

Medium bore size cylinder
Double acting/single rod/with switch

SCA2 Series

- Bore size: 40, 50, 63, 80, 100 mm

JIS symbol



CAD DATA AVAILABLE.

Specifications

Descriptions		SCA2/SCA2-L2				
Bore size	mm	40 dia.	50 dia.	63 dia.	80 dia.	100 dia.
Actuation		Double acting				
Working fluid		Compressed air				
Max. working pressure	MPa	1.0				
Min. working pressure	MPa	0.05				
Withstanding pressure	MPa	1.6				
Ambient temperature	°C	-10 to 60 (to be unfrozen)				
Port size		Rc1/4	Rc3/8			Rc1/2
Stroke tolerance	mm	$^{+1.0}_0$ (to 300), $^{+1.4}_0$ (to 500), $^{+2.0}_0$ (to 1000)				
Working piston speed	mm/s	50 to 1000 (use this within allowable energy absorption range.)				
Cushion		Air cushion				
Effective cushion length	mm	14.6	16.6	16.6	20.6	23.6
Lubrication		Not required (when lubrication, use turbine oil Class 1 ISO VG32)				
Allowable energy absorption	Cushioned	4.29	8.37	15.8	27.9	49.8
	Non cushion	The types without cushioning cannot absorb a large energy generated by an external load. We recommend installation of an external shock absorbing device.				

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
40 dia.	25, 50, 75, 100, 150, 200, 250,	600	1
50 dia.			
63 dia.			
80 dia.	700		
100 dia.	450, 500	800	

* For types with switch, minimum stroke varies depending on installation method. Refer to the below table.

Min. stroke length of types with switch

(Unit: mm)

Rough sketch	Different surface installation	Same surface installation	Center trunnion mounted	Rod side trunnion mounted	Head side trunnion mounted
Descriptions				The position at rod side stroke end cannot be detected.	The position at head side stroke end cannot be detected.
40 dia.	10	34	86(66)	38(28)	38(28)
50 dia.			86(66)	36(26)	36(26)
63 dia.	10	10	91(71)	41(31)	41(31)
80 dia.			96(76)	44(34)	44(34)
100 dia.			106(86)	50(40)	50(40)

• Note 1: Value in () for R * B (terminal box type).

• Note 2: When stroke length is not greater than 15mm, two switches could turn ON at the same time. In this case, adjust the distance between switches as far as possible.

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

Switch specifications

Descriptions	Proximity 2 wire			Proximity 3 wire		Proximity 2 wire for strong magnetic field
	R1	R2	R2Y (2 color indicator)	R3	R3Y (2 color indicator)	T2YD
Applications	Programmable controller, relay, small solenoid valve		Programmable controller	Programmable controller, relay, IC circuit, solenoid valve		Programmable controller
Power voltage	—————		—————	DC4.5V to 28V		—————
Load voltage/current	AC85V to 265V 5 to 100mA		DC10 to 30V 5 to 300mA	DC30V or less 200mA or less 150mA or less		DC24V ± 10%, 5 to 20mA
Light	LED (ON lighting)		Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	Red/green LED (ON lighting)

Descriptions	Reed 2 wire				Reed 2 wire for strong magnetic field		
	R0	R4	R5	R6	H0	HOY (2 color indicator)	
Applications	Relay, programmable controller	High capacity relay, solenoid valve	Programmable controller, relay, IC circuit (without indicator light), serial connection	Programmable controller (DC self hold type)	Relay, programmable controller	Programmable controller	
Load voltage/current	DC12/24V, 5 to 50mA or less AC110V, 7 to 20mA or less AC220V, 7 to 10mA or less	AC110V, 20 to 200mA AC220V, 10 to 200mA	DC5/12/24V, 50mA or less AC110V, 20mA or less AC220V, 10mA or less	DC24V, 5 to 50mA	DC12/24V 5 to 50mA	AC110V 7 to 20mA	DC24V 5 to 20mA (Note 3)
Light	LED ON lighting	Neon light OFF lighting	None	LED ON lighting	Green LED ON lighting	Red/green LED ON lighting	

Note 1: Please refer to Ending 1 about other switch specifications.

Note 2: Max. load current is the value at 25 °C. When ambient temperature around switches is higher than 25 °C, the value is lower than 20mA. (5 to 10mA at 60 °C)

Cylinder mass

(Unit: Kg)

Bore size (mm)	Product mass when stroke length (S) =0mm							Mass per switch (bracket included)						Additional mass per S=100mm
	Basic type (00)	Foot type (LB)	Flange type (FA, FB)	Special flange type (FC)	Eye bracket (CA)	Clevis bracket (CB)	Trunnion type (TA, TB, TC)	R type		H type		T2YD type		
								Grommet	Terminal box	1m	3m	1m	3m	
40 dia.	0.83	1.01	1.26	0.92	1.18	1.18	1.21	0.08	0.07	0.10	0.20	0.08	0.17	0.39
50 dia.	1.20	1.37	1.70	1.31	1.64	1.64	1.72							0.46
63 dia.	1.60	1.97	2.66	1.78	2.15	2.20	2.45							0.50
80 dia.	2.60	3.37	4.48	2.96	4.14	4.15	3.96	0.09	0.08					0.90
100 dia.	4.20	5.12	6.89	4.75	6.35	6.31	6.72							1.12

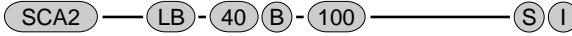
(E. g.) product mass of SCA2-LB-50B-200-RO-D ———

{ When stroke length 0mm, product mass is 1.37kg.
 Additional mass at stroke length 200mm is $0.46 \times \frac{200}{100} = 0.92\text{kg}$
 Mass of two switches is $0.08 \times 2 = 0.16\text{kg}$
 Product mass is $1.37 + 0.92 + 0.16\text{kg} = 2.45\text{kg}$

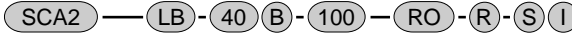
Standard type
Medium bore size cylinder

How to order

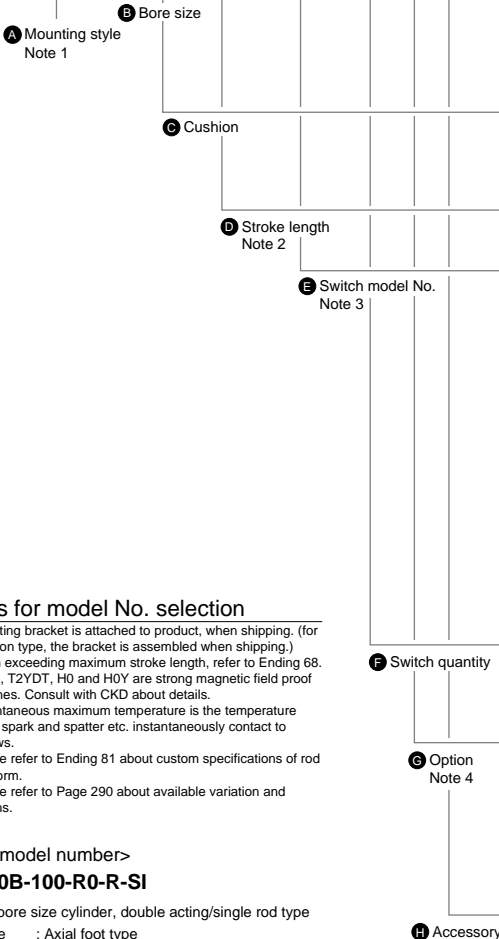
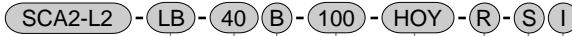
Without switch



With switch



Strong magnetic field proof switch (HO, HOY)



Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head side flange type
FC	Special head side flange type
CA	Eye bracket type
CB	Clevis bracket type
TC	Center trunnion type
TA	Rod side trunnion type
TB	Head side trunnion type

B Bore size (mm)	
40	40 dia.
50	50 dia.
63	63 dia.
80	80 dia.
100	100 dia.

C Cushion	
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	Non cushion

D Stroke length (mm)	
25, 50, 75, 100, 150, 200, 250	
300, 350, 400, 450, 500	

E Switch model No.					
Grommet type	Terminal box type		Contact	Display	Lead wire
	Std.type	Splash-prf.			
R1 *	R1B	R1A	Proximity	1 color indicator	2 wire
R2Y *	R2B	R2A		2 color indicator	
T2YD *	R2YB	-		Strong magnetic field proof switch	2 wire
R3 *	-	-	Proximity	1 color indicator	
R3Y *	R3B	R3A		2 color indicator	
R0 *	R3YB	-		Reed	1 color indicator
R4 *	R0B	R0A	Strong magnetic field proof Strong magnetic field proof 2 color indicator type		
R5 *	R4B	R4A			
R6 *	R5B	R5A			
H0 *	R6B	R6A			
H0Y *	-	-			

*Lead wire length	
Blank	1m (standard)
3	3m (Option)
5	5m (Option)

F Switch quantity	
R	One on rod side
H	One on head side
D	Two
T	Three

G Option			
	Max. ambient	Instant max.	
J	Bellows	100 °C	200 °C
L	Bellows	250 °C	400 °C
M	Piston rod material change (stainless steel)		
Blank	Cushion needle position R (standard)		
S	Cushion needle position S		
T	Cushion needle position T		
P6	Copper and PTFE free		

H Accessory	
I	Rod eye
Y	Rod clevis
B1	Eye bracket
B2	Clevis bracket
B3	Eye bracket
B4	Trunnion type No.2 bracket

⚠ Cautions for model No. selection

- Note 1: Mounting bracket is attached to product, when shipping. (for trunnion type, the bracket is assembled when shipping.)
- Note 2: When exceeding maximum stroke length, refer to Ending 68.
- Note 3: T2YD, T2YDT, H0 and H0Y are strong magnetic field proof switches. Consult with CKD about details.
- Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contact to bellows.
- Note 5: Please refer to Ending 81 about custom specifications of rod end form.
- Note 6: Please refer to Page 290 about available variation and options.

<Example of model number>

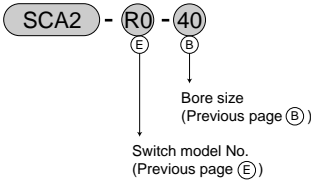
SCA2-LB-40B-100-R0-R-S-I

Model: Medium bore size cylinder, double acting/single rod type

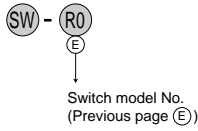
- A** Mounting style : Axial foot type
- B** Bore size : 40mm
- C** Cushion : Both sides cushion
- D** Stroke length : 100mm
- E** Switch model No : Reed R0 switch, lead wire length 1m
- F** Switch quantity : One on rod side
- G** Option : Cushion needle position S
- H** Accessory : Rod eye

How to order switch

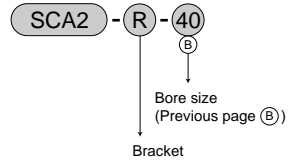
- Switch main body + mounting bracket



- Switch only



- Mounting bracket



- For spatter countermeasures, RF is provided.
(R2YK, R3YK switch only)

- Terminal box only

- For R * B

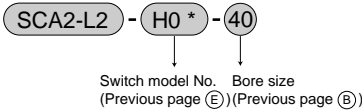


- For R * A

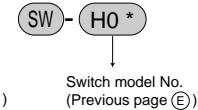


How to order discrete H type switch

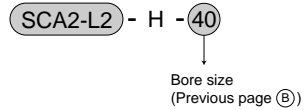
- Switch main body + mounting bracket



- Switch only

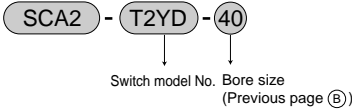


- Mounting bracket

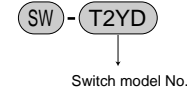


How to order T2YD type switch

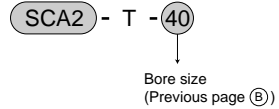
- Switch main body + mounting bracket



- Switch only



- Mounting bracket



How to order mounting bracket

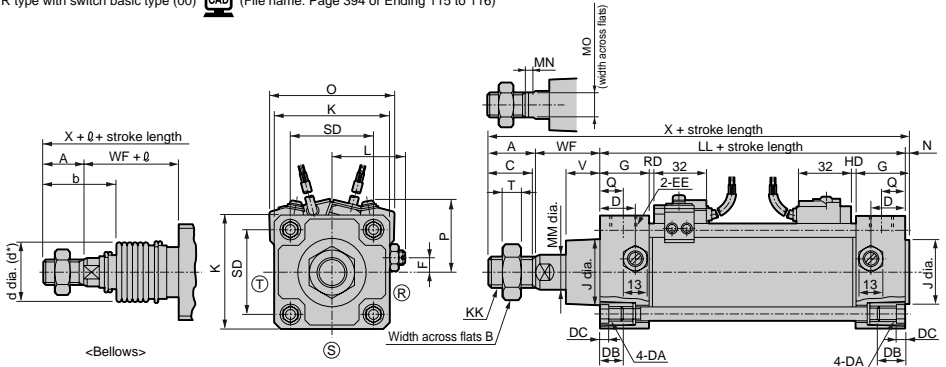
Bore size (mm)	40 dia.	50 dia.	63 dia.	80 dia.	100 dia.
Foot (LB)	S1-LB-40	S1-LB-50	S1-LB-63	S1-LB-80	S1-LB-100
Flange (FA/FB)	S1-FA-40	S1-FA-50	S1-FA-63	S1-FA-80	S1-FA-100
Eye (CA)	S1-CA-40	S1-CA-50	S1-CA-63	S1-CA-80	S1-CA-100
Clevis (CB)	S1-CB-40	S1-CB-50	S1-CB-63	S1-CB-80	S1-CB-100

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

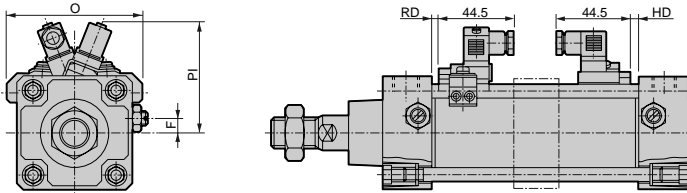
Standard type
Medium bore size cylinder

Dimensions

- R type with switch basic type (00)  (File name: Page 394 or Ending 115 to 116)



- R type switch terminal box basic type (00)



Note 1: ①, ②, and ③ show the positions of cushion needle.

RD: Rod side max. sensitive position, d*: Dimensions for J

HD: Head side max. sensitive position, d*: Dimensions for L

Note: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

Symbol	Basic type (00) basic dimensions																								
	A	B	C	D	DA	DB	DC	EE	F	G	J	K	KK	L	LL	MM	MN	MO	N	Q	SD	T	V	WF	X
40 dia.	22	22	20	18	M8	12	4	Rc $\frac{1}{2}$	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	8	14	2	13	40.5	8	18.5	33.5	150.5
50 dia.	28	27	26	20	M8	12	4	Rc $\frac{1}{2}$	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	8	17	2.5	14	48	11	20.5	37	168.5
63 dia.	28	27	26	22	M8	12	4	Rc $\frac{1}{2}$	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	8	17	3	15	59	11	21	35	171
80 dia.	36	32	34	26	M12	16	5	Rc $\frac{1}{2}$	0	34	43	98	M22 X 1.5	56 to 59	116	25	11	22	3.5	17	74	13	23.5	48	203.5
100 dia.	45	41	43	28	M12	16	5	Rc $\frac{1}{2}$	0	36	51	118	M26 X 1.5	66 to 69	128	30	13	27	4	18	90	16	32	53	230

Symbol	Bellows													With switch				
	A	X	b	d	d*	ℓ								HD	P	PI	O	RD
Bore size (mm)	A	X	b	d	d*	50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	When 500 exceeding	HD	P	PI	O	RD
						40 dia.	22	150.5	41	40	40	25.5	41.5					
50 dia.	28	168.5	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	44	67	73	7.5
63 dia.	28	171	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	48	71	84	7.5
80 dia.	36	203.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	58	81	104	9
100 dia.	45	230	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	66	88	120	13

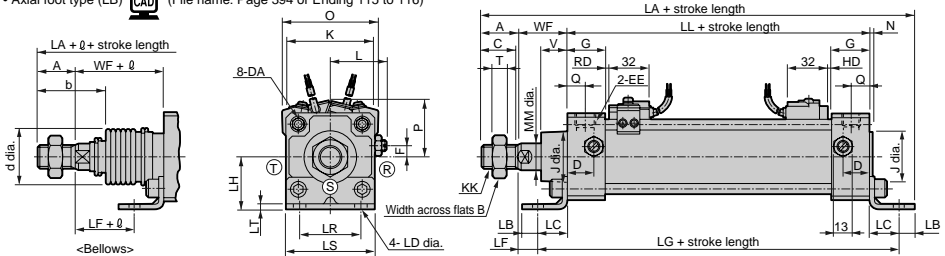
* Round up below decimal point.

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCA
HCM
MRL2
SRL2
SRG
SRM
SRT
SRB2

Standard type
Medium bore size cylinder

Dimensions


• Axial foot type (LB)  (File name: Page 394 or Ending 115 to 116)

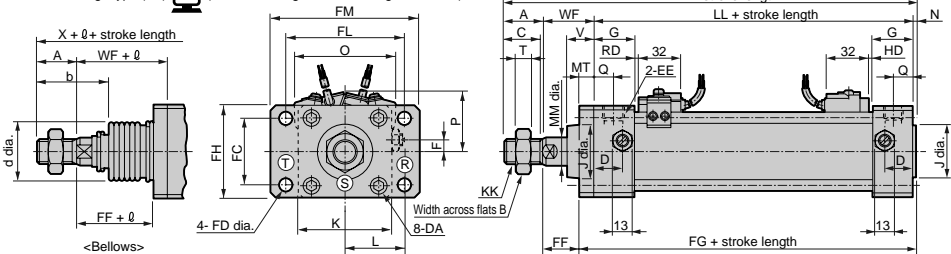


Note 1: For \varnothing dimensions, round up decimal point or less. d : Dimensions for J
 Note 2: \textcircled{R} , \textcircled{S} and \textcircled{T} show the positions of cushion needle. d^* : Dimensions for L Note 3: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

Symbol	Axial foot type (00) basic dimensions																	Mounting dimensions								
Bore size (mm)	A	B	C	D	DA	EE	F	G	J	K	KK	L	LL	MM	N	Q	T	V	WF	LA	LB	LC	LD	LF	LG	LH
40 dia.	22	22	20	18	M8	Rc1/8	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	2	13	8	18.5	33.5	178	10	19.5	9	14	132	40
50 dia.	28	27	26	20	M8	Rc1/8	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	2.5	14	11	20.5	37	200	12	22	9	15	145	40
63 dia.	28	27	26	22	M8	Rc1/8	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	3	15	11	21	35	210	12	30	11	5	165	50
80 dia.	36	32	34	26	M12	Rc1/4	0	34	43	98	M22 X 1.5	56 to 59	116	25	3.5	17	13	23.5	48	251	14	37	14	11	190	60
100 dia.	45	41	43	28	M12	Rc1/4	0	36	51	118	M26 X 1.5	66 to 69	128	30	4	18	16	32	53	278	21	31	14	22	190	67

Symbol	Bellows											With switch						
Bore size (mm)	LR	LS	LT	b	d	d*	\varnothing							HD	O	P	RD	
							50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500					When 500 exceeding
40 dia.	40	57	3.2	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	5.5	66	42	5.5
50 dia.	46	66	4.5	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	73	44	7.5
63 dia.	60	80	4.5	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	84	48	7.5
80 dia.	74	98	6.0	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	104	58	9
100 dia.	80	118	6.0	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	120	66	13

• Rod side flange type (FA)  (File name: Page 394 or Ending 115 to 116)



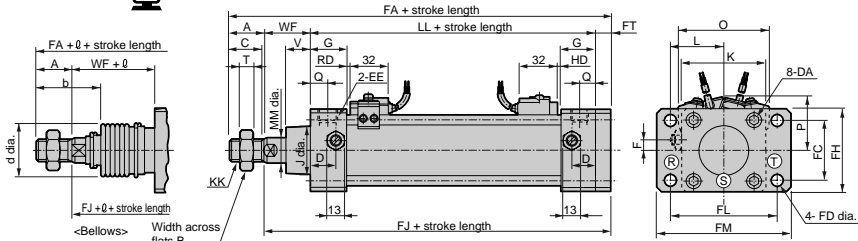
Note 1: For \varnothing dimensions, round up decimal point or less. d : Dimensions for J
 Note 2: \textcircled{R} , \textcircled{S} and \textcircled{T} show the positions of cushion needle. d^* : Dimensions for L Note 3: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.




Symbol	Rod side flange type (FA) basic dimensions																	Mounting dimensions								
Bore size (mm)	A	B	C	D	DA	EE	F	G	J	K	KK	L	LL	MM	N	Q	T	V	WF	X	FC	FD	FF	FG	MT	FH
40 dia.	22	22	20	18	M8	Rc1/8	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	2	13	8	18.5	33.5	150.5	40	9	21.5	107	12	57
50 dia.	28	27	26	20	M8	Rc1/8	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	2.5	14	11	20.5	37	188.5	47	9	25	115.5	12	65
63 dia.	28	27	26	22	M8	Rc1/8	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	3	15	11	21	35	171	60	11	19	124	16	80
80 dia.	36	32	34	26	M12	Rc1/4	0	34	43	98	M22 X 1.5	56 to 59	116	25	3.5	17	13	23.5	48	203.5	74	14	29	138.5	19	98
100 dia.	45	41	43	28	M12	Rc1/4	0	36	51	118	M26 X 1.5	66 to 69	128	30	4	18	16	32	53	230	88	14	34	151	19	118

Symbol	Bellows											With switch					
Bore size (mm)	FL	FM	b	d	d*	\varnothing							HD	O	P	RD	
						50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500					When 500 exceeding
40 dia.	80	100	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	5.5	66	42	5.5
50 dia.	85	108	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	73	44	7.5
63 dia.	106	130	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	84	48	7.5
80 dia.	125	153	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	104	58	9
100 dia.	144	180	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	120	66	13

Dimensions

• Head side flange type (FB)  (File name: Page 394 or Ending 115 to 116)

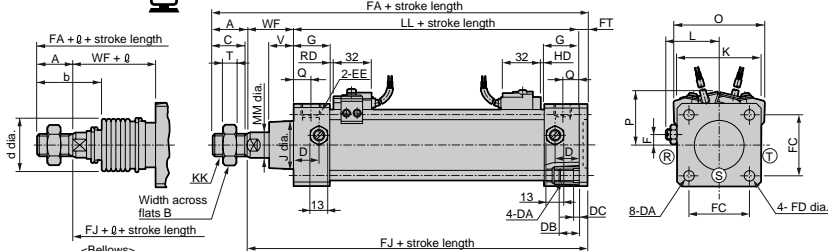





Note 1: For θ dimensions, round up decimal point or less. d : Dimensions for J
 Note 2: , , and  show the positions of cushion needle. d^* : Dimensions for L Note 3: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

Symbol	Head side flange type (FB) basic dimensions																Mounting dimensions						
	A	B	C	D	DA	EE	F	G	J	K	KK	L	LL	MM	Q	T	V	WF	FA	FC	FD	FH	FJ
40 dia.	22	22	20	18	M8	Rc $\frac{1}{4}$	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	13	8	18.5	33.5	160.5	40	9	57	138.5
50 dia.	28	27	26	20	M8	Rc $\frac{1}{4}$	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	14	11	20.5	37	178	47	9	65	150
63 dia.	28	27	26	22	M8	Rc $\frac{1}{4}$	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	15	11	21	35	184	60	11	80	156
80 dia.	36	32	34	26	M12	Rc $\frac{1}{2}$	0	34	43	98	M22 X 1.5	56 to 59	116	25	17	13	23.5	48	219	74	14	98	183
100 dia.	45	41	43	28	M12	Rc $\frac{1}{2}$	0	36	51	118	M26 X 1.5	66 to 69	128	30	18	16	32	53	245	88	14	118	200

Symbol	Bellows										With switch							
	FL	FM	FT	b	d	θ							HD	O	P	RD		
						50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500					When 500 exceeding	
40 dia.	80	100	12	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	5.5	66	42	5.5
50 dia.	85	108	12	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	73	44	7.5
63 dia.	106	130	16	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	84	48	7.5
80 dia.	125	153	19	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	104	58	9
100 dia.	144	180	19	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	120	66	13

• Special head side flange type (FC)  (File name: Page 394 or Ending 115 to 116)




Note 1: For θ dimensions, round up decimal point or less. d : Dimensions for J
 Note 2: , , and  show the positions of cushion needle. d^* : Dimensions for L Note 3: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

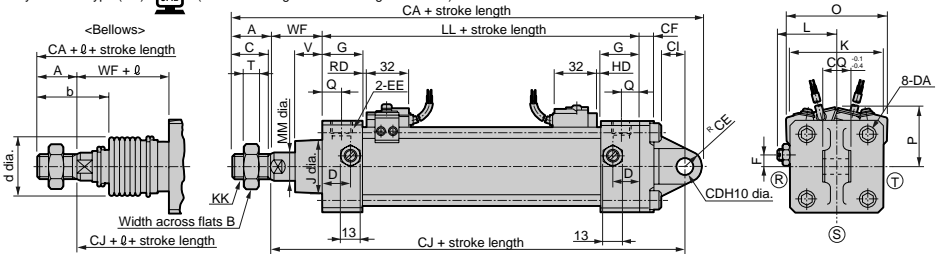
Symbol	Head side flange type (FC) basic dimensions																Mounting dimensions									
	A	B	C	D	DA	DB	DC	EE	F	G	J	K	KK	L	LL	MM	Q	T	V	WF	FA	FC	FD	FJ	FT	b
40 dia.	22	22	20	18	M8	12	4	Rc $\frac{1}{4}$	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	13	8	18.5	33.5	153	40	9	131	4.5	41
50 dia.	28	27	26	20	M8	12	4	Rc $\frac{1}{4}$	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	14	11	20.5	37	170.5	47	9	142.5	4.5	47
63 dia.	28	27	26	22	M8	12	4	Rc $\frac{1}{4}$	0	30	38	80	M18 X 1.5	47.5 to 50	105	20	15	11	21	35	172.5	60	11	144.5	4.5	45
80 dia.	36	32	34	26	M12	16	5	Rc $\frac{1}{2}$	0	34	43	98	M22 X 1.5	56 to 59	116	25	17	13	23.5	48	206	94	14	170	6	58.5
100 dia.	45	41	43	28	M12	16	5	Rc $\frac{1}{2}$	0	36	51	118	M26 X 1.5	66 to 69	128	30	18	16	32	53	232	88	14	187	6	69.5

Symbol	Bellows										With switch			
	d	d*	θ							HD	O	P	RD	
			50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500					When 500 exceeding
40 dia.	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	5.5	66	42	5.5
50 dia.	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	73	44	7.5
63 dia.	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	84	48	7.5
80 dia.	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	104	58	9
100 dia.	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	120	66	13

- SCP * 2
- CMK2
- CMA2
- SCM
- SCA2
- SCS
- CKV2
- CAV2/COV * 2
- CAT
- MDC2
- MVC
- SMD2
- MSD/MSDG
- SSD
- SSD (large)
- FC *
- ULKP/ULK
- JSK2/JSK2
- JSC3 (medium)
- JSC3 (large)
- JSB3
- UCAC
- STS/STL
- LCS
- LCY
- STR2
- UCA2
- STK
- USSD
- USC
- MFC
- GLC
- SHC
- CAC3
- HCM
- HCA
- MRL2
- SRL2
- SRG
- SRT
- SRM
- SRB2
- Medium bore size cylinder

Dimensions

• Eye bracket type (CA)  (File name: Page 394 or Ending 115 to 116)




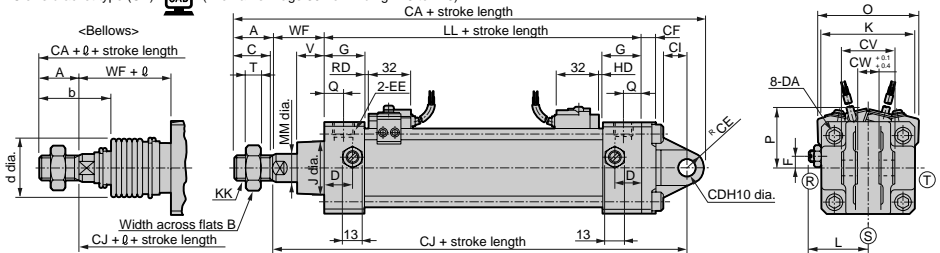
Note 1: For ℓ dimensions, round up decimal point or less. d : Dimensions for J

Note 2: (R), (S) and (T) show the positions of cushion needle. d^* : Dimensions for L. Note 3: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

Symbol	Eye bracket (CA) basic dimensions																Mounting dimensions						
Bore size (mm)	A	B	C	D	DA	EE	F	G	J	K	KK	L	LL	MM	Q	T	V	WF	CA	CD	CE	CF	
40 dia.	22	22	20	18	M8	Rc $\frac{1}{2}$	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	13	8	18.5	33.5	192.5	12	$^{+0.070}_0$	12	10
50 dia.	28	27	26	20	M8	Rc $\frac{1}{2}$	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	14	11	20.5	37	210	12	$^{+0.070}_0$	12	10
63 dia.	28	27	26	22	M8	Rc $\frac{1}{2}$	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	15	11	21	35	221	14	$^{+0.070}_0$	16	10
80 dia.	36	32	34	26	M12	Rc $\frac{1}{2}$	0	34	43	98	M22 X 1.5	56 to 59	116	25	17	13	23.5	48	272	20	$^{+0.084}_0$	20	14
100 dia.	45	41	43	28	M12	Rc $\frac{1}{2}$	0	36	51	118	M26 X 1.5	66 to 69	128	30	18	16	32	53	298	20	$^{+0.084}_0$	20	16

Symbol	Bellows																With switch			
Bore size (mm)	Cl	CJ	CQ	b	d	d*	ℓ							When 500 exceeding	HD	O	P	RD		
							50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500							
40 dia.	18	158.5	18	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	5.5	66	42	5.5		
50 dia.	18	170	18	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	73	44	7.5		
63 dia.	24	177	20	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	84	48	7.5		
80 dia.	30	216	28	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	104	58	9		
100 dia.	30	233	28	68.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	120	66	13		

• Clevis bracket type (CB)  (File name: Page 394 or Ending 115 to 116)



Note 1: For ℓ dimensions, round up decimal point or less. d : Dimensions for J

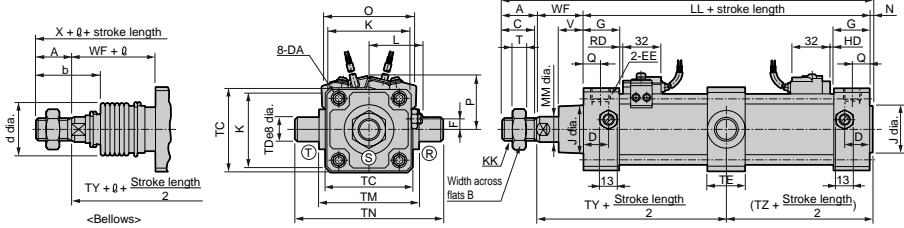
Note 2: (R), (S) and (T) show the positions of cushion needle. d^* : Dimensions for L. •Note: A pin is attached. Note 3: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

Symbol	Clevis bracket (CB) basic dimensions																Mounting dimensions						
Bore size (mm)	A	B	C	D	DA	EE	F	G	J	K	KK	L	LL	MM	Q	T	V	WF	CA	CD	CE	CF	
40 dia.	22	22	20	18	M8	Rc $\frac{1}{2}$	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	13	8	18.5	33.5	192.5	12	$^{+0.070}_0$	12	10
50 dia.	28	27	26	20	M8	Rc $\frac{1}{2}$	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	14	11	20.5	37	210	12	$^{+0.070}_0$	12	10
63 dia.	28	27	26	22	M8	Rc $\frac{1}{2}$	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	15	11	21	35	221	14	$^{+0.070}_0$	16	10
80 dia.	36	32	34	26	M12	Rc $\frac{1}{2}$	0	34	43	98	M22 X 1.5	56 to 59	116	25	17	13	23.5	48	272	20	$^{+0.084}_0$	20	14
100 dia.	45	41	43	28	M12	Rc $\frac{1}{2}$	0	36	51	118	M26 X 1.5	66 to 69	128	30	18	16	32	53	298	20	$^{+0.084}_0$	20	16

Symbol	Bellows																With switch			
Bore size (mm)	Cl	CJ	CV	CW	b	d	d*	ℓ							When 500 exceeding	HD	O	P	RD	
								50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500						
40 dia.	18	158.5	36	18	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	5.5	66	42	5.5	
50 dia.	18	170	36	18	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	73	44	7.5	
63 dia.	24	177	40	20	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	84	48	7.5	
80 dia.	30	216	56	28	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	104	58	9	
100 dia.	30	233	56	28	68.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	120	66	13	

Dimensions

• Center trunnion type (TC)  (File name: Page 394 or Ending 115 to 116)



Note 1: For ϕ dimensions, round up decimal point or less. d : Dimensions for J

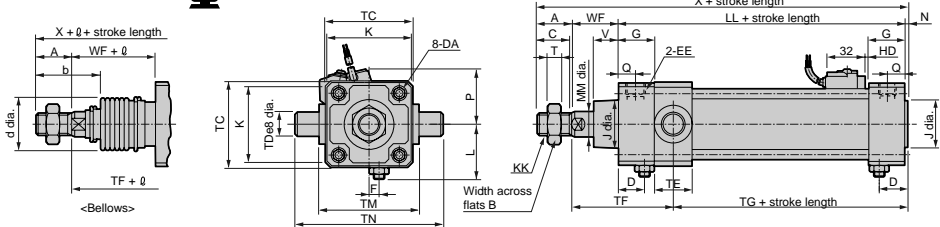
Note 2: \oplus , \otimes and \odot show the positions of cushion needle. d^* : Dimensions for L

Note 3: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

Symbol	Center trunnion type (TC) basic dimensions																			Mounting dimensions		
Bore size (mm)	A	B	C	D	DA	EE	F	G	J	K	KK	L	LL	MM	N	Q	T	V	WF	X	TC	TD
40 dia.	22	22	20	18	M8	Rc $\frac{1}{2}$	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	2	13	8	18.5	33.5	150.5	57	16
50 dia.	28	27	26	20	M8	Rc $\frac{1}{2}$	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	2.5	14	11	20.5	37	168.5	67	18
63 dia.	28	27	26	22	M8	Rc $\frac{1}{2}$	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	3	15	11	21	35	171	82	20
80 dia.	36	32	34	26	M12	Rc $\frac{1}{2}$	0	34	43	98	M22 X 1.5	56 to 59	116	25	3.5	17	13	23.5	48	203.5	100	25
100 dia.	45	41	43	28	M12	Rc $\frac{1}{2}$	0	36	51	118	M26 X 1.5	66 to 69	128	30	4	18	16	32	53	230	121	35

Symbol	Mounting dimensions										Bellows										With switch			
Bore size (mm)	TE	TM	TN	TY	TZ	b	d	d*	ϕ										HD	O	P	RD		
									50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	When 500 exceeding								
40 dia.	30	63	95	80	48.5	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	5.5	66	42	5.5				
50 dia.	30	80	116	87.5	53	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	73	44	7.5				
63 dia.	35	90	130	87.5	55.5	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	84	48	7.5				
80 dia.	40	115	165	106	61.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	104	58	9				
100 dia.	50	135	205	117	68	68.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	120	66	13				

• Rod side trunnion type (TA)  (File name: Page 394 or Ending 115 to 116)



Note 1: The position at rod side stroke end cannot be detected.

Note 2: For ϕ dimensions, round up decimal point or less. d : Dimensions for J

Note 3: Position of cushion needle cannot be changed. d^* : Dimensions for L

Note 4: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

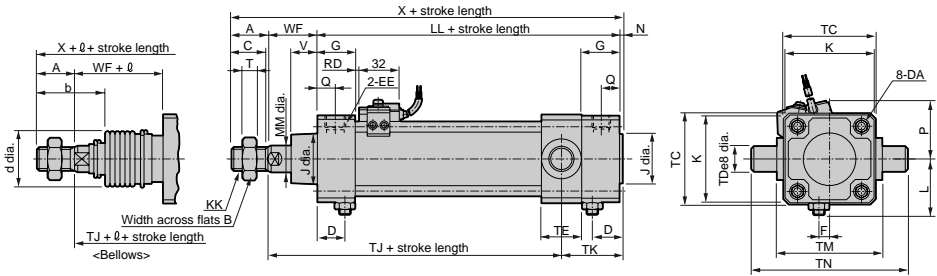
Symbol	Rod side trunnion type (TA) basic dimensions																			Mounting dimensions		
Bore size (mm)	A	B	C	D	DA	EE	F	G	J	K	KK	L	LL	MM	N	Q	T	V	WF	X	TC	TD
40 dia.	22	22	20	18	M8	Rc $\frac{1}{2}$	7.5	26	31	57	M14 X 1.5	38 to 39.5	93	16	2	13	8	18.5	33.5	150.5	57	16
50 dia.	28	27	26	20	M8	Rc $\frac{1}{2}$	0	28	38	66	M18 X 1.5	41 to 43.5	101	20	2.5	14	11	20.5	37	168.5	67	18
63 dia.	28	27	26	22	M8	Rc $\frac{1}{2}$	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	3	15	11	21	35	171	82	20
80 dia.	36	32	34	26	M12	Rc $\frac{1}{2}$	0	34	43	98	M22 X 1.5	56 to 59	116	25	3.5	17	13	23.5	48	203.5	100	25
100 dia.	45	41	43	28	M12	Rc $\frac{1}{2}$	0	36	51	118	M26 X 1.5	66 to 69	128	30	4	18	16	32	53	230	121	35

Symbol	Mounting dimensions										Bellows										With switch	
Bore size (mm)	TE	TF	TG	TM	TN	b	d	d*	ϕ										HD	P		
									50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	When 500 exceeding						
40 dia.	30	74.5	54	63	95	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	5.5	42				
50 dia.	30	80	60.5	80	116	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	44				
63 dia.	35	82.5	60.5	90	130	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	7.5	48				
80 dia.	40	102	65.5	115	165	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	9	58				
100 dia.	50	114	71	135	205	68.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 9	13	66				

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSGD
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2
JSC3
(medium)
JSC3
(large)
USB3
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCA
HMA
MRL2
SRL2
SRG
SRT
SRB2
Medium bore size cylinder

Dimensions

• Head side trunnion type (TB)  (File name: Page 394 or Ending 115 to 116)



Note 1: The position at head side stroke end cannot be detected.

Note 2: For ℓ dimensions, round up decimal point or less. d : Dimensions for J

Note 3: Position of cushion needle cannot be changed. d^* : Dimensions for L

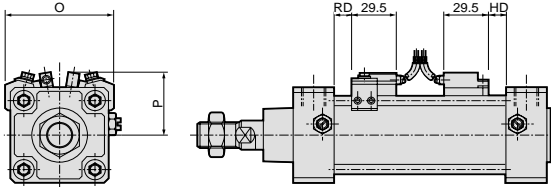
Note 4: Please refer to Page 307 about dimensions of projecting section of T2YD and HO switches.

Symbol	Head side trunnion type (TB) basic dimensions																	Mounting dimensions					
Bore size (mm)	A	B	C	D	DA	EE	F	G	J	K	KK	L	LL	MM	N	Q	T	V	WF	X	TC	TD	
40 dia.	22	22	20	18	M8	Rc $\frac{1}{2}$	0	28	38	66	M14 X 1.5	38 to 39.5	93	16	2	13	8	18.5	33.5	150.5	57	16	-0.032 -0.059
50 dia.	28	27	26	22	M8	Rc $\frac{1}{2}$	0	30	38	80	M18 X 1.5	41 to 43.5	101	20	3	15	11	21	35	171	82	20	-0.040 -0.073
63 dia.	28	27	26	22	M8	Rc $\frac{1}{2}$	0	30	38	80	M18 X 1.5	47.5 to 50.0	105	20	3	15	11	21	35	171	82	20	-0.040 -0.073
80 dia.	36	32	34	26	M12	Rc $\frac{1}{2}$	0	34	43	98	M22 X 1.5	56 to 59	116	25	3.5	17	13	23.5	48	203.5	100	25	-0.040 -0.073
100 dia.	45	41	43	28	M12	Rc $\frac{1}{2}$	0	36	51	118	M26 X 1.5	66 to 69	128	30	4	18	16	32	53	230	121	35	-0.050 -0.059

Symbol	Mounting dimensions					Bellows												With switch	
Bore size (mm)	TE	TJ	TM	TN	TK	b	d	d*	ℓ								P	RD	
									50 or less	50 to 100	100 to 150	150 to 200	200 to 300	300 to 400	400 to 500	When 500 exceeding			
40 dia.	30	85.5	43.5	63	95	43	41	40	40	25.5	41.5	58.5	75.5	108.5	141.5	174.5	(Stroke length/3.0) + 8	42	5.5
50 dia.	30	95	46	80	116	45.5	47	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	44	7.5
63 dia.	35	92.5	51	90	130	50.5	45	47	48	22	36	49	63	90	119	146	(Stroke length/3.6) + 7.5	48	7.5
80 dia.	40	110	58	115	165	57.5	58.5	53	55	14	26	38	49	72	96	119	(Stroke length/4.3) + 2.5	58	9
100 dia.	50	120	65.5	135	205	65	69.5	61	65	20	32	42	53	76	98	120	(Stroke length/4.5) + 8	66	13

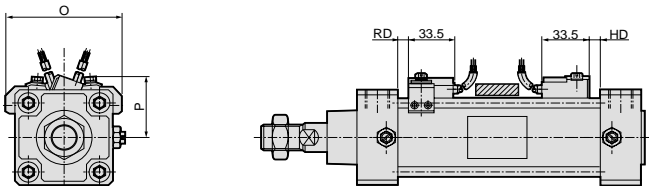
Dimensions

- T2YD with switch



Symbol	O	P	RD	HD
Bore size (mm)				
40 dia.	66	40	10	10
50 dia.	73	44.5	12	12
63 dia.	84	50	12	12
80 dia.	104	60	13.5	13.5
100 dia.	120	68	17.5	17.5

- HO * with switch



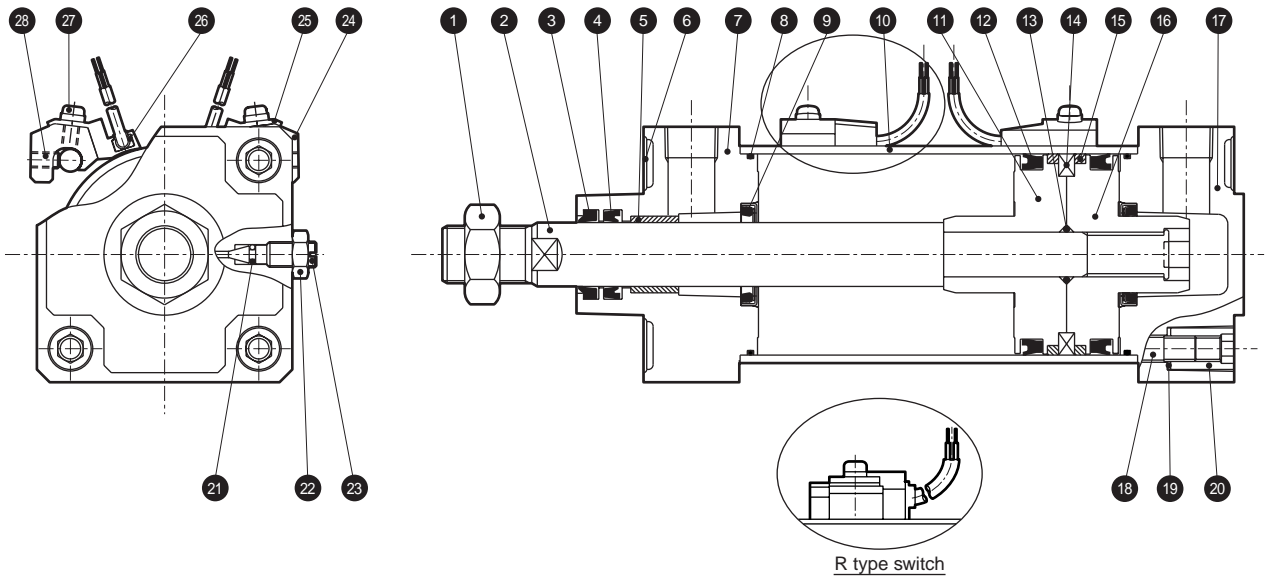
Symbol	O	P	RD	HD
Bore size (mm)				
40 dia.	66	42	4	4
50 dia.	73	44	6	6
63 dia.	84	47	6	6
80 dia.	104	58	7.5	7.5
100 dia.	120	64	11.5	11.5

- SCP * 2
- CMK2
- CMA2
- SCM
- SCA2**
- SCS
- CKV2
- CAV2/
COV * 2
- CAT
- MDC2
- MVC
- SMD2
- MSP/
MSDG
- SSD
- SSD
(large)
- FC *
- ULKP/
ULK
- JSK2/
JSM2
- JSC3
(medium)
- JSC3
(large)
- JSB3
- UCAC
- STS/
STL
- LCS
- LCY
- STR2
- UCA2
- STK
- USSD
- USC
- MFC
- GLC
- SHC
- CAC3
- HCM
- HCA
- MRL2
- SRL2
- SRG
- SRM
- SRT
- SRB2

Standard type
Medium bore size cylinder

Internal structure and parts list

● SCA2



No.	Parts name	Material	Remarks	No.	Parts name	Material	Remarks
1	Rod nut	Steel	Zinc chromate	16	Piston H	Aluminum alloy die-casting	
2	Piston rod	Steel	Industrial chrome plating	17	Head cover	Aluminum alloy die-casting	Paint
3	Dust wiper	Nitrile rubber		18	Tie rod	Steel	Zinc chromate
4	Rod packing seal	Nitrile rubber		19	Conical spring washer	Steel	Blackening
5	Bush	Oil impregnated bearing alloy	Note 1	20	Round nut	Steel	Zinc chromate
6	Masking plate	Aluminum alloy	Paint	21	Needle gasket	Nitrile rubber	
7	Rod cover	Aluminum alloy die-casting	Paint	22	Needle nut	Copper alloy	Note 2
8	Cylinder gasket	Nitrile rubber		23	Cushion needle	Copper alloy	Note 2
9	Cushion packing seal	Urethane rubber, steel		With switch			
10	Cylinder tube	Aluminum alloy	Hard alumite treatment	24	Switch installation unit	Aluminum alloy	
11	Piston R	Aluminum alloy die-casting		25	Switch holder	Aluminum alloy	
12	Piston packing seal	Nitrile rubber		26	Cylinder switch		
13	Piston gasket	Nitrile rubber		27	Cross headed pan w/washer	Steel	Zinc chromate
14	Magnet	Plastic		28	Hexagon socket head set screw	Alloy steel	Blackening
15	Wear ring	Polyacetal resin					

Note 1: Oil impregnated cast iron bearing is used for copper and PTFE free. Note 2: Steel + galvanizing is used for copper and PTFE free.

Repair parts list

Bore size (mm)	Kit No.	Repair parts number
φ 40	SCA2-40K	
φ 50	SCA2-50K	3 4 8 9 12
φ 63	SCA2-63K	15 21
φ 80	SCA2-80K	
φ 100	SCA2-100K	

Note: Specify the kit No. when placing an order.

Mounting bracket material

Mounting style	Material	Remarks
LB	Steel	Paint
FA/FB/FC	Steel	Paint
CA/CB	Cast iron	Paint
TC/TA/TB	Cast iron	Paint