## **Aerial Cam Unit General Description of SACE**

**WORKING FORCE 3-TON TYPE** 



•The standard working force (one million strokes) achieved 29.4 kN with the mounting width of 52 mm.

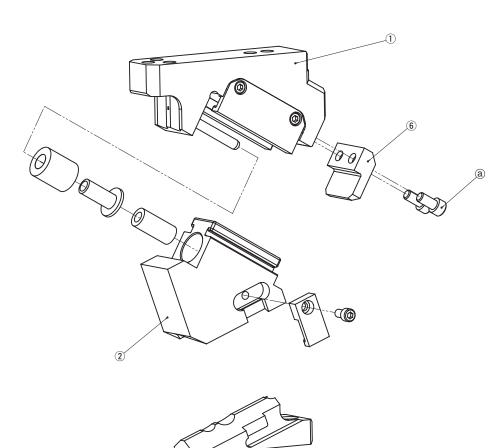
The allowable working force (300,000 strokes) is 58.8 kN.

- •A spring force just under 10% of the working force is attained, which is optimum for high tensile strength steel sheets and thick plate piercing.
- V-shaped guide.
- •Available angle is 0°to 60°at increments of 5°
- Durability of the coil spring improved compared to old SACD model (rated up to 1 million strokes).

#### **■ SACE Specifications**

Mounting	Surface			Working Fo	rce kN(tonf)	
w	н	Working Angle	Travel	Standard Working Force (one million strokes)	Allowable Working Force (300,000 strokes)	Spring Force N(kgf)
		00	30.2			
		05	33.4			
		10	36.6			
		15	39.9			
		20	43.3			
		25	47.0			
52	75	30	51.0	29.4 (3.0)	58.8 (6.0)	1425.5 (145.5)
		35	55.4	(3.0)	(0.0)	(145.5)
		40	60.4			
		45	66.2			
		50	73.1			
		55	64.5			
		60	54.0			

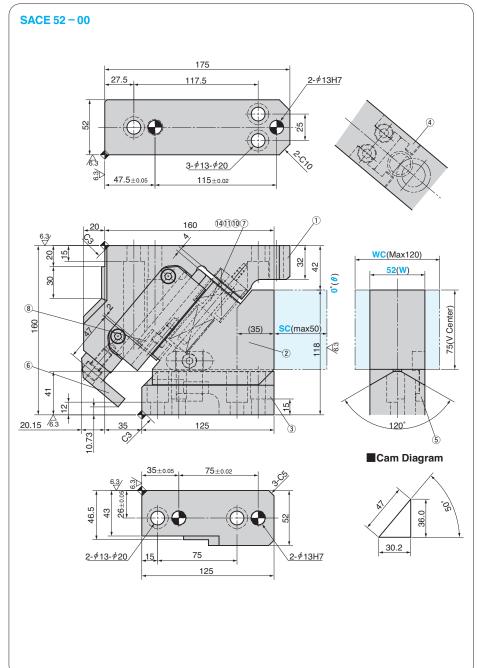
#### ■SACE Structure and Assembly / Disassembly



- Disassembly method of SACE52
- 1) Remove hexagon socket head bolt (a), and remove stopper plate (6).
- 2) Pull and remove cam slider (2) from cam holder (1) to the rear.
- Assembly method of SACE52
- 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.

**WORKING FORCE 3-TON TYPE** 





	Working Fo	Spring Fo	pring Force N(kgf)		Total				
Travel S	Standard Working Force (one million strokes)			Final Load	Return Force N(kgf)	Weight kg	Catalog No.	W	θ
30.2	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1913 (195.2)	8.8	SACE	52	00



Catalog No. W – θ

SACE 52 – 00



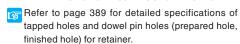
Option Code	Specification					
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).					
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).					
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7					

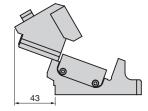
 ↑ Determine the pierce center position in the range of the cam width.



SACE52 - 00 - SC40 - N12 SACE52 - 00 - WC120

SACE52 - 00 - WC120 SACE52 - 00 - SC40 - WC120 - N12





**■**Space for removing

#### ■ Table of Components

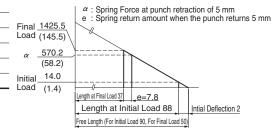
	lable of Components									
No.	Description	Qty	Material and Remark							
1	Cam Holder	1	FCD550							
2	Cam Slider	1	FCD550 with Graphite							
3	Cam Driver	1	SF700							
4	Slide Keeper	2	S45C with Graphite							
(5)	Positive Return Follower	1	Bronze							
<b>6</b>	Stopper Plate	1	S45C(1045)							
7	Spring Guide Pin	1	S45C(1045)							
8	Stopper	1	Urethane							
10	Coil Spring	1	TF20-90							
11)	Coil Spring	1	TM30-50							
14)	Spring Guide Bush	1	Bronze							

Bolts for assembly are not indicated.

#### **■** Spring Diagram

<ul> <li>Spring Used</li> </ul>	For Initial Load	TF20-90(1 piece)
		7.01N/mm(0.72kgf/mm)
	For Final Load	TM30-50(1 piece)
		109.65N/mm(11.18kgf/mm)

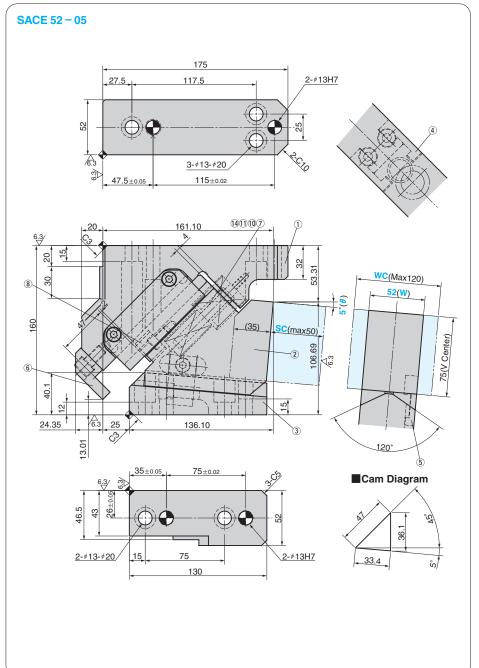
• Guideline of spring durability TF20-90 1,000,000 strokes TM30-50 1,000,000 strokes



SACE 52

**WORKING FORCE 3-TON TYPE** 





	Working Force kN(tonf) Spring F			orce N(kgf) Return		Total			
Travel S	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
33.4	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1910 (194.9)	8.6	SACE	52	05



Catalog No. W - θ
SACE 52 - 05



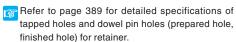
Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7

 ↑ Determine the pierce center position in the range of the cam width.

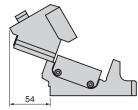


SACE52 - 05 - SC40 - N12 SACE52 - 05 - WC120

SACE52 - 05 - SC40 - WC120 - N12



#### ■Space for removing



#### ■ Table of Components

	Description Qtv Material and Remark								
Description	Qty	Material and Remark							
Cam Holder	1	FCD550							
Cam Slider	1	FCD550 with Graphite							
Cam Driver	1	SF700							
Slide Keeper	2	S45C with Graphite							
Positive Return Follower	1	Bronze							
Stopper Plate	1	S45C(1045)							
Spring Guide Pin	1	S45C(1045)							
Stopper	1	Urethane							
Coil Spring	1	TF20-90							
Coil Spring	1	TM30-50							
Spring Guide Bush	1	Bronze							
	Cam Slider Cam Driver Slide Keeper Positive Return Follower Stopper Plate Spring Guide Pin Stopper Coil Spring Coil Spring	Cam Slider         1           Cam Driver         1           Slide Keeper         2           Positive Return Follower         1           Stopper Plate         1           Spring Guide Pin         1           Stopper         1           Coil Spring         1           Coil Spring         1							

Bolts for assembly are not indicated.

#### **■** Spring Diagram

<ul><li>Spring Used</li></ul>	For Initial Load	TF20-90(1 piece)
		7.01N/mm(0.72kgf/mm)
	For Final Load	TM30-50(1 piece)
		109.65N/mm(11.18kgf/mm)
<ul> <li>Guideline of spi</li> </ul>	ring durability	TF20-90 1,000,000 strokes

TM30-50 1,000,000 strokes

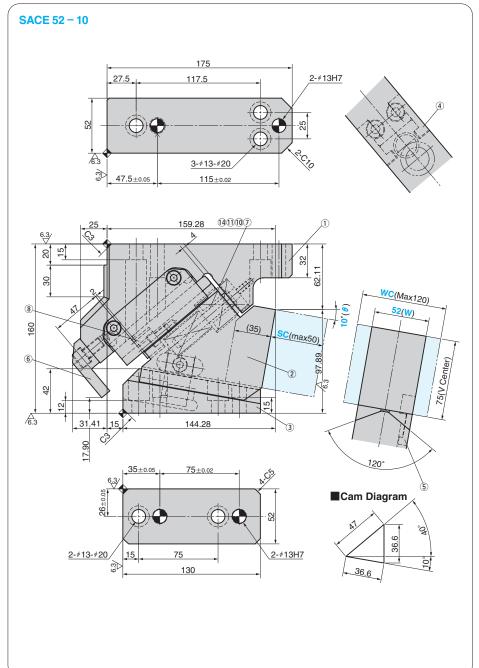
a : Spring Force at punch retraction of 5 mm
e : Spring return amount when the punch returns 5 mm



SACE 52

**WORKING FORCE 3-TON TYPE** 





	Working Force kN(tonf) Spring Force N			rce N(kgf)	Return Total				
Travel S	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
36.6	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1906 (194.5)	8.7	SACE	52	10



Catalog No. SACE



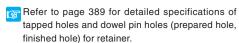
Option Specification					
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).				
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).				
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7				

⚠ Determine the pierce center position in the range of the cam width.

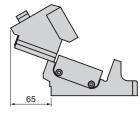


**SACE52 - 10 - SC40 - N12** SACE52-10 - WC120

SACE52-10 - SC40-WC120-N12



#### **■**Space for removing



#### ■ Table of Components

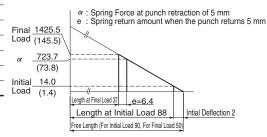
No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
<b>(5</b> )	Positive Return Follower	1	Bronze
<b>6</b>	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

↑ Bolts for assembly are not indicated.

#### **■** Spring Diagram

<ul><li>Spring Used</li></ul>	For Initial Load	TF20-90(1 piece)
		7.01N/mm(0.72kgf/mm)
	For Final Load	TM30-50(1 piece)
		109.65N/mm(11.18kgf/mm)

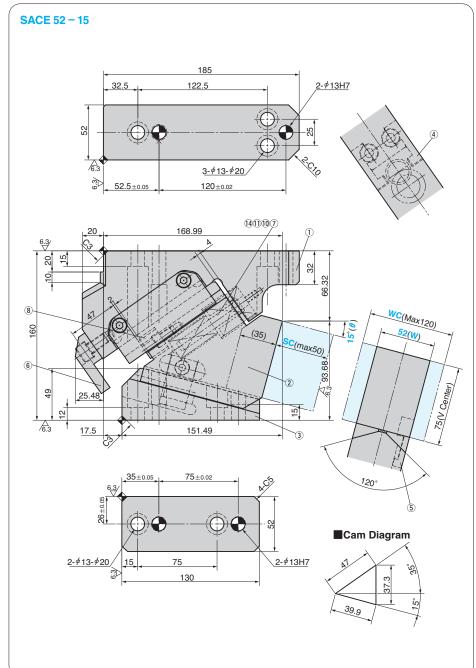
 Guideline of spring durability TF20-90 1,000,000 strokes TM30-50 1,000,000 strokes



SACE 52

**WORKING FORCE 3-TON TYPE** 





	Working Force kN(tonf)		Spring Force N(kgf)		Return	Total			
Travel S	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
39.9	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1903 (194.2)	8.7	SACE	52	15

15



Catalog No. W SACE 52

Option

Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to ∮12H7

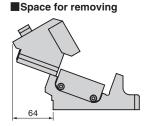
 ↑ Determine the pierce center position in the range of the cam width.



SACE52 - 15 - SC40 - N12 SACE52 - 15 - WC120

SACE52 - 15 - SC40 - WC120 - N12

Refer to page 389 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finished hole) for retainer.



#### **■** Table of Components

No.	Description	Qty	Material and Remark
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
6	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

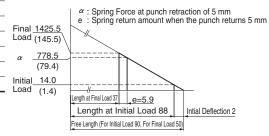
Bolts for assembly are not indicated.

#### **■** Spring Diagram

• Spring Used For Initial Load TF20-90(1 piece)
7.01N/mm(0.72kgf/mm)
For Final Load TM30-50(1 piece)

• Guideline of spring durability TF20-90 1,000,000 strokes

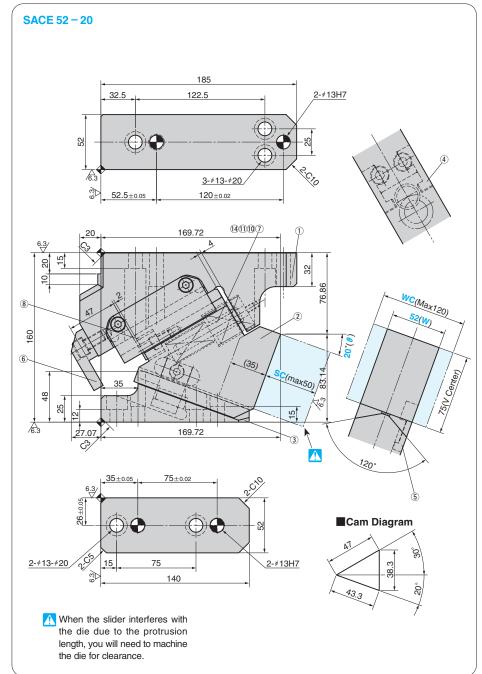
TM30-50 1,000,000 strokes



SACE 52

**WORKING FORCE 3-TON TYPE** 





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	Working Fo	rce kN(tonf)	Spring Force N(kgf)		Return	Total			
Travel S	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
43.3	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1899 (193.8)	8.9	SACE	52	20



Catalog No. SACE



Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7

Determine the pierce center position in the range of the cam width.

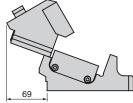


**SACE52 - 20 - SC40 - N12** SACE52 - 20 - WC120

SACE52-20 - SC40-WC120-N12

Refer to page 389 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finished hole) for retainer.

# **■**Space for removing



#### ■ Table of Components

	able of Componen	ιo	
No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
<b>6</b>	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze
_			

Bolts for assembly are not indicated.

#### **■** Spring Diagram

• Spring Used For Initial Load TF20-90(1 piece) 7.01N/mm(0.72kgf/mm) For Final Load TM30-50(1 piece)

109.65N/mm(11.18kgf/mm)

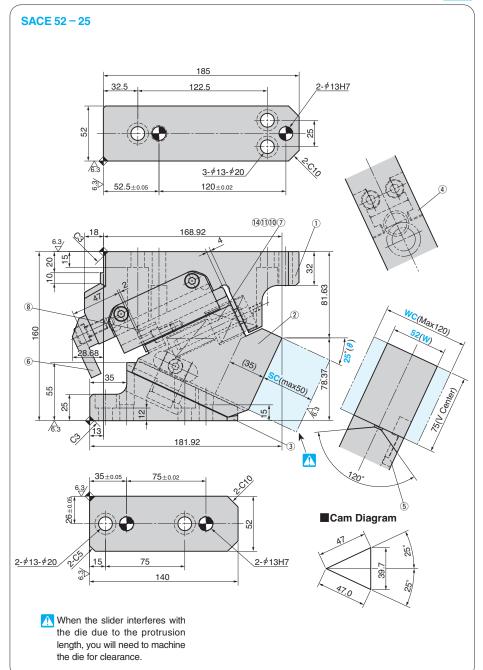
TF20-90 1,000,000 strokes Guideline of spring durability TM30-50 1,000,000 strokes

α: Spring Force at punch retraction of 5 mm
e: Spring return amount when the punch returns 5 mm Final 1425.5 Load (145.5) 833.3 (85.0)Initial 14.0 Load (1.4) Length at Final Load 37 \_ e=5.4 Length at Initial Load 88 Intial Deflection 2 Free Length (For Initial Load 90, For Final Load 50)

> SACE 52

**WORKING FORCE 3-TON TYPE** 

CAD FILE



	Working Force kN(tonf) Spring			rce N(kgf) Return		Total			
	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
47.0	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1895 (193.4)	8.8	SACE	52	25



Catalog No. SACE



Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7

Determine the pierce center position in the range of the cam width.

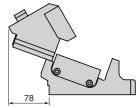


**SACE52 - 25 - SC40 - N12** SACE52 - 25 - WC120

SACE52 - 25 - SC40 - WC120 - N12

Refer to page 389 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finished hole) for retainer.

### **■**Space for removing



#### ■ Table of Components

No.	Description	Qty	Material and Remark
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
6	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

Bolts for assembly are not indicated.

#### **■** Spring Diagram

• Spring Used For Initial Load TF20-90(1 piece) 7.01N/mm(0.72kgf/mm) For Final Load TM30-50(1 piece)

109.65N/mm(11.18kgf/mm)

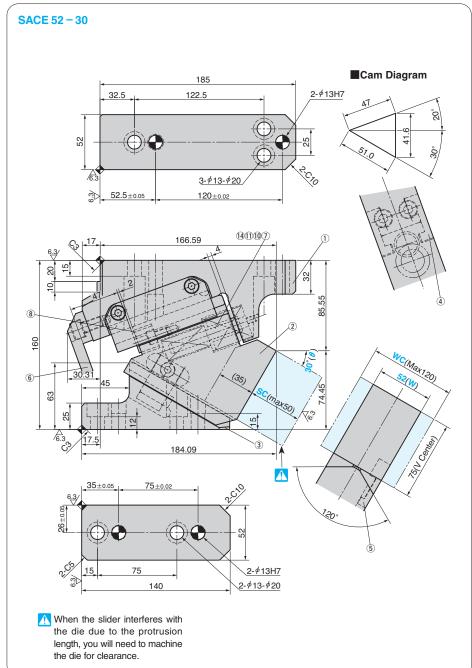
TF20-90 1,000,000 strokes Guideline of spring durability TM30-50 1,000,000 strokes

α: Spring Force at punch retraction of 5 mm
e: Spring return amount when the punch returns 5 mm Final 1425.5 Load (145.5) 877.2 (89.5)Initial 14.0 Load (1.4) ngth at Final Load 37 Length at Initial Load 88 Intial Deflection 2 Free Length (For Initial Load 90, For Final Load 50)

> SACE 52

**WORKING FORCE 3-TON TYPE** 





	Working Force kN(tonf) Spring Force N(kgf)			Return	Total				
Travel S		Allowable Working Force (300,000 strokes)		Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
51.0	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1891 (193.0)	8.6	SACE	52	30



Catalog No. SACE



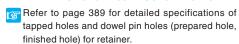
Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7

Determine the pierce center position in the range of the cam width.

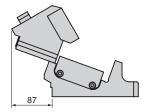


SACE52 - 30 - SC40 - N12 SACE52-30 - WC120

SACE52 - 30 - SC40 - WC120 - N12



#### **■**Space for removing



#### ■ Table of Components

	able of Componen	LS	
No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
6	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze
$\overline{}$			

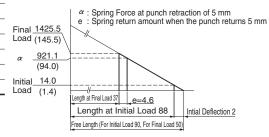
Bolts for assembly are not indicated.

#### **■** Spring Diagram

<ul> <li>Spring Used</li> </ul>	For Initial Load	TF20-90(1 piece)		
		7.01N/mm(0.72kgf/mm)		
	For Final Load	TM30-50(1 piece)		
		109.65N/mm(11.18kgf/mm)		

TF20-90 1,000,000 strokes Guideline of spring durability

TM30-50 1,000,000 strokes

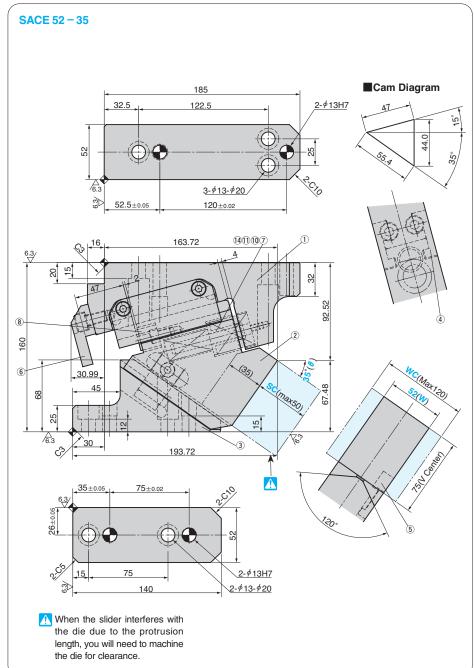


SACE

52

**WORKING FORCE 3-TON TYPE** 





	Working Force kN(tonf) Spring For			rce N(kgf)	Return	Total			
	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
55.4	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1887 (192.6)	8.8	SACE	52	35



Catalog No. SACE



Option Code	Specification					
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).					
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).					
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7					

Determine the pierce center position in the range of the cam width.

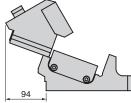


**SACE52 - 35 - SC40 - N12** SACE52 - 35 - WC120

SACE52 - 35 - SC40 - WC120 - N12



# **■**Space for removing



#### ■ Table of Components

No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
<b>6</b>	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

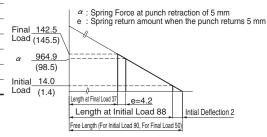
Bolts for assembly are not indicated.

#### **■** Spring Diagram

 Spring Used For Initial Load TF20-90(1 piece) 7.01N/mm(0.72kgf/mm) For Final Load TM30-50(1 piece)

109.65N/mm(11.18kgf/mm)

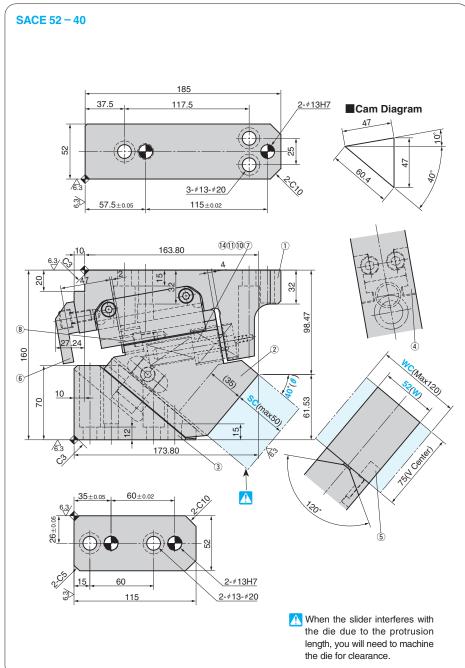
TF20-90 1,000,000 strokes Guideline of spring durability TM30-50 1,000,000 strokes



SACE 52

**WORKING FORCE 3-TON TYPE** 





	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
60.4	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1883 (192.2)	8.9	SACE	52	40



Catalog No. W – θ
SACE 52 – 40



Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7

 ↑ Determine the pierce center position in the range of the cam width.

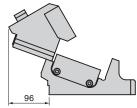


SACE52 - 40 - SC40 - N12 SACE52 - 40 - WC120

SACE52 - 40 - SC40 - WC120 - N12

Refer to page 389 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finished hole) for retainer.

### ■Space for removing



#### ■ Table of Components

No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
6	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

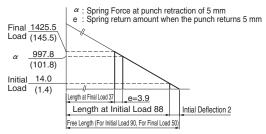
Bolts for assembly are not indicated.

#### **■** Spring Diagram

• Spring Used For Initial Load TF20-90(1 piece)
7.01N/mm(0.72kgf/mm)
For Final Load TM30-50(1 piece)

109.65N/mm(11.18kgf/mm)

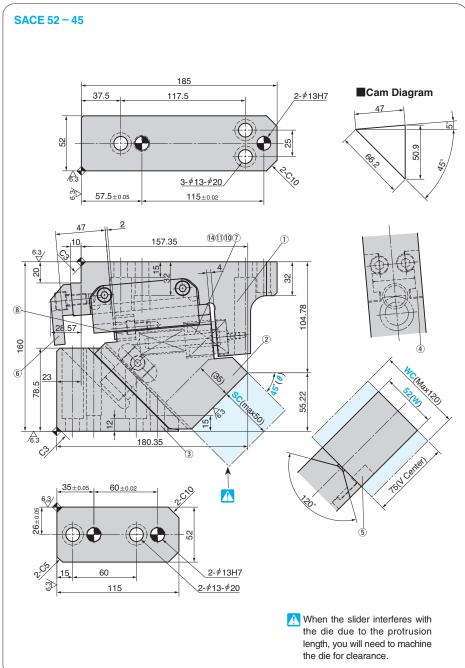
• Guideline of spring durability TF20-90 1,000,000 strokes TM30-50 1,000,000 strokes



SACE 52

**WORKING FORCE 3-TON TYPE** 





	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
66.2	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1897 (191.7)	9.1	SACE	52	45



Catalog No. θ 45 SACE



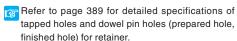
Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7

Determine the pierce center position in the range of the cam width.

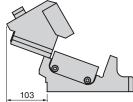


**SACE52 - 45 - SC40 - N12** SACE52-45 - WC120

SACE52-45 - SC40-WC120-N12



### **■**Space for removing



#### ■ Table of Components

No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
<b>(5</b> )	Positive Return Follower	1	Bronze
<b>6</b>	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

Bolts for assembly are not indicated.

#### **■** Spring Diagram

• Spring Used For Initial Load TF20-90(1 piece) 7.01N/mm(0.72kgf/mm) For Final Load TM30-50(1 piece)

109.65N/mm(11.18kgf/mm)

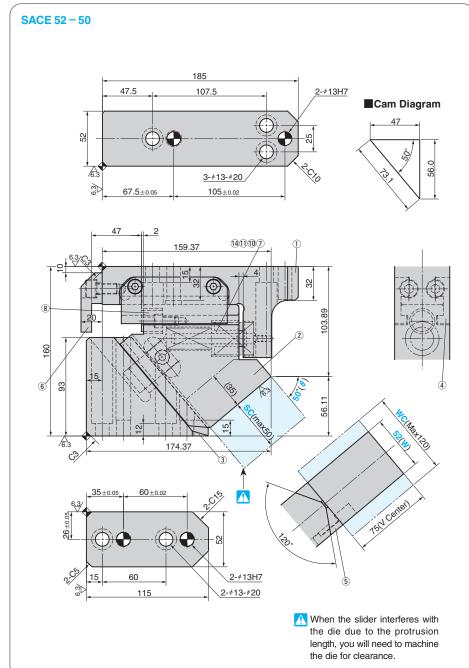
TF20-90 1,000,000 strokes Guideline of spring durability TM30-50 1,000,000 strokes

α: Spring Force at punch retraction of 5 mm
e: Spring return amount when the punch returns 5 mm Final 1425.5 Load (145.5) 1041.7 (106.3)Initial 14.0 Load (1.4) ength at Final Load 37 Length at Initial Load 88 Intial Deflection 2 Free Length (For Initial Load 90, For Final Load 50)

SACE

**WORKING FORCE 3-TON TYPE** 





	Working Force kN(tonf) Spring Force N			rce N(kgf)	Return Total				
	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
73.1	29.4 (3.0)	58.8 (6.0)	14.0 (1.4)	1425.5 (145.5)	1875 (191.3)	8.8	SACE	52	50



Catalog No. SACE

50



Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to ∮12H7

Determine the pierce center position in the range of the cam width.

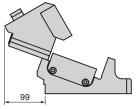


**SACE52-50 - SC40-N12** SACE52-50 - WC120

SACE52-50 - SC40-WC120-N12

Refer to page 389 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finished hole) for retainer.

### **■**Space for removing



#### ■ Table of Components

No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
<b>6</b>	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-90
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

Bolts for assembly are not indicated.

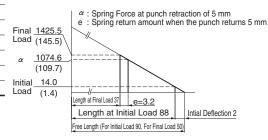
#### **■** Spring Diagram

• Spring Used For Initial Load TF20-90(1 piece) 7.01N/mm(0.72kgf/mm) For Final Load TM30-50(1 piece)

109.65N/mm(11.18kgf/mm)

TF20-90 1,000,000 strokes Guideline of spring durability

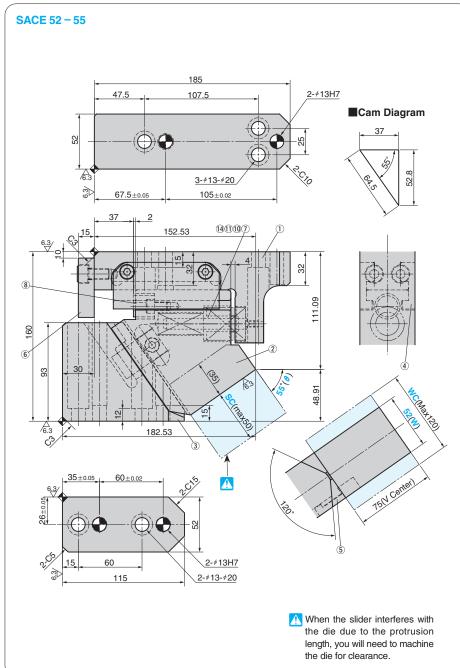
TM30-50 1,000,000 strokes



SACE 52

**WORKING FORCE 3-TON TYPE** 





		Working Force kN(tonf) Spring Force N(kgf)			Return Total	Total			
Travel S	Working Force	Allowable Working Force (300,000 strokes)		Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
64.5	29.4 (3.0)	58.8 (6.0)	36.1 (3.7)	1425.5 (145.5)	2040 (208.1)	8.9	SACE	52	55



Catalog No. W – SACE 52 –



Option Code	Specification
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7

 ↑ Determine the pierce center position in the range of the cam width.



**■** Table of Components

SACE52 - 55 - SC40 - N12 SACE52 - 55 - WC120

SACE52-55 - SC40-WC120-N12

Refer to page 389 for detailed specifications of tapped holes and dowel pin holes (prepared hole, finished hole) for retainer.

99

**■**Space for removing

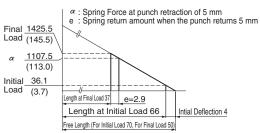


No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
6	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-70
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

⚠ Bolts for assembly are not indicated.

• Spring Used For Initial Load TF20-70(1 piece) 9.02N/mm(0.92kgf/mm)
For Final Load TM30-50(1 piece) 109.65N/mm(11.18kgf/mm)
• Guideline of spring durability TF20-70 1,000,000 strokes

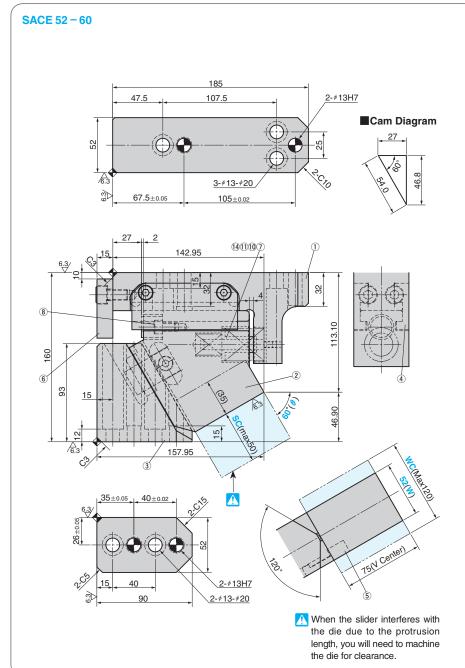
TM30-50 1,000,000 strokes



SACE 52

**WORKING FORCE 3-TON TYPE** 





	Working Force kN(tonf) Spring Force N(kgf)			Return	eturn Total				
Travel S	Standard Working Force (one million strokes)			Final Load	Force N(kgf)	Weight kg	Catalog No.	W	θ
54.0	29.4 (3.0)	58.8 (6.0)	75.7 (7.7)	1425.5 (145.5)	2255 (230.1)	8.5	SACE	52	60



Catalog No. W - SACE 52 -



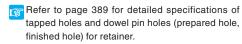
Option Code	Specification					
SC	The mount surface is extended in the range from 1 to 50 mm (in the increments of 1 mm).					
wc	The mounting surface width (W) is changed within the range 53 mm - 120 mm (1 mm increments).					
N12	Dowel Pin holes of cam holder and cam driver are changed to \$\phi\$12H7					

 ↑ Determine the pierce center position in the range of the cam width.

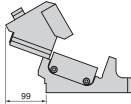


SACE52 - 60 - SC40 - N12 SACE52 - 60 - WC120

SACE52 - 60 - SC40 - WC120 - N12



### ■Space for removing



#### ■ Table of Components

No.	Description	Qty	<b>Material and Remark</b>
1	Cam Holder	1	FCD550
2	Cam Slider	1	FCD550 with Graphite
3	Cam Driver	1	SF700
4	Slide Keeper	2	S45C with Graphite
(5)	Positive Return Follower	1	Bronze
<b>6</b>	Stopper Plate	1	S45C(1045)
7	Spring Guide Pin	1	S45C(1045)
8	Stopper	1	Urethane
10	Coil Spring	1	TF20-50
11)	Coil Spring	1	TM30-50
14)	Spring Guide Bush	1	Bronze

Bolts for assembly are not indicated.

#### **■** Spring Diagram

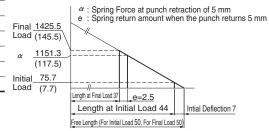
 ◆Spring Used
 For Initial Load
 TF20-50(1 piece)

 12.62N/mm(1.29kgf/mm)
 12.62N/mm(1.29kgf/mm)

 For Final Load
 TM30-50(1 piece)

109.65N/mm(22.66kgf/mm)

• Guideline of spring durability TF20-50 1,000,000 strokes TM30-50 1,000,000 strokes



SACE 52