

## Compact Cylinder: Standard Type Double Acting, Single Rod

### Series **CQS**

ø12, ø16, ø20, ø25

#### Features

- ➔ Very compact, lightweight, space saving design
- ➔ Bore sizes ø12, ø16, ø20, ø25mm
- ➔ Rubber cushion option
- ➔ Flush fitting autoswitch design capability
- ➔ New 2 way basic mounting (through hole/both ends tapped)
- ➔ Higher side load version available



#### Specifications

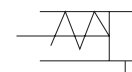
Type	Pneumatic (Non-lube)
Action	Double acting, Single rod
Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Ambient and fluid temperature	Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)
Rubber bumper	Standard stroke: None, Long stroke: Standard equipment
Rod end thread	Female thread
Rod end thread tolerance	JIS Class 2
Stroke length tolerance	Standard stroke: $^{+1.0}_0$ Long stroke: $^{+1.4}_0$
Mounting	Through-hole/Both ends tapped common
Piston speed	50 to 500 mm/s

#### Symbol

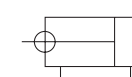
Double acting,  
Single rod type



Single acting,  
Spring return



Non-Rotating



#### How to Order

Without magnet

CQS [ ] B 20-30 D

With magnet

CDQS [ ] B 20-30 D

Built-in magnet

Rod Type

-	Standard single Rod Type
K	Non-rotating Rod type*

\*Non-rotating rod type for double acting only

Mounting style

B	Through-hole/Both ends tapped common (Standard)
L	Foot style
F	Rod side flange style
G	Head side flange style

\*In the case of long strokes, use either ends tapped mounting or bracket mounting.

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

Bore size

12	12 mm
16	16 mm
20	20 mm
25	25 mm

➔ Auto Switch Specifications  
Refer to switch section.

Action	
D	Double acting
S	Single acting

\*Non-rotating type not available.

● Cylinder stroke for Double Acting Type (mm)

Bore size (mm)	Standard stroke (mm)	Long stroke (mm)
12, 16	5, 10, 15, 20, 25, 30	35, 40, 45, 50, 75, 100
20	5, 10, 15, 20, 25, 30, 35, 40, 45, 50	75, 100, 125, 150, 175, 200
25		* 75, 100, 125, 150, 175, 200, 250, 300

\*Intermediate stroke upon request.

\*Long stroke for non-rotating type (-K) not available

Cylinder stroke for Single Acting Type

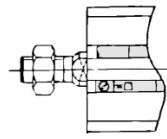
Bore size	Standard stroke (mm)
12,16,20,25	5, 10

Additional variations are also available

Double acting with Double Rod

Anti-lateral load type

Rod end male thread upon request



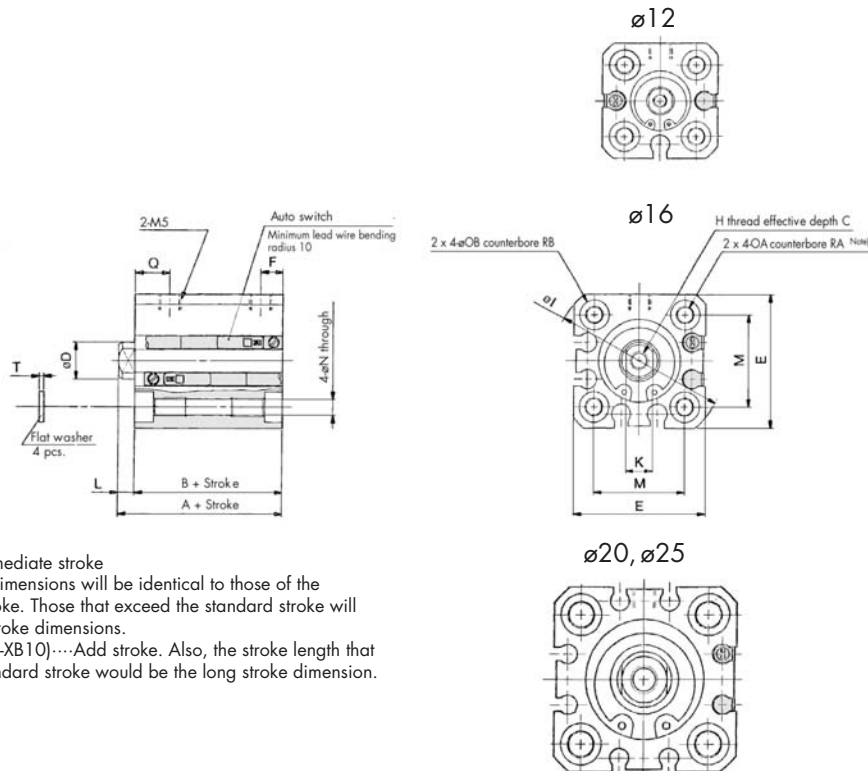
Cylinder Mounting Accessories



Bore size	Front/Rear Flange	Double Clevis	Foot
12	CQS-F012	CQS-D012	CQS-L012
16	CQS-F016	CQS-D016	CQS-L016
20	CQS-F020	CQS-D020	CQS-L020
25	CQS-F025	CQS-D025	CQS-L025

Dimensions:  $\phi 12$  to  $\phi 25$ /Double acting

Basic style (Through-hole/Both ends tapped common): CQSB/CDQSB



- Length with intermediate stroke
- (1) Spacer ... The dimensions will be identical to those of the nearest long stroke. Those that exceed the standard stroke will have the long stroke dimensions.
- (2) Exclusive body (-XB10) ... Add stroke. Also, the stroke length that exceeds the standard stroke would be the long stroke dimension.

Basic Style

Bore size (mm)	Standard stroke range (mm)	Standard stroke								Long stroke range (mm)	Long stroke				C	D	E	H	I	K	M	N	OA	OB	Q	RA	RB	T
		Without auto switch				With auto switch					With/Without auto switch																	
		A	B	F	L	A	B	F	L		A	B	F	L														
12	5 to 30	20.5	17	5	3.5	25.5	22	5	3.5	35 to 100	45.5	32	7.5	13.5	6	6	25	M3	32	5	15.5	3.5	M4	6.5	7.5	7	4	0.5
16	5 to 30	20.5	17	5	3.5	25.5	22	5	3.5	35 to 100	45.5	32	7.5	13.5	8	8	29	M4	38	6	20	3.5	M4	6.5	7.5	7	4	0.5
20	5 to 50	24	19.5	5.5	4.5	34	29.5	5.5	4.5	75 to 200	55.5	41	9	14.5	7	10	36	M5	47	8	25.5	5.4	M6	9	9	10	7	1
25	5 to 50	27.5	22.5	5.5	5	37.5	32.5	5.5	5	75 to 300	59	44	11	15	12	12	40	M6	52	10	28	5.4	M6	9	11	10	7	1

Note1) For the following bore/stroke sizes through-hole is threaded over the entire length: Basic style  $\phi 12$  and  $\phi 16$ ; 5 stroke,  $\phi 20$ ; 5 to 15 stroke,  $\phi 25$ ; 5 to 10 stroke,  $\phi 20$  with auto switch built-in magnet; 5 stroke.

Note2) Rubber bumper type has the same dimensions as those indicated above.



CAD CD-ROM AVAILABLE

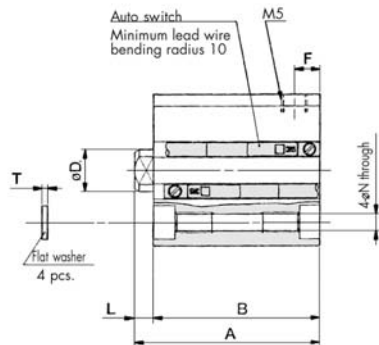


CATALOGUE E256-A AVAILABLE

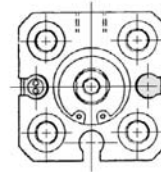


PDF AVAILABLE ONLINE

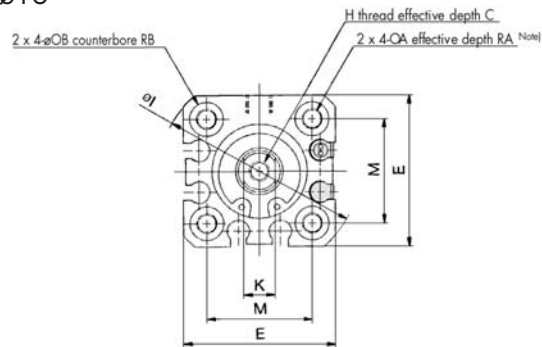
Dimensions:  $\phi 12$  to  $\phi 25$ /Single Acting, Spring Return  
Basic style (Through-hole/Both ends tapped common): CQSB/CDQSB



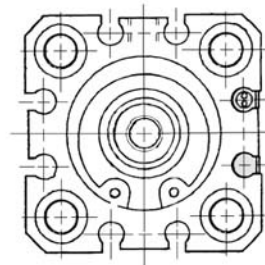
$\phi 12$



$\phi 16$



$\phi 20, \phi 25$



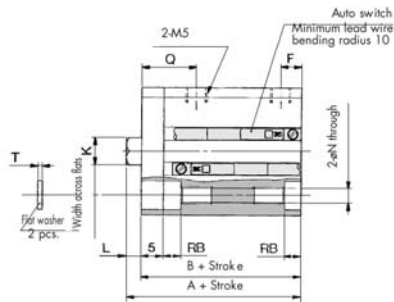
Basic Style

Bore size (mm)	Stroke range (mm)	Without auto switch				With auto switch				C	D	E	F	H	I	K	L	M	N	OA	OB	RA	RB	T
		A		B		A		B																
		5 <sup>ST</sup>	10 <sup>ST</sup>	5 <sup>ST</sup>	10 <sup>ST</sup>	5 <sup>ST</sup>	10 <sup>ST</sup>	5 <sup>ST</sup>	10 <sup>ST</sup>															
12	5, 10	25.5	30.5	22	27	30.5	35.5	27	32	6	6	25	5	M3	32	5	3.5	15.5	3.5	M4	6.5	7	4	0.5
16		25.5	30.5	22	27	30.5	35.5	27	32	8	8	29	5	M4	38	6	3.5	20	3.5	M4	6.5	7	4	0.5
20		29	34	24.5	29.5	39	44	34.5	39.5	7	10	36	5.5	M5	47	8	4.5	25.5	5.4	M6	9	10	7	1
25		32.5	37.5	27.5	32.5	42.5	47.5	37.5	42.5	12	12	40	5.5	M6	52	10	5	28	5.4	M6	9	10	7	1

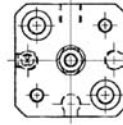
Note) For basic style  $\phi 12$  and  $\phi 16$  with 5 stroke, through-hole is threaded over the entire length.  
For basic style  $\phi 20, \phi 25$  with 5 and 10 stroke, through-hole is threaded over the entire length.  
With auto switch (Built-in magnet)/ $\phi 20$ ; 5 stroke.

Dimensions:  $\varnothing 12$  to  $\varnothing 25$  Double-Acting/Non-Rotating Type

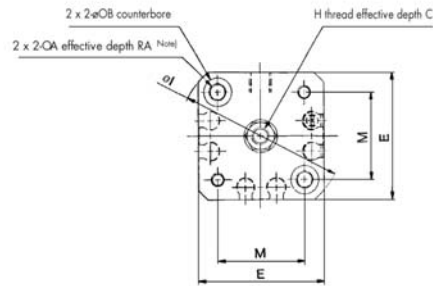
Basic style (Through-hole/Both ends tapped common): CQSK/CDQSK



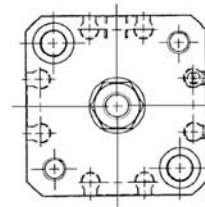
$\varnothing 12$



$\varnothing 16$



$\varnothing 20, \varnothing 25$



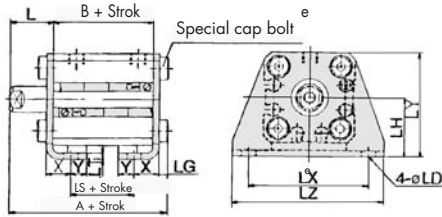
Basic Style

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch		C	E	F	H	I	K	L	M	N	OA	OB	Q	RA	RB	T
		A	B	A	B															
12	5 to 30	25.5	22	30.5	27	6	25	5	M3	32	5.2	3.5	15.5	3.5	M4	6.5	12.5	7	4	0.5
16	5 to 30	25.5	22	30.5	27	8	29	5	M4	38	6.2	3.5	20	3.5	M4	6.5	12.5	7	4	0.5
20	5 to 50	29	24.5	39	34.5	7	36	5.5	M5	47	8.2	4.5	25.5	5.4	M6	9	14	10	7	1
25	5 to 50	32.5	27.5	42.5	37.5	12	40	5.5	M6	52	10.2	5	28	5.4	M6	9	16	10	7	1

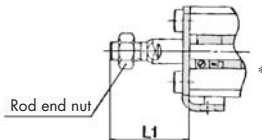
Note) For basic style  $\varnothing 12$  and  $\varnothing 16$  with 5 stroke, through-hole is threaded over the entire length.  
 For basic style  $\varnothing 20$  with 5 to 15 stroke, through-hole is threaded over the entire length.  
 For basic style  $\varnothing 25$  with 5 and 10 stroke, through-hole is threaded over the entire length.  
 Note) With auto switch (Built-in magnet):  $\varnothing 20$ ; 5 stroke

### Double Acting

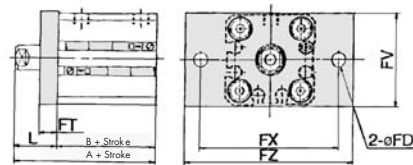
Foot style:



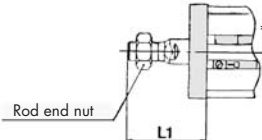
Rod end male thread



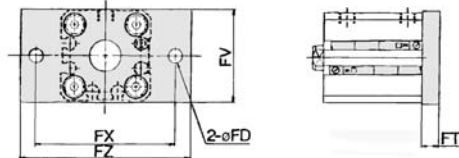
Rod side flange style:



Rod end male thread

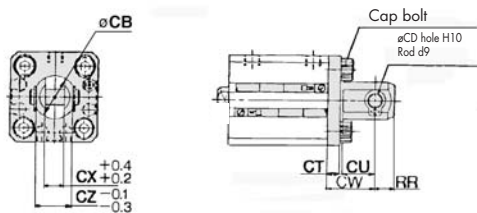


Head side flange style:



Note: All cylinder dimensions as per basic type.

Double clevis style:



Note: All cylinder dimensions as per basic type.

Foot Style

Bore size (mm)	Standard stroke range (mm)	Standard stroke						Long stroke range (mm)	Long stroke		
		Without auto switch			With auto switch				Without/With auto switch		
		A	B	LS	A	B	LS		A	B	LS
12	5 to 30	35.3	17	5	40.3	22	10	35 to 100	50.3	32	20
16	5 to 30	35.3	17	5	40.3	22	10	35 to 100	50.3	32	20
20	5 to 50	41.2	19.5	7.5	51.2	29.5	17.5	75 to 200	62.7	41	29
25	5 to 50	44.7	22.5	7.5	54.7	32.5	17.5	75 to 300	66.2	44	29

Bore size (mm)	L	L1	LD	LG	LH	LT	LX	LY	LZ	X	Y
12	13.5	24	4.5	2.8	17	2	34	29.5	44	8	4.5
16	13.5	25.5	4.5	2.8	19	2	38	33.5	48	8	5
20	14.5	28.5	6.6	4	24	3.2	48	42	62	9.2	5.8
25	15	32.5	6.6	4	26	3.2	52	46	66	10.7	5.8

Foot bracket material: Carbon steel

Rod Side Flange Style

Bore size (mm)	Standard stroke range (mm)	Standard stroke				Long stroke range (mm)	Long stroke	
		Without auto switch		With auto switch			Without/With auto switch	
		A	B	A	B		A	B
12	5 to 30	30.5	17	35.5	22	35 to 100	45.5	32
16	5 to 30	30.5	17	35.5	22	35 to 100	45.5	32
20	5 to 50	34	19.5	44	29.5	75 to 200	55.5	41
25	5 to 50	37.5	22.5	47.5	32.5	75 to 300	59	44

Bore size (mm)	FD	FT	FV	FX	FZ	L	L1
12	4.5	5.5	25	45	55	13.5	24
16	4.5	5.5	30	45	55	13.5	25.5
20	6.6	8	39	48	60	14.5	28.5
25	6.6	8	42	52	64	15	32.5

Flange bracket material: Carbon steel

Head Side Flange Style

Bore size (mm)	FD	FT	FV	FX	FZ
12	4.5	5.5	25	45	55
16	4.5	5.5	30	45	55
20	6.6	8	39	48	60
25	6.6	8	42	52	64

Flange bracket material: Carbon steel

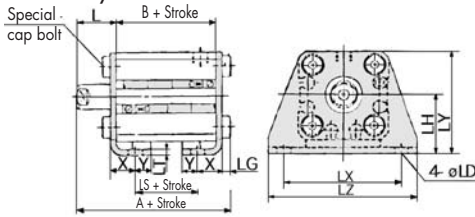
Double Clevis

Bore size (mm)	CB	CD	CT	CU	CW	CX	CZ	RR
12	12	5	4	7	14	5	10	6
16	14	5	4	10	15	6.5	12	6
20	20	8	5	12	18	8	16	9
25	24	10	5	14	20	10	20	10

Double clevis bracket material: Carbon steel

Dimensions: 12 to 25/Single Acting, Spring Return

Foot style:

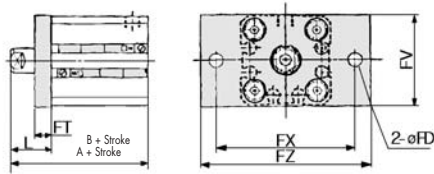


Foot Style

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			L	L <sub>1</sub>	LD	LG	LH	LT	LX	LY	LZ	X	Y
		A	B	LS	A	B	LS											
12	5, 10	35.3	17	5	40.3	22	10	13.5	24	4.5	2.8	17	2	34	29.5	44	8	4.5
16		35.3	17	5	40.3	22	10	13.5	25.5	4.5	2.8	19	2	38	33.5	48	8	5
20		41.2	19.5	7.5	51.2	29.5	17.5	14.5	28.5	6.6	4	24	3.2	48	42	62	9.2	5.8
25		44.7	22.5	7.5	54.7	32.5	17.5	15	32.5	6.6	4	26	3.2	52	46	66	10.7	5.8

Foot bracket material: Carbon steel

Rod side flange style:



Rod Side Flange Style

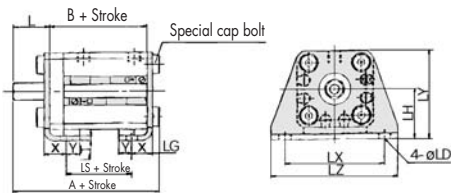
Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			FD	FT	FV	FX	FZ	L	L <sub>1</sub>
		A	B	LS	A	B	LS							
12	5, 10	30.5	17	35.5	22	4.5	5.5	25	45	55	13.5	24		
16		30.5	17	35.5	22	4.5	5.5	30	45	55	13.5	25.5		
20		34	19.5	44	29.5	6.6	8	39	48	60	14.5	28.5		
25		37.5	22.5	47.5	32.5	6.6	8	42	52	64	15	32.5		

Flange bracket material: Carbon steel

'Head Side flange' and 'Double Clevis' options for 'Single Acting Spring Return' (above) and also 'Non-Rotating' types (below) are the same as those shown previously on the 'Double Acting' type.

Non-Rotating Type

Foot style:

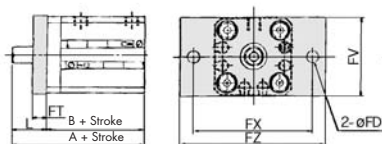


Foot Style

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			L	L <sub>1</sub>	LD	LG	LH	LT	LX	LY	LZ	X	Y
		A	B	LS	A	B	LS											
12	5 to 30	40.3	22	10	45.3	27	15	13.5	24	4.5	2.8	17	2	34	29.5	44	8	4.5
16	5 to 30	40.3	22	10	45.3	27	15	13.5	25.5	4.5	2.8	19	2	38	33.5	48	8	5
20	5 to 50	46.2	24.5	12.5	56.2	34.5	22.5	14.5	28.5	6.6	4	24	3.2	48	42	62	9.2	5.8
25	5 to 50	49.7	27.5	12.5	59.7	37.5	22.5	15	32.5	6.6	4	26	3.2	52	46	66	10.7	5.8

Foot bracket material: Carbon steel

Rod side flange style:



Rod Side Flange Style

Bore size (mm)	Stroke range (mm)	Without auto switch			With auto switch			FD	FT	FV	FX	FZ	L	L <sub>1</sub>
		A	B	LS	A	B	LS							
12	5 to 30	35.5	22	40.5	27	4.5	5.5	25	45	55	13.5	24		
16	5 to 30	35.5	22	40.5	27	4.5	5.5	30	45	55	13.5	25.5		
20	5 to 50	39	24.5	49	34.5	6.6	8	39	48	60	14.5	28.5		
25	5 to 50	42.5	27.5	52.5	37.5	6.6	8	42	52	64	15	32.5		

Flange bracket material: Carbon steel