Compact Cylinder



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Compact Cylinder Series CQ2











Reduce the size and improve your machine's performance with the world's most flexible compact cylinder range from SMC

Small is definitely the new big:

The need for increased performance from smaller, more energy efficient machines are demands heard thoughout the world. Today, small is definitely the new big for the many machine designers and machine builders.

As the worldwide leading experts in pneumatics, our continued investment in developing smaller, more compact, energy efficient components for factory automation applications can be seen throughout our extensive product range.

However, we are constantly reviewing and improving our product range and our newly redesigned and improved compact air operated cylinder range – Series CQ2 – is just one small example of our constant quest for product perfection.

Gain competive advantage by discovering the benefits of using our improved CQ2 compact cylinder range

Series CQ2 - the facts:

The striking difference between our new CQ2 range and our previous model is the totally redesigned body, which offers improved auto-switch mounting possibilities plus an overall reduction of cylinder weight of between 5 -13% depending on the selected model, with any loss of body strenght.

Whilst still delivering the same powerful performance, the compact size of this cylinder range coupled with this weight reduction now makes mounting even easier.

Our new CQ2 cylinders in bore sizes bewteen Ø 32 to 200mm have been designed with slide in grooves which can accommodate auto-switches on all four cylinder sides without the need for auto-switch brackets. And, for smaller bore sizes between Ø 12 and 25mm, slide in grooves have also been integrated in the new body design to accommodate bracket free auto-switches on two surfaces.

Designed for use with our easy to set, dual colour, Series D-M9W auto-switch range, which illuminates green when the optimum position is located, the cylinders integrated auto-switch groove effectively eliminates the need for mounting brackets and protects the switch against accidental damage during installation and potential operator health and safety issued during machine maintenance checks.

Reduce your inventory costs and differentiate your machines from your competitors by discovering our new CQ2 compact cylinder range

Series CQ2 – the world's most flexible pneumatic cylinder range:

Flexibility is not a word that's often used to describe a pneumatic actuator, but with over 40 standard options, 6 mounting types and excellent auto switch mounting positionability, our improved Series CQ2, really is the most flexible, compact designed, air actuator in the world!

Suitable for almost all machine applications and available in 15 bore sizes from 12mm – 200mm (depending on your selected model), our CQ2 range could be the perfect solution - to help reduce your current stock inventory and also to differentiate your machines from your competitors.

Our Series CQ2 really is a truly outstanding range of pneumatic cylinders!





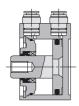
Compact overall dimensions in any size·

Exclusive bodies (-XB10) for ø32 to ø100 intermediate strokes (50 mm or more) now kept in inventory*, enabling shorter delivery times. * Formerly produced upon receipt of order

Bore size					,	Stroke	;				
(mm)	50	55	60	65	70	75	80	85	90	95	100
ø32 to ø100	•		•			•		•		•	•

[◆] Standard stroke ○ Currently stocked intermediate stroke

Built-in one-touch fittings



Cylinder with valve

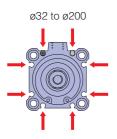


Compact Cylinder with air cushion



With the most compact and flexible auto-switch mounting.

■ Auto-switches can be mounted on 4 surfaces.



■ 2 switches can be mounted on the same surface.



(ø12: One slot for each surface)

■ No protrusion of auto switch

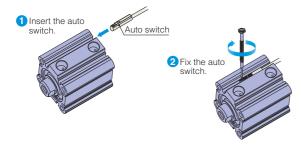
- Prevention of damage to auto switch.
- Sleeves cannot get caught in the auto switch and its mounting rail.
- Reduction in labour for design.

 There is no need to check for interference with a machine, because the outer dimensions of the cylinder do not change when the auto switch is mounted.

■ Reduction in labour for work

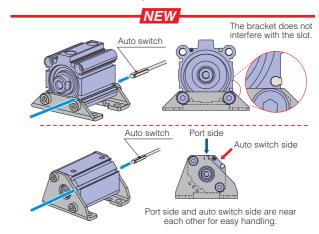
NEW

- Reduction in number of components
- No loss of components



■ Reduction in labour for design

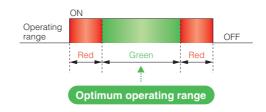
• The auto switch can be replaced with the foot brackets mounted.



■ Small auto switch

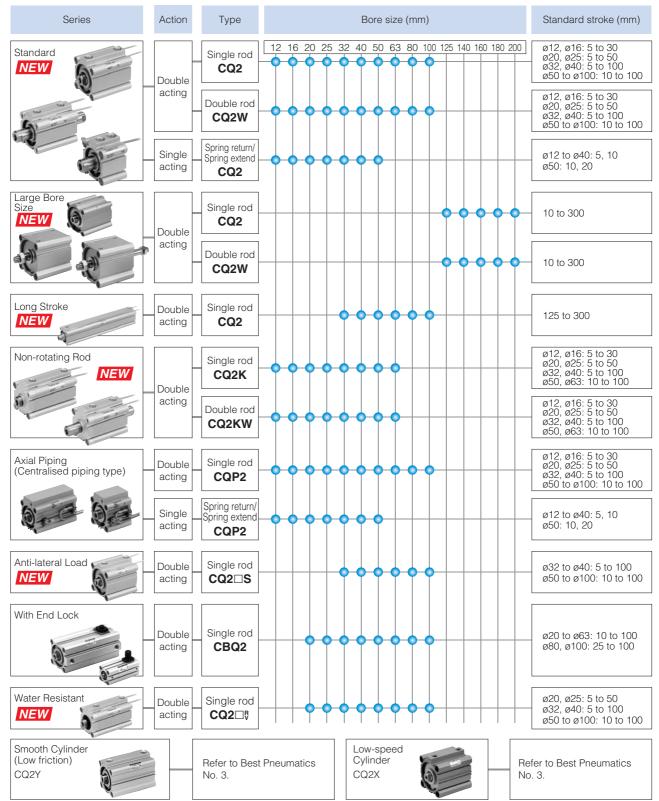
- 2-colour indication solid state auto switch
- Appropriate setting of the mounting position can be performed without mistakes.





With a short overall length, the space-saving cylinder helps to make various jigs and equipment more compact.

Series Variations



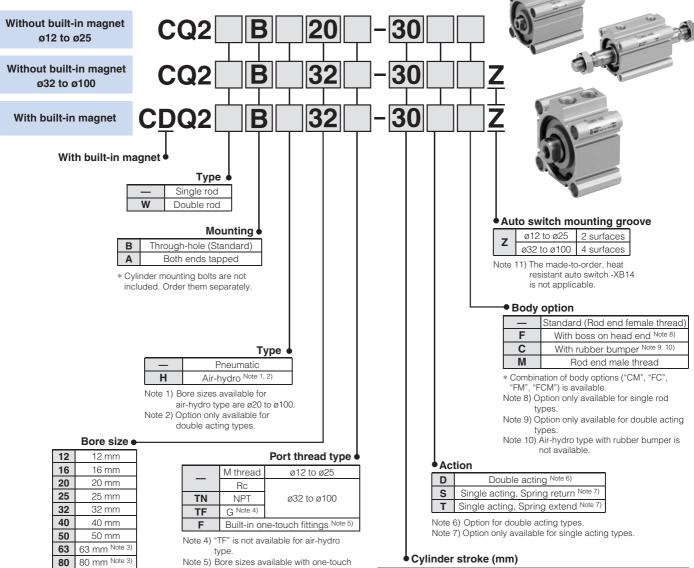




Compact Cylinder: Standard Single/Double Acting, Single/Double Rod

Series CQ2/CQ2W

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



Note 3) Bore available for double acting types.

100 mm Note 3)

Note 5) Bore sizes available with one-touch

fittings are ø32 to ø63. Besides, it is not possible to use for air-hydro type. * For cylinders without auto switch. M

threads are compatible only for ø32-5 mm

Pneumatic type (D	Pneumatic type (Double Acting types)								
Bore size	Standard stroke								
12, 16	5, 10, 15, 20, 25, 30								
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50								
32, 40	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100								
50 to 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100								

Air-hydro type (Double Acting types)

Bore size	Standard stroke
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100
50, 63, 80, 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100

Single Acting types

Bore size	Standard stroke
12, 16, 20, 25, 32, 40	5, 10
50	10, 20

Manufacture of Intermediate Strokes (Except air-hydro type)

1. Spacer-installed type 1: Standard model number

Intermediate stroke with ©: Available in 1 mm intervals

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

: Standard stroke

Во	re size	Stroke	T																				Str	oke)												
(mm)	range	Туре	*	5	*	10	*	15	*	20	*	25	**	30	**	35		40	4	45	4	50	-		H		\exists	-	75	-		Н	\exists	\exists	-	100
1	2, 16	1 to 29	Coooss	\bigcirc	•	0	♦	0	♦	\bigcirc	♦	0		0	♦																						
2	0, 25	1 to 49	Spacer- installed	0	♦	\bigcirc		\bigcirc	•	\bigcirc	♦	0	•	\bigcirc	♦	0	♦	\odot	•	0		0	•														
3	2, 40	1 to 99	type 1	\bigcirc	♦	\bigcirc	♦	\bigcirc	•	\bigcirc	♦	0	◆	\bigcirc	♦	0	•	\odot	•	0	♦	0	•				\bigcirc			♦			0				•
50	to 100	1 to 99	-51-0	0	0	0	♦	0		\bigcirc		\bigcirc		\bigcirc	•	0	♦	0	•	0		0	•				0						0				•

Ordering example (when ordering ø32-57 mm stroke (with through-hole (standard), without switch)

Type	1. Spacer-installed type 1
Part no.	Standard model number
	CQ2B32-57DZ (uses 75 mm stroke tube)
Order no	CQ2B32-75DZ with 18 mm width spacer inside
	The B dimension is 108 mm.

2. Spacer-installed type 2: Suffix "-XB10A"

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	Stroke	Tupo										Str	oke									
(mm)	range	Type	→	55	→	60	+	65	→	70	* >	75	→	80	+	85	\rightarrow	90	→	95	*	100
32, 40	51 to 94	Spacer-installed	0		0		0		0	•	_	•	0	•	0		0		0		_	•
50 to 100	51 to 94	type 2	0	•	0	•	0	•	0	•		•	0	•	0	•	0	•	0	•		•

Ordering example (when ordering ø32-57 mm stroke (with through-hole (standard), without switch)

	, , , , , , , , , , , , , , , , , , , ,
Type	2. Spacer-installed type 2
Part no.	Suffix "-XB10A" to the end of model number.
	CQ2B32-57DZ-XB10A (uses 60 mm stroke tube)
Order no.	CQ2B32-60DZ-XB10 with 3 mm width spacer inside
	The B dimension is 93 mm.

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

3. Exclusive body type: Suffix "-XB10"

Available in 1 mm intervals

Exclusive body can be manufactured for specified stroke upon request.

Bore size (mm)	Stroke range	Type
12, 16	6 to 29	
20, 25	6 to 49	Exclusive body
32, 40	6 to 99	Exclusive body
50 to 100	11 to 99	

Note) In the case of exclusive body type with ø32 to ø100 (-XB10) with the stroke length exceeding 50 mm, reference values of the longitudinal dimension (A/B dimension) will be the same as those with auto switch. Refer to page 185 for details.

Ordering example

(when ordering ø32-57 mm stroke (with through-hole (standard), without switch)

Type	3. Exclusive body type
Part no.	Suffix "-XB10" to the end of model number.
Order no.	CQ2B32-57DZ-XB10 (uses 57 mm stroke tube)
Order 110.	Makes 57 mm stroke tube. The B dimension is 90 mm.

For 55, 60, 65, 70, 80, 85, 90, and 95 stroke, exclusive bodies are kept in inventory, enabling shorter delivery times.

Mounting

Retaining Ring Installation/Removal

- 1. For installation and removal, use an appropriate pair of pliers (tool for installing a type C retaining ring).
- 2. Even if a proper plier (tool for installing a type C retaining ring) is used, it is likely to inflict damage to a human body or peripheral equipment, as a retaining ring may be flown out of the tip of a plier (tool for installing a type C retaining ring). Be much careful with the popping of a retaining ring. Besides, be certain that a retaining ring is placed firmly into the groove of rod cover before supplying air at the time of installment.

Mounting

The CQ2 series compact cylinders are designed to create compact mechanical equipment and promote space saving. Thus, if it is used in the same manner as conventional cylinders such as tie-rod cylinders, it may degrade the performance. Pay sufficient attention to the operating conditions when using

1. Allowable lateral load

Lateral load that can apply to the piston rod end is limited. If a cylinder is used witha lateral load over the limit, it may cause air leakage due to abnormal friction of seals, galling of cylinder tubes and pistons, or abnormal friction of the bearing part. The lateral load applied to the piston rod must be within the allowable range indicatedin this catalogue. When the load exceeds the limit, use a double rod cylinder, install a guide, or change the bore size to suit the load in order to make the load within the allowable range. As a standard product, an anti-lateral load type cylinder that is resistant to approx. 2 times more than the conventional compact CQ2 series is also available

2. Connection with a work piece

When a work piece is mounted on the piston rod end, connect them aligning the center of piston rod and a work piece. If they are off-center, lateral load is generated and phenomena mentioned in (1) may occur. In order not to apply the off-center load, use of a floating joint or simple joint is recommended.

3. Simultaneous use of multiple cylinders It is difficult to control the speed of pneumatic cylinders. The conditions cause speed change: change in supply pressure, load, temperature and lubrication, performance difference of each cylinder, deterioration of each part over time, etc. Aspeed controller can be used to control the speed of multiple cylinders simultaneously for a short period of time, but depending on conditions, it may not work as desired. If multiple cylinders cannot operate simultaneously, unreasonable force is applied to the piston rod because cylinder positions may not be the same. This may cause abnormal friction of seals and bearings, and galling of cylinder tubes and pistons. Do not use an application to operate several cylinders simultaneously by adjusting cylinder speed. If this is inevitable, use a high rigid guide against load, so that the cylinder is not damaged even when the each cylinder output is slightly different.

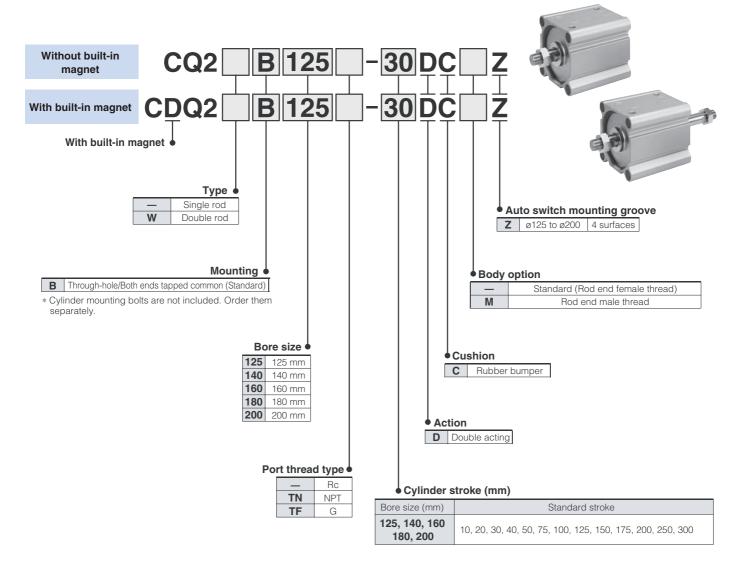




Compact Cylinder: Large Bore Size Double Acting, Single/Double Rod

Series CQ2/CQ2W

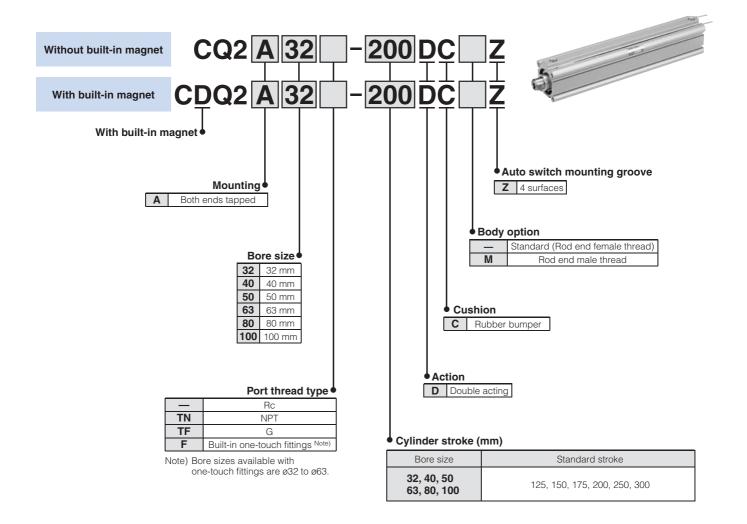
ø125, ø140, ø160, ø180, ø200



Compact Cylinder: Long Stroke Double Acting, Single Rod

Series CQ2

ø32, ø40, ø50, ø63, ø80, ø100



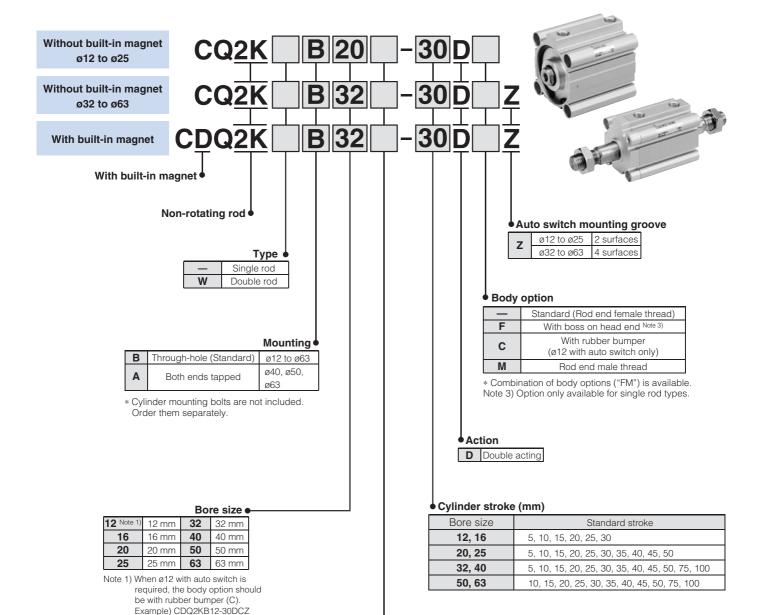




Compact Cylinder: Non-rotating Rod Double Acting, Single/Double Rod

Series CQ2K/CQ2KW

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63



RC NPT ø32 to ø63
G Built-in one-touch fittings Note 2)

Port thread type

ø12 to ø25

one-touch fittings are ø32 to ø63.

* For cylinders without auto switch, M threads are compatible only for ø32-5 mm stroke model.

Note 2) Bore sizes available with

M thread

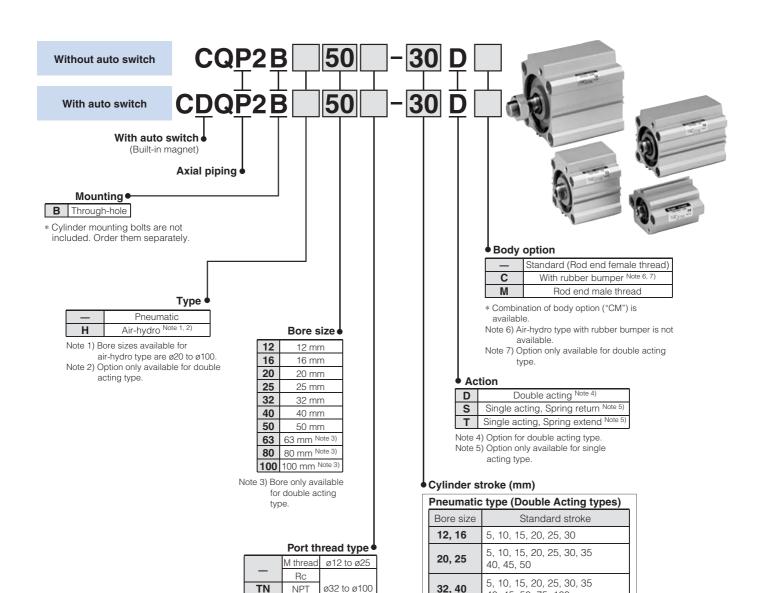
TN

TF

Compact Cylinder: Axial Piping Single/Double Acting, Single Rod

Series CQP2

ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



TF

G

45, 50, 75, 100 Air-hydro type (Double Acting types)

40, 45, 50, 75, 100

10, 15, 20, 25, 30, 35, 40

	371 ()
Bore size	Standard stroke
20, 25	5, 10, 15, 20, 25, 30, 35 40, 45, 50
32, 40	5, 10, 15, 20, 25, 30, 35 40, 45, 50, 75, 100
50, 63 80, 100	10, 15, 20, 25, 30, 35, 40 45, 50, 75, 100

Single Acting types

50, 63

80, 100

onigie Act	ing types
Bore size	Standard stroke
12, 16, 20 25, 32, 40	5, 10
50	10, 20

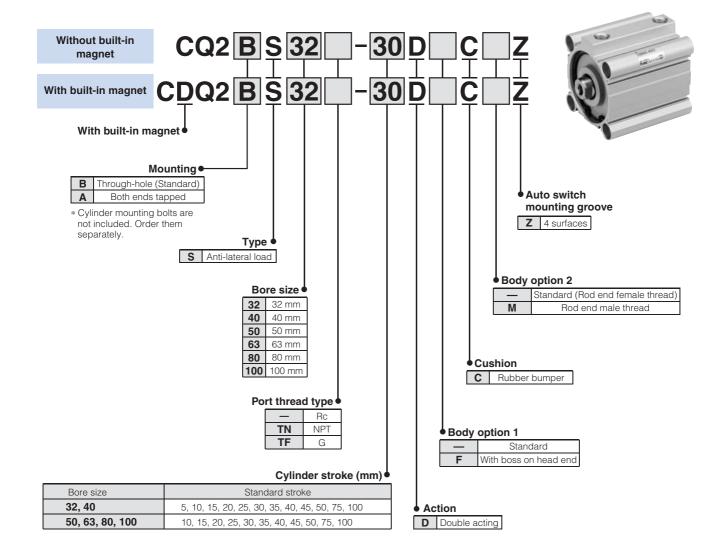




Compact Cylinder: Anti-lateral Load Double Acting, Single Rod

Series CQ2

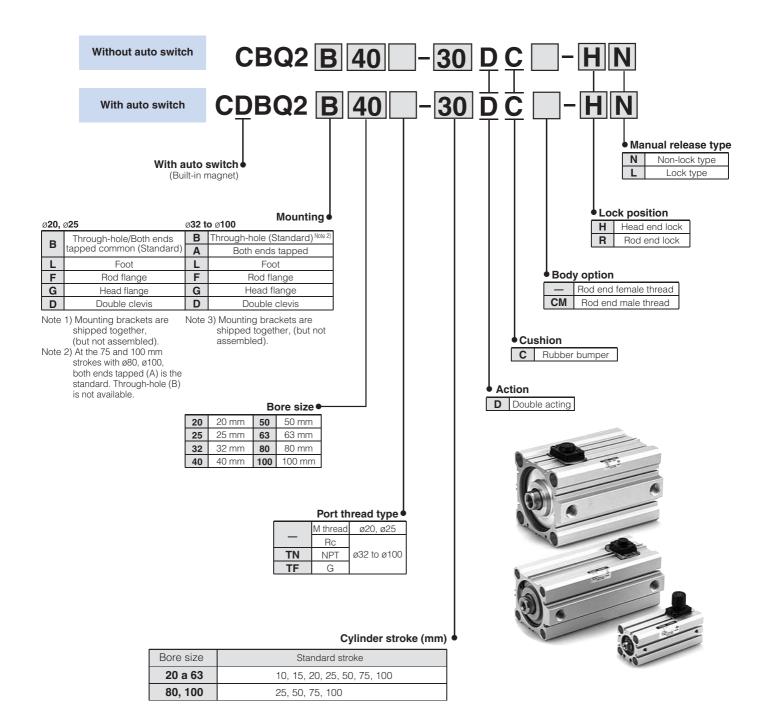
ø32, ø40, ø50, ø63, ø80, ø100



Compact Cylinder: With End Lock Double Acting, Single Rod

Series CBQ2

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



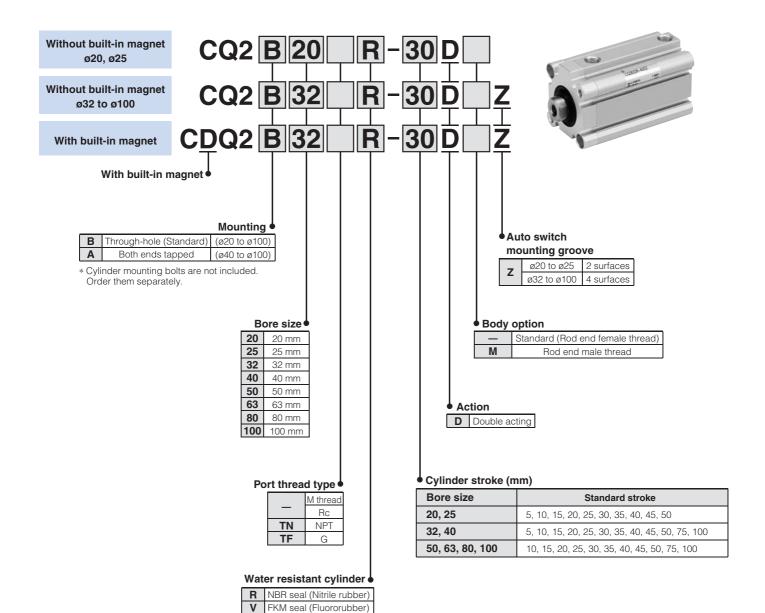




Compact Cylinder: Water Resistant Double Acting, Single Rod

Series CQ2

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100



Specifications

Pneumatic type

Bore size (mm)		12	16	20	25	32	40	50	63	80	100	125	140	160	180	200
Fluid	Fluid Air															
Proof pressure		1.5 MPa 1.05 I					MPa									
Maximum opera	ting pressure	pressure 1.0 MPa								0.7	MPa					
Minimum operating	Double acting type	0.07	0.07 MPa 0.05 MPa													
pressure	Single acting type	0.25	0.25 MPa													
Ambient and flu	id temperature					hout aut /ith auto										
Lubrication							Not req	uired (N	on-lube)						
Piston speed							50	to 500 m	nm/s						20 to 40	00 mm/s
Allowable kinetic	kinetic Standard 0.022 0.038 0.055 0.09 0.15 0.26 0.46 0.77 1.36 2.27					_										
energy (J) With rubber bumper 0.043 0.075 0.11 0.18 0.29 0.52 0.91 1.54 2.71 4.54					4.54	7.4	9.8		12.4							
Stroke length to					+1.0 r 0	nm Note)						+	1.4 mm ^{No} 0	ote)		

Note) Stroke length tolerance does not include the amount of bumper change. With rubber bumper type is standard form ø25 to ø200 bore.

Air-hydro type

Bore size (mm)	20	25	32	40	50	63	80	100
Fluid		Turbine oil Note)						
Proof pressure	1.5 MPa							
Maximum operating pressure	1.0 MPa							
Minimum operating pressure	0.18 MPa 0.1 MPa							
Ambient and fluid temperature	5 to 60°C							
Piston speed	5 to 50 mm/s							
Cushion	None							
Stroke length tolerance	+1.0 mm 0							

Note) Refer to "Handling Precautions for SMC Products" (M-E03-3) for Actuator Precautions (5).

Mounting Brackets/Part No.

Standard Note 4)

	Bore size (mm)	Model	Foot Note 1)	Flange	Double clevis Note 3)	
12	Without switch	CQ2□□-□D	CQ-L012	CQ-F012	CQ-D012	
12	With switch	CQ2□□-□DZ	CQ-LZ12	CQ-F012	CQ-D012	
16	Without switch	CQ2□□-□D	CQ-L016	CQ-F016	CQ-D016	
10	With switch	CQ2□□-□DZ	CQ-LZ16	CQ-F016	CQ-D016	
20	Without switch	CQ2□□-□D	CQ-L020	CQ-F020	CQ-D020	
20	With switch	CQ2□□-□DZ	CQ-LZ20	CQ-F020	UQ-D020	
25	Without switch	CQ2□□-□D	CQ-L025	CQ-F025	CQ-D025	
25	With switch	CQ2□□-□DZ	CQ-LZ25	CQ-F025	CQ-D025	
	32	CQ2□□-□DZ	CQ-L032	CQ-F032	CQ-D032	
	40	CQ2□□-□DZ	CQ-L040	CQ-F040	CQ-D040	
	50	CQ2□□-□DZ	CQ-L050	CQ-F050	CQ-D050	
	63 Note 2)	CQ2□□-□DZ	CQ-L063	CQ-F063	CQ-D063	
	80 Note 2)	CQ2□□-□DZ	CQ-L080	CQ-F080	CQ-D080	
	100 Note 2)	CQ2□□-□DZ	CQ-L100	CQ-F100	CQ-D100	

Long stroke; Non-rotating single rod; Antilateral load; Water resistant; With end lock $^{\text{Note}\,5)}$

Bore size (mm)	Foot Note 6)	Flange	Double clevis Note 4)
20 Note 7)	CQS-L020	CQS-F020	CQS-D020
25 Note 7)	CQS-L025	CQS-F025	CQS-D025
32 Note 8)	CQ-L032	CQ-F032	CQ-D032
40	CQ-L040	CQ-F040	CQ-D040
50	CQ-L050	CQ-F050	CQ-D050
63	CQ-L063	CQ-F063	CQ-D063
80 Note 9)	CQ-L080	CQ-F080	CQ-D080
100 Note 9)	CQ-L100	CQ-F100	CQ-D100

Non-rotating, double rod

Bore size (mm)	Foot Note 6)	Flange
40	CQ-L040	CQ-F040
50	CQ-L050	CQ-F050
63	CQ-L063	CQ-F063

Note 1) When ordering a foot bracket, the required quantity will be different depending on the bore size.

Ø12 to Ø25:Without switch: Order 2 pieces per cylinder.

• With switch: Order 1 piece per cylinder. (Part number for a set of 2 foot brackets)

ø32 to ø100: • Order 2 pieces per cylinder.

Note 2) Not applicable to single acting types.

Note 3) Not applicable to double acting, double rod types.

Note 4) Parts belonging to each bracket are as follows. Foot or Flange: Body mounting bolts Double clevis: Clevis pin, Type C retaining rings for axis,

Body mounting bolts

Note 5) Clevis pin and retaining rings are included with double

clevis.

Note 6) When ordering a foot bracket, order 2 pieces per cylinder.

Note 7) Only applicable to CQ2 with end lock types.

Note 8) Not applicable to non-rotating single rod type and water resistant type.

Note 9) Not applicable to non-rotating single rod type.





Applicable CQ2 cylinder		Part number	Wiring output	Model	Lead wire lenght	Pre-wired connector	Mounting surface	Mounting bracket
Standard NEW	General purpose solid state auto-switch	D-M9BWL D-M9BWVL D-M9PWL D-M9PWVL D-M9PWSAPC D-M9PWVSAPC	2 wire 3 wire (PNP) 3 wire (PNP)	In-line Perpendicular In-line Perpendicular In-line Perpendicular	3 m 3 m 0,5 m	— — M8 (3 pin)	ø12 ø16 to ø25	
Large Bore Size	Water resistant solid state auto-switch	D-M9BAL D-M9BAVL D-M9PAL D-M9PASAPC D-A93L D-A93VL D-A93SAPC	2 wire 3 wire (PNP) 2 wire	In-line Perpendicular In-line In-line Perpendicular In-line	3 m 3 m 0,5 m 3 m 0,5 m		ø32 to ø200	Not required
NEW Non-rotating Rod NEW	General purpose reed auto-switch	D-A73SAPC	2 wire	Perpendicular	3 m	M8 (3 pin)	ø12 ø16 to ø25	Bore size Bracket ø12 to ø25 BQ4-012 ø32 to ø160 BQ5-032
Water Resistant NEW Anti-lateral Load NEW	Magnetic field resistant auto-switch	D-P3DWL D-P3DWSC	3 wire (PNP)	In-line	3 m	— M8 (3 pin)	Ø32 to Ø100	BQ3-032S
Axial Piping (Centralised piping type)	General purpose I solid state auto-switch	D-M9BWL D-M9BWVL D-M9PWL D-M9PWVL D-M9PWSAPC D-M9PWVSAPC	2 wire 3 wire (PNP)	In-line Perpendicular In-line Perpendicular In-line Perpendicular	3 m 3 m 0,5 m	— — M8 (3 pin)	ø12, ø16, ø20, ø25	Bore size
0.00	General purpose reed auto-switch	D-A93VL D-A93SAPC D-A73L	2 wire	In-line Perpendicular In-line	3 m 0,5 m 3 m	M8 (3 pin)	Ø12 to Ø25	switch brackets are used as a set. Bore size Bracket Ø12, Ø16, BQ-1
	Gener reed a	D-A73SAPC	2 wire	Perpendicular	0,5 m	M8 (3 pin)		ø20, ø25 BQ-1 ø32 to ø100 BQ-2
	se solid witch	D-M9BWL D-M9BWVL	2 wire	In-line Perpendicular	3 m	_	ø20, ø25 <u>Port si</u> de <u>1</u> A ø32, ø40, ø50	
	General purpose solid state auto-switch	D-M9PWL D-M9PWVL	3 wire (PNP)	In-line Perpendicular	3 m	_	B Port side	Bore size Bracket ### Bracket ### Bracket ### Bracket ### Bracket ### Not ### required ### required
With End Lock		D-M9PWSAPC D-M9PWVSAPC D-A93L	3 wire (PNP)	In-line Perpendicular In-line	0,5 m	M8 (3 pin)	ø63, ø80, ø100 Port side B	ø32 to ø50 BQ-2 BQ-012
	d auto-switc	D-A93VL D-A93SAPC	2 wire	Perpendicular In-line	3 m	— M8 (3 pin)	C A	switch brackets are used as a set.
	General purpose reed auto-switch	D-A73L D-A73SAPC	2 wire	Perpendicular	3 m	— M8 (3 pin)	ø32 to ø100	Bore size Bracket ø32 to ø100 BQ-2
-XB14 Made to Order Cylinder with Heat Resistant Auto Switch How to Order CDQ2 Standard model no. F7NJL—XB14 Cylinder with heat resistant auto switch believed by the same as the existing product 'Z' is not included in the model number.	Heat resistant solid state auto-switch	D-F7NJL	3-wire (NPN)	In-line	3 m	_	ø16 to ø25 ø32 to ø63	Bore size Bracket ø16, ø20, ø25 ø32, ø40 ø50, ø63 BQJ1-032

Simple Specials/Made to Order

Series CQ2

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. **■** Simple Specials

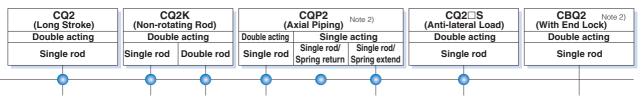
		CQ2 (Standard)					Q2 lore Size)
Symbol	Specifications	Double	acting	Single	acting	Double	acting
		Single rod	Double rod	Single rod/ Spring return	Single rod/ Spring extend	Single rod	Double rod
-XA1 to 30	Special rod end shape		-	-			

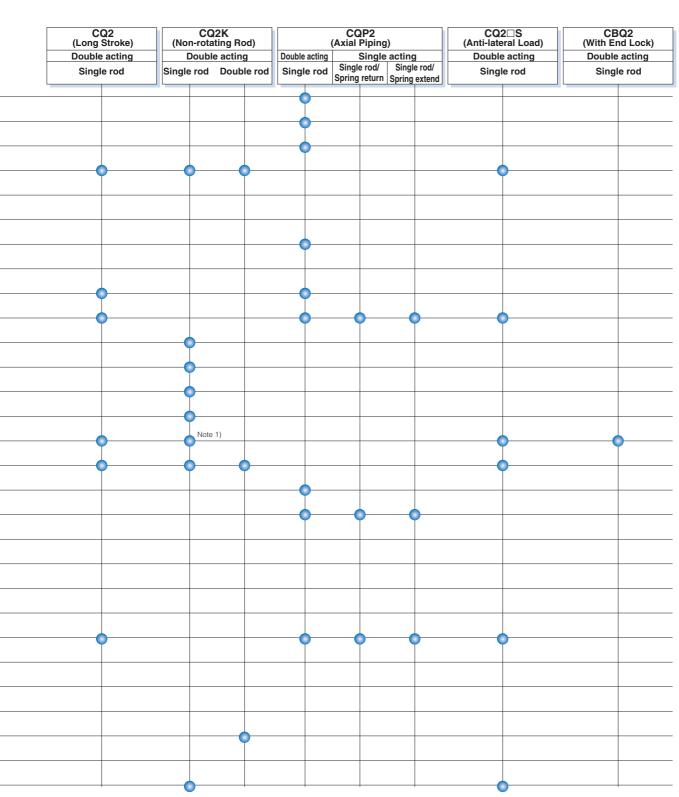
Made to	Order			Q2			CQ2
Symbol	Specifications		(Star	Single Single rod/ Spring return	acting Single rod/ Spring extend	Doub	Bore Size) le acting Double rod
XB6	Heat resistant cylinder (-10 to 150°C)		-				
XB7	Cold resistant cylinder (-40 to 70°C)	<u> </u>	<u> </u>				
XB9	Low-speed cylinder (10 to 50 mm/s)	<u> </u>	<u> </u>				
XB10	Intermediate stroke (Exclusive body type)	<u> </u>	<u> </u>	_		<u> </u>	
XB10A	Intermediate stroke (Spacer-installed type) Note 3)	<u> </u>					
XB11	Long stroke (Air-hydro type only)	<u> </u>					
XB13	Low-speed cylinder (5 to 50 mm/s)	—	<u> </u>				
XB14	Cylinder with heat resistant auto switch Note 2)						
XC4	With heavy-duty scraper		_				
XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel		<u> </u>	_	<u> </u>		
XC8	Adjustable stroke cylinder/Adjustable extension type						
XC9	Adjustable stroke cylinder/Adjustable retraction type						
XC10	Dual stroke cylinder/Double rod	—					
XC11	Dual stroke cylinder/Single rod	—					
XC26	With split pins for double clevis pin/double knuckle joint pin and flat washers	<u> </u>		_	<u> </u>		
XC27	Double clevis pin/Double knuckle joint pin material: Stainless steel 304			_			
XC35	With coil scraper		<u> </u>				
XC36	With boss on rod side		<u> </u>	_	<u> </u>		
X144	Special port location		<u> </u>	_	<u> </u>		
X202	Full length dimension is the same as Series CQ1			-			
X203	L dimension from rod cover is the same as Series CQ1			<u> </u>			
X235	Special rod end for double rod cylinder		<u> </u>				
X271	Fluororubber seals	<u> </u>	•	_	•	_	
X293	Full length dimension is the same as Series CQ1W		•				
X525	Long stroke of adjustable extension stroke cylinder (-XC8)	<u> </u>					
X526	Long stroke of adjustable retraction stroke cylinder (-XC9)	<u> </u>					
X633	Intermediate stroke of double rod cylinder		-				<u> </u>
X636	Long stroke of dual stroke single rod cylinder	<u> </u>					
X1876	Cylinder tube: With concave boss on head side						





Note 1) For ø40 to ø63 only. \emptyset 12 to \emptyset 32 are available as a special product. Note 2) The body shape is the same as the existing product. Note 3) For \emptyset 32 to \emptyset 100 only.





CQ2 made to order options to meet different requirements

Symbol	Details	How to order
For special enviroments		
-XB6 —	Heat resistant cylinder (-10~150°C) Air cylinder in which the materials of the seals and the grease have been changed so that the cylinder can be operated at high ambient temperature of up to 150°C.	CQ2 CQ2W Standard model noXB6 CQP2
-XB7	Cold resistant cylinder (-40~70°C) Air cylinder in which the materials of the seals and the grease have been changed so that the cylinder can be operated at ambient temperature as low as -40°C.	CQ2 CQ2W Standard model noXB7 CQP2
-XB14	Cylinder with heat resistant auto switch Heat resistant compact cylinder Series CDQ2 (ø16 to ø63) which can mount heat resistant solid state switch. (D-F7NJL, D-F7NJZ, Max. 150°C)	CDQ2 Standard model no F7NJL-XB14
-XC4 Heavy duty scraper Sand and dust	With heavy duty scraper As it is incorporated with a heavy duty scraper as a wiper ring, it is suitable for use in dusty area and also in earth and sand area such as casting machine, construction machine, industrial vehicle, etc.	C□Q2 C□QP2 Standard model noXC4
-XC6	Piston rod, Rod end nut made of stainless steel It is suitable for rusty and/or corrosive area subject to water splashing.	C□Q2 C□Q2W C□QP2 Standard model no. −XC6 C□Q2□S
-XC35 Coil scraper Weld spatter	With coil scraper It avoids entrance of frost, ice, weld spatter, cutting chips adhered to the piston rod, and protects the seals, etc.	CQ2 CQ2W Standard model noXC35 CQP2
-X271	Fluoro rubber for seals Material for seals is changed to fluoro rubber.	C□Q2 Standard model no. −X271

For special spped conditions

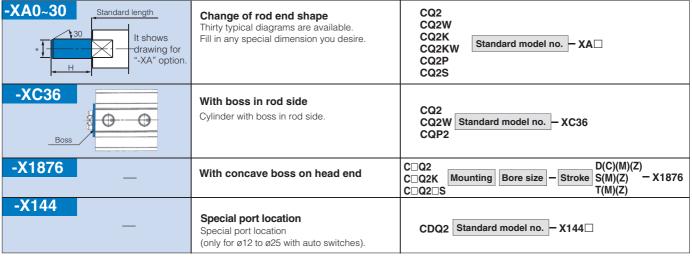
-XB9	_	Low speed cylinder (10~50 mm/s) Operates smoothly without sticking or slipping even at low speeds of 10~50 mm/s.	C□Q2 C□Q2W Standard model noXB9 C□QP2
-XB13	_	Low speed cylinder (5~50 mm/s) Operates smoothly without sticking or slipping even at low speeds of 5~50 mm/s.	C□Q2 C□Q2W Standard model no. −XB13 C□QP2
-XB9		Smood cylinder (Low friction)	C=Q2Y===-DC=-==
-XB9		Low speed cylinder	C=Q2X===-D=-==





CQ2 made to order options

Symbol	Details	How to order
For adjusting cylinder stroke to cylin	ider lengh	
-XB10 —	Intermediate stroke (Using exclusive body) When using a cylinder with a non-standard intermediate stroke, this cylinder uses a special body without a spacer in order to shorten its overall dimensions and thus minimize the installation space.	C□Q2 C□Q2W C□Q2K Standard model no. — XB10 C□Q2KW C□Q2□S
-XB10A	Intermediate stroke (Using exclusive body already in stock with an spacer)	C□Q2 Standard model no XB10 A
-XC8 Adjustable range	Adjustable stroke cylinder / Adjustable extension type A stroke adjustment mechanism is provided in the head side to adjust the extend stroke. (After the stroke is adjusted, cylinder with cushion on both sides is altered to with single-sided cushion.)	C□Q2B(H) C□Q2K Bore size - Stroke D(C)(M)(Z) - XC8
-XC9 B A Adjustable range	Adjustable stroke cylinder / Adjustable retraction type The retract stroke of the cylinder can be adjusted by the adjusting bolt.	C□Q2B Bore size - Stroke D(M)(Z) - XC9
-XC10 B DC A B stroke A stroke	Dual stroke cylinder / Double rod type Two cylinders are constructed as one cylinder in a back-to-back configuration allowing the cylinder stroke to be controlled in three steps.	$C \square Q2B$ $C \square Q2K$ Bore size $- Stroke S_1 + Stroke S_2 $ $D(C)(M)(Z) - XC10$
-XC11 B C A B stroke A stroke	Dual stroke cylinder / Single rod type Two cylinders can be integrated by connecting them in line, and the cylinder stroke can be controlled in two stages in both directions.	C \square Q2B Bore size $-$ Stroke S ₁ + Stroke S ₁ - S ₂ $D(C)(M)(Z) - XC11$
For additional mounting possibilities	and accuracy	
-XA0~30 Standard length It shows drawing for	Change of rod end shape Thirty typical diagrams are available. Fill in any special dimension you desire.	CQ2 CQ2W CQ2K CQ2KW Standard model no. — XA□



Additional variations

CQ2□F _	With one-touch fittings	C Q 2 0 0 F - 0 0 Z
CQ2□H —	Air-hydro type	COQ2OOHOO-ODOZ
10-, 11-	Clean series	10-C□Q2B□-□D(M)Z 11-C□Q2B□-□D(M)Z
20-	Copper and fluorine-free series	20-C□Q2B□-□D(C)(M)Z

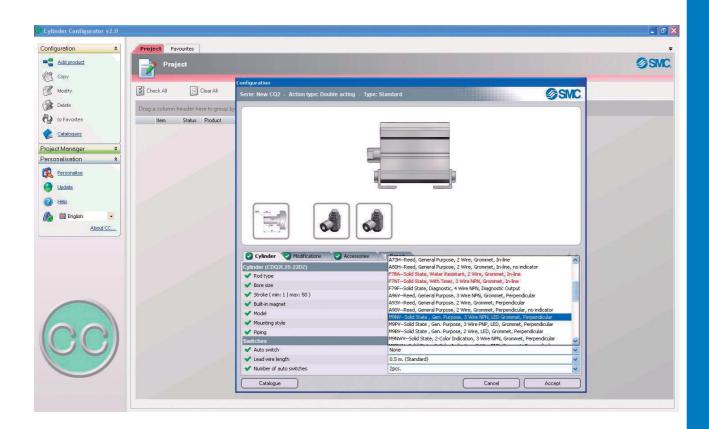
■ For more information about the new CQ2 series:

To help you find the right CQ2 Cylinder for your application needs, simply check out our new Cylinder Configurator v 2.0.(CC v2.0).

This user friendly configurator had been specifically developed to make the selection of standard CQ2 Cylinders, including Simple Special options and accessories, even easier than before .

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Suitable for almost all machine applications our Series CQ2 really is the most flexible compact air operated cylinder in the world.





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