

Compact Cylinder/Guide Rod Type

Series CQM

ø12, ø16, ø20, ø25, ø32, ø40, ø50

How to Order

Without auto switch

CQM B 20 10

With auto switch

CDQM B 20 10 M9B S

With auto switch

Mounting

B	Through-hole (standard)
A	Both end tapped (ø32 to ø50)

Note 1) Cylinder bodies of ø12 to ø25 are common for both B (through hole) and A (both end tapped) types. Symbol to order is unified to "B" for those sizes.

Note 2) Contact SMC for the other mounting types.

Bore size

12	12 mm
16	16 mm
20	20 mm
25	25 mm
32	32 mm
40	40 mm
50	50 mm

Port thread/Mounting thread type

Symbol	Port thread	Mounting thread	Bore size
Nil	M thread	M thread	ø12 to ø25
	Rc		
TN	NPT		ø32 to ø50
TF	G		
NN	M thread	Inch thread	ø12 to ø25
	NPT		ø32 to ø50

Note 3) M thread to be used for without auto switch type of ø32, 5 stroke exceptionally.

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Auto switch type

Nil	Without auto switch (Built-in magnet cylinder)
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* Refer to the table below for auto switch model numbers.

* Auto switches are packed together when shipped (unassembled). (Except for D-P5DWL)

Cylinder stroke (mm)

Refer to the next page for standard and intermediate strokes.

Applicable auto switches/Refer to page 5.3-2 to 5.3-75 of Best Pneumatics vol. 2 for detailed auto switch specifications.

Type	Special function	Electrical entry	Indicator light	Wiring (output)	Load voltage			Rail mounting		Direct mounting		Lead wire length (m)*				Applicable load		
					DC	AC	ø32 to ø50		ø12 to ø50		0.5 (Nil)	3 (L)	5 (Z)	None (N)				
							Perpendicular	In-line	Perpendicular	In-line								
Reed switch	—	Grommet	Yes	3-wire (NPN equiv.)	—	5 V	—	—	A76H	A96V	A96	●	●	—	—	IC circuit	Relay, PLC	
				2-wire	24 V	—	200 V	A72	A72H	—	—	●	●	—	—	—		
			12 V					A73	A73H	—	—	●	●	●	—	—		
			5 V, 12 V			A80	A80H	A90V	A90	●	●	—	—	—				
		12 V	—			—	A93V	A93	●	●	—	—	—					
		Connector	No			12 V	A73C	—	—	—	●	●	●	●	—	—		—
	5 V, 12 V					A80C	—	—	—	●	●	●	●	—	—	IC circuit		
	Diagnostic indication (2-color display)	Grommet	Yes	—	—	A79W	—	—	—	●	●	—	—	—				
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	F7NV	F79	F9NV	M9N	●	●	○	—	IC circuit	Relay, PLC	
				3-wire (PNP)				F7PV	F7P	F9PV	M9P	●	●	○	—			
		Connector	2-wire	12 V				F7BV	J79	F9BV	M9B	●	●	○	—			—
			J79C	—				—	—	●	●	●	●	—	—			
	Diagnostic indication (2-color display)	Grommet	Yes	3-wire (NPN)		5 V, 12 V	F7N WV	F79W	F9N WV	F9N W	●	●	○	—	IC circuit			
				3-wire (PNP)			—	F7P W	F9P WV	F9P W	●	●	○	—				
				2-wire			12 V	F7B WV	J79W	F9B WV	F9B W	●	●	○		—		
							—	F7B A	—	F9B A	—	●	○	—				
						Water resistant (2-color display)	5 V, 12 V	F7B AV	—	—	—	—	●	○	—	—		
							—	P5D W	—	—	—	●	●	—	—			
				Magnetic field resistant (2-color display)			—	—	—	—	—	●	●	—	—			
							—	—	—	—	—	—	—	—	—			

* Lead wire length symbols: 0.5 m..... Nil (Example) A73C
 3 m..... L A73CL
 5 m..... Z A73CZ
 None..... N A73CN

* Solid state switches marked with a "○" symbol are produced upon receipt of order.

- In addition to the models in the above table, there are some other auto switches that are applicable. For more information, please refer to page 10.
- D-P5DWL type: ø40 and ø50 only available.

Order made specifications → Contact SMC.

- -50 Without indicator light
- -61 Flexible lead wire
- Pre-wire connector

Compact Cylinder/Guide Rod Type **Series CQM**



⚠ Caution

This product should not be used as a stopper.

Specifications

Model	Pneumatic (non-lube) type	
Action	Double acting single rod	
Fluid	Air	
Proof pressure	1.5 MPa	
Maximum operating pressure	1.0 MPa	
Minimum operating pressure	ø12, 16	0.12 MPa
	ø20 to 50	0.1 MPa
Ambient and fluid temperature	Without auto switch: -10°C to 70°C (with no freezing) With auto switch: -10°C to 60°C (with no freezing)	
Cushion	Rubber bumper at both ends	
Stroke length tolerance	+1.0 mm 0	
Mounting	Through-holes	
Piston speed	ø12 to 40	50 to 500 mm/s
	ø50	50 to 300 mm/s

Standard Stroke

Bore size (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	10, 15, 20, 25, 30, 35, 40, 45, 50, 75, 100

Manufacture of Intermediate Stroke

Description		Intermediate stroke range	
Spacers are installed in a standard stroke cylinder.		Bore size (mm)	Intermediate stroke range (mm)
Bore size (mm)	Description	12, 16	1 to 29
		20, 25	1 to 49
12 to 32	Available in 1 mm stroke increments	32	1 to 99
40, 50	Available in 5 mm stroke increments	40, 50	5 to 95

Example) Part number: CQMB32-57

It is produced by installing a 18 mm spacer in a standard stroke cylinder CQMB32-75. B dimension: 108 mm.

Theoretical Output

Unit: N

Bore size (mm)	Operating direction	Operating pressure (MPa)		
		0.3	0.5	0.7
12	IN	25	42	59
	OUT	34	57	79
16	IN	45	75	106
	OUT	60	101	141
20	IN	71	118	165
	OUT	94	157	220
25	IN	113	189	264
	OUT	147	245	344
32	IN	181	302	422
	OUT	241	402	563
40	IN	317	528	739
	OUT	377	628	880
50	IN	495	825	1150
	OUT	589	982	1370

Auto Switch Mounting Bracket Weight

Mounting bracket part no.	Applicable cylinder bore size	Weights (g)
BQ-2	ø32 to ø50	1.5
BQP1-050	ø40, ø50	16

Weight

Without auto switch

Unit: g

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	44	52	60	69	77	86	—	—	—	—	—	—
16	56	67	77	87	97	108	—	—	—	—	—	—
20	92	107	122	137	152	167	183	198	213	227	—	—
25	125	143	162	180	198	216	234	252	270	288	—	—
32	182	205	228	250	274	297	320	343	366	389	553	669
40	269	295	320	345	370	396	421	446	471	497	692	823
50	—	500	540	580	620	661	701	740	780	821	1133	1341

With auto switch (built-in magnet)

Unit: g

Bore size (mm)	Cylinder stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
12	52	59	68	77	84	93	—	—	—	—	—	—
16	66	77	87	97	107	118	—	—	—	—	—	—
20	122	138	153	168	182	197	213	227	242	257	—	—
25	168	186	205	223	240	258	277	295	313	331	—	—
32	241	264	287	309	333	356	379	401	425	448	564	680
40	345	371	396	421	447	473	498	523	548	574	705	836
50	—	618	658	698	738	779	819	858	898	939	1147	1355

Add each weight of auto switches and mounting brackets.

Refer to pages 14 to 18 for auto switch weight.