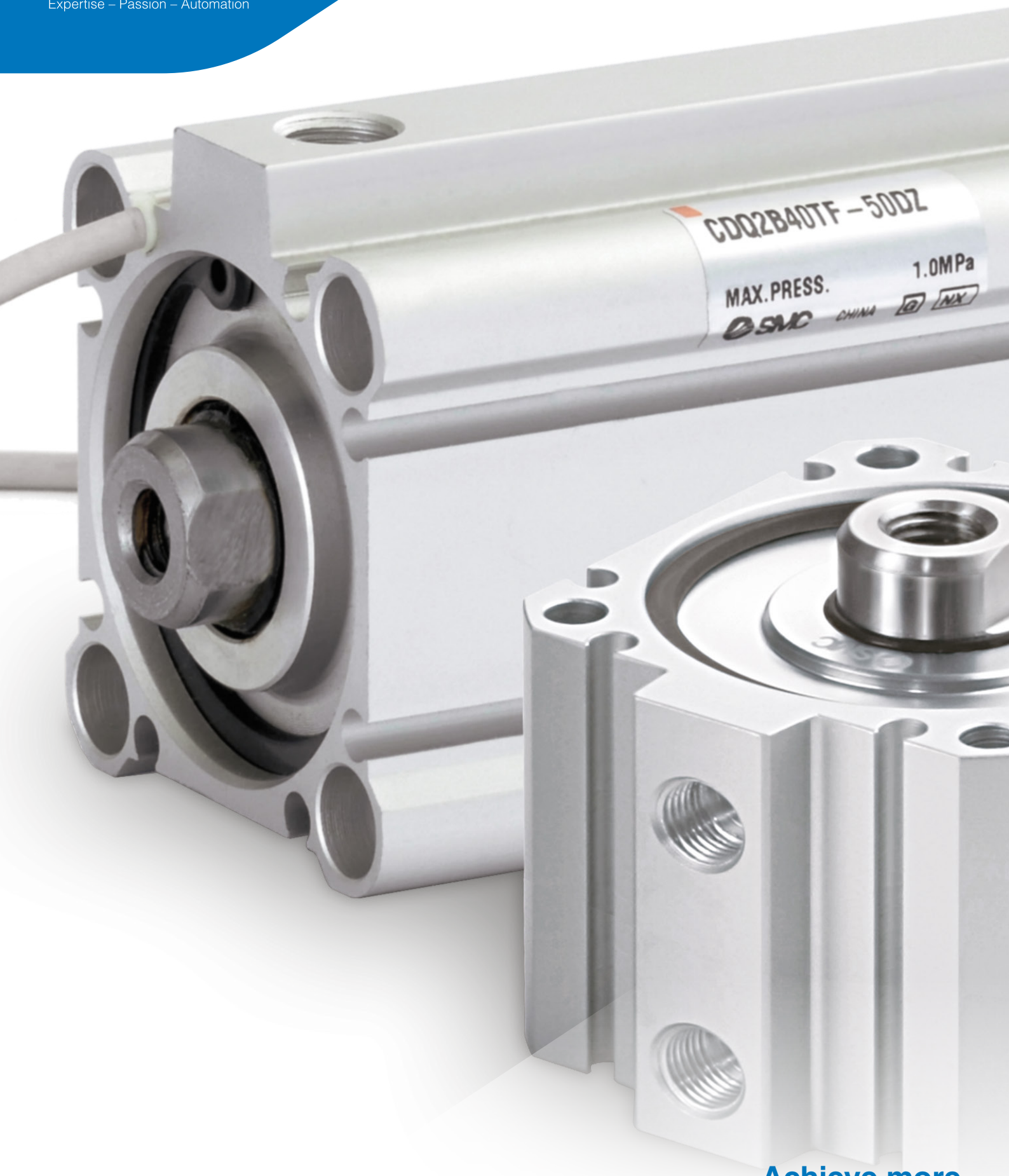





Expertise – Passion – Automation



Achieve more
SMC compact cylinders



SMC has been at the forefront of pneumatic technology for over 60 years, offering customers an unrivalled range of energy efficient air cylinders that deliver a solution for every need.

We are here to support you every step of the way, thanks to our European wide team of experts and quick delivery times, so find out how you can achieve more with SMC in four simple steps.

Discover

Discover our comprehensive range of compact cylinders.

Cylinder selection

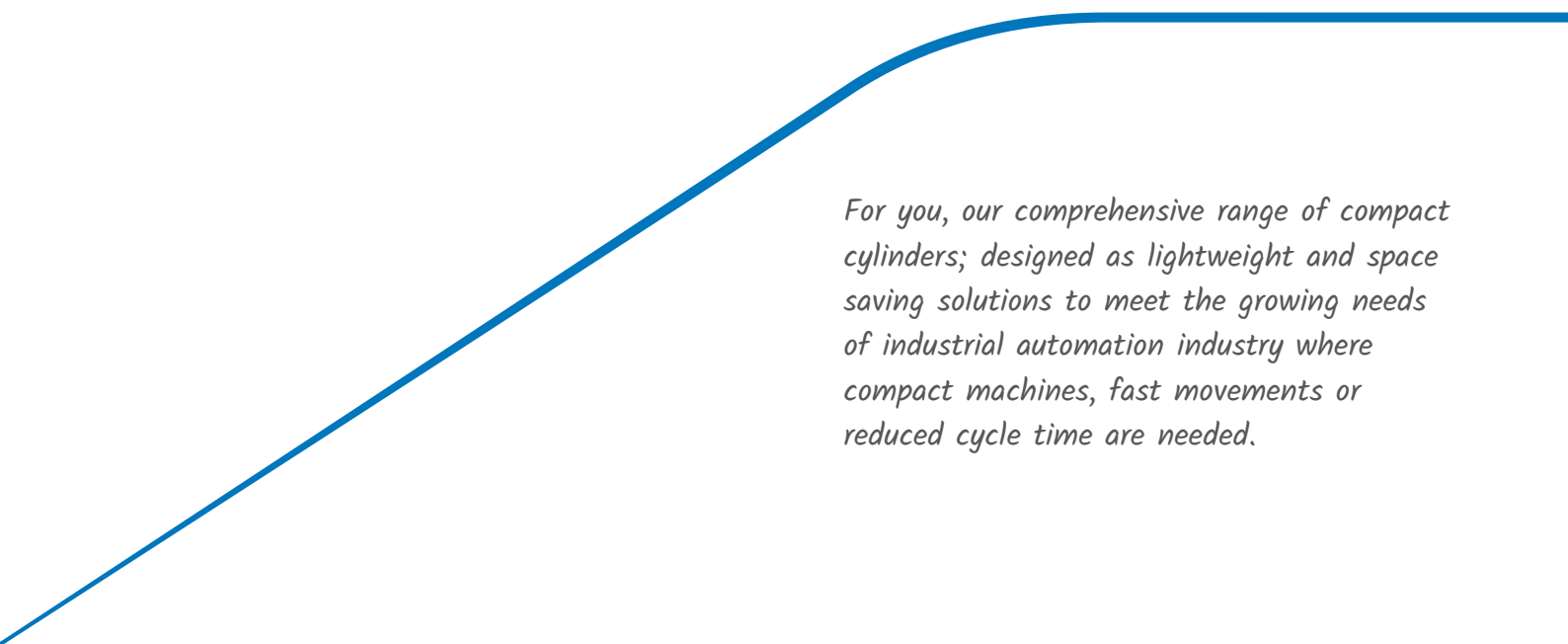
An intuitive online product selection, configuration and design tools for complex pneumatic and electric systems, as well as that human connection with access to one of our 1,500 expert engineers, located in 30 countries across Europe with the aim of making the product selection and design process as easy and seamless as possible.

Customisation

Our accessories range, allows us to offer a full suite of solutions including speed controllers and auto switches to shock absorbers and floating joints.

Order fulfilment

With a strong infrastructure throughout Europe, featuring our main factory in the Czech Republic and central warehouse in Antwerp, Belgium, we can respond quickly to the demands of globalisation and fast changing customer requirements.



For you, our comprehensive range of compact cylinders; designed as lightweight and space saving solutions to meet the growing needs of industrial automation industry where compact machines, fast movements or reduced cycle time are needed.



Achieve more SMC compact cylinders

Discover in the following pages: C55, ISO type, in case you have standard requirements. Our popular CQ2, the all-rounder of the compact cylinders, we as many standard options as you can imagine. And the latest to join the team, the compact version of the compact cylinder, JCQ, aimed directly to hit your efficiency.

Index

Compact cylinder

CQ2 Series p.4

Compact cylinder

JCQ Series p.14

Compact cylinder ISO standard (ISO 21287)

C55 Series p.16

Applications p.20

Related products p.21

Compact cylinder

CQ2 Series



New body to get more flexibility



Benefits

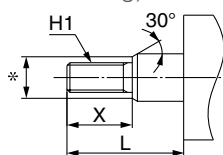
- **Design compact machines thanks to the reduction of the required space by the cylinder and the components**
- **Reduce overall machine weight and increase the productivity** – Lightweight just 456 g (Ø 40 and 50 mm stroke)
- **Find a compact cylinder for each specific application** – Wide range of variations for customised applications (long strokes, large bore size...).

Main features

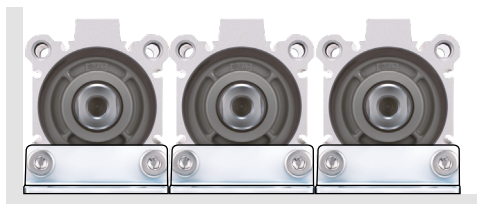
- **Long strokes**
Strokes up to 300 mm available
Minimum operating pressure: 0.05 MPa

Rod end modification

Short delivery times (European manufacturing)



- **Short pitch mounting is possible**
Installed state



- **Intermediate stops (3 position pneumatics)**
Dual stroke version available (XC11)

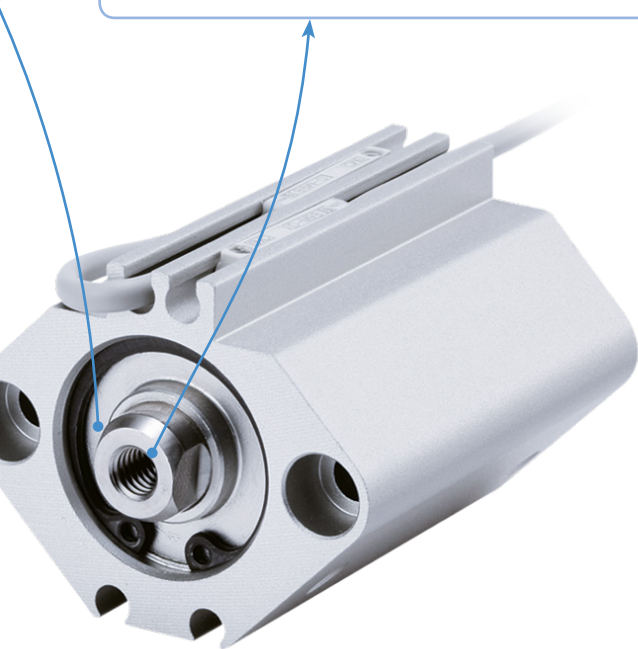
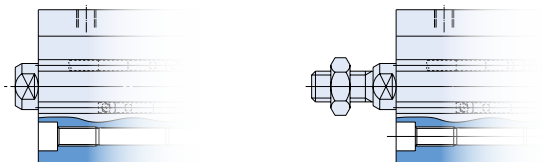
- **Easily adaptable to your application technical requirements**

- Low speed versions
- Low friction version
- Anti-lateral load version
- Heat and cold resistant versions
- Applicable to clean room environment.

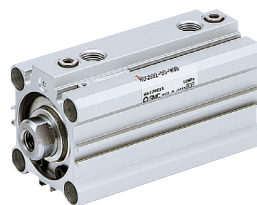
Speed controllers

Bore size Ø [mm]	Port size	Ø tube	Speed controller with one touch fitting	Speed controller with indicator	Compact speed controller. Right side	Compact speed controller. Left side
12	M5	4				
16						
20						
25						
32	1/8	6	AS2201F-01-06SA	AS2201FS-01-06S	JAS-LEA06-01S	JAS-LEB06-01S
40						
50	1/4	8	AS2201F-02-08SA	AS2201FS-02-08S	—	—
63						
80	3/8	10	AS3201F-03-10SA	AS3201FS-03-10S	—	—
100						

Female and male rod threads available



Compact cylinder with air cushion (RQ Series) Unique air cushion construction with no cushion ring Available strokes from 15 mm



► Compact cylinder with lock (CLQ Series) Maintains cylinder position when supply pressure falls or residual pressure is released Locking is possible at any position within the entire stroke



► Offset pin shift cylinder (CDQ2B-X2839 Series) High rigidity and precision offset load capacity Ø 32, Ø 40, Ø 50 Deflection of ±0.1 mm or less



► With end lock Compact cylinder with unidirectional lock



Series variations

- **Machine tool industry applications (Water resistant cylinder)**
Compatible with an operating environment using coolants



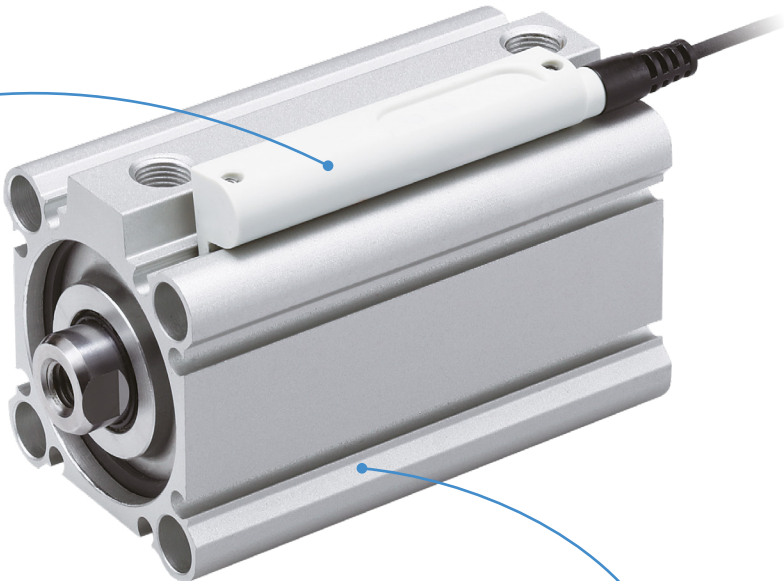
Water resistant auto switches:
- D-M9 Series



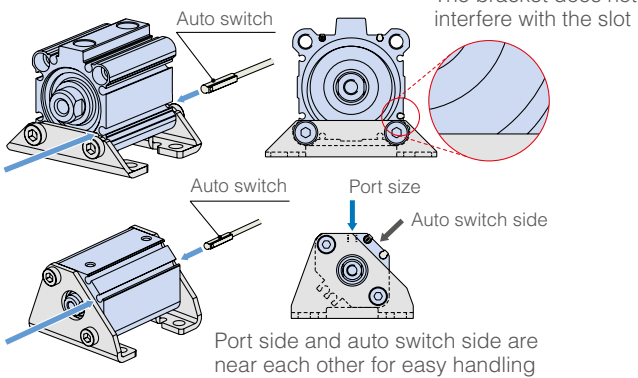
- **Arc welding applications (spatter resistant cylinder and auto switch)**
Spatter resistant coil scraper, lube-retainer, grease for welding (XC88/XC89)
- D-P3DW Series



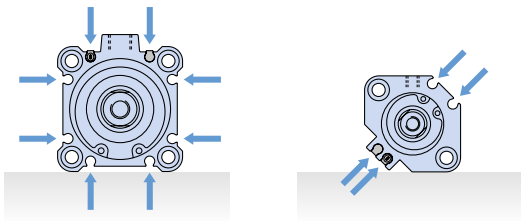
Actuator position sensor D-MP series
Get continuous information on cylinder position.
 IO-Link



- **The auto switch can be replaced with the foot brackets mounted**



Small auto switches can be directly mounted on the 4 sides of the cylinder without protrusion



Auto switches

Type	Auto switch with indicator light (3 m lead wire)	General purpose with 2 colour indication with (3 m lead wire)	General purpose auto switch with pre-wired connector (M8-3pin) and 0.5 m lead wire
3-wire solid state, PNP	D-M9PL	D-M9PWL	D-M9PSAPC
2-wire solid state	D-M9BL	D-M9BWL	D-M9BSAPC
Reed	D-A93L	—	D-A93SAPC

Mounting options

Bore size [mm]		① Knuckle pin	② Flange	③ Double clevis ³⁾	④ Foot ¹⁾	⑤ Compact foot ¹⁾	⑥ Single knuckle joint	⑦ Double Knuckle joint	⑧ Joint	⑨ Rod end nut
12	Without switch	IY-G012	CQ-F012	CQ-D012	CQ-L012	CQ-LC012	I-G012	Y-G012	—	NTJ-015A
	With switch				CQ-LZ12	CQ-LCZ12				
16	Without switch	IY-J015	CQ-F016	CQ-D016	CQ-L016	CQ-LC016	I-Z015A	Y-Z015A	—	NT-015A
	With switch				CQ-LZ16	CQ-LCZ16				
20	Without switch	IY-G02	CQ-F020	CQ-D020	CQ-L020	CQ-LC020	I-G02	Y-G02	—	NT-02
	With switch				CQ-LZ20	CQ-LCZ20				
25	Without switch	IY-G03	CQ-F025	CQ-D025	CQ-L025	CQ-LC025	I-G03	Y-G03	—	NT-03
	With switch				CQ-LZ25	CQ-LCZ25				
32 ⁴⁾		IY-G04	CQ-F032	CQ-D032	CQ-L032	CQ-LC032	I-G04	Y-G04	YU-03	NT-04
40			CQ-F040	CQ-D040	CQ-L040	CQ-LC040				
50		IY-G05	CQ-F050	CQ-D050	CQ-L050	CQ-LC050	I-G05	Y-G05	YU-05	NT-05
63 ²⁾			CQ-F063	CQ-D063	CQ-L063	CQ-LC063				
80 ²⁾		IY-G08	CQ-F080	CQ-D080	CQ-L080	CQ-LC080	I-G08	Y-G08	YU-08	NT-08
100 ²⁾		IY-G10	CQ-F100	CQ-D100	CQ-L100	CQ-LC100	I-G10	Y-G10	YU-10	NT-10

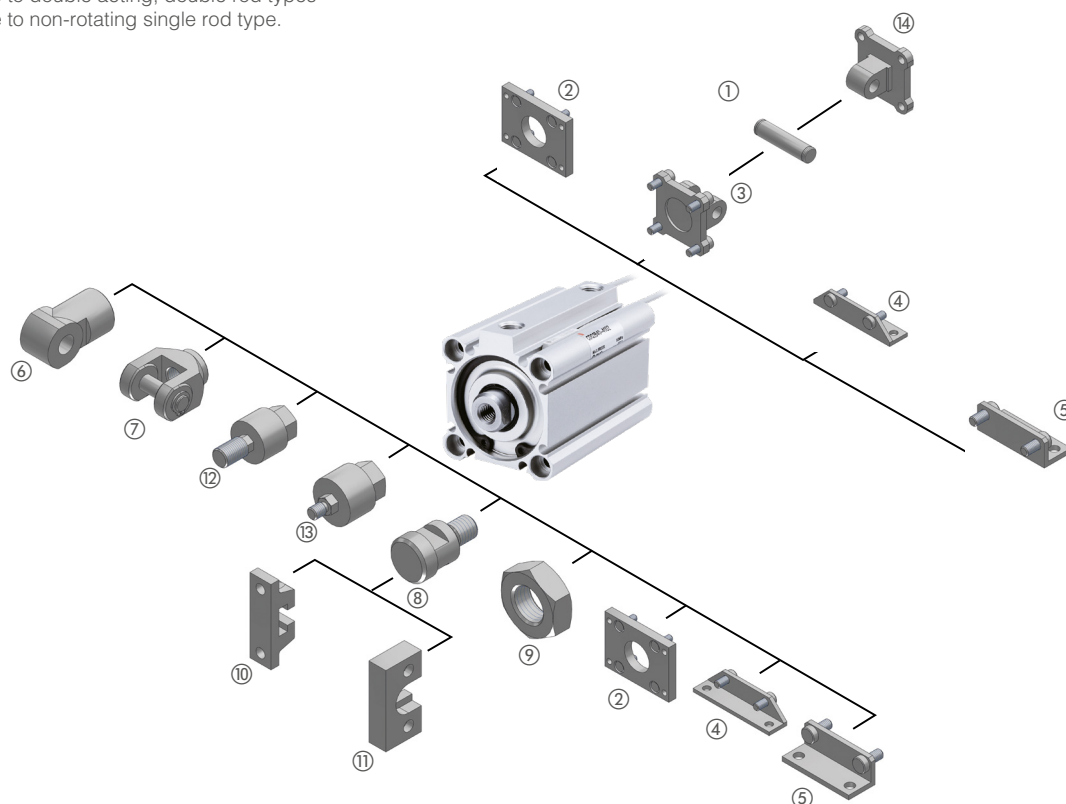
Bore size [mm]	⑩ Type A mounting bracket for joint	⑪ Type B mounting bracket for joint	⑫ Floating joint for male thread	⑬ Floating joint for female thread	⑭ Double clevis pivot bracket
12	—	—	JA15-5-080	JB12-3-050	CQ-C012
16	—	—	JA15-6-100	JB16-4-070	CQ-C016
20	—	—	JA20-8-125	JB20-5-080	CQ-C020
25	—	—	JA30-10-125	JB25-6-100	CQ-C025
32 ⁴⁾	YA-03	YB-03	JA40-14-150	JB40-8-125	CQ-C032
40					CQ-C040
50	YA-05	YB-05	JA63-18-150	JB63-10-150	CQ-C050
63 ²⁾					CQ-C063
80 ²⁾	YA-08	YB-08	JA80-22-150	JB80-16-200	CQ-C080
100 ²⁾	YA-10	YB-10	JA100-26-150	JB100-20-250	CQ-C100

1) Order two pieces per cylinder except in Ø 12 to Ø 25 of the standard type with switch, that you should order only 1 piece per cylinder because in this case a part number is a set of two foot brackets

2) Not applicable to single acting types

3) Not applicable to double acting, double rod types

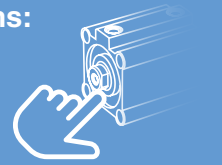
4) Not applicable to non-rotating single rod type.



How to order

Standard, double acting, single rod

Discover all CQ2 options:
cq2.smc.eu



Without auto switch Ø 12 to Ø 25

CQ2 B 20 - 30 D - - -

Without auto switch Ø 32 to Ø 100

CQ2 B 32 - 30 D Z - - -

With auto switch

C D Q2 B 32 - 30 D Z - - -

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① With auto switch (Built in magnet)

② Mounting

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

- 1) Mounting brackets are shipped together, (but not assembled).
- 2) Cylinder mounting bolts are not included. Order them separately.

③ Bore size

12	12 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

④ Port thread type

—	M thread	Ø 12 to Ø 25
	Rc	
TN	NPT	Ø 32 to Ø 100
TF	G	
F	Built-in one-touch fittings ¹⁾	

- 1) Bore sizes available with one-touch fittings are Ø 32 to Ø 63. Besides, it is not possible to use for air-hydro type.
- 2) For cylinders without auto switch, M threads are compatible only for Ø 32-5 mm stroke.

⑤ Standard strokes

Bore size Ø [mm]	Standard stroke [mm]
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

⑥ Action

D	Double acting
----------	---------------

⑦ Body option

—	Standard (Rod end female thread)
F	With boss on head end
C	With rubber bumper
M	Rod end male thread

- 1) Combination of body options ("CM", "FC", "FM", "FCM") is available.

⑧ Auto switch mounting groove

Z	Ø 12 to Ø 25	2 surfaces
	Ø 32 to Ø 100	4 surfaces

⑨ Mounting bolt

—	None
L	Shipped together

- 1) Mounting bolt is shipped together only when the mounting bracket is "B".
- 2) For details about the mounting bolt sizes, refer to pages 5 and 10.
- 3) Mounting bolt is shipped together.
- 4) Order mounting bolts separately for made to order specifications.

⑩ Rod end bracket

—	None
D	Simple joint A type + Joint
E	Simple joint B type + Joint
V	Single knuckle joint
W	Double knuckle joint

- 1) The single knuckle joint and double knuckle joint cannot be mounted for the rod end female thread.
- 2) A knuckle joint pin is not provided with the single knuckle joint.
- 3) The simple joint A and B types cannot be mounted for the rod end male thread.
- 4) Rod end bracket is shipped together.
- 5) Bore sizes available with the simple joint (D, E) are Ø 32 to Ø 100.

⑪ Made to order

-XA□	Change of compact rod end shape
-XB6	Heat resistant cylinder (-10 to 150 °C) w/o auto switch only
-XB7	Cold resistant cylinder (-40 to 70 °C) w/o auto switch only
-XB9	Low-speed cylinder (10 to 50 mm/s)
-XB10	Intermediate stroke (Exclusive body type)
-XB10A	Intermediate stroke (Spacer-installed type)
-XB13	Low-speed cylinder (5 to 50 mm/s)
-XB14	Cylinder with heat resistant auto switch Ø 16 to Ø 63 only
-XC2(A)	Rod end length, 10mm increased (For foot and flange bracket)
-XC4	With heavy-duty scraper, Ø 20 to Ø 100 only
-XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel
-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
-XC26□	Double clevis width/Double knuckle width 12.5 mm, 16.5 mm, 19.5 mm: With double clevis and double knuckle joint
-XC27	Double clevis pin/Double knuckle joint pin material: Stainless steel 304
-XC35	With coil scraper, Ø 32 to Ø 100 only
-XC36	With boss on rod side
-XC85	Grease for food processing equipment
-XC88	Spatter resistant coil scraper, Lube-retainer, Grease for welding (Piston rod: Stainless steel 304)
-XC89	Spatter resistant coil scraper, Lube-retainer, Grease for welding (Piston rod: S45C)
-XC91	Spatter resistant coil scraper, Grease for welding (Piston rod: S45C)
-XC92	Dust resistant actuator
-X144	Special port location, with auto switch Ø 12 to Ø 25 only
-X202	Full length dimension is the same as Series CQ1, Except Ø 16, Ø 25
-X203	L dimension from rod cover is the same as Series CQ1, Ø 20, Ø 32 only
-X271	Fluororubber seals
-X525	Long stroke of adjustable extension stroke cylinder (-XC8)
-X526	Long stroke of adjustable retraction stroke cylinder (-XC9)
-X636	Long stroke of dual stroke single rod cylinder
-X1876	Cylinder tube: With concave boss on head side

Specifications

Bore size Ø [mm]		12	16	20	25	32	40	50	63	80	100
Action		Double acting, single rod									
Fluid		Air									
Proof pressure		1.5 MPa									
Max. operating pressure		1.0 MPa									
Min. operating pressure		0.07 MPa		0.05 MPa							
Ambient and fluid temperature		Without auto switch: -10 to 70 °C (No freezing) With auto switch: -10 to 60 °C (No freezing)									
Piston speed		50 to 500 mm/s									
Allowable kinetic energy [J]	Standard	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
	With rubber bumper	0.043	0.075	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54
Stroke length tolerance		+1.0 mm ¹⁾									

1) Stroke length tolerance does not include the amount of bumper change.

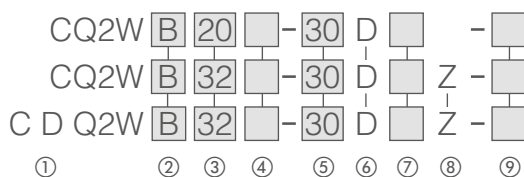
How to order

Standard, double acting, double rod

Without auto switch Ø 12 to Ø 25

Without auto switch Ø 32 to Ø 100

With auto switch



- ① With auto switch
(Built in magnet)

② Mounting

B	Through-hole (Standard)
A	Both ends tapped
L	Foot
LC	Compact foot
F	Rod flange

- 1) Mounting brackets are shipped together, (but not assembled).
2) Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for C(D)Q2WB" on series catalogues.

③ Bore size

12	12 mm	40	40 mm
16	16 mm	50	50 mm
20	20 mm	63	63 mm
25	25 mm	80	80 mm
32	32 mm	100	100 mm

④ Port thread type

—	M thread	Ø 12 to Ø 25
	Rc	
TN	NPT	Ø 32 to Ø 100
TF	G	
F	Built-in one-touch fittings ¹⁾	

- 1) Bore sizes available with one-touch fittings are Ø 32 to Ø 63. Besides, it is not possible to use for air-hydro type.
2) For cylinders without auto switch, M threads are compatible only for Ø 32-5 mm stroke.

⑤ Standard strokes

Bore size Ø [mm]	Standard stroke [mm]
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

⑥ Action

D	Double acting
----------	---------------

⑦ Body option

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

- 1) Combination of body options ("CM", "FC", "FM", "FCM") is available.

⑧ Auto switch mounting groove

Z	Ø 12 to Ø 25	2 surfaces
	Ø 32 to Ø 100	4 surfaces

- 1) The made-to-order, heat resistant auto switch -XB14 is not applicable.

⑨ Made to order

-XA□	Change of compact rod end shape
-XB6	Heat resistant cylinder (-10 to 150 °C) w/o auto switch only
-XB7	Cold resistant cylinder (-40 to 70 °C) w/o auto switch only
-XB9	Low-speed cylinder (10 to 50 mm/s)
-XB10	Intermediate stroke (Exclusive body type)
-XB13	Low-speed cylinder (5 to 50 mm/s)
-XC2(A)	Rod end length, 10mm increased (For foot and flange bracket)
-XC4	With heavy-duty scraper, Ø 20 to Ø 100 only
-XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel
-XC35	With coil scraper, Ø 32 to Ø 100 only
-XC36	With boss on rod side
-XC85	Grease for food processing equipment
-X144	Special port location, with auto switch Ø 12 to Ø 25 only
-X235	Special rod end for double rod cylinder
-X271	Fluororubber seals
-X293	Full length dimension is the same as Series CQ1W
-X633	Intermediate stroke of double rod cylinder

Specifications

Bore size Ø [mm]		12	16	20	25	32	40	50	63	80	100
Action		Double acting, double rod									
Fluid		Air									
Proof pressure		1.5 MPa									
Max. operating pressure		1.0 MPa									
Min. operating pressure		0.07 MPa		0.05 MPa							
Ambient and fluid temperature		Without auto switch: -10 to 70 °C (No freezing) With auto switch: -10 to 60 °C (No freezing)									
Piston speed		50 to 500 mm/s									
Allowable kinetic energy [J]	Standard	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
	With rubber bumper	0.043	0.075	0.11	0.18	0.29	0.52	0.91	1.54	2.71	4.54
Stroke length tolerance		+0.0 mm ¹⁾									

- 1) Stroke length tolerance does not include the amount of bumper change.

How to order

Large bore size, double acting, double and single rod

Without auto switch CQ2 **W** B **125** **30** D C **Z** - **1**
With auto switch C D Q2 **W** B **125** **30** D C **Z** - **1**
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪

① With auto switch (Built in magnet)

② Type

—	Single rod
W	Double rod

③ Mounting

B	Through-hole/Both ends tapped common (Standard)
----------	---

1) Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for C(D)Q2WB" on series catalogues.

④ Bore size

125	125 mm
140	140 mm
160	160 mm
180	180 mm
200	200 mm

⑤ Port thread type

—	Rc
TN	NPT
TF	G

⑥ Standard strokes

Bore size Ø [mm]	Standard stroke [mm]
125, 140, 160, 180, 200	10, 20, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300

⑦ Action

D	Double acting
----------	---------------

⑧ Cushion

C	Rubber bumper
----------	---------------

⑨ Body option

—	Standard (Rod end female thread)
M	Rod end male thread

⑩ Auto switch mounting groove

Z	Ø 125 to Ø 200	4 surfaces
----------	----------------	------------

⑪ Made to order

-XA	Change of compact rod end shape
-XB10	Intermediate stroke (Exclusive body type)
-XC85	Grease for food processing equipment
-X235	Special rod end for double rod cylinder ¹⁾
-X271	Fluororubber seals
-X633	Intermediate stroke of double rod cylinder ¹⁾

1) Only available for double rod.

2) -X633: Intermediate stroke in 5 mm intervals only.

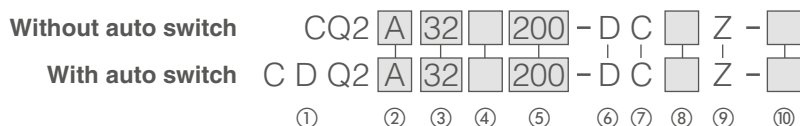
Specifications

Bore size Ø [mm]		125	140	160	180	200
Action	Double rod	Double acting, single rod				
	Single rod	Double acting, double rod				
Fluid		Air				
Proof pressure		1.5 MPa			1.05 MPa	
Max. operating pressure		1.0 MPa			0.7 MPa	
Min. operating pressure		0.05 MPa				
Ambient and fluid temperature		Without auto switch: -10 to 70 °C (No freezing) With auto switch: -10 to 60 °C (No freezing)				
Lubrication		Not required (Non-lube)				
Piston speed		50 to 500 mm/s			20 to 400 mm/s	
Allowable kinetic energy [J]		7.4	9.8	12.4		
Stroke length tolerance		+0.4 mm ¹⁾				

1) Stroke length tolerance does not include the amount of bumper change.

How to order

Long stroke, double acting, single rod



① **With auto switch**
(Built in magnet)

② Mounting

A	Both ends tapped
L	Foot
LC	Compact foot
F	Rod flange
G	Head flange
D	Double clevis

1) Mounting brackets are shipped together, (but not assembled).

③ Bore size

32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

④ Port thread type

—	Rc
TN	NPT
TF	G
F	Built-in one-touch fittings ¹⁾

1) Bore sizes available with one-touch fittings are Ø 32 to Ø 63.

⑤ Standard strokes

Bore size Ø [mm]	Standard stroke [mm]
32, 40, 50, 63, 80, 100	125, 150, 175, 200, 250, 300

⑥ Action

D	Double acting
----------	---------------

⑦ Cushion

C	Rubber bumper
----------	---------------

⑧ Body option

—	Standard (Rod end female thread)
M	Rod end male thread

⑨ Auto switch mounting groove

Z	4 surfaces
----------	------------

⑩ Made to order

-X271	Fluororubber seals
-XA□	Change of compact rod end shape
-XB10	Intermediate stroke (Exclusive body type)
-XC4	With heavy-duty scraper
-XC6	Piston rod/Retaining ring/Rod end nut material: Stainless steel
-XC26	With split pins for double clevis pin/double knuckle joint pin and flat washers
-XC26□	Double clevis width/Double knuckle width 12.5 mm, 16.5 mm, 19.5 mm: With double clevis and double knuckle joint
-XC35	With coil scraper
-XC85	Grease for food processing equipment
-XC88	Spatter resistant coil scraper, Lube-retainer, Grease for welding (Piston rod: Stainless steel 304)
-XC89	Spatter resistant coil scraper, Lube-retainer, Grease for welding (Piston rod: S45C)

Specifications

Bore size Ø [mm]	32	40	50	63	80	100
Action	Double acting, single rod					
Fluid	Air					
Proof pressure	1.5 MPa					
Max. operating pressure	1.0 MPa					
Min. operating pressure	0.05 MPa					
Ambient and fluid temperature	Without auto switch: -10 to 70 °C (No freezing) With auto switch: -10 to 60 °C (No freezing)					
Lubrication	Not required (Non-lube)					
Piston speed	50 to 500 mm/s					
Allowable kinetic energy [J]	0.29	0.52	0.91	1.54	2.71	4.54
Stroke length tolerance	+1.4 mm ¹⁾					

1) Stroke length tolerance does not include the amount of bumper change.

How to order

Non-rotating rod, double acting, single and double rod

Without auto switch Ø 12 to Ø 25

Without auto switch Ø 32 to Ø 63

With auto switch

CQ2	K	W	B	20		-	30	D		-	
CQ2	K	W	B	32		-	30	D		Z	-
C	D	Q2	K	W	B	32		-	30	D	
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	

① With auto switch
(Built in magnet)

② Non rotating rod

③ Type

—	Single rod
W	Double rod

④ Mounting

B	Through-hole (Standard)	Ø 20 to Ø 63
A	Both ends tapped	Ø 40, Ø 50, Ø 63
L	Foot	
LC	Compact foot	
F	Rod flange	
G	Head flange ³⁾	
D	Double clevis ³⁾	

- 1) Mounting brackets are shipped together, (but not assembled).
2) Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for C(D)Q2WB" on series catalogues.
3) Only available for single rod.

⑤ Bore size

12 ¹⁾	12 mm	32	40 mm
16	16 mm	40	50 mm
20	20 mm	50	63 mm
25	25 mm	63	80 mm

- 1) For singles rod, when Ø 12 with auto switch is required, the body option should be with rubber bumper (C). Example) CDQ2KB12-30DCZ

⑥ Port thread type

—	M thread	Ø 12 to Ø 25 Ø 32 to Ø 63
	Rc	
TN	NPT	
TF	G	
F	Built-in one-touch fittings ¹⁾	

- 1) Bore sizes available with one-touch fittings are Ø 32 to Ø 63.
2) For cylinders without auto switch, M threads are compatible only for Ø 32-5 mm stroke.

Specifications

Bore size Ø [mm]		12	16	20	25	32	40	50	63
Action	Double rod	Double acting, single rod							
	Single rod	Double acting, double rod							
Fluid		Air							
Proof pressure		1.5 MPa							
Max. operating pressure		1.0 MPa							
Min. operating pressure		0.07 MPa		0.05 MPa					
Ambient and fluid temperature		Without auto switch: -10 to 70 °C (No freezing) With auto switch: -10 to 60 °C (No freezing)							
Lubrication		Not required (Non-lube)							
Piston speed		50 to 500 mm/s							
Allowable kinetic energy [J]		0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77
		0.043 ²⁾							
Stroke length tolerance		+1.0 mm ³⁾							

- 1) Ø 12 with auto switch: With rubber bumper (Standard).
2) For cylinders with rubber bumper (Ø 12 with auto switch only).
3) Stroke length tolerance does not include the amount of bumper change.

⑦ Standard strokes

Bore size Ø [mm]	Standard stroke [mm]
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, 63	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100

⑧ Action

D	Double acting
---	---------------

⑨ Body option

—	Standard (Rod end female thread)
F ²⁾	With boss on head end
C	With rubber bumper (Ø 12 with auto switch only)
M	Rod end male thread

- 1) For single rod, combination of body options ("FM") is available.
2) Not available for double rod.

⑩ Auto switch mounting groove

Z	Ø 12 to Ø 25	2 surfaces
	Ø 32 to Ø 63	4 surfaces

- 1) The made-to-order, heat resistant auto switch -XB14 is not applicable.

⑪ Made to order

-X633 ^{2) 3)}	Intermediate stroke of double rod cylinder
-XA□	Change of compact rod end shape
-XB10	Intermediate stroke (Exclusive body type)
-XC2(A)	Rod end length, 10mm increased (For foot and flange bracket)
-XC8 ¹⁾	Adjustable stroke cylinder/Adjustable extension type
-XC9 ¹⁾	Adjustable stroke cylinder/Adjustable retraction type
-XC10 ¹⁾	Dual stroke cylinder/Double rod
-XC11 ¹⁾	Dual stroke cylinder/Single rod
-XC26 ¹⁾	With split pins for double clevis pin/double knuckle joint pin and flat washers
-XC85	Grease for food processing equipment

- 1) Only available for single rod.
2) Only available for double rod.
3) -X633: Intermediate stroke in 5 mm intervals only.

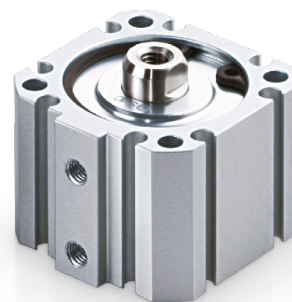
Compact cylinder

JCQ Series



Fit for purpose - Maximum efficiency

RoHS



Benefits

- ▶ **Achieve cost-efficient machines** – By downsizing other components
- ▶ **Increase your productivity** – Improved cycle times due to the cylinder's lightness
- ▶ **Reduce the dimensions of your machine** – Highly compact
- ▶ **Get mounting flexibility** – Mount the auto switch on any of the 4 surfaces.

Main features

- ▶ **Minimum operating pressure:** 0.05 MPa.

Strokes from 5 to 50 mm

Short delivery times (European stocked items).

- ▶ **As Little as 29 g for 12 bore size**

More than 40 % volume reduction compared with a standard compact cylinder.

Bore size Ø [mm]	Weight
12	29 mm
16	37 mm
20	61 mm
25	82 mm
32	135 mm









Auto switches can be directly mounted on 4 surfaces















Speed controllers

Bore size Ø [mm]	Port size	Ø tube	Speed controller with one touch fitting	Speed controller with indicator	Compact speed controller. Right side	Compact speed controller. Left side
						
12	M3	4	AS1201F-M3-04	—	JAS-LEA04-M3	JAS-LEB04-M3
16						
20	M5		AS1201F-M5-04A	AS1201FS-M5-04A	JAS-LEA04-M5	JAS-LEB04-M5
25						
32						
40	1/8	6	AS2201F-01-06SA	AS2201FS-01-06S	JAS-LEA06-01S	JAS-LEB06-01S
50						
63						
80	1/4	8	AS2201F-02-08SA	AS2201FS-02-08S	—	—
100						

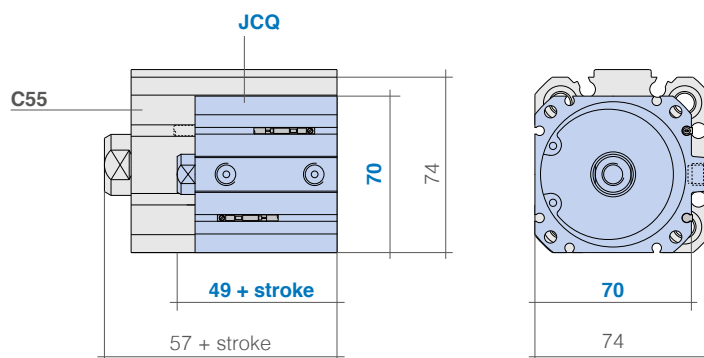
Floating joint

Bore size Ø [mm]	Port size	Floating joint for female thread
12	M3	
16		
20	M4	
25	M5	
32	M6	
40	M8	
50	M10	
63		
80	M14	
100	M16	

Auto switches

Type	Auto switch with indicator light (3 m lead wire)	General purpose with 2 colour indication with (3 m lead wire)	General purpose auto switch with pre-wired connector (M8-3pin) and 0.5 m lead wire	Auto switch, short type (3 m lead wire)
3-wire solid state, PNP				
2-wire solid state				
Reed				

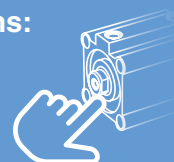
► Comparative dimensions Ø 63



Bore sizes (Ø): 12 mm to 100 mm.

How to order

Discover all JCQ options:
jcq.smc.eu



Without auto switch JCQ 12 - 30
 With auto switch JC D Q 12 - 30
 ① ② ③ ④ ⑤

① With magnet for auto switch

② Mounting

—	Through-hole (Standard)
A	Both ends tapped

④ Port thread type

—	M thread	Ø 12 to Ø 40
	Rc	
TN	NPT	Ø 50 to Ø 100
TF	G	

③ Bore size

12	12 mm	40	40 mm
16	16 mm	50	50 mm
20	20 mm	63	63 mm
25	25 mm	80	80 mm
32	32 mm	100	100 mm

⑤ Standard strokes

Bore size Ø [mm]	Standard stroke [mm]
12, 16	5, 10, 15, 20, 25, 30
20, 25	5, 10, 15, 20, 25, 30, 35, 40, 45, 50
50, 63, 80, 100	10, 15, 20, 25, 30, 35, 40, 45, 50

Specifications

Bore size Ø [mm]	12	16	20	25	32	40	50	63	80	100
Action	Double acting, single rod									
Fluid	Air									
Proof pressure	1.0 MPa									
Max. operating pressure	0.7 MPa									
Min. operating pressure	0.07 MPa		0.05 MPa							
Ambient and fluid temperature	5 to 60 °C									
Lubrication	Not required (Non-lube)									
Piston speed ²⁾	50 to 500 mm/s					50 to 300 mm/s ³⁾				
Cushion	Rubber bumper									
Allowable kinetic energy [J]	0.022	0.038	0.055	0.09	0.15	0.26	0.46	0.77	1.36	2.27
Rod end thread	Female thread									
Stroke length tolerance	+1.3 0 mm ¹⁾									

1) Stroke length tolerance does not include the deflection of the bumper.

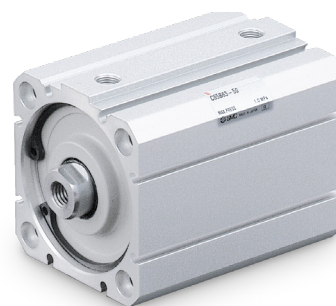
2) Depending on the system configuration selected, the specified speed may not be satisfied.

3) Maximum operating pressure and piston speed are different from the current product (CQ2 series).

Compact cylinder ISO standard (ISO 21287) C55 Series



ISO compact cylinder



Benefits

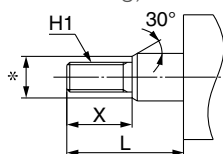
- **Get the qualified assistance you need** – Personalised and prompt advice from our experts
- **Put it to work the soonest** – Produced & Stocked in Europe
- **Let the cylinder adapt to your application** – Up to 30 rod end modifications available.

Main features

- Rubber bumper on both sides to reduce the impact on the cylinder body
- ISO 21287 compliant

Rod end modification

Short delivery times (European manufacturing)



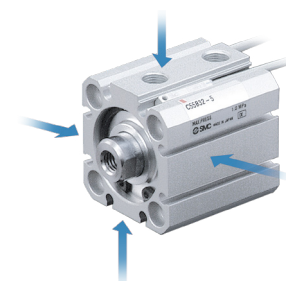
Tapped body with through holes for easy mounting

Piston rod

Made of stainless steel available (XC6).

With auto switch mounting option

- Auto switches can be mounted on 4 surfaces

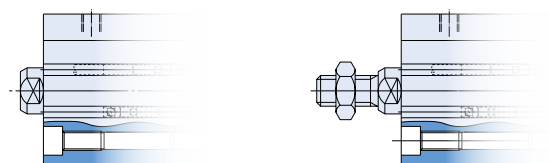


- T-slot type mounting groove available (-X1439)

- Bore sizes: Ø 20 to Ø 100
- Standard strokes from 5 to 150 mm
- Minimum operating pressure: 0.03 MPa
- Operating piston speed up to 500 mm/s

ATEX compliant version for explosive atmospheres




Female and male rod threads available



Speed controllers

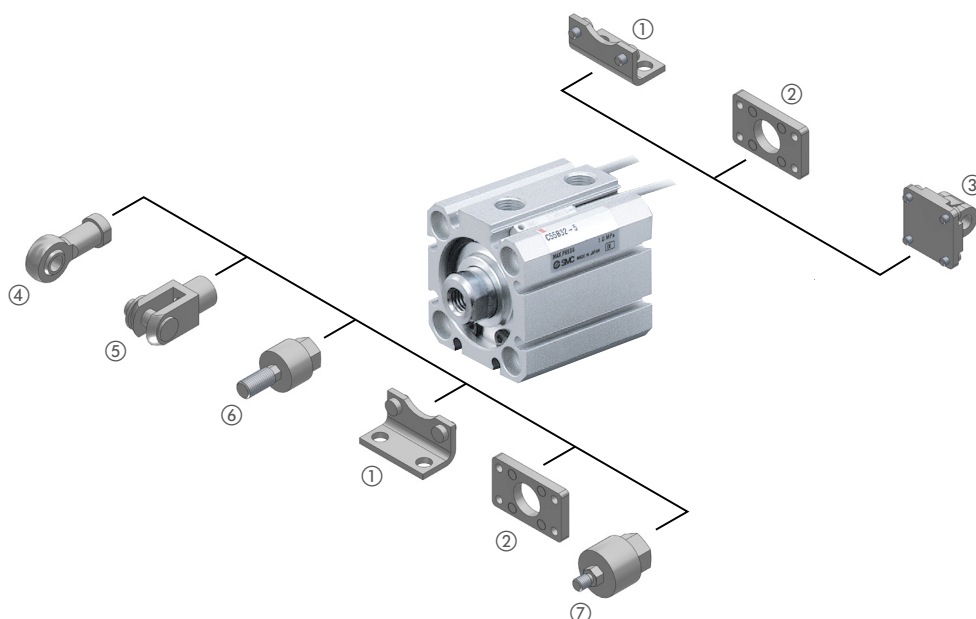
Bore size Ø [mm]	Port size	Ø tube	Speed controller with one touch fitting	Speed controller with indicator	Compact speed controller. Right side	Compact speed controller. Left side
						
20		4	AS1201F-M5-04A	AS1201FS-M5-04	JAS-LEA04-M5	JAS-LEB04-M5
25						
30						
40						
50		6	AS2201F-01-06SA	AS2201FS-01-06S	JAS-LEA06-01S	JAS-LEB06-M5
63						
80						
100						

Auto switches

Type	Auto switch with indicator light (3 m lead wire)	General purpose with 2 colour indication with (3 m lead wire)	General purpose auto switch with pre-wired connector (M8-3pin) and 0.5 m lead wire
			
3-wire solid state, PNP	D-M9PL	D-M9PWL	D-M9PSAPC
2-wire solid state	D-M9BL	D-M9BWL	D-M9BSAPC
Reed	D-A93L	—	D-A93SAPC

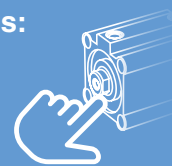
Mounting brackets

Bore size [mm]	① Foot	② Flange	③ Single clevis	④ Piston rod ball joint (ISO 8139)	⑤ Rod clevis (ISO 8140)	⑥ Floating joint for male thread	⑦ Floating joint for female thread
20	C55-L020	C55-F020	C55-C020	KJ8D	GKM8-16	JA20-8-125	JB25-6-100
25	C55-L025	C55-F025	C55-C025				
32	C55-L032	C55-F032	C55-C032				
40	C55-L040	C55-F040	C55-C040	KJ10D	GKM10-20	JA30-10-125	JB40-8-125
50	C55-L050	C55-F050	C55-C050	KJ12D	GKM12-24	JA40-12-125	JB63-10-150
63	C55-L063	C55-F063	C55-C063				
80	C55-L080	C55-F080	C55-C080	KJ16D	GKM16-32	JA50-16-150	—
100	C55-L100	C55-F100	C55-C100				—



How to order

Discover all C55 options:
c55.smc.eu



Without auto switch

C55 **B** **20** – **10** –

With auto switch

C **D** 55 **B** **20** – **10** –

① ② ③ ④ ⑤ ⑥

① With auto switch (Built in magnet)

② Mounting

B	Through-hole/Both ends tapped common (Standard)
L	Foot
F	Rod flange
G	Head flange
C	Single clevis

③ Bore size

20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm
63	63 mm
80	80 mm
100	100 mm

④ Standard strokes

Bore size Ø [mm]	Standard stroke [mm]
20 to 63	5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 80, 100, 125, 150
80, 100	10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 80, 100, 125

⑤ Rod end thread

—	Female rod end
M	Male rod end

1) A rubber bumper comes as standard.

⑥ Made to order

-XA□	Change of compact rod end shape
-XC6	Made of stainless steel(Rod, retaining ring and rod end nut made of stainless steel)
-X1439¹⁾	Auto switch mounting groove: T-slot type

1) Only available with bore size 20 to 63.

Specifications

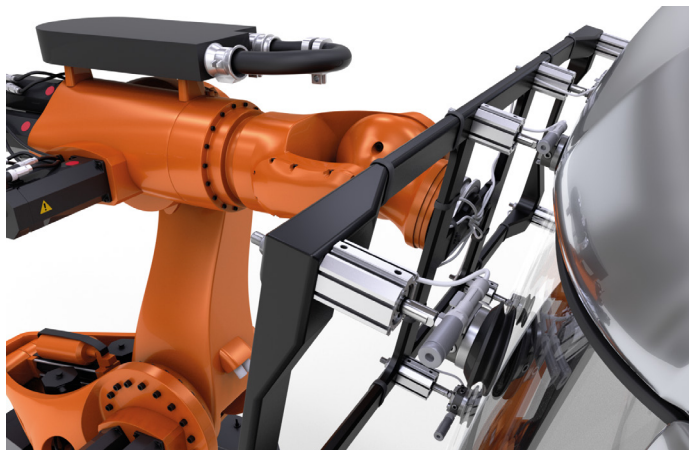
Type	Pneumatic (Non-lube)	
Action	Double acting, single rod	
Fluid	Air	
Proof pressure	1.5 MPa	
Max. operating pressure	1.0 MPa	
Min. operating pressure	0.05 MPa (Ø 20 to Ø 63), 0.03 MPa (Ø 80, Ø 100)	
Ambient and fluid temperature	Without auto switch: -10 to 70 °C (No freezing) With auto switch: -10 to 60 °C (No freezing)	
Cushion	Rubber bumper on both ends	
Stroke length tolerance¹⁾	+1,0 ⁰ mm	
Piston speed	Ø 20 to Ø 63	50 to 500 mm/s
	Ø 80, Ø 100	50 to 300 mm/s

1) Stroke length tolerance does not include the amount of bumper change.

Applications

Compact cylinders

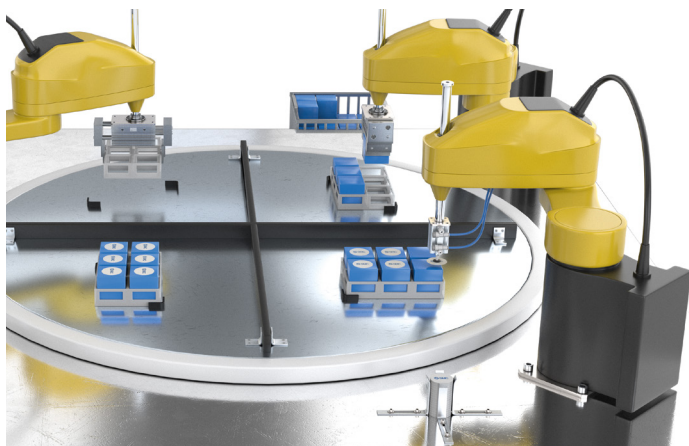
Suitable for robotics manipulation



Suitable for big movable tools

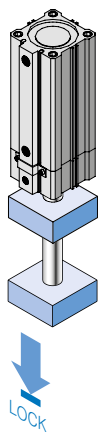


Suitable for precise movements

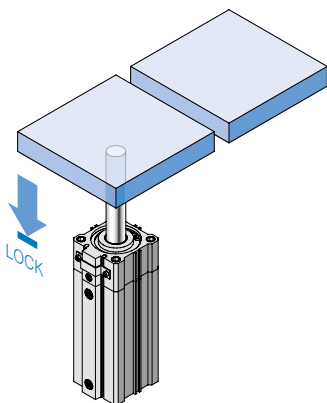


Compact cylinders with lock unit

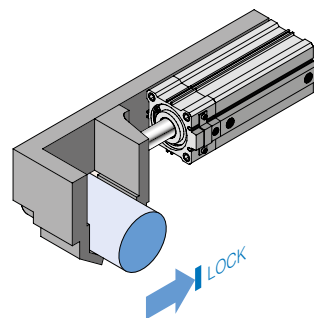
Drop prevention for press fitting jig, etc.
Extension locking



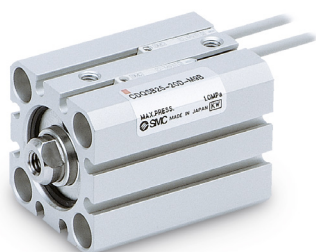
Drop prevention for lifter.
Retraction locking



Holding a clamped condition
Retraction locking



Related products



Compact cylinder



CQS Series

- Bore sizes: Ø 12 to Ø 25 mm
- Square-section body style ensures full flexibility in design projects
- Through-hole/Both ends tapped common (Standard)
- A wide variety of mounting options is available.



Compact cylinder guide rod type



CQM Series

- Bore sizes: Ø 12 to Ø 100 mm
- High lateral Load Resisting 2 ~ 4 times standard compact cylinder
- Non-rotating accuracy $\pm 0.2^\circ$ or less
- Load can be directly mounted.

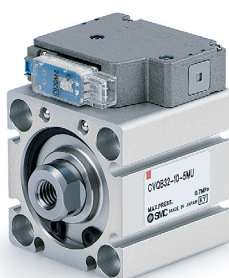


Low friction compact cylinder



MQQ Series

- Bore sizes: Ø 10 to Ø 40 mm
- Low and uniform speed actuation as low as 0.3 mm/s
- High lateral load resistance
- Long service life of 100 million cycles.



Compact cylinder with solenoid valve



CVQ Series

- Bore sizes: Ø 32 to Ø 63 mm
- Labour saving
- Energy saving, low air consumption
- Space saving
- Selectable piping direction.



Hygienic design compact cylinder



HYQ Series

- Bore sizes: Ø 20 to Ø 63 mm
- Wash down compatible due to its streamlined design
- Resilient body and seal materials ensure long service life
- Many mounting options available.



Free mount cylinder

 CU/CUK Series

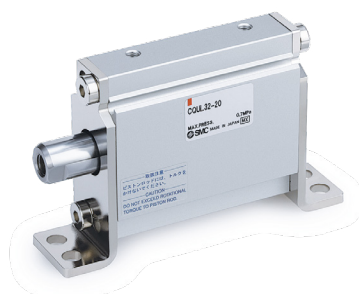
- Bore sizes: Ø 6 to Ø 32
- Strokes up to 100 mm
- Multiple surfaces capable of direct mounting.



Mini free mount cylinder

 CUJ Series

- Bore sizes: Ø 4 to Ø 10 mm
- Significantly reduced dimensions compared to Series CU
- ~64 % reduced overall length
- ~70 % reduced volume
- Simple maintenance, since piston rod cover is removable.




Compact cylinder

 CQU Series

- From Ø 20 to Ø 40
- High width reduction rate compared with standard compact cylinders
- Multiple mounting options available.



Compact cylinder

 MU Series

- Bore sizes: Ø 25 to Ø 63
- High width reduction rate compared with standard compact cylinders
- Available with a stroke up to 300 mm
- Multiple mounting options available.



Expertise – Passion – Automation

SMC Corporation

Akihabara UDX 15F, 4-14-1
Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249
Fax: 03-5298-5362

Austria	+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	+32 (0)33551464	www.smc.be	info@smc.be
Bulgaria	+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smc.dk.com	smc@smc.dk.com
Estonia	+372 6510370	www.smc.ee	smc@smc.ee
Finland	+358 207513513	www.smc.fi	smc@smc.fi
France	+33 (0)164761000	www.smc-france.fr	info@smc-france.fr
Germany	+49 (0)61034020	www.smc.de	info@smc.de
Greece	+30 210 2717265	www.smc.gr	sales@smc.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smc.ie	sales@smc.ie
Italy	+39 03990691	www.smc.it	mailbox@smc.it
Latvia	+371 67817700	www.smc.lv	info@smc.lv

Lithuania	+370 5 2308118	www.smc.lt	info@smc.lt
Netherlands	+31 (0)205318888	www.smc.nl	info@smc.nl
Norway	+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	+48 222119600	www.smc.pl	office@smc.pl
Portugal	+351 214724500	www.smc.eu	apoiocliente@smc.smces.es
Romania	+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	+7 8123036600	www.smc.eu	sales@smc.ru
Slovakia	+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	+386 (0)73885412	www.smc.si	office@smc.si
Spain	+34 945184100	www.smc.eu	post@smc.smces.es
Sweden	+46 (0)86031200	www.smc.se	smc@smc.se
Switzerland	+41 (0)523963131	www.smc.ch	helpcenter@smc.ch
Turkey	+90 212 489 0 440	www.smcpnomatik.com.tr	info@smcpnomatik.com.tr
UK	+44 (0)845 121 5122	www.smc.uk	sales@smc.uk