

Compact Cylinder: Standard Type Double Acting, Single Rod

CQS Series

ø12, ø16, ø20, ø25

How to Order

With auto switch CQS B 20 - 30 D - [] - []

With auto switch (Built-in magnet) CDQS B 20 - 30 D - M9BW [] - []

Mounting type

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

Bore size

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

Cylinder stroke (mm)

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

Number of auto switches

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

Auto switch

Nil	Without auto switch
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Body option

<Standard stroke>		<Long stroke>	
Nil	Standard	C	With rubber bumper Rod end female thread (Standard)
C	With rubber bumper	CM	With rubber bumper Rod end male thread
M	Rod end male thread		
F	Boss on head end		

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) CDQSL25-30D

* In the case of long strokes, use either ends tapped mounting or bracket mounting.
* Mounting brackets are shipped together (but not assembled).
* Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for CQS" on pages 700 and 701.
* Combination of body options is available. CM, FC, FM, FCM
* Rubber bumper is standard equipment for long stroke type.

For "Manufacture of Intermediate Strokes", refer to page 694.

Applicable Auto Switches/Refer to pages 1575 to 1701 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-wired connector	Applicable load		
					DC	AC	Perpendicular	In-line	0.5 (Nil)	1 (M)	3 (L)	5 (Z)				
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit	
				3-wire (PNP)				M9PV	M9P	●	●	●	○	○		
				2-wire				M9BV	M9B	●	●	●	○	○		
				3-wire (NPN)				M9NWV	M9NW	●	●	●	○	○		
	Diagnostic indication (2-color indicator)			3-wire (PNP)	M9PWV	M9PW	●	●	●	○	○	IC circuit				
				2-wire	M9BWV	M9BW	○	○	●	○	○					
				3-wire (NPN)	M9NAV*1	M9NA*1	○	○	●	○	○					
				3-wire (PNP)	M9PAV*1	M9PA*1	○	○	●	○	○					
Water resistant (2-color indicator)	2-wire	M9BAV*1	M9BA*1	○	○	●	○	○	—							
	2-wire (Non-polar)	—	P3DWA**	●	—	●	●	○								
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	5 V	—	A96V	A96	●	—	●	—	IC circuit		
				2-wire				100 V	A93V*2	A93	●	●	●		●	—
								100 V or less	A90V	A90	●	—	●		—	

*1 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.

*2 1 m type lead wire is only applicable to D-A93.

* Lead wire length symbols: 0.5 m..... Nil (Example) M9NV
1 m..... M (Example) M9NWM
3 m..... L (Example) M9NWL
5 m..... Z (Example) M9NWZ

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

** Available only for ø25.

It is mounted away from the port side to avoid interference with fittings.

* Since there are other applicable auto switches than listed, refer to page 749 for details.

* For details about auto switches with pre-wired connector, refer to pages 1648 and 1649.

* Auto switches are shipped together (not assembled).

Note) There is the case D-A9□V/M9□V/M9□WV/M9□AV type auto switches cannot be mounted on the port surface, depending on the cylinder's stroke and the fitting size for piping. Consult with SMC for details.

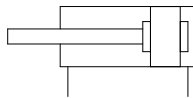
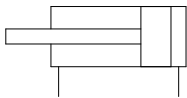
CQS Series



Symbol

Without cushion

Rubber bumper



Made to Order: Individual Specifications

(For details, refer to pages 750 to 752)

Symbol	Specifications
-X271	Fluororubber seals
-X525	Long stroke of adjustable extension stroke cylinder (-XC8)
-X526	Long stroke of adjustable retraction stroke cylinder (-XC9)
-X636	Long stroke of dual stroke single rod
-X1876	With concave shape end boss on the cylinder tube head side

Made to Order Specifications

[Click here for details](#)

Symbol	Specifications
-XA□	Change of rod end shape
-XB6	Heat-resistant cylinder (-10 to 150 °C) (without an auto switch)
-XB7	Cold-resistant cylinder (-40 to 70 °C) (without an auto switch)
-XB9	Low speed cylinder (10 to 50 mm/s)
-XB10	Intermediate stroke (Using exclusive body)
-XB13	Low speed cylinder (5 to 50 mm/s)
-XC6	Piston rod, retaining ring, 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
-XC85	Grease for food processing equipment
-XC92	Dust resistant cylinder

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.

Moisture Control Tube IDK Series



When operating an actuator with a small diameter and a short stroke at a high frequency, the dew condensation (water droplet) may occur inside the piping depending on the conditions.

Simply connecting the moisture control tube to the actuator will prevent dew condensation from occurring. For details, refer to [the IDK series in the Best Pneumatics No. 6.](#)

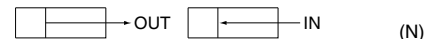
Specifications

Bore size (mm)		12	16	20	25	
Action		Double acting, Single rod				
Fluid		Air				
Lubrication		Not required (Non-lube)				
Proof pressure		1.5 MPa				
Maximum operating pressure		1.0 MPa				
Minimum operating pressure		0.07 MPa	0.05 MPa			
Ambient and fluid temperature		Without auto switch: -10 to 70°C (No freezing)				
		With auto switch: -10 to 60°C (No freezing)				
Cushion		None, Rubber bumper*				
Rod end thread		Female thread				
Stroke length tolerance		Standard stroke: $^{+1.0}_0$ Long stroke: $^{+1.4}_0$ *				
Piston speed		50 to 500 mm/s				
Allowable kinetic energy (J)		Standard type	0.022	0.038	0.055	0.09
		With rubber bumper	0.043	0.075	0.11	0.18

* Stroke length tolerance does not include the deflection of the bumper.

* Only rubber bumper is available for the long stroke type.

Theoretical Output



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

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 693).		Suffix "-XB10" to the end of standard model no. (page 693).	
Standard stroke	Description	Intermediate strokes in 1 mm increments are available by using spacers with standard stroke cylinders.		Dealing with the stroke in 1 mm increments 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 in 1 mm increments are available by using spacers with standard stroke cylinders.		Dealing with the stroke in 1 mm increments by using an exclusive body with the specified stroke.	
	Stroke range	Bore size	Stroke range	Bore size	Stroke range
		12, 16	31 to 199	12, 16	31 to 199
		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.	

Refer to pages 747 to 749 for cylinders with auto switches.

- Minimum auto switch mounting stroke
- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range
- Auto switch mounting bracket/Part no.

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	213	246	279	312	—	—
16	38	47	56	64	73	82	119	128	136	145	187	229	271	313	355	397	—	—
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
- Additional weight: Rod end male thread.....10 g
- Additional weight: Rubber bumper.....-2 g
- Additional weight: Double clevis type.....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	214	247	280	313	—	—
16	48	57	66	74	83	92	121	129	137	146	188	231	273	315	357	399	—	—
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
With boss on head end		0.7	1.3	2	3
Rubber bumper * (No need to add for long stroke)		0	1	-2	-3
Compact foot type (Including mounting bolt)		41 (39)	51 (47)	121 (115)	140 (131)
Foot type (Including mounting bolt)		55 (53)	65 (61)	159 (153)	181 (172)
Rod side flange type (Including mounting bolt)		58 (56)	70 (66)	143 (137)	180 (171)
Head side flange type (Including mounting bolt)		56	66	137	171
Double clevis type (Including pin, snap ring, bolt)		34	40	92	127

(): denotes the values of long stroke model.

Mounting Bracket Part No.

Bore size (mm)	Foot (1)	Compact foot (1)	Flange	Double clevis
12	CQS-L012	CQS-LC012	CQS-F012	CQS-D012
16	CQS-L016	CQS-LC016	CQS-F016	CQS-D016
20	CQS-L020	CQS-LC020	CQS-F020	CQS-D020
25	CQS-L025	CQS-LC025	CQS-F025	CQS-D025

Note1) When ordering foot and compact foot brackets, order 2 pieces per cylinder.

Note2) Parts belonging to each bracket are as follows.

- Foot, Compact foot, Flange type: Body mounting bolt
- Double clevis type: Clevis pin, Type C retaining ring for axis, Body mounting bolt.

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data

CQS Series

Allowable Kinetic Energy

Load Mass and Piston Speed [J]

Bore size (mm)	12	16	20	25
Standard/ Allowable kinetic energy: Ea	0.022	0.038	0.055	0.09
With rubber bumper/ Allowable kinetic energy: Eb	0.043	0.075	0.110	0.18

$$\text{Kinetic energy } E \text{ (J)} = \frac{(m1+m2)V^2}{2}$$

m1: Mass of cylinder movable parts kg
m2: Load mass kg
V: Piston speed m/s

Mass of Movable Parts/Without Built-in Magnet: CQSB□-□D(C)(M) (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	5	6	7	8	9	11	16	17	18	19	25	30	36	41	47	53	—	—
16	8	10	12	14	16	18	28	30	32	34	44	54	64	74	84	94	—	—
20	15	18	21	24	28	31	34	37	40	43	73	88	104	119	135	150	—	—
25	23	28	32	37	41	46	50	55	59	64	112	135	157	179	202	224	269	314

Mass of Movable Parts/With Built-in Magnet: CDQSB□-□D(C)(M) (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	5	7	8	9	10	11	16	18	19	20	25	31	37	42	48	53	—	—
16	9	11	13	15	17	19	29	31	33	35	45	55	65	75	85	95	—	—
20	21	24	27	30	33	36	39	42	46	49	78	93	109	124	140	155	—	—
25	37	42	46	51	55	59	64	68	73	77	118	141	163	186	208	230	275	320

Additional Mass of Movable Parts (g)

Bore size (mm)		12	16	20	25
Rod end male thread	Male thread	2	3	6	13
	Nut	1	2	4	8
Rubber bumper (No need to add for long stroke)		0	-1	-2	-2
Foot type, Rod side flange type (No need to add for long stroke)		2	4	6	9

Calculation: (Example) **CQSB20-20DCM**

- Basic mass: CQSB20-20D 24 g
- Additional mass: Rod end male thread 10 g
- : With rubber bumper -2 g
- Total 32 g

Clean Series (Standard stroke is only available.)

10 — C(D)QSB Bore size — Stroke D(M)

Clean Series

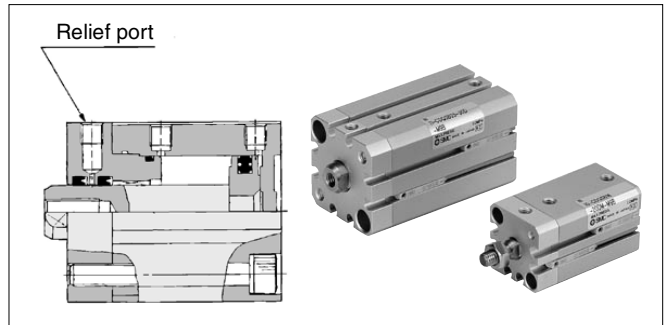
10	Relief type
11	Vacuum type

The type which is applicable for using inside the clean room graded ISO Class 4 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)	ø12, ø16, ø20, ø25
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Rubber bumper	None
Piping	Screw-in piping
Piston speed	30 to 400 mm/s
Mounting	Through-hole/Both ends tapped common
Auto switch	Mountable

Note) For details, please contact SMC.



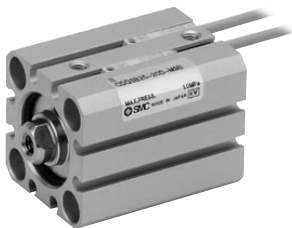
For details, refer to the "Pneumatic Clean Series" (CAT.E02-23)

Smooth Cylinder

CQS Y Mounting Bore size — Stroke DC(M)

Smooth Cylinder

Smooth operation with a little sticking and slipping at low speed.
Dual-side low friction operation is possible.



Some of the parts are different from the dimensions of the double acting, single rod type.
Refer to Best Pneumatics No. 2-3.

Low-speed Cylinder

CQS X Mounting Bore size — Stroke D(C)(M)

Low-speed Cylinder

Smooth operation with a little sticking and slipping at low speed.
Can start smoothly with a little ejection even after being rendered for hours.



The dimensions are the same as the double acting, single rod type.
Refer to Best Pneumatics No. 2-3.

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 (No freezing) With auto switch: -10 to 60°C (No freezing)			
Cushion	None, Rubber bumper*			
Rod end thread	Female thread			
Stroke length tolerance	+1.0 0 *			
Mounting	Through-hole/Both ends tapped common			
Piston speed	50 to 500 mm/s			
Allowable leakage	0.5 L/min (ANR) or less			

* Stroke length tolerance does not include the deflection of the bumper.

Minimum operating pressure (MPa)

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

Specifications

Bore size (mm)	12	16	20	25
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 With auto switch: -10 to 60°C (No freezing)			
Rubber bumper	None, Rubber bumper*			
Rod end thread	Female thread			
Stroke length tolerance	Standard stroke +1.0 0 *			
Mounting	Through-hole/Both ends tapped common			
Piston speed	ø12, ø16: 1 to 300 mm/s ø20, ø25: 0.5 to 300 mm/s			

* Stroke length tolerance does not include the deflection of the bumper.

Minimum operating pressure (MPa)

Bore size (mm)	12	16	20	25
Minimum operating pressure	0.03	0.03	0.025	0.025

CUJ
CU
CQS
JCQ
CQ2
RQ
CQM
CQU
MU

D-□
-X□
Technical Data

CQS Series

Compact Cylinder with Stable Lubrication Function (Lube-retainer)

C D QS **Mounting type** **Bore size** M — **Stroke** D **Rod end thread** — **Auto switch**

• With auto switch (Built-in magnet) • With stable lubrication function (Lube-retainer) * Available only for with auto switch.

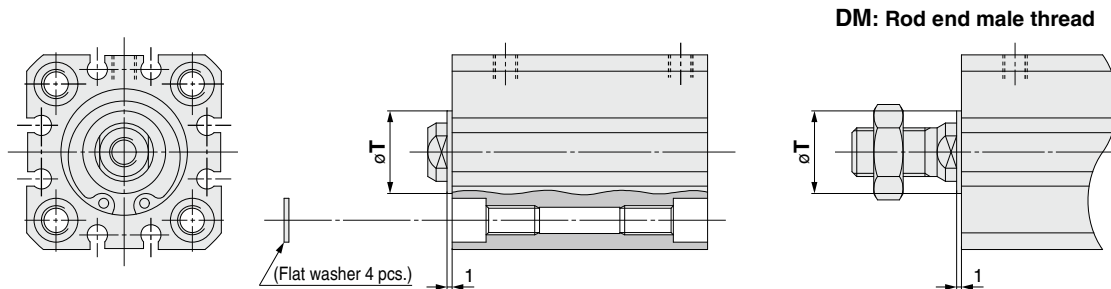


Specifications

Bore size (mm)	20, 25
Action	Double acting, Single rod
Minimum operating pressure	0.1 MPa
Piston speed	50 to 500 mm/s
Cushion	None

* Specifications other than those shown above are the same as the standard model.

Dimensions (Dimensions other than those shown below are the same as the standard model.)



Bore size	Standard stroke	(mm) T
20	5, 10, 15, 20, 25, 30,	15
25	35, 40, 45, 50	18

* The mounting dimensions of the mounting bracket are the same as the standard model.

Mounting Bracket Part No.

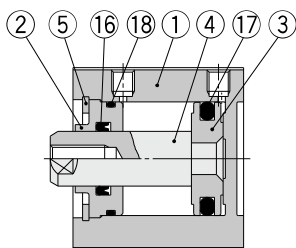
Bore size (mm)	Foot	Compact foot	Flange
20	CQS-LM020	CQS-LCM020	CQS-FM020
25	CQS-LM025	CQS-LCM025	CQS-FM025

* The double clevis type is the same as the standard model.
* When ordering foot and compact foot brackets, order 2 pieces per cylinder.

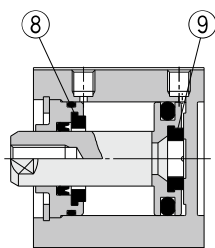
For details, refer to the **Web Catalog**.

Construction

Basic type

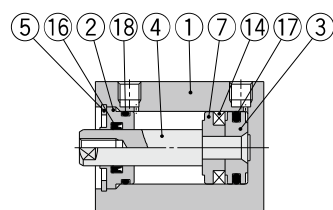


With rubber bumper

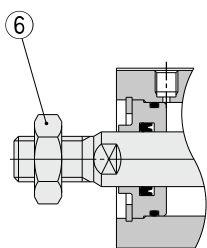


With auto switch (Built-in magnet)

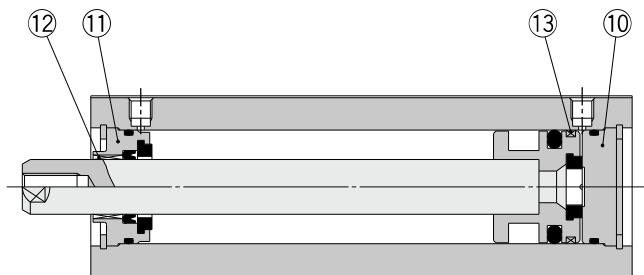
ø12, ø16



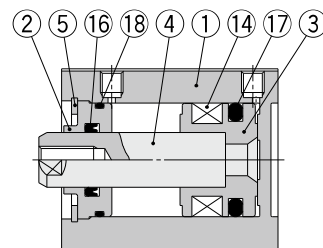
Rod end male thread



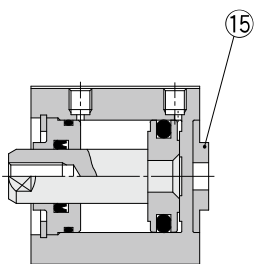
Long stroke



ø20, ø25



With boss on head end



Component Parts

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

Component Parts

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

Replacement Parts: Seal Kit (Basic type)

Bore size (mm)	Kit no.	Contents
12	CQSB12-PS	Set of nos. above ⑬, ⑭, ⑮
16	CQSB16-PS	
20	CQSB20-PS	
25	CQSB25-PS	

Replacement Parts: Seal Kit (Long stroke)

Bore size (mm)	Kit no.	Contents
12	CQSB12-L-PS	Set of nos. above ⑬, ⑭, ⑮
16	CQSB16-L-PS	
20	CQSB20-L-PS	
25	CQSB25-L-PS	

* Seal kit includes ⑬, ⑭, ⑮. Order the seal kit, based on each bore size. (The long stroke type includes 2 tube gaskets.)

* Since the seal kit does not include a grease pack, order it separately.

Grease pack part no.: GR-S-010 (10 g)

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical Data

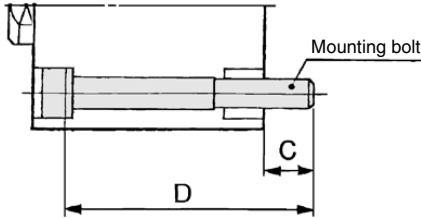
CQS Series

Mounting Bolt for CQS without Auto Switch

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

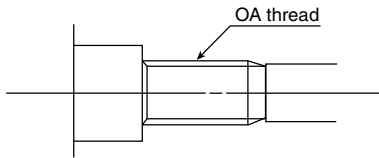
Refer to the following for ordering procedures.
Order the actual number of bolts that will be used.

Example) CQ-M3x25L 4 pcs.



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 $\phi 12$ and $\phi 16$ that exceed 30 mm strokes, or $\phi 20$ and $\phi 25$ that exceed 50 mm strokes.



Cylinder model	C	D	Mounting bolt part no.
CQSB12-5D	6.5	25	CQ-M3 x 25L
-10D		30	x 30L
-15D		35	x 35L
-20D		40	x 40L
-25D		45	x 45L
-30D		50	x 50L
-35DC	Secure the cylinder by using the OA screws that are provided with the cylinder tube.		
-40DC			
-45DC			
-50DC			
-75DC			
-100DC			
-125DC			
-150DC			
-175DC			
-200DC			
CQSB16-5D	6.5	25	CQ-M3 x 25L
-10D		30	x 30L
-15D		35	x 35L
-20D		40	x 40L
-25D		45	x 45L
-30D		50	x 50L
-35DC	Secure the cylinder by using the OA screws that are provided with the cylinder tube.		
-40DC			
-45DC			
-50DC			
-75DC			
-100DC			
-125DC			
-150DC			
-175DC			
-200DC			

Cylinder model	C	D	Mounting bolt part no.			
CQSB20-5D	6.5	25	CQ-M5 x 25L			
-10D		30	x 30L			
-15D		35	x 35L			
-20D		40	x 40L			
-25D		45	x 45L			
-30D		50	x 50L			
-35D		55	x 55L			
-40D		60	x 60L			
-45D		65	x 65L			
-50D		70	x 70L			
-75DC	Secure the cylinder by using the OA screws that are provided with the cylinder tube.					
-100DC						
-125DC						
-150DC						
-175DC						
-200DC						
CQSB25-5D				8.5	30	CQ-M5 x 30L
-10D					35	x 35L
-15D					40	x 40L
-20D					45	x 45L
-25D	50	x 50L				
-30D	55	x 55L				
-35D	60	x 60L				
-40D	65	x 65L				
-45D	70	x 70L				
-50D	75	x 75L				
-75DC	Secure the cylinder by using the OA screws that are provided with the cylinder tube.					
-100DC						
-125DC						
-150DC						
-175DC						
-200DC						
-250DC						
-300DC						

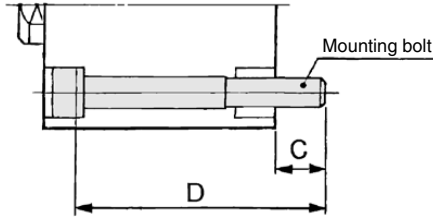
Material: Chromium molybdenum steel
Surface treatment: Nickel plated

Mounting Bolt for CDQS with Auto Switch

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

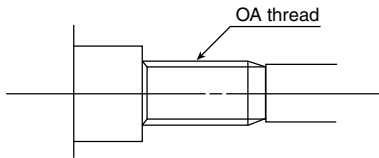
Refer to the following for ordering procedures.
Order the actual number of bolts that will be used.

Example) CQ-M3x30L 4 pcs.



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 $\phi 12$ and $\phi 16$ that exceed 30 mm strokes, or $\phi 20$ and $\phi 25$ that exceed 50 mm strokes.



Accessory

For accessory bracket for the **CQS series**, refer to page 796, since it is commonly used with the **CQ2 series**.

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

Cylinder model	C	D	Mounting bolt part no.
CDQSB12-5D	6.5	30	CQ-M3 x 30L
-10D		35	x 35L
-15D		40	x 40L
-20D		45	x 45L
-25D		50	x 50L
-30D		55	x 55L
-35DC	Secure the cylinder by using the OA screws that are provided with the cylinder tube.		
-40DC			
-45DC			
-50DC			
-75DC			
-100DC			
-125DC			
-150DC			
-175DC			
-200DC			
CDQSB16-5D	6.5	30	CQ-M3 x 30L
-10D		35	x 35L
-15D		40	x 40L
-20D		45	x 45L
-25D		50	x 50L
-30D		55	x 55L
-35DC	Secure the cylinder by using the OA screws that are provided with the cylinder tube.		
-40DC			
-45DC			
-50DC			
-75DC			
-100DC			
-125DC			
-150DC			
-175DC			
-200DC			

Cylinder model	C	D	Mounting bolt part no.	
CDQSB20-5D	6.5	35	CQ-M5 x 35L	
-10D		40	x 40L	
-15D		45	x 45L	
-20D		50	x 50L	
-25D		55	x 55L	
-30D		60	x 60L	
-35D		65	x 65L	
-40D		70	x 70L	
-45D		75	x 75L	
-50D		80	x 80L	
-75DC	Secure the cylinder by using the OA screws that are provided with the cylinder tube.			
-100DC				
-125DC				
-150DC				
-175DC				
-200DC				
CDQSB25-5D		8.5	40	CQ-M5 x 40L
-10D			45	x 45L
-15D			50	x 50L
-20D			55	x 55L
-25D	60		x 60L	
-30D	65		x 65L	
-35D	70		x 70L	
-40D	75		x 75L	
-45D	80		x 80L	
-50D	85		x 85L	
-75DC	Secure the cylinder by using the OA screws that are provided with the cylinder tube.			
-100DC				
-125DC				
-150DC				
-175DC				
-200DC				
-250DC				
-300DC				

Material: Chromium molybdenum steel
Surface treatment: Zinc chromated

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-

-X

Technical Data

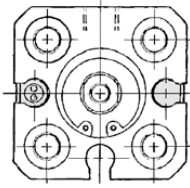
CQS Series

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

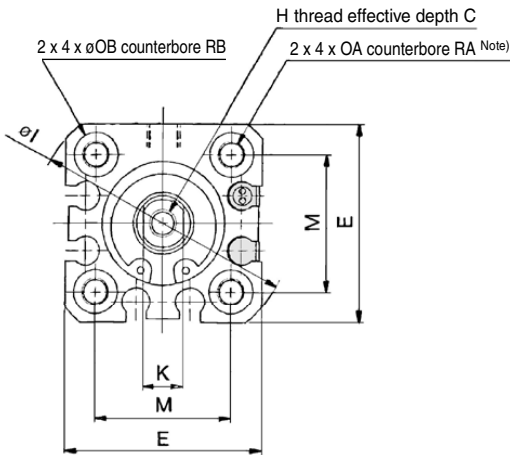
Basic type (Through-hole/Both ends tapped common): CQSB/CDQSB

* For the auto switch mounting position and its mounting height, refer to page 747.

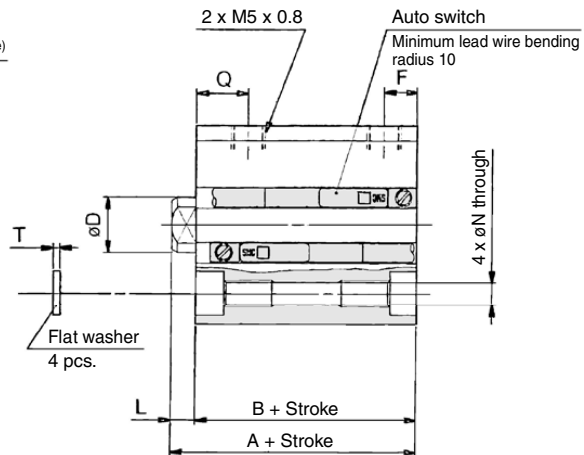
$\phi 12$



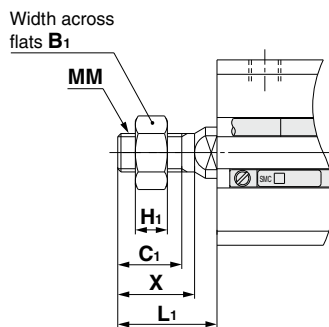
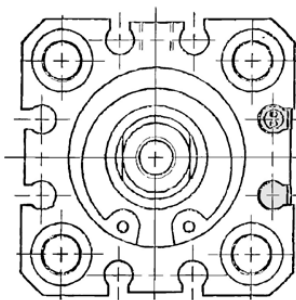
$\phi 16$



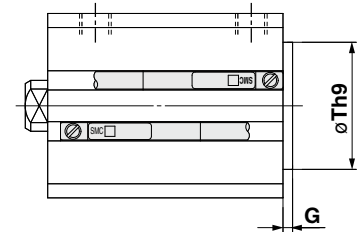
$\phi 20, \phi 25$



Rod end male thread



With boss on head end



- 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.

Rod End Male Thread

Bore size (mm)	B1	C1	H1	Standard stroke		MM	X
				L1	L1		
12	8	9	4	14	24	M5 x 0.8	10.5
16	10	10	5	15.5	25.5	M6 x 1.0	12
20	13	12	5	18.5	28.5	M8 x 1.25	14
25	17	15	6	22.5	32.5	M10 x 1.25	17.5

With Boss on Head End (mm)

Bore size (mm)	G	Th9
12	1.5	15 ⁰ _{-0.043}
16	1.5	20 ⁰ _{-0.052}
20	2	13 ⁰ _{-0.043}
25	2	15 ⁰ _{-0.043}

Note1) The product with boss on head end is applicable to only the standard stroke.

Note2) With boss on rod end : Option (Suffix "-XC36" to the end of part number.)

Note that only bore sizes $\phi 12$ and $\phi 16$ are applicable to the long stroke.

Basic Type

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 200	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 200	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	8	14.5	7	10	36	M5 x 0.8	47	8	25.5	5.4	M6 x 1.0	9	8	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	9	15	12	12	40	M6 x 1.0	52	10	28	5.4	M6 x 1.0	9	9	10	7	1

Note 1) For the following bore/stroke sizes through-hole is threaded over the entire length: Basic type $\phi 12$ 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.

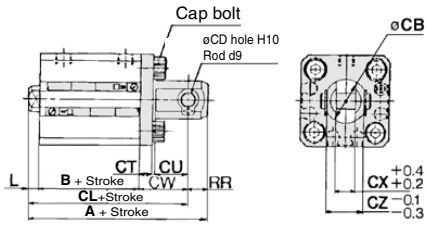
Note 2) Rubber bumper type has the same dimensions as those indicated above.

* For details about the rod end nut and accessory brackets, refer to page 796.

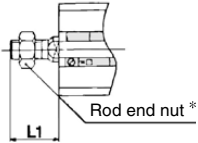
CQS Series

Dimensions: $\varnothing 12$ to $\varnothing 25$

Double clevis type: CQSD/CDQSD



Rod end male thread



Double Clevis Type

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 ₁	A	B	CL	L	L ₁		A	B	CL	L	L ₁
12	5 to 30	40.5	17	34.5	3.5	14	45.5	22	39.5	3.5	14	35 to 200	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 200	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
Surface treatment: Nickel plated

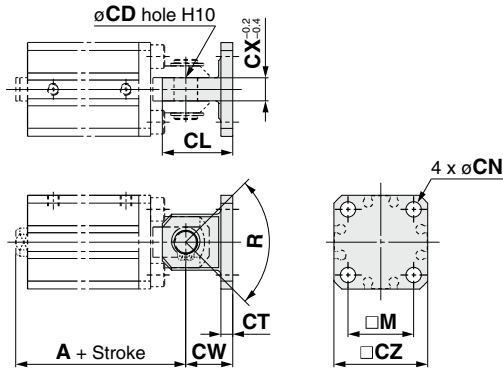
* For details about the double clevis pivot bracket, refer to page 705.

* For details about the rod end nut and accessory brackets, refer to page 796.

CQS Series Accessory Dimensions

Double Clevis Pivot Bracket

Bore size $\varnothing 12$ to $\varnothing 25$



(mm)

Bracket part no.	Bore size	Stroke range	A		CW	CT	CL	CX	CD	M	CZ	R	CN	Hexagon socket head cap screw for mounting pivot bracket (Accessory)
			Without auto switch	With auto switch										
CQ-C012	12	5 to 30	34.5	39.5	14	4	19	5	5	15.5	25	100°	4.5	M4 x 10L
CQ-C016	16	5 to 30	35.5	40.5	15	4	21	6.5	5	20	28	100°	4.5	M4 x 10L
CQ-C020	20	5 to 50	42	52	18	5	27	8	8	25.5	35	80°	6.6	M6 x 12L
CQ-C025	25	5 to 50	47.5	57.5	20	5	30	10	10	28	40	90°	6.6	M6 x 12L

* The double clevis pin and retaining ring are not included.

Double clevis pivot bracket material: Carbon steel
Surface treatment: Nickel plated

CUJ

CU

CQS

JCQ

CQ2

RQ

CQM

CQU

MU

D-□

-X□

Technical
Data