

Series CQ2

Simple Specials/Made to Order

Made to Order

Please contact SMC for detailed specifications, lead times, and pricing.

Simple Specials/Made to Order **Series CQ2**

■ **Simple Specials** The following special specifications can be ordered as a simplified made-to-order. There is a specification sheet available on paper and CD-ROM. Please contact your SMC sales representatives if necessary.

Symbol	Specifications	CQ2 (Standard)				CQ2 (Large Bore Size)		CQ2 (Long Stroke)			CQ2K (Non-rotating Rod)		CQP2 (Axial Piping) ^{Note 2)}			CQ2□S (Anti-lateral Load)	CBQ2 (With End Lock) ^{Note 2)}	Page
		Double acting		Single acting		Double acting		Double acting			Double acting		Double acting	Double acting	Double acting			
		Single rod	Double rod	Single rod/ Spring return	Single rod/ Spring extend	Single rod	Double rod	Single rod	Double rod	Single rod	Single rod/ Spring return	Single rod/ Spring extend	Single rod	Single rod				
-XA1 to 30	Special rod end shape	●	●	●				●	●	●	●	●	●	●		P.179		

■ **Made to Order**

Symbol	Specifications	CQ2 (Standard)				CQ2 (Large Bore Size)		CQ2 (Long Stroke)	CQ2K (Non-rotating Rod)		CQP2 (Axial Piping)			CQ2□S (Anti-lateral Load)	CBQ2 (With End Lock)	Page
		Double acting		Single acting		Double acting			Double acting		Double acting	Single acting		Double acting	Double acting	
		Single rod	Double rod	Single rod/ Spring return	Single rod/ Spring extend	Single rod	Double rod		Single rod	Double rod	Single rod	Single rod/ Spring return	Single rod/ Spring extend	Single rod	Single rod	
-XB6	Heat resistant cylinder (−10 to 150°C)	●	●								●					P.183
-XB7	Cold resistant cylinder (−40 to 70°C)	●	●								●					P.183
-XB9	Low-speed cylinder (10 to 50 mm/s)	●	●								●					P.184
-XB10	Intermediate stroke (Exclusive body type)	●	●	●		●	●	●		●			●		●	P.185
-XB10A	Intermediate stroke (Spacer-installed type) Note 3)	●														P.187
-XB11	Long stroke (Air-hydro type only)	●														P.187
-XB13	Low-speed cylinder (5 to 50 mm/s)	●	●								●					P.187
-XB14	Cylinder with heat resistant auto switch Note 2)	●														P.188
-XC4	With heavy-duty scraper	●	●					●			●					P.189
-XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel	●	●	●	●			●			●	●	●	●		P.190
-XC8	Adjustable stroke cylinder/Adjustable extension type	●							●							P.191
-XC9	Adjustable stroke cylinder/Adjustable retraction type	●							●							P.192
-XC10	Dual stroke cylinder/Double rod	●							●							P.193
-XC11	Dual stroke cylinder/Single rod	●							●							P.194
-XC26	With split pins for double clevis pin/double knuckle joint pin and flat washers	●		●	●			●		Note 1) ●			●		●	P.195
-XC27	Double clevis pin/Double knuckle joint pin material: Stainless steel 304	●		●	●			●		●	●		●			P.196
-XC35	With coil scraper	●	●								●					P.197
-XC36	With boss on rod end	●	●	●	●						●	●	●			P.197
-X144	Special port location	●	●	●	●											P.198
-X202	Full length dimension is the same as Series CQ1.	●		●	●											P.199
-X203	L dimension from rod cover is the same as Series CQ1.	●		●	●											P.201
-X235	Special rod end for double rod cylinder		●				●									P.202
-X271	Fluororubber seals	●	●	●	●	●	●	●			●	●	●	●		P.202
-X293	Full length dimension is the same as Series CQ1W.		●													P.203
-X525	Long stroke of adjustable extension stroke cylinder (-XC8)	●														P.204
-X526	Long stroke of adjustable retraction stroke cylinder (-XC9)	●														P.205
-X633	Intermediate stroke of double rod cylinder		●				●			●						P.205
-X636	Long stroke of dual stroke single rod cylinder	●														P.206
-X1876	Cylinder tube: With concave boss on head end	●		●	●				●				●			P.207

Note 1) For ø40 to ø63 only. ø12 to ø32 are available as a special product. Note 2) The body shape is the same as the existing product. Note 3) For ø32 to ø100 only.

Standard

Large Bore Size

Long Stroke

Non-rotating Rod

Axial Piping

Anti-lateral Load

With End Lock

Water Resistant

With Auto Switch

Auto Switch

Made to Order

Series CQ2
Simple Specials 1

These changes are dealt with Simple Specials System.

CQ2 (ø12 to ø25): Special Rod End Shape

Symbol
-XA1/2/6/7/11/17/18

Applicable Series

Series	Model	Action	Special rod end shape/symbol
CQ2 (ø12 to ø25)	Standard	CQ2	Double acting, Single rod Single acting (Spring return)
		CQ2W	Double acting, Double rod
	Axial piping (Centralized piping type)	CQP2	Double acting, Single rod Single acting (Spring return)
		CQ2K	Double acting, Single rod Double acting, Double rod (Non-rotating rod side)
	Non-rotating rod	CQ2KW	Double acting, Double rod (Round rod side)

Precautions

- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with “*” will be as follows to the rod diameter (D).
Enter any special dimension you desire.
ø12, ø16 → D – 1 mm ø20, ø25 → D – 2 mm
- In the case of double rod, fill in the dimension when the rod is retracted.
- It is not possible to manufacture when -XA17 and -XA18 are the same male thread diameter as the piston rod external diameter.
- Contact SMC separately for the special rod end shape/symbols other than the table on the left and the cases other than the manufacturing conditions.

Conditions of Manufacture

Special rod end shape/Symbol	Single rod		Double rod
XA1	For ø12	øM: 3 mm or more 5 mm or less	øM: ø5 mm or less
	ø16	øM: 3 mm or more 7 mm or less	øM: ø7 mm or less
	ø20	øM: 4 mm or more 8 mm or less	øM: ø8 mm or less
	ø25	øM: 4 mm or more 10 mm or less	øM: ø10 mm or less
XA2	For ø12	øJ: 4 mm or more, W1: 6 mm or less	øJ: 3 mm or more, W1: 6 mm or less
	ø16	øJ: 4 mm or more, W1: 6 mm or less	øJ: 4 mm or more, W1: 6 mm or less
	ø20	øJ: 5 mm or more, W1: 11 mm or less	øJ: 5 mm or more, W1: 11 mm or less
	ø25	øJ: 6 mm or more, W1: 13 mm or less	øJ: 6 mm or more, W1: 13 mm or less
XA6	For ø12	H: M4 or less	H: M4 or less
	ø16	H: M6 or less	H: M6 or less
	ø20	H: M6 or less	H: M6 or less
	ø25	H: M8 or less	H: M8 or less
XA7	For ø12	H: M4 or less	H: M4 or less
	ø16	H: M5 or less	H: M5 or less
	ø20	H: M6 or less	H: M6 or less
	ø25	H: M8 or less	H: M8 or less
XA11	For ø12	SR3 mm only	SR3 mm or more
	ø16	SR4 mm only	SR4 mm or more
	ø20	SR5 mm only	SR5 mm or more
	ø25	SR6 mm only	SR6 mm or more
XA17	For ø12	H: M5 or more, X: 20 mm or less	H: M5 or less
	ø16	H: M6 or more, X: 22.5 mm or less	H: M6 or less
	ø20	H: M8 or more, X: 26.5 mm or less	H: M8 or less
	ø25	H: M10 or more, X: 33 mm or less	H: M10 or less
XA18	For ø12	H: M5 or more, X: 20 mm or less	H: M5 or less
	ø16	H: M6 or more, X: 22.5 mm or less	H: M6 or less
	ø20	H: M8 or more, X: 26.5 mm or less	H: M8 or less
	ø25	H: M10 or more, X: 33 mm or less	H: M10 or less

Symbol: A1	Symbol: A2	Symbol: A6	Symbol: A7
Symbol: A11	Symbol: A17	Symbol: A18	

Series CQ2
Simple Specials 2

These changes are dealt with Simple Specials System.

Simple Specials Series CQ2

CQ2 (ø32 to ø200): Special Rod End Shape

Symbol
-XA1 to XA23/-XA26 to XA30

Applicable Series

Series	Model	Action	Special rod end shape/symbol
CQ2	Standard	CQ2 Double acting, Single rod Single acting (Spring return)	XA1 to 23 XA26 to 30
		CQ2W Double acting, Double rod	
	Axial piping (Centralized piping type)	CQP2 Double acting, Single rod Single acting (Spring return/extend)	
		CQ2S Double acting, Single rod	
	Long stroke	CQ2 Double acting, Single rod	
	Non-rotating rod	CQ2K Double acting, Single rod	XA1, XA2, XA6, XA10 to 14, XA17, XA19, XA21
		CQ2KW Double acting, Double rod (Non-rotating rod side) Double acting, Double rod (Round rod side)	XA1 to 23 XA26 to 30

Series	Model	Action	Symbol for change of rod end shape
CQ2	Large bore size ø125 to ø200	CQ2 Double acting, Single rod	XA1 to 23
		CQ2W Double acting, Double rod	XA26 to 30

Precautions

- SMC will make appropriate arrangements if no dimension, tolerance, or finish instructions are given in the diagram.
- Standard dimensions marked with "*" will be as follows to the rod diameter (D).
Enter any special dimension you desire.
D - 2 mm
- In the case of double rod, fill in the dimension when the rod is retracted.

Symbol: A1 	Symbol: A2 	Symbol: A3 	Symbol: A4
Symbol: A5 	Symbol: A6 	Symbol: A7 	Symbol: A8
Symbol: A9 	Symbol: A10 	Symbol: A11 	Symbol: A12

Symbol: A13 	Symbol: A14 	Symbol: A15 	Symbol: A16
Symbol: A17 	Symbol: A18 	Symbol: A19 	Symbol: A20
Symbol: A21 	Symbol: A22 	Symbol: A23 	Symbol: A26
Symbol: A27 	Symbol: A28 	Symbol: A29 	Symbol: A30

Series CQ2

Made to Order 1

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-XB6 Heat Resistant Cylinder (−10 to 150°C)

The seal material and grease for air cylinders have been changed for high temperature tolerance, now with a range of −10 to 150°C.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
		CQ2W	Double acting, Double rod
	Axial piping	CQP2	Double acting, Single rod
			Except with rubber bumper

How to Order

CQ2
CQ2W
CQP2

Standard model no. — **XB6**

Heat resistant cylinder ●

Specifications

Ambient temperature range	−10 to 150°C
Seal material	Fluororubber
Grease	Heat resistant grease
Specifications other than above and external dimensions	Same as standard



Note 1) Operate without lubrication from a pneumatic system lubricator.
Note 2) For maintenance intervals for this cylinder, which differ from those of the standard cylinder, please contact SMC.

Note 3) In principle, it is not possible to make built-in magnet type and mounted auto switch models. However, for cylinders with auto switches and heat resistant cylinders with heat resistant auto switches, please contact SMC as the compatibility differs depending on the series.

Note 4) Piston speed is ranged from 50 to 500 mm/s.

Note 5) For cylinders with rubber bumper, please contact SMC.

Warning Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

Symbol

-XB7 Cold Resistant Cylinder (−40 to 70°C)

The seal material and grease for air cylinders have been changed for low temperature use, down to −40°C.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
		CQ2W	Double acting, Double rod
	Axial piping	CQP2	Double acting, Single rod
			Except ø50 or more, with switch, with rubber bumper, with bracket

How to Order

CQ2
CQ2W
CQP2

Standard model no. — **XB7**

Cold resistant cylinder ●

Specifications

Ambient temperature range	−40 to 70°C
Seal material	Low nitrile rubber
Grease	Cold resistant grease
Auto switch	Not mountable
External dimensions	Same as standard
Specifications other than above	Same as standard



Note 1) Operate without lubrication from a pneumatic system lubricator.
Note 2) Use dry air which is suitable for heatless air dryer, etc. not to cause the moisture to be frozen.

Note 3) For maintenance intervals for this cylinder, which differ from those of the standard cylinder, please contact SMC.

Note 4) Mounting an auto switch is not possible.

Note 5) For cylinders with rubber bumper, please contact SMC.

Warning Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

Symbol

-XB9 Low-speed Cylinder (10 to 50 mm/s)

Even if driving at lower speeds 10 to 50 mm/s, there would be no stick-slip phenomenon and it can run smoothly.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
		CQ2W	Double acting, Double rod
	Axial piping	CQP2	Double acting, Single rod

How to Order

C□Q2

C□Q2W

C□QP2

Standard model no.

— XB9

Low-speed cylinder ●

Specifications

Piston speed	10 to 50 mm/s
External dimensions	Same as standard
Specifications other than above	Same as standard



Note) Operate without lubrication from a pneumatic system lubricator.

Warning Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

Standard

Large Bore
Size

Long Stroke

Non-rotating
Rod

Axial Piping

Anti-lateral
Load

With End Lock

Water
Resistant

With Auto
Switch

Auto Switch

Made to Order

Series CQ2

Made to Order 2

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-XB10 Intermediate Stroke (Exclusive body type)

Air cylinder which can reduce the mounting space by using an exclusive body which does not use a spacer to achieve that the full length dimension could be shortened when an intermediate stroke other than the standard stroke is required.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
		CQ2W	Single acting (Spring return)
	Large bore size	CQ2W	Double acting, Double rod
		CQ2	Double acting, Single rod
	Long stroke	CQ2W	Double acting, Double rod
		CQ2	Double acting, Single rod
	Non-rotating rod	CQ2K	Double acting, Single rod
		CQ2KW	Double acting, Double rod
	Anti-lateral load	CQ2□S	Double acting, Single rod
	End lock	CBQ2	Double acting, Single rod
			Except ø12 to ø32

How to Order

C□Q2
C□Q2W
C□Q2K
C□Q2KW
C□Q2□S

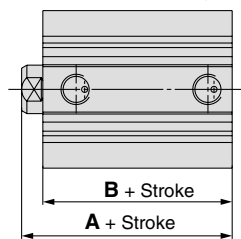
Standard model no. — XB10

Intermediate stroke ●

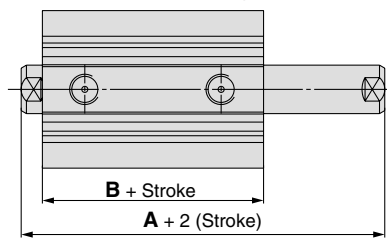
Specifications: Same as standard

Dimensions: Series CQ2

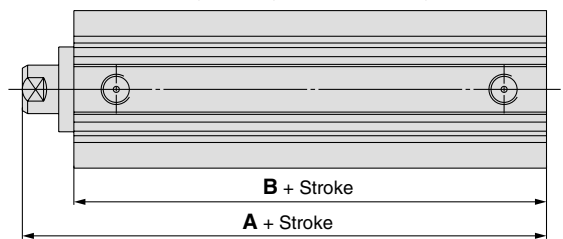
Double acting, Single rod



Double acting, Double rod



Double acting, Single rod/Long stroke



Bore size (mm)	Single rod				Applicable stroke range
	A		B		
	49 stroke or less	51 to 99 stroke	49 stroke or less	51 to 99 stroke	
12	20.5 (31.5)	—	17 (28)	—	6 to 29
16	22 (34)	—	18.5 (30.5)	—	
20	24 (36)	—	19.5 (31.5)	—	6 to 49
25	27.5 (37.5)	—	22.5 (32.5)	—	
32	30 (40)	40 (40)	23 (33)	33 (33)	6 to 99
40	36.5 (46.5)	46.5 (46.5)	29.5 (39.5)	39.5 (39.5)	
50	38.5 (48.5)	48.5 (48.5)	30.5 (40.5)	40.5 (40.5)	11 to 99
63	44 (54)	54 (54)	36 (46)	46 (46)	
80	53.5 (63.5)	63.5 (63.5)	43.5 (53.5)	53.5 (53.5)	
100	65 (75)	75 (75)	53 (63)	63 (63)	

Bore size (mm)	Double rod				Applicable stroke range
	A		B		
	49 stroke or less	51 to 99 stroke	49 stroke or less	51 to 99 stroke	
12	32.2 (39.4)	—	25.2 (32.4)	—	6 to 29
16	33 (43)	—	26 (36)	—	
20	35 (47)	—	26 (38)	—	6 to 49
25	39 (49)	—	29 (39)	—	
32	44.5 (54.5)	54.5 (54.5)	30.5 (40.5)	40.5 (40.5)	6 to 99
40	54 (64)	64 (64)	40 (50)	50 (50)	
50	56.5 (66.5)	66.5 (66.5)	40.5 (50.5)	50.5 (50.5)	11 to 99
63	58 (68)	68 (68)	42 (52)	52 (52)	
80	71 (81)	81 (81)	51 (61)	61 (61)	
100	84.5 (94.5)	94.5 (94.5)	60.5 (70.5)	70.5 (70.5)	

Bore size (mm)	Single rod (Long stroke)		Applicable stroke range
	A	B	
32	62.5	45.5	101 to 299
40	72	55	
50	73.5	55.5	
63	75	57	
80	86	66	
100	97.5	75.5	

* The dimensions are the same with or without auto switch.



* (): Dimensions with auto switch

* The dimensions other than listed are the same as those of the standard.

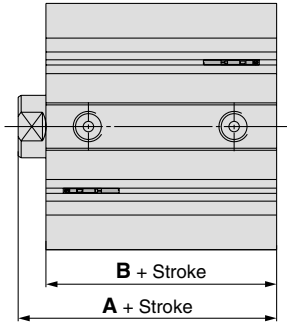
Note) Applicable stroke: Available in 1 mm intervals

Bore size (mm)	Single rod (Single acting/Spring return)		Applicable stroke range
	A	B	
12	20.5 (31.5)	17 (28)	6 to 9
16	22 (34)	18.5 (30.5)	
20	24 (36)	19.5 (31.5)	6 to 9
25	27.5 (37.5)	22.5 (32.5)	
32	30 (40)	23 (33)	6 to 9
40	36.5 (46.5)	29.5 (39.5)	
50	38.5 (48.5)	30.5 (40.5)	11 to 19

Symbol
-XB10

Dimensions: Series CQ2

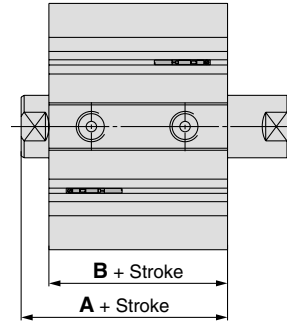
Double acting, Single rod/Large bore size



Bore size (mm)	Single rod		Applicable stroke range
	A	B	
125	99	83	11 to 299
140	99	83	
160	108	91	
180	119	102	
200	126	109	

* The dimensions other than listed are the same as those of the standard.
Note) Applicable stroke: Available in 1 mm intervals

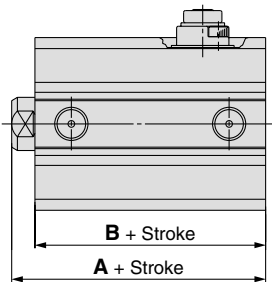
Double acting, Double rod/Large bore size



Bore size (mm)	Double rod		Applicable stroke range
	A	B	
125	115	83	11 to 299
140	115	83	
160	125	91	
180	136	102	
200	143	109	

* The dimensions other than listed are the same as those of the standard.
Note) Applicable stroke: Available in 1 mm intervals

Double acting, Single rod/End lock With head end lock



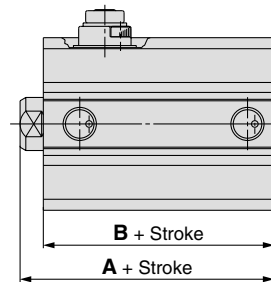
Head End Lock

(mm)

Bore size (mm)	A		B		Applicable stroke range
	24 stroke or less	26 to 99 stroke	24 stroke or less	26 to 99 stroke	
20	65.5	80.5	61	66	6 to 99
25	69	84	64	69	
32	72.5		65.5		
40	82		75		
50	83.5		75.5		
63	85		77		

Bore size (mm)	A		B		Applicable stroke range
	49 stroke or less	51 to 99 stroke	49 stroke or less	51 to 99 stroke	
80	121	136	111	116	6 to 99
100	132.5	147.5	120.5	125.5	

Double acting, Single rod/End lock With rod end lock



Red End Lock (mm)

Bore size (mm)	A		B		Applicable stroke range
	24 stroke or less	26 to 99 stroke	24 stroke or less	26 to 99 stroke	
20	59	80.5	54.5	66	6 to 99
25	62.5	84	57.5	69	
32	65		58		
40	71.5		64.5		
50	73.5		65.5		
63	79		71		

Bore size (mm)	A		B		Applicable stroke range
	49 stroke or less	51 to 99 stroke	49 stroke or less	51 to 99 stroke	
80	113.5	136	103.5	116	6 to 99
100	125	147.5	113	125.5	

Series CQ2

Made to Order 3

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-XB10A Intermediate Stroke (Spacer-installed type)

Intermediate stroke: Available in 1 mm intervals A spacer is installed on tubes with a stroke longer than the specified stroke (● in the below table).

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
			ø32 to ø100

Applicable Stroke

Intermediate stroke with ◎: Available in 1 mm intervals

A spacer is installed on tubes with a stroke longer than the specified stroke (●).

◆: Standard stroke ●: Stroke in stock

Bore size (mm)	Stroke range	Type	Stroke																			
			↔	55	↔	60	↔	65	↔	70	*	75	↔	80	↔	85	↔	90	↔	95	*	100
32, 40	51 to 94	Spacer-installed type 2	⊙	●	⊙	●	⊙	●	⊙	●	—	◆	⊙	●	⊙	●	⊙	●	⊙	●	—	◆
50 to 100	51 to 94		⊙	●	⊙	●	⊙	●	⊙	●	—	◆	⊙	●	⊙	●	⊙	●	⊙	●	—	◆

Note) Specify a spacer-installed type 1 with standard model number on page 3 for ordering intermediate stroke with a * mark.

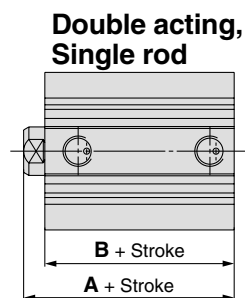
Specifications: Same as standard

How to Order C□Q2 **Standard model no.** — XB10 A

Intermediate stroke ●
Spacer-installed type ●

Order no.	
	CQ2B32-57DZ-XB10A (uses 60 mm stroke tube)
	• CQ2B32-60DZ-XB10 with 3 mm width spacer inside
	• The B dimension is 93 mm.

Dimensions: Series CQ2



Symbol Stroke	A								B							
	51 to 54	56 to 59	61 to 64	66 to 69	76 to 79	81 to 84	86 to 89	91 to 94	51 to 54	56 to 59	61 to 64	66 to 69	76 to 79	81 to 84	86 to 89	91 to 94
Bore size																
32	95	100	105	110	120	125	130	135	88	93	98	103	113	118	123	128
40	101.5	106.5	111.5	116.5	126.5	131.5	136.5	141.5	94.5	99.5	104.5	109.5	119.5	124.5	129.5	134.5
50	103.5	108.5	113.5	118.5	128.5	133.5	138.5	143.5	95.5	100.5	105.5	110.5	120.5	125.5	130.5	135.5
63	109	114	119	124	134	139	144	149	101	106	111	116	126	131	136	141
80	118.5	123.5	128.5	133.5	143.5	148.5	153.5	158.5	108.5	113.5	118.5	123.5	133.5	138.5	143.5	148.5
100	130	135	140	145	155	160	165	170	118	123	128	133	143	148	153	158

Symbol

-XB11 Long Stroke (Air-hydro type only)

Strokes exceeding the standard stroke length

Applicable Series

Series	Model	Action	Note
CQ2	Air-hydro type (ø32 to ø100)	CQ2AH	Double acting, Single rod
			The external dimensions are the same as those of the CQ2 series long stroke type air cylinder.

How to Order **Standard model no.** — XB11

Long stroke ●

* Enter a symbol for stroke required.

Specifications: Same as standard

Symbol

-XB13 Low-speed Cylinder (5 to 50 mm/s)

Even if driving at lower speeds 5 to 50 mm/s, there would be no stick-slip phenomenon and it can run smoothly.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
		CQ2W	Double acting, Double rod
	Axial piping	CQP2	Double acting, Single rod
			Except Large bore size, Long stroke, Non-rotating rod, Anti-lateral load, With end lock
			Except Large bore size, Non-rotating rod

How to Order C□Q2 **Standard model no.** — XB13

Low-speed cylinder ●



Note 1) Operate without lubrication from a pneumatic system lubricator.

Note 2) For speed control, use the low-speed-control speed controller (Series AS-FM/AS-M).

Specifications

Piston speed	5 to 50 mm/s
External dimensions	Same as standard
Specifications other than above	Same as standard

Warning Precautions

Be aware that smoking cigarettes, etc. after your hands have come into contact with the grease used in this cylinder can create a gas that is hazardous to humans.

Symbol

-XB14 Cylinder with Heat Resistant Auto Switch

Heat resistant compact cylinder CDQ2 series (ø16 to ø63), which can mount heat resistant solid state switch. (D-F7NJL_Z, Max. 150°C)

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod Applicable to ø16 to ø63 Except with rubber bumper Body shape: Same as the existing product

How to Order

CDQ2 **Standard model no.** — **F7NJL** — **XB14**

Note) The body shape is the same as the existing product.
"Z" is not included in the model number.

• Cylinder with heat resistant auto switch

Specifications

Applicable cylinder	Compact cylinder/Standard
Series	CQ2
Bore size (mm)	16, 20, 25, 32, 40, 50, 63
Type	Non-lube
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa (0.07 MPa: for ø16 only)
Ambient and fluid temperature	0 to 150°C
Rubber bumper	None
Rod end thread	Male or female thread
Stroke length tolerance	$^{+1.0}_0$ mm
Piston speed	50 to 500 mm/s

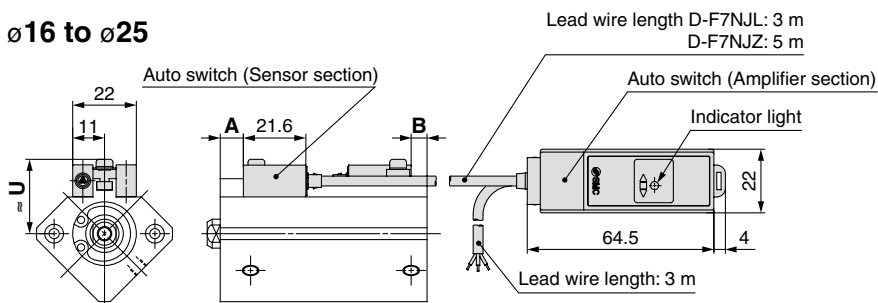
Bore size (mm)	Standard stroke (mm)									
	15	20	25	30	35	40	45	50	70	100
16	●	●	●	●						
20	●	●	●	●	●	●	●	●		
25	●	●	●	●	●	●	●	●	●	
32	●	●	●	●	●	●	●	●	●	●
40	●	●	●	●	●	●	●	●	●	●
50	●	●	●	●	●	●	●	●	●	●
63	●	●	●	●	●	●	●	●	●	●

• Manufacture of intermediate strokes
Intermediate strokes in 1 mm intervals are available by installing a spacer in the standard stroke cylinder.

Note) Refer to page 1319 in Best Pneumatics No. 2 for further information on auto switches.

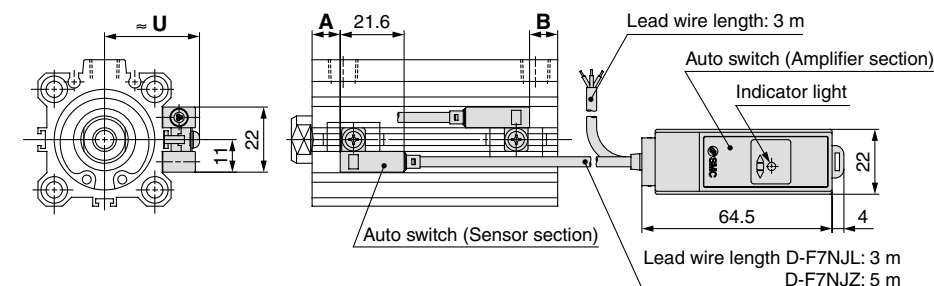
Auto Switch Proper Mounting Position (Detection at Stroke End)

ø16 to ø25



Bore size (mm)	A	B	U
16	8	5.5	23.5
20	8	7	25.5
25	8	7.5	28.5
32	9.5	6.5	32.5
40	13.5	9	36
50	11.5	12	42
63	14	15	48.5

ø32 to ø63



Auto Switch Mounting Bracket/Part No.

Auto switch model	Bore size (mm)						
	16	20	25	32	40	50	63
D-F7NJL(Z)	BQ-1			BQJ1-032			

Auto Switch Mounting Bracket/Weight

Mounting bracket part no.	Weight (g)
BQ-1	1.5
BQJ1-032	8.5

* The dimensions on the cylinder body is equivalent to the standard, double acting, single rod of the CDQ2 series.

Note 1) Auto switches are shipped in the same package, but not assembled in order to protect it at the time of shipment. Assemble it by referring to A, B dimensions for mounting position shown in the above table.

Note 2) The tightening torque of the auto switch mounting M3 screw must be 0.5 to 0.7 N·m.

Series CQ2

Made to Order 4

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-XC4 With Heavy-Duty Scraper

Suitable for using cylinders under the environment, where there are much dusts in a surrounding area by using a heavy-duty scraper on the wiper ring, or using cylinders under earth and sand exposed to the die-casted equipment, construction machinery, or industrial vehicles.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
		CQ2W	
	Long stroke	CQ2	Double acting, Single rod
	Axial piping	CQP2	Double acting, Single rod

How to Order

C□CQ2
C□CQP2

Standard model no.

— XC4

With heavy-duty scraper
(SCB scraper)

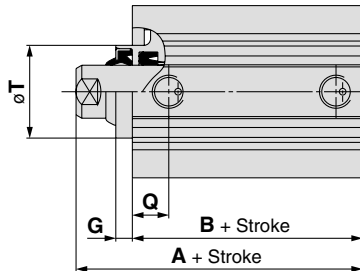
Specifications: Same as standard

⚠ Caution

Do not replace heavy-duty scrapers.

- Since heavy-duty scrapers are press-fit, replace the entire rod cover assembly.

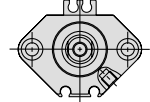
Series CQ2



- (): Dimensions with auto switch
 - The other dimensions are the same as those of the standard, CQ2 series.
 - ø32, without switch, 5 mm stroke: Q-dimension is 21.5
 - Relation between ø12 to ø32 piping port and mounting holes is as the diagram on the right.
- For models with a bracket, please contact SMC.
Applicable stroke: Available in 5 mm intervals



Without switch: ø20 to ø32
With switch: ø32



With switch: ø20, ø25

Series CQ2

Bore size (mm)	A			B			T	G		Q	
	50 stroke or less	75, 100 stroke	125 to 300 stroke	50 stroke or less	75, 100 stroke	125 to 300 stroke		100 stroke or less	125 stroke or more	50 stroke or less	125 stroke or more
20	34 (46)	—	—	29.5 (41.5)	—	—	—	—	—	19 (20.5)	—
25	37.5 (47.5)	—	—	32.5 (42.5)	—	—	—	—	—	21 (21)	—
32	40 (50)	50 (50)	67.5 (67.5)	33 (43)	43 (43)	55.5 (55.5)	—	—	—	20.5 (20.5)	—
40	46.5 (56.5)	56.5 (56.5)	77 (77)	29.5 (39.5)	39.5 (39.5)	55 (55)	28	5	10	11 (11)	14 (14)
50	48.5 (58.5)	58.5 (58.5)	78.5 (78.5)	30.5 (40.5)	40.5 (40.5)	55.5 (55.5)	35	5	10	10.5 (10.5)	14 (14)
63	54 (64)	64 (64)	80 (80)	36 (46)	46 (46)	57 (57)	35	5	10	15 (15)	16.5 (16.5)
80	63.5 (73.5)	73.5 (73.5)	91 (91)	43.5 (53.5)	53.5 (53.5)	66 (66)	43	5	10	16 (16)	19 (19)
100	75 (85)	85 (85)	102.5 (102.5)	53 (63)	63 (63)	75.5 (75.5)	59	5	10	23 (23)	23 (23)

Symbol

-XC6 Piston Rod/Retaining Ring/Rod End Nut Material: Stainless Steel

Suitable for the cases it is likely to generate rust by water immersion or corrosion.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
			Single acting (Spring return/extend)
	Long stroke	CQ2W	Double acting, Double rod
		CQ2	Double acting, Single rod
	Axial piping	CQP2	Double acting, Single rod
			Single acting (Spring return/extend)
Anti-lateral load	CQ2□S	Double acting, Single rod	

How to Order

C□Q2
C□Q2W
C□QP2
C□Q2□S

Standard model no. — XC6

Material: Stainless steel

Specifications

Parts changed to stainless steel	Piston rod, Rod end nut
Specifications other than above and external dimensions	Same as standard

Note) Retaining ring and piston rod are made of stainless steel. Rod end nut is also made of stainless steel for rod end male thread type.

Series CQ(P)2^R

Piston rod and rod end nut (male thread only) have been changed to stainless steel specification “-XC6”. Also, the materials for hexagon socket head cap screws to fix ø20 to ø32 rod covers have been changed to stainless steel.

Applicable Series

Series	Model	Action	Note
CQ2	Water resistant compact cylinder	C□Q2□ ^R	Double acting, Single rod
	Water resistant, axial piping	C□QP2□ ^R	Double acting, Single rod

How to Order

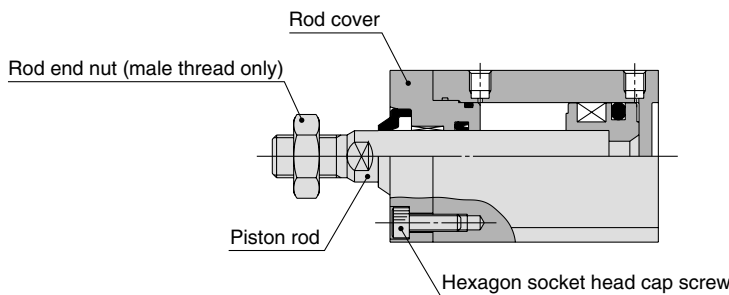
C□Q2□^R
C□QP2□^R

Standard model no. — XC6A

Steel parts: Stainless steel

Specifications

Parts changed to stainless steel	Piston rod, Rod end nut (male thread only), Rod cover holding hexagon socket head cap screw
Specifications other than above and external dimensions	Same as standard



Standard

Large Bore Size

Long Stroke

Non-rotating Rod

Axial Piping

Anti-lateral Load

With End Lock

Water Resistant

With Auto Switch

Auto Switch

Made to Order

Series CQ2

Made to Order 5

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-XC8 Adjustable Stroke Cylinder/Adjustable Extension Type

The extending stroke by the cylinder can be adjusted by the stroke adjustment mechanism equipped on the head end.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	Double acting	Except with rubber bumper and with bracket
	Non-rotating rod	Double acting	Except with rubber bumper and with bracket
	Air-hydro type	Double acting	

How to Order

C□Q2B(H)
C□Q2K

Bore size — **Stroke** D(M)(Z) — **XC8**
Adjustable stroke cylinder/Adjustable extension type

Specifications

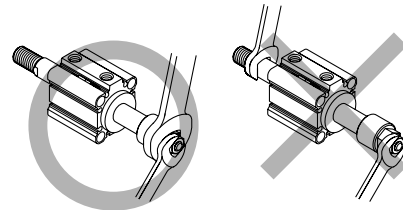
Series	Stroke adjustment range (mm)
CQ2	0 to 10

Note) The specifications other than above are the same as those of the standard.

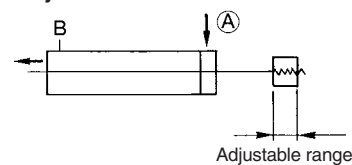
Precautions

⚠ Warning

- When the cylinder is operating, if something gets caught between the stopper bracket for adjusting the stroke and the cylinder body, it could cause bodily injury or damage the peripheral equipment. Therefore, take preventive measures as necessary, such as installing a protective cover.
- To adjust the stroke, make sure to secure the wrench flats of the stopper bracket by a wrench, etc. before loosening the lock nut. If the lock nut is loosened without securing the stopper bracket, be aware that the area that joins the load to the piston rod or the area in which the piston rod is joined with the load side and the stopper bracket side could loosen first. It may cause an accident or malfunction.

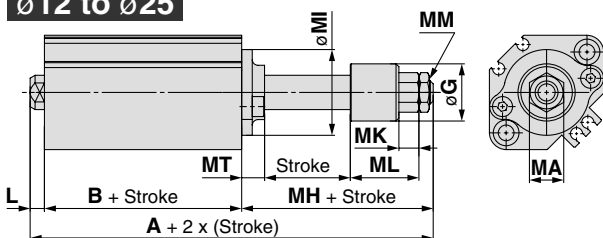


Symbol

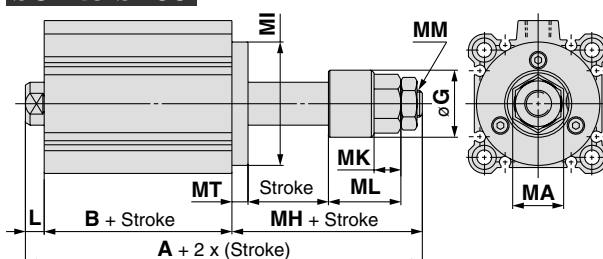


Series CQ2/CQ2H

ø12 to ø25



ø32 to ø100



Bore size	A	B	L	MH	MT	MA	MI	MM	MK	ML	øG	Stroke range
12	57.7 (64.9)	25.2 (32.4)	3.5	29	5	8	□25 (ø15)	M4 x 0.7	5.5	20	14	5 to 30
16	58.5 (68.5)	26 (36)	3.5	29	5	10	□28 (ø20)	M5 x 0.8	5.5	20	14	
20	67.5 (79.5)	26 (38)	4.5	37	8	12	□36 (ø25)	M6 x 1	7	24	20	5 to 50
25	71 (81)	29 (39)	5	37	8	12	□40 (ø30)	M6 x 1	7	24	20	
32	78.5 (88.5)	30.5 (40.5)	7	41	6	17	ø38	M8 x 1.25	9	28.5	25	5 to 50
	88.5	40.5										75,100
40	88 (98)	40 (50)	7	41	6	19	ø46	M10 x 1.25	10	27	25	5 to 50
	98	50										75,100
50	100.5 (110.5)	40.5 (50.5)	8	52	8	24	ø57	M14 x 1.5	13	31	35	10 to 50
	110.5	50.5										75,100
63	102 (112)	42 (52)	8	52	10	24	ø68	M14 x 1.5	13	31	35	10 to 50
	112	52										75,100
80	125 (135)	51 (61)	10	64	12	32	ø90	M20 x 1.5	16	40	45	10 to 50
	135	61										75,100
100	138.5 (148.5)	60.5 (70.5)	12	66	14	32	ø110	M20 x 1.5	16	40	45	10 to 50
	148.5	70.5										75,100

Note 1) (): Dimensions with auto switch

Note 2) Applicable stroke: Available in 5 mm intervals

Symbol

-XC9 Adjustable Stroke Cylinder/Adjustable Retraction Type

The retracting stroke of the cylinder can be adjusted by the adjusting bolt.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	Double acting, Single rod	Except with rubber bumper and with bracket
	Non-rotating rod		

How to Order

C□Q2B **Bore size** — **Stroke** D(M)(Z) — **XC9**
Adjustable stroke cylinder/Adjustable retraction type

Specifications

Series	Stroke adjustment range (mm)
CQ2	0 to 10

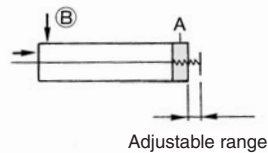
Note) The specifications other than above are the same as those of the standard.

Precautions

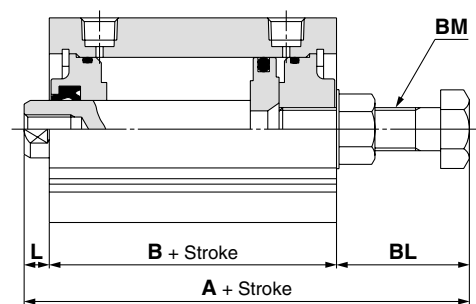
⚠ Warning

- When air is supplied to the cylinder, if the stroke adjusting bolt is loosened in excess of the allowable stroke adjustment amount, be aware that the stroke adjusting bolt could fly out or air could be discharged, which could cause bodily injury or damage the peripheral equipment.
- Adjust the stroke when the cylinder is not pressurized. If it is adjusted in the pressurized state, the seal of the adjustment section could become deformed, leading to air leakage.

Symbol



Series CQ2

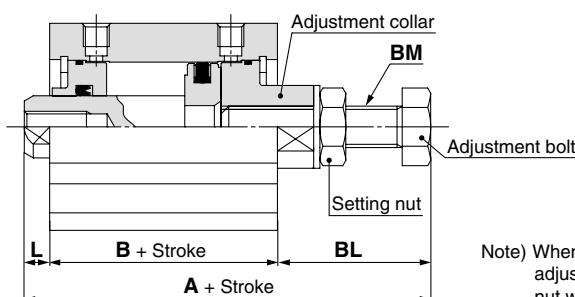


Bore size (mm)	A	B	L	BL	BM	Stroke range (mm)
12	52 (59.2)	25.2 (32.4)	3.5	23.3	M5 x 0.8	5 to 30
16	53 (63)	26 (36)	3.5	23.5	M6 x 1	
20	61 (73)	26 (38)	4.5	30.5	M8 x 1.25	5 to 50
25	63.5 (73.5)	29 (39)	5	29.5	M8 x 1.25	
32	65.5 (75.5)	30.5 (40.5)	7	28	M8 x 1.25	5 to 50 75, 100
40	84 (94)	40 (50)	7	37	M12 x 1.5	
50	84.5 (94.5)	40.5 (50.5)	8	36	M12 x 1.5	10 to 50 75, 100
63	88.5 (98.5)	42 (52)	8	38.5	M16 x 1.5	
80	109.5 (119.5)	51 (61)	10	48.5	M20 x 1.5	
100	125 (135)	60.5 (70.5)	12	52.5	M24 x 1.5	

Note 1) (): Dimensions with auto switch

Note 2) Applicable stroke: Available in 5 mm intervals

ø20, ø25, ø32



Note) When securing the adjustment bolt, clamp the width across flats of the adjustment collar with a tool, such as a spanner and tighten the setting nut with a tool, such as other spanner to secure the bolt firmly.

Series CQ2

Made to Order 6

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-XC10 Dual Stroke Cylinder/Double Rod

Two cylinders are constructed as one cylinder in a back-to-back configuration allowing the cylinder stroke to be controlled in three steps.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	Double acting, Single rod	Except with bracket
	Non-rotating rod		
	Air-hydro type		

How to Order

☐ Q2B ☐ Q2K **Bore size** — **Stroke S₁** + **Stroke S₂** **D(C)(M)(Z) — XC10**
 Dual stroke cylinder

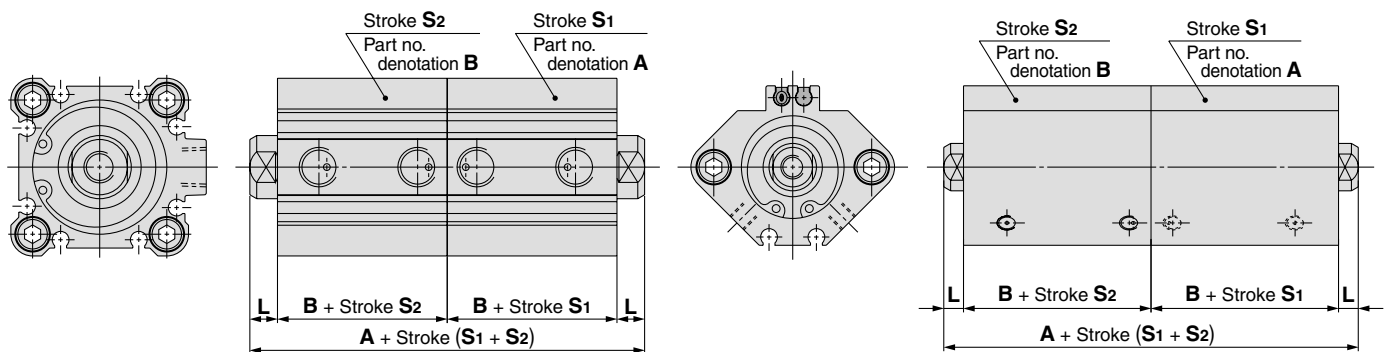
Specifications

Series	Bore size (mm)	Max. manufacturable stroke (mm)
CQ2	12, 16	60 (Max. on single side: 30)
	20, 25	100 (Max. on single side: 50)
	32, 40	200 (Max. on single side: 100)
	50 to 100	200 (Max. on single side: 100)

(Note) The specifications other than above are the same as those of the standard.

Dimensions (Other dimensions are the same as those of the standard.)

Series CQ2



Bore size	A		B		L	Stroke Both of S ₁ , S ₂
	50 st or less	75, 100 st	50 st or less	75, 100 st		
12	41 (63)	—	17 (28)	—	3.5	5 to 30
16	44 (68)	—	18.5 (30.5)	—	3.5	
20	48 (72)	—	19.5 (31.5)	—	4.5	
25	55 (75)	—	22.5 (32.5)	—	5	5 to 50
32	60 (80)	80 (80)	23 (33)	33 (33)	7	
40	73 (93)	93 (93)	29.5 (39.5)	39.5 (39.5)	7	
50	77 (97)	97 (97)	30.5 (40.5)	40.5 (40.5)	8	10 to 100
63	88 (108)	108 (108)	36 (46)	46 (46)	8	
80	107 (127)	127 (127)	43.5 (53.5)	53.5 (53.5)	10	
100	130 (150)	150 (150)	53 (63)	63 (63)	12	

Note 1) (): Dimensions with auto switch

Note 2) Applicable stroke: Available in 5 mm intervals

(Note) In the case of ø12 to ø25 with auto switch, port directions are different.

Symbol

-XC11 Dual Stroke Cylinder/Single Rod

Two cylinders can be integrated by connecting them in line, and the cylinder stroke can be controlled in two stages in both directions.

Applicable Series

	Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod	Except with bracket
	Air-hydro type	CQ2H		

How to Order

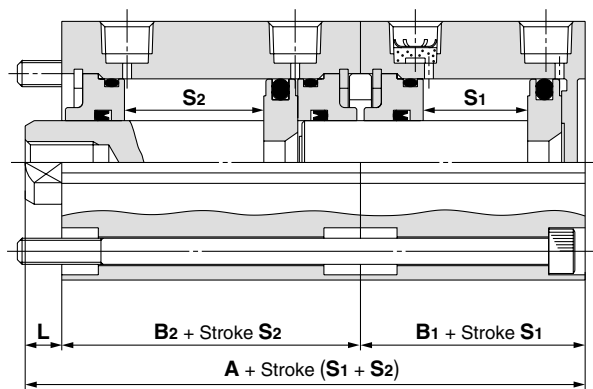
C□Q2B **Bore size** – **Stroke S₁** + **Stroke S₂ - S₁** **D(C)(M)(Z) – XC11**
 Dual stroke cylinder/Single rod

Specifications: Same as standard

(For manufacturable strokes, please contact SMC.)

Construction/Dimensions

Series CQ2



Bore size (mm)	A	B ₁	B ₂	L	Stroke Both of S ₁ , S ₂
12	45.7 (63.9)	17 (28)	25.2 (32.4)	3.5	5 to 30
16	48 (70)	18.5 (30.5)	26 (36)	3.5	
20	50 (74)	19.5 (31.5)	26 (38)	4.5	5 to 50
25	56.5 (76.5)	22.5 (32.5)	29 (39)	5	
32	60.5 (80.5)	23 (33)	30.5 (40.5)	7	
40	76.5 (96.5)	29.5 (39.5)	40 (50)	7	10 to 50
50	79 (99)	30.5 (40.5)	40.5 (50.5)	8	
63	86 (106)	36 (46)	42 (52)	8	
80	104.5 (124.5)	43.5 (53.5)	51 (61)	10	
100	125.5 (145.5)	53 (63)	60.5 (70.5)	12	

Note 1) (): Dimensions with auto switch

Note 2) Applicable stroke: Available in 5 mm intervals

Note 3) For long stroke type, please contact SMC.

Standard

Large Bore Size

Long Stroke

Non-rotating Rod

Axial Piping

Anti-lateral Load

With End Lock

Water Resistant

With Auto Switch

Auto Switch

Made to Order

Series CQ2

Made to Order 7

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-XC26 With Split Pins for Double Clevis Pin/Double Knuckle Joint Pin and Flat Washers

A pin for double clevis (one of the mounting types) or double knuckle joint (one of the accessories) has been changed for a split pin, and split pins and flat washers have been added.

Applicable Series

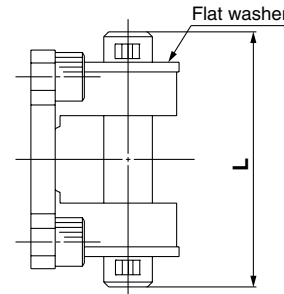
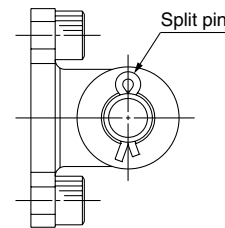
Series	Model	Action
CQ2	Standard	CQ2
		Double acting, Single rod
		Single acting (Spring return/extend)
	Long stroke	CQ2□
		Double acting, Single rod
	Non-rotating rod	CQ2K
		Double acting, Single rod
	Anti-lateral load	CQ2□S
		Double acting, Single rod
	With end lock	CBQ2
		Double acting, Single rod
CQ2	Magnetic field resistant	CDQ2□P
		Double acting, Single rod
	Copper-free compact	20-CQ2
		Double acting, Single rod
		Single acting (Spring return/extend)
CQ2	Copper-free long stroke	20-CQ2□
		Double acting, Single rod
CQ2	Copper-free anti-lateral load	20-CQ2□S
		Double acting, Single rod

Specifications

Mounting	Double clevis (D) only
Changed parts	Clevis pin/Knuckle pin, Split pin, Flat washer
Specifications other than above	Same as standard

Dimensions

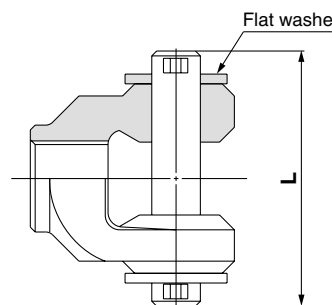
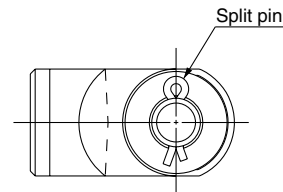
Double clevis



Bore size (mm)	L
12	21
16	23
20	31
25	36.5
32, 40	52.5
50, 63	66
80	78
100	86

- * For mounting bracket, split pins, clevis pin and flat washers are shipped together, (but not assembled).
- * Mounting method is the same as standard.
- * Dimensions except mentioned above are the same as standard.

Double knuckle joint



Bore size (mm)	L
12	21
16	23
20	31
25	36.5
32, 40	52.5
50, 63	66
80	78
100	86

- * For mounting bracket, split pins, knuckle pin and flat washers are shipped together, (but not assembled).
- * Mounting method is the same as standard.
- * Dimensions except mentioned above are the same as standard.

How to Order

● Product

CQ2D **Standard model no.** — XC26
 Double clevis
 With double clevis pin, split pins and flat washers

● Parts assembly

CQ — D 032 — XC26
 Double clevis • Double clevis pin
 • Bore size

012	12 mm
016	16 mm
020	20 mm
025	25 mm
032	32 mm
040	40 mm
050	50 mm
063	63 mm
080	80 mm
100	100 mm

Y — **G012, Z015A, G02, G03
G04, G05, G08, G10** — XC26
 Double knuckle joint
 With double knuckle joint pin,
 split pins and flat washers

IY — **G012, J015, G02, G03
G04, G05, G08, G10** — XC26
 Clevis pin/Knuckle pin
 With clevis pin/knuckle pin,
 split pins and flat washers

Symbol

-XC27 Double Clevis Pin/Double Knuckle Joint Pin Material: Stainless Steel 304

For preventing the oscillating portion of the double clevis or the double knuckle joint from rusting, the material of the pin and the retaining ring has been changed to stainless steel.

Applicable Series

Series	Model	Action
CQ2	Standard	CQ2
		Double acting, Single rod
		Single acting (Spring return/extend)
	Long stroke	CQ2□
	Non-rotating rod	CQ2K
	Anti-lateral load	CQ2□S
	Magnetic field resistant	CDQ2□P
	Copper-free compact	20-CQ2
		Double acting, Single rod
		Single acting (Spring return/extend)
	Copper-free long stroke	20-CQ2□
	Copper-free anti-lateral load	20-CQ2□S
		Double acting, Single rod

Specifications

Mounting	Double clevis (D) only
Pin and retaining ring material	Stainless steel 304
Specifications other than above	Same as standard

Dimensions: Same as Standard

* For mounting bracket, retaining ring, clevis pin and knuckle joint pin are shipped together, (but not assembled).

* Mounting method is the same as standard type.

How to Order

● **Product**

CQ2D Standard model no. **- XC27**

• Double clevis

• Double clevis pin material: Stainless steel

● **Parts assembly**

CQ — D 032 — XC27

• Double clevis

• Bore size

• Double clevis pin material: Stainless steel

012	12 mm
016	16 mm
020	20 mm
025	25 mm
032	32 mm
040	40 mm
050	50 mm
063	63 mm
080	80 mm
100	100 mm

Y — G012, Z015A, G02, G03
G04, G05, G08, G10 **- XC27**

• Double knuckle joint

• Double knuckle joint pin material: Stainless steel

IY — G012 (J015)*, G02, G03
G04, G05, G08, G10 **- XC27**

• Clevis pin/Knuckle pin

• Clevis pin/Knuckle pin material: Stainless steel

* Stainless steel specification for IY-J015 is IY-J015SUS.

Standard

Large Bore
Size

Long Stroke

Non-rotating
Rod

Axial Piping

Anti-lateral
Load

With End Lock

Water
Resistant

With Auto
Switch

Auto Switch

Made to Order

Series CQ2

Made to Order 8

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-XC35 With Coil Scraper

For getting rid of frost, ice, weld spatter, cutting chips adhered to the piston rod, and for protecting the seals, etc.

Applicable Series

Series	Model	Action	Note
CQ2	Standard	CQ2	Double acting, Single rod
		CQ2W	Double acting, Double rod
	Axial piping	CQP2	Double acting, Single rod

Applicable to ø32 to ø100, Except with bracket

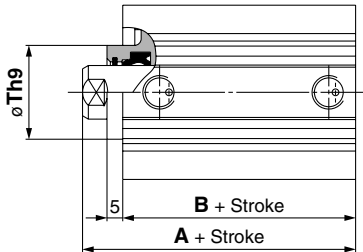
How to Order

Standard model no. — XC35

With coil scraper ●

Specifications: Same as standard

Series CQ2



Bore size (mm)	A		B		Th9
	50 stroke or less	51 to 100 stroke	50 stroke or less	51 to 100 stroke	
32	35 (45)	45 (45)	23 (33)	33 (33)	23 $\begin{smallmatrix} 0 \\ -0.052 \end{smallmatrix}$
40	41.5 (51.5)	51.5 (51.5)	29.5 (39.5)	39.5 (39.5)	28 $\begin{smallmatrix} 0 \\ -0.052 \end{smallmatrix}$
50	43.5 (53.5)	53.5 (53.5)	30.5 (40.5)	40.5 (40.5)	35 $\begin{smallmatrix} 0 \\ -0.062 \end{smallmatrix}$
63	49 (59)	59 (59)	36 (46)	46 (46)	35 $\begin{smallmatrix} 0 \\ -0.062 \end{smallmatrix}$
80	58.5 (68.5)	68.5 (68.5)	43.5 (53.5)	53.5 (53.5)	43 $\begin{smallmatrix} 0 \\ -0.062 \end{smallmatrix}$
100	70 (80)	80 (80)	53 (63)	63 (63)	59 $\begin{smallmatrix} 0 \\ -0.074 \end{smallmatrix}$

Note 1) (): Dimensions with auto switch

Note 2) Applicable stroke: Available in 5 mm intervals

Symbol

-XC36 With Boss on Rod End

Cylinder with boss on rod end

Applicable Series

Series	Model	Action
CQ2	Standard	CQ2
		Single acting (Spring return/extend)
	Axial piping	CQ2W
		Double acting, Double rod

Note 1) For double rod type, it comes with boss on both ends.

Note 2) Except with bracket

Note 3) Except ø125 or more

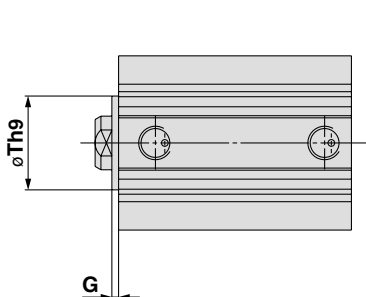
How to Order

Standard model no. — XC36

With boss on rod end ●

Specifications: Same as standard

Dimensions



* The dimensions except mentioned above are the same as those of the standard.

Series	CQ2	
	Th9	G
Bore size (mm)		
12	15 $\begin{smallmatrix} 0 \\ -0.043 \end{smallmatrix}$	1.5
16	20 $\begin{smallmatrix} 0 \\ -0.052 \end{smallmatrix}$	1.5
20	13 $\begin{smallmatrix} 0 \\ -0.043 \end{smallmatrix}$	2
25	15 $\begin{smallmatrix} 0 \\ -0.043 \end{smallmatrix}$	2
32	21 $\begin{smallmatrix} 0 \\ -0.052 \end{smallmatrix}$	2
40	28 $\begin{smallmatrix} 0 \\ -0.052 \end{smallmatrix}$	2
50	35 $\begin{smallmatrix} 0 \\ -0.062 \end{smallmatrix}$	2
63	35 $\begin{smallmatrix} 0 \\ -0.062 \end{smallmatrix}$	2
80	43 $\begin{smallmatrix} 0 \\ -0.062 \end{smallmatrix}$	2
100	59 $\begin{smallmatrix} 0 \\ -0.074 \end{smallmatrix}$	2

Series CQ2

Made to Order Individual Specifications 1

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-X144 Special Port Location

For changing port location (ø12 to ø25 with auto switch only)

How to Order

CDQ2 Standard model no. — X144 B

Special port location •

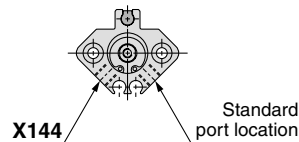
In the case of CDQ2□20/25, specify the port location with B, C and D.

Applicable Model

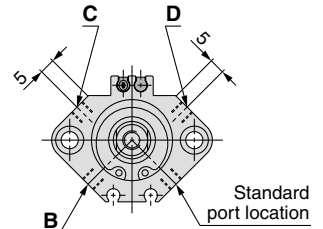
Action	Note
Double acting, Single rod	Applicable to ø12 to ø25
Double acting, Double rod	
Single acting (Spring return/extend)	

Note) The specifications are the same as those of the CDQ2 series.

ø12, ø16



ø20, ø25



Standard

Large Bore Size

Long Stroke

Non-rotating Rod

Axial Piping

Anti-lateral Load

With End Lock

Water Resistant

With Auto Switch

Auto Switch

Made to Order

Series CQ2

Made to Order Individual Specifications 2

Please contact SMC for detailed dimensions, specifications, and lead times.



Made to Order Individual Specifications **Series CQ2**

Symbol

-X202 Full Length Dimension is the Same as the CQ1 Series.

Symbol

-X202

C□Q2 **Mounting** **Bore size** **Stroke** **Action** **Option** **(Z) — X202**

In a single rod cylinder of the CQ2 series, the A dimension (from the head face to the rod end) and the rod end female thread size are the same as those of the CQ1 series (former model).

Applicable Model

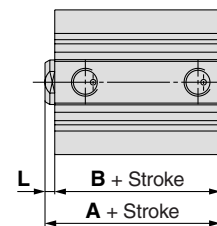
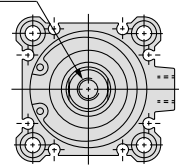
Action		Note
Single rod	Double acting (Rubber bumper)	Applicable to ø12, ø20, ø32, ø40, ø50, ø63, ø80, ø100
	Single acting (Spring return/Spring extend)	Applicable to ø12, ø20, ø32, ø40, ø50

Note 1) ø16 and ø25 are the new models so that they are not applicable.
Note 2) Strokes except mentioned below are available as standard products.

Dimensions (Without auto switch)

Double acting,
Single rod: Female thread

H thread effective depth C



Symbol	Bore size		ø12		ø20		ø32		ø40		ø50		ø63		ø80		ø100	
	Stroke (mm)		15, 25		5, 10 20, 30 40, 50		5, 10 20, 30 40, 50		5, 10 20, 30 40, 50		5, 10 20, 30 40, 50		5, 10 20, 30 40, 50		5, 10 20, 30 40, 50		5, 10 20, 30 40, 50	
A	25.5		23(25)		28		26.5 (28.5)		31.5		33		38		34		39	
B	22		19.5		24.5		23		29.5		34.5		30.5		35.5		36	
L	3.5		3.5 (5.5)		3.5		3.5 (5.5)		3.5		3.5		3.5		3.5		3.5	
H	M3 x 0.5		M5 x 0.8		M6 x 1.0*		M6 x 1.0*		M8 x 1.25*		M10 x 1.5		M16 x 2.0		M20 x 2.5			
C	6		7		9*		11*		13*		15		21		27			

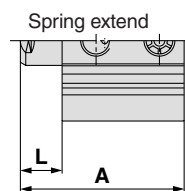
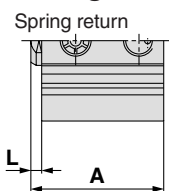
Note) (): Stroke 10 mm * The H/C dimensions of ø32, ø40 and ø50 are different from those of the new CQ2 series model.

75 st, 100 st

Symbol	Bore size		ø32		ø40		ø50		ø63		ø80		ø100	
	Stroke		75 100		75 100		75 100		75 100		75 100		75 100	
A	36.5		43		44		49.5		57		66.5			
B	33		39.5		40.5		46		53.5		63			
L	3.5		3.5		3.5		3.5		3.5		3.5			

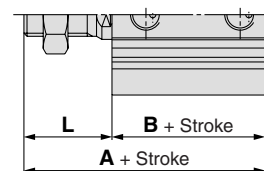
Note) The H/C dimensions are the same as above.

Single acting



Action	Symbol	Bore size		ø20		ø32		ø40		ø50	
		Stroke		5 10		5 10		5 10		10 20	
Single acting, Spring return	A	28		35		31.5		38.5		38	
	L	3.5		5.5		3.5		5.5		3.5	
Single acting, Spring extend	A	33		45		36.5		48.5		43	
	L	8.5		15.5		8.5		15.5		8.5	

Double acting: Rod end male thread

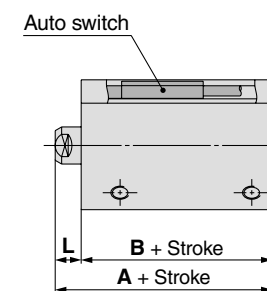


Symbol	Bore size		ø12		ø20		ø32		ø40		ø50		ø63		ø80		ø100	
	Stroke		15, 25		10		15, 25 35, 45		15, 25 35, 45		15, 25 35, 45		15, 25 35, 45		15, 25 35, 45		15, 25 35, 45	
A	36		40		43		53.5		56.5		63		69		74.5		92	
B	22		19.5		24.5		23		28		34.5		35.5		41		48.5	
L	14		20.5		18.5		30.5		28.5		28.5		33.5		33.5		43.5	

Dimensions (With auto switch)

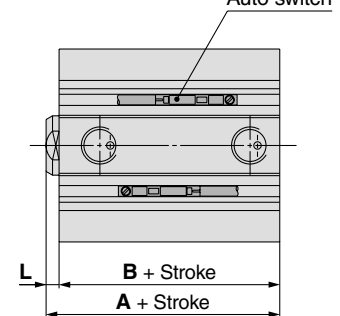
Double acting, Single rod: Female thread

ø12 to ø25



H thread effective depth C

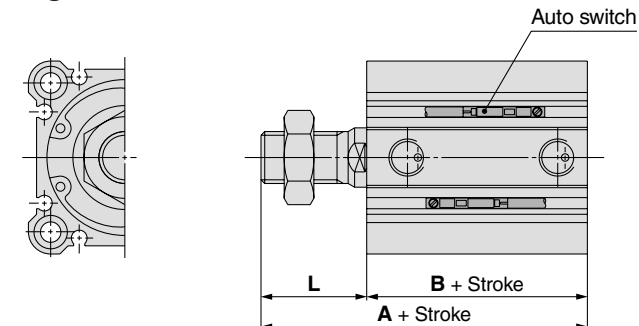
ø32 to ø100



Symbol	Bore size		ø12		ø20		ø32		ø40		ø50		ø63		ø80		ø100	
	Stroke (mm)		15, 25		5, 10, 20 30, 40, 50		10, 20, 30 40, 50, 75 100		5, 15, 25 35, 45		10, 20, 30 40, 50, 75 100		5, 15, 25 35, 45		10, 20, 30 40, 50, 75 100		15, 25 35, 45	
A	36.5		38.5		43.5		36.5		41.5		43		48		44		49	
B	33		31.5		36.5		33		38		39.5		44.5		40.5		45.5	
L	3.5		7		7		3.5		3.5		3.5		3.5		3.5		3.5	
H	M3 x 0.5		M5 x 0.8		M6 x 1.0*		M6 x 1.0*		M6 x 1.0*		M6 x 1.0*		M8 x 1.25*		M8 x 1.25*		M10 x 1.5	
C	6		7		9*		9*		11*		11*		13*		13*		15	

* The H/C dimensions of ø32, ø40 and ø50 are different from those of the new CQ2 series model.

Double acting: Rod end male thread



Symbol	Bore size		ø12		ø20		ø32		ø40		ø50		ø63		ø80		ø100	
	Stroke (mm)		15, 25		5, 10, 20, 30 40, 50		15, 25 35, 45		5, 15, 25 35, 45		15, 25 35, 45		15, 25 35, 45		15, 25 35, 45		15, 25 35, 45	
A	47		53.5		58.5		66.5		73		79		84.5		102		111.5	
B	33		31.5		36.5		38		44.5		45.5		51		58.5		68	
L	14		22		22		28.5		28.5		33.5		33.5		43.5		43.5	

Series CQ2

Made to Order Individual Specifications 3

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-X203 L Dimension from Rod Cover is the Same as the CQ1 Series.

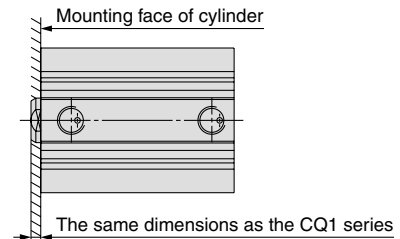
C□Q2 **Mounting** **Bore size** — 10 **Action** **Option** **Z — X203**

In a single rod cylinder of the CQ2 series, the L dimension (from the rod face to the rod end) and the rod end female thread size are the same as the CQ1 series (former model).

Applicable Model

Action			Note
Single rod	Female thread	Double acting Rubber bumper	Applicable to ø20, ø32, (ø40), (ø50), (ø63), (ø80), (ø100)
		Single acting (Spring return, Spring extend)	Applicable to ø20, ø32, (ø40), (ø50)
	Male thread	Available as the standard, CQ2 series	

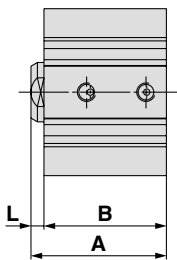
Note 1) ø16 and ø25 are the new models so that they are not applicable.
Note 2) (): Same dimensions as for those of -X202



The specifications are the same as those of the standard, CQ2 series.

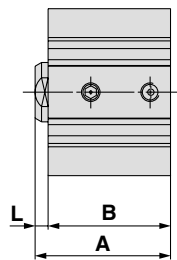
Dimensions: Applicable to CQ2B²⁰₃₂-10D(C)Z Only

Double acting, Single rod



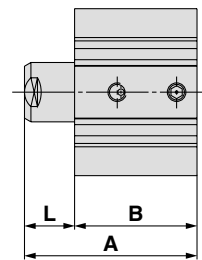
Symbol	Bore size	
	ø20	ø32
A	33	36.5
B	29.5	33
L	3.5	3.5

Single acting, Spring return



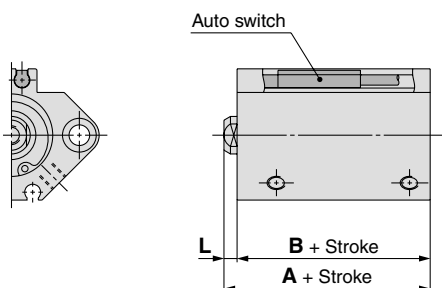
Symbol	Bore size	
	ø20	ø32
A	33	36.5
B	29.5	33
L	3.5	3.5

Single acting, Spring extend



Symbol	Bore size	
	ø20	ø32
A	43	46.5
B	29.5	33
L	13.5	13.5

With Auto Switch: Applicable to CDQ2B-□D(C)(Z) Only



Symbol	Bore size	
	ø20	
Stroke	5, 10	15, 25
	20, 30	35, 45
A	35	40
B	31.5	36.5
L	3.5	3.5

Symbol

-X235 Special Rod End for Double Rod Cylinder

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

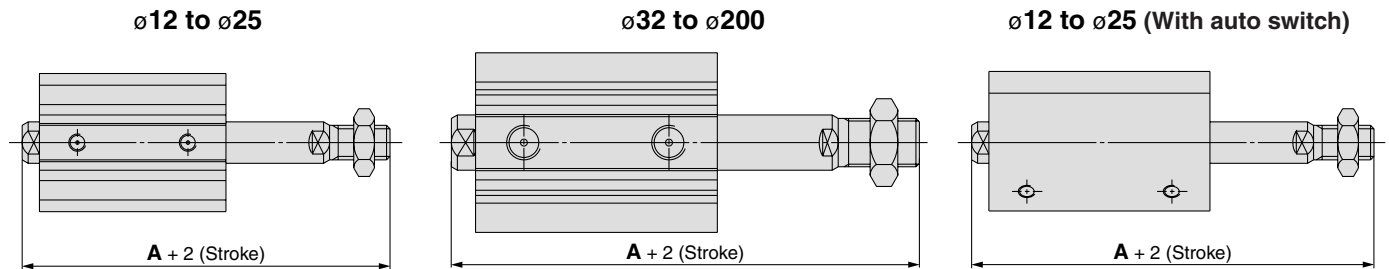
C□Q2W Mounting Bore size — Stroke D (Z) — X235

“D” in the case of “-X235”

Piston rod end
Male thread, Female thread

* Specifications: Same as standard

Note) For mounting a bracket, please contact SMC.



Symbol \ Bore size	12	16	20	25	32	40	50	63	80	100	125	140	160	180	200
A	42.7 (49.9)	45 (55)	49 (61)	56.5 (66.5)	66 (76)	75.5 (85.5)	82 (92)	83.5 (93.5)	104.5 (114.5)	116 (126)	157	157	172	183	190
Applicable stroke	5 to 30		5 to 50		5 to 100		10 to 100				10 to 300				

Note 1) Applicable stroke: Available in 5 mm intervals

Note 2) (): Dimensions with auto switch

Symbol

-X271 Fluororubber Seals

Material for seals has been changed to fluororubber.

C□Q2 Standard model no. — X271

Fluororubber seals

* All variations except non-rotating rod is available.

Only ø125 to ø160 is available for the large bore size type.

The specifications are the same as for each variation of the CQ2 series.

Note) With rubber bumper: There is no change of the bumper material.

Standard

Large Bore
Size

Long Stroke

Non-rotating
Rod

Axial Piping

Anti-lateral
Load

With End Lock

Water
Resistant

With Auto
Switch

Auto Switch

Made to Order

Series CQ2

Made to Order Individual Specifications 4

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-X293

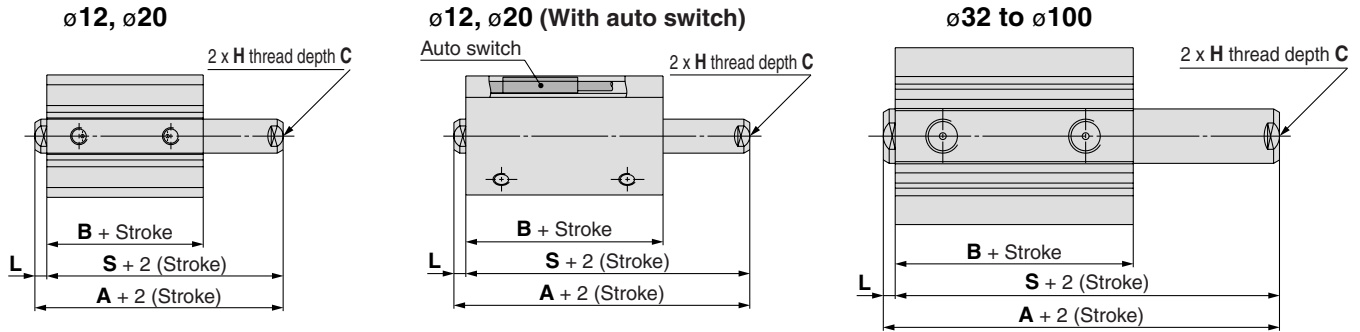
Full Length Dimension is the Same as the CQ1W Series.

C□Q2W

Standard model no.

— X293

The same dimensions as the CQ1W



Without Auto Switch

Bore size Stroke (mm)	12	20	32	40	50	63	80	100
5	5	5	5	5	5	5	5	5
10	10	10	10, 20	15	15	15	15	15
20	20	20	30, 40	25	25	25	25	25
35			35	40	40	40	40	40
Symbol								
A	33	33	38	37	38	43	46.5	51.5
B	25.2	26	31	30.5	30.5	35.5	40	45
L	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
S	29.5	29.5	34.5	33.5	34.5	39.5	43	48
H	M3 x 0.5	M5 x 0.8	M5 x 0.8	M6 x 1	M6 x 1	M6 x 1	M6 x 1	M8 x 1.25
C	6	7	7	9	9	9	9	13

With Auto Switch

Bore size Stroke (mm)	12	20	32	40	50	63	80	100
5	5	5	5	5	5	5	5	5
10	10	10	10	15	15	15	15	15
20	20	20	20	25	25	25	25	25
30				30	30	30	30	30
Symbol								
A	40	47	52	48	53	56.5	61.5	57.5
B	32.4	38	43	40.5	45.5	50	55	50.5
L	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
S	36	43.5	48.5	44.5	49.5	53	58	54
H	M3 x 0.5	M5 x 0.8	M5 x 0.8	M6 x 1	M6 x 1	M6 x 1	M6 x 1	M8 x 1.25
C	6	7	7	9	9	9	9	13

Symbol

-X525 Long Stroke of Adjustable Extension Stroke Cylinder (-XC8)

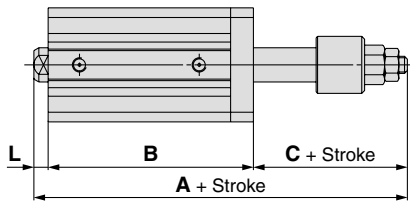
C□Q2 **Mounting** **Bore size** — **Stroke** D(M)(Z) — **X525**

• Long stroke of -XC8

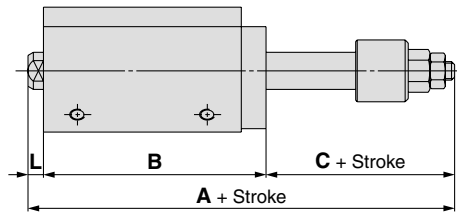
The specifications are the same as those of -XC8 of the CQ2 series.
Refer to “Made to Order.”

Note) For tap mounting (ø12 to ø25—without switch) and bracket mounting, please contact SMC.

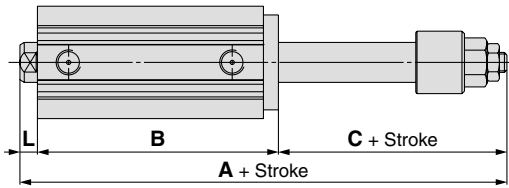
ø12 to ø25 (Without auto switch)



ø12 to ø25 (With auto switch)



ø32 to ø100



ø12, ø16

Symbol Stroke	A				B				C	L	Applicable stroke
	Bore size	35st	40st	45st	50st	35st	40st	45st			
12	99.9	104.9	109.9	114.9	72.4	77.4	82.4	87.4	24	3.5	35, 40
16	104.5	109.9	114.9	119.5	77	82	87	92	24	3.5	45, 50

ø20 to ø100

Symbol Stroke Bore size	A						B						C	L	Applicable stroke
	55 to 75st	80 to 100st	105 to 125st	130 to 150st	155 to 175st	180 to 200st	55 to 75st	80 to 100st	105 to 125st	130 to 150st	155 to 175st	180 to 200st			
20	155.5	180.5	—	—	—	—	122	147	—	—	—	—	29	4.5	55 to 100
25	156	181	—	—	—	—	122	147	—	—	—	—	29	5	
32	—	—	213.5	238.5	263.5	288.5	—	—	171.5	196.5	221.5	246.5	35	7	55 to 200
40	—	—	223	248	273	298	—	—	181	206	231	256	35	7	
50	—	—	235.5	260.5	285.5	310.5	—	—	183.5	208.5	233.5	258.5	44	8	
63	—	—	237	262	287	312	—	—	187	212	237	262	42	8	
80	—	—	260	285	310	335	—	—	198	223	248	273	52	10	
100	—	—	273.5	298.5	323.5	348.5	—	—	209.5	234.5	259.5	284.5	52	12	

Note 1) The dimensions are the same with or without auto switch.

Note 2) Applicable stroke: Available in 5 mm intervals

Series CQ2

Made to Order Individual Specifications 5

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-X526 Long Stroke of Adjustable Retraction Stroke Cylinder (-XC9)

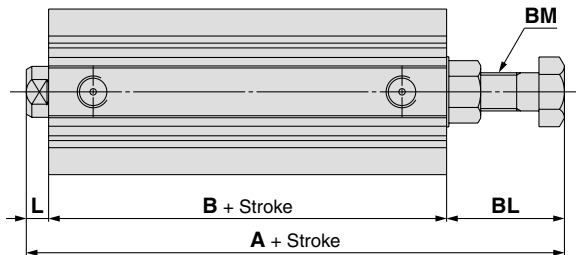
C□Q2 Mounting Bore size — Stroke D(M)(Z) — X526

Long stroke of -XC9

The specifications are the same as those of -XC9 of the CQ2 series. Refer to "Made to Order."

Note) For models with a bracket, please contact SMC.

Dimensions



Symbol Bore size	A	B	L	BL	BM	Applicable stroke
12	59.2 (56.4)	32.4	3.5	23.3 (20.5)	M5 x 0.8	35, 40, 45, 50
16	64	37	3.5	23.5	M6 x 1.0	
20	74	39	4.5	30.5	M8 x 1.25	75, 100
25	73.5	39	5	29.5	M8 x 1.25	
32	75.5	40.5	7	28	M8 x 1.25	
40	94	50	7	37	M12 x 1.5	
50	94.5	50.5	8	36	M12 x 1.5	75, 100, 125
63	98.5	52	8	38.5	M16 x 1.5	150, 175, 200
80	119.5	91	10	48.5	M20 x 1.5	
100	135	70.5	12	52.5	M24 x 1.5	

Note 1) (): Dimensions with auto switch

Note 2) Intermediate strokes (available in 5 mm intervals) are available with a spacer.

The dimensions are the same as those of 75, 100, 125, 150, 175, 200 mm strokes.

Symbol

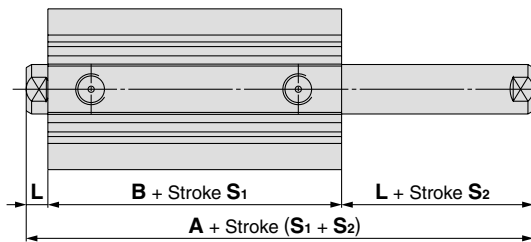
-X633 Intermediate Stroke of Double Rod Cylinder

C□Q2W Standard model no. — X633
C□Q2KW

* Specifications: Same as standard

Note) For models with a bracket, please contact SMC.

Dimensions



Symbol Bore size	A	B	L	Stroke S1	Stroke S2
12	32.2 (39.4)	25.2 (32.4)	3.5	In the case of 5 to 30 stroke, 5 mm intervals	In the case of 5 to 30 stroke, 1 mm intervals
16	33 (43)	26 (36)	3.5		
20	35 (47)	26 (38)	4.5	In the case of 5 to 50 stroke, 5 mm intervals	In the case of 5 to 50 stroke, 1 mm intervals
25	39 (49)	29 (39)	5		
32	44.5 (54.5)	30.5 (40.5)	7	In the case of 5 to 50 stroke, 5 mm intervals	In the case of 5 to 100 stroke, 1 mm intervals
40	54 (64)	40 (50)	7	In the case of 50 to 100 stroke, 25 mm intervals	
50	56.5 (66.5)	40.5 (50.5)	8		
63	58 (68)	42 (52)	8	In the case of 10 to 50 stroke, 5 mm intervals	In the case of 10 to 100 stroke, 1 mm intervals
80	71 (81)	51 (61)	10	In the case of 50 to 100 stroke, 25 mm intervals	
100	84.5 (94.5)	60.5 (70.5)	12		
125	115	83	16	In the case of 10 to 50 stroke, 10 mm intervals	
140	115	83	16		
160	125	91	17	In the case of 50 to 200 stroke, 25 mm intervals	In the case of 10 to 300 stroke, 1 mm intervals
180	136	102	17		
200	143	109	17	In the case of 200 to 300 stroke, 50 mm intervals	

Note 1) (): 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 intervals.

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

Note 3) For ø40 to ø100 cylinders with bumper, please consult with SMC.

Symbol

-X636 Long Stroke of Dual Stroke Single Rod Cylinder

C□Q2B Bore size – Stroke S₁ + Stroke S₂–S₁ (C)(M)(Z) – X636

Long stroke of -XC11

Applicable Stroke

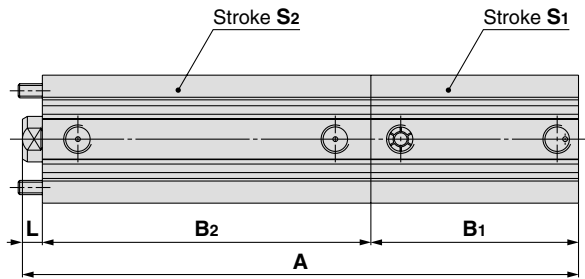
(mm)

Bore size	Stroke
ø12, ø16	Stroke S ₂ : Up to 50 mm
ø20 to ø100	Stroke S ₂ : Up to 100 mm

The specifications are the same as those of -XC11 of the CQ2 series.
Refer to "Made to Order."

Note) For tap mounting and bracket mounting, please contact SMC.

Series CQ2



Bore Size: ø12, ø16

(mm)

Symbol Bore size	A	B ₁	B ₂	L	Stroke range	
					S ₁	S ₂
ø12	52.9 (63.9) + Stroke (S ₁ + S ₂)	17 (28) + Stroke S ₁	32.4 + Stroke S ₂	3.5	5 to 30	35 to 50
ø16	58 (70) + Stroke (S ₁ + S ₂)	18.5 (30.5) + Stroke S ₁	36 + Stroke S ₂	3.5	5 to 30	35 to 50

Bore Size: ø20, ø25

(mm)

Symbol Stroke Bore size	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			
ø20	137 (149) + Stroke S ₁	162 (174) + Stroke S ₁	19.5 (31.5) + Stroke S ₁	113	138	4.5	5 to 50	55 to 100
ø25	141.5 (151.5) + Stroke S ₁	166.5 (176.5) + Stroke S ₁	22.5 (32.5) + Stroke S ₁	114	139	5	5 to 50	55 to 100

Bore Size: ø32 to ø100

(mm)

Symbol Stroke Bore size	A					B1			B2		L	Stroke range	
	Stroke S2 55 to 75		Stroke S2 80 to 100			Stroke S1			Stroke S2			S1	S2
	Stroke S1		Stroke S1			≤ 50	55 to 75	80 to 100	55 to 75	80 to 100			
	≤ 55	55 to 75	≤ 50	55 to 75	80 to 100								
ø32	145.4 (155.5) + Stroke S1	230.5	170.5 (180.5) + Stroke S1	255.5	280.5	23 (33) + Stroke S1	108	133	115.5	140.5	7	5 to 100	55 to 100
ø40	161.5 (171.5) + Stroke S1	246.5	186.5 (196.5) + Stroke S1	271.5	296.5	29.5 (39.5) + Stroke S1	114.5	139.5	125	150	7	5 to 100	55 to 100
ø50	164 (174) + Stroke S1	249	189 (199) + Stroke S1	274	299	30.5 (40.5) + Stroke S1	115.5	140.5	125.5	150.5	8	10 to 100	55 to 100
ø63	171 (181) + Stroke S1	256	196 (206) + Stroke S1	281	306	36 (46) + Stroke S1	121	146	127	152	8	10 to 100	55 to 100
ø80	189.5 (199.5) + Stroke S1	274.5	214.5 (224.5) + Stroke S1	299.5	324.5	43.5 (53.5) + Stroke S1	128.5	153.5	136	161	10	10 to 100	55 to 100
ø100	210.5 (220.5) + Stroke S1	295.5	235.5 (245.5) + Stroke S1	320.5	345.5	53 (63) + Stroke S1	138	163	145.5	170.5	12	10 to 100	55 to 100

Note 1) (): Dimensions with auto switch

Note 2) Applicable stroke: Available in 5 mm intervals

Series CQ2

Made to Order Individual Specifications 6

Please contact SMC for detailed dimensions, specifications, and lead times.



Symbol

-X1876 Cylinder Tube: With Concave Boss on Head End

C□Q2
C□Q2K
C□Q2□S

Mounting

Bore size

Stroke

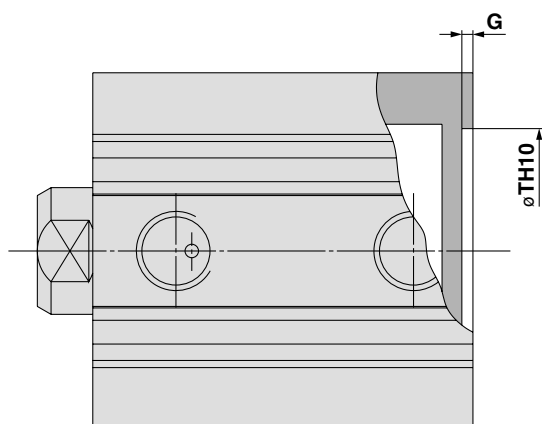
D(C)(M)(Z)
S(M)(Z)
T(M)(Z)

— X1876

• With concave boss on head end

The specifications are the same as those of the CQ2 series.

Note) Except ø12, ø16 and ø125 to ø200



Bore size (mm)	TH10	G
20	19.3 ^{+0.084} ₀	1.4
25	23.8 ^{+0.084} ₀	1.4
32	30.9 ^{+0.100} ₀	1.4
40	39.3 ^{+0.100} ₀	1.3
50	48.7 ^{+0.100} ₀	2.1
63	61.5 ^{+0.120} ₀	2.4
80	78.3 ^{+0.120} ₀	2.7
100	98.9 ^{+0.140} ₀	2.8