

Smooth Cylinder

Series CQSY

ø12, ø16, ø20, ø25

How to Order

CQSY B 20 - 30 D C

With auto switch

CDQSY B 20 - 30 D C - M9BW

With auto switch
(Built-in magnet)

Mounting style

B	Through-hole/Both ends tapped (Standard)
L	Foot style <small>Note</small>
LC	Compact foot style
F	Rod side flange style
G	Head side flange style
D	Double clevis style

* 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" on page 1169.

Number of auto switches

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

Auto switch

Nil	Without auto switch
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*For the applicable auto switch model, refer to the table below.

Bumper/Rod end thread

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

Action

D	Double acting
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Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example) CDQSYL25-30DC

Applicable Auto Switches/Refer to pages 1893 to 2007 for further information on auto switches.

Type		Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model		Lead wire (m)					Pre-wired connector	Applicable load		
						DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)					
Solid state auto switch	—	Diagnostic indication (2-color)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC		
					3-wire (PNP)			M9PV	M9P	●	●	●	○	○				
					2-wire	12 V		M9BV	M9B	●	●	●	○	○			—	
					3-wire (NPN)	5 V, 12 V		M9NVW	M9NW	●	●	●	○	○			IC circuit	
	3-wire (PNP)	M9PVW	M9PW	●	●	●	○	○	IC circuit									
	2-wire	12 V	M9BWW	M9BW	●	●	●	○		○	—							
	3-wire (NPN)	5 V, 12 V	M9NAV***	M9NA***	○	○	●	○		○	IC circuit							
	3-wire (PNP)	M9PAV***	M9PA***	○	○	●	○	○		—								
2-wire	12 V	M9BAV***	M9BA***	○	○	●	○	○	—									
Magnetic field resistant (2-color indication)	2-wire (Non-polar)	—	—	P3DW**	●	—	●	○				—						
Reed auto switch	—	Grommet	Yes	3-wire (Equiv. NPN)	—	5 V	—	A96V			A96		●	—	●	—	—	IC circuit
				No	2-wire	24 V	12 V	100 V or less		A93V	A93		●	—	●	—	—	—
									A90V	A90	●		—	○	—	—	—	IC circuit

*** Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.

* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWW

* O: Manufactured upon receipt of order.
** D-P3DW□ is compatible with ø25.
It is mounted away from the port side to avoid interference with fittings.

* In addition to the models in the above table, there are some other auto switches that are applicable. For more information, refer to page 1175.

* Refer to pages 1960 and 1961 for details of auto switches with a pre-wired connector. For D-P3DW□, refer to pages 1948 and 1949.

* 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 D-A9□V, M9□V, M9□WV and M9□AV may not be mounted on the side with ports due to the cylinder stroke or the size of the fittings.

Specifications

Bore size (mm)	12	16	20	25
Type	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			
Stroke length tolerance	+1.0 mm (Note)			
	0			
Operating piston speed	5 to 500 mm/s			
Allowable leakage rate	0.5 L/min (ANR) or less			

(Note) Stroke length tolerance does not include the amount of bumper change.

Minimum Operating Pressure

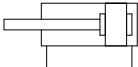
				Unit: MPa
Bore size (mm)	12	16	20	25
Minimum operating pressure	0.03		0.02	

Standard Stroke

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

Symbol

Rubber bumper

**Replacement Parts: Seal Kit**

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 part no.: GR-L-005 (5 g)
GR-L-010 (10 g)
GR-L-150 (150 g)

Theoretical Output

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)			Unit: N
				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 Stroke

Method	Installation of spacer on standard stroke body.		
Model no.	Refer to page 1168 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)
		12, 16	1 to 29
Example		20, 25	1 to 49
		Part no.: CQSYB25-47DC CQSYB25-50DC with 3 mm width spacer inside. B dimension is 77.5 mm. Calculation: $\varnothing 25$, B dimension 27.5 mm (without auto switch) 27.5 (B dimension) + 50 (st) = 77.5 (mm)	

REA

REB

REC

CEY

CIX

MQ

RHC

RZQ

D-□

-X□