Compact Cylinder with Lock
Double Acting, Single Rod
CLQ Series
ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order

CLQ **B** **40** □ – **30** **D** □ – **F** – □

With auto switch **CDLQ** **B** **40** □ – **30** **D** □ – **F** – **M9BW** □ – □

With auto switch (Built-in magnet)

Mounting type

ø20, ø25		ø32 to ø100	
B	Through-hole/ Both ends tapped common (Standard)	**B**	Through-hole (Standard)
		A	Both ends tapped type
L	Foot type	**L**	Foot type
F	Rod side flange type	**F**	Rod side flange type
G	Head side flange type	**G**	Head side flange type
D	Double clevis type	**D**	Double clevis type

∗ Mounting bracket is shipped together, (but not assembled).
∗ Cylinder mounting bolts are not included. Order them separately referring to "Mounting Bolt for C□LQB" on page 853.

Bore size

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

Auto switch

Nil	Without auto switch

∗ For the applicable auto switch model, refer to the table below.

Locking direction

F	Extension locking
B	Retraction locking

Number of auto switches

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

Made to Order
Refer to page 851 for details.

Body option

Nil	Standard (Rod end female thread)
C	With rubber bumper
M	Rod end male thread
CM	With rubber bumper, Rod end male thread

Action

D	Double acting

Port thread type

Nil	Rc,M (ø20, ø25)
TN	NPT
TF	G

Cylinder stroke (mm)
For "Standard strokes" and "Manufacture of Intermediate of Stroke", refer to page 851.

Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example) CDLQL32-30D-B

Applicable Auto Switches/Refer to pages 1341 to 1435 for detailed specifications of auto switches.

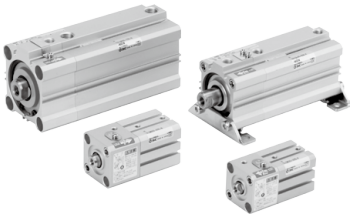
Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage DC	Load voltage AC	Auto switch model: Perpendicular ø20, ø25	Auto switch model: Perpendicular ø32 to ø100	Auto switch model: In-line ø20, ø25	Auto switch model: In-line ø32	Auto switch model: In-line ø40 to ø100	Lead wire length (m): 0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)	Pre-wired connector	Applicable load	
Solid state auto switch	——	Grommet	Yes	3-wire (NPN)	5 V, 12 V	—	M9NV		M9N			●	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)			M9PV		M9P			●	●	●	○	—	○		
				2-wire	12V		M9BV		M9B			●	●	●	○	—	○	—	
		Connector					—	J79C	—			●	—	●	●	●	—		
	Diagnostic indication (2-color indicator)	Grommet		3-wire (NPN)	5 V, 12 V	—	M9NWV		M9NW			●	●	●	○	—	○	IC circuit	
				3-wire (PNP)			M9PWV		M9PW			●	●	●	○	—	○		
				2-wire	24 V		M9BWV		M9BW			●	●	●	○	—	○	—	
	Water resistant (2-color indicator)			3-wire (NPN)	5 V, 12 V		M9NAV∗1		M9NA∗1			○	○	●	○	—	○	IC circuit	
				3-wire (PNP)			M9PAV∗1		M9PA∗1			○	○	●	○	—	○		
				2-wire	12 V		M9BAV∗1		M9BA∗1			○	○	●	○	—	○	—	
	With diagnostic output (2-color indicator)			4-wire	5 V,12 V		—		—	F79F		●	—	●	○	—	○	IC circuit	
	Magnetic field resistant (2-color indicator)			2-wire (Non-polar)	—		—		—	P3DWA∗∗		●	—	●	●	—	○	—	
							—		—	P4DW		—	—	●	●	—	○		
Reed auto switch	——	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—		A96V		A96		●	—	●	—	—	—	IC circuit	—	Relay, PLC
				2-wire	24 V	—	200V		—	A72	—	A72H	●	—	●	—	—	—	—	
						12 V	100V		A93V∗2		A93		●	●	●	●	—	—	
			None			5 V,12 V	100 V or less		A90V		A90		●	—	●	—	—	—	IC circuit	
		Connector				12 V	—		—	A73C	—		●	—	●	●	●	—	—	
			Yes			5 V,12 V	24 V or less		—	A80C	—		●	—	●	●	●	—	IC circuit	
	Diagnostic indication (2-color indicator)	Grommet	Yes			—	—		—	A79W	—		●	—	●	—	—	—	—	

∗1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.
∗2 1 m type lead wire is only applicable to D-A93.

∗ Lead wire length symbols: 0.5 m ····· Nil (Example) M9NW
1 m ····· M (Example) M9NWM
3 m ····· L (Example) M9NWL
5 m ····· Z (Example) M9NWZ
None ····· N (Example) J79CN

∗ Solid state auto switches marked with "○" are produced upon receipt of order.
∗ D-P4DW is compatible with ø40 to ø100.
∗ D-P4DW is assembled at the time of shipment.
∗∗ D-P3DWA□ is compatible with ø25 to ø100.
For ø25, it is mounted away from the port side to avoid interference with fittings.

∗ Since there are other applicable auto switches than listed, refer to page 871 for details.
∗ For details about auto switches with pre-wired connector, refer to pages 1410 and 1411.
∗ When D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V) types with ø32 to ø50 are mounted on a side other than the port side, order auto switch mounting brackets separately. Refer to page 870 for details.
∗ When mounting brackets (foot/head side flange/double clevis type) are used, then in some cases auto swit a nnot be retrofitted.



Cylinder Specifications

Bore size (mm)	20	25	32	40	50	63	80	100
Action	Double acting, Single rod							
Fluid	Air							
Proof pressure	1.5 MPa							
Maximum operating pressure	1.0 MPa							
Minimum operating pressure	0.2 MPa Note 1)							
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							
Stroke length tolerance	$^{+1.0}_{0}$ mm Note 2)							
Cushion	None, rubber bumper							
Port size (Rc, NPT, G)	M5 x 0.8		1/8		1/4		3/8	

Note 1) The minimum operating pressure of the cylinder is 0.1 MPa when the cylinder and lock are connected to separate ports.
Note 2) Stroke length tolerance does not include the amount of bumper change.

Lock Specifications

Bore size (mm)		20	25	32	40	50	63	80	100
Locking action		Spring locking (Exhaust locking)							
Unlocking pressure		0.2 MPa or more							
Lock starting pressure		0.05 MPa or less							
Locking direction		One direction (Either extension locking or retraction locking)							
Unlocking port size	**Rc**	M5 x 0.8		1/8					1/4
	NPT	—							
	G			M5 x 0.8				1/8	1/4
Holding force Note) **(N)**		157	245	402	629	982	1559	2513	3927
(Maximum static load)		Equivalent to 0.5 MPa							

Note) The holding force (max. static load) shows the maximum capability and does not show the normal holding capability. So, select an appropriate cylinder while referring to page 872.

Standard Stroke

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

Manufacture of Intermediate Stroke

Description	Spacer is installed in the standard stroke body.	
Part no.	Refer to "How to Order" for the standard model no. on page 850.	
Method	Dealing with the stroke in 1 mm increments is available by installing spacer with standard stroke cylinder.	
Stroke range	Bore size (mm)	Stroke range (mm)
	20, 25	1 to 50
	32, 40, 50, 63, 80, 100	1 to 100
Example	Part no.: CLQB40-47D-B 3 mm spacer is installed in standard cylinder CLQB40-50D-B. B dimension is 79.5 mm.	

Note) ø40 to ø100 bumper spacers with intermediate strokes can be manufactured in 5 mm increments from 55 to 95 mm.

Made to Order

Made to Order Specifications

Click here for details

Symbol	Specifications
-XA□	Change of rod end shape
-XC35	With coil scraper (ø40 to ø100 only)
-XC87	Heavy duty (ø40 to ø100 only)

Refer to pages 868 to 871 for cylinders with auto switches.

- Minimum auto switch mounting stroke
- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range
- Auto switch mounting bracket: Part no.

Mounting Bracket Part No.

Bore size (mm)	Foot (1)	Flange	Double clevis
20	CLQ-L020	CLQ-F020	CLQ-D020
25	CLQ-L025	CLQ-F025	CLQ-D025
32	CLQ-L032	CLQ-F032	CLQ-D032
40	CLQ-L040	CLQ-F040	CLQ-D040
50	CLQ-L050	CLQ-F050	CLQ-D050
63	CLQ-L063	CLQ-F063	CLQ-D063
80	CLQ-L080	CLQ-F080	CLQ-D080
100	CLQ-L100	CLQ-F100	CLQ-D100

Note 1) When ordering foot bracket, order 2 pieces per cylinder.

Note 2) Parts belonging to each bracket are as follows. Foot, Flange: Body mounting screws, Double clevis: Clevis pin, type C retaining ring for shaft, Body mounting screws, Flat washer.

Theoretical Output

(N)

Bore size (mm)	Operating direction	Operating pressure (MPa)		
		0.3	0.5	0.7
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
63	IN	841	1400	1960
	OUT	935	1560	2180
80	IN	1360	2270	3170
	OUT	1510	2510	3520
100	IN	2140	3570	5000
	OUT	2360	3930	5500

Weight

Basic Weight: Mounting/Through-hole (Type B)

(g)

Bore size (mm)	Standard stroke (mm)											
	5	10	15	20	25	30	35	40	45	50	75	100
20 *	184	199	213	227	241	255	270	284	298	312	—	—
25 *	260	278	295	312	329	346	364	381	398	415	—	—
32	—	407	430	453	475	498	521	544	566	589	754	867
40	—	514	537	560	583	606	630	653	676	699	883	1003
50	—	838	874	910	947	983	1019	1055	1092	1128	1421	1609
63	—	1202	1242	1283	1324	1365	1406	1447	1488	1529	1877	2088
80	—	2229	2297	2364	2432	2500	2568	2636	2704	2771	3344	3678
100	—	3770	3860	3951	4041	4132	4223	4313	4404	4495	5299	5759

* Through-hole and both ends tapped are common for sizes ø20 and ø25.

Basic Weight: Mounting/Both Ends Tapped (Type A)

(g)

Bore size (mm)	Standard stroke (mm)										
	10	15	20	25	30	35	40	45	50	75	100
32	405	429	453	475	499	523	546	569	593	763	879
40	542	568	593	619	644	670	695	721	746	947	1079
50	883	922	962	1002	1041	1081	1121	1161	1200	1517	1723
63	1330	1377	1424	1471	1518	1565	1613	1660	1707	2099	2341
80	2468	2545	2623	2700	2778	2856	2933	3011	3089	3729	4113
100	4054	4154	4254	4355	4455	4556	4656	4757	4857	5730	6239

Additional Weight

(g)

Bore size (mm)		**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**
Magnet		35	45	64	77	118	158	261	380
Rod end male thread	Thread	6	12	26	27	53	53	120	175
	Nut	4	8	17	17	32	32	49	116
With rubber bumper		–2	–3	–3	–7	–9	–18	–31	–56
Foot type (Including mounting bolt)		152	174	137	149	221	288	638	1009
Rod side flange type (Including mounting bolt)		127	149	174	208	351	523	998	1307
Head side flange type (Including mounting bolt)		121	140	159	192	326	498	959	1251
Double clevis type (Including pin, snap ring, bolt and flat washer)		76	111	145	190	373	518	1064	1839

Calculation: (Example) **CDLQD32-20DCM-B**

- Basic weight : CLQA32-20D-□ ····· 453 g
- Additional weight: Magnet ····· 64 g
  Rod end male thread ····· 43 g
  With rubber bumper ····· –3 g
  Double clevis ····· 145 g

  702 g

When auto switches are mounted, add the weight of the auto switch and auto switch mounting bracket multiplied by the quantity.

Auto Switch Mounting Bracket Weight

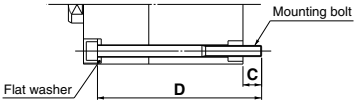
Auto Switch mounting bracket part no.	Applicable bore size (mm)	weight (g)
BQ-2	ø32 to ø100	1.5
BQ2-012	ø32 to ø100	5
BQP1-050	ø40 to ø100	16

For the auto switch weight, refer to page 1341.
Refer to pages 870 and 871 for applicable auto switch mounting brackets.

Mounting Bolt for C□LQB

Mounting method: Mounting bolt for through-hole mounting
Refer to the following for ordering procedures.
Order the actual number of bolts that will be used.

Example) CQ-M5 x 55L 2 pcs.



Note) Be sure to use the attached flat washers as the bearing surface is small when mounting ø50 to ø100 cylinders from the rod side.

CLQB: Without Auto Switch

Cylinder model	C	D	Mounting bolt part no.
CLQB20-5D	10.5	55	CQ-M5 x 55 L
-10D		60	x 60 L
-15D		65	x 65 L
-20D		70	x 70 L
-25D		75	x 75 L
-30D		80	x 80 L
-35D		85	x 85 L
-40D		90	x 90 L
-45D		95	x 95 L
-50D		100	x 100 L
CLQB25-5D	8.5	60	CQ-M5 x 60 L
-10D		65	x 65 L
-15D		70	x 70 L
-20D		75	x 75 L
-25D		80	x 80 L
-30D		85	x 85 L
-35D		90	x 90 L
-40D		95	x 95 L
-45D		100	x 100 L
-50D		105	x 105 L

Cylinder model	C	D	Mounting bolt part no.
CLQB32-10D	7	65	CQ-M5 x 65 L
-15D		70	x 70 L
-20D		75	x 75 L
-25D		80	x 80 L
-30D		85	x 85 L
-35D		90	x 90 L
-40D		95	x 95 L
-45D		100	x 100 L
-50D		105	x 105 L
-75D		140	x 140 L
-100D		165	x 165 L
CLQB40-10D	8.5	75	CQ-M5 x 75 L
-15D		80	x 80 L
-20D		85	x 85 L
-25D		90	x 90 L
-30D		95	x 95 L
-35D		100	x 100 L
-40D		105	x 105 L
-45D		110	x 110 L
-50D		115	x 115 L
-75D		150	x 150 L
-100D		175	x 175 L

Cylinder model	C	D	Mounting bolt part no.
CLQB50-10D	12.5	80	CQ-M6 x 80 L
-15D		85	x 85 L
-20D		90	x 90 L
-25D		95	x 95 L
-30D		100	x 100 L
-35D		105	x 105 L
-40D		110	x 110 L
-45D		115	x 115 L
-50D		120	x 120 L
-75D		155	x 155 L
-100D		180	x 180 L
CLQB63-10D	16.5	90	CQ-M8 x 90 L
-15D		95	x 95 L
-20D		100	x 100 L
-25D		105	x 105 L
-30D		110	x 110 L
-35D		115	x 115 L
-40D		120	x 120 L
-45D		125	x 125 L
-50D		130	x 130 L
-75D		165	x 165 L
-100D		190	x 190 L

Cylinder model	C	D	Mounting bolt part no.
CLQB80-10D	17	100	CQ-M10 x 100 L
-15D		105	x 105 L
-20D		110	x 110 L
-25D		115	x 115 L
-30D		120	x 120 L
-35D		125	x 125 L
-40D		130	x 130 L
-45D		135	x 135 L
-50D		140	x 140 L
-75D		175	x 175 L
-100D		200	x 200 L
CLQB100-10D	15.5	115	CQ-M10 x 115 L
-15D		120	x 120 L
-20D		125	x 125 L
-25D		130	x 130 L
-30D		135	x 135 L
-35D		140	x 140 L
-40D		145	x 145 L
-45D		150	x 150 L
-50D		155	x 155 L
-75D		190	x 190 L
-100D		215	x 215 L

CDLQB: Without Auto Switch

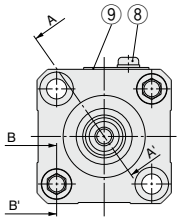
Cylinder model	C	D	Mounting bolt part no.
CDLQB20-5D	10.5	65	CQ-M5 x 65 L
-10D		70	x 70 L
-15D		75	x 75 L
-20D		80	x 80 L
-25D		85	x 85 L
-30D		90	x 90 L
-35D		95	x 95 L
-40D		100	x 100 L
-45D		105	x 105 L
-50D		110	x 110 L
CDLQB25-5D	8.5	70	CQ-M5 x 70 L
-10D		75	x 75 L
-15D		80	x 80 L
-20D		85	x 85 L
-25D		90	x 90 L
-30D		95	x 95 L
-35D		100	x 100 L
-40D		105	x 105 L
-45D		110	x 110 L
-50D		115	x 115 L

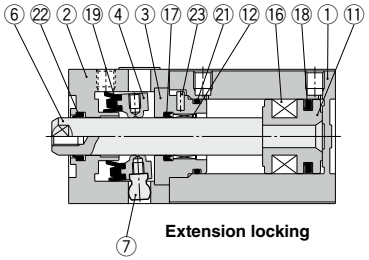
Cylinder model	C	D	Mounting bolt part no.
CDLQB32-10D	7	75	CQ-M5 x 75 L
-15D		80	x 80 L
-20D		85	x 85 L
-25D		90	x 90 L
-30D		95	x 95 L
-35D		100	x 100 L
-40D		105	x 105 L
-45D		110	x 110 L
-50D		115	x 115 L
-75D		140	x 140 L
-100D		165	x 165 L
CDLQB40-10D	8.5	85	CQ-M5 x 85 L
-15D		90	x 90 L
-20D		95	x 95 L
-25D		100	x 100 L
-30D		105	x 105 L
-35D		110	x 110 L
-40D		115	x 115 L
-45D		120	x 120 L
-50D		125	x 125 L
-75D		150	x 150 L
-100D		175	x 175 L

Cylinder model	C	D	Mounting bolt part no.
CDLQB50-10D	12.5	90	CQ-M6 x 90 L
-15D		95	x 95 L
-20D		100	x 100 L
-25D		105	x 105 L
-30D		110	x 110 L
-35D		115	x 115 L
-40D		120	x 120 L
-45D		125	x 125 L
-50D		130	x 130 L
-75D		155	x 155 L
-100D		180	x 180 L
CDLQB63-10D	16.5	100	CQ-M8 x 100 L
-15D		105	x 105 L
-20D		110	x 110 L
-25D		115	x 115 L
-30D		120	x 120 L
-35D		125	x 125 L
-40D		130	x 130 L
-45D		135	x 135 L
-50D		140	x 140 L
-75D		165	x 165 L
-100D		190	x 190 L

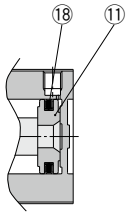
Cylinder model	C	D	Mounting bolt part no.
CDLQB80-10D	17	110	CQ-M10 x 110 L
-15D		115	x 115 L
-20D		120	x 120 L
-25D		125	x 125 L
-30D		130	x 130 L
-35D		135	x 135 L
-40D		140	x 140 L
-45D		145	x 145 L
-50D		150	x 150 L
-75D		175	x 175 L
-100D		200	x 200 L
CDLQB100-10D	15.5	125	CQ-M10 x 125 L
-15D		130	x 130 L
-20D		135	x 135 L
-25D		140	x 140 L
-30D		145	x 145 L
-35D		150	x 150 L
-40D		155	x 155 L
-45D		160	x 160 L
-50D		165	x 165 L
-75D		190	x 190 L
-100D		215	x 215 L

Construction: ø20 to ø32

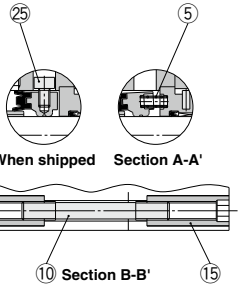




Extension locking



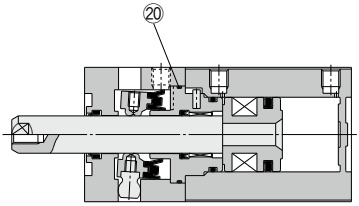
Without magnet



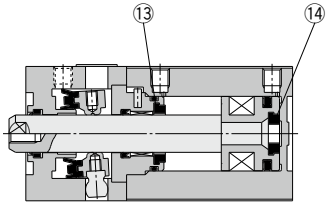
When shipped

Section A-A'

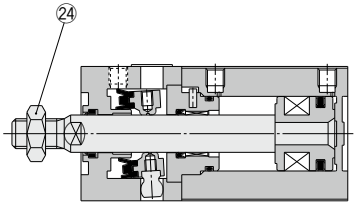
Section B-B'



Retraction locking



With bumper



Rod end male thread

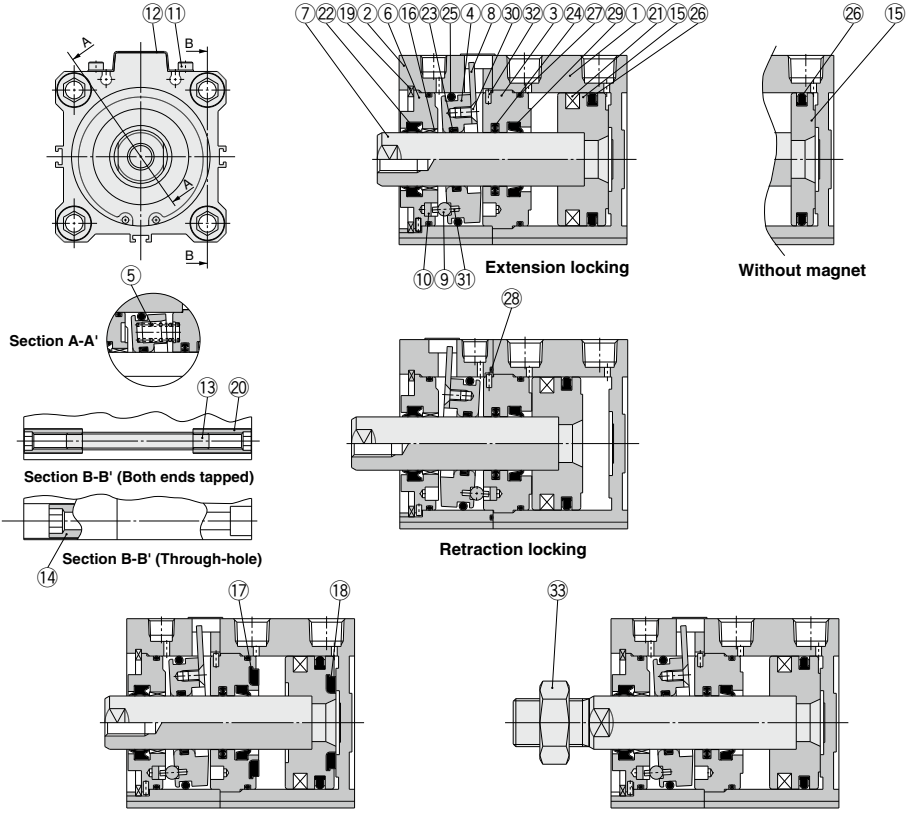
Note) The sectional drawing above shows the locked condition. (A bolt is used to maintain the cylinder in the unlocked condition when shipped.)

Component Parts

No.	Description	Material	Note
1	**Cylinder tube**	Aluminum alloy	Hard anodized
2	**Lock body**	Aluminum alloy	Hard anodized
3	**Intermediate collar**	Aluminum alloy	Extension locking: Chromated Retraction locking: Hard anodized
4	**Lock ring**	Carbon steel	Heat treated
5	**Brake spring**	Steel wire	Zinc chromated
6	**Piston rod**	Stainless steel	ø20, 25: Hard chrome plated
		Carbon steel	ø32: Hard chrome plated
7	**Pivot**	Chromium molybdenum steel	Electroless nickel plated
8	**Dust cover holding bolt**	Carbon steel	
9	**Dust cover**	Stainless steel	
10	**Tie-rod**	Rolled steel	ø20: Nickel plated ø25: Zinc chromated ø32: Black zinc chromated
11	**Piston**	Aluminum alloy	

No.	Description	Material	Note
12	**Bushing**	Bearing alloy	
13	**Bumper A**	Urethane	
14	**Bumper B**	Urethane	
15	**Tie-rod nut**	Carbon steel	Nickel plated
16	**Magnet**	—	
17	**Rod seal**	NBR	
18	**Piston seal**	NBR	
19	**Lock ring seal**	NBR	
20	**Tube gasket A**	NBR	
21	**Tube gasket B**	NBR	
22	**Scraper**	NBR	
23	**Parallel pin**	Stainless steel	JIS B 1354
24	**Rod end nut**	Carbon steel	
25	**Unlocking bolt**	Chromium molybdenum steel	

Construction: ø40 to ø100



Component Parts

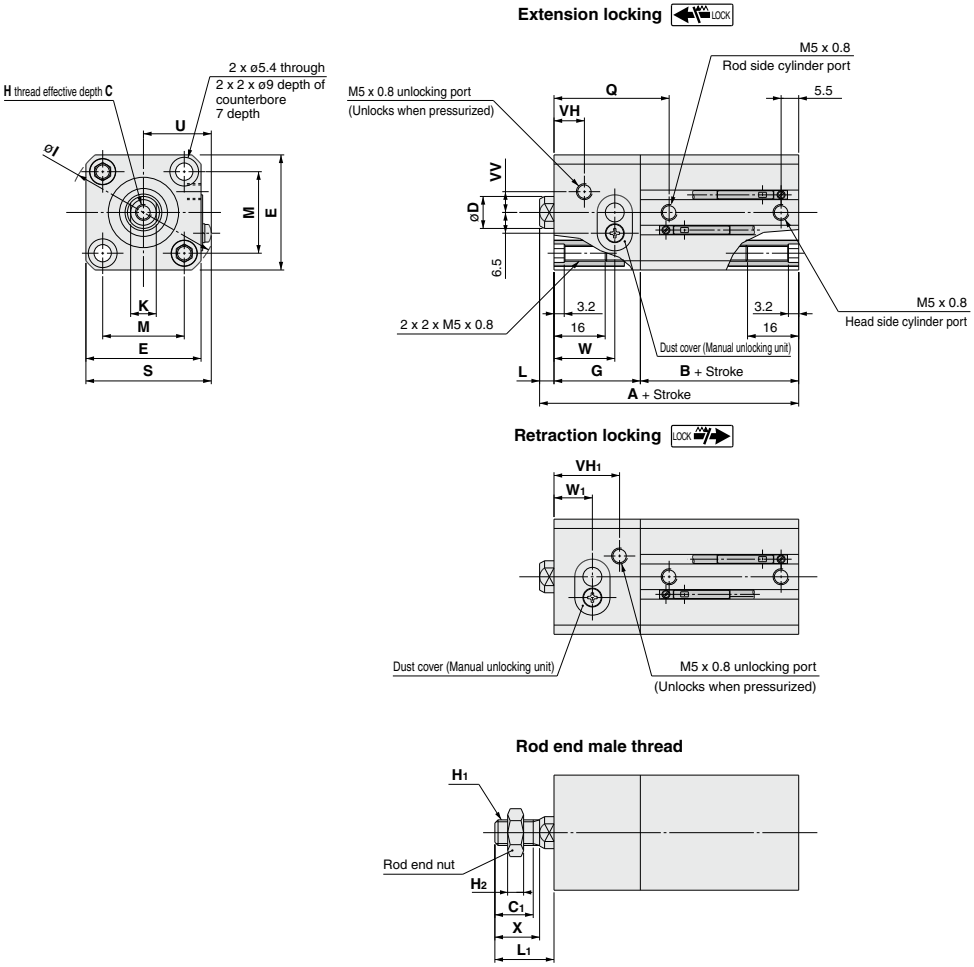
No.	Description	Material	Note
1	**Cylinder tube**	Aluminum alloy	Hard anodized
2	**Lock body**	Aluminum alloy	Hard anodized
3	**Intermediate collar**	Aluminum alloy	Chromated
4	**Lock ring**	Carbon steel	Heat treated
5	**Brake spring**	Steel wire	Zinc chromated
6	**Collar**	Aluminum bearing alloy	ø40: Hard anodized
		Aluminum alloy casted	ø50 to ø100: Chromated, painted
7	**Piston rod**	Carbon steel	Hard chrome plated
8	**Lever**	Stainless steel	
9	**Pivot pin**	Carbon steel	Zinc chromated
10	**Pivot key**	Carbon steel	Zinc chromated
11	**Dust cover holding bolt**	Chromium molybdenum steel	
12	**Dust cover**	Rolled steel	
13	**Tie-rod**	Rolled steel	ø40, Zinc chromated
		Carbon steel	ø50 or larger, Zinc chromated
14	**Unit holding bolt**	Carbon steel	Nickel plated
15	**Piston**	Aluminum alloy	
16	**Bushing**	Bearing alloy	For ø50 or larger only

Note) The sectional drawing above shows the locked condition.

No.	Description	Material	Note
17	**Bumper A**	Urethane	
18	**Bumper B**	Urethane	
19	**Retaining ring**	Carbon tool steel	Phosphate coated
20	**Tie-rod nut**	Carbon steel	ø40, Nickel plated
			ø50 to ø100, Zinc chromated
21	**Magnet**	—	
22	**Rod seal A**	NBR	
23	**Rod seal B**	NBR	
24	**Rod seal C**	NBR	
25	**Piston seal A**	NBR	
26	**Piston seal B**	NBR	
27	**Tube gasket A**	NBR	
28	**Tube gasket B**	NBR	
29	**Scraper**	NBR	
30	**Hexagon socket countersunk head screw**	Chromium molybdenum steel	
31	**Spring pin**	Carbon steel	JIS B 2808
32	**Parallel pin**	Stainless steel	JIS B 1354
33	**Rod end nut**	Carbon steel	

Dimensions: ø20, ø25

Basic type (Through-hole/Both ends tapped common): C□LQB20/25



(mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch		C	D	E	G	H	I	K	L	M	Q	S	U	VH	VV	W
		A	B	A	B															
20	5 to 50	51	19.5	61	29.5	7	10	36	27	M5 x 0.8	47	8	4.5	25.5	36	39.2	21.2	9.5	6.5	19
25	5 to 50	58.5	22.5	68.5	32.5	12	12	40	31	M6 x 1.0	52	10	5	28	42	43.2	23.2	10	7	21.5

Retraction Locking (mm)

Bore size (mm)	VH_1	W_1
20	20.5	12
25	23	14.5

Rod End Male Thread (mm)

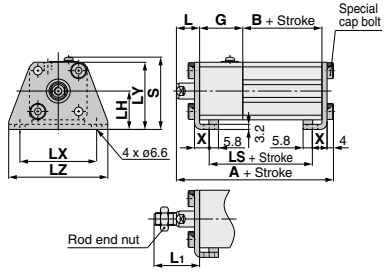
Bore size (mm)	C_1	X	H_1	H_2	L_1
20	12	14	M8 x 1.25	5	18.5
25	15	17.5	M10 x 1.25	6	22.5

∗ Dimensions for cylinders with a rubber bumper are the same as the standard type above.

∗∗ Refer to page 866 for details of rod end nuts and accessory brackets.

Dimensions: ø20, ø25

Foot type: CLQL/CDLQL



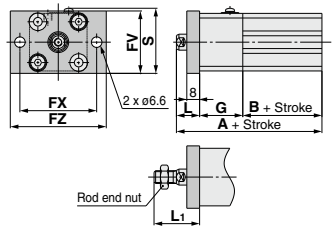
Foot Type (mm)

Bore size (mm)	Stroke range	Without auto switch			With auto switch		
		A	B	LS	A	B	LS
20	5 to 50	68.2	19.5	34.5	78.2	29.5	44.5
25	5 to 50	75.7	22.5	38.5	85.7	32.5	48.5

Bore size (mm)	G	L	L1	LH	LX	LY	LZ	S	X
20	27	14.5	28.5	24	48	42	62	45.2	9.2
25	31	15	32.5	26	52	46	66	49.2	10.7

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Rod side flange type: CLQF/CDLQF



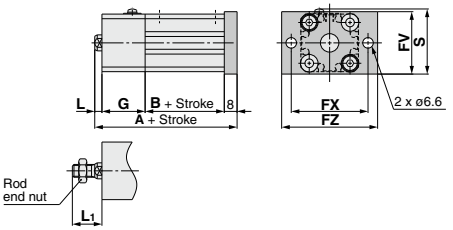
Rod Side Flange Type (mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
20	5 to 50	61	19.5	71	29.5
25	5 to 50	68.5	22.5	78.5	32.5

Bore size (mm)	FV	FX	FZ	G	L	L1	S
20	39	48	60	27	14.5	28.5	40.7
25	42	52	64	31	15	32.5	44.2

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head side flange type: CLQG/CDLQG



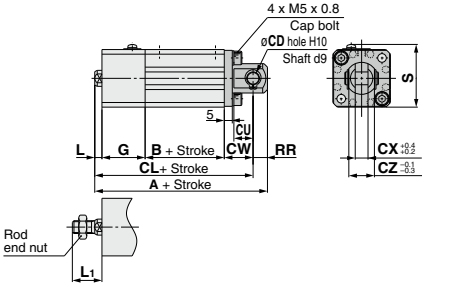
Head Side Flange Type (mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
20	5 to 50	59	19.5	69	29.5
25	5 to 50	66.5	22.5	76.5	32.5

Bore size (mm)	FV	FX	FZ	G	L	L1	S
20	39	48	60	27	4.5	18.5	40.7
25	42	52	64	31	5	22.5	44.2

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Double clevis type: CLQD/CDLQD



Double Clevis Type (mm)

Bore size (mm)	Stroke range	Without auto switch			With auto switch		
		A	B	CL	A	B	CL
20	5 to 50	78	19.5	69	88	29.5	79
25	5 to 50	88.5	22.5	78.5	98.5	32.5	88.5

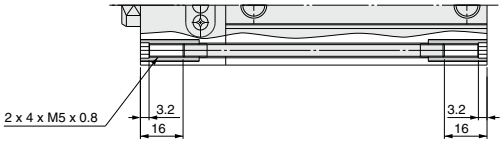
Bore size (mm)	CD	CU	CW	CX	CZ	G	L	L1	RR	S
20	8	12	18	8	16	27	4.5	18.5	9	39.2
25	10	14	20	10	20	31	5	22.5	10	43.2

∗ Refer to page 866 for details of rod end nuts and accessory brackets.
∗∗ Double clevis pins and retaining rings are included.

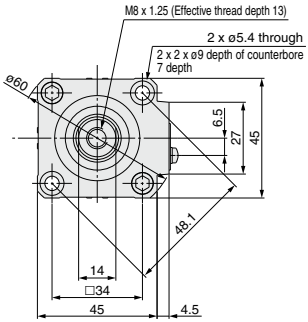
Double clevis bracket material: Carbon steel
Surface treatment: Nickel plated

Dimensions: ø32

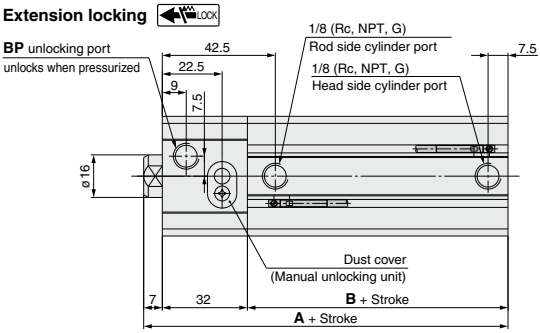
Both ends tapped type: C□LQA32



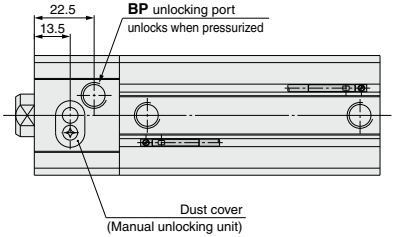
Basic type (Through-hole): C□LQB32



Extension locking



Retraction locking



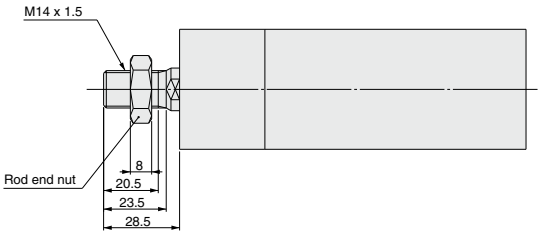
(mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
32	10 to 50	62	23	72	33
	75, 100	72	33		

Port thread type	BP
Rc	1/8
NPT	
G	M5 x 0.8

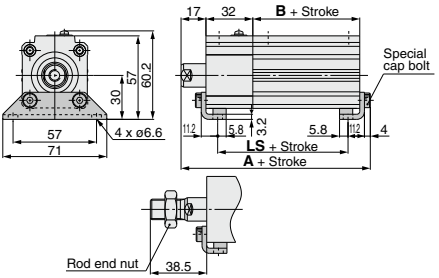
∗ Dimensions for cylinders with a rubber bumper are the same as the standard type above.
∗∗ Refer to page 866 for details of rod end nuts and accessory brackets.

Rod end male thread



Dimensions: ø32

Foot type: C□LQL32

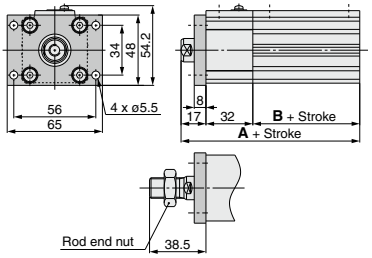


Foot Type (mm)

Bore size (mm)	Stroke range	Without auto switch			With auto switch		
		A	B	LS	A	B	LS
32	10 to 50	79.2	23	39	89.2	33	49
	75, 100	89.2	33	49			

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Rod side flange type: C□LQF32

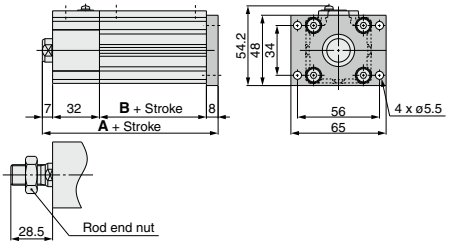


Rod Side Flange Type (mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
32	10 to 50	72	23	82	33
	75, 100	82	33		

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head Side flange type: C□LQG32

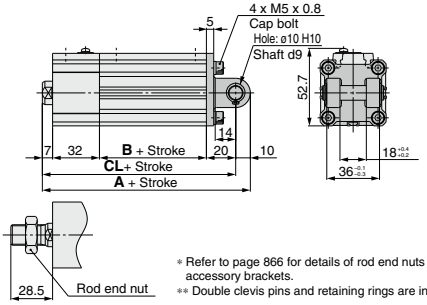


Head Side Flange Type (mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
32	10 to 50	70	23	80	33
	75, 100	80	33		

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Double clevis type: C□LQD32



Double Clevis Type (mm)

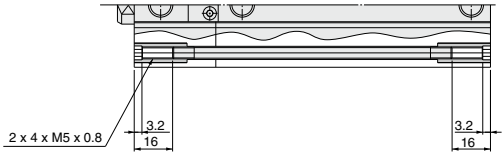
Bore size (mm)	Stroke range	Without auto switch			With auto switch		
		A	B	CL	A	B	CL
32	10 to 50	92	23	82	102	33	92
	75, 100	102	33	92			

Double clevis bracket material: Cast iron
Surface treatment: Painted

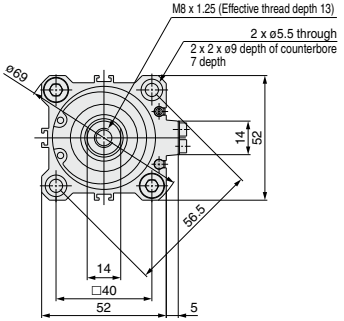
* Refer to page 866 for details of rod end nuts and accessory brackets.
** Double clevis pins and retaining rings are included.

Dimensions: ø40

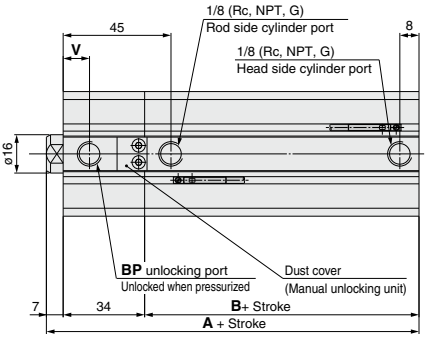
Both ends tapped type: C□LQA40



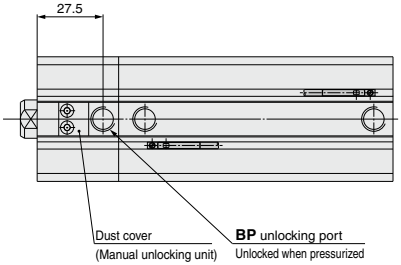
Basic type (Through-hole): C□LQB40



Extension locking



Retraction locking



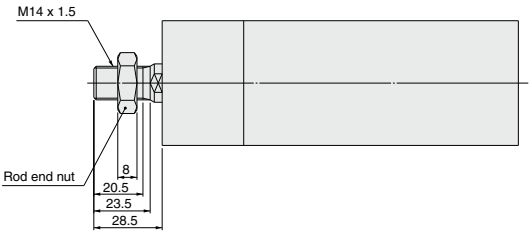
A, B Dimensions (mm)

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch	
		A	B	A	B
40	10 to 50	70.5	29.5	80.5	39.5
	75, 100	80.5	39.5		

Port thread type	BP	V
Rc	1/8	11
NPT		
G	M5 x 0.8	13

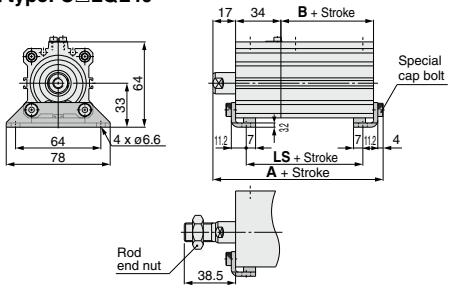
∗ Dimensions for cylinders with a rubber bumper are the same as the standard type above.
∗∗ Refer to page 866 for details of rod end nuts and accessory brackets.

Rod end male thread



Dimensions: ø40

Foot type: C□LQL40

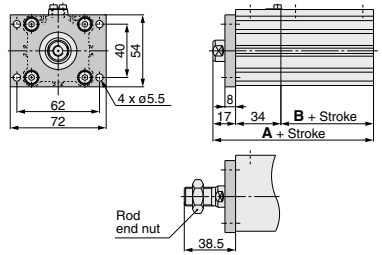


Foot Type (mm)

Bore size (mm)	Stroke range	Without auto switch			With auto switch		
		A	B	LS	A	B	LS
40	10 to 50	87.7	29.5	47.5	97.7	39.5	57.5
	75, 100	97.7	39.5	57.5			

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Rod side flange type: C□LQF40

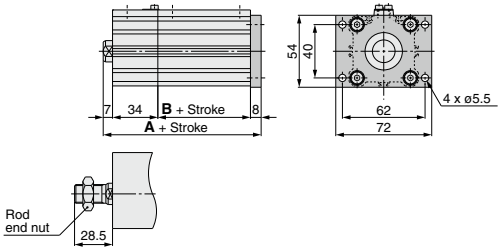


Rod Side Flange Type (mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
40	10 to 50	80.5	29.5	90.5	39.5
	75, 100	90.5	39.5		

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head Side flange type: C□LQG40

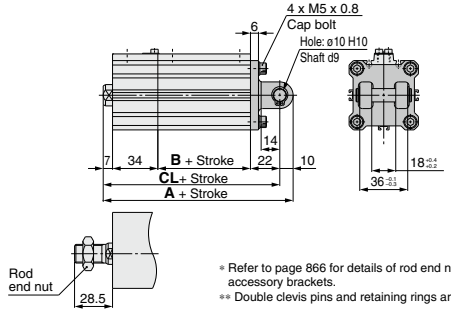


Head Side Flange Type (mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
40	10 to 50	78.5	29.5	88.5	39.5
	75, 100	88.5	39.5		

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Double clevis type: C□LQD40



∗ Refer to page 866 for details of rod end nuts and accessory brackets.
∗∗ Double clevis pins and retaining rings are included.

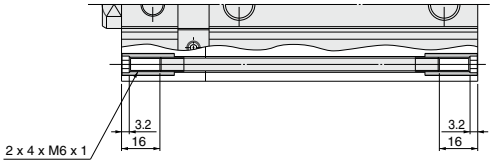
Double Clevis Type (mm)

Bore size (mm)	Stroke range	Without auto switch			With auto switch		
		A	B	CL	A	B	CL
40	10 to 50	102.5	29.5	92.5	112.5	39.5	102.5
	75, 100	112.5	39.5	102.5			

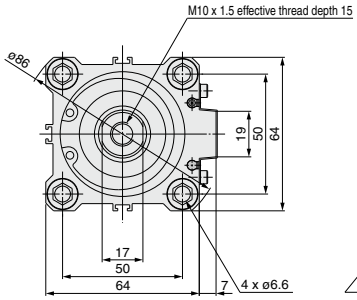
Double clevis bracket material: Cast iron
Surface treatment: Painted

Dimensions: ø50

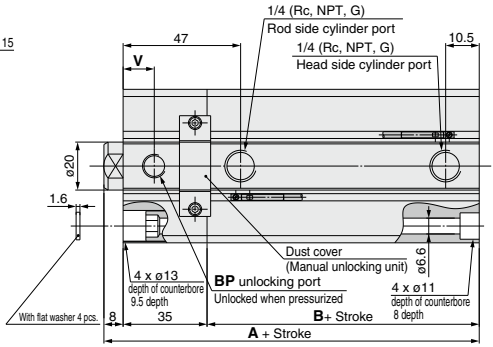
Both ends tapped type: C□LQA50



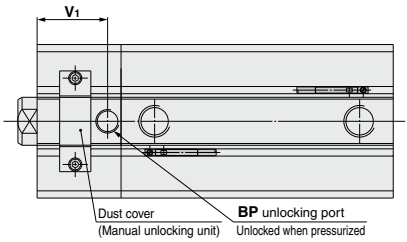
Basic type (Through-hole): C□LQB50



Extension locking



Retraction locking



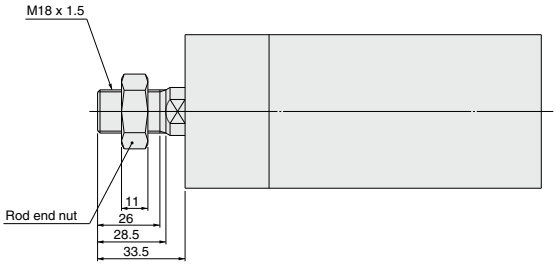
A, B Dimensions (mm)

Bore size (mm)	Stroke range (mm)	Without auto switch		With auto switch	
		A	B	A	B
50	10 to 50	73.5	30.5	83.5	40.5
	75, 100	83.5	40.5		

Port thread type	BP	V	V1
Rc	1/8	13	28
NPT			
G	M5 x 0.8	15	30.2

∗ Dimensions for cylinders with a rubber bumper are the same as the standard type above.
∗∗ Refer to page 866 for details of rod end nuts and accessory brackets.

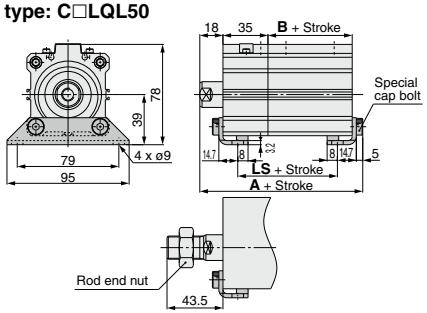
Rod end male thread



Note) Be sure to use the attached flat washers when mounting a cylinder from the rod side.

Dimensions: ø50

Foot type: C□LQL50

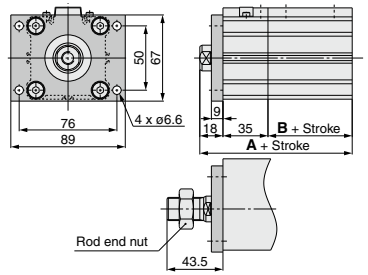


Foot Type (mm)

Bore size (mm)	Stroke range	Without auto switch			With auto switch		
		A	B	LS	A	B	LS
50	10 to 50	91.7	30.5	42.5	101.7	40.5	52.5
	75, 100	101.7	40.5	52.5			

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Rod side flange type: C□LQF50

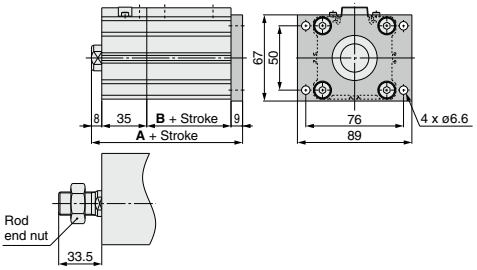


Rod Side Flange Type (mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
50	10 to 50	83.5	30.5	93.5	40.5
	75, 100	93.5	40.5		

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head Side flange type: C□LQG50

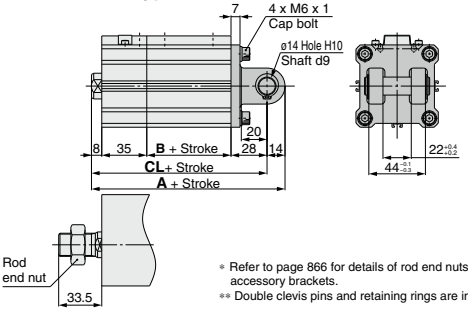


Head Side Flange Type (mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch	
		A	B	A	B
50	10 to 50	82.5	30.5	92.5	40.5
	75, 100	92.5	40.5		

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Double clevis type: C□LQD50



Double Clevis Type (mm)

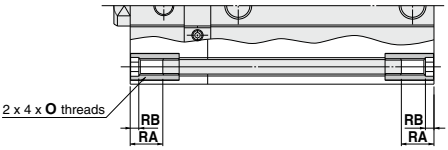
Bore size (mm)	Stroke range	Without auto switch			With auto switch		
		A	B	CL	A	B	CL
50	10 to 50	115.5	30.5	101.5	125.5	40.5	111.5
	75, 100	125.5	40.5	111.5			

Double clevis bracket material: Cast iron
Surface treatment: Painted

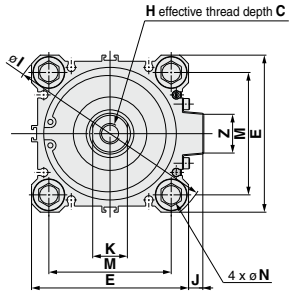
∗ Refer to page 866 for details of rod end nuts and accessory brackets.
∗∗ Double clevis pins and retaining rings are included.

Dimensions: ø63, ø80, ø100

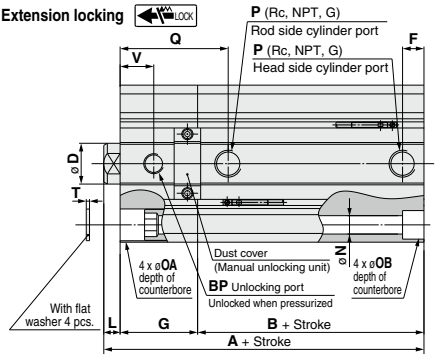
Both ends tapped type: C□LQA63/80/100



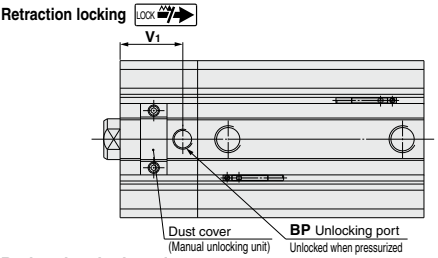
Basic type (Through-hole): C□LQB63/80/100



Extension locking



Retraction locking

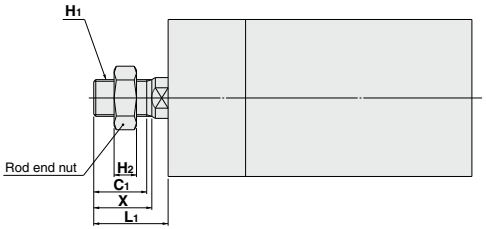


Retraction Locking

(mm)

Bore size (mm)	V1		
	Rc	NPT	G
63	30.5		33
80	35.5		37.7
100	40.5		41.5

Rod end male thread



Rod End Male Thread

(mm)

Bore size (mm)	C1	X	H1	H2	L1
63	26	28.5	M18 x 1.5	11	33.5
80	32.5	35.5	M22 x 1.5	13	43.5
100	32.5	35.5	M26 x 1.5	16	43.5

∗ Dimensions for cylinders with a rubber bumper are the same as the standard type above.
∗∗ Refer to page 866 for details of rod end nuts and accessory brackets.

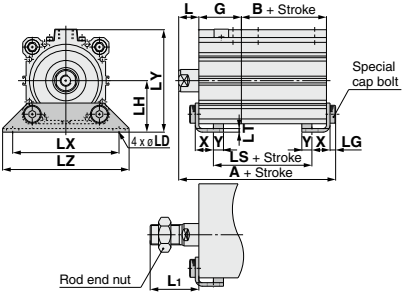
Note) Be sure to use the attached flat washers when mounting a cylinder from the rod side.

(mm)

Bore size (mm)	Stroke range (mm)	Without auto switch A	Without auto switch B	With auto switch A	With auto switch B	BP Rc	BP NPT	BP G	C	D	E	F	G	H	I	J	K	L	M	N	O	OA	OB	P	Q	RA	RB	T	V	Z
63	10 to 50	82	36	92	46	1/8	M5 x 0.8		15	20	77	10.5	38	M10 x 1.5	103	7	17	8	60	9	M8 x 1.25	15.6 depth 12	14 depth 10.5	1/4	53	16	4.2	1.6	16.5	19
	75, 100	92	46																											
80	10 to 50	96.5	43.5	106.5	53.5	1/8	1/8		21	25	98	12.5	43	M16 x 2.0	132	6	22	10	77	11	M10 x 1.5	19.6 depth 15.5	17.5 depth 13.5	3/8	59	16	4.2	2	18.5	26
	75, 100	106.5	53.5																											
100	10 to 50	115	53	125	63	1/4	1/4		27	30	117	13	50	M20 x 2.5	156	6.5	27	12	94	11	M10 x 1.5	19.6 depth 15.5	17.5 depth 13.5	3/8	73	16	4.2	2	23	26
	75, 100	125	63																											

Dimensions: ø63, ø80, ø100

Foot type: CLQL/CDLQL



Foot Type

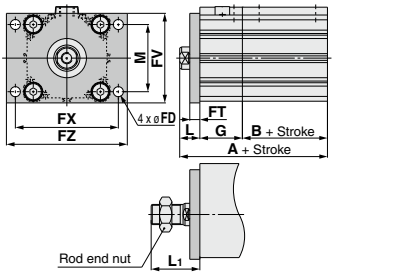
(mm)

Bore size (mm)	Stroke range	Without auto switch			With auto switch			G	L
		A	B	LS	A	B	LS		
63	10 to 50	100.2	36	48	110.2	46	58	38	18
	75, 100	110.2	46	58					
80	10 to 50	118	43.5	56.5	128	53.5	66.5	43	20
	75, 100	128	53.5	66.5					
100	10 to 50	138	53	69	148	63	79	50	22
	75, 100	148	63	79					

Bore size (mm)	L1	LD	LG	LH	LT	LX	LY	LZ	X	Y
63	43.5	11	5	46	3.2	95	91.5	113	16.2	9
80	53.5	13	7	59	4.5	118	114	140	19.5	11
100	53.5	13	7	71	6	137	136	162	23	12.5

Foot bracket material: Carbon steel
Surface treatment: Nickel plated

Rod side flange type: CLQF/CDLQF



Rod Side Flange Type

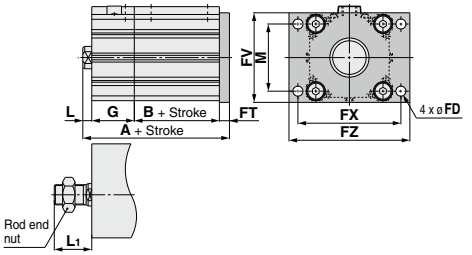
(mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch		FD	FT
		A	B	A	B		
63	10 to 50	92	36	102	46	9	9
	75, 100	102	46				
80	10 to 50	106.5	43.5	116.5	53.5	11	11
	75, 100	116.5	53.5				
100	10 to 50	125	53	135	63	11	11
	75, 100	135	63				

Bore size (mm)	FV	FX	FZ	G	L	L1	M
63	80	92	108	38	18	43.5	60
80	99	116	134	43	20	53.5	77
100	117	136	154	50	22	53.5	94

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Head Side flange type: CLQG/CDLQG



Head Side Flange Type

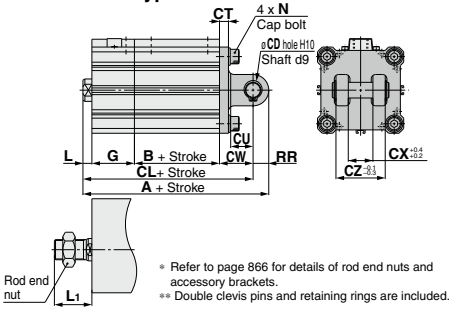
(mm)

Bore size (mm)	Stroke range	Without auto switch		With auto switch		FD	FT
		A	B	A	B		
63	10 to 50	91	36	101	46	9	9
	75, 100	101	46				
80	10 to 50	107.5	43.5	117.5	53.5	11	11
	75, 100	117.5	53.5				
100	10 to 50	126	53	136	63	11	11
	75, 100	136	63				

Bore size (mm)	FV	FX	FZ	G	L	L1	M
63	80	92	108	38	8	33.5	60
80	99	116	134	43	10	43.5	77
100	117	136	154	50	12	43.5	94

Flange bracket material: Carbon steel
Surface treatment: Nickel plated

Double clevis type: CLQD/CDLQD



* Refer to page 866 for details of rod end nuts and accessory brackets.
** Double clevis pins and retaining rings are included.

Double Clevis Type

(mm)

Bore size (mm)	Stroke range	Without auto switch			With auto switch			CD	CT
		A	B	CL	A	B	CL		
63	10 to 50	126	36	112	136	46	122	14	8
	75, 100	136	46	122					
80	10 to 50	152.5	43.5	134.5	162.5	53.5	144.5	18	10
	75, 100	162.5	53.5	144.5					
100	10 to 50	182	53	160	192	63	170	22	13
	75, 100	192	63	170					

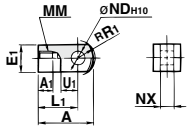
Bore size (mm)	CU	CW	CX	CZ	G	L	L1	N	RR
63	20	30	22	44	38	8	33.5	M8 x 1.25	14
80	27	38	28	56	43	10	43.5	M10 x 1.5	18
100	31	45	32	64	50	12	43.5	M10 x 1.5	22

Double clevis bracket material: Cast iron
Surface treatment: Painted

CLQ Series
Accessory Bracket Dimensions

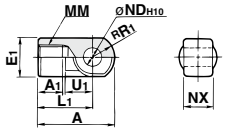
Single Knuckle Joint

I-G02, I-G03



Material: Rolled steel
Surface treatment: Nickel plated

I-G04, I-G05
I-G08, I-G10



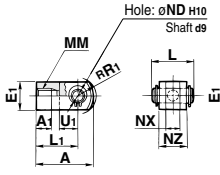
Material: Cast iron
Surface treatment: Nickel plated

(mm)

Part no.	Applicable bore size (mm)	A	A1	E1	L1	MM	RR1	U1	ND	NX
I-G02	**20**	34	8.5	□16	25	M8 x 1.25	10.3	11.5	$8^{+0.058}_{0}$	$8^{-0.2}_{-0.4}$
I-G03	**25**	41	10.5	□20	30	M10 x 1.25	12.8	14	$10^{+0.058}_{0}$	$10^{-0.2}_{-0.4}$
I-G04	**32, 40**	42	14	ø22	30	M14 x 1.5	12	14	$10^{+0.058}_{0}$	$18^{-0.3}_{-0.5}$
I-G05	**50, 63**	56	18	ø28	40	M18 x 1.5	16	20	$14^{+0.070}_{0}$	$22^{-0.3}_{-0.5}$
I-G08	**80**	71	21	ø38	50	M22 x 1.5	21	27	$18^{+0.070}_{0}$	$28^{-0.3}_{-0.5}$
I-G10	**100**	79	21	ø44	55	M26 x 1.5	24	31	$22^{+0.084}_{0}$	$32^{-0.3}_{-0.5}$

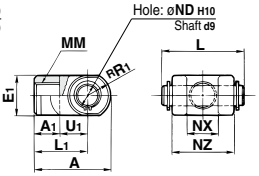
Double Knuckle Joint

Y-G02, Y-G03



Material: Rolled steel
Surface treatment: Nickel plated

Y-G04, Y-G05
Y-G08, Y-G10



Material: Cast iron
Surface treatment: Nickel plated

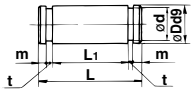
(mm)

Part no.	Applicable bore size (mm)	A	A1	E1	L1	MM	RR1	U1	ND
Y-G02	**20**	34	8.5	□16	25	M8 x 1.25	10.3	11.5	$8^{+0.058}_{0}$
Y-G03	**25**	41	10.5	□20	30	M10 x 1.25	12.8	14	$10^{+0.058}_{0}$
Y-G04	**32, 40**	42	16	ø22	30	M14 x 1.5	12	14	$10^{+0.058}_{0}$
Y-G05	**50, 63**	56	20	ø28	40	M18 x 1.5	16	20	$14^{+0.070}_{0}$
Y-G08	**80**	71	23	ø38	50	M22 x 1.5	21	27	$18^{+0.070}_{0}$
Y-G10	**100**	79	24	ø44	55	M26 x 1.5	24	31	$22^{+0.084}_{0}$

Part no.	Applicable bore size (mm)	NX	NZ	L	Applicable pin part no.
Y-G02	**20**	$8^{+0.4}_{+0.2}$	16	21	IY-G02
Y-G03	**25**	$10^{+0.4}_{+0.2}$	20	25.6	IY-G03
Y-G04	**32, 40**	$18^{+0.5}_{+0.3}$	36	41.6	IY-G04
Y-G05	**50, 63**	$22^{+0.5}_{+0.3}$	44	50.6	IY-G05
Y-G08	**80**	$28^{+0.5}_{+0.3}$	56	64	IY-G08
Y-G10	**100**	$32^{+0.5}_{+0.3}$	64	72	IY-G10

∗ Knuckle pins and retaining rings are included.

Knuckle Pin (Common with double clevis pin)

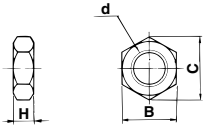


Material: Carbon steel
(mm)

Part no.	Applicable bore size (mm)	D	L	d	L1	m	t	Applicable retaining ring
IY-G02	**20**	$8^{-0.040}_{-0.076}$	21	7.6	16.2	1.5	0.9	Type C 8 for axis
IY-G03	**25**	$10^{-0.040}_{-0.076}$	25.6	9.6	20.2	1.55	1.15	Type C 10 for axis
IY-G04	**32, 40**	$10^{-0.040}_{-0.076}$	41.6	9.6	36.2	1.55	1.15	Type C 10 for axis
IY-G05	**50, 63**	$14^{-0.050}_{-0.093}$	50.6	13.4	44.2	2.05	1.15	Type C 14 for axis
IY-G08	**80**	$18^{-0.050}_{-0.093}$	64	17	56.2	2.55	1.35	Type C 18 for axis
IY-G10	**100**	$22^{-0.065}_{-0.117}$	72	21	64.2	2.55	1.35	Type C 22 for axis

∗ Retaining rings are included.

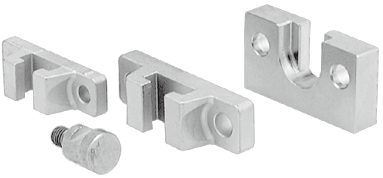
Rod End Nut



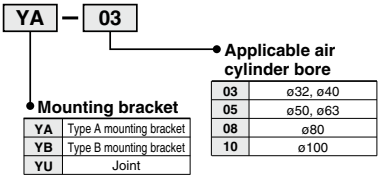
Material: Rolled steel
(mm)

Part no.	Applicable bore size (mm)	d	H	B	C
NT-02	**20**	M8 x 1.25	5	13	15.0
NT-03	**25**	M10 x 1.25	6	17	19.6
NT-04	**32, 40**	M14 x 1.5	8	22	25.4
NT-05	**50, 63**	M18 x 1.5	11	27	31.2
NT-08	**80**	M22 x 1.5	13	32	37.0
NT-10	**100**	M26 x 1.5	16	41	47.3

Simple Joint: ø32 to ø100



Joint and Mounting Bracket (Type A, Type B) Part No.



YA	Type A mounting bracket
YB	Type B mounting bracket
YU	Joint

03	ø32, ø40
05	ø50, ø63
08	ø80
10	ø100

Bore size (mm)	Joint	Applicable mounting bracket	
		Type A mounting bracket	Type B mounting bracket
32, 40	YU-03	YA-03	YB-03
50, 63	YU-05	YA-05	YB-05
80	YU-08	YA-08	YB-08
100	YU-10	YA-10	YB-10

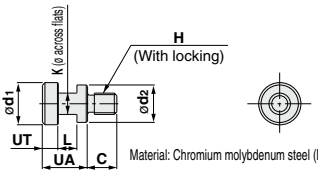
Allowable Eccentricity

Bore size (mm)	32	40	50	63	80	100
Eccentricity tolerance	±1				±1.5	±2
Backlash	0.5					

<Ordering>
- Joints are not included with the A or B type mounting brackets. Order them separately.

(Example)
Bore size ø40 Part no.
- Type A mounting bracket part number·····YA-03
- Joint·····YU-03

Joint

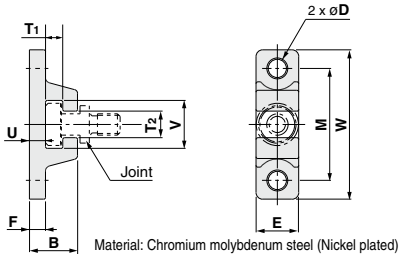


Material: Chromium molybdenum steel (Nickel plated)

(mm)

Part no.	Applicable bore size (mm)	UA	C	d1	d2	H	K	L	UT	Weight (g)
YU-03	**32, 40**	17	11	15.8	14	M8 x 1.25	8	7	6	25
YU-05	**50, 63**	17	13	19.8	18	M10 x 1.5	10	7	6	40
YU-08	**80**	22	20	24.8	23	M16 x 2	13	9	8	90
YU-10	**100**	26	26	29.8	28	M20 x 2.5	14	11	10	160

Type A Mounting Bracket



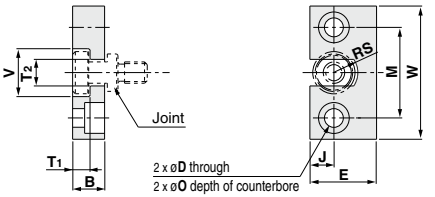
Material: Chromium molybdenum steel (Nickel plated)

(mm)

Part no.	Bore size (mm)	B	D	E	F	M	T1	T2
YA-03	**32, 40**	18	6.8	16	6	42	6.5	10
YA-05	**50, 63**	20	9	20	8	50	6.5	12
YA-08	**80**	26	11	25	10	62	8.5	16
YA-10	**100**	31	14	30	12	76	10.5	18

Part no.	Bore size (mm)	U	V	W	Weight (g)
YA-03	**32, 40**	6	18	56	55
YA-05	**50, 63**	8	22	67	100
YA-08	**80**	10	28	83	195
YA-10	**100**	12	36	100	340

Type B Mounting Bracket



Material: Stainless steel

(mm)

Part no.	Bore size (mm)	B	D	E	J	M	O
YB-03	**32, 40**	12	7	25	9	34	11.5 depth 7.5
YB-05	**50, 63**	12	9	32	11	42	14.5 depth 8.5
YB-08	**80**	16	11	38	13	52	18 depth 12
YB-10	**100**	19	14	50	17	62	21 depth 14

Part no.	Bore size (mm)	RS	T1	T2	V	W	Weight (g)
YB-03	**32, 40**	9	6.5	10	18	50	80
YB-05	**50, 63**	11	6.5	12	22	60	120
YB-08	**80**	14	8.5	16	28	75	230
YB-10	**100**	18	10.5	18	36	90	455

Auto Switch Mounting 1

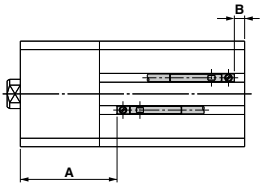
Minimum Auto Switch Mounting Stroke

(mm)

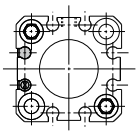
No. of auto switches mounted	D-M9□V D-F7□V D-J79C	D-A9□V D-A7□ D-A80 D-A73C D-A80C	D-A9□ D-M9□	D-M9□WV D-M9□AV D-F7□WV D-F7BAV	D-M9□W D-M9□A D-A7□H D-A80H D-F7□ D-J79	D-A79W	D-F7□W D-J79W D-F7BA D-F79F	D-P3DWA	D-P4DW
1 pc.	5	5	10	10	15	15	20	15	15
2 pcs.	5	10	10	15	15	20	20	15	15

Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

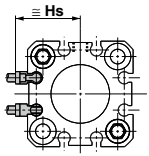
ø20, ø25



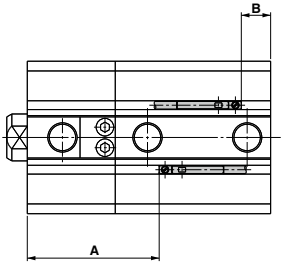
D-M9□
D-M9□W
D-M9□A
D-A9□



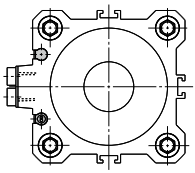
D-M9□V
D-M9□WV
D-M9□AV
D-A9□V



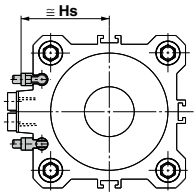
ø32 to ø100



D-M9□
D-M9□W
D-M9□A
D-A9□



D-M9□V
D-M9□WV
D-M9□AV
D-A9□V



Auto Switch Proper Mounting Position (mm)

Auto switch model / Bore size (mm)	D-M9□ D-M9□V D-M9□W D-M9□WV D-M9□A D-M9□AV		D-A9□ D-A9□V	
	A	B	A	B
20	37	7.5	33	3.5
25	42	9.5	38	5.5
32	44	9	40	5
40	50	11.5	46	7.5
50	49	14.5	45	10.5
63	54.5	17.5	50.5	13.5
80	63.5	21	59.5	17
100	74	27	70	23

Auto Switch Mounting Height (mm)

Auto switch model / Bore size (mm)	D-M9□V D-M9□WV D-M9□AV	D-A9□V
	Hs	Hs
20	25	22.5
25	27	24.5
32	29	27
40	32.5	30.5
50	38.5	36.5
63	42	40
80	52	50
100	62	60

Note) Adjust the auto switch after confirming the operating conditions in the actual setting.

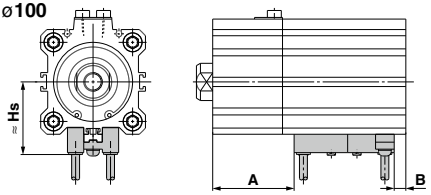
Auto Switch Proper Mounting Position (Detection at Stroke End) and Its Mounting Height

D-A7□
D-A80
D-A7□H
D-A80H
D-F7□
D-J79

D-F7□W
D-J79W
D-F79F
D-F7NT
D-F7BA
D-A73C

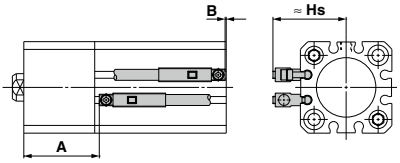
D-A80C
D-J79C
D-A79W
D-F7□WV
D-F7□V
D-F7BAV

ø32 to ø100

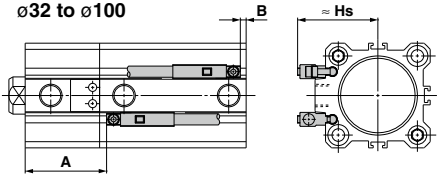


D-P3DWA

ø25

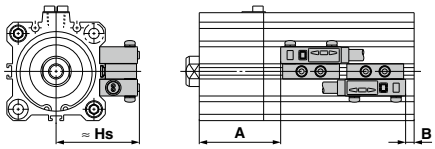


ø32 to ø100



D-P4DW

ø40 to ø100



Auto Switch Proper Mounting Position

(mm)

Auto switch model / Bore size (mm)	D-A73 D-A80		D-A72/A7□H D-A80H/A73C D-A80C/F7BAV D-F7BA/F79F D-F7□W/F7□ D-J79/F7□V D-J79C/J79W D-F7□WV		D-F7NT		D-A79W		D-P3DWA		D-P4DW	
	A	B	A	B	A	B	A	B	A	B	A	B
20	—	—	—	—	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	37.5	5	—	—
32	41	6	41.5	6.5	46.5	11.5	38.5	3.5	39.5	4.5	—	—
40	47	8.5	47.5	9	52.5	14	44.5	6	45.5	7	43	4.5
50	46	11.5	46.5	12	51.5	17	43.5	9	44.5	10	42	7.5
63	51.5	14.5	52	15	57	20	49	12	50	13	47.5	10.5
80	60.5	18	61	18.5	66	23.5	58	15.5	59	16.5	56.5	14
100	71	24	71.5	24.5	76.5	29.5	68.5	21.5	69.5	22.5	67	20

Note 1) Adjust the auto switch after confirming the operating conditions in the actual setting.
Note 2) For bore sizes ø32 to ø50, the D-P3DWA is mountable only on the port side.

Auto Switch Mounting Height

(mm)

Auto switch model / Bore size (mm)	D-A7□ D-A80	D-A7□H D-A80H D-F7□ D-J79 D-F7□W D-J79W D-F7BA D-F79F D-F7NT	D-A73C D-A80C	D-F7□V D-F7□WV D-F7BAV	D-J79C	D-A79W	D-P3DWA	D-P4DW
	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs
20	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	33	—
32	31.5	32.5	38.5	35	38	34	35.5	—
40	35	36	42	38.5	41.5	37.5	39	44
50	41	42	48	44.5	47.5	43.5	45	50
63	47.5	48.5	54.5	51	54	50	48.5	56.5
80	57.5	58.5	64.5	61	64	60	58.5	66.5
100	67.5	68.5	74.5	71	74	70	68.5	76.5

Auto Switch Mounting 2

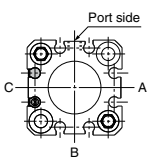
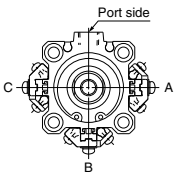
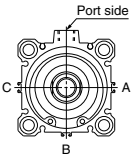
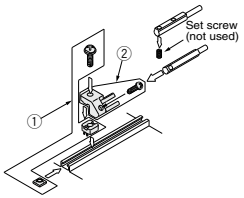
Operating Range

(mm)

Auto switch model	Bore size (mm)							
	20	**25**	**32**	**40**	**50**	**63**	**80**	**100**
D-M9□/M9□V **D-M9□W/M9□WV** **D-M9□A/M9□AV**	4.5	4.5	5	5	6	6.5	6.5	7.5
D-A9□/A9□V	10	10	9.5	9.5	9.5	11.5	9	11.5
D-A7□/F7□H **D-A73C** **D-A80/A80H** **D-A80C**	—	—	12	11	10	12	12	13
D-A79W	—	—	13	14	14	16	15	17
D-F7□/F7□V **D-J79/J79C** **D-F7□W/F7□WV** **D-J79W** **D-F7BA/F7BAV** **D-F7NT/F79F**	—	—	6	6	6	6.5	6.5	7
D-P3DWA	—	5	6	6	7.5	6.5	6.5	7.5
D-P4DW	—	—	—	5	5	5	5	5.5

∗ Since this is a guideline including hysteresis, not meant to be guaranteed. (Assuming approximately ±30% dispersion)
There may be the case it will vary substantially depending on an ambient environment.
∗ Auto switch mounting brackets BQ2-012 are not used for sizes over ø32 of D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V) types.
The above values indicate the operating range when mounted with the current auto switch installation groove.

Auto Switch Mounting Bracket: Part No.

Auto switch mounting surface / Auto switch model	Bore size (mm)				
	ø20	**ø25**	**ø32, ø40, ø50**		**ø63, ø80, ø100**
					
	Auto switch mounting surface		Auto switch mounting surface		Auto switch mounting surface
	Port, A, B, C sides		Port side	A, B, C sides	Port, A, B, C sides
D-M9□ **D-M9□V** **D-M9□W** **D-M9□WV** **D-M9□A** **D-M9□AV** **D-A9□** **D-A9□V**	Auto switch mounting bracket not required.		Auto switch mounting bracket not required.	1. BQ-2 2. BQ2-012 Two kinds of auto switch mounting brackets are used as a set. 	Auto switch mounting bracket not required.
D-P3DWA	—	Auto switch mounting bracket not required.	Auto switch mounting bracket not required.	—	Auto switch mounting bracket not required.

Note 1) For each cylinder series, when a compact auto switch is mounted on the three sides (A, B and C above) other than the port side of bore sizes ø32 to ø50, the auto switch mounting brackets above are required. Order them separately from cylinders.
(It is the same as when mounting compact cylinders with an auto switch mounting rail, but not with ø63 to ø100 compact auto switch installation groove.)
Example order
CDLQB32-50-M9BW 1 unit
BQ-2 2 pcs.
BQ2-012 2 pcs.
Note 2) Auto switch mounting brackets and auto switches are shipped together with cylinders.

Auto Switch Mounting Bracket: Part. No.

Auto switch model	Bore size (mm)						
	25	32	40	50	63	80	100
D-A7□/A80 **D-A73C/A80C** **D-A7□H/A80H** **D-A79W** **D-F7□/J79** **D-F7□V** **D-J79C** **D-F7□W/J79W** **D-F7□WV** **D-F7BA/F7BAV** **D-F79F/F7NT**	—	BQ-2					
D-P4DW	—	BQP1-050					

Note 1) Auto switch mounting brackets and auto switches are shipped together with cylinders.

[Mounting screw set made of stainless steel]

The following set of mounting screws made of stainless steel (including nuts) is available. Use it in accordance with the operating environment. (Please order BQ-2 separately, since the auto switch spacer (for BQ-2) is not included.)

BBA2: For D-A7/A8/F7/J7 types

Water resistant auto switches, D-F7BA/F7BAV are set on the cylinder with the stainless steel screws above when shipped. When an auto switch is shipped independently, BBA2 is attached.

Note 1) Refer to page 1443 for the details of BBA2.

Note 2) When mounting D-M9□A(V) on a port other than the ports for ø32, ø40 and ø50, order auto switch mounting brackets BQ2-012S, BQ-2 and stainless steel screw set BBA2 separately.

Auto Switch Mounting Bracket Weight

Auto switch mounting bracket part no.	Weight (g)
BQ-2	1.5
BQ2-012	5
BQP1-050	16

Other than the applicable auto switches listed in “How to Order”, the following auto switches can be mounted. For details, refer to pages 1341 to 1435.

Auto switch type	Model	Electrical entry (Fetching direction)	Features
Reed	D-A73	Grommet (Perpendicular)	—
	D-A80		Without indicator light
	D-A73H, A76H	Grommet (In-line)	—
	D-A80H		Without indicator light
Solid state	D-F7NV, F7PV, F7BV	Grommet (Perpendicular)	—
	D-F7NWV, F7BWV		Diagnostic indication(2-color indicator)
	D-F7BAV		Water resistant (2-color indicator)
	D-F79, F7P, J79	Grommet (In-line)	—
	D-F79W, F7PW, J79W		Diagnostic indication(2-color indicator)
	D-F7BA		Water resistant (2-color indicator)
	D-F7NT		With timer
	D-P5DW		Magnetic field resistant (2-color indicator)

∗ For solid state auto switches, auto switches with a pre-wired connector are also available. Refer to pages 1410 and 1411 for details.

∗ Normally closed (NC = b contact) solid state auto switches (D-M9□E(V)) are also available. Refer to page 1360 for details.

∗ D-A7/A8/F7/J7 types cannot be mounted on ø20 and ø25.