

**NEW**

# LONG NOSE CAM

## Panel Avoidance Cam

### OUTLINE OF SULNC·SULNG

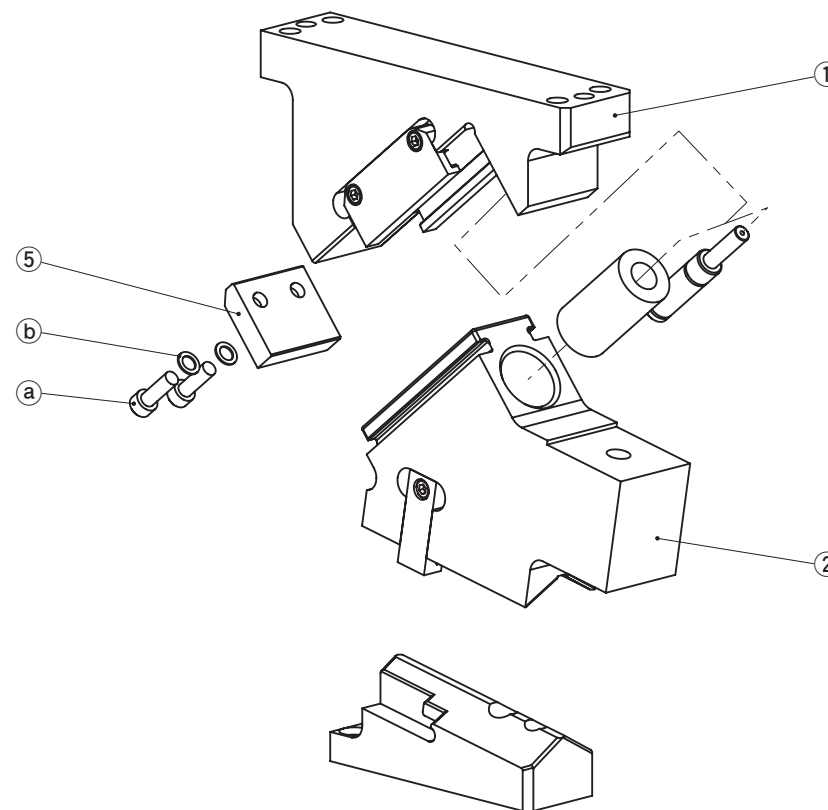
#### Easy to work on hard-to-access areas

- **SULNC**: Cast iron and solid lubricant sliding  
Coil spring type
- **SULNG**: Bronze and solid lubricant sliding  
Gas spring type  
For high speed production
- Extendable mounting surface up to 150 mm forward with SC option
- SULNC and SULNG are interchangeable



Catalog No.	Mounting Surface		Angle	Stroke SS	Working Force kN(tonf) 300,000 strokes
	Width	Height			
SULNC SULNG	65	80	00	30.2	14.7(1.5)
			05	31.9	
			10	35.0	
			15	31.4	
			20	32.3	
		25	35.0		

#### SULNC·SULNG Assembly Instructions



#### Disassembly

- 1) Remove hexagon socket head bolts (a) and washers (b), and remove Stopper Plate (5).
- 2) Pull out and remove Cam Slider (2) from Cam Holder (1) to the rear.

#### Assembly

Assembly is the reverse procedure of disassembly.

NOTE · Ensure that all parts are clean, particularly the sliding components to which a small amount of grease is applied and is then placed in position.

- Take care that the respective tolerances are observed when assembling the Cam Slider and Cam Holder, which also should be identified by the same serial number.
- Make sure that all bolts are tightened to the recommended torque after assembly and disassembly.



#### Gas Spring

Please contact your local sales representative if you prefer to use a gas spring not specified in our catalog. For use and maintenance of gas spring, please contact the manufacturer directly.

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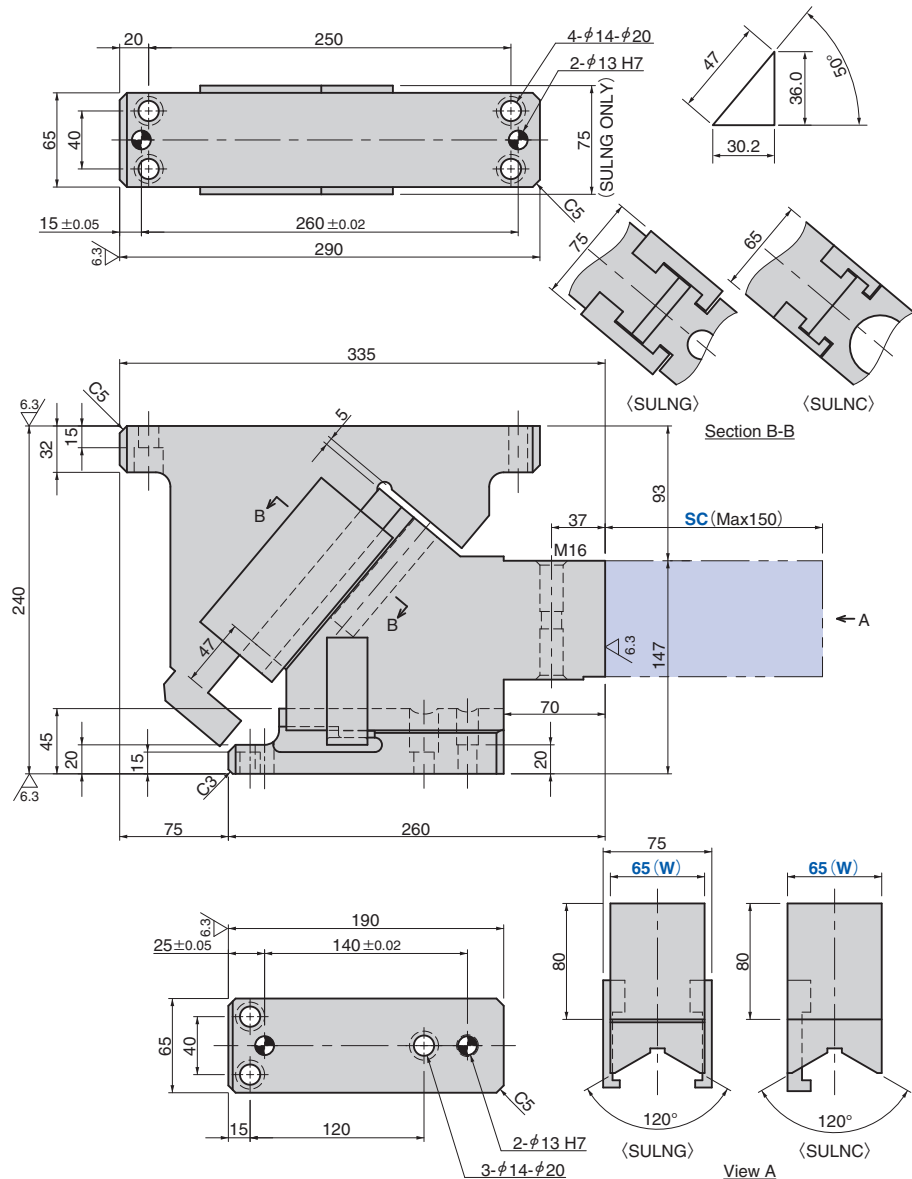
Panel Avoidance Cam

AERIAL CAM UNIT

SULNC65-00  
SULNG65-00



● Cam Diagram



Refer to page 15-16 for parts list.

Working Force kN (tonf) 300,000 strokes	Spring Force N (kgf)		Return Force N (kgf)	Total Weight kg*1	Catalog No.	W	θ	Stroke SS	Spring Type PS
	Initial Load	Final Load							
14.7 (1.5)	126.9 (12.9)	2115.0 (215.7)	2881.3 (294.0)	33.7	SULNC	65	00	30.2	No Code (Coil Spring)
	—	2527.0 (257.9)	3437.0 (350.7)	34.5	SULNG				GK NGK GD NGD

No Code:Coil Spring GK:Gas Spring (KALLER) GD:Gas Spring (DADCO)  
NGK/NGD:Without Gas Spring Parts for spring assembly are included.  
\*1 Weight with SC150 option.



Catalog No.	W	θ	PS	Option
SULNC	65	00		
SULNC	65	00		— SC120
SULNG	65	00	GK	— NF — SC50 — N12



Option Code	Specification
SC	The mounting surface is extended in the range from 1 to 150 mm in increments of 1 mm.
N12	Dowel pin holes of cam holder and cam driver are changed to φ12H7.
NF	Nitrogen gas not charged.

Refer to page 389 for the machining details of tapped holes and dowel pin holes for retainer mounting.

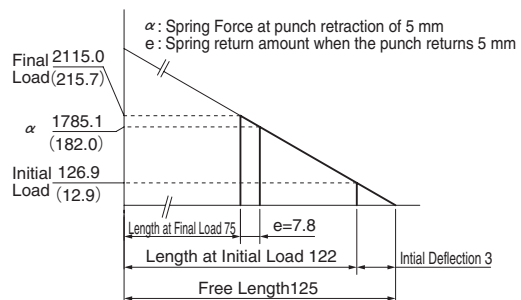
### Spring Specification

No.	PS	Model	Qty	Remark
	No Code	TL40-125	1	Coil Spring
6	GK	X170-50	1	Gas Spring (KALLER)
	GD	U.0175.050.TO.180	1	Gas Spring (DADCO)

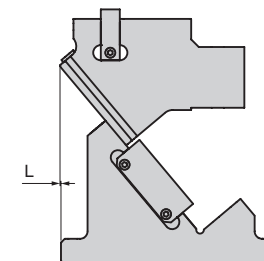
Gas filling pressure is 18 MPa.

### Spring Diagram

- Spring Used TL40-125 (1 piece)
- Spring Constant 42.3N/mm (4.31kgf/mm)
- Guideline of spring durability 300,000 strokes



### Rear Removal Space



Catalog No.	L
SULNC	1
SULNG	7

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# LONG NOSE CAM

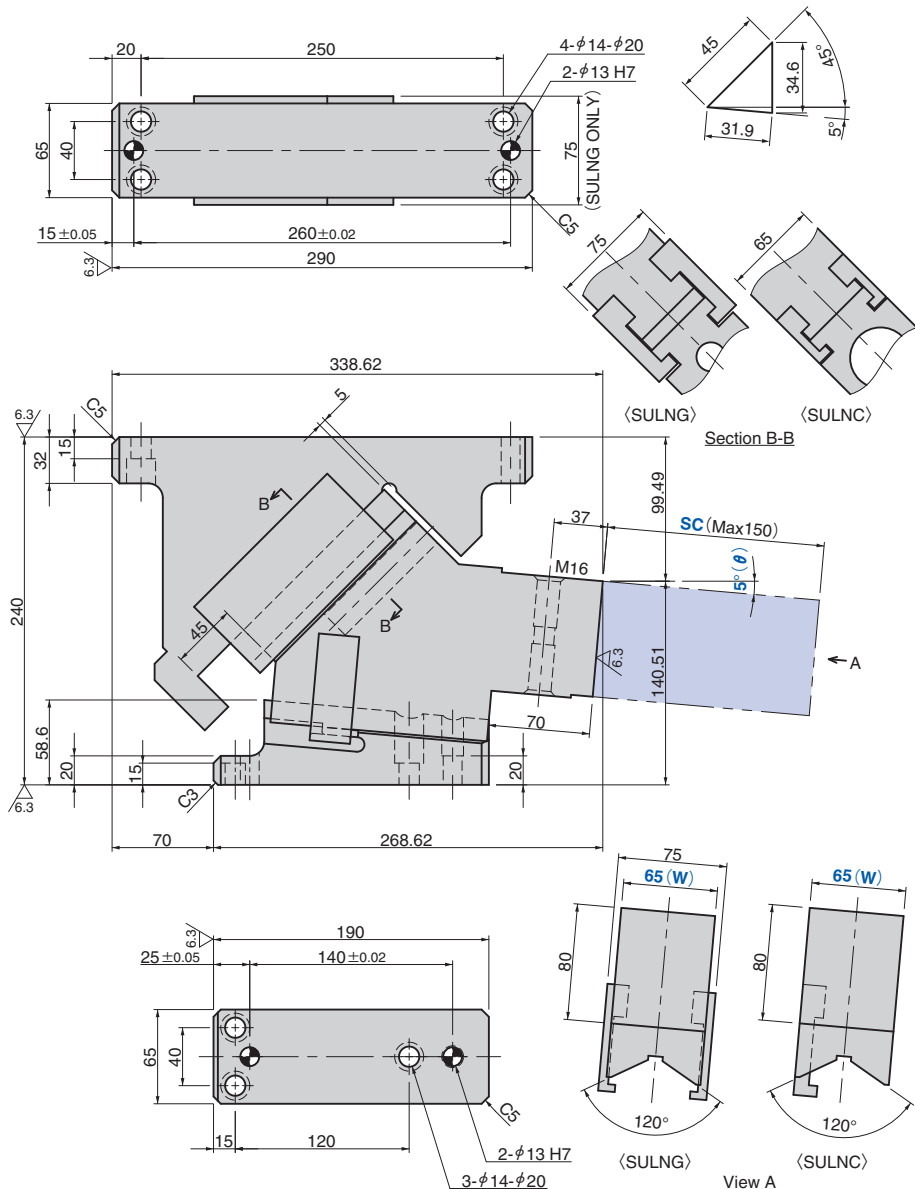
Panel Avoidance Cam

AERIAL CAM UNIT

SULNC65-05  
SULNG65-05

**CAD FILE**

● Cam Diagram



Working Force kN (tonf) 300,000 strokes	Spring Force N (kgf)		Return Force N (kgf)	Total Weight kg*1	Catalog No.	W	θ	Stroke SS	Spring Type PS
	Initial Load	Final Load							
14.7 (1.5)	211.5 (21.6)	2115.0 (215.7)	2872.0 (293.1)	33.2	SULNC	65	05	31.9	No Code (Coil Spring)
-	-	2489.0 (254.0)	3376.2 (344.5)	34.0	SULNG				GK NGK GD NGD

No Code:Coil Spring GK:Gas Spring (KALLER) GD:Gas Spring (DADCO)  
NGK/NGD:Without Gas Spring Parts for spring assembly are included.  
\*1 Weight with SC150 option.

Order	Catalog No.	W	θ	PS	Option
	SULNC	65	05		
	SULNC	65	05		- SC120
	SULNG	65	05	GK	- NF - SC50 - N12

Option	Option Code	Specification
	SC	The mounting surface is extended in the range from 1 to 150 mm in increments of 1 mm.
	N12	Dowel pin holes of cam holder and cam driver are changed to φ12H7.
	NF	Nitrogen gas not charged.

Refer to page 389 for the machining details of tapped holes and dowel pin holes for retainer mounting.

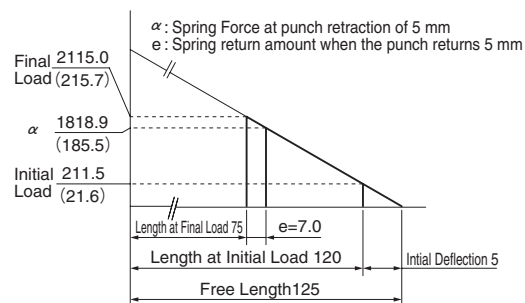
### Spring Specification

No.	PS	Model	Qty	Remark
	No Code	TL40-125	1	Coil Spring
6	GK	X170-50	1	Gas Spring (KALLER)
	GD	U.0175.050.TO.180	1	Gas Spring (DADCO)

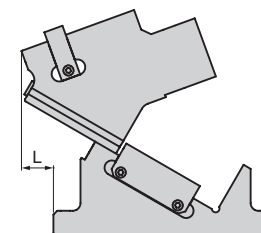
Gas filling pressure is 18 MPa.

### Spring Diagram

- Spring Used TL40-125 (1 piece)
- Spring Constant 42.3N/mm (4.31kgf/mm)
- Guideline of spring durability 300,000 strokes



### Rear Removal Space



Catalog No.	L
SULNC	8
SULNG	17

Refer to page 15-16 for parts list.

**NEW**

# LONG NOSE CAM

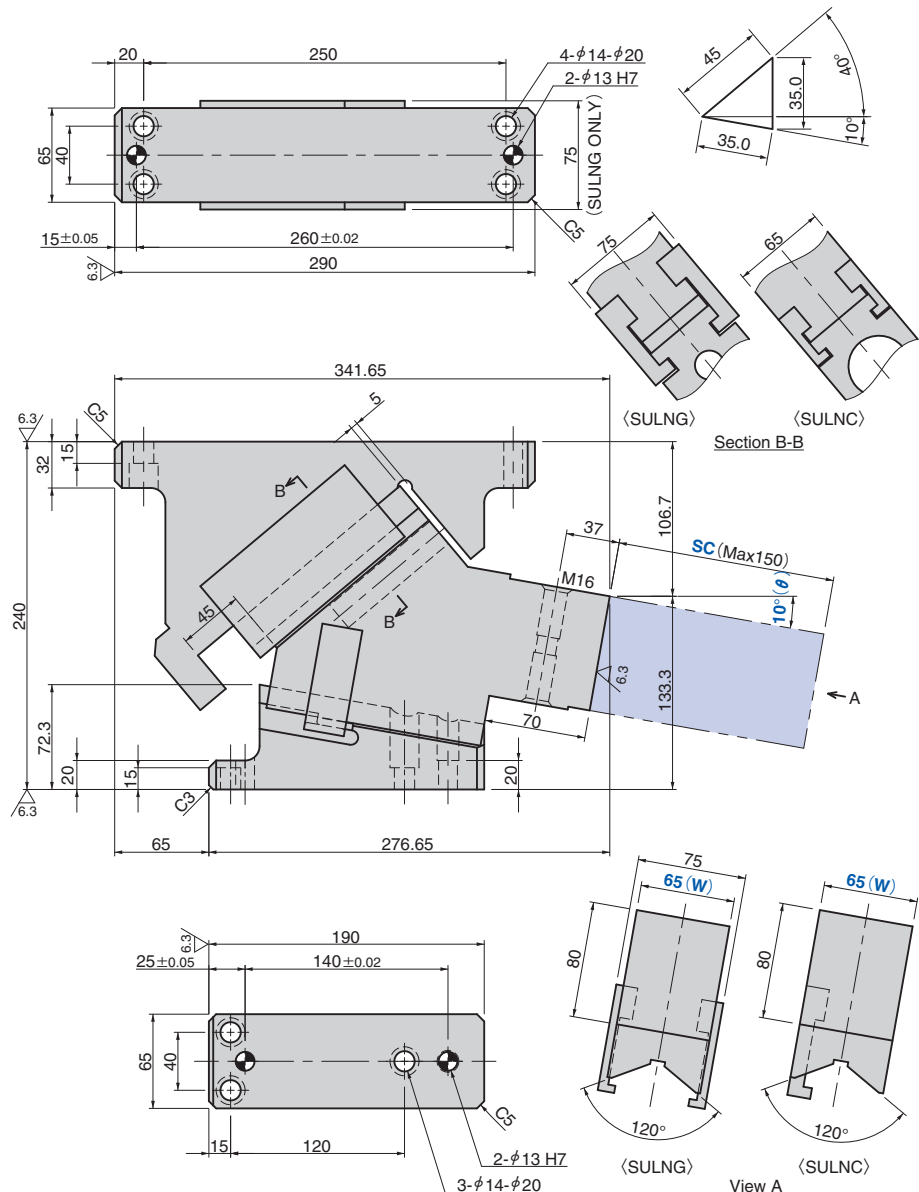
Panel Avoidance Cam

AERIAL CAM UNIT

**SULNC65-10**  
**SULNG65-10**



● Cam Diagram



Working Force kN (tonf) 300,000 strokes	Spring Force N (kgf)		Return Force N (kgf)	Total Weight kg*1	Catalog No.	W	θ	Stroke SS	Spring Type PS
	Initial Load	Final Load							
14.7 (1.5)	211.5 (21.6)	2115.0 (215.7)	2862.0 (292.0)	32.7	<b>SULNC</b>	65	10	35.0	No Code (Coil Spring)
—	—	2489.0 (254.0)	3365.1 (343.4)	33.4	<b>SULNG</b>				GK NGK GD NGD

No Code:Coil Spring GK:Gas Spring (KALLER) GD:Gas Spring (DADCO)  
NGK/NGD:Without Gas Spring Parts for spring assembly are included.  
\*1 Weight with SC150 option.

Order	Catalog No.	W	θ	PS	Option
	<b>SULNC</b>	65	10		
	<b>SULNC</b>	65	10		— SC120
	<b>SULNG</b>	65	10	GK	— NF — SC50 — N12

Option	Option Code	Specification
	<b>SC</b>	The mounting surface is extended in the range from 1 to 150 mm in increments of 1 mm.
	<b>N12</b>	Dowel pin holes of cam holder and cam driver are changed to φ12H7.
	<b>NF</b>	Nitrogen gas not charged.

Refer to page 389 for the machining details of tapped holes and dowel pin holes for retainer mounting.

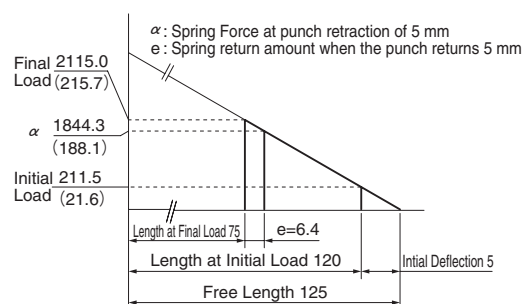
### Spring Specification

No.	PS	Model	Qty	Remark
	No Code	TL40-125	1	Coil Spring
6	GK	X170-50	1	Gas Spring (KALLER)
	GD	U.0175.050.TO.180	1	Gas Spring (DADCO)

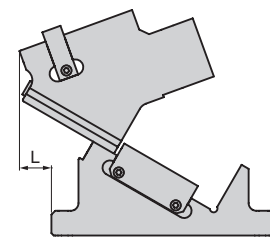
Gas filling pressure is 18 MPa.

### Spring Diagram

- Spring Used TL40-125 (1 piece)
- Spring Constant 42.3N/mm (4.31kgf/mm)
- Guideline of spring durability 300,000 strokes



### Rear Removal Space



Catalog No.	L
SULNC	15
SULNG	25

Refer to page 15-16 for parts list.

Cam Units

**SULNC**  
**SULNG**  
**65**

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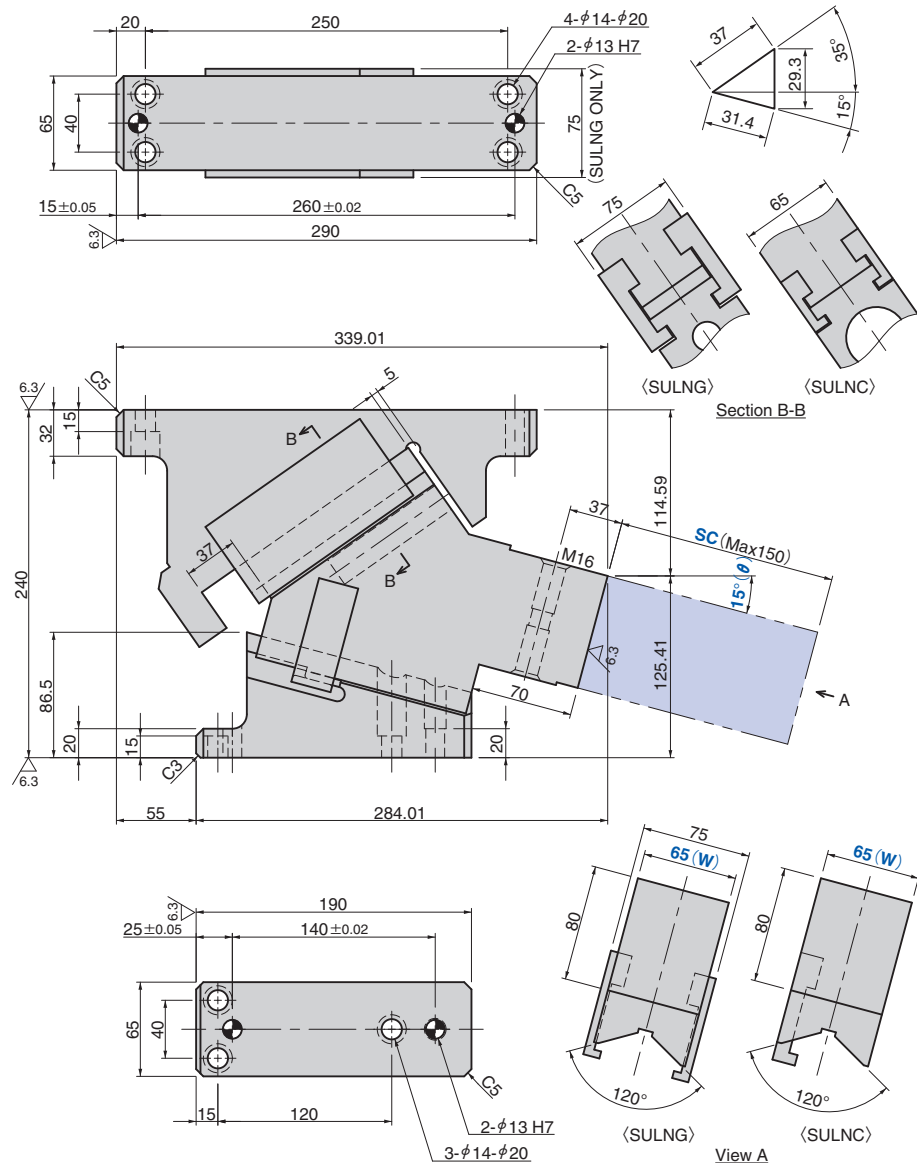
Panel Avoidance Cam

AERIAL CAM UNIT

SULNC65-15  
SULNG65-15



● Cam Diagram



Working Force kN (tonf) 300,000 strokes	Spring Force N (kgf)		Return Force N (kgf)	Total Weight kg*1	Catalog No.	W	θ	Stroke SS	Spring Type PS
	Initial Load	Final Load							
14.7 (1.5)	550.0 (56.1)	2115.0 (215.7)	2851.4 (291.0)	32.1	SULNC	65	15	31.4	No Code (Coil Spring)
—	—	2337.0 (238.5)	3153.0 (321.7)	32.8	SULNG				GK NGK GD NGD

No Code:Coil Spring GK:Gas Spring (KALLER) GD:Gas Spring (DADCO)  
NGK/NGD:Without Gas Spring Parts for spring assembly are included.  
\*1 Weight with SC150 option.



Catalog No.	W	θ	PS	Option
SULNC	65	15		
SULNC	65	15		— SC120
SULNG	65	15	GK	— NF — SC50 — N12



Option Code	Specification
SC	The mounting surface is extended in the range from 1 to 150 mm in increments of 1 mm.
N12	Dowel pin holes of cam holder and cam driver are changed to φ12H7.
NF	Nitrogen gas not charged.

Refer to page 389 for the machining details of tapped holes and dowel pin holes for retainer mounting.

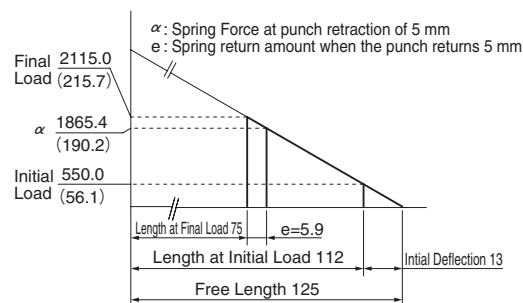
### Spring Specification

No.	PS	Model	Qty	Remark
	No Code	TL40-125	1	Coil Spring
6	GK	X170-50	1	Gas Spring (KALLER)
	GD	U.0175.050.TO.180	1	Gas Spring (DADCO)

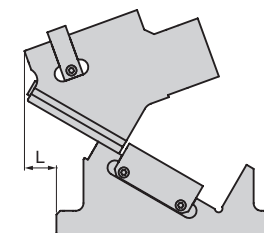
Gas filling pressure is 18 MPa.

### Spring Diagram

- Spring Used TL40-125 (1 piece)
- Spring Constant 42.3N/mm (4.31kgf/mm)
- Guideline of spring durability 300,000 strokes



### Rear Removal Space



Catalog No.	L
SULNC	26
SULNG	32

Refer to page 15-16 for parts list.

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# LONG NOSE CAM

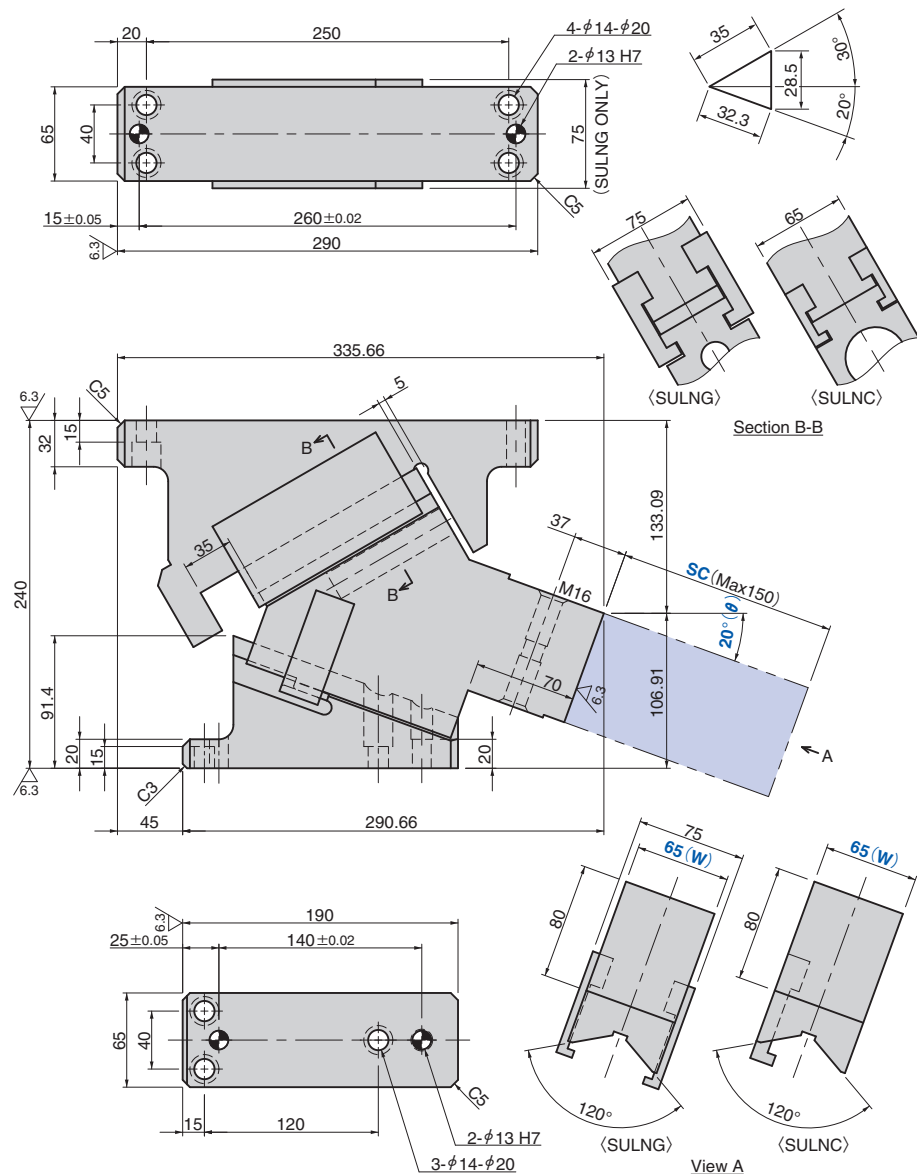
Panel Avoidance Cam

AERIAL CAM UNIT

SULNC65-20  
SULNG65-20



● Cam Diagram



Working Force kN (tonf) 300,000 strokes	Spring Force N (kgf)		Return Force N (kgf)	Total Weight kg*1	Catalog No.	W	θ	Stroke SS	Spring Type PS
	Initial Load	Final Load							
14.7 (1.5)	634.5 (64.7)	2115.0 (215.7)	2840.4 (289.8)	32.1	SULNC	65	20	32.3	No Code (Coil Spring)
	—	2299.0 (234.6)	3090.3 (315.3)	32.8	SULNG				GK NGK GD NGD

No Code:Coil Spring GK:Gas Spring (KALLER) GD:Gas Spring (DADCO)  
NGK/NGD:Without Gas Spring Parts for spring assembly are included.  
\*1 Weight with SC150 option.



Catalog No.	W	θ	PS	Option
SULNC	65	20		
SULNC	65	20		— SC120
SULNG	65	20	GK	— NF — SC50 — N12



Option Code	Specification
SC	The mounting surface is extended in the range from 1 to 150 mm in increments of 1 mm.
N12	Dowel pin holes of cam holder and cam driver are changed to φ12H7.
NF	Nitrogen gas not charged.

Refer to page 389 for the machining details of tapped holes and dowel pin holes for retainer mounting.

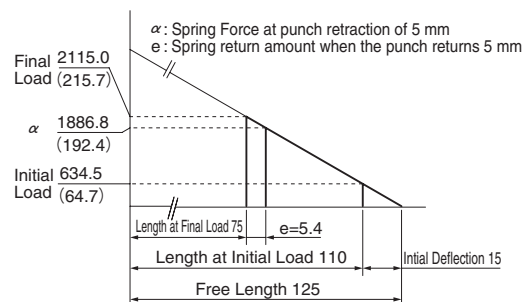
### Spring Specification

No.	PS	Model	Qty	Remark
	No Code	TL40-125	1	Coil Spring
6	GK	X170-50	1	Gas Spring (KALLER)
	GD	U.0175.050.TO.180	1	Gas Spring (DADCO)

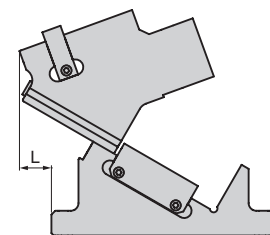
Gas filling pressure is 18 MPa.

### Spring Diagram

- Spring Used TL40-125 (1 piece)
- Spring Constant 42.3N/mm (4.31kgf/mm)
- Guideline of spring durability 300,000 strokes



### Rear Removal Space



Catalog No.	L
SULNC	37
SULNG	37

Refer to page 15-16 for parts list.

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# LONG NOSE CAM

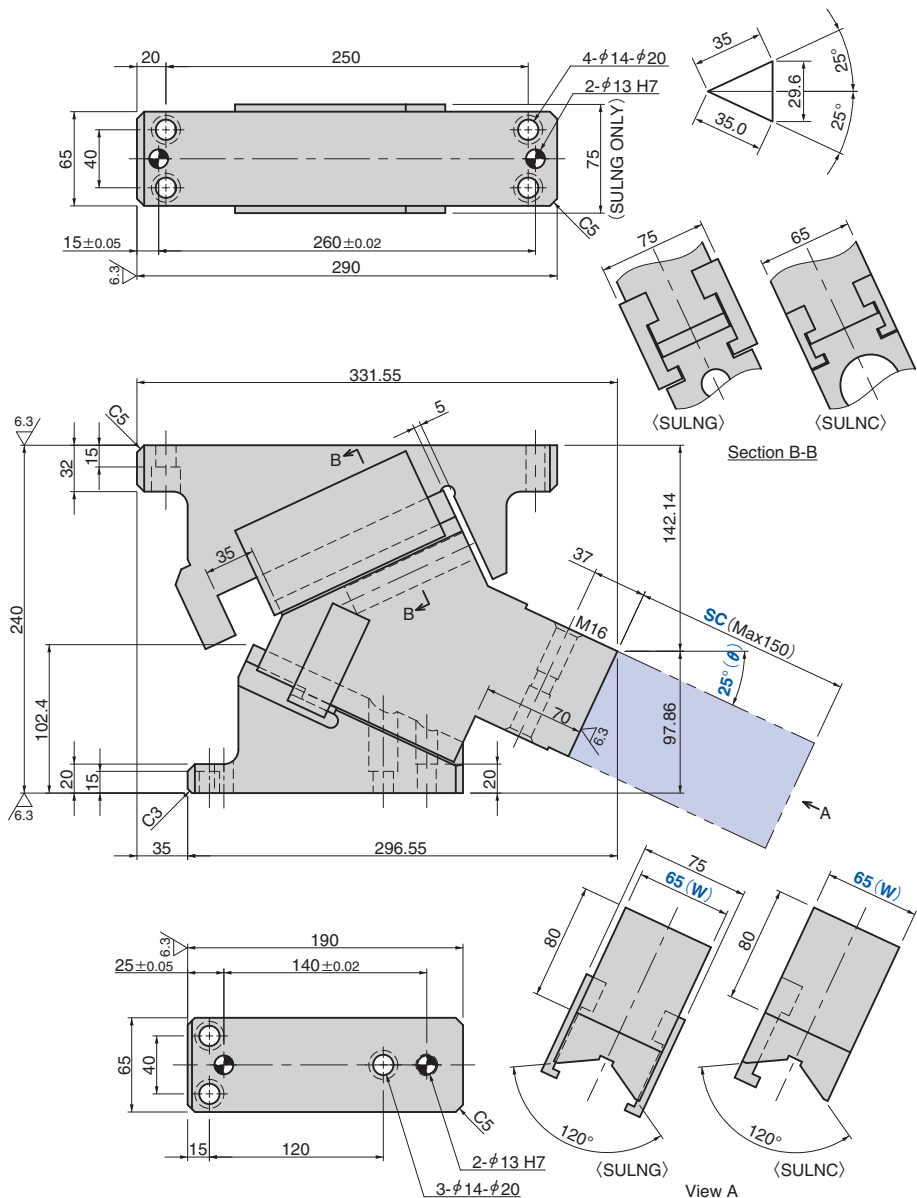
Panel Avoidance Cam

AERIAL CAM UNIT

SULNC65-25  
SULNG65-25



● Cam Diagram



Refer to page 15-16 for parts list.

Working Force kN (tonf) 300,000 strokes	Spring Force N (kgf)		Return Force N (kgf)	Total Weight kg*1	Catalog No.	W	θ	Stroke SS	Spring Type PS
	Initial Load	Final Load							
14.7 (1.5)	634.5 (64.7)	2115.0 (215.7)	2829.0 (288.7)	31.8	SULNC	65	25	35.0	No Code (Coil Spring)
	—	2299.0 (234.6)	3077.7 (314.1)	32.6	SULNG				GK NGK GD NGD

No Code:Coil Spring GK:Gas Spring (KALLER) GD:Gas Spring (DADCO)  
NGK/NGD:Without Gas Spring Parts for spring assembly are included.  
\*1 Weight with SC150 option.



Catalog No.	W	θ	PS	Option
SULNC	65	25		
SULNC	65	25		— SC120
SULNG	65	25	GK	— NF — SC50 — N12



Option Code	Specification
SC	The mounting surface is extended in the range from 1 to 150 mm in increments of 1 mm.
N12	Dowel pin holes of cam holder and cam driver are changed to φ12H7.
NF	Nitrogen gas not charged.

Refer to page 389 for the machining details of tapped holes and dowel pin holes for retainer mounting.

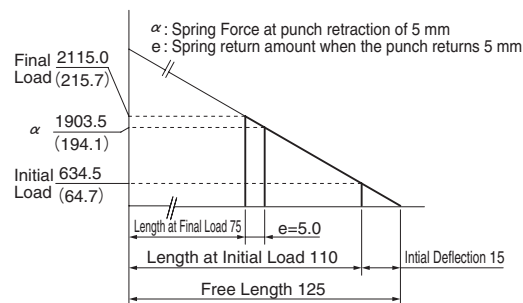
### Spring Specification

No.	PS	Model	Qty	Remark
	No Code	TL40-125	1	Coil Spring
6	GK	X170-50	1	Gas Spring (KALLER)
	GD	U.0175.050.TO.180	1	Gas Spring (DADCO)

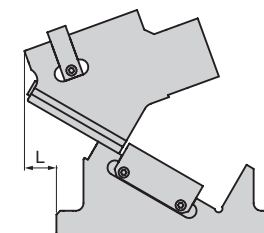
Gas filling pressure is 18 MPa.

### Spring Diagram

- Spring Used TL40-125 (1 piece)
- Spring Constant 42.3N/mm (4.31kgf/mm)
- Guideline of spring durability 300,000 strokes



### Rear Removal Space



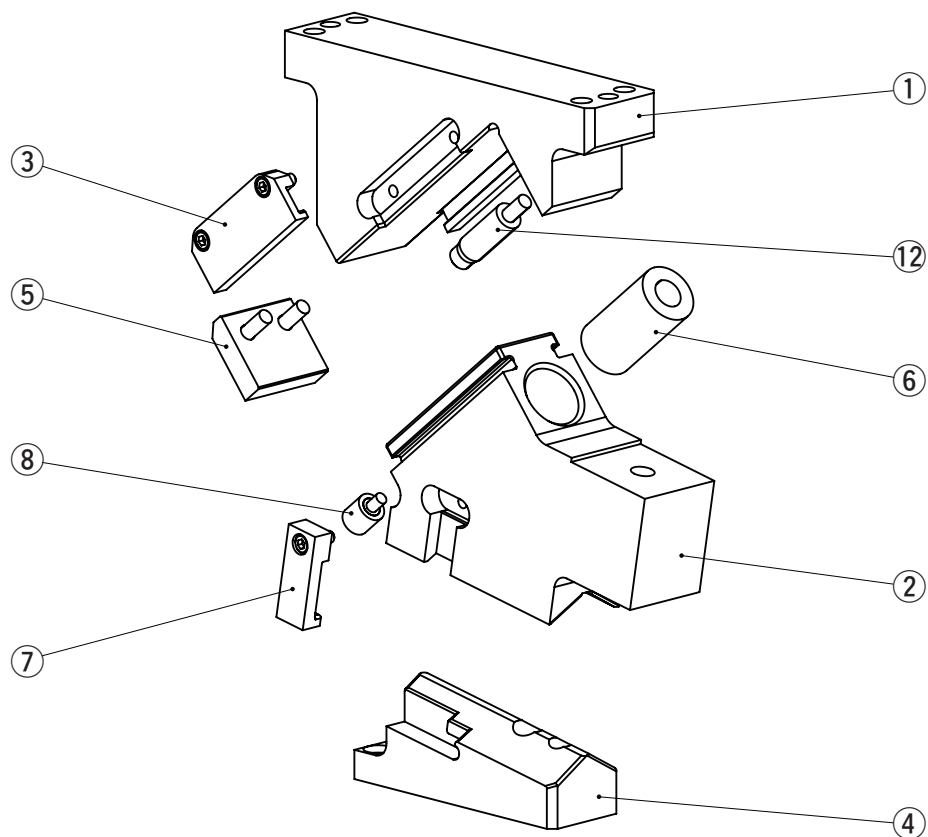
Catalog No.	L
SULNC	49
SULNG	49

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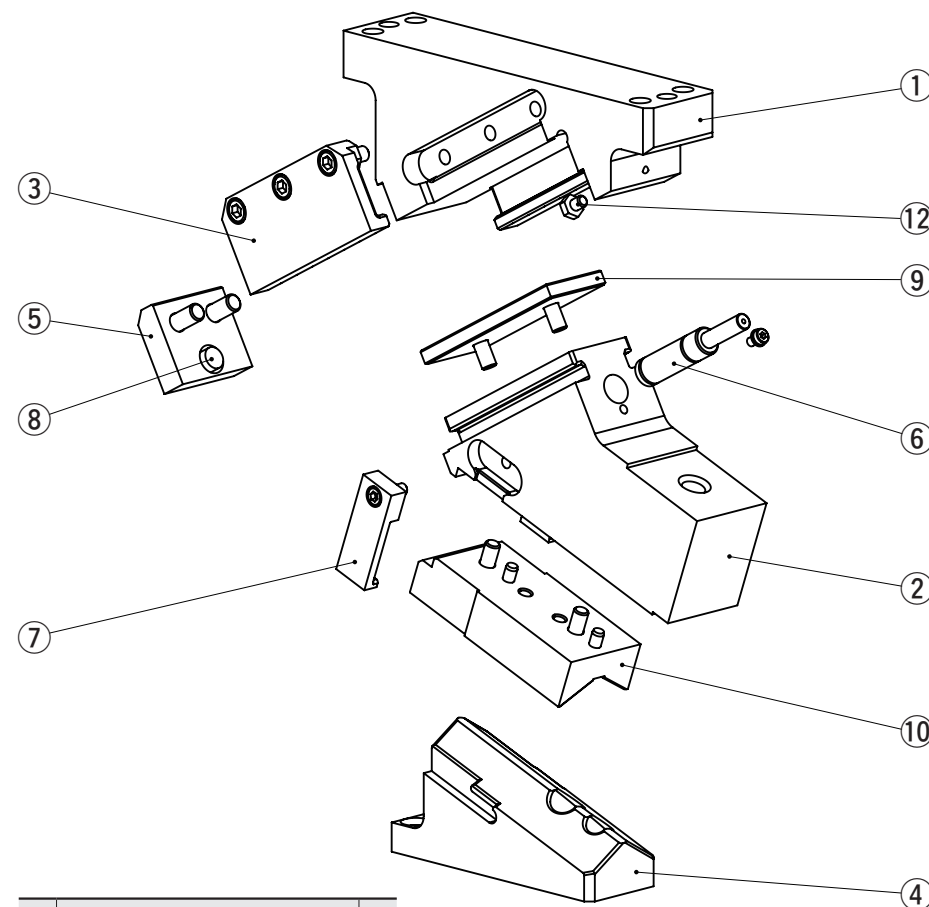
## Panel Avoidance Cam

### AERIAL CAM UNIT

**SULNC65**

No.	Description	Qty
1	Cam Holder	1
2	Cam Slider	1
3	Slide Keeper	2
4	Cam Driver	1
5	Stopper Plate	1
6	Coil Spring	1
7	Positive Return Follower	1
8	Stopper	1
12	Spring Guide Pin	1

Bolts, nuts, dowel pins and washers for assembly are not indicated.

**SULNG65**

No.	Description	Qty
1	Cam Holder	1
2	Cam Slider	1
3	Slide Keeper	2
4	Cam Driver	1
5	Stopper Plate	1
6	Gas Spring	1
7	Positive Return Follower	2
8	Stopper	1
9	Slide Plate	1
10	Cam Slide Guide	1
12	Stop Pin	1

Bolts, nuts, dowel pins and washers for assembly are not indicated.



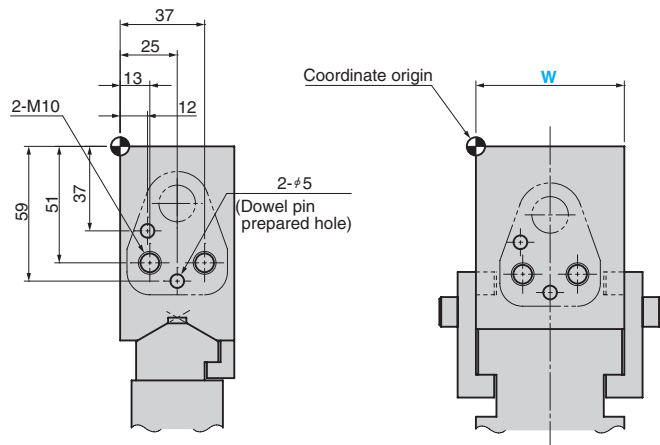
# General Description of Additional Machining

## AERIAL CAM UNIT OPTION

### ■ Tapped Hole and Dowel Pin Hole (Prepared Hole, Finish) Machining for Retainer Mounting

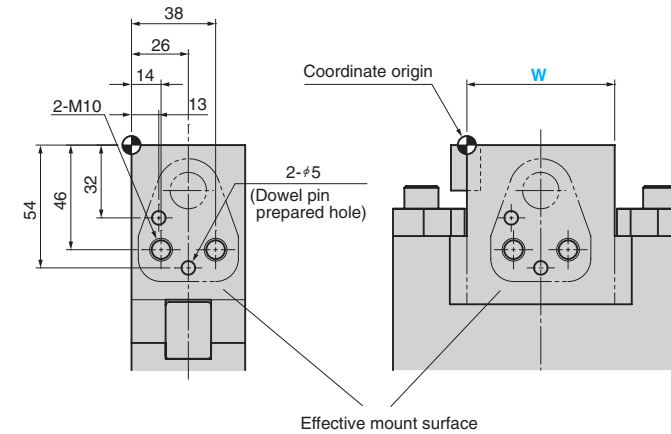
- Instruction method for machining
  - Indicate the tapped hole diameter and the dowel pin hole (or prepared hole) diameter with the XY coordinates.
- To indicate the coordinates
  - The origin is positioned at the upper left corner of the mount surface. (However, machining uses our machining datum as the reference.)
  - Indication symbol
  - M...Tapped hole, K...Dowel pin prepared hole, N...Dowel pin finish hole
- Machining standard
  - Tapped holes and dowel pin prepared holes are machined to general tolerances.
  - The hole depth is 2.5 times the diameter for both tapped holes and dowel holes. The dowel pilot hole is processed for 2 times the diameter.
  - The dowel pin hole spacing is machined to the tolerance of  $\pm 0.02$ . The hole tolerance is H7.

(Example of aerial cam)



Order	Catalog No.	W	$\theta$	Additional Machining
	SACE	52	00	- M10 - X(13.0) - Y(-51.0) - M10 - X(37.0) - Y(-51.0) - K5.0 - X(12.0) - Y(-37.0) - K5.0 - X(25.0) - Y(-59.0)

(Example of die mounted cam unit)



Order	Catalog No.	W	$\theta$	S	Additional Machining
	CMSD	52	00	55	- M10 - X(14.0) - Y(-46.0) - M10 - X(38.0) - Y(-46.0) - K5.0 - X(13.0) - Y(-32.0) - K5.0 - X(26.0) - Y(-54.0)

### ■ Other machining

Please give instructions on a separate drawing for drilling or cutting other than tapped holes and dowel holes.