА	Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)
N13	Dowel pin holes of cam holder and cam driver are changed to #13.



■Space for removing

UCMSG50 - 00 - K UCMSG50 - 00 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

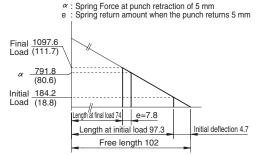
No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-102

Bolts for assembly are not indicated.

■Spring Diagram

Spring used TJH20-102 (1 piece) Spring constant 39.2N/mm(3.99kgf/mm)

• Guideline of spring durability 500,000 strokes

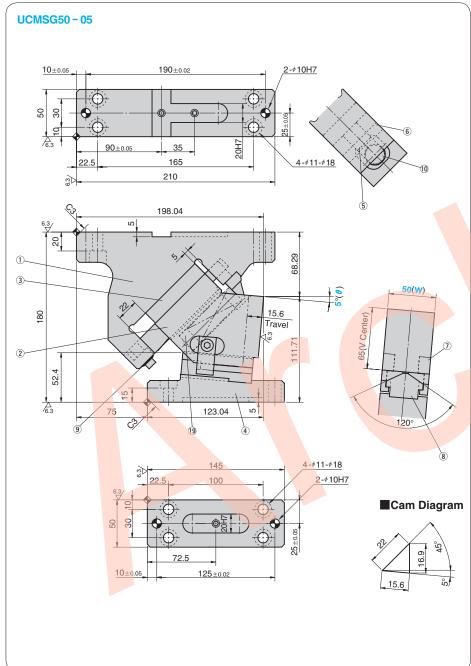


UCMSG



FOR PIERCE





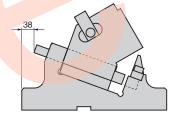
	Travel S	Working Force kN(tonf) Spring Force N(kgf			rce N(kgf)	Return	Total			
		Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)		Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
	15.6	29.4 (3.0)	58.8 (6.0)	179.6 (18.3)	1167.4 (118.8)	1589 (162.2)	10.3	UCMSG	50	05



Catalog No. **UCMSG**

(W) (θ) **50** 05

Option Code	Specific	ation		
K	A metric key is atta (It is not assemble)			unit.)
KA	Metric dedicated k both cam holder ar (It is not assembled	nd dri	ver.	
N13	Dowel pin holes of cam driver are char			nd



■Space for removing

UCMSG50 - 05 - K UCMSG50 - 05 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-89
19	Spacer	1	SS400(1020)

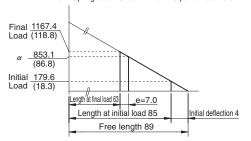
Bolts for assembly are not indicated.

■Spring Diagram

Spring used TJH20-89 (1 piece) •Spring constant 44.9N/mm(4.57kgf/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

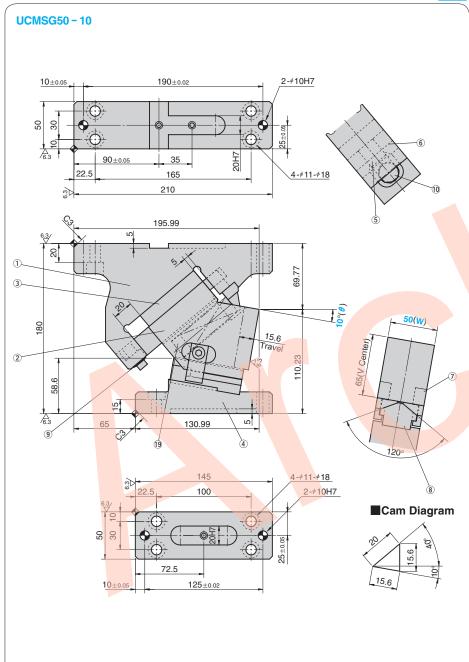


UCMSG



FOR PIERCE

CAD FILE



Travel S	Working Fo Standard Working Force (one million strokes)	Allowable Working Force	Initial	rce N(kgf) Final Load	Return Force N(kgf)	Total Weight kg	Catalog No.	(W)	(θ)
15.6	29.4 (3.0)	58.8 (6.0)	269.4 (27.4)	1167.4 (118.8)	1583 (161.5)	9.9	UCMSG	50	10

10



Order

Catalog No. **UCMSG**

(W) $- \mid \theta$

50

■Space for removing cam driver are changed to ≠13.

Option Specification Code A metric key is attached. K (It is not assembled to the main unit.) Metric dedicated key is attached for KA both cam holder and driver. (It is not assembled to the main unit.) Dowel pin holes of cam holder and N13



UCMSG50 - 10 - K UCMSG50 - 10 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

_			
No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-89
19	Spacer	1	SS400(1020)

Bolts for assembly are not indicated.

■Spring Diagram

- Spring used TJH20-89 (1 piece)
- •Spring constant 44.9N/mm(4.57kgf/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 <u>1167.4</u> Load (118.8) Initial _269.4 Load (27.4) Length at final load 63 e=6.4

Length at initial load 83

Free length 89

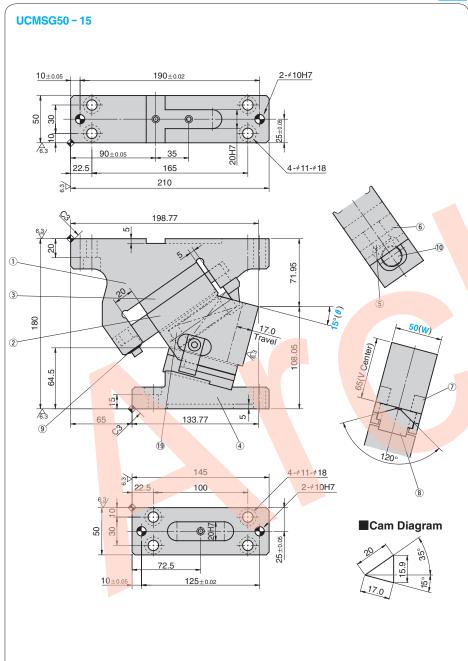
UCMSG

Initial deflection 6



FOR PIERCE





	Travel S	Working Force kN(tonf) Sprin			ng Force N(kgf) Ret		Total			
		Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
1	7.0	29.4 (3.0)	58.8 (6.0)	269.4 (27.4)	1167.4 (118.8)	1576 (160.8)	9.7	UCMSG	50	15

 (θ)

15

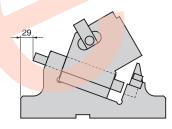


Catalog No. **UCMSG**

(W) **50**

Option Code	Specific	ation				
K	A metric key is atta			unit.		
KA	Metric dedicated k both cam holder a (It is not assemble	nd dr	iver.			
N13	Dowel pin holes of cam hole cam driver are changed to					







UCMSG50 - 15 - K UCMSG50 - 15 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

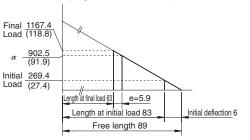
==			
No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-89
19	Spacer	1	SS400(1020)

M Bolts for assembly are not indicated.

■Spring Diagram

- Spring used TJH20-89 (1 piece) •Spring constant 44.9N/mm(4.57kgf/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

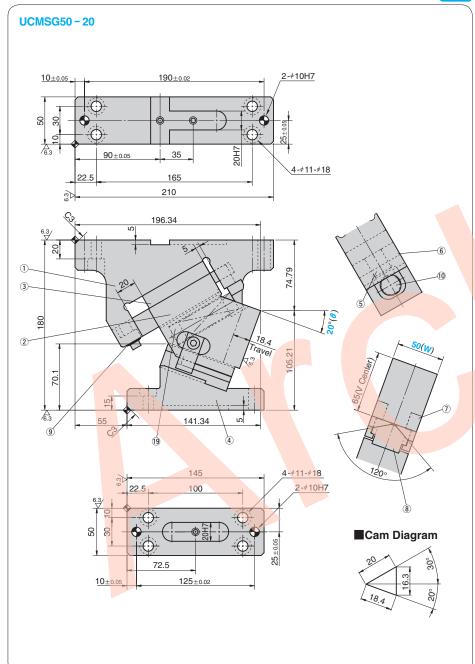


UCMSG



FOR PIERCE

CAD FILE



Ī	Travel S	Working Fo	rce 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)
	18.4	29.4 (3.0)	58.8 (6.0)	269.4 (27.4)	1167.4 (118.8)	1569 (160.1)	9.4	UCMSG	50	20

 (θ)

20



Order

Catalog No. **UCMSG**

Option Code

K

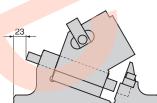
KA

N13

(W)

50

	=0
Specification	Space for removing
A metric key is attached. (It is not assembled to the main unit.)	23
Metric dedicated key is attached for both cam holder and driver. (It is not assembled to the main unit.)	4
Dowel pin holes of cam holder and cam driver are changed to \$13.	



UCMSG50 - 20 - K UCMSG50 - 20 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

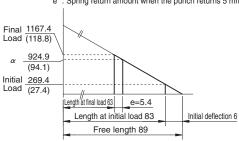
_			
No. Description		Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-89
19	Spacer	1	SS400(1020)

M Bolts for assembly are not indicated.

■Spring Diagram

- Spring used TJH20-89 (1 piece)
- •Spring constant 44.9N/mm(4.57kgf/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

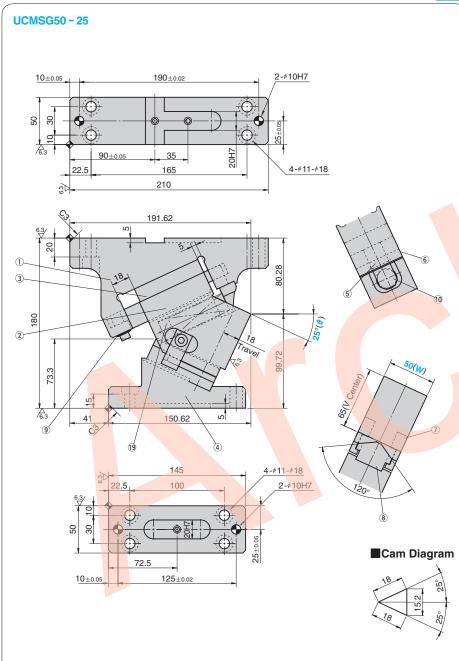


UCMSG



FOR PIERCE

CAD FILE



		Working 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)
	18.0	29.4 (3.0)	58.8 (6.0)	359.2 (36.6)	1167.4 (118.8)	1562 (159.4)	9.4	UCMSG	50	25

 (θ)

25



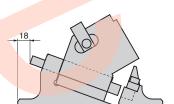
Order

Catalog No.

(W) –

Option

	ption ode	Specific					
	K	A metric key is atta (It is not assemble			unit.		
1	KA	Metric dedicated key is attache both cam holder and driver. (It is not assembled to the main					
	N13	Dowel pin holes of cam holder at cam driver are changed to \$\psi 13.					



■Space for removing

Or

UCMSG50 - 25 - K UCMSG50 - 25 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

_			
No. Description		Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-89
19	Spacer	1	SS400(1020)

Bolts for assembly are not indicated.

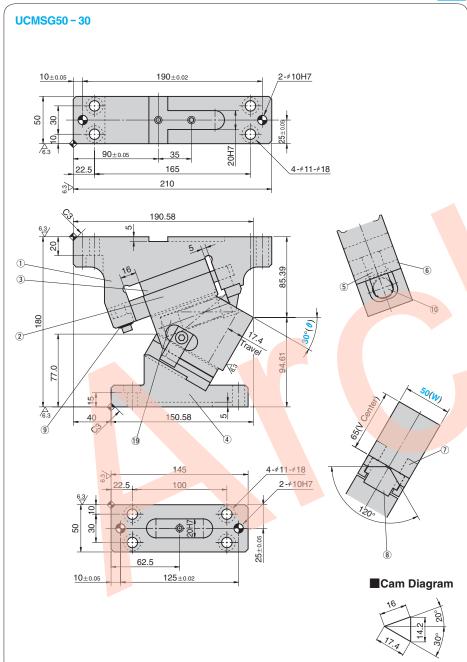
■Spring Diagram

- •Spring used TJH20-89 (1 piece)
 •Spring constant 44.9N/mm(4.57kgf/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 1167.4 (118.8)
 α 942.9 (96.8)
 Initial 359.2 (36.6)



FOR PIERCE

CAD FILE



Travel S	Working Force kN(tonf) Spring Force 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)
17.4	29.4 (3.0)	58.8 (6.0)	263.0 (26.8)	1104.6 (112.6)	1474 (150.4)	9.2	UCMSG	50	30

 (θ)

30



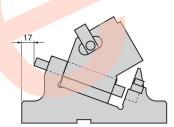
Order

Catalog No. **UCMSG**

(W) **50**

	Option
--	--------

Option Code	Specification	
K	A metric key is attached. (It is not assembled to the main ur	nit.)
KA	Metric dedicated key is attached to both cam holder and driver. (It is not assembled to the main ur	
N13	Dowel pin holes of cam holder and cam driver are changed to #13.	d L



■Space for removing

UCMSG50 - 30 - K UCMSG50 - 30 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	S		S45C(1045)
(5)			SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9			SS400(1020)
10			TJH20-76
19	Spacer	1	SS400(1020)

Bolts for assembly are not indicated.

■Spring Diagram

- Spring used TJH20-76 (1 piece) •Spring constant 52.6N/mm(5.36kgf/mm)
- Guideline of spring durability 300,000 strokes

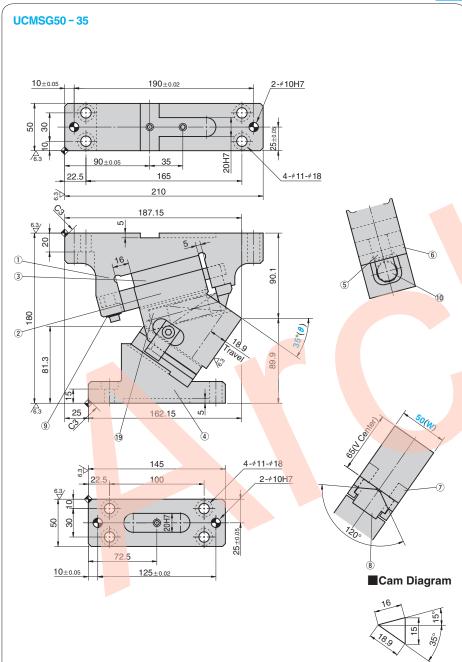
α: Spring Force at punch retraction of 5 mm e: Spring return amount when the punch returns 5 mm Final 1104.6 Load (112.6) (87.9) Initial <u>263.0</u> Load (26.8) Length at final load 55 __e=4.6 Length at initial load 71 Initial deflection 5

Free length 76

UCMSG

FOR PIERCE

CAD FILE



	Working Force kN(tonf) Spring Force N(kgf)		Return	Total					
Travel S	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)		Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
18.9	29.4 (3.0)	58.8 (6.0)	263.0 (26.8)	1104.6 (112.6)	1466 (149.6)	9.2	UCMSG	50	35

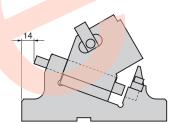


Catalog No. **UCMSG**

(W) (θ) 35

	Option
--	--------

Option Code	Specific	ation		
K	A metric key is atta			unit.
KA	Metric dedicated k both cam holder a (It is not assemble	nd dri	ver.	
N13 Dowel pin holes of cam holder a cam driver are changed to #13.				



■Space for removing

UCMSG50 - 35 - K UCMSG50 - 35 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

_			
No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-76
19	Spacer	1	SS400(1020)

Bolts for assembly are not indicated.

■Spring Diagram

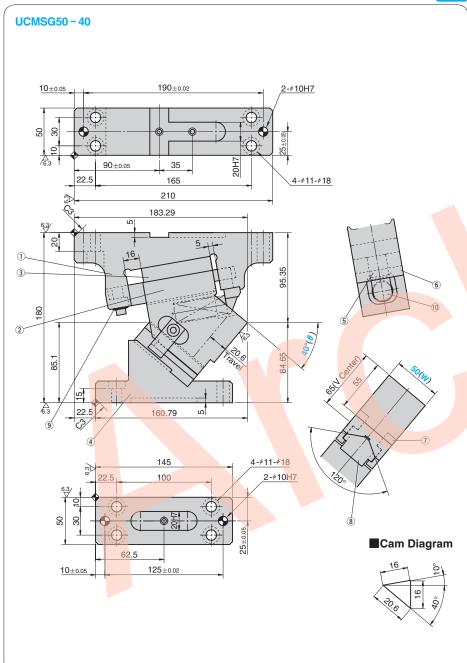
- •Spring used TJH20-76 (1 piece)
 •Spring constant 52.6N/mm(5.36kgf/mm)
- Guideline of spring durability 300,000 strokes
 - α : Spring Force at punch retraction of 5 mm e : Spring return amount when the punch returns 5 mm
- Final <u>110</u>4.6 Load (112.6) 883.7 (90.0) Initial 263.0 Load (26.8) ength at final load 55 e=4.2 Length at initial load 71 Initial deflection 5 Free length 76

UCMSG



FOR PIERCE

CAD FILE



Tuesda		rce kN(tonf)	Spring Fo	rce N(kgf)	Return	Total			
Travel S	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)		Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
20.6	29.4 (3.0)	58.8 (6.0)	263.0 (26.8)	1104.6 (112.6)	1459 (148.8)	9.1	UCMSG	50	40

40



Order

Catalog No. **UCMSG**

(w) |-| (θ) **50**

■s	pace for removing
ain unit.)	12
ched for	A
ain unit.)	
er and 13.	

Option Specification Code A metric key is attached. K (It is not assembled to the ma Metric dedicated key is attach KA both cam holder and driver. (It is not assembled to the ma Dowel pin holes of cam holde N13 cam driver are changed to \$13

UCMSG50 - 40 - K UCMSG50 - 40 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

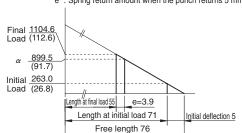
■Table of Components

_			
No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-76

A Bolts for assembly are not indicated.

■Spring Diagram

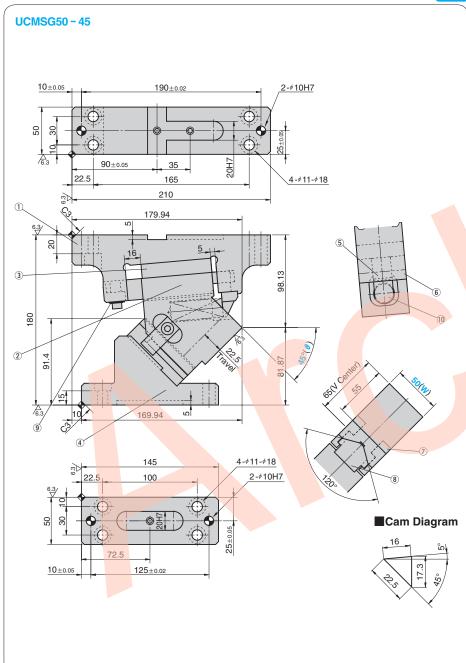
- TJH20-76 (1 piece) Spring used •Spring constant 52.6N/mm(5.36kgf/mm)
- Guideline of spring durability 300,000 strokes
 - α : Spring Force at punch retraction of 5 mm e: Spring return amount when the punch returns 5 mm





FOR PIERCE

CAD FILE



	Working Fo	rce kN(tonf)	Spring Fo	rce N(kgf)	Return	Total			
Travel S	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
22.5	29.4 (3.0)	58.8 (6.0)	263.0 (26.8)	1104.6 (112.6)	1451 (148.1)	9.1	UCMSG	50	45



Catalog No. **UCMSG**

(W) (θ) 45

	Option
--	--------

Option Code	Specific	ation				
K	A metric key is atta			unit.		
КА	Metric dedicated k both cam holder a (It is not assemble	nd dri	ver.			
N13	Dowel pin holes of cam holder a cam driver are changed to #13.					



■Space for removing

UCMSG50 - 45 - K UCMSG50 - 45 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

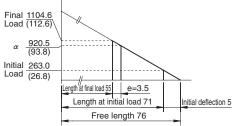
No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-76

A Bolts for assembly are not indicated.

■Spring Diagram

 Spring used TJH20-76 (1 piece) •Spring constant 52.6N/mm(5.36kgf/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

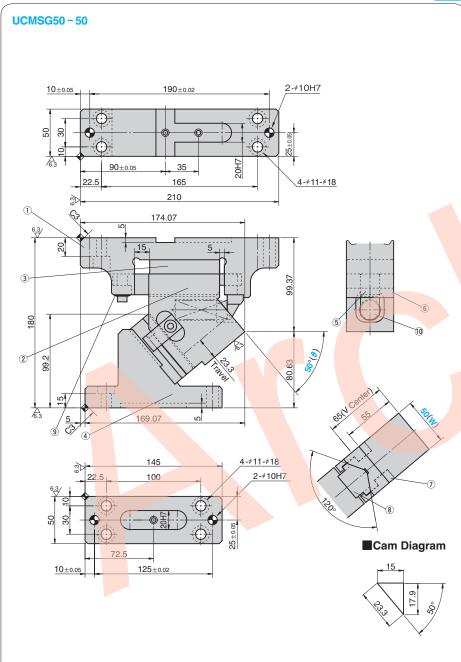


UCMSG



FOR PIERCE

CAD FILE



		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)
	23.3	29.4 (3.0)	58.8 (6.0)	315.6 (32.2)	1104.6 (112.6)	1443 (147.3)	9.0	UCMSG	50	50

 (θ)

50

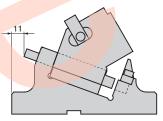


Catalog No. **UCMSG**

(W)

	Option Code	Specific	ation		
	K	A metric key is atta (It is not assemble			unit.
	KA	Metric dedicated k both cam holder a (It is not assemble	nd dri	ver.	
1	N13	Dowel pin holes of cam driver are cha			nd

■Space for removing



UCMSG50 - 50 - K UCMSG50 - 50 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

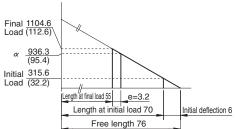
No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-76

Bolts for assembly are not indicated.

■Spring Diagram

- Spring used TJH20-76 (1 piece)
- •Spring constant 52.6N/mm(5.36kgf/mm)
- Guideline of spring durability 300,000 strokes

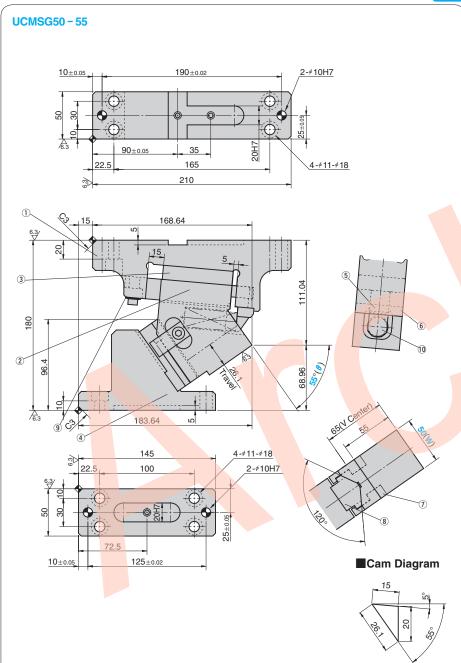
 - lpha: Spring Force at punch retraction of 5 mm e: Spring return amount when the punch returns 5 mm



UCMSG

FOR PIERCE

CAD FILE



	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)
26.1	29.4 (3.0)	58.8 (6.0)	315.6 (32.2)	1104.6 (112.6)	1436 (146.5)	9.5	UCMSG	50	55

55



Catalog No. **UCMSG**

(W) (θ) **50**

Option Code	Specifi <mark>cation</mark>
К	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.)
N13	Dowel pin holes of cam holder and cam driver are changed to #13.

■Space for removing

UCMSG50 - 55 - K UCMSG50 - 55 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

■Table of Components

No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-76

Bolts for assembly are not indicated.

■Spring Diagram

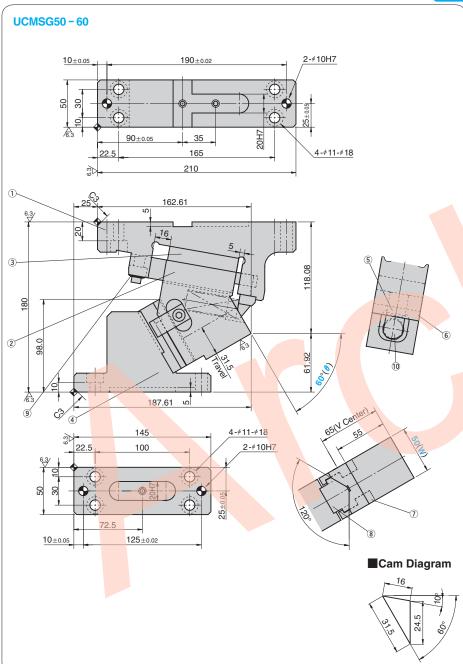
- Spring used TJH20-76 (1 piece)
- •Spring constant 52.6N/mm(5.36kgf/mm)
- Guideline of spring durability 300,000 strokes

 α : Spring Force at punch retraction of 5 mm e: Spring return amount when the punch returns 5 mm Final 1104.6 Load (112.6) 952.1 Initial 315.8 Load (32.2) ength at final load 55 Length at initial load 70 Initial deflection 6 Free length 76



FOR PIERCE

CAD FILE



		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)
3	1.5	29.4 (3.0)	58.8 (6.0)	263.0 (26.8)	1104.6 (112.6)	1428 (145.7)	9.7	UCMSG	50	60



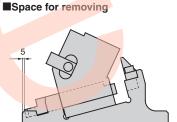
Order

Catalog No. **UCMSG**

(W) (θ) 60

	Option
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	Option Code	Specifi <mark>cation</mark>
	K	A metric key is attached. (It is not assembled to the main unit
_	KA	Metric dedicated key is attached fo both cam holder and driver. (It is not assembled to the main unit
1	N13	Dowel pin holes of cam holder and cam driver are changed to #13.



UCMSG50 - 60 - K UCMSG50 - 60 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

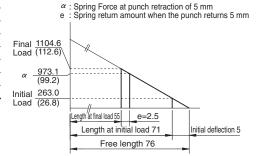
■Table of Components

No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-76

Bolts for assembly are not indicated.

■Spring Diagram

- Spring used TJH20-76 (1 piece) •Spring constant 52.6N/mm(5.36kgf/mm)
- Guideline of spring durability 300,000 strokes

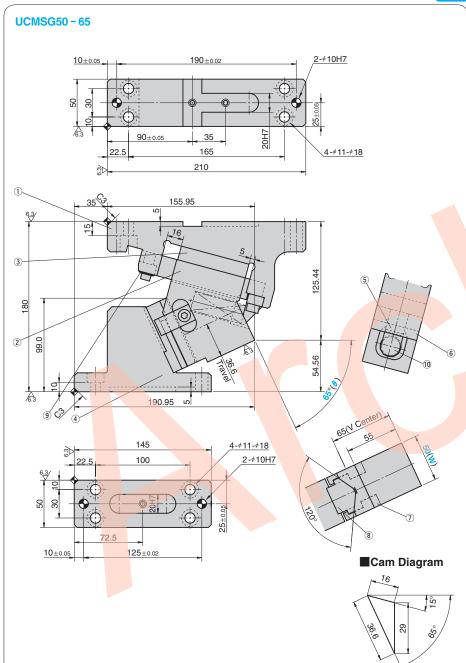


UCMSG



FOR PIERCE

CAD FILE



Ī		Working 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)
	36.6	29.4 (3.0)	58.8 (6.0)	263.0 (26.8)	1104.6 (112.6)	1419 (144.8)	10.0	UCMSG	50	65

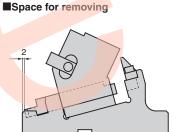
65



Catalog No. **UCMSG**

(W) (θ) **50**

Option Code	Specification	
К	A metric key is attached. (It is not assembled to the mai	n unit.)
KA	Metric dedicated key is attach both cam holder and driver. (It is not assembled to the mai	
N13	Dowel pin holes of cam holder cam driver are changed to #13	



UCMSG50 - 65 - K UCMSG50 - 65 - KA - N13

For machining details or tapping hole and dowel hole (prepared hole and finished hole) for mounting of the retainer, refer to page 559. For detailed specification of the key, refer to page 1259.

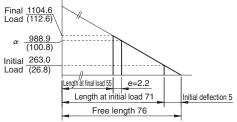
■Table of Components

No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Lower Slider	1	SF700 with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Positive Return Follower	2	NAK55
8	Slide Guide	1	Bronze with Graphite(SO#50SP7
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	TJH20-76

Bolts for assembly are not indicated.

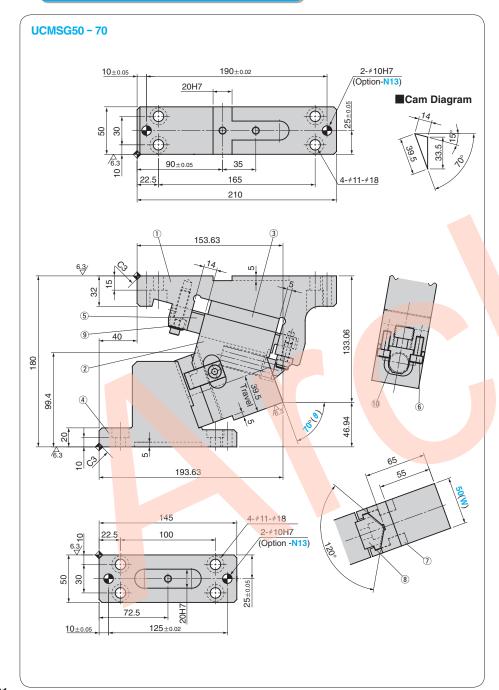
■Spring Diagram

- Spring used TJH20-76 (1 piece)
- •Spring constant 52.6N/mm(5.36kgf/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 AND FLANGE



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)
39.5	29.4 (3.0)	58.8 (6.0)	263.0 (26.8)	999.4 (101.9)	1393 (142.2)	10.1	UCMSG	50	70

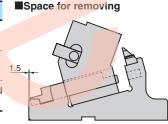


Catalog No. (W) – (θ)

UCMSG 50 – 70



Option Code	Spec <mark>ificat</mark> ion
K	Desicated key is attached. (It is not assembled to the main unit.)
KA	A metric key is attached. (It is not assembled to the main unit)
N13	Dowel pin holes of cam holder and cam driver are changed to ∮13





der U

UCMSG50 - 70 - K UCMSG50 - 70 - N13



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

	able of componen		
No.	Description	Qty	Material and Remark
1	Cam Holder	1	S45C(1045)
2	Cam Slider	1	S45C(1045)
3	Cam Lower Slider	1	FCS with Graphite
4	Cam Driver	1	S45C(1045)
(5)	Guide Bar	1	SCM440 with Graphite
6	Spring Block	1	SS400(1020)
7	Cam Positive Return	2	NAK55
8	Cam Slide Guide	1	Bronze with Graphite(SO#50SP7
9	Safety Plate	1	SS400(1020)
10	Coil Spring	1	SWOSC-V TJH20-76

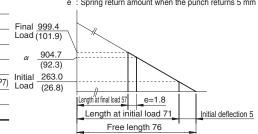
⚠ Bolts for assembly are not indicated.

■Spring Diagram

• Spring used TJH20-76 (1 piece)
• Spring constant 52.6N/mm(5.36kgf/mm)

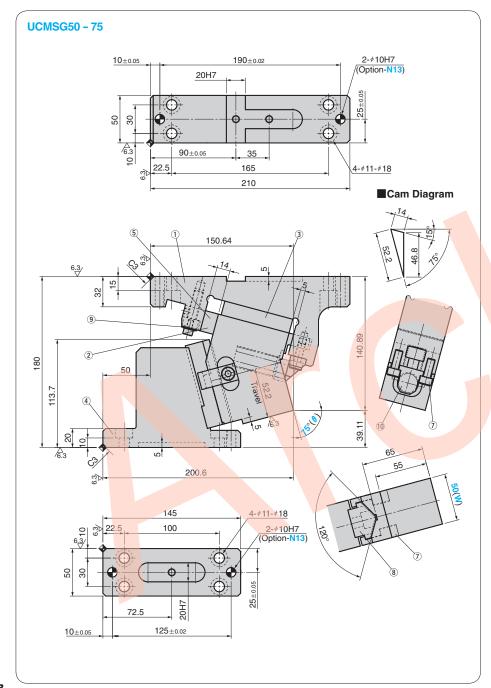
• Guideline of spring durability 1,000,000 strokes

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





FOR PIERCE AND FLANGE



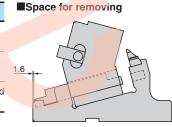
Travel	Working Force kN(tonf)		Spring Force N(kgf)		Return	Total			
S	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Initial Load	Final Load	Force N(kgf)	Weight kg	Catalog No.	(W)	(θ)
52.2	29.4 (3.0)	58.8 (6.0)	263.0 (26.8)	999.4 (101.9)	1540 (157.2)	10.1	UCMSG	50	75



 (θ) Catalog No. (W) **UCMSG 50 75**



Option Code	Specifica	tion
K	Desicated key is attack (It is not assembled to	
KA	A metric key is attach (It is not assembled to	
N13	Dowel pin holes of cam driver are change	





UCMSG50 - 75 - K UCMSG50 - 75 - N13

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

NI.	No December		Metarial and Damerk		
No.	Description	uty	Material and Remark		
1	Cam Holder	1	S45C(1045)		
2	Cam Slider	1	S45C(1045)		
3	Cam Lower Slider	1	FCS with Graphite		
4	Cam Driver	1	S45C(1045)		
(5)	Guide Bar	1	SCM440 with Graphite		
6	Spring Block	1	SS400(1020)		
7	Cam Positive Return	2	NAK55(1020)		
8	Cam Slide Guide	1	Bronze with Graphite(SO#50SP7)		
9	Safety Plate	1	SS400		
10	Coil Spring	1	SWOSC-V TJH20-76		

M Bolts for assembly are not indicated.

■ Spring Diagram

 Spring used TJH20-76 (1 piece) Spring constant 52.6N/mm(5.36kgf/mm)

• Guideline of spring durability 1,000,000 strokes

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

