High Speed / High Frequency Cylinder

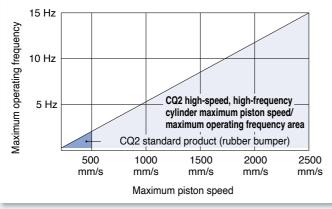
Ø 20, Ø 25, Ø 32

Maximum piston speed:

2500 mm/s (→ Refer to page 9.)

Maximum operating frequency:

15 Hz (→ Refer to page 9.)



(CQ2: Based on SMC's recommended circuit conditions when the stroke is 5 mm)

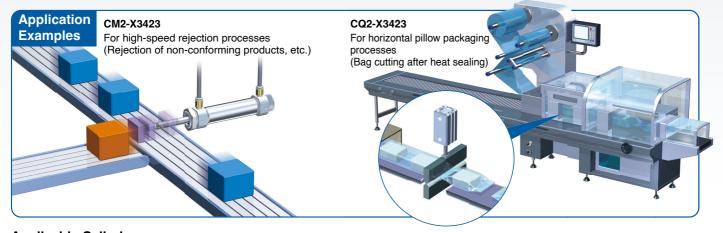
Kinetic energy:

1.5 times (Compared with the standard product)

- · Reduced impact due to revision of cushion structure
- · Reduced weight of moving parts (piston rod, piston, etc.)



RoHS



Applicable Cylinder

Applicable Cylinaci										
Series	Maximum	Maximum operating	Bor	e size [r	nm]	Cushion	Stroke	Mounting bracket	Auto switch	
Series	piston speed	frequency	20	25	32	Cusmon	[mm]	Mounting bracket	Auto Switch	
CM2-X3423	2500 mm/s	12 Hz (at 25 mm stroke)	•	•	•	Rubber	25 to 100	Basic Foot bracket Flange	D-M9□ D-F7NJ	
CQ2-X3423		15 Hz (at 5 mm stroke)	•	•	•	nubbei	5 to 50	Basic Foot bracket Compact foot bracket Flange	D-M9□	

CM2/CQ2-X3423



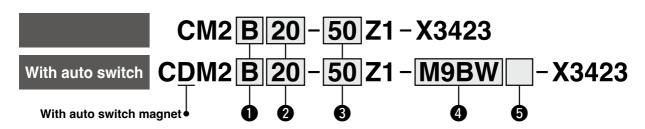
High Speed / High Frequency Cylinder

CM2-X3423

Ø 20, Ø 25, Ø 32



How to Order



Mounting

В	Basic (Double-side bossed)
L	Axial foot bracket
F	Rod flange
G	Head flange

2 Bore size

20	20 mm
25	25 mm
32	32 mm

3 Cylinder stroke

Bore size	Standard stroke [mm]							
20, 25, 32	25, 50, 75, 100							

4 Auto switch

* Solid state auto switches marked with a "O" are produced upon receipt of

_	Without auto switch								
For a	annlicable auto switches								

refer to the table below.

The rail can only be mounted on the right side when viewed from the piston rod side. (Refer to page 16 for details.)

5 Number of auto switches

_	2
S	1
n	n

Applicable Auto Switches / Refer to the catalogue on www.smc.eu for further information on auto switches.

_	<u></u>																
		Electrical	igh	VA Contractor	Load voltage			Auto swit	Lead	d wir	e ler	ngth	[m]	Due suine d			
Type Special function	Electrical entry	Indicator light	Wiring (Output)	D	С	AC	Perpendicular	In-line	0.5 (—)	1 (M)	3 (L)	5 (Z)	None	Pre-wired connector	Applicable load		
anto		Grommet		3-wire (NPN)		5 V,	5 V,	M9NV	M9N	•	•	•	0	_	0	IC	
				3-wire (PNP)	12 V		M9PV	M9P	•	•	•	0	_	0	circuit		
e	<u>,</u>			2-wire		12 V	V	M9BV	M9B	•	•	•	0	-	0	_	Dalan
state	Niagnostic indication		Grommet	Yes	3-wire (NPN)	24 V	5 V, -	_	M9NWV	M9NW	•	•	•	0	_	0	IC
Diagnostic indication (2-colour indicator)	I 3-WIFE (PNI	3-wire (PNP)		12 V		M9PWV	M9PW	•	•	•	0	_	0	circuit	1 20		
	(2 colour maleator)			2-wire		12 V		M9BWV	M9BW	•	•	•	0	_	0	_	-
	Heat resistant (2-colour indicator)			3-wire (NPN)		_		_	F7NJ	_	_			_	_	_	

order.

- * Lead wire length symbols: 0.5 m······ (Example) M9N 1 m···· M (Example) M9NM
 - 3 m······ L (Example) M9NL
 - 5 m······ Z (Example) M9NZ
- * Auto switch mounting method is rail mounting.
- * Screws and nuts for 2 auto switches come with the rail.
- * The auto switches and auto switch mounting brackets are packed together (not assembled).
- * Use D-F7NJ heat-resistant auto switches when continuously operating at high speed/high frequency for long periods of time.





Symbol

Double acting, Single rod



Specifications

Bore size [mm]	20	25	32					
Action	Double acting, Single rod							
Fluid	Air							
Proof pressure		1.0 MPa						
Max. operating pressure	0.7 MPa							
Min. operating pressure	0.05 MPa							
Ambient and fluid temperatures	-10 to 40 °C (No freezing)							
Lubrication	١	Not required (Non-lube	e)					
Piston speed		750 to 2500 mm/s						
Cushion		Rubber bumper						
Rod end thread	Male thread							
Allowable kinetic energy [J]	0.41 0.6 0.9							
Stroke length tolerance	0 to +1.4 mm*1							

^{*1} Stroke length tolerance does not include the amount of bumper change.

Mounting Brackets/Part Nos.

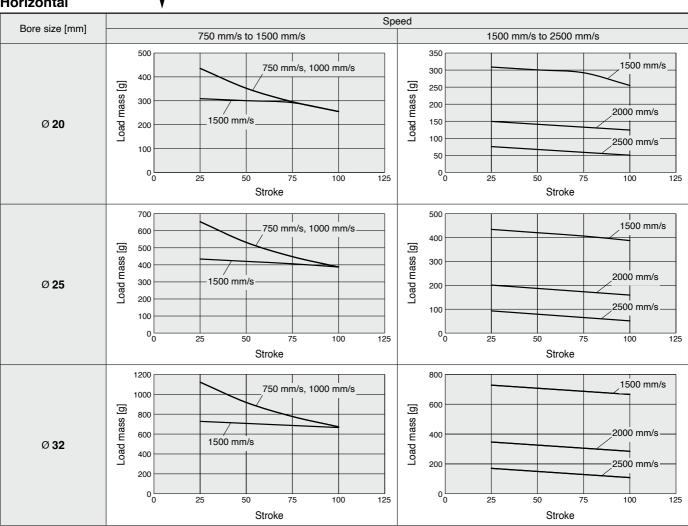
Mounting	Min. order		Bore size [mm]							
bracket	quantity	20	(for min. order quantity)							
Foot bracket	2	CM-L020B	CM-L	2 foot brackets, 1 mounting nut						
Foot bracket	1	CMZ1-L020B	CMZ1-	1 foot bracket						
Flange	1	CM-F020B	CM-F	1 flange						

- * Order two foot brackets per cylinder.
- * A single foot is available.

CM2-X3423

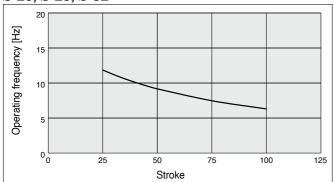
Allowable Lateral Load at Rod End





Operating Frequency (Guide)

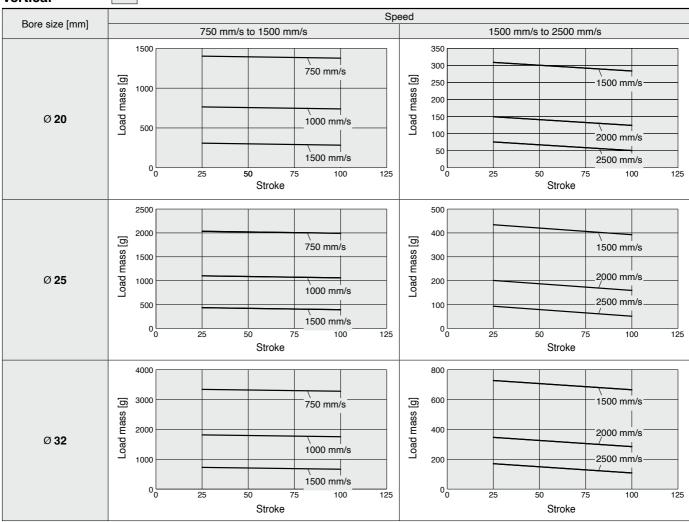
Ø 20, Ø 25, Ø 32



Allowable Lateral Load at Rod End

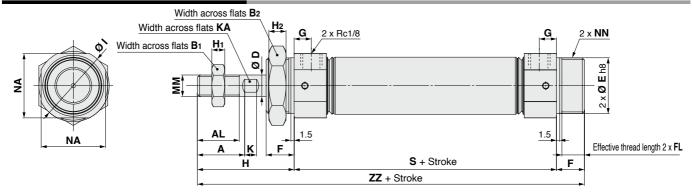
Mounting orientation: Vertical





CM2-X3423

Dimensions: Mounting Brackets

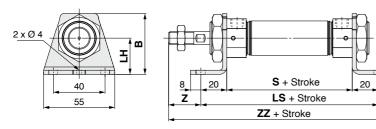


Bore size	Standard stroke	Α	AL	B ₁	B ₂	D	E	F	FL	G	н	H ₁	H ₂	ı	K	KA	ММ	NA	NN	s	ZZ
20	05 50	18	15.5	13	26	8	20_0.033	13	10.5	8	41	5	8	28	5	6	M8 x 1.25	24	M20 x 1.5	77	131
25	25, 50, 75, 100	22	19.5	17	32	10	26_0.033	13	10.5	8	45	6	8	33.5	5.5	8	M10 x 1.25	30	M26 x 1.5	82	140
32	73, 100	22	19.5	17	32	12	26_0.033	13	10.5	8	45	6	8	37.5	5.5	10	M10 x 1.25	34.5	M26 x 1.5	84	142

4 x Ø 6.8

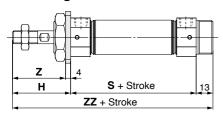
8

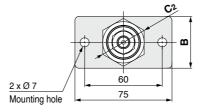
Foot bracket



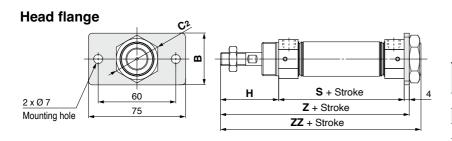
						[mm]
Bore size	В	LH	LS	s	Z	ZZ
20	40	25	117	77	21	146
25	47	28	122	82	25	155
32	47	28	124	84	25	157

Rod flange





						[mm]
Bore size	В	C2	Н	s	Z	ZZ
20	34	30	41	77	37	131
25	40	37	45	82	41	140
32	40	37	45	84	41	142



	[ווווו]										
Bore size	В	C2	Н	s	Z	ZZ					
20	34	30	41	77	122	131					
25	40	37	45	82	131	140					
32	40	37	45	84	133	142					



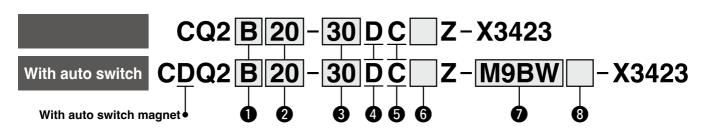
High Speed / High Frequency Cylinder

Q2-X3423

Ø 20, Ø 25, Ø 32



How to Order



Mounting

В	Through-hole/Both ends tapped common (Standard)
L	Foot bracket
LC	Compact foot bracket
F	Rod flange
G	Head flange

2 Bore size

20	20 mm
25	25 mm
32	32 mm

3 Cylinder stroke

Bore size	Standard stroke [mm]
20, 25, 32	5, 10, 15, 20, 25, 30, 35, 40, 45, 50

4 Action

D	Double acting

5 Cushion

С	Rubber bumper

6 Body option

_	Standard (Rod end female thread)
М	Rod end male thread

Auto switch

П	_	Williout auto Switch
*	For a	pplicable auto switches
	rofor t	n the table below

8 Number of auto switches

_	2
S	1
n	n

Applicable Auto Switches / Refer to the catalogue on www.smc.eu for further information on auto switches.

			light		Lo	ad volt	age	Auto swit	ch model	Lead	wire	lenç	gth [n	n]* ²										
Type	Special function	Electrical entry	Indicator	Wiring (Output)		(Output)	D	С	AC	Perpendicular	In-line	0.5 (—)	1 (M)	3 (L)	5 (Z)	None (N)	Pre-wired connector	Applical	ble load					
0				3-wire (NPN)		5 V,		M9NV	M9N	•	•	•	0	_	0	IC								
anto				3-wire (PNP)		12 V		M9PV	M9P	•	•	•	0	_	0	circuit								
tg 달		Crammat	Yes	2-wire	04.7/	24.1/	24 V	24.1/	24.17	24.1/	24.17	24.17	12 V		M9BV	M9B	•	•	•	0	_	0	_	Relay,
state a	5	Grommet	res	3-wire (NPN)	24 V	5 V,	_	M9NWV	M9NW	•	•	•	0	_	0	IC	PLC							
Solid	Diagnostic indication (2-colour indicator)			3-wire (PNP)		12 V		M9PWV	M9PW	•	•	•	0	_	0	circuit								
Ň	(2-colour indicator)			2-wire		12 V		M9BWV	M9BW	•	•	•	0	_	0	_								

- * Lead wire length symbols: 0.5 m····· (Example) M9NW
 - 1 m······ M (Example) M9NWM

 - 3 m······ L (Example) M9NWL 5 m···· Z (Example) M9NWZ
- * Solid state auto switches marked with a "O" are produced upon receipt of order.



Symbol

Double acting, Single rod



Specifications

Bore size [mm]	20	25	32			
Action	D	ouble acting, Single ro	od			
Fluid		Air				
Proof pressure		1.0 MPa				
Max. operating pressure		0.7 MPa				
Min. operating pressure	0.05 MPa					
Ambient and fluid temperatures	-10 to 40 °C (No freezing)					
Lubrication	Not required (Non-lube)					
Piston speed	500 to 2500 mm/s					
Cushion	Rubber bumper					
Allowable kinetic energy [J]	0.16 0.27 0.43					
Stroke length tolerance	0 to +1.0 mm*1					

^{*1} Stroke length tolerance does not include the amount of bumper change.

Mounting Brackets/Part Nos.

Bore size [mm]	Foot bracket*1	Compact foot bracket*1	Flange
20	CQ-L020-X3423	CQ-LC020-X3423	CQS-F020
25	CQ-L025-X3423	CQ-LC025-X3423	CQS-F025
32	CQ-L032-X3423	CQ-LC032-X3423	CQS-F032-X3423

^{*1} When ordering foot and compact foot brackets, order 2 pieces per cylinder.



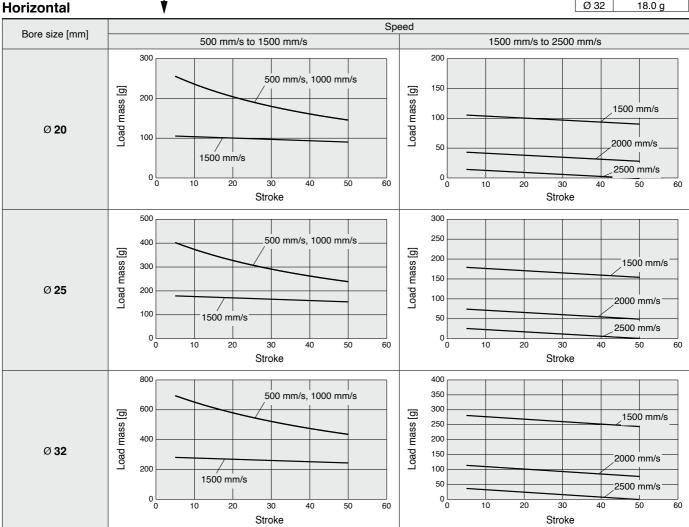
^{*} Parts included with each type of bracket are as follows. Foot, Compact foot, Flange: Body mounting bolts

Allowable Lateral Load at Rod End

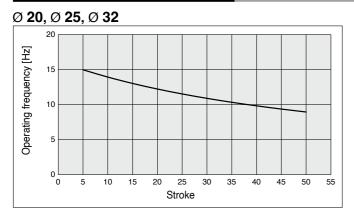
Mounting orientation:

* When selecting the rod end male thread type, subtract the moving parts additional mass (table on the right) from the load mass (tables below) to find the load mass.

Male Thread Type Additional Mass									
Bore	Moving parts additional mass								
Ø 20	4.5 g								
Ø 25	10.0 g								
Ø 32	18 O a								



Operating Frequency (Guide)



Allowable Lateral Load at Rod End

Mounting orientation:

* When selecting the rod end male thread type, subtract the moving parts additional mass (table on the right) from the load mass (tables below) to find the load mass.

Male Thread Type Additional Ma											
Bore	Moving parts additional mass										
Ø 20	4.5 g										
Ø 25	10.0 g										
Ø 32	18 O a										

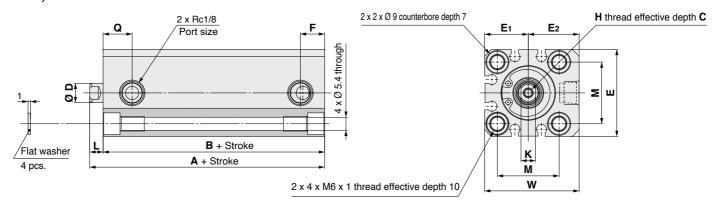
Vertical		Ø 32 18.0 g
Para siza [mm]	Sp	peed
Bore size [mm]	500 mm/s to 1500 mm/s	1000 mm/s to 2500 mm/s
Ø 20	2000 500 mm/s 1000 mm/s 1000 mm/s 1000 mm/s 1500 mm/s 1500 mm/s 1500 mm/s Stroke	200
Ø 25	3000 2500 2000	300 250 250 88 B 150 100 100 2000 mm/s 2500 mm/s 0 10 20 30 40 50 60 Stroke
Ø 32	5000 4000 500 mm/s 500 mm/s 2000 1000 1000 1500 mm/s 1500 mm/s 500 60 Stroke	500 400 400 500 400 400 400 500 400 4

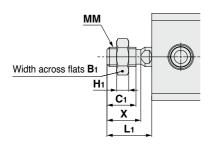


CQ2-X3423

Dimensions

Ø 20, Ø 25

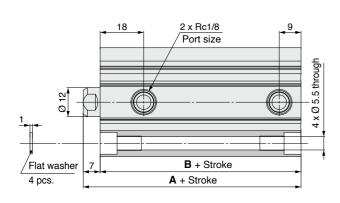


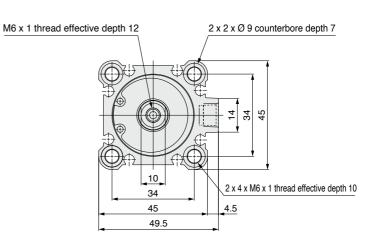


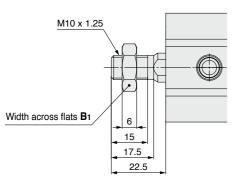
															[mm]
	Bore	Stroke	Without	auto swite	h With	With auto switch			_	Е	E ₁	E			Н
	size	range	Α	В	-	4	В	C	CD		E1		2 [П
	20	5 to 50	50.5	46	60).5	56	8	8	36	18	21	10	M4	x 0.7
	25	5 10 50	54	49	64	ŀ	59	7	10 40		20	23.	5 10	M5 x 0.8	
٠											_				
	Bore size	Stroke	K	L	М	Q	W	Bı	С	1 F	1 1	L ₁	MN	1	X

Bore size	Stroke range	- K L		М	Q	w	B ₁	C ₁	Hı	Lı	ММ	x
20	5 to 50		4.5	25.5	12	39	13	12	5	18.5	M8 x 1.25	14
25	5 10 50	8	5	28	11	43.5	17	15	6	22.5	M10 x 1.25	17.5

Ø 32





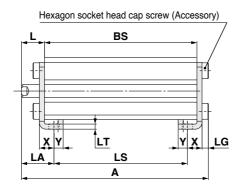


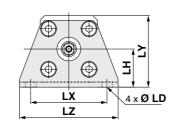
					[mm]
Bore	Stroke	Without a	uto switch	With aut	o switch
size	range	Α	В	Α	В
32	5 to 50	60	53	70	63



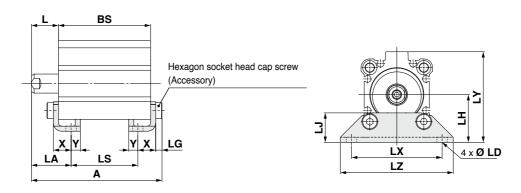
Dimensions: Mounting, Foot Bracket

Ø **20**, Ø **25**





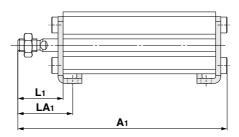
Ø 32



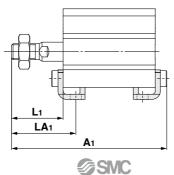
<u> </u>																		
Bore size	Part no.	Α	A 1	L	L ₁	LA	LA ₁	LD	LG	LH	LJ	LS	LT	LX	LY	LZ	Х	Υ
20	CQ-L020-X3423	BS + 21.7	BS + 35.7	14.5	28.5	20.5	34.5	6.6	4	24	_	BS-12	3.2	48	45	62	9.2	5.8
25	CQ-L025-X3423	BS + 22.2	BS + 39.7	15	32.5	22.5	40	6.6	4	26	_	BS-15	3.2	52	49.5	66	10.7	5.8
32	CQ-L032-X3423	BS + 24.2	BS + 39.7	17	32.5	25	40.5	6.6	4	30	18.5	BS-16	3.2	57	57	71	11.2	5.8

Rod end male thread

Ø 20, Ø 25





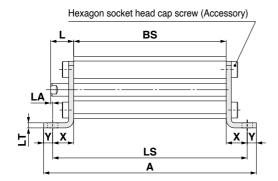


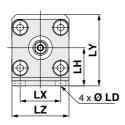
			[mm]
Bore size	A 1	L ₁	LA ₁
20	BS + 35.7	28.5	34.5
25	BS + 39.7	32.5	40
32	BS + 39.7	32.5	40.5

CQ2-X3423

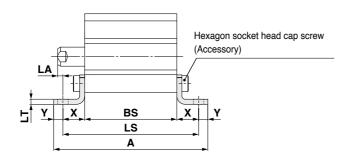
Dimensions: Mounting, Compact Foot Bracket

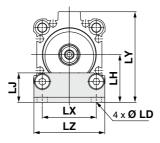
Ø **20**, Ø **25**





Ø 32

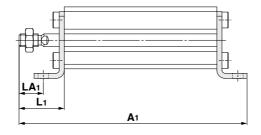


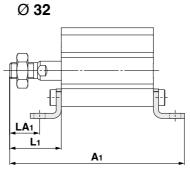


			<u> </u>											[mmm]			
Bore size	Part no.	Α	A 1	L	L ₁	LA	LA ₁	LD	LH	LJ	LS	LT	LX	LY	LZ	Х	Υ
20	CQ-LC020-X3423	BS + 38	BS + 47.5	14.5	28.5	1.3	15.3	6.6	24	_	BS + 26.4	3.2	25.5	42	36	13.2	5.8
25	CQ-LC025-X3423	BS + 38	BS + 51.5	15	32.5	1.8	19.3	6.6	26	_	BS + 26.4	3.2	28	46	40	13.2	5.8
32	CQ-LC032-X3423	BS + 39	BS + 52	17	32.5	3.3	18.8	6.6	30	18.5	BS + 27.4	3.2	34	57	45	13.7	5.8

Rod end male thread





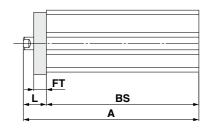


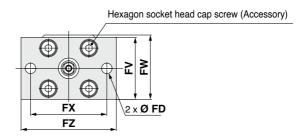
			[mm]
Bore size	A 1	L ₁	LA ₁
20	BS + 47.5	28.5	15.3
25	BS + 51.5	32.5	19.3
32	BS + 52	32.5	18.8



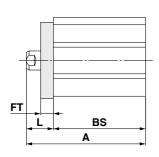
Dimensions: Mounting, Rod Flange

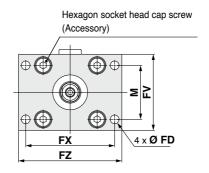
Ø 20, Ø 25





Ø 32



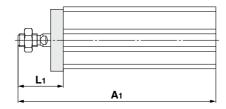


*	BS indicates the overall length	of the cylinder tube to be used.
~	Do indicates the overall length	of the cylinder tube to be used.

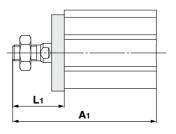
								[mm]								
	Bore size	Part no.	Α	A 1	A 2	Аз	FD	FT	FV	FX	FZ	L	L ₁	L2	Lз	M
	20	CQS-F020	BS + 14.5	BS + 28.5	BS + 12.5	BS + 26.5	6.6	8	39	48	60	14.5	28.5	4.5	18.5	_
	25	CQS-F025	BS + 15	BS + 32.5	BS + 13	BS + 30.5	6.6	8	42	52	64	15	32.5	5	22.5	_
	32	CQ-F032-X3423	BS + 17	BS + 32.5	BS + 15	BS + 30.5	5.5	8	48	56	65	17	32.5	7	22.5	34

Rod end male thread

Ø 20, Ø 25



Ø 32



		[mm]
Bore size	A1	L1
20	BS + 28.5	28.5
25	BS + 32.5	32.5
32	BS + 32.5	32.5

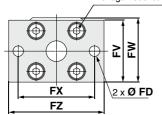


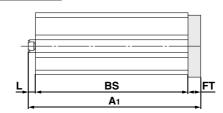
CQ2-X3423

Dimensions: Mounting, Head Flange

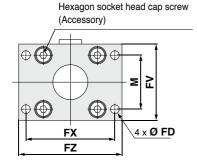
Ø 20, Ø 25

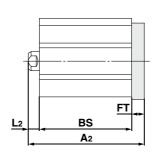
Hexagon socket head cap screw (Accessory)





Ø 32





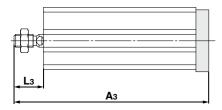
 $\ast\,$ BS indicates the overall length of the cylinder tube to be used.

[mm]

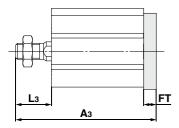
Bore size	Part no.	Α	A 1	A 2	Аз	FD	FT	F۷	FX	FZ	L	L ₁	L2	Lз	M
20	CQS-F020	BS + 14.5	BS + 28.5	BS + 12.5	BS + 26.5	6.6	8	39	48	60	14.5	28.5	4.5	18.5	_
25	CQS-F025	BS + 15	BS + 32.5	BS + 13	BS + 30.5	6.6	8	42	52	64	15	32.5	5	22.5	_
32	CQ-F032-X3423	BS + 17	BS + 32.5	BS + 15	BS + 30.5	5.5	8	48	56	65	17	32.5	7	22.5	34

Rod end male thread

Ø 20, Ø 25



Ø 32



		[mmj
Bore size	A3	L3
20	BS + 26.5	18.5
25	BS + 30.5	22.5
32	BS + 30.5	22.5

Rod End Nut





					[111111]
Bore size	Part no.	d	Н	В	С
20	NT-02	M8 x 1.25	5	13	15.0
25, 32	NT-03	M10 x 1.25	6	17	19.6



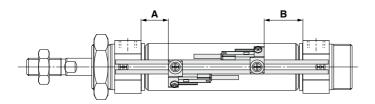
CM2-X3423

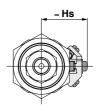
Auto Switch Mounting



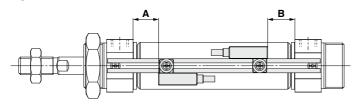
Auto Switch Proper Mounting Position (Detection at stroke end) and Mounting Height

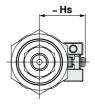
D-M9□(**V**), **D-M9**□**W**(**V**)





D-F7NJ





						[mm]	
			Auto swit	ch model			
Bore size	D-M9□(V) D-M9□W(V)			D-F7NJ			
	Α	В	Hs	Α	В	Hs	
20	13.5	16.5	23.5	12.5	15.5	23.5	
25	15.5	22	26.5	14.5	21	26.5	
32	16	23.5	30	15	22.5	30	

Minimum Stroke for Auto Switch Mounting

n: Number of auto switches [mm]

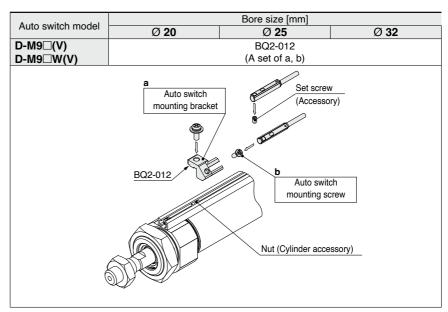
Auto switch model	Number of auto switches					
Auto Switch model	With 1 pc.	With 2 pcs.	With n pcs.			
D-M9□(V) D-M9□W(V)	25	25	10 + 15 (n - 2) (n = 4, 6···)			
D-F7NJ	25	25	15 + 20 (n - 2) (n = 4, 6···)			

Operating Range

			[mm]			
Auto autitale mandal	Bore size					
Auto switch model	20	25	32			
D-M9□(V) D-M9□W(V)	3	3.5	4			

* Values which include hysteresis are for reference purposes only. They are not a guarantee (assuming approximately ±30 % dispersion) and may change substantially depending on the ambient environment.

Auto Switch Mounting Brackets/Part Nos.



 When adding a D-M9□(W)(V), order BQ-1 and BQ2-012 auto switch mounting brackets separately.

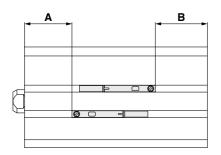
When adding a D-F7NJ, order a BQ-1 auto switch mounting bracket separately.

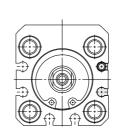
CDQ2-X3423

Auto Switch Mounting



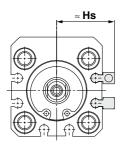
Auto Switch Proper Mounting Position * Adjust the auto switch after confirming the operating conditions in the actual setting.





	[mm]
D-M9 D-M9	
Α	В
23.0	21.0
24.5	22.5
28.5	22.5
	D-M9 □ A 23.0 24.5

Auto Switch Mounting Height * Adjust the auto switch after confirming the operating conditions in the actual setting.



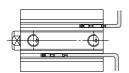
Auto Switch Mounting Height					
Auto switch	D-1013 U				
model	D-M9□WV				
Bore size	Hs				
20	24.5				
25	26.5				
32	32.5				

Minimum Stroke for Auto Switch Mounting * Adjust the auto switch after confirming the operating conditions in the actual setting.

Applicable Cylinder Series: CDQ2

Applicable Cylinder Series: CBQ2							
Number of auto switches	D-M9□(V)	D-M9□W(V)					
With 1 pc.	5	5					
With 2 pcs.	5	10					

* The dimension stated in () shows the minimum stroke for the auto switch mounting when the auto switch does not project from the end surface of the cylinder body and hinder the lead wire bending space. (Refer to the figure below.) The auto switch and auto switch mounting bracket are ordered separately.



Operating Range			[mm]
Auto switch model	Bore size		
	20	25	32
D-M9□(V) D-M9□W(V)	3	3.5	4

Values which include hysteresis are for reference purposes only. They
are not a guarantee (assuming approximately ±30 % dispersion) and
may change substantially depending on the ambient environment.





CM2/CQ2-X3423 Specific Product Precautions

Be sure to read this before handling the products. Refer to the back cover for safety instructions. For actuator and auto switch precautions, refer to "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website: https://www.smc.eu

Precautions

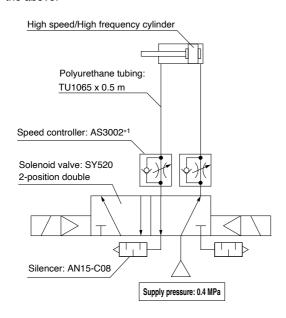
.∱Warning

 The surface of the cylinder tube may become hot when continuously operated at high speed/high frequency for long periods of time. Therefore, refrain from touching the tube with bare hands.

The surface of the cylinder tube may become hot depending on the pneumatic circuit, operating conditions, and surrounding environment.

Pay attention not to touch it because doing so can cause burns.

* We recommend the following circuit as a measure against the above.



*1 As a measure against cylinder heat generation, install the speed controller as close to the solenoid valve as possible.

⚠Caution

- High-speed, high-frequency operation may not be possible depending on the pneumatic circuit. (Solenoid valves, silencers, piping, fittings, speed controllers, etc.)
- 2. With high-speed operation, there is a larger impact at the end of the stroke.
 - Adjust the operating speed and load mass, and use within the allowable kinetic energy range.



These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) 1), and other safety regulations.

♠ Danger:

Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious

Marning:

Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious

Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate 1) ISO 4414: Pneumatic fluid power - General rules and safety requirements for systems and their components.

ISO 4413: Hydraulic fluid power - General rules and safety requirements for systems and their components.

IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)

ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots.

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

- 3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
 - 1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
 - 2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
 - 3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
- 4. Our products cannot be used beyond their specifications. Our products are not developed, designed, and manufactured to be used under the following conditions or environments. Use under such conditions or environments is not covered.
 - 1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
 - 2. Use for nuclear power, railways, aviation, space equipment, ships, vehicles, military application, equipment affecting human life, body, and property, fuel equipment, entertainment equipment, emergency shut-off circuits, press clutches, brake circuits, safety equipment, etc., and use for applications that do not conform to standard specifications such as catalogues and operation manuals.
 - 3. Use for interlock circuits, except for use with double interlock such as installing a mechanical protection function in case of failure. Please periodically inspect the product to confirm that the product is operating properly.

We develop, design, and manufacture our products to be used for automatic control equipment, and provide them for peaceful use in manufacturing industries. Use in non-manufacturing industries is not covered.

Products we manufacture and sell cannot be used for the purpose of transactions or certification specified in the

Measurement Act. The new Measurement Act prohibits use of any unit other than SI units in Japan.

Limited warranty and **Disclaimer/Compliance** Requirements

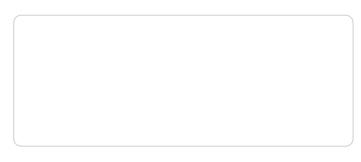
The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements". Read and accept them before using the product.

Limited warranty and Disclaimer

- 1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. 2) Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales
- 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
- 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty. A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited

Compliance Requirements

- 1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
- 2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed



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