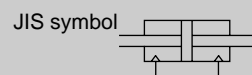


Unit cylinder Metal bush bearing type with switch

# UCA2 Series

● Bore size:  $\phi 10$ ,  $\phi 16$ ,  $\phi 25$ ,  $\phi 32$



## Specifications

Descriptions	UCA2 UCA2-L (with switch)			
	$\phi 10$	$\phi 16$	$\phi 25$	$\phi 32$
Bore size mm	$\phi 10$	$\phi 16$	$\phi 25$	$\phi 32$
Actuation	Double acting			
Working fluid	Compressed air			
Max. working pressure MPa	1.0			
Min. working pressure MPa	0.15		0.1	
Withstanding pressure MPa	1.5			
Ambient temperature °C	-10 to 60 (no freezing)			
Port size	M5		Rc1/8	
Stroke tolerance mm	+1.0			
	0			
Working piston speed mm/s	30 to 300			
Revolvable angle tolerance Note	$\pm 0.1^\circ$	$\pm 0.05^\circ$		$\pm 0.02^\circ$
Max. repeating cycle Time/min.	30			
Cushion	Shock absorber integrated			
Lubrication	Not required (when lubricating, use turbine oil Class 1 ISOVG 32.)			
Allowable energy absorption J	0.25	0.65	2.4	4.5

Note: The value when stroke length 0 ( deflection of position rod excluded).

## Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Min. stroke length with switch (mm)
$\phi 10$	25, 50, 75, 100	100	25	10: With switch 1 piece (Note 2) 20: With switch 2 pieces (Note 2) 75: With switch 3 pieces
$\phi 16$	25, 50, 75, 100,	200		
$\phi 25$	125, 150, 175, 200	200		
$\phi 35$		200		

Note 1: Not available except standard stroke length.

Note 2: Minimum stroke when stroke is adjusted with stopper.

## Switch specifications

● 1 color indicator type

\* The T0/T5 switch can be used with 220 VAC.  
Consult with CKD for working conditions.

Descriptions	Proximity 2 wire	Proximity 3 wire		Reed 2 wire			
	T2H/T2V	T3H/T3V		T0H/T0V		T5H/T5V	
Applications	Programmable controller	Programmable controller, relay		Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection	
Output method	-	NPN output		-			
Power voltage	-	10 to 28 VDC		-			
Load voltage	10 to 30 VDC	30 VDC or less		12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 20mA (Note 1)	100mA or less	50mA or less	5 to 50mA	7 to 20mA	50mA or less	20mA or less
Light	LED (ON lighting)	LED (ON lighting)		LED (ON lighting)			
Leakage current	1mA or less	10 $\mu$ A or less		0mA			

Note 1: Maximum load current above: 20mA applies at 25°C. When ambient temperature around a switch is higher than 25°C, the value is lower than 20mA. (5 to 10mA. when 60°C)

Cylinder weight (X: Body mount) - Number in ( ) includes switch rail.

Model no.	Stroke length (mm)								Switch weight per 1 piece
	25	50	75	100	125	150	175	200	
UCA2-X-10	0.30 (0.35)	0.37 (0.42)	0.43 (0.49)	0.49 (0.55)	-	-	-	-	0.03
UCA2-X-16	0.53 (0.56)	0.66 (0.71)	0.78 (0.84)	0.91 (0.98)	1.04 (1.12)	1.17 (1.25)	1.30 (1.39)	1.42 (1.52)	
UCA2-X-25	1.00 (1.04)	1.20 (1.26)	1.41 (1.47)	1.61 (1.68)	1.81 (1.89)	2.02 (2.11)	2.22 (2.32)	2.43 (2.53)	
UCA2-X-32	1.65 (1.69)	1.95 (2.01)	2.25 (2.31)	2.55 (2.62)	2.85 (2.93)	3.15 (3.24)	3.45 (3.55)	3.75 (3.85)	

Cylinder weight (Y: End plate mount) - Number in ( ) includes switch rail.

Model no.	Stroke length (mm)								Switch weight per 1 piece
	25	50	75	100	125	150	175	200	
UCA2-Y-10	0.30 (0.33)	0.37 (0.40)	0.43 (0.46)	0.49 (0.52)	-	-	-	-	0.03
UCA2-Y-16	0.53 (0.56)	0.66 (0.69)	0.78 (0.82)	0.91 (0.95)	1.04 (1.08)	1.17 (1.21)	1.30 (1.34)	1.42 (1.47)	
UCA2-Y-25	1.00 (1.03)	1.20 (1.23)	1.41 (1.44)	1.61 (1.65)	1.81 (1.85)	2.02 (2.06)	2.20 (2.27)	2.43 (2.47)	
UCA2-Y-32	1.65 (1.68)	1.95 (1.98)	2.25 (2.29)	2.55 (2.59)	2.85 (2.89)	3.15 (3.19)	3.45 (3.50)	3.75 (3.80)	

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
**UCA2**  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

Unit cylinder  
Combined functions

## How to order

Without switch

UCA2 - X - 10 - 25 - P1A

With switch

UCA2-L - X - 10 - 25 - T2H - RA - P1A

A Fixing method

B Bore size

C Port thread type

D Stroke length  
Refer to Page 1924 for minimum stroke.

E Switch model no.  
Note 1

F Switch quantity  
Note 2

G Option  
Note 3

Symbol	Descriptions				
<b>A Fixing method</b>					
X	Body mount				
Y	End plate mount				
<b>B Bore size (mm)</b>					
10	φ 10				
16	φ 16				
25	φ 25				
32	φ 32				
<b>C Port thread type</b>					
Blank	Rc thread				
NN	NPT thread (φ 25 and over) is custom order.				
GN	G thread (φ 25 and over) is custom order.				
<b>D Stroke length (mm)</b>					
	Bore size (φ)	10	16	25	32
25	25	●	●	●	●
50	50	●	●	●	●
75	75	●	●	●	●
100	100	●	●	●	●
125	125		●	●	●
150	150		●	●	●
175	175		●	●	●
200	200		●	●	●
<b>E Switch model no.</b>					
Axial lead wire	Radial lead wire	Contact	Indicator	Lead wire	
T0H*	T0V*	Reed	1 color indicator type	2-wire	
T5H*	T5V*		Without indicator light		
T2H*	T2V*	Proximity	1 color indicator type	2-wire	
T3H*	T3V*			3-wire	
<b>*Lead wire length</b>					
Blank	1m (standard)				
3	3m (option)				
5	5m (option)				
<b>F Switch quantity</b>					
RA	One	Plate A side			
RB	One	Plate B side			
D	Two				
T	Three				
<b>G Option</b>					
P1A	Single adjustable stopper	Plate A side			
P1B	stopper	Plate B side			
P2	Both sides adjustable stopper				

### Note on model no. selection

Note 1: For types without switch, magnet is not integrated.

For types without switch, magnet and magnet rail are installed but not switch rail.

Note 2: 3 switches minimum stroke length 75 (mm)

Note 3: Distinction of A or B side is listed in the dimensional drawing.

<Example of model number>

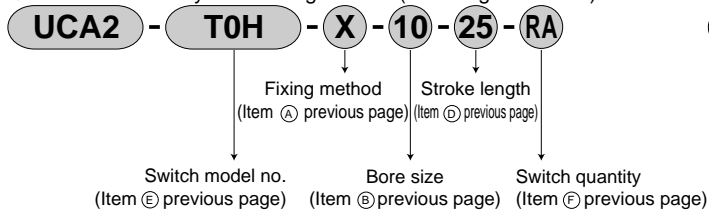
**UCA2-L-X-10-25-T2H-RA-P1A**

Model: Unit cylinder, metal bush bearing type

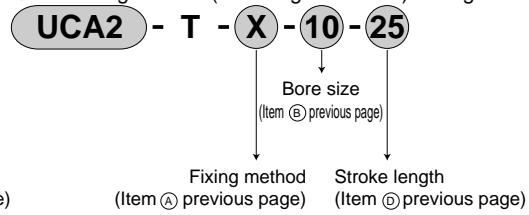
- A Fixing method : Body mount
- B Bore size : φ 10mm
- C Port thread type : Rc thread
- D Stroke length : 25mm
- E Switch model no. : Proximity switch T2H, lead wire length 1m
- F Switch quantity : One (plate A side)
- G Option : Single adjustable stopper (plate A side)

### How to order switch discrete

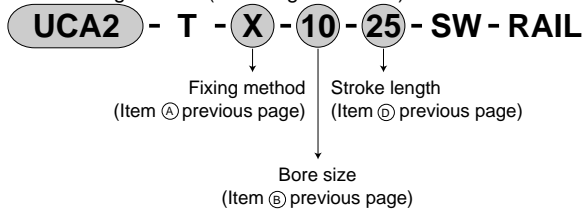
- Switch main body + mounting bracket (including switch rail): 1



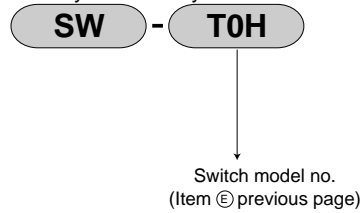
- Mounting bracket (including switch rail) + magnet: 2



- Mounting bracket (including switch rail): 3



- Only switch body: 4



1) When changing from type with no switch to type with T-type switch.

Descriptions	Switch necessary	Switch not required
UCA2-(XY) → UCA2-L-(XY)	2 + 4	2

\* If the switch is unnecessary, the switch can be retrofit later. (Such as when customer already has T-type)

2) When mounting only magnet for T-type switch.

Descriptions	Switch necessary	Switch not required
UCA2-L-(XY) → UCA2-L-(XY) Without switch    With switch	1	3

When switch could not be mounted with the UCA2-L and higher types. (Only magnet is mounted)

3) When changing from type with S-type switch to type with T-type switch.

Descriptions	Switch necessary	Switch not required
S type switch → T type switch	2 + 4	—

\* The switch rail, mounting bracket and switch unit must be replaced.

### How to order shock absorber kit model number

- $\phi$  10

**UCA2-10-NCK**

- $\phi$  16 to  $\phi$  32 (common)

**UCA2-16-NCK**

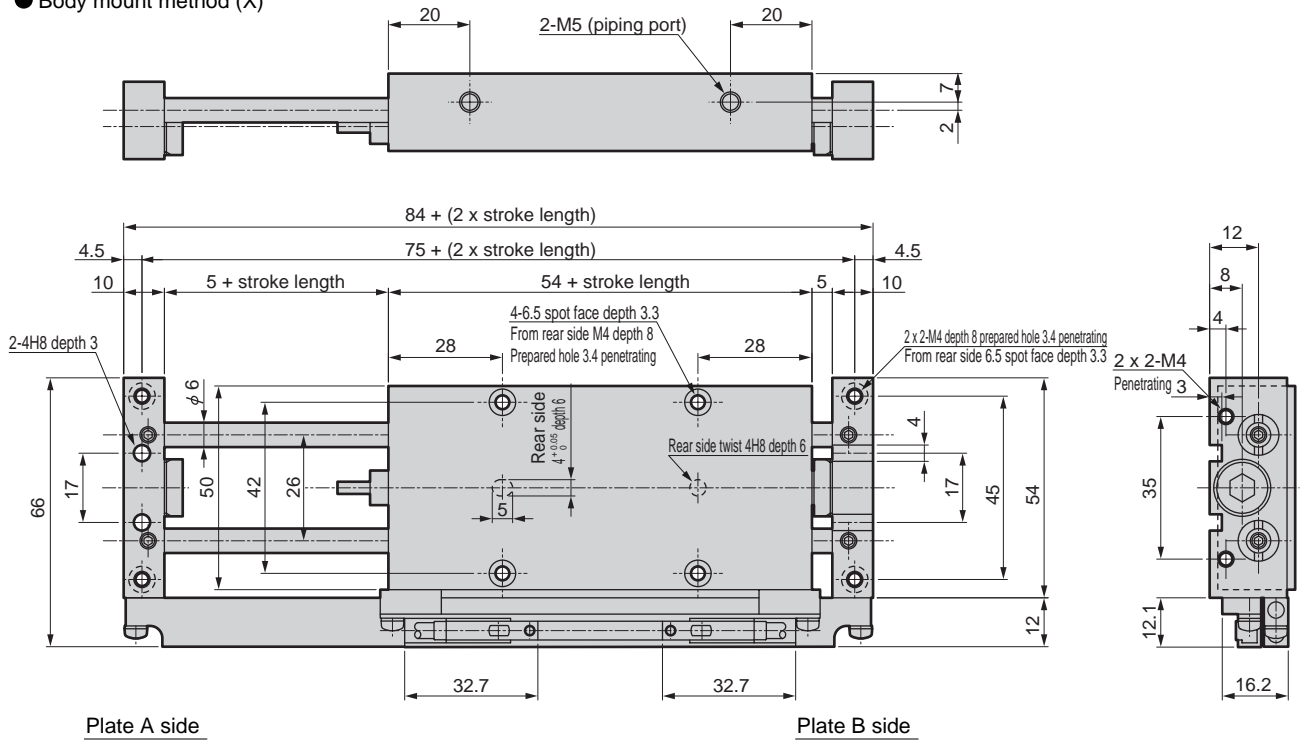
SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
<b>UCA2</b>
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Unit cylinder  
Combined functions

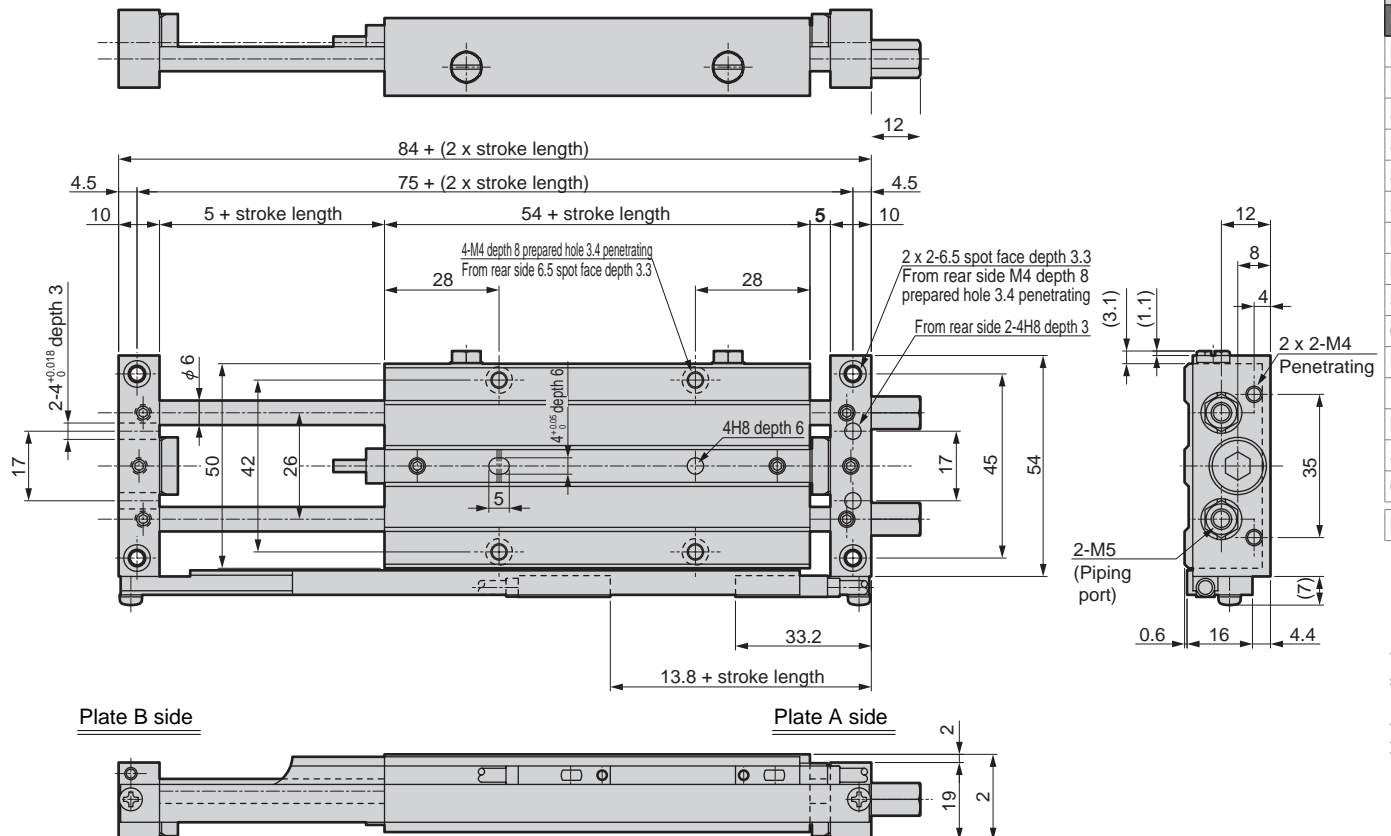
Dimensions:  $\phi 10$



● Body mount method (X)



● End plate mount method (Y)



\* Faults can occur if the stroke is lengthened by adjusting the stopper. Refer to page 1923 for details.

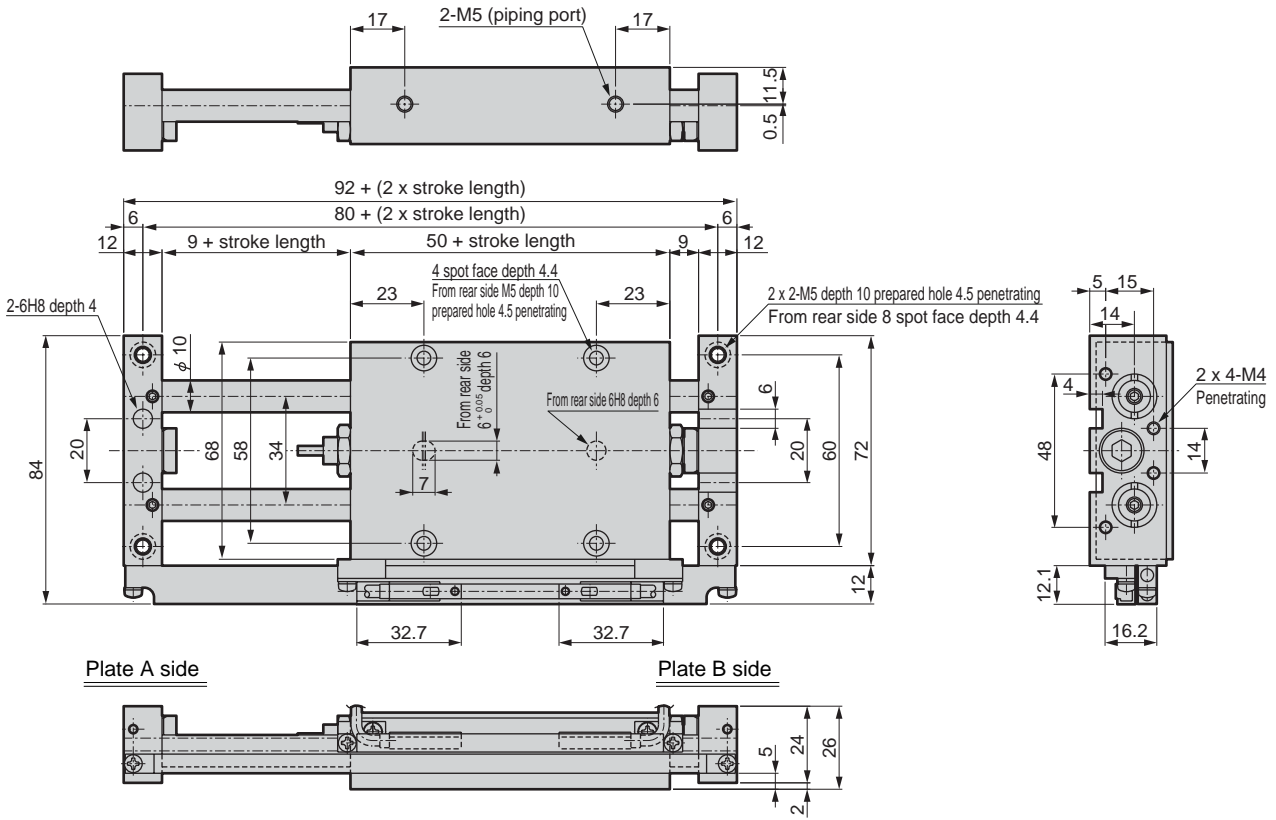
SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
<b>UCA2</b>
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Unit cylinder  
Combined functions

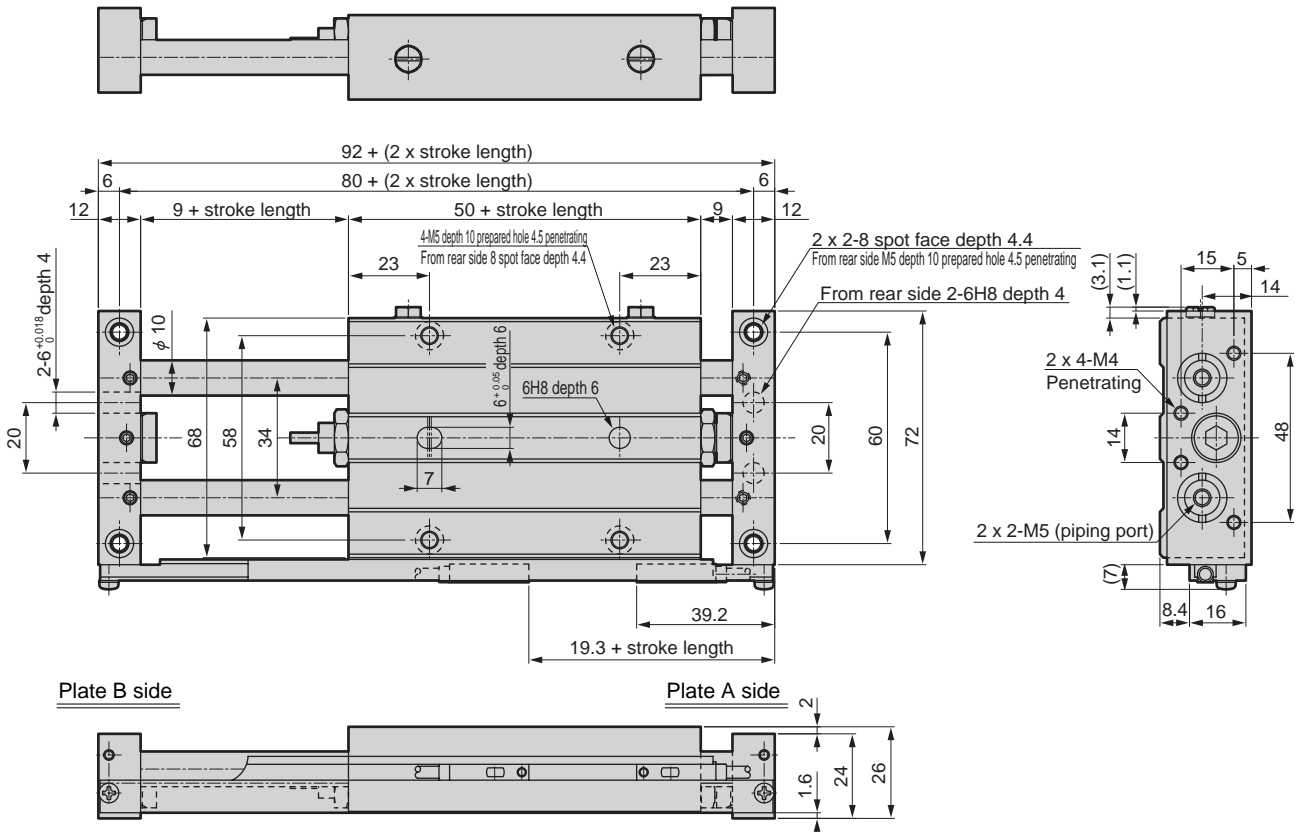


Dimensions:  $\phi 16$

● Body mount method (X)



● End plate mount method (Y)

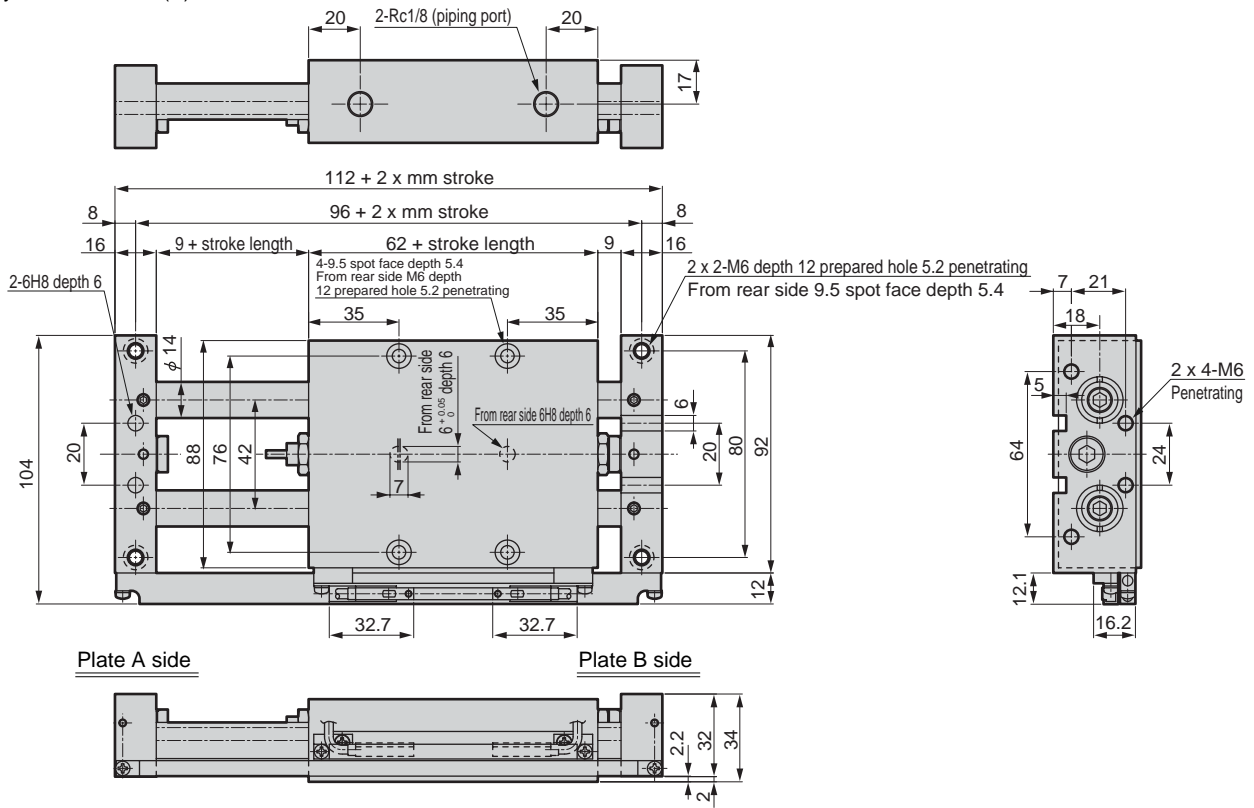


\* Faults can occur if the stroke is lengthened by adjusting the stopper.  
Refer to page 1923 for details.

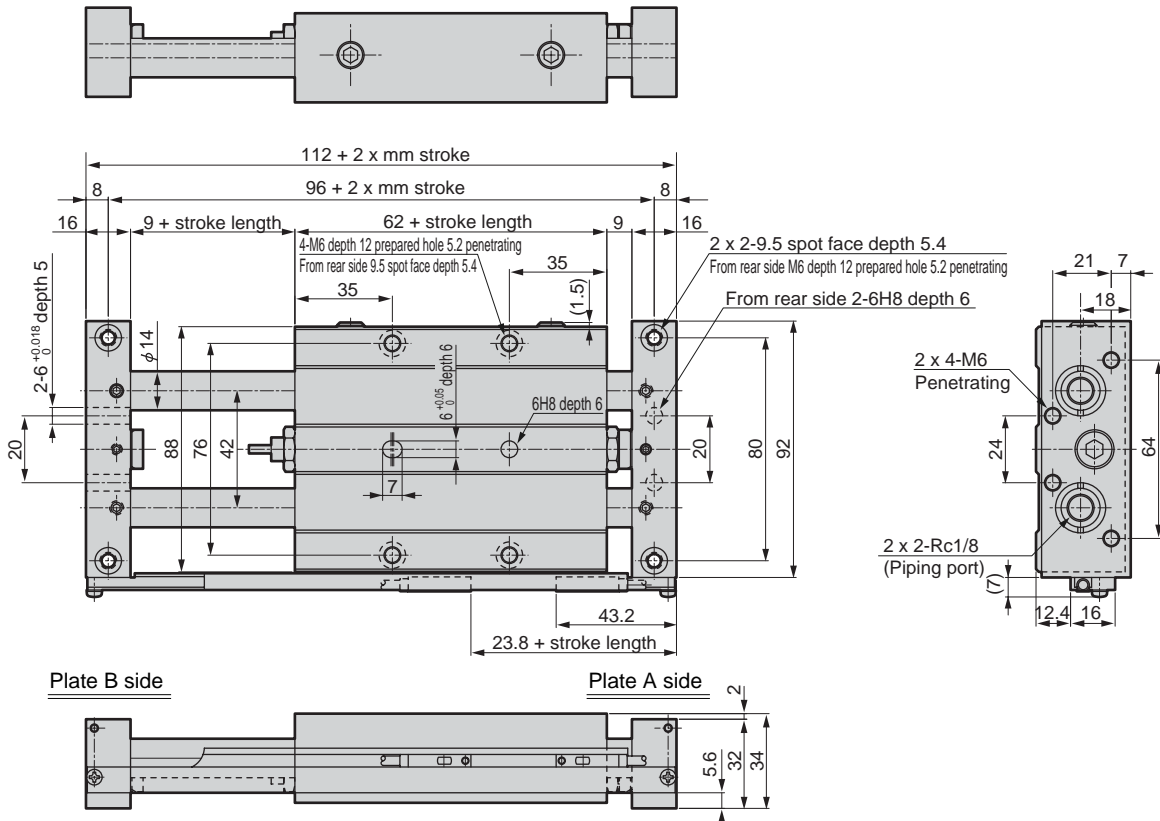
Dimensions:  $\phi$  25



● Body mount method (X)



● End plate mount method (Y)



\* Faults can occur if the stroke is lengthened by adjusting the stopper. Refer to page 1923 for details.

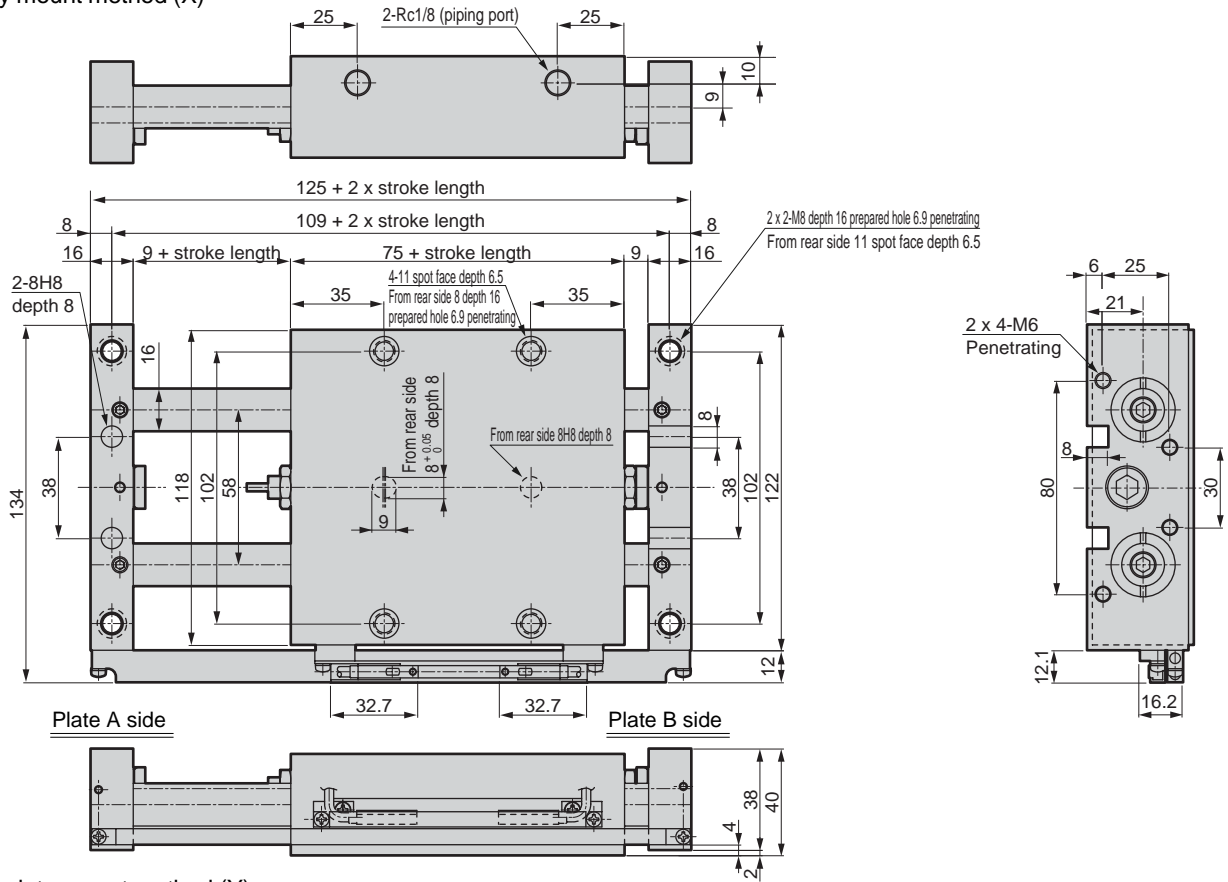
SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
<b>UCA2</b>
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Unit cylinder  
Combined functions

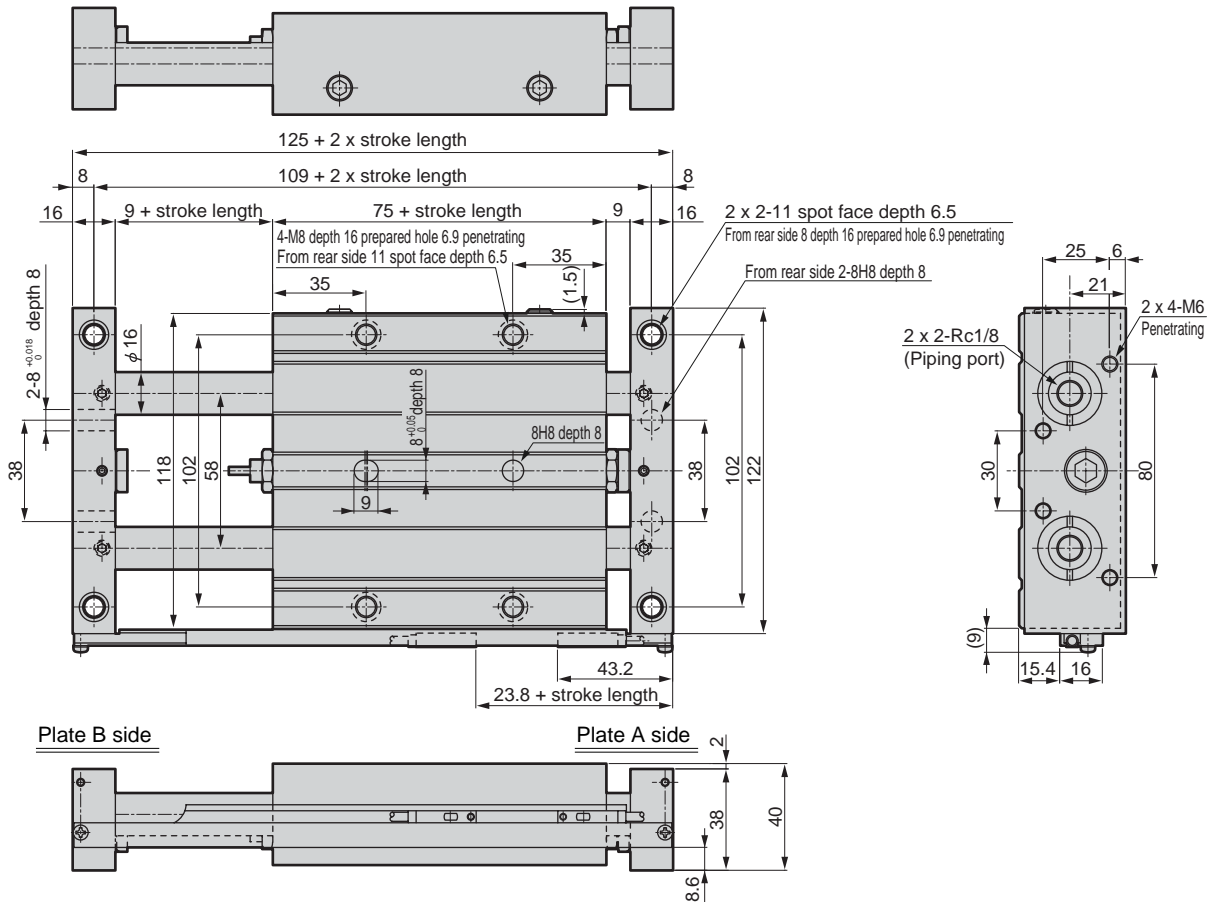


Dimensions:  $\phi 32$

● Body mount method (X)



● End plate mount method (Y)



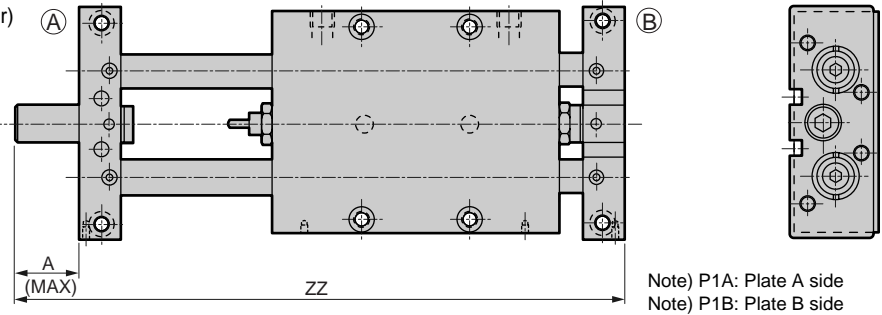
\* Faults can occur if the stroke is lengthened by adjusting the stopper.  
Refer to page 1923 for details.

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2**
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending



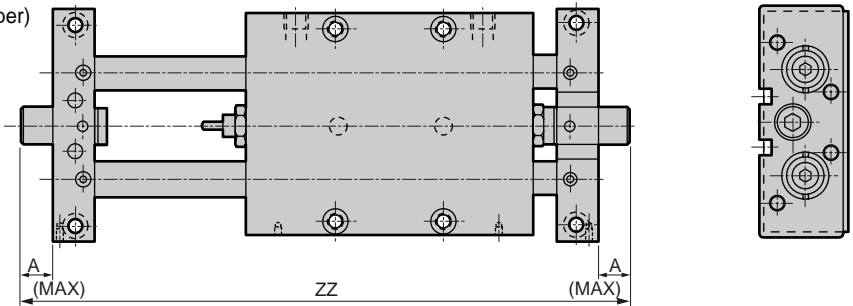
### Dimensions: Adjustable stopper

- UCA2- $\frac{10}{Y}$ - $\frac{16}{X}$ - $\frac{25}{25}$ -\* \*P1\* (single adjustable stopper)



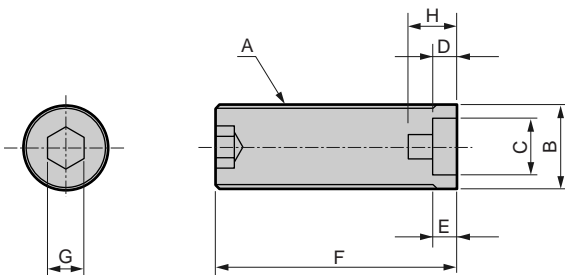
Model no.	A (Max.)	ZZ							
		25st	50st	75st	100st	125st	150st	175st	200st
UCA2-10	25	159	209	259	309	-	-	-	-
UCA2-16		167	217	267	317	367	417	467	517
UCA2-25		187	237	287	337	387	437	487	537
UCA2-32		200	250	300	350	400	450	500	550

- UCA2- $\frac{10}{Y}$ - $\frac{16}{X}$ - $\frac{25}{25}$ -\* \*P2\* (both sides adjustable stopper)



Model no.	A (Max.)	ZZ							
		25st	50st	75st	100st	125st	150st	175st	200st
UCA2-10	12.5	159	209	259	309	-	-	-	-
UCA2-16		167	217	267	317	367	417	467	517
UCA2-25		187	237	287	337	387	437	487	537
UCA2-32		200	250	300	350	400	450	500	550

### Stopper dimension



Symbol Bore size (mm)	A	B	C	D	E	F		G	H
						Standard	P2		
φ 10	M14 x 1	φ14	φ10	4	4	Standard	14.5	6	8
						P2	27		
						P1	39.5		
φ 16	M14 x 1	φ14	φ10	8	4	Standard	17	6	-
						P2	29.5		
						P1	42		
φ 25	M14 x 1	φ14	φ10	6.5	4	Standard	21	6	-
						P2	33.5		
						P1	46		
φ 32	M16 x 1	φ16	φ10	5.5	4	Standard	21	8	-
						P2	33.5		
						P1	46		

### Discrete adjustable stopper model no.

- Standard type

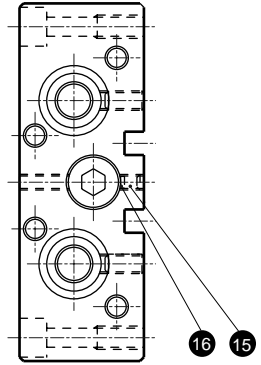
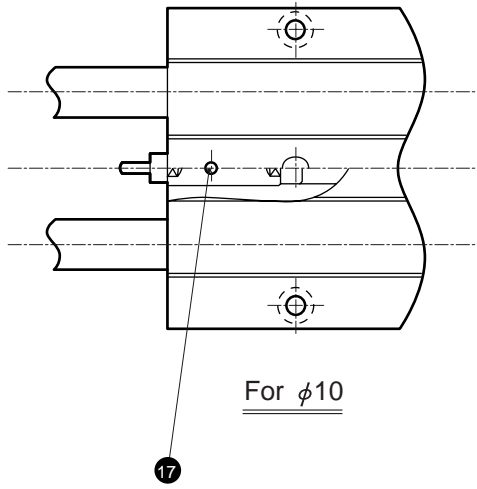
No. and part name Bore size (mm)	Standard stopper	Single adjustable stopper	Both sides adjustable stopper
φ 10	UCA2-P-10	UCA2-P1-10	UCA2-P2-10
φ 16	UCA2-P-16	UCA2-P1-16	UCA2-P2-16
φ 25	UCA2-P-25	UCA2-P1-25	UCA2-P2-25
φ 32	UCA2-P-32	UCA2-P1-32	UCA2-P2-32

SCP\*2  
CMK2  
CMA2  
SCM  
SCG  
SCA2  
SCS  
CKV2  
CA/OV2  
SSD  
CAT  
MDC2  
MVC  
SMD2  
MSD\*  
FC\*  
STK  
ULK\*  
JSK/M2  
JSG  
JSC3  
USSD  
USC  
JSB3  
LMB  
STG  
STS/L  
LCS  
LCG  
LCM  
LCT  
LCY  
STR2  
**UCA2**  
HCM  
HCA  
SRL2  
SRG  
SRM  
SRT  
MRL2  
MRG2  
SM-25  
CAC3  
UCAC  
RCC2  
MFC  
SHC  
GLC  
Ending

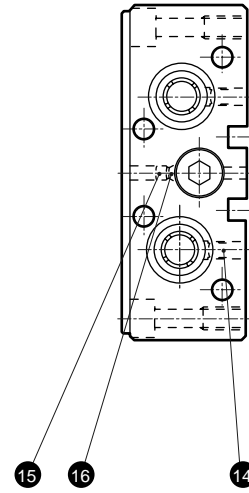
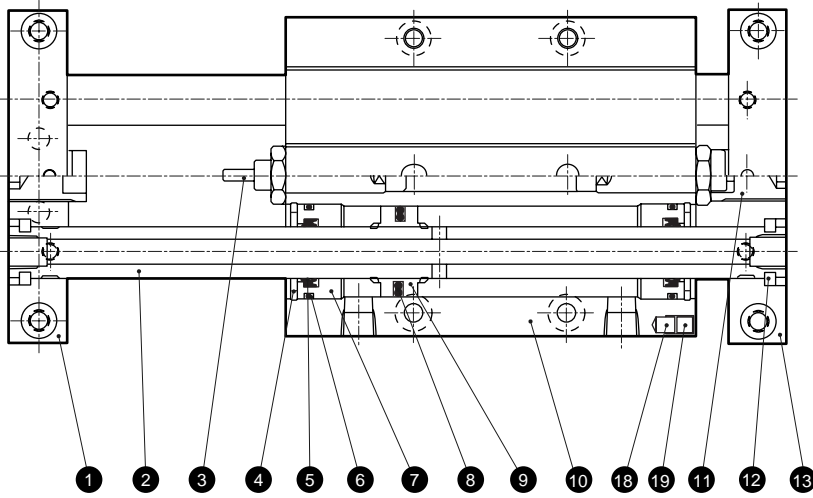
Unit cylinder  
Combined functions

## Internal structure and parts list

- SCP\*2
- CMK2
- CMA2
- SCM
- SCG
- SCA2
- SCS
- CKV2
- CA/OV2
- SSD
- CAT
- MDC2
- MVC
- SMD2
- MSD\*
- FC\*
- STK
- ULK\*
- JSK/M2
- JSG
- JSC3
- USSD
- USC
- JSB3
- LMB
- STG
- STS/L
- LCS
- LCG
- LCM
- LCT
- LCY
- STR2
- UCA2**
- HCM
- HCA
- SRL2
- SRG
- SRM
- SRT
- MRL2
- MRG2
- SM-25
- CAC3
- UCAC
- RCC2
- MFC
- SHC
- GLC
- Ending



When UCA2-X-25, 32



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	End plate (A)	Aluminum alloy	Alumite	10	Cylinder body	Aluminum alloy	Hard alumite
2	Piston rod	Steel	Industrial chrome plating	11	Stopper	Steel	Chromate
3	Shock absorber		φ 10: UCA2-10-NCK φ 16 to 32: UCA2-16-NCK	12	Split ring	Steel	Blackening
4	C type snap ring for hole	Steel	Blackening	13	End plate (B)	Aluminum alloy	Alumite
5	Rod packing seal	Nitrile rubber		14	Hexagon socket head set screw	Alloy steel	Blackening
6	Rod metal gasket	Nitrile rubber		15	Hexagon socket head set screw	Alloy steel	
7	Rod bushing	Aluminum alloy	Alumite	16	Set shoe	Aluminum alloy	
8	Piston packing seal	Nitrile rubber		17	Hexagon socket head set screw	Alloy steel	
9	Piston	Aluminum alloy		18	Magnet	Special alloy	Only UCA2-L-Y
				19	Hexagon socket head set screw	Stainless steel	Only UCA2-L-Y

## Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 10	UCA2-10K	<span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">6</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">8</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">14</span>
φ 16	UCA2-16K	
φ 25	UCA2-25K	
φ 32	UCA2-32K	

Note: Repair parts of metal bush bearing type and ball bearing type are same.