



# Compact Cylinder: Standard Type Double Acting, Single Rod Series **CQS** ø12, ø16, ø20, ø25

## How to Order

**Without auto switch**

**CQS** B 20 30 D  

**With auto switch**

**CDQS** B 20 30 D   F9BW S

**Number of auto switches**

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

**Auto switch**

Nil	Without auto switch (Built-in magnet)
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\* For the applicable auto switch model, refer to the table below.  
\* Auto switches are shipped together, (but not assembled).  
Note) There is the case A9□V type, M9□V type auto switches cannot be mounted on the port surface, depending on the cylinder's stroke and the fitting size for piping. Please confirm SMC separately.

**Body option**

Nil	Standard
C	With rubber bumper
M	Rod end male thread

\* Combination of body options ("CM") is available.

**Long stroke**

C	With rubber bumper Rod end female thread (Standard)
CM	With rubber bumper Rod end male thread

\* Rubber bumper is standard equipment for long stroke type.

**Action**

D	Double acting
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**Built-in magnet**

**Mounting style**

B	Through-hole/Both ends tapped common (Standard)
L	Foot style
F	Rod side flange style
G	Head side flange style
D	Double clevis style

**Bore size**

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

**Cylinder stroke (mm)**

Bore size (mm)	Standard stroke (mm)	Long stroke (mm)
12, 16	5, 10, 15, 20, 25, 30	35, 40, 45, 50, 75, 100
20	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	75, 100, 125, 150, 175, 200
25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	75, 100, 125, 150, 175, 200, 250, 300

\* In the case of long strokes, use either ends tapped mounting or bracket mounting.  
\* Mounting brackets are shipped together, (but not assembled).

For "Manufacture of Intermediate Strokes", refer to page 7-4-5.

### Applicable Auto Switch/Refer to page 7-9-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage			Auto switch model		Lead wire length (m) *			Pre-wire connector	Applicable load	
					DC	AC		Perpendicular	In-line	0.5 (Nil)	3 (L)	5 (Z)			
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	A96V	A96	●	●	—	—	IC circuit	—
				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	—	M9NV	M9N	●	●	○	○	IC circuit	Relay, PLC
				3-wire (PNP)				M9PV	M9P	●	●	○	○		
				2-wire				M9BV	M9B	●	●	○	○		
				3-wire (NPN)				F9NWV	F9NW	●	●	○	○		
				3-wire (PNP)				F9PWV	F9PW	●	●	○	○		
				2-wire				F9BWV	F9BW	●	●	○	○		
Diagnostic indication (2-color indication)	—	—	—	—	—	—	F9BA	—	●	○	○	—			
Water resistant (2-color indication)	—	—	—	—	—	—	—	—	—	—	—	—	—		

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

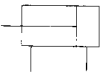
\* Solid state switches marked with "○" are produced upon receipt of order.

- Since there are other applicable auto switches than listed, refer to page 7-4-45 for details.
- For details about auto switches with pre-wire connector, refer to page 7-9-36.

# Compact Cylinder: Standard Type Double Acting, Single Rod Series CQS



JIS Symbol



## Allowable Kinetic Energy (J)

Bore size (mm)	12	16	20	25
Standard	0.022	0.038	0.055	0.09
With rubber bumper	0.043	0.075	0.11	0.18

## Minimum Operating Pressure (MPa)

Bore size (mm)	12	16	20	25
Minimum operating pressure	0.07	0.07	0.05	0.05

## Body Option

Description	Application
Rod end male thread	Available for all standard models of double acting, single rod.
Rubber bumper	

\* Rubber bumper is standard equipment for long stroke type.

## Mounting Bracket Part No.

Bore size (mm)	Foot <sup>(1)</sup>	Flange	Double clevis
12	CQS-L012	CQS-F012	CQS-D012
16	CQS-L016	CQS-F016	CQS-D016
20	CQS-L020	CQS-F020	CQS-D020
25	CQS-L025	CQS-F025	CQS-D025

- Note 1) Order two foot brackets per cylinder.  
 Note 2) Parts belonging to each bracket are as follows.  
 Foot or Flange style: Body mounting bolt  
 Double clevis style: Clevis pin, Type C snap ring for axis, Body mounting bolt.

## Specifications

Type	Pneumatic (Non-lube)
Action	Double acting, Single rod
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)
Rubber bumper	Standard stroke: None, Long stroke: Standard equipment
Rod end thread	Female thread
Rod end thread tolerance	JIS Class 2
Stroke length tolerance	Standard stroke: $+1.0_0$ Long stroke: $+1.4_0$
Mounting	Through-hole/Both ends tapped common
Piston speed	50 to 500 mm/s

## Minimum Stroke for Auto Switch Mounting (mm)

No. of auto switches mounted	D-A9□, D-F9□WV	D-A9□V	D-M9□, D-F9□W	D-M9□V	D-F9BAL
2	10	10	15 <sup>Note)</sup>	5	25 <sup>Note)</sup>
1	10 <sup>Note)</sup>	5	15 <sup>Note)</sup>	5	25 <sup>Note)</sup>

Note) Please consult with SMC for shorter stroke length than indicated in the table.

## Theoretical Output

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm <sup>2</sup> )	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

## Manufacture of Intermediate Stroke

Description		Spacer is installed in the standard stroke body.	Exclusive body (-XB10)		
Part no.		Refer to "How to Order" for the standard model no. (page at left)	Suffix "-XB10" to the end of standard model no. (page at left)		
Standard stroke	Description	Intermediate strokes by the 1 mm interval are available by using spacers with standard stroke cylinders.	Dealing with the stroke by the 1 mm interval by using an exclusive body with the specified stroke		
	Stroke range	Bore size	Stroke range	Bore size	Stroke range
		12, 16	1 to 29	12, 16	6 to 29
		20, 25	1 to 49	20, 25	6 to 49
Long stroke	Description	Intermediate strokes by the 1 mm interval are available by using spacers with standard stroke cylinders.	Dealing with the stroke by the 1 mm interval by using an exclusive body with the specified stroke		
	Stroke range	Bore size	Stroke range	Bore size	Stroke range
		12, 16	31 to 99	12, 16	31 to 99
		20	51 to 199	20	51 to 199
		25	51 to 299	25	51 to 299
Example		Part no.: CQSB25-47D CQSB25-50D with 3 mm width spacer inside. B dimension is 72.5 mm.	Part no.: CQSB25-47D-XB10 Makes 47 stroke tube. B dimension is 69.5 mm.		

# Series CQS

## Weight/Without Auto Switch

(g)

Bore size (mm)	Cylinder stroke (mm)																	
	5	10	15	20	25	30	35	40	45	50	75	100	125	150	175	200	250	300
12	29	36	42	49	56	63	93	100	107	113	147	180	—	—	—	—	—	—
16	38	47	56	64	73	82	119	128	136	145	187	229	—	—	—	—	—	—
20	63	75	88	101	114	127	140	153	166	178	306	370	434	498	562	627	—	—
25	91	107	123	139	155	171	186	202	218	234	399	478	557	636	715	794	952	1110

## For standard stroke

Calculation: (Example) CQSD20-20DCM

- Cylinder weight: CQSB20-20D.....101 g
- Option weight: Rod end male thread..... 10 g  
: Rubber bumper.....-2 g  
: Double clevis style..... 92 g

201 g

## Weight/With Auto Switch (Built-in magnet)

(g)

Bore size (mm)	Cylinder stroke (mm)																	
	5	10	15	20	25	30	35	40	45	50	75	100	125	150	175	200	250	300
12	37	43	50	57	63	70	94	101	108	114	148	181	—	—	—	—	—	—
16	48	57	66	74	83	92	121	129	137	146	188	231	—	—	—	—	—	—
20	93	106	119	132	144	157	170	182	195	208	311	375	439	503	567	632	—	—
25	134	150	166	182	197	213	229	245	261	277	406	485	564	643	721	800	958	1116

## Additional Weight

(g)

Bore size (mm)		12	16	20	25
Rod end male thread	Male thread	1.5	3	6	12
	Nut	1	2	4	8
Rubber bumper * (No need to add for long stroke)		0	1	-2	-3
Foot style (Including mounting bolt)		55(53)	65(61)	159(153)	181(172)
Rod side flange style (Including mounting bolt)		58(56)	70(66)	143(137)	180(171)
Head side flange style (Including mounting bolt)		56	66	137	171
Double clevis style (Including pin, snap ring, bolt)		34	40	92	127

( ): denotes the values of long stroke model.



## Made to Order Specifications (For details, refer to page 7-10-1.)

Symbol	Specifications
-XA□	Change of rod end shape
-XB6	Heat resistant cylinder (150°C)
-XB7	Cold resistant cylinder
-XB9	Low speed cylinder (10 to 50 mm/s)
-XB10	Intermediate stroke (Using exclusive body)
-XB13	Low speed cylinder (5 to 50 mm/s)
-XB18	Low friction cylinder
-XC6	Piston rod and rod end nut made of stainless steel
-XC8	Adjustable stroke cylinder/Adjustable extension type
-XC9	Adjustable stroke cylinder/Adjustable retraction type
-XC10	Dual stroke cylinder/Double rod type
-XC11	Dual stroke cylinder/Single rod type
-XC36	With boss in rod side
-X271	Fluoro rubber for seals
-X525	Long stroke of adjustable extension stroke cylinder (-XC8)
-X526	Long stroke of adjustable retraction stroke cylinder (-XC9)
-X636	Intermediate stroke of double rod type

### Copper-free (For CRT manufacturing process)

20 — CQS **Mounting** **Bore size** — **Stroke** D(C)(M)  
 • Copper-free —  $\varnothing 12, \varnothing 16, \varnothing 20, \varnothing 25$

To prevent the influence of copper ions or halogen ions during CRT manufacturing processes, copper and fluorine materials are not used in the component parts.

### Specifications

Action	Double acting, Single rod
Bore size (mm)	12, 16, 20, 25
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Rubber bumper	Standard stroke: None, Long stroke: Standard equipment
Mounting	Through-hole/Both ends tapped common
Piston speed	50 to 500 mm/s

### Clean Series (Standard stroke is only available.)

10 — C(D)QSB **Bore size** — **Stroke** D(M)  
 • Clean Series

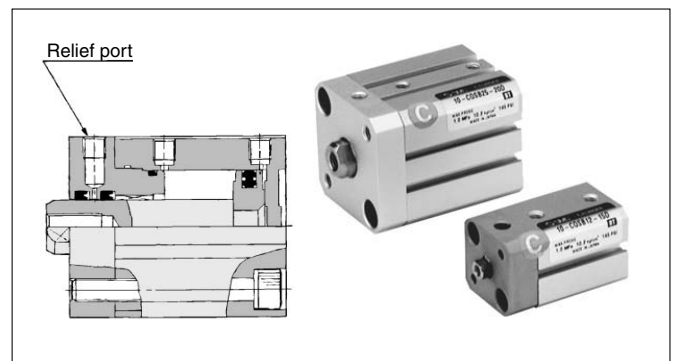
10	Relief type
11	Vacuum type

The type which is applicable for using inside the clean room graded Class 100 by making an actuator's rod section a double seal construction and discharging by relief port directly to the outside of clean room.

### Specifications

Action	Double acting, Single rod
Bore size (mm)	12, 16, 20, 25
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Rubber bumper	None
Piping	Screw-in piping
Piston speed	50 to 500 mm/s
Mounting	Through-hole/Both ends tapped common
Auto switch	Mountable

Note) For details, please contact SMC.



For details, refer to the separate catalog "Pneumatic Clean Series".

CUJ

CU

**CQS**

CQM

CQ2

RQ

MU

D-

-X

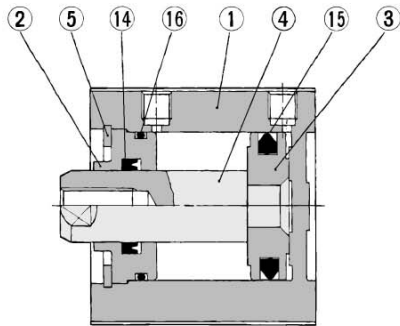
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Data

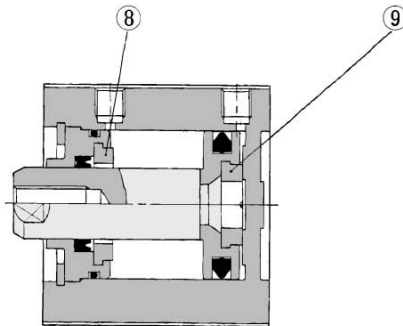
# Series CQS

## Construction

### Basic style

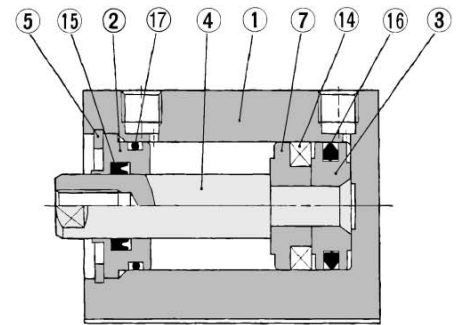


### With rubber bumper

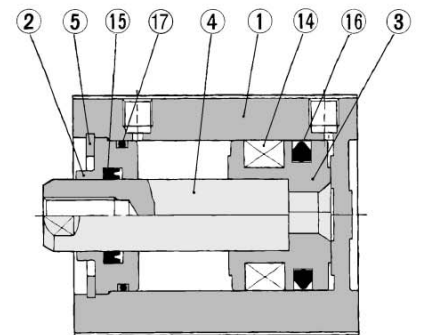


### With auto switch (Built-in magnet)

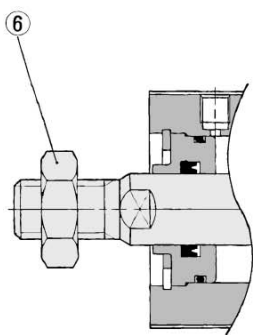
ø12, ø16



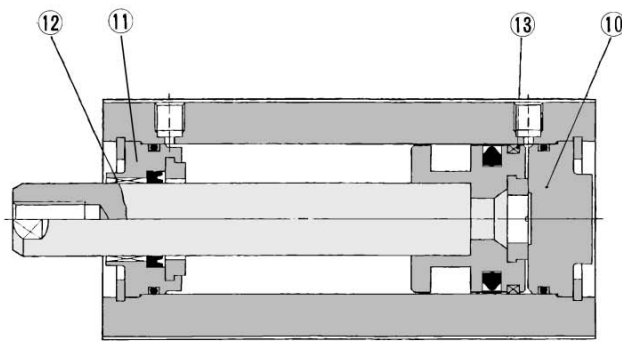
ø20, ø25



### Rod end male thread



### Long stroke



## Component Parts

No.	Description	Material	Note
①	Cylinder tube	Aluminum alloy	Hard anodized
②	Collar	Aluminum alloy	Anodized
③	Piston	Aluminum alloy	Chromated
④	Piston rod	Stainless steel	
⑤	Snap ring	Carbon tool steel	Phosphate coated
⑥	Rod end nut	Carbon steel	Nickel plated
⑦	Spacer for switch type	Aluminum alloy	Chromated
⑧	Bumper A	Urethane	
⑨	Bumper B	Urethane	
⑩	Bottom plate	Aluminum alloy	Anodized

No.	Description	Material	Note
⑪	Collar	Aluminum alloy	Anodized
⑫	Bushing	Oil-impregnated sintered alloy	
⑬	Wear ring	Resin	
⑭	Magnet	—	
⑮*	Rod seal	NBR	
⑯*	Piston seal	NBR	
⑰*	Tube gasket	NBR	

## Replacement Parts: Seal Kit

Bore size (mm)	Kit no.	Contents
12	CQSB12-PS	Set of nos. above ⑮, ⑯, ⑰
16	CQSB16-PS	
20	CQSB20-PS	
25	CQSB25-PS	

\* Seal kit includes ⑮, ⑯, ⑰. Order the seal kit, based on each bore size.

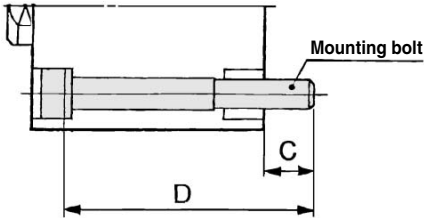
# Compact Cylinder: Standard Type Double Acting, Single Rod Series CQS

## Mounting Bolt for CQS

Mounting method: Mounting bolt for through-hole mounting style of CQSB is available as an option.

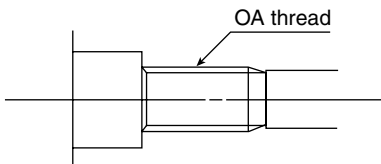
Ordering: Add the word "Bolt" in front of the bolts to be used.

Example) Bolt M3 x 25ℓ 4 pcs. (Standard stroke)  
Bolt M3 x 75ℓ 4 pcs. (Long stroke)



Note 1) The appropriate plain washer must be used for through-hole mounting.

Note 2) Please contact SMC for details concerning the mounting bolts to be used with ø12 and ø16 that exceed 30 mm strokes, or ø20 and ø25 that exceed 50 mm strokes.



Model	C	D	Mounting bolt
<b>CQSB12-5D</b>	6.5	25	M3 x 25ℓ
<b>-10D</b>		30	x 30ℓ
<b>-15D</b>		35	x 35ℓ
<b>-20D</b>		40	x 40ℓ
<b>-25D</b>		45	x 45ℓ
<b>-30D</b>		50	x 50ℓ
<b>-35DC</b>	Secure the cylinder by using the OA screws that are provided with the cylinder tube.		
<b>-40DC</b>			
<b>-45DC</b>			
<b>-50DC</b>			
<b>-75DC</b>			
<b>-100DC</b>			
<b>CQSB16-5D</b>	6.5	25	M3 x 25ℓ
<b>-10D</b>		30	x 30ℓ
<b>-15D</b>		35	x 35ℓ
<b>-20D</b>		40	x 40ℓ
<b>-25D</b>		45	x 45ℓ
<b>-30D</b>		50	x 50ℓ
<b>-35DC</b>	Secure the cylinder by using the OA screws that are provided with the cylinder tube.		
<b>-40DC</b>			
<b>-45DC</b>			
<b>-50DC</b>			
<b>-75DC</b>			
<b>-100DC</b>			
<b>CQSB20-5D</b>	6.5	25	M5 x 25ℓ
<b>-10D</b>		30	x 30ℓ
<b>-15D</b>		35	x 35ℓ
<b>-20D</b>		40	x 40ℓ
<b>-25D</b>		45	x 45ℓ
<b>-30D</b>		50	x 50ℓ

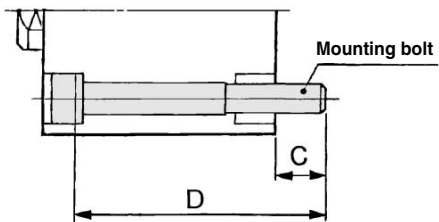
Model	C	D	Mounting bolt
<b>CQSB20-30D</b>	6.5	50	M5 x 50ℓ
<b>-35D</b>		55	x 55ℓ
<b>-40D</b>		60	x 60ℓ
<b>-45D</b>		65	x 65ℓ
<b>-50D</b>		70	x 70ℓ
<b>-75DC</b>		Secure the cylinder by using the OA screws that are provided with the cylinder tube.	
<b>-100DC</b>			
<b>-125DC</b>			
<b>-150DC</b>			
<b>-175DC</b>			
<b>-200DC</b>			
<b>CQSB25-5D</b>	8.5	30	M5 x 30ℓ
<b>-10D</b>		35	x 35ℓ
<b>-15D</b>		40	x 40ℓ
<b>-20D</b>		45	x 45ℓ
<b>-25D</b>		50	x 50ℓ
<b>-30D</b>		55	x 55ℓ
<b>-35D</b>		60	x 60ℓ
<b>-40D</b>		65	x 65ℓ
<b>-45D</b>		70	x 70ℓ
<b>-50D</b>		75	x 75ℓ
<b>-75DC</b>		Secure the cylinder by using the OA screws that are provided with the cylinder tube.	
<b>-100DC</b>			
<b>-125DC</b>			
<b>-150DC</b>			
<b>-175DC</b>			
<b>-200DC</b>			
<b>-250DC</b>			
<b>-300DC</b>			

## Mounting Bolt for CDQS with Auto Switch

Mounting method: Mounting bolt for through-hole mounting style of CDQSB is available as an option.

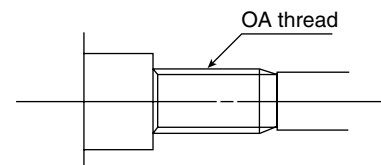
Ordering: Add the word "Bolt" in front of the bolts to be used.

Example) Bolt M3 x 30ℓ 4 pcs. (Standard stroke)  
Bolt M3 x 75ℓ 4 pcs. (Long stroke)



Note 1) The appropriate plain washer must be used for through-hole mounting.

Note 2) Please contact SMC for details concerning the mounting bolts to be used with ø12 and ø16 that exceed 30 mm strokes, or ø20 and ø25 that exceed 50 mm strokes.



Model	C	D	Mounting bolt
<b>CDQSB12-5D</b>	6.5	30	M3 x 30ℓ
<b>-10D</b>		35	x 35ℓ
<b>-15D</b>		40	x 40ℓ
<b>-20D</b>		45	x 45ℓ
<b>-25D</b>		50	x 50ℓ
<b>-30D</b>		55	x 55ℓ
<b>-35DC</b>	Secure the cylinder by using the OA screws that are provided with the cylinder tube.		
<b>-40DC</b>			
<b>-45DC</b>			
<b>-50DC</b>			
<b>-75DC</b>			
<b>-100DC</b>			
<b>CDQSB16-5D</b>	6.5	30	M3 x 30ℓ
<b>-10D</b>		35	x 35ℓ
<b>-15D</b>		40	x 40ℓ
<b>-20D</b>		45	x 45ℓ
<b>-25D</b>		50	x 50ℓ
<b>-30D</b>		55	x 55ℓ
<b>-35DC</b>	Secure the cylinder by using the OA screws that are provided with the cylinder tube.		
<b>-40DC</b>			
<b>-45DC</b>			
<b>-50DC</b>			
<b>-75DC</b>			
<b>-100DC</b>			
<b>CDQSB20-5D</b>	6.5	35	M5 x 35ℓ
<b>-10D</b>		40	x 40ℓ
<b>-15D</b>		45	x 45ℓ
<b>-20D</b>		50	x 50ℓ
<b>-25D</b>		55	x 55ℓ
<b>-30D</b>		60	x 60ℓ

Model	C	D	Mounting bolt
<b>CDQSB20-30D</b>	6.5	60	M5 x 60ℓ
<b>-35D</b>		65	x 65ℓ
<b>-40D</b>		70	x 70ℓ
<b>-45D</b>		75	x 75ℓ
<b>-50D</b>		80	x 80ℓ
<b>-75DC</b>		Secure the cylinder by using the OA screws that are provided with the cylinder tube.	
<b>-100DC</b>			
<b>-125DC</b>			
<b>-150DC</b>			
<b>-175DC</b>			
<b>-200DC</b>			
<b>CDQSB25-5D</b>	8.5	40	M5 x 40ℓ
<b>-10D</b>		45	x 45ℓ
<b>-15D</b>		50	x 50ℓ
<b>-20D</b>		55	x 55ℓ
<b>-25D</b>		60	x 60ℓ
<b>-30D</b>		65	x 65ℓ
<b>-35D</b>		70	x 70ℓ
<b>-40D</b>		75	x 75ℓ
<b>-45D</b>		80	x 80ℓ
<b>-50D</b>		85	x 85ℓ
<b>-75DC</b>		Secure the cylinder by using the OA screws that are provided with the cylinder tube.	
<b>-100DC</b>			
<b>-125DC</b>			
<b>-150DC</b>			
<b>-175DC</b>			
<b>-200DC</b>			
<b>-250DC</b>			
<b>-300DC</b>			

## Accessory

For accessory bracket for Series CQS, refer to page 7-6-20, since it is commonly used with Series CQ2.

- Single knuckle joint
- Double knuckle joint
- Pin for knuckle
- Rod end nut

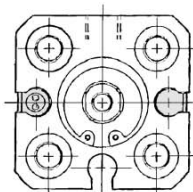
# Series CQS

## Dimensions: $\phi 12$ to $\phi 25$

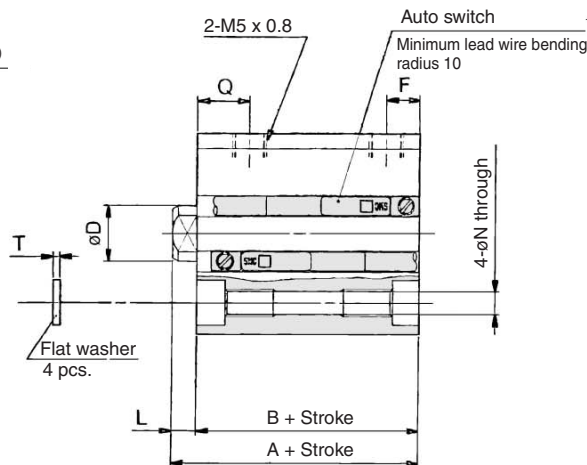
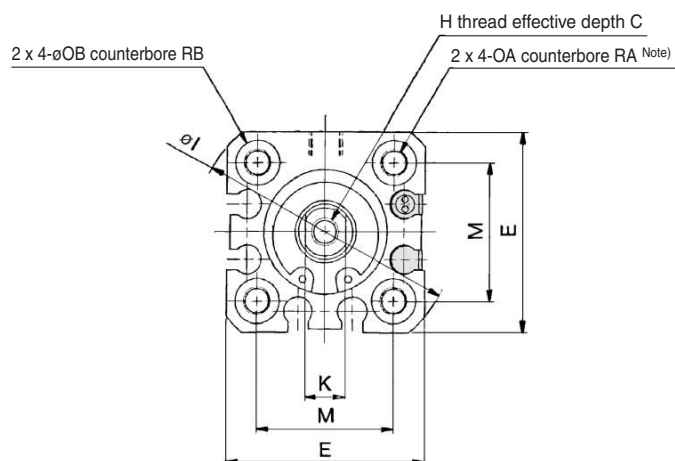
### Basic style (Through-hole/Both ends tapped common): CQSB/CDQSB

\* For the auto switch mounting position and its mounting height, refer to page 7-4-34.

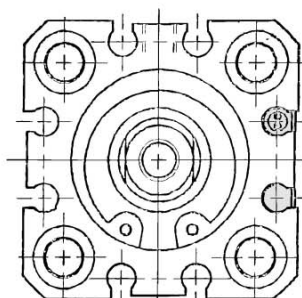
$\phi 12$



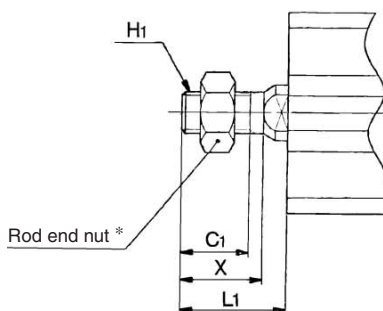
$\phi 16$



$\phi 20, \phi 25$



### Rod end male thread



### Rod End Male Thread

Bore size (mm)	Standard stroke		C <sub>1</sub>	H <sub>1</sub>	X
	L <sub>1</sub>	L <sub>1</sub>			
12	14	24	9	M5 x 0.8	10.5
16	15.5	25.5	10	M6 x 1.0	12
20	18.5	28.5	12	M8 x 1.25	14
25	22.5	32.5	15	M10 x 1.25	17.5



• Length with intermediate stroke

- (1) Spacer ... The dimensions will be identical to those of the nearest long stroke. Those that exceed the standard stroke will have the long stroke dimensions.
- (2) Exclusive body (-XB10)....Add stroke. Also, the stroke length that exceeds the standard stroke would be the long stroke dimension.

### Basic Style

Bore size (mm)	Standard stroke range (mm)	Standard stroke								Long stroke range (mm)	Long stroke				C	D	E	H	I	K	M	N	OA	OB	Q	RA	RB	T
		Without auto switch				With auto switch					With/Without auto switch																	
		A	B	F	L	A	B	F	L		A	B	F	L														
12	5 to 30	20.5	17	5	3.5	25.5	22	5	3.5	35 to 100	45.5	32	7.5	13.5	6	6	25	M3 x 0.5	32	5	15.5	3.5	M4 x 0.7	6.5	7.5	7	4	0.5
16	5 to 30	20.5	17	5	3.5	25.5	22	5	3.5	35 to 100	45.5	32	7.5	13.5	8	8	29	M4 x 0.7	38	6	20	3.5	M4 x 0.7	6.5	7.5	7	4	0.5
20	5 to 50	24	19.5	5.5	4.5	34	29.5	5.5	4.5	75 to 200	55.5	41	9	14.5	7	10	36	M5 x 0.8	47	8	25.5	5.4	M6 x 1.0	9	9	10	7	1
25	5 to 50	27.5	22.5	5.5	5	37.5	32.5	5.5	5	75 to 300	59	44	11	15	12	12	40	M6 x 1.0	52	10	28	5.4	M6 x 1.0	9	11	10	7	1

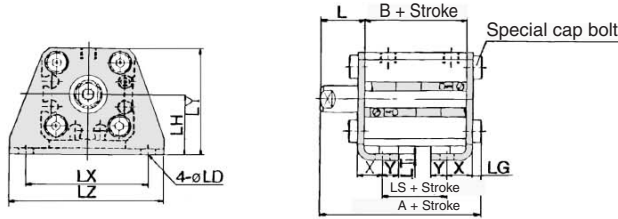
Note 1) For the following bore/stroke sizes through-hole is threaded over the entire length: Basic style  $\phi 12$  and  $\phi 16$ ; 5 stroke,  $\phi 20$ ; 5 to 15 stroke,  $\phi 25$ ; 5 to 10 stroke,  $\phi 20$  with auto switch built-in magnet; 5 stroke.

Note 2) Rubber bumper type has the same dimensions as those indicated above.

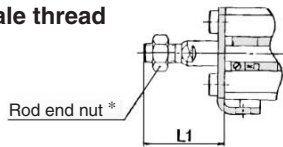
\* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

# Compact Cylinder: Standard Type Double Acting, Single Rod Series CQS

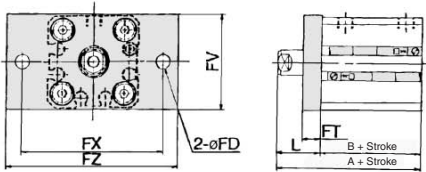
## Foot style: CQSL/CDQSL



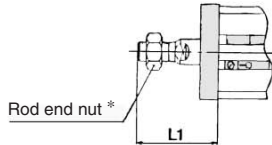
### Rod end male thread



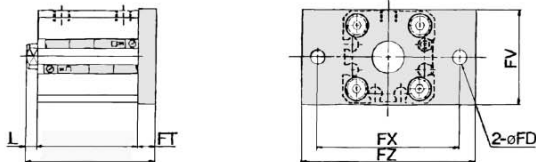
## Rod side flange style: CQSF/CDQSF



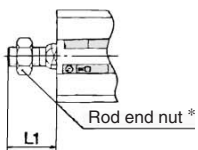
### Rod end male thread



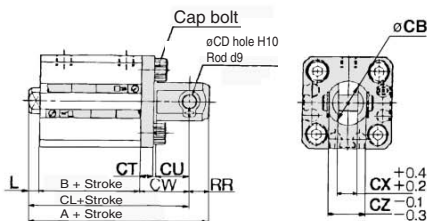
## Head side flange style: CQSG/CDQSG



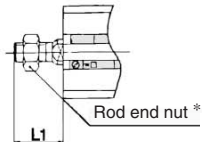
### Rod end male thread



## Double clevis style: CQSD/CDQSD



### Rod end male thread



## Foot Style

Bore size (mm)	Standard stroke range (mm)	Standard stroke						Long stroke range (mm)	Long stroke		
		Without auto switch			With auto switch				Without/With auto switch		
		A	B	LS	A	B	LS		A	B	LS
12	5 to 30	35.3	17	5	40.3	22	10	35 to 100	50.3	32	20
16	5 to 30	35.3	17	5	40.3	22	10	35 to 100	50.3	32	20
20	5 to 50	41.2	19.5	7.5	51.2	29.5	17.5	75 to 200	62.7	41	29
25	5 to 50	44.7	22.5	7.5	54.7	32.5	17.5	75 to 300	66.2	44	29

Bore size (mm)	L	L <sub>1</sub>	LD	LG	LH	LT	LX	LY	LZ	X	Y
12	13.5	24	4.5	2.8	17	2	34	29.5	44	8	4.5
16	13.5	25.5	4.5	2.8	19	2	38	33.5	48	8	5
20	14.5	28.5	6.6	4	24	3.2	48	42	62	9.2	5.8
25	15	32.5	6.6	4	26	3.2	52	46	66	10.7	5.8

Foot bracket material: Carbon steel

## Rod Side Flange Style

Bore size (mm)	Standard stroke range (mm)	Standard stroke				Long stroke range (mm)	Long stroke	
		Without auto switch		With auto switch			Without/With auto switch	
		A	B	A	B		A	B
12	5 to 30	30.5	17	35.5	22	35 to 100	45.5	32
16	5 to 30	30.5	17	35.5	22	35 to 100	45.5	32
20	5 to 50	34	19.5	44	29.5	75 to 200	55.5	41
25	5 to 50	37.5	22.5	47.5	32.5	75 to 300	59	44

Bore size (mm)	FD	FT	FV	FX	FZ	L	L <sub>1</sub>
12	4.5	5.5	25	45	55	13.5	24
16	4.5	5.5	30	45	55	13.5	25.5
20	6.6	8	39	48	60	14.5	28.5
25	6.6	8	42	52	64	15	32.5

Flange bracket material: Carbon steel

## Head Side Flange Style

Bore size (mm)	Standard stroke range (mm)	Standard stroke								Long stroke range (mm)	Long stroke			
		Without auto switch				With auto switch					Without/With auto switch			
		A	B	L	L <sub>1</sub>	A	B	L	L <sub>1</sub>		A	B	L	L <sub>1</sub>
12	5 to 30	26	17	3.5	14	31	22	3.5	14	35 to 100	51	32	13.5	24
16	5 to 30	26	17	3.5	15.5	31	22	3.5	15.5	35 to 100	51	32	13.5	25.5
20	5 to 50	32	19.5	4.5	18.5	42	29.5	4.5	18.5	75 to 200	63.5	41	14.5	28.5
25	5 to 50	35.5	22.5	5	22.5	45.5	32.5	5	22.5	75 to 300	67	44	15	32.5

Bore size (mm)	FD	FT	FV	FX	FZ
12	4.5	5.5	25	45	55
16	4.5	5.5	30	45	55
20	6.6	8	39	48	60
25	6.6	8	42	52	64

Flange bracket material: Carbon steel

## Double Clevis Style

Bore size (mm)	Standard stroke range (mm)	Standard stroke										Long stroke range (mm)	Long stroke				
		Without auto switch					With auto switch						Without/With auto switch				
		A	B	CL	L	L <sub>1</sub>	A	B	CL	L	L <sub>1</sub>		A	B	CL	L	L <sub>1</sub>
12	5 to 30	40.5	17	34.5	3.5	14	45.5	22	39.5	3.5	14	35 to 100	65.5	32	59.5	13.5	24
16	5 to 30	41.5	17	35.5	3.5	15.5	46.5	22	40.5	3.5	15.5	35 to 100	66.5	32	60.5	13.5	25.5
20	5 to 50	51	19.5	42	4.5	18.5	61	29.5	52	4.5	18.5	75 to 200	82.5	41	73.5	14.5	28.5
25	5 to 50	57.5	22.5	47.5	5	22.5	67.5	32.5	57.5	5	22.5	75 to 300	89	44	79	15	32.5

Bore size (mm)	CB	CD	CT	CU	CW	CX	CZ	RR
12	12	5	4	7	14	5	10	6
16	14	5	4	10	15	6.5	12	6
20	20	8	5	12	18	8	16	9
25	24	10	5	14	20	10	20	10

Double clevis bracket material: Carbon steel

\* For details about the rod end nut and accessory brackets, refer to page 7-6-20.

CUJ

CU

CQS

CQM

CQ2

RQ

MU

D-

-X

20-

Data