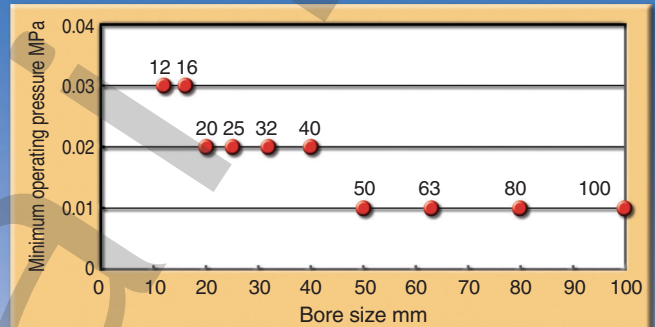


Smooth Cylinder



Minimum operating pressure 0.01 to 0.03 MPa

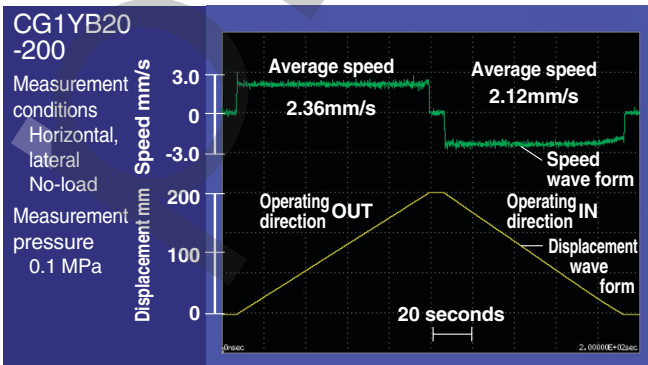
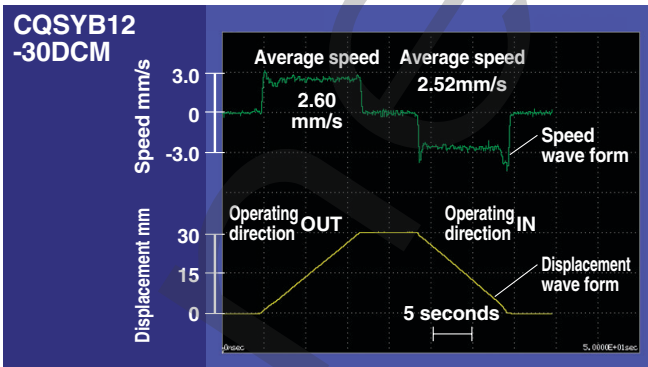


(Measurement based on JIS B8377)

Series CQSY/CQ2Y/CM2Y/CG1Y/CA2Y
 ø12 to ø25 ø32 to ø100 ø20 to ø40 ø20 to ø100 ø40 to ø100

Stable operation possible even at a low speed of 5 mm/s (measurement based on JIS B8377)

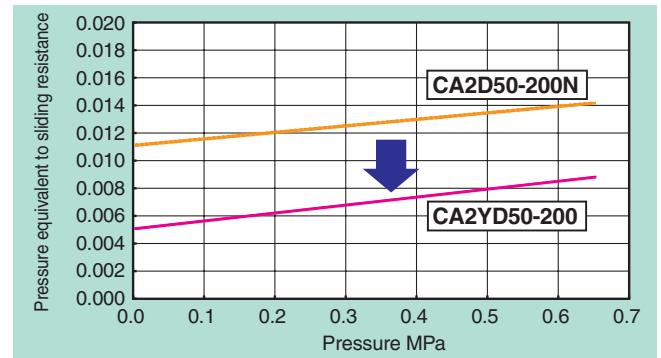
Smooth operation with less sticking and slipping



Sliding resistance

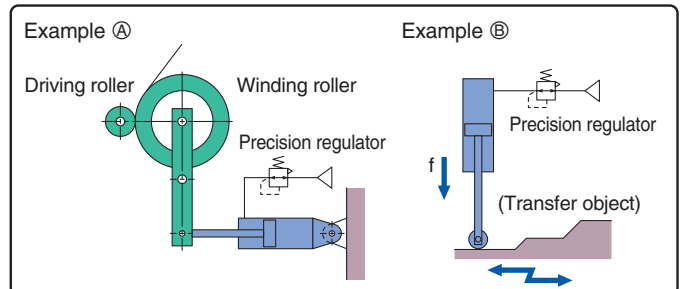
Bi-directional low-friction operation possible.

Pressure can be controlled regardless of its direction.



Example

Smooth cylinder combined with precision regulator (e.g. Series IR)



Smooth Cylinder Series CQSY

ø12, ø16, ø20, ø25

Specifications and auto switch information not provided below are the same as those of the anti-lateral load type of Series CQS□S.

How to Order

Standard

CQSY B 20-30 D C

With auto switch

CDQSY B 20-30 D C F9BW S

With auto switch
(Built-in magnet)

Mounting

B	Through-hole/Both ends tapped (Standard)
L	Foot
F	Front flange
G	Rear flange
D	Double clevis

* Mounting brackets are not mounted and are supplied loose at the time of shipment.

Bore size

12	12 mm
16	16 mm
20	20 mm
25	25 mm

Cylinder stroke (mm)

→ Refer to "Standard stroke table" on page 2.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	n pcs.

Auto switch

Nil	Without auto switch (Built-in magnet)
-----	---------------------------------------

* Please select the applicable auto switch model from the table below.

* Auto switches are not mounted and are supplied loose at the time of shipment.

Note) Please also confirm whether the selected auto switch can be mounted at the desired position. Auto switches of models A9□V and F9□V may not be mounted on the side with ports due to the cylinder stroke or the size of the fittings.

Bumper/Rod end thread

C	Rubber bumper & Rod end female thread
CM	Rubber bumper & Rod end male thread

Action

D	Double acting
---	---------------

Applicable Auto Switches /

Type	Special function	Electrical entry	Indicator	Wiring (Output)	Load voltage			Auto switch model		Lead wire (m)*			Pre-wired connector	Applicable load	
					DC	AC		Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)			
Reed switch	-	Grommet	Yes	3-wire (Equiv. NPN)	-	5 V	-	A96V	A96	●	●	-	-	IC	-
				2-wire	24 V	12 V	100 V	A93V	A93	●	●	-	-	-	Relay, PLC
Solid state switch	-	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	-	-	M9N	●	●	-	-	IC	Relay, PLC
				3-wire (PNP)				-	M9P	●	●	-	-		
				2-wire				-	M9B	●	●	-	-		
				3-wire (NPN)				F9NV	F9N	●	●	○	○		
				3-wire (PNP)	F9PV	F9P	●	●	○	○					
				2-wire	F9BV	F9B	●	●	○	○					
				3-wire (NPN)	F9NWV	F9NW	●	●	○	○					
				3-wire (PNP)	F9PWV	F9PW	●	●	○	○					
				2-wire	F9BWV	F9BW	●	●	○	○					
				-	F9BA	-	●	○	○	○					

* Lead wire length 0.5 m Nil (Example) A93
3 m L (Example) A93L
5 m Z (Example) F9NWZ

* ○: Manufactured upon receipt of order.

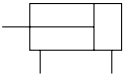
In addition to the models in the above table, there are some other auto switches that are applicable.



Specifications

Model	Pneumatic (Non-lube)
Action	Double acting, single rod
Fluid	Air
Proof pressure	1.05 MPa
Maximum operating pressure	0.7 MPa
Ambient and fluid temperature	Without auto switch -10 to 70°C (with no freezing) With auto switch -10 to 60°C (with no freezing)
Cushion	Rubber bumper
Rod end thread	Female thread
Rod end thread tolerance	JIS class 2
Stroke length tolerance	$\begin{matrix} +1.0 \\ 0 \end{matrix}$
Mounting	Through-hole/Both ends tapped
Operating piston speed	5 to 500 mm/s
Allowable leakage rate	0.5 ℓ/min (ANR) or less

JIS symbol



Minimum Operating Pressure

	Unit: MPa			
Bore size (mm)	12	16	20	25
Minimum operating pressure	0.03		0.02	

Standard Stroke Table

Bore size (mm)	Standard stroke (mm)
12, 16	5, 10, 15, 20, 25, 30
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50

Replacement Parts: Seal Kits

Bore size (mm)	Kit No.	Contents
12	CQSY12-PS	Piston seal 1 pc.
16	CQSY16-PS	Rod seal 1 pc.
20	CQSY20-PS	Tube gasket 1 pc.
25	CQSY25-PS	Grease pack (10 g) 1 pc.

When only grease for maintenance is necessary, please order by the following part numbers.

Grease pack GR-L-005 (5 g)
GR-L-010 (10 g)
GR-L-150 (150 g)

Theoretical Output Table

					OUT	IN	Unit: N
Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)			
				0.3	0.5	0.7	
12	6	IN	84.8	25	42	59	
		OUT	113	34	57	79	
16	8	IN	151	45	75	106	
		OUT	201	60	101	141	
20	10	IN	236	71	118	165	
		OUT	314	94	157	220	
25	12	IN	378	113	189	264	
		OUT	491	147	245	344	

Intermediate Strokes

Method	Installation of spacer on standard stroke body.	
Model no.	Refer to page 1 for standard model no.	
Standard stroke	Method	Intermediate strokes at 1 mm intervals are available by using spacers with standard stroke cylinders.
	Stroke range	Bore size (mm)
		Stroke range (mm)
Example	Model no.: CQSYB25-47DC CQSYB25-50DC with 3 mm width spacer inside. B dimension is 77.5 mm. Calculation: $\phi 25$, B dimension 27.5 mm (without switch) $27.5 (B \text{ dimension}) + 50 (st) = 77.5 (mm)$	

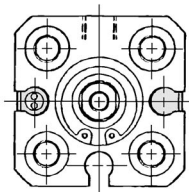
Series CQSY

Mounting bracket dimensions are the same as those of the anti-lateral load type of Series CQS□S.

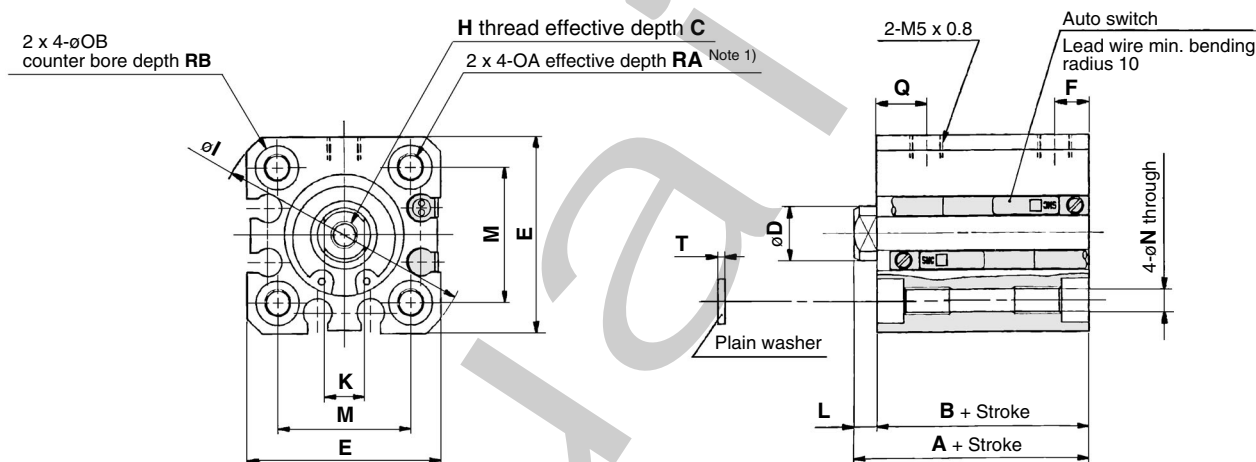
Dimensions/ø12 to ø25

Standard (Through-hole/Both ends tapped)/CQSYB, CDQSYB

ø12

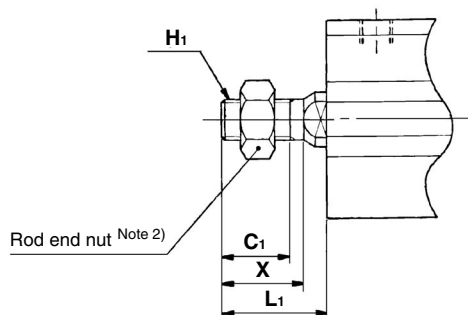
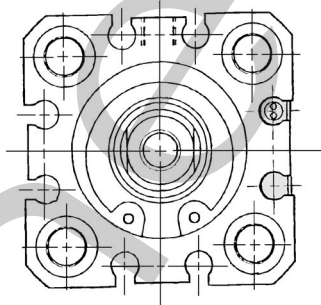


ø16



ø20, ø25

Rod end male thread



Rod end male thread (mm)

Bore size (mm)	C ₁	H ₁	L ₁	X
12	9	M5 x 0.8	14	10.5
16	10	M6 x 1.0	15.5	12
20	12	M8 x 1.25	18.5	14
25	15	M10 x 1.25	22.5	17.5

Standard

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	D	E	F	H	I	K	L	M	N	OA	OB	Q	RA	RB	T
		A	B	A	B																
12	5 to 30	25.5	22	30.5	27	6	6	25	5	M3 x 0.5	32	5	3.5	15.5	3.5	M4 x 0.7	6.5	7.5	7	4	0.5
16	5 to 30	25.5	22	30.5	27	8	8	29	5	M4 x 0.7	38	6	3.5	20	3.5	M4 x 0.7	6.5	7.5	7	4	0.5
20	5 to 50	29	24.5	39	34.5	7	10	36	5.5	M5 x 0.8	47	8	4.5	25.5	5.4	M6 x 1.0	9	9	10	7	1
25	5 to 50	32.5	27.5	42.5	37.5	12	12	40	5.5	M6 x 1.0	52	10	5	28	5.4	M6 x 1.0	9	11	10	7	1

Note 1) Threaded through hole is used for the standard of ø20 with 5 to 10 mm strokes and ø25 with a 5 mm stroke.