

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

ø12, ø16, ø20, ø25

How to Order

With auto switch CQDS B 20-30 D [] - [] - [] - [] - M9BW [] - [] - []

With auto switch (Built-in magnet)

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

Number of auto switches

NII	2 pcs.
S	1 pc.
n	*"n" pcs.

Auto switch

NII	Without auto switch
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* Refer to the table below for the applicable auto switch model.

Body option

<Standard stroke>

NII	Standard
C	With rubber bumper
M	Rod end male thread
F	Boss on head end

* Combination of body options is available. CM, FC, FM, FCM

<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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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, 250, 300
25		75, 100, 125, 150, 175, 200, 250, 300

For "Manufacture of Intermediate Strokes", refer to page 798.

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

Applicable Auto Switches/Refer to pages 1271 to 1365 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 (NII)	1 (M)	3 (L)	5 (Z)					
Solid state auto switch	—	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV	M9N	●	●	●	○	○	IC circuit	Relay, PLC		
				3-wire (PNP)			M9PV	M9P	●	●	●	○					
				2-wire	M9BV	M9B	●	●	●	○	○						
				3-wire (NPN)	M9NWV	M9NW	●	●	●	○	○						
	Diagnostic indication (2-color indicator)	Grommet	Yes	3-wire (PNP)	5 V, 12 V	—	M9PWW	M9PW	●	●	●	○	○	IC circuit	Relay, PLC		
				2-wire			M9BWW	M9BW	●	●	●	○	○				
	Water resistant (2-color indicator)	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NAV ^{*1}	M9NA ^{*1}	○	○	●	●	○	IC circuit	Relay, PLC		
				3-wire (PNP)			M9PAV ^{*1}	M9PA ^{*1}	○	○	●	●	○				
Magnetic field resistant (2-color indicator)	Grommet	No	2-wire	12 V	—	M9BAV ^{*1}	M9BA ^{*1}	○	○	○	○	○	—	—			
			2-wire (Non-polar)	—	—	—	P3DWA ^{**}	●	●	●	●	○			○		
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	5 V	—	A96V	A96	●	—	●	—	—	IC circuit	—		
				2-wire	24 V	12 V	100 V	A93V ^{**2}	A93	●	●	●	●			—	Relay, PLC
					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..... NII (Example) M9NW
1 m..... M (Example) M9NWM
3 m..... L (Example) M9NLW
5 m..... Z (Example) M9NZW

* 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 853 for details.

* For details about auto switches with pre-wired connector, refer to pages 1340 and 1341.

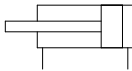
* Auto switches are shipped together (not assembled).

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.

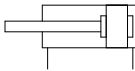


Symbol

Without cushion



Rubber bumper



Made to Order: Individual Specifications

(For details, refer to pages 854 to 856)

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

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 [Web Catalog](#).

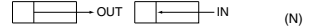
Specifications

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 797).	Suffix "XB10" to the end of standard model no. (page 797).			
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
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.			
		Bore size	Stroke range	Bore size	Stroke range
	Stroke range	12, 16	31 to 199	12, 16	31 to 199
20		51 to 199	20	51 to 199	
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.			
			25	51 to 299	25

Refer to pages 852 to 853 for cylinders with auto switches.

- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range
- Minimum auto switch mounting stroke

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 type92 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.

CQS Series

Allowable Kinetic Energy

Load Mass and Piston Speed

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

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

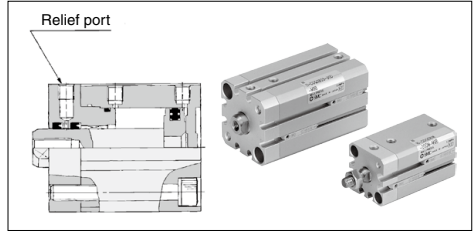
10	Relief type
11	Vacuum type

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 [Web Catalog](#).

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 the [Web Catalog](#).

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 *			
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)

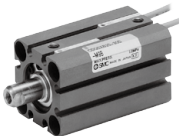
Bore size (mm)	12	16	20	25
Minimum operating pressure	0.03		0.02	

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 page 806 for details.

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 (No freezing) With auto switch: -10 to 60°C			
Rubber bumper	None, Rubber bumper*			
Rod end thread	Female thread			
Stroke length tolerance	Standard stroke $\begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$			
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.

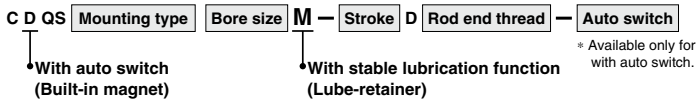
Minimum operating pressure

(MPa)

	12	16	20	25
Minimum operating pressure	0.03	0.03	0.025	0.025

CQS Series

Compact Cylinder with Stable Lubrication Function (Lube-retainer)

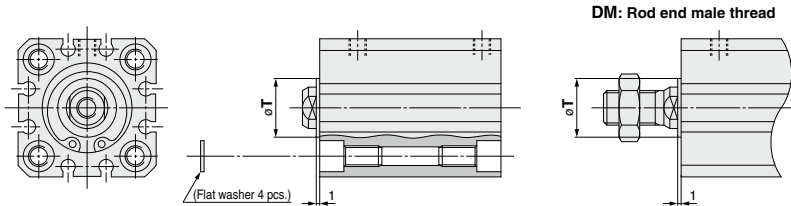


Specifications

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.)



DM: Rod end male thread

Bore size	Standard stroke	(mm)
20	5, 10, 15, 20, 25, 30,	T 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

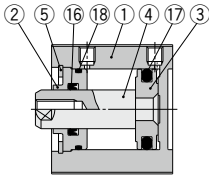
* The double clevis type is the same as the standard model.

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

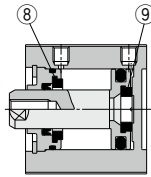
For details, refer to page 1205.

Construction

Basic type

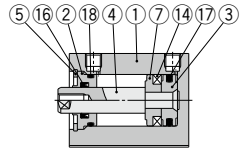


With rubber bumper

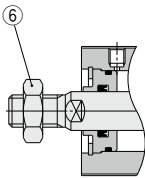


With auto switch (Built-in magnet)

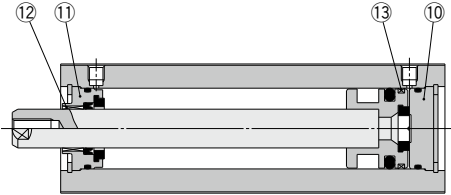
ø12, ø16



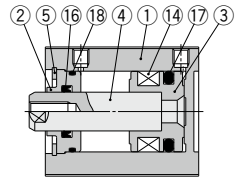
Rod end male thread



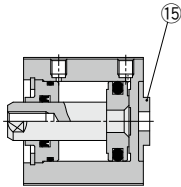
Long stroke



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 16, 17, 18
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 16, 17, 18
16	CQSB16-L-PS	
20	CQSB20-L-PS	
25	CQSB25-L-PS	

* Seal kit includes 16, 17, 18. Order the seal kit, based on each bore size.
(The long stroke type includes 2 tube gaskets.)

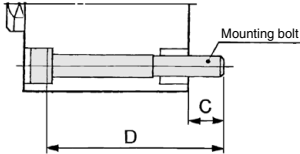
* Since the seal kit does not include a grease pack, order it separately.

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

Mounting Bolt for CQS without Auto Switch

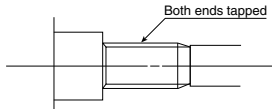
Mounting bolt for through-hole mounting type of CQSB is available as an option.
Refer to the following for ordering procedures.
Order the actual number of bolts that will be used.

Example) CQ-M3x25L 4 pcs.



Note 1) To install a through-hole type mounting bolt, make sure to use the flat washer that is provided.

Note 2) We do not provide mounting bolts for the long stroke type.
Secure the cylinder with both ends of the cylinder tube tapped or prepare mounting bolts separately.



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				
-40DC				
-45DC				
-50DC				
-75DC			Note 2)	
-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				
-40DC				
-45DC				
-50DC				
-75DC			Note 2)	
-100DC				
-125DC				
-150DC				
-175DC				
-200DC				

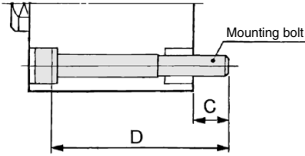
Cylinder model	C	D	Mounting bolt part no.	
CQSB20-5D	6.5	25	CQ-M5 x 25L	
-10D		30	x 30L	
-15D		35	x 35L	
-20D		40	x 40L	
-25D		45	x 45L	
-30D		50	x 50L	
-35DC				
-40DC				
-45DC				
-50DC				
-75DC			Note 2)	
-100DC				
-125DC				
-150DC				
-175DC				
-200DC				
CQSB25-5D	8.5	30	CQ-M5 x 30L	
-10D		35	x 35L	
-15D		40	x 40L	
-20D		45	x 45L	
-25D		50	x 50L	
-30D		55	x 55L	
-35DC				
-40DC				
-45DC				
-50DC				
-75DC			Note 2)	
-100DC				
-125DC				
-150DC				
-175DC				
-200DC				
-250DC				
-300DC				

Material: Chromium molybdenum steel
Surface treatment: Nickel plated

Mounting Bolt for CDQS with Auto Switch

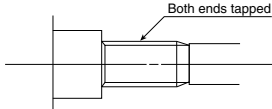
Mounting bolt for through-hole mounting type of CDQSB is available as an option. Refer to the following for ordering procedures. Order the actual number of bolts that will be used.

Example) CQ-M3x30L 4 pcs.



Note 1) To install a through-hole type mounting bolt, make sure to use the flat washer that is provided.

Note 2) We do not provide mounting bolts for the long stroke type. Secure the cylinder with both ends of the cylinder tube tapped or prepare mounting bolts separately.



Cylinder model	C	D	Mounting bolt part no.
CDQSB12-5D		30	CQ-M3 x 30L
-10D	6.5	35	x 35L
-15D		40	x 40L
-20D		45	x 45L
-25D		50	x 50L
-30D		55	x 55L
-35DC			
-40DC			
-45DC			
-50DC			
-75DC			
-100DC			
-125DC			
-150DC			
-175DC			
-200DC			
CDQSB16-5D		30	CQ-M3 x 30L
-10D	6.5	35	x 35L
-15D		40	x 40L
-20D		45	x 45L
-25D		50	x 50L
-30D		55	x 55L
-35DC			
-40DC			
-45DC			
-50DC			
-75DC			
-100DC			
-125DC			
-150DC			
-175DC			
-200DC			

Note 2)

Note 2)

Cylinder model	C	D	Mounting bolt part no.
CDQSB20-5D		35	CQ-M5 x 35L
-10D	6.5	40	x 40L
-15D		45	x 45L
-20D		50	x 50L
-25D		55	x 55L
-30D		60	x 60L
-35DC		65	x 65L
-40DC		70	x 70L
-45DC		75	x 75L
-50DC		80	x 80L
-75DC			
-100DC			
-125DC			
-150DC			
-175DC			
-200DC			
CDQSB25-5D		40	CQ-M5 x 40L
-10D	8.5	45	x 45L
-15D		50	x 50L
-20D		55	x 55L
-25D		60	x 60L
-30D		65	x 65L
-35DC		70	x 70L
-40DC		75	x 75L
-45DC		80	x 80L
-50DC		85	x 85L
-75DC			
-100DC			
-125DC			
-150DC			
-175DC			
-200DC			
-250DC			
-300DC			

Note 2)

Note 2)

Material: Chromium molybdenum steel
 Surface treatment: Zinc chromated

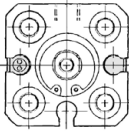
CQS Series

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

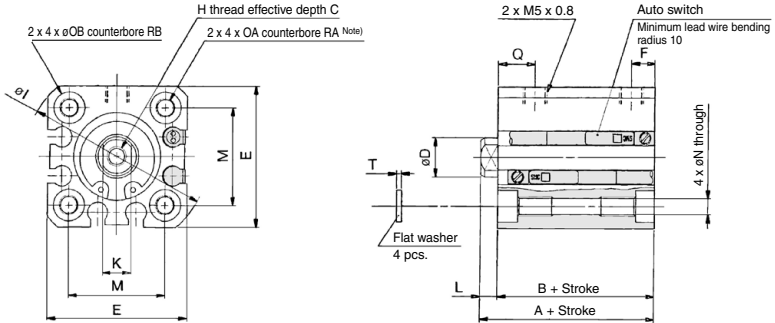
Basic type (Through-hole/Both ends tapped common): CQSB/CDQSB

* For the auto switch mounting position and its mounting height, refer to page 852.

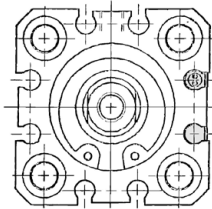
$\phi 12$



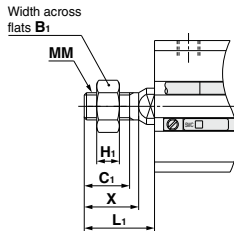
$\phi 16$



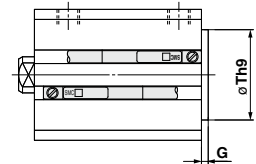
$\phi 20, \phi 25$



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		Long 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
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

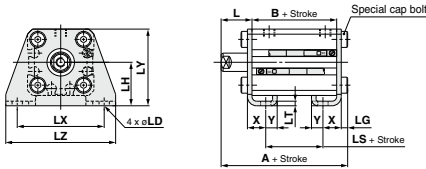
Bore size (mm)	Standard stroke range (mm)	Standard stroke										Long stroke range (mm)	Long stroke																	
		Without auto switch					With auto switch						With/Without auto switch				C	D	E	H	I	K	M	N	OA	OB	Q	RA	RB	T
		A	B	F	L	A	B	F	L	A	B		F	L																
12	5 to 30	20.5	17	5	3.5	25.5	22	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.

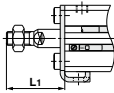
Note 2) Rubber bumper type has the same dimensions as those indicated above.

* For details about the rod end nut and accessory brackets, refer to page 809.

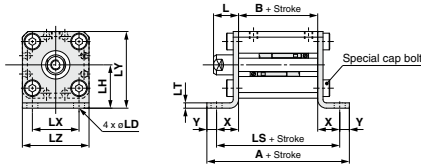
Foot type: CQSL/CDQSL



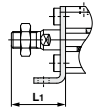
Rod end male thread



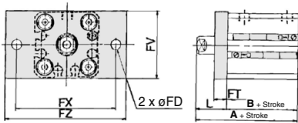
Compact foot type: CQSLC/CDQSLC



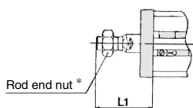
Rod end male thread



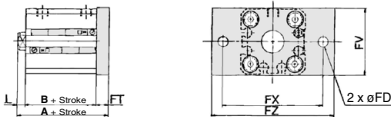
Rod side flange type: CQSF/CDQSF



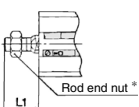
Rod end male thread



Head side flange type: CQSG/CDQSG



Rod end male thread



Foot 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			Without/With auto switch		
		A	B	LS	A	B	LS	A	B	LS	A	B	LS
12	5 to 30	35.3	17	5	40.3	22	10	35 to 200	50.3	32	20		
16	5 to 30	35.3	17	5	40.3	22	10	35 to 200	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	L1	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
Surface treatment: Nickel plated

Compact Foot 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			Without/With auto switch		
		A	B	LS	A	B	LS	A	B	LS	A	B	LS
12	5 to 30	44.6	17	35.6	49.6	22	40.6	35 to 200	59.6	32	50.6		
16	5 to 30	45.6	17	35.6	50.6	22	40.6	35 to 200	60.6	32	50.6		
20	5 to 50	57.5	19.5	45.9	67.5	29.5	55.9	75 to 200	79	41	67.4		
25	5 to 50	60.5	22.5	48.9	70.5	32.5	58.9	75 to 300	82	44	70.4		

Bore size (mm)	L	L1	LD	LH	LT	LX	LY	LZ	X	Y
12	13.5	24	4.5	17	2	15.5	29.5	25	9.3	4.5
16	13.5	25.5	4.5	19	2	20	33.5	29	9.3	5
20	14.5	28.5	6.6	24	3.2	25.5	42	36	13.2	5.8
25	15	32.5	6.6	26	3.2	28	46	40	13.2	5.8

Compact foot bracket material: Carbon steel
Surface treatment: Zinc chromated

Rod Side Flange 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		Without/With auto switch	
		A	B	A	B			A	B		
12	5 to 30	30.5	17	35.5	22	35 to 200	45.5	32			
16	5 to 30	30.5	17	35.5	22	35 to 200	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	L1
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
Surface treatment: Nickel plated

Head Side Flange 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			Without/With auto switch			
		A	B	L	L1	A	B	L	L1	A	B	L	L1	
12	5 to 30	26	17	3.5	14	31	22	3.5	14	35 to 200	51	32	13.5	24
16	5 to 30	26	17	3.5	15.5	31	22	3.5	15.5	35 to 200	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

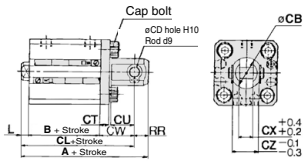
Flange bracket material: Carbon steel
Surface treatment: Nickel plated

* For details about the rod end nut and accessory brackets, refer to page 809.

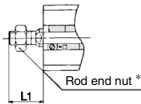
CQS Series

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

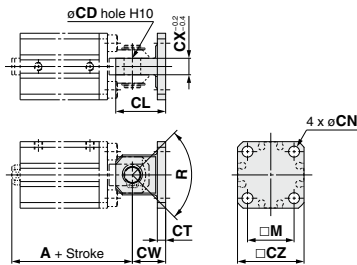
Bore size (mm)	CB	CD	CT	CU	CW	CX	CZ	RR
12	12	5	4	7	14	5	10	6
16	14	5	4	10	15	6.5	12	6
20	20	8	5	12	18	8	16	9
25	24	10	5	14	20	10	20	10

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

* For details about the double clevis pivot bracket, refer to page 809.

* For details about the rod end nut and accessory brackets, refer to page 899.

Double clevis pivot bracket



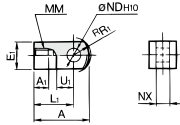
Bore size (mm)	Bracket part no.	Stroke range (mm)	A		CW	CT	CL	CX	CD	M	CZ	R	CN	Hexagon socket head cap screw for mounting pivot bracket (Accessory)
			Without auto switch	With auto switch										
12	CQ-C012	5 to 30	34.5	39.5	14	4	19	5	5	15.5	25	100°	4.5	M4 x 10L
16	CQ-C016	5 to 30	35.5	40.5	15	4	21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

Accessory Dimensions

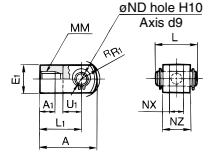
Single Knuckle Joint



Material: Carbon steel
Surface treatment: Nickel plating (mm)

Bore size (mm)	Part no.	A	A ₁	E ₁	L ₁	MM	[°] R ₁	U ₁	NDH ₁₀	NX	Weight (g)
12	I-G012	21.5	6	□10	16	M5 x 0.8	6.3	7	5 ^{+0.048} ₀	5 ^{+0.2} _{-0.4}	9
16	I-G016	32	8	□12	25	M6 x 1	8.1	14	5 ^{+0.048} ₀	6.4 ^{+0.1} _{-0.3}	9
20	I-G02	34	8.5	□16	25	M8 x 1.25	10.3	11.5	8 ^{+0.058} ₀	8 ^{+0.2} _{-0.4}	38
25	I-G03	41	10.5	□20	30	M10 x 1.25	12.8	14	10 ^{+0.058} ₀	10 ^{+0.2} _{-0.4}	70

Double Knuckle Joint

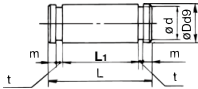


Material: Carbon steel
Surface treatment: Nickel plating (mm)

Bore size (mm)	Part no.	A	A ₁	E ₁	L ₁	MM	[°] R ₁	U ₁	NDH ₁₀	NX	NZ	L	Applicable pin part no.	Weight (g)
12	Y-G012	21.5	6	□10	16	M5 x 0.8	6.3	7	5 ^{+0.048} ₀	5 ^{+0.4} _{-0.2}	10	14.6	IY-G012	11
16	Y-G016	28	11	□12	21	M6 x 1	8.1	10	5 ^{+0.048} ₀	6.5 ^{+0.2} _{-0.2}	12	16.6	IY-J015	11
20	Y-G02	34	8.5	□16	25	M8 x 1.25	10.3	11.5	8 ^{+0.058} ₀	8 ^{+0.4} _{-0.2}	16	21	IY-G02	45
25	Y-G03	41	10.5	□20	30	M10 x 1.25	12.8	14	10 ^{+0.058} ₀	10 ^{+0.4} _{-0.2}	20	25.6	IY-G03	86

* Knuckle pin and retaining rings are included.

Knuckle Pin (Common with double clevis pin)

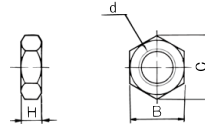


Material: Carbon steel
(mm)

Bore size (mm)	Part no.	Dd9	L	d	L ₁	m	t	Applicable retaining ring	Weight (g)
12	IY-G012	5 ^{-0.050} _{-0.050}	14.6	4.8	10.2	1.5	0.7	Type C5 for axis	2
16	IY-J015 ^{Note)}	5 ^{-0.050} _{-0.050}	16.6	4.8	12.2	1.5	0.7	Type C5 for axis	3
20	IY-G02	8 ^{-0.050} _{-0.076}	21	7.6	16.2	1.5	0.9	Type C8 for axis	8
25	IY-G03	10 ^{-0.050} _{-0.076}	25.6	9.6	20.2	1.55	1.15	Type C10 for axis	16

* Type C retaining rings for axis are included.
Note) Only the IY-J015 is stainless steel.

Rod End Nut



Material: Carbon steel
Surface treatment: Zinc chromated (mm)

Bore size (mm)	Part no.	d	H	B	C	Weight (g)
12	NTJ-015C	M5 x 0.8	4	8	9.2	1
16	NT-015A	M6 x 1	5	10	11.5	2
20	NT-02	M8 x 1.25	5	13	15.0	4
25	NT-03	M10 x 1.25	6	17	19.6	8

Rod End Bracket, Rod End Nut Material: Stainless Steel

Part Nos. (Dimensions: Same as the standard type)

Bore size (mm)	Single knuckle joint	Double knuckle joint*	Knuckle joint pin	Rod end nut
20	I-G02SUS	Y-G02SUS	IY-G02SUS	NT-02SUS
25	I-G03SUS	Y-G03SUS	IY-G03SUS	NT-03SUS

* A knuckle pin and retaining rings are included with the double knuckle joint. Retaining rings are included with the knuckle joint pin.

CQS Series

Simple Joint (CQS): $\varnothing 12$ to $\varnothing 25$

Joint/Mounting Bracket (Type A/B) Part Nos.

Bore size (mm)	Joint	Type A mounting bracket	Type B mounting bracket
12	YU-012	YA-012	YB-012
16	YU-016	YA-016	YB-016
20	YU-020	YA-020	YB-020
25	YU-025	YA-025	YB-025

<Ordering>

Joints are not included with type A or B mounting brackets. Order them separately.

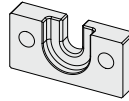
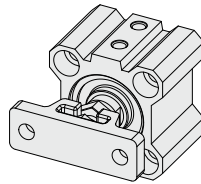
(Example)

Bore size $\varnothing 12$

Part no.

• Type A mounting bracketYA-012

• JointYU-012

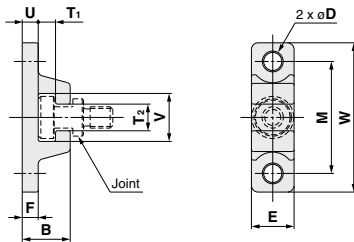


Allowable Eccentricity

(mm)

Bore size (mm)	12	16	20	25
Eccentricity tolerance	± 0.5			
Axial direction backlash	0.5			

Type A Mounting Bracket

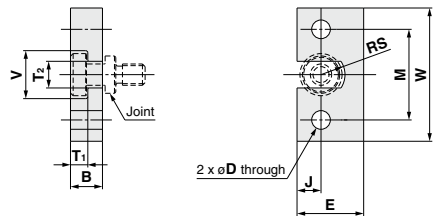


Material: Chromium molybdenum steel (Nickel plating)
(mm)

Bore size (mm)	Part no.	B	D	E	F	M	T ₁	T ₂
12	YA-012	8	3.5	10	3	20	2.5	4
16	YA-016	8	3.5	10	3	24	2.5	5
20	YA-020	12	4.5	13	5	30	3.5	6
25	YA-025	12.5	5.5	15	5	33	3.5	7

Bore size (mm)	Part no.	U	V	W	Weight (g)
12	YA-012	3	8.5	30	9
16	YA-016	3	11	34	11
20	YA-020	5	13.5	42	27
25	YA-025	5	16.5	45	34

Type B Mounting Bracket

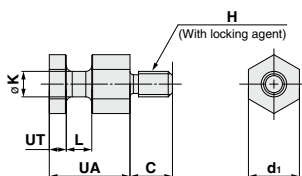


Material: Stainless steel
(mm)

Bore size (mm)	Part no.	B	D	E	J	M	T ₁
12	YB-012	5	3.5	14	5	17	2.5
16	YB-016	5	3.5	16	6	20	2.5
20	YB-020	7	4.5	18	7	25.5	3.5
25	YB-025	7.5	5.5	20	8	28	3.5

Bore size (mm)	Part no.	T ₂	V	W	RS	Weight (g)
12	YB-012	4	8.6	25	2	11
16	YB-016	5	11	29	2.5	15
20	YB-020	6	13.6	36	3	28
25	YB-025	7	16.6	40	3.5	36

Joint



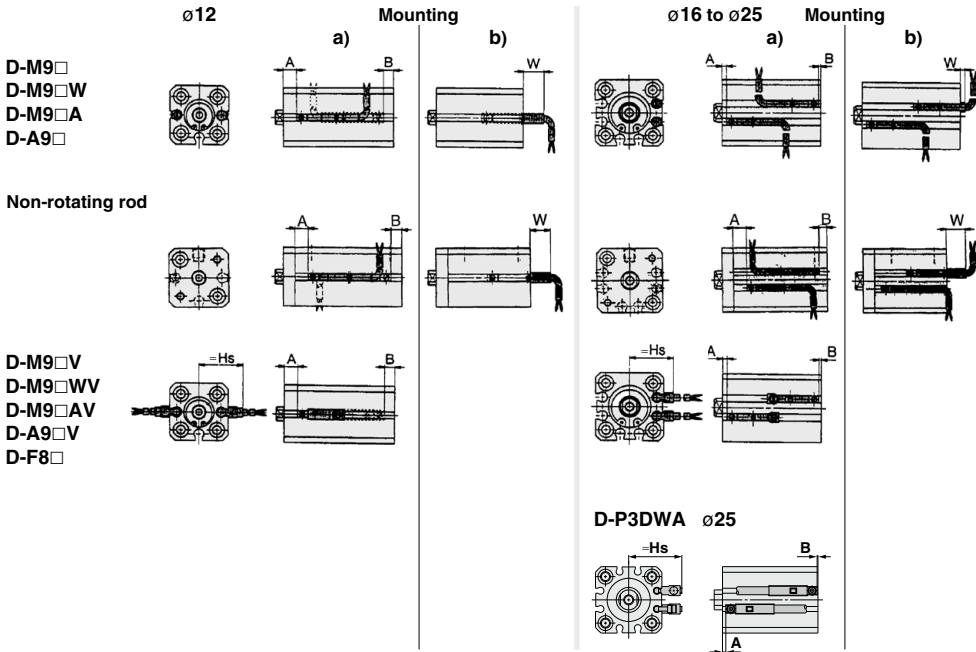
Material: Chromium molybdenum steel (Nickel plating)
(mm)

Bore size (mm)	Part no.	UA	C	d ₁	H	K	L	UT	Weight (g)
12	YU-012	9.5	5	6	M3 x 0.5	3	3	2	2
16	YU-016	9.5	7	8	M4 x 0.7	4	3	2	4
20	YU-020	11.5	6	10	M5 x 0.8	5	4	3	7
25	YU-025	12	11	12	M6 x 1.0	6	4.5	3	11

Auto Switch Mounting

Proper Auto Switch Mounting Position (Detection at stroke end) and Its Mounting Height

Basic type, Single acting (Spring return/Spring extend), Long stroke type, Anti-lateral load type



Proper Auto Switch Mounting Position (Detection at stroke end)

Proper Auto Switch Mounting Position

Auto switch model	D-M9□/M9□W			D-M9□V/M9□WV/M9□AV			D-M9□A			D-A9□			D-A9□V			D-F8□			D-P3DWA		
	A	B	W	A	B	Hs	A	B	W	A	B	W	A	B	Hs	A	B	Hs	A	B	Hs

Single rod: Basic type, Single acting (Spring return/Spring extend), Non-rotating rod []: Denotes the values of D-A93. (): Denotes the values of type T.

12	5.5 (6.5)	3.5 (4.5)	5.5 (6.5)	5.5 (6.5)	4.5 (3.5)	19.5	5.5 (6.5)	4.5 (3.5)	7.5 (8.5)	1.5 (2.5)	0	1.5 [4] (2.5 [5])	1.5 (2.5)	0	17	3.5	2.5	27	—	—	—
16	6	4	6	6	4	21.5	6	4	8	2	0	2 [4.5]	2	0	19	4	2	29	—	—	—
20	10	7.5	2.5	10	7.5	25	10	7.5	4.5	6	3.5	-1.5 [1]	6	3.5	22.5	8.5	5	32.5	—	—	—
25	11	9.5	0.5	11	9.5	27	11	9.5	2.5	7	5.5	-3.5 [-1]	7	5.5	24.5	9	7.5	34.5	6.5	5	33

Long stroke

12	9	11	-1	9	11	19.5	9	11	1	5	7	-5 [2.5]	5	7	17	7	9	27	—	—	—
16	9.5	10.5	-0.5	9.5	10.5	21.5	9.5	10.5	1.5	5.5	6	-4.5 [-2]	5.5	6	19	7.5	8.5	29	—	—	—
20	13	16	-6	13	16	25	13	16	-4	9	12	-10 [-7.5]	9	12	22.5	11	14	32.5	—	—	—
25	14	18	-8	14	18	27	14	18	-6	10	14	-12 [-9.5]	10	14	24.5	12	16	34.5	9.5	13.5	33

Anti-lateral load type

12	10	5	5	10	5	19.5	10	5	7	6	1	1 [3.5]	6	1	17	8	3	27	—	—	—
16	9.5	5.5	4.5	9.5	5.5	21.5	9.5	5.5	6.5	5.5	1.5	0.5 [3]	5.5	1.5	19	7.5	3.5	29	—	—	—
20	13	9.5	0.5	13	9.5	25	13	9.5	2.5	9	5.5	-3.5 [-1]	9	5.5	22.5	11	7.5	32.5	—	—	—
25	14	11.5	-1.5	14	11.5	27	14	11.5	0.5	10	7.5	-5.5 [-3]	10	7.5	24.5	12	9.5	34.5	9.5	7	33

Double acting: Basic type, Non-rotating rod

12	5.5	9.5	0.5	5.5	9.5	19.5	5.5	9.5	2.5	1.5	5.5	-3.5 [1]	1.5	5.5	17	3.5	7.5	27	—	—	—
16	6	9	1	6	9	21.5	6	9	3	2	5	-3 [-0.5]	2	5	19	4	7	29	—	—	—
20	10	14	-4	10	14	25	10	14	-2	6	10	-8 [-5.5]	6	10	22.5	8	12	32.5	—	—	—
25	11	16	-6	11	16	27	11	16	-4	7	12	-10 [-7.5]	7	12	24.5	9	14	34.5	6.5	11.5	33

Note 1) Negative figures in the table W indicate an auto switch is mounted inward from the edge of the cylinder body.

Note 2) The D-M9□/M9□W and M9□A cannot be installed on the single acting: single rod type.

Note 3) Adjust the auto switch after confirming the operating conditions in the actual setting.

Note 4) The D-P3DWA□ is available only for ø25.

Operating Range

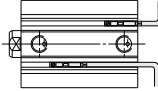
Auto switch model	Bore size (mm)			
	12	16	20	25
D-M9□/M9□V D-M9□W/M9□WV D-M9□A/M9□AV	3	4	5.5	5.5
D-A9□/A9□V	6	7.5	10	10
D-F8□	2.5	3	4	4
D-P3DWA	—	—	—	6

* Since this is a guideline including hysteresis, not meant to be guaranteed. (assuming approximately ±30% dispersion.) There may be the case it will vary substantially depending on an ambient environment.

Minimum Auto Switch Mounting Stroke

No. of auto switch mounted	(mm)							
	D-M9□V	D-M9□WV D-M9□AV	D-A9□	D-A9□V	D-M9□	D-M9□W D-M9□A	D-F8□	D-P3DWA <small>Note 2)</small>
1 pc.	5	10	10 (5)	5	15 (5)	15 (10)	5	15
2 pcs.	5	10	10	10	15 (5)	15 (10)	5	15

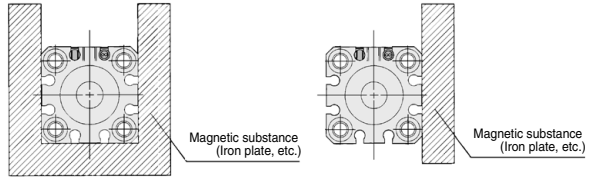
Note 1) The D-M9□/M9□W/M9□A and P3DWA□ cannot be installed on the single acting: single rod type.
 Note 2) Available only for ø25.
 Note 3) As the dimension stated in () shows the minimum mountable stroke when the auto switch does not project from the end face of the cylinder body and the lead wire bending space is not hindered, the auto switch needs to be ordered separately. (Refer to the figure below.)



⚠ Caution

Avoid proximity to magnetic objects.

• If the cylinder is used in an application in which a magnetic material is placed in close contact around the cylinder as shown in the graph on the right (including cases in which even one of the sides is in close contact) the operation of auto switches could become unstable. Therefore, please check with SMC for this type of application.



Other than the applicable auto switches listed in "How to Order", the following auto switches can be mounted.

- * Normally closed (NC = b contact) solid state auto switches (D-M9□E(V)) and solid state auto switch D-F8 are also available. For details, refer to pages 1289 and 1290.
- * For solid state auto switches, auto switches with a pre-wired connector are also available. Refer to pages 1340 and 1341 for details.

⚠ Precautions

Be sure to read this before handling the products.
 Refer to page 20 for safety instructions and pages 21 to 30 for actuator and auto switch precautions.



1 Special Piston Rod End for Double Rod Type Cylinder

Symbol
-X235

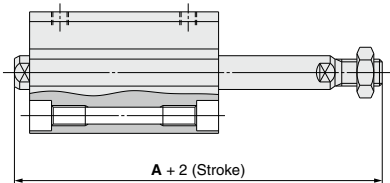
Male thread is used at one piston rod end of double rod type cylinder and female thread is used at the other end.

C□QSW **Mounting** **Bore size** — **Stroke** **D** — **X235**

* Specifications: Same as standard type.
Note) Please contact SMC for mounting bracket.

“D” in the case of “-235”

Piston rod end
Male thread, Female thread



Symbol	Bore size	12	16	20	25
A		39.5 (44.5)	41 (46)	49 (59)	56.5 (66.5)
Applicable stroke		5 to 30		5 to 50	

Note 1) Applicable stroke is available in 5 mm increments.
Note 2) (): Denotes the dimensions with auto switch.

2 Fluororubber for Seals

Symbol
-X271

Material for seals is changed to fluororubber.

C□QS **Standard model no.** — **X271**

All series variations except non-rotating piston rod type of the CQS series is available. Specifications are the same as for each variation of CQS.

Fluororubber for seals

3 Long Stroke of Adjustable Extension Stroke Cylinder (-XC8)

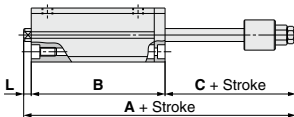
Symbol
-X525

C□QS **Mounting** **Bore size** — **Stroke** **D(M)** — **X525**

Long stroke
of XC8

Specifications are the same as for -XC8 of the CQ2/CQS series. Refer to "Made to Order Common Specifications".
Note) For the tap mounting type (ø12 to ø25—without switch) and mounting bracket, please contact SMC.

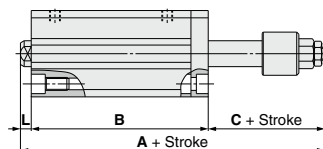
ø12, ø16



ø12, ø16

Symbol Stroke	A				B			C	L	Applicable stroke	
	35st	40st	45st	50st	35st	40st	45st				50st
Bore (mm)											
12	91.1 (96.1)	96.1 (101.1)	101.1 (106.1)	106.1 (111.1)	62 (67)	67 (72)	72 (77)	77 (82)	25.6	3.5	35, 40, 45, 50
16	91.5 (96.5)	96.5 (101.5)	101.5 (106.5)	106.5 (111.5)	62 (67)	67 (72)	72 (77)	77 (82)	26	3.5	

ø20, ø25



ø20, ø25

Symbol Stroke	A		B		C	L	Applicable stroke
	55 to 75st	80 to 100st	55 to 75st	80 to 100st			
Bore (mm)							
20	142.5 (152.5)	167.5 (177.5)	109 (119)	134 (144)	29	4.5	55 to 100
25	146 (156)	171 (181)	112 (122)	137 (147)	29	5	

Note 1) (): Denotes dimensions with auto switch.
Note 2) Applicable stroke is available in 5 mm increments.

4 Long Stroke of Adjustable Retraction Stroke Cylinder (-XC9)

Symbol
-X526

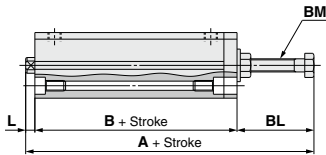
C□QS **Mounting** **Bore size** — **Stroke** D (M) — X526

Long stroke of XC9

Specifications are the same as for -XC9 of the CQS series.
Refer to "Made to Order Common Specifications".
Note) Please contact SMC for bracket type.

Dimensions

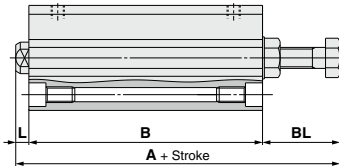
ø12, ø16



Symbol	A	B	L	BL	BM	Applicable stroke
Bore (mm) 12	69.8	37	3.5	29.3	M5 x 0.8	35, 40, 45, 50, 75, 100
16	69.5	37	3.5	29	M6 x 1.0	75, 100, 125, 150, 175, 200
20	76	41	4.5	30.5	M8 x 1.25	75, 100, 125, 150, 175, 200, 250, 300
25	78.5	44	5	29.5	M8 x 1.25	75, 100, 125, 150, 175, 200, 250, 300

Note 1) Intermediate stroke type (available in 5 mm increments) is for spacer so that dimensions are the same as for each type of 75, 100, 125, 150, 175, 200, 250, 300 stroke.

ø20, ø25



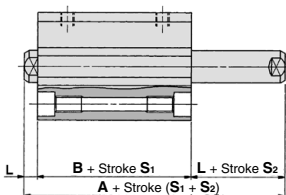
5 Intermediate Stroke of Double Rod Type

Symbol
-X633

C□QSW **Standard model no.** — X633
C□QSKW

※ Specifications: Same as standard type.
Note) Please contact SMC for bracket type.

Dimensions



Symbol	C(D)QSW		C(D)QSKW		L	Stroke S ₁	Stroke S ₂
	A	B	A	B			
Bore (mm) 12	29 (34)	22 (27)	34 (39)	27 (32)	3.5	In the case of 5 to 30 stroke 5 mm intervals	In the case of 6 to 29 stroke 1 mm intervals
16	29 (34)	22 (27)	34 (39)	27 (32)	3.5	In the case of 5 to 30 stroke 5 mm intervals	In the case of 6 to 29 stroke 1 mm intervals
20	35 (45)	26 (36)	40 (50)	31 (41)	4.5	In the case of 5 to 50 stroke 5 mm intervals	In the case of 6 to 49 stroke 1 mm intervals
25	39 (49)	29 (39)	44 (54)	34 (44)	5	In the case of 5 to 50 stroke 5 mm intervals	In the case of 6 to 49 stroke 1 mm intervals

Note 1) (): Denotes the dimensions with auto switch.

Note 2) Installing a spacer inside the standard cylinder tube, stroke S₁ has 5 mm intervals for controlling intermediate strokes in 1 mm increments.

Example) In the case of CDQ2WB40-16D, stroke S₁ is 20 mm and stroke S₂ is 18 mm.



6 Long Stroke of Dual Stroke Single Rod Type

Symbol

-X636

C□QSB Bore size — Stroke S₁ + Stroke S₂-S₁ DC (M) — X636

Long stroke of
XC11

Applicable stroke

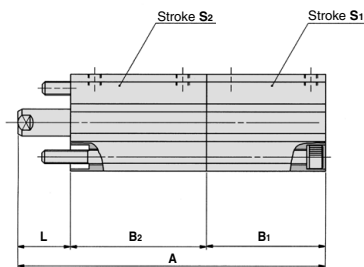
mm

Bore size	Stroke
ø12, ø16	Max. stroke S ₂ : up to 50 mm
ø20, ø25	Max. stroke S ₂ : up to 100 mm

Specifications are the same as for -XC11 of the CQS series.

Refer to "Made to Order Common Specifications".

Note) Please contact SMC for tap mounting type and bracket mounting type.



Bore size: ø12, ø16

mm

Symbol	A	B ₁	B ₂	L	Stroke range	
					S ₁	S ₂
Bore ø12	62.5 (67.5) + Stroke (S ₁ + S ₂)	17 (22) + Stroke S ₁	32 + Stroke S ₂	13.5	5 to 30	35 to 50
Bore ø16	62.5 (67.5) + Stroke (S ₁ + S ₂)	17 (22) + Stroke S ₁	32 + Stroke S ₂	13.5	5 to 30	35 to 50

Bore size: ø20, ø25

mm

Symbol	A		B ₁	B ₂		L	Stroke range	
	Stroke S ₂			Stroke S ₂			S ₁	S ₂
	55 to 75	80 to 100		55 to 75	80 to 100			
Bore ø20	150 (160) + Stroke S ₁	175 (185) + Stroke S ₁	19.5 (29.5) + Stroke S ₁	116	141	14.5	5 to 50	55 to 100
Bore ø25	156.5 (166.5) + Stroke S ₁	181.5 (191.5) + Stroke S ₁	22.5 (32.5) + Stroke S ₁	119	144	15	5 to 50	55 to 100

Note 1) (): Denotes the dimensions with auto switch.

Note 2) Applicable stroke is available in 5 mm increments.