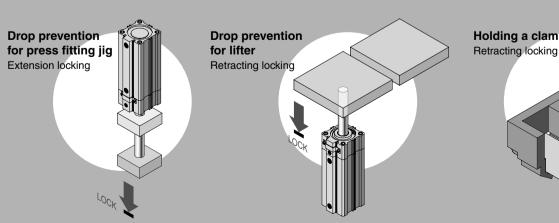
Compact Cylinder with Lock

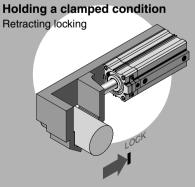
Series CLQ

Ø20, Ø25, Ø32, Ø40, Ø50, Ø63, Ø80, Ø100



Drop prevention when the pressure of air source is decreased or the residual pressure is released.



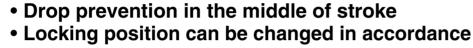




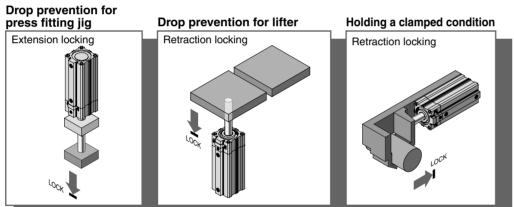
Individual -X□



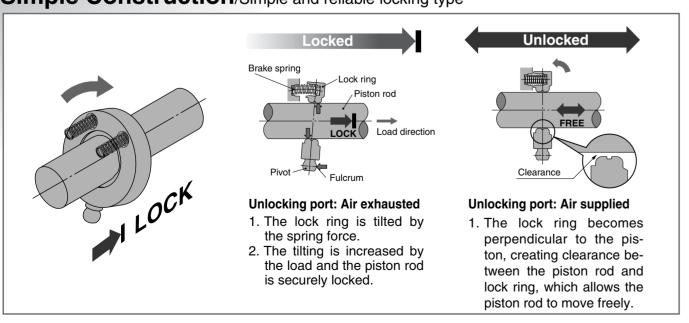
Drop prevention is possible within the entire stroke at any position.



 Locking position can be changed in accordance with the external stopper position and the thickness of clamped workpieces.



Simple Construction/Simple and reliable locking type



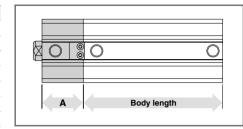
Low profile with compact lock unit

Lock unit length

27 mm to 50 mm

 The lock unit does not project beyond the cylinder's external dimensions

Thickness of Lock	k Unit (mm)
Bore size (mm)	Α
20	27
25	31
32	32
40	34
50	35
63	38
80	43
100	50

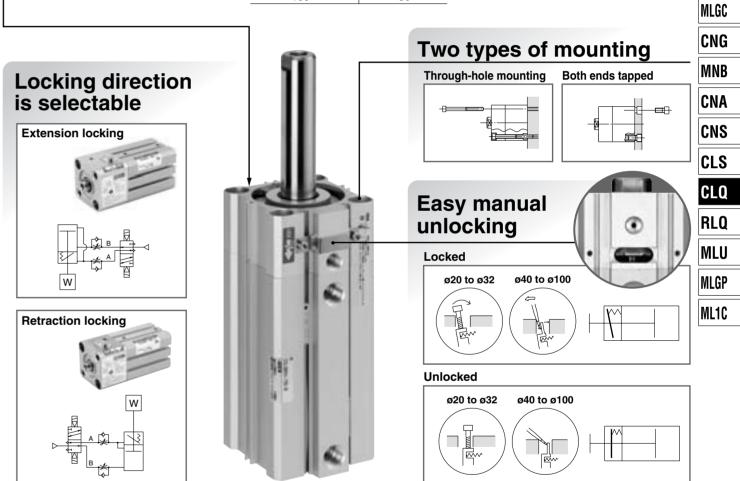


CLJ2

CLM2

CLG1

CL1



Wide Size Variations from \(\varnothing 20 \) to \(\varnothing 100 \)

Series	Manustina	Locking	Bore size					Sta	ndard s	troke (n	nm)														
Series	Mounting	direction	direction	(mm)	5	10	15	20	25	30	35	40	45	50	75	100									
	Through-hole/	Through-hole/ Both ends tapped			0	0	0	0	0	0	0	0	0	0											
	common common	Extension locking		25	0	0	0	0	0	0	0	0	0	0											
	CLQ Through-hole Both ends tapped style Extension locking Retraction locking		32		0	0	0	0	0	0	0	0	0	0	0										
CLQ		Through-hole Retraction	Through-hole	Retraction	Retraction locking	n-hole Retraction locking	Through-hole Retraction locking	igh-hole				40		0	0	0	0	0	0	0	0	0	0	0	D-
									50		0	0	0	0	0	0	0	0	0	0	0] - X			
		nds locking						63		0	0	0	0	0	0	0	0	0	0	0	Indiv				
			80		0	0	0	0	0	0	0	0	0	0	0	-X									
			100		0	0	0	0	0	0	0	0	0	0	0										



Series CLQ Specific Product Precautions 1

Be sure to read before handling.

Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

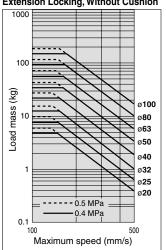
Selection

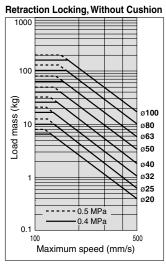
\land Warning

- The holding force (max. static load) indicates the maximum capability to hold a static load without vibration and impact. The maximum load in a locked state should be below 50 % of the holding force (max. static load).
 - Refer to 6 when the kinetic energy of the workpiece is absorbed at the cylinder end or eccentric loads are applied.
- Do not use for intermediate stops while the cylinder is operating.
 - This cylinder is designed for locking against inadvertent movement with the locking mechanism from a stationary condition. Do not perform intermediate stops while the cylinder is operating, as this may damage the cylinder, cause unlocking malfunction or shorten the service life.
- 3. Select the correct locking direction, as this cylinder does not generate holding force opposite to the locking direction.
 - The extension locking does not generate holding force in the cylinder's retracting direction, and the retraction lock does not generate holding force in the cylinder's extension direction.
- Even when locked, there may be stroke movement up to 1 mm in the locking direction due to external forces such as the weight of the workpiece.
 - Even when locked, if air pressure drops, stroke movement up to 1 mm may be generated in the locking direction of the lock mechanism due to external forces such as the workpiece weight.
- 5. When in the locked state, do not apply a load accompanied by an impact shock, strong vibration or turning force, etc.
 - This may damage the locking mechanism, shorten the service life or cause unlocking malfunction.
- 6. Operate so that load mass, maximum speed and eccentric distance are within the limiting ranges in the graphs below. If the products are used beyond the limiting range, it may lead to a reduced service life or cause damage to the machinery.

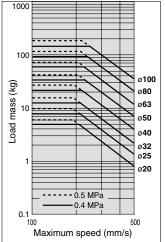
Allowable Kinetic Energy (Energy absorbable at the cylinder end)

Extension Locking, Without Cushion Retraction Locking, Without Cushion

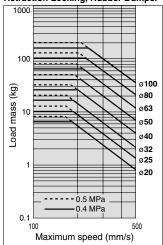




Extension Locking, Rubber Bumper Retraction

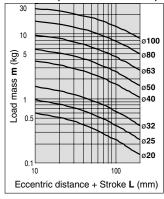


Retraction Locking, Rubber Bumper

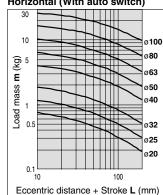


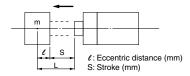
Allowable Load Mass

Horizontal (Without auto switch)



Horizontal (With auto switch)











Series CLQ Specific Product Precautions 2

Be sure to read before handling.

Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

Pneumatic Circuit

Marning

- Drop prevention circuit
- Do not use 3 position valves with circuit example 1.
 The lock may be released due to inflow of the unlocking pressure.
- 2. Install speed controllers as meter-out control. (Circuit example 1)

When they are not installed or they are used under meter-in control, it may cause malfunction.

3. Branch off the compressed air piping for the lock unit between the cylinder and the speed controller. (Circuit example 1)

Note that branching off in other sections may shorten the service life.

4. Perform piping so that the unlocking port side going from the piping junction is short. (Circuit example 1)

If the piping of unlocking port side is longer than that of the cylinder port from the piping junction, this may cause unlocking malfunction or shorten the service life.

5. Be aware of reverse exhaust pressure flow from common exhaust type valve manifolds. (Circuit example 1)

Since the lock may be released due to reverse exhaust pressure flow, use an individual exhaust type manifold or single type valve.

6. Be sure to release the lock before operating the cylinder. (Circuit example 2)

When the lock release delays, a cylinder may eject at high speed, which is extremely dangerous. It may also damage the cylinder, greatly shorten the service life or cause locking malfunction. Even when the cylinder moves freely, be sure to release the lock and operate the cylinder.

7. Be aware that the locking action may be delayed due to the piping length or the timing of exhaust. (Circuit example 2)

The locking action may be delayed due to the piping length or the timing of exhaust, which also makes the stroke movement toward the lock larger. Install the solenoid valve for locking closer to the cylinder than the cylinder drive solenoid valve.

- Emergency stop circuit
- 1. Perform emergency stops with the pneumatic circuit. (Circuit examples 3 and 4)

This cylinder is designed for locking against inadvertent movement from a stationary condition. Do not perform intermediate stops while the cylinder is operating, as this may damage the cylinder, cause unlocking malfunction or shorten the service life. Emergency stops must be performed with the pneumatic circuit, and workpieces must be held with the locking mechanism after the cylinder fully stops.

2. When restarting the cylinder from the locked state, remove the workpiece and exhaust the residual pressure in the cylinder. (Circuit examples 3 and 4)

A cylinder may eject at high speed, which is extremely dangerous. It may also damage the cylinder, greatly shorten the service life or cause locking malfunction.

3. Be sure to release the lock before operating the cylinder. (Circuit example 4)

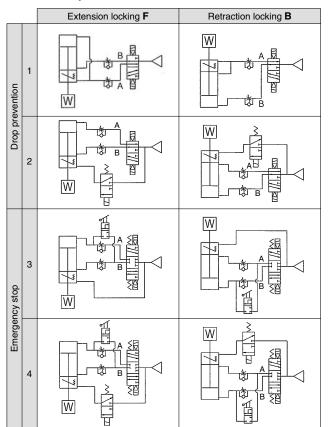
When the lock release delays, the cylinder may eject at high speed, which is extremely dangerous. It may also damage the cylinder, greatly shorten the service life or cause locking malfunction. Even when the cylinder moves freely, be sure to release the lock and operate the cylinder.

- Drop prevention circuit, Emergency stop circuit
- 1. If installing a solenoid valve for a lock unit, be aware that repeated supply and exhaustion of air may cause condensation. (Circuit examples 2 and 4)

 The lock unit operating stroke is very small and so the pipe is long. If supplying and exhausting air repeatedly condensation.

long. If supplying and exhausting air repeatedly, condensation, which occurs by adiabatic expansion, accumulates in the lock unit. This may then cause air leakage and an unlocking malfunction due to corrosion of internal parts.

Circuit example



Mounting

⚠ Caution

1. Be sure to connect the load to the rod end with the cylinder in an unlocked condition.

If ${\bf \tilde{t}}$ this is done in the locked state, it may cause damage to the lock mechanism.

2. Mount auto switches from the head side.

The lock body and cylinder tube exterior have the same shape for cylinder bore sizes ø40 to ø100, but auto switches may not be mountable from the rod side. For the head side flange or double clevis styles, install mounting brackets after mounting auto switches and auto switch mounting brackets from the head side.



CLJ2

CLM₂

CLG1

CL₁

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

RLQ

MLU

MLGP

ML1C

Individual





Series CLQ Specific Product Precautions 3

Be sure to read before handling. Refer to front matters 42 and 43 for Safety Instructions and pages 3 to 11 for Actuator and Auto Switch Precautions.

Preparing for Operation

⚠ Warning

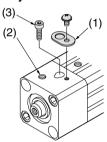
1. When starting operation from the locked position, be sure to restore air pressure to the B line in the pneumatic circuit. (Example 1)

When pressure is not applied to the B line, the load may drop or the cylinder may eject at high speed, which is extremely dangerous. It may also damage the cylinder, greatly shorten the service life or cause unlocking malfunction. When applying pressure to the B line, be sure to confirm whether the environment is safe, since workpieces may move.

 Size Ø20 to Ø 32 are shipped in the unlocked condition maintained by the unlocking bolt. Be sure to remove the unlocking bolt following the steps below before operation.

The unlocking mechanism will not be effective without the removal of the unlocking bolt.

Only ø20 to ø32



- Confirm that there is no air pressure inside the cylinder, and remove the dust cover (1).
- Supply air pressure of 0.2 MPa or more to unlocking port (2) shown in the drawing on the left.
- 3) Remove the unlocking bolt (3) with a hexagon wrench (width across flats 2.5).

Since a holding function for the unlocked state is not available for sizes ø40 through ø100, they can be used as shipped.

Manually Unlocking

⚠ Warning

1. Do not perform unlocking while an external force such as a load or spring force is being applied.

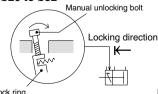
This is very dangerous because the cylinder will move suddenly.

Release the lock after preventing cylinder movement with a lifting device such as a jack.

2. After confirming safety, operate the manual release following the steps shown below.

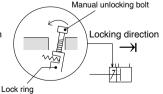
Confirm that there are no personnel inside the load movement range, etc., and that there is no danger even if the load moves suddenly.

Manually unlocking ø20 to ø32





- Remove the dust cover.
- 2) Screw a manual unlocking bolt (a bolt of M3 x 0.5 x 15 ℓ or more commercially available) into the lock ring threads as shown above, and lightly push the bolt in the direction of the arrow (head side) to unlock.

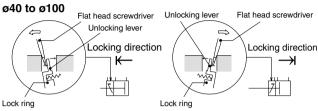


Retraction locking

- 1) Remove the dust cover.
- 2) Screw a manual unlocking bolt (a bolt of M3 x 0.5 x 15 c or more commercially available) into the lock ring threads as shown above, and lightly push the bolt in the direction of the arrow (rod side) to unlock.

Manually Unlocking

⚠ Warning



Extension locking

- 1) Remove the dust cover.
- 2) Insert a flat head screwdriver on the rod side of the manual unlocking lever as shown in the figure above, and lightly push the screwdriver in the direction of the arrow (rod side) to unlock.

Retraction locking

- 1) Remove the dust cover.
- 2) Insert a flat head screwdriver on the head side of the manual unlocking lever as shown in the figure above, and lightly push the screwdriver in the direction of the arrow (head side) to unlock.

Maintenance

⚠ Caution

1. In order to maintain good performance, operate with clean unlubricated air.

If lubricated air, compressor oil or drainage, etc., enters the cylinder, there is a danger of sharply reducing the locking performance.

2. Do not apply grease to the piston rod.

There is a danger of sharply reducing the locking performance.

3. Never disassemble the lock unit.

It contains a heavy duty spring which is dangerous and there is also a danger of reducing the locking performance.

4. Never remove the pivot seal and disassemble the internal unit.

As for Ø20 to Ø32, a Ø12 silver seal (pivot seal) is labeled on the one surface of the lock body (on the surface opposite from the unlocking port). The seal is meant for dust prevention, but even if it's peeled off, there would be no problem functionally. However, never disassemble the internal parts.

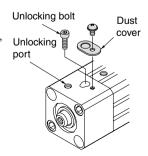
Holding the Unlocked State

Marning

1. ø20 to ø32 can hold the unlocked condition.

<Holding the unlocked state>

- 1) Remove the dust cover.
- Supply air pressure of 0.2 MPa or more to the unlocking port, and set the lock ring to the perpendicular position.
- 3) Screw the attached bolt for unlocking (hexagon socket head cap screw/ø20, ø25: M3 x 5 ℓ, ø32: M3 x 10 ℓ) into the lock ring to hold the unlocked condition.



2. To use the lock mechanism again, be sure to remove the unlocking bolt.

When the unlocking bolt is screwed in, the lock mechanism does not function. Remove the unlocking bolt according to the steps prescribed in the section of "Preparing for Operation".



CLJ2

CLM2

CLG1

CL1

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ RLQ

MLU

MLGP

ML1C

Individual -X□

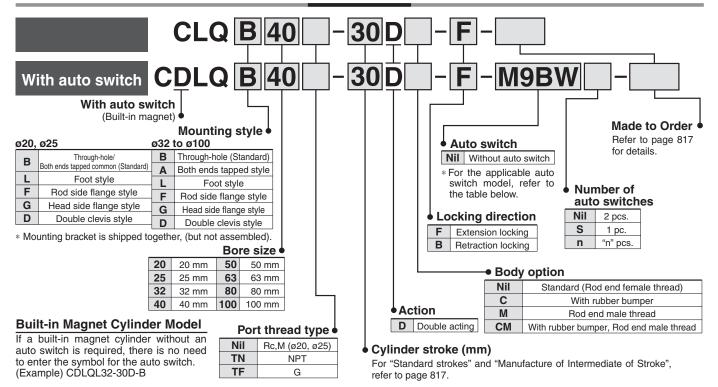


Compact Cylinder with Lock **Double Acting, Single Rod**

Series C

ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100

How to Order



Applicable Auto Switch/Refer to pages 1719 to 1827 for detailed specifications of auto switches.

		Flactical	ight	Wiring	L	oad vo	ltage	Auto s	witch model	Lea	ad wi	re le	ngth	(m)	Due suined	A 1	ماطمه
Type	Special function	Electrical entry	Indicator light	(Output)		DC	AC	Perpendicular	In-line	0.5		3		None	Pre-wired connector		cable ad
		0,	igi	(٨٥	ø20, ø25 ø32 to ø100		(Nil)	(M)	(L)	(Z)	(N)	00111100101		
				3-wire (NPN)		5 V,		M9NV	M9N	•			0	_	0	IC circuit	
		Grommet		3-wire (PNP)		12 V		M9PV	M9P	•			0	_	0	10 GIIGUIL	
				2-wire		12V		M9BV	M9B	•			0	_	0		
ڃ		Connector				120		J79C	_	•	<u> </u>			•	_		
switch	Diagnostic indication			3-wire (NPN)		5 V,		M9NWV	M9NW	•			0	_	0	IC circuit	
	Diagnostic indication (2-color indication)		,,	3-wire (PNP)		12 V		M9PWV	M9PW				0	_	0	10 GIIGUII	Relay,
state	(E color indication)		Yes	2-wire	24 V	12 V	—	M9BWV	M9BW	•	•		0	_	0	_	PLC
S	Water resistant	Grommet	ļ ·	3-wire (NPN)		5 V,		M9NAV***	M9NA***		0		0	_	0	IC circuit	0
Solid	(2-color indication)	Grommet		3-wire (PNP)		12 V		M9PAV***	M9PA***	0	0		0	_	0	10 circuit	
0,	,			2-wire		12 V		M9BAV***	M9BA***	0	0		0	_	0	_	
	With diagnostic output (2-color indication)			4-wire		5 V,12 V			F79F	•	<u> </u>		0	_	0	IC circuit	
	Magnetic field resistant			2-wire		l			─ P3DW**		<u> </u>			_	0		
	(2-color indication)			(Non-polar)				_	— P4DW	_	<u> </u>			_	0		
			es	3-wire (NPN equivalent)	_	5 V	_	A96V	A96	•	-	•	_	_	_	IC circuit	_
등		Grommet	>			_	200V	— A72	— A72H	•	I —	•	_	_	_		
Reed switch						12 V	100V	A93V	A93		I —	•	_	_	_		
8			None	2-wire		5 V,12 V	100 V or less	A90V	A90	•	I —	•	_	_	_	IC circuit	Relay,
æ		Connector	None Yes None	2-wire	24 V	12 V	_	— A73C	_			•		•	_	_	PLC
		COLLIGOROL	None]		5 V,12 V	24 V or less	— A80C	_	•	-	•	•		_	IC circuit	
	Diagnostic indication (2-color indication)	Grommet	Yes			_	_	— A79W	_	•	-	•	_	_	_	_	

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.

(Example) M9NWL

* Lead wire length symbols: 0.5 m Nil (Example) M9NW (Example) M9NWM

3 m L

5 m Z

None ······ N

- * Solid state auto switches marked with "O" are produced upon receipt of order.
- * D-P4DW□ is compatible with ø40 to ø100.
- * D-P4DW \square is assembled at the time of shipment.
- ** D-P3DW□ is compatible with ø25 to ø100. (Example) M9NWZ (Example) J79CN
 - 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 837 for details.
- * For details about auto switches with pre-wired connector, refer to pages 1784 and 1785. For D-P3DW\(\sigma\), refer to pages 1773-1 and 1773-2.

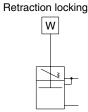
 * When D-A9\(\subseteq\((V)\)/M9\(\supseteq\((V)\)/ brackets separately. Refer to page 836 for details
- * When mounting brackets (foot/head side flange/double clevis style) are used, then in some cases auto switches cannot be retrofitted.



Compact Cylinder with Lock Double Acting, Single Rod Series CLQ

JIS Symbol

Extension locking F





Made to Order Specifications (For details, refer to pages 1836 and 1926.)

Symbol	Specifications
— XA□	Change of rod end shape
—XC35	With coil scraper (ø40 to ø100 only)

Refer to pages 834 to 837 for cylinders

- Minimum auto switch mounting stroke
- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range

with auto switches.

• Auto switch mounting bracket: Part no.

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		Withou	ut auto s	witch: –	10 to 70	°C (No	freezing	J)					
fluid temperature		With	auto sv	vitch: -1	0 to 60°	C (No fi	reezing)						
Lubrication				Non-	lube								
Piston speed				50 to 50	00 mm/s	i							
Stroke length tolerance				^{+1.0} mr	n 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 lo	ocking (I	Exhaust	locking)					
Unlocking pressure	9	0.2 MPa or more									
Lock starting press	sure	0.05 MPa or less									
Locking direction	One direction (Either extension locking or retraction locking)										
	Rc	M5 >	M5 x 0.8 1/8 1/4								
Unlocking port size	NPT	_	1/8								
	G		M5 x 0.8 1/8						1/4		
Holding force (N)		157	245	402	629	982	1559	2513	3927		
(Maximum static lo	ad)	Equivalent to 0.5 MPa									

Note) Be sure to select cylinders referring page 812.

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 standa	Spacer is installed in the standard stroke body.								
Part no.	Refer to "How to Order" for the st	Refer to "How to Order" for the standard model no. on page 816.								
Method	Dealing with the stroke by the 1 mm interval is available trinstalling spacer with standard stroke cylinder.									
	Bore size (mm)	Stroke range (mm)								
Stroke range	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) \emptyset 40 to \emptyset 100 bumper spacers with intermediate strokes can be manufactured in 5 mm increments from 55 to 95 mm.

D-□

Individual -X□



CLJ2

CLM2

CLG1

CL₁

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

RLQ

MLU

MLGP

ML1C

817 a

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.

Note 3) Clevis pin and retaining ring are included with the double clevis style.

Theoretical Output



				(N)
Bore size (mm)	Operating direction	Ор	erating pressure (N	ЛРа)
Dore Size (ITIIII)	Operating direction	0.3	0.5	0.7
20	IN	71	118	165
20	OUT	94	157	220
25	IN	113	189	264
25	OUT	147	245	344
22	IN	181	302	422
32	OUT	241	402	563
40	IN	317	528	739
40	OUT	377	628	880
50	IN	495	825	1150
30	OUT	589	982	1370
63	IN	841	1400	1960
03	OUT	935	1560	2180
80	IN	1360	2270	3170
80	OUT	1510	2510	3520
100	IN	2140	3570	5000
100	OUT	2360	3930	5500

Mass

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

(a)

	(9) (9)													
Bore size					Sta	ndard s	troke (n	nm)						
(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 Mass:

Mounting/Both Ends Tapped (Type A)

(g)

Bore size		Standard stroke (mm)												
(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 Mass

(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
nou enu maie imeau	Nut	4	8	17	17	32	32	49	116
With rubber bumper		-2	-3	-3	-7	-9	-18	-31	-56
Foot style (Including mounting bolt)		152	174	137	149	221	288	638	1009
Rod side flange style (Including mounting bolt)		127	149	174	208	351	523	998	1307
Head side flange style (Including mounting bolt)		121	140	159	192	326	498	959	1251
Double clevis style (Including pin, snap ring, bolt and flat washer)		76	111	145	190	373	518	1064	1839

Calculation: (Example) CDLQD32-20DCM-B

 Basic mass : CLQA32-20D-□-----453 g Additional mass: Magnet------ 64 g Rod end male thread43 g Double clevis-----145 g

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

Auto Switch Mounting Bracket Mass

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

For the auto switch mass, refer to page 1719. Refer to pages 836 and 837 for applicable auto switch mounting brackets.



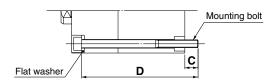
Compact Cylinder with Lock Double Acting, Single Rod Series CLQ

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-M5x55L 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	С	D	Mounting bolt part no.
CLQB20-5D		55	CQ-M5 x 55 L
-10D		60	x 60 L
-15D		65	x 65 L
-20D		70	x 70 L
-25D	10.5	75	x 75 L
-30D	10.5	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		60	CQ-M5 x 60 L
-10D		65	x 65 L
-15D		70	x 70 L
-20D		75	x 75 L
-25D	8.5	80	x 80 L
-30D	0.0	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	С	D	Mounting bolt part no.
CLQB32-10D		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	7	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		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	8.5	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	С	D	Mounting bolt part no.
CLQB50-10D		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	12.5	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		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	16.5	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	С	D	Mounting bolt part no.
CLQB80-10D		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	17	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		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	15.5	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	С	D	Mounting bolt part no.
CDLQB20-5D		65	CQ-M5 x 65 L
-10D		70	x 70 L
-15D		75	x 75 L
-20D		80	x 80 L
-25D	10.5	85	x 85 L
-30D	10.5	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		70	CQ-M5 x 70 L
-10D		75	x 75 L
-15D		80	x 80 L
-20D		85	x 85 L
-25D	8.5	90	x 90 L
-30D	0.5	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	С	D	Mounting bolt part no.
CDLQB32-10D		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	7	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		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	8.5	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	С	D	Mounting bolt part no.
CDLQB50-10D		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	12.5	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		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	16.5	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	С	D	Mounting bolt part no.
CDLQB80-10D		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	17	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		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	15.5	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

L 	
<u> </u>	
L	
L	D-□
L	
L	-X□
<u>-</u> I	Individual

-X□

CLJ2

CLM2

CLG1

CL1

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

RLQ

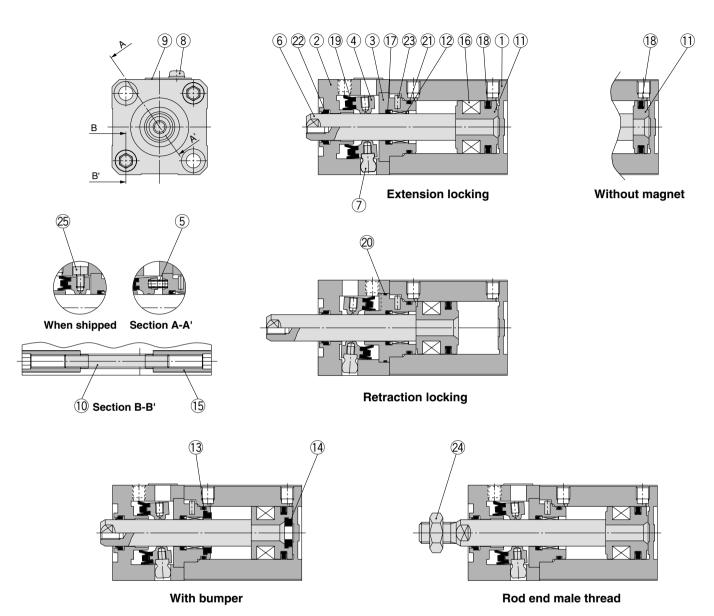
MLU

MLGP

ML1C



Construction: ø20 to ø32



Component Parts

Joneth Larts		
Description	Material	Note
Cylinder tube	Aluminum alloy	Hard anodized
Lock body	Aluminum alloy	Hard anodized
	A I	Extension locking: Chromated
intermediate collar	Aluminum alloy	Retraction locking: Hard anodized
Lock ring	Carbon steel	Heat treated
Brake spring	Steel wire	Zinc chromated
6 Piston rod	Stainless steel	ø20, 25: Hard chrome plated
	Carbon steel	ø32: Hard chrome plated
Pivot	Chromium molybdenum steel	Electroless nickel plated
Dust cover holding bolt	Carbon steel	Nickel plated
Dust cover	Stainless steel	
		ø20: Nickel plated
Tie-rod	Rolled steel	ø25: Zinc chromated
		ø32: Black zinc chromated
Piston	Aluminum alloy	Chromated
	Description Cylinder tube Lock body Intermediate collar Lock ring Brake spring Piston rod Pivot Dust cover holding bolt Dust cover	Description Material Cylinder tube Aluminum alloy Lock body Aluminum alloy Intermediate collar Aluminum alloy Lock ring Carbon steel Brake spring Steel wire Piston rod Stainless steel Carbon steel Pivot Chromium molybdenum steel Dust cover holding bolt Carbon steel Tie-rod Rolled steel

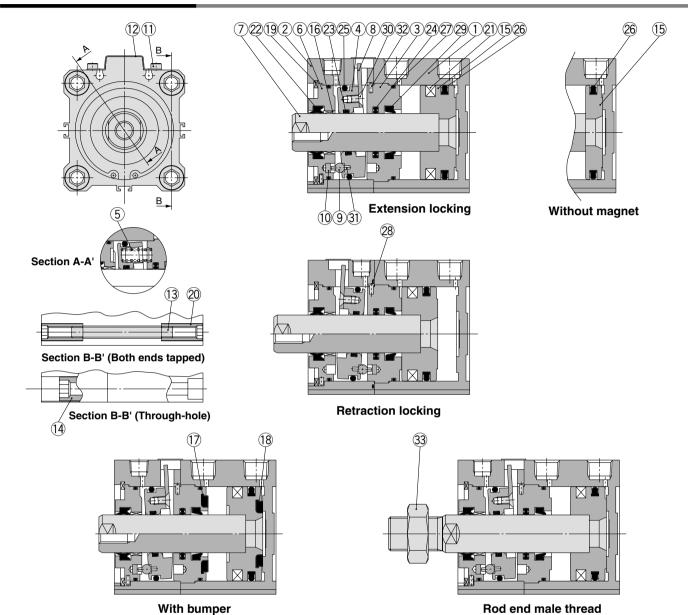
Note) The sectional drawing above shows the locked condition. (A bolt is used to maintain the cylinder in the unlocked condition when shinned)

No.	Description	Material	Note
INO.	Description	Oil-impregnated sintered alloy	
12	Bushing	Oil-impregnated sintered alloy	ø20, 25
		Copper alloy	ø32
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	Nickel plated
25	Unlocking bolt	Chromium molybdenum steel	Nickel plated



Compact Cylinder with Lock Double Acting, Single Rod Series CLQ

Construction: ø40 to ø100



Component Parts

ponent Parts		
Description	Material	Note
Cylinder tube	Aluminum alloy	Hard anodized
Lock body	Aluminum alloy	Hard anodized
Intermediate collar	Aluminum alloy	Chromated
Lock ring	Carbon steel	Heat treated
Brake spring	Steel wire	Zinc chromated
Caller	Aluminum bearing alloy	ø40: Hard anodized
Collar	Aluminum alloy casted	ø50 to ø100: Chromated, painted
Piston rod	Carbon steel	Hard chrome plated
Lever	Stainless steel	
Pivot pin	Carbon steel	Zinc chromated
Pivot key	Carbon steel	Zinc chromated
Dust cover holding bolt	Chromium molybdenum steel	Nickel plated
Dust cover	Rolled steel	Nickel plated
Tie week	Rolled steel	ø40, Zinc chromated
6 Collar All 7 Piston rod 8 Lever 9 Pivot pin 10 Pivot key 11 Dust cover holding bolt 12 Dust cover 13 Tie-rod 14 Unit holding bolt 15 Piston	Carbon steel	ø50 or larger, Zinc chromated
Unit holding bolt	Carbon steel	Nickel plated
Piston	Aluminum alloy	Chromated
Bushing	Copper alloy	For ø50 or larger only
	Description Cylinder tube Lock body Intermediate collar Lock ring Brake spring Collar Piston rod Lever Pivot pin Pivot key Dust cover holding bolt Dust cover Tie-rod Unit holding bolt Piston	Description Material Cylinder tube Aluminum alloy Lock body Aluminum alloy Intermediate collar Aluminum alloy Lock ring Carbon steel Brake spring Steel wire Collar Aluminum bearing alloy Aluminum alloy casted Piston rod Carbon steel Lever Stainless steel Pivot pin Carbon steel Pivot key Carbon steel Dust cover holding bolt Chromium molybdenum steel Dust cover Rolled steel Tie-rod Rolled steel Unit holding bolt Carbon steel Unit holding bolt Carbon steel Piston Aluminum alloy

Note) The sectional drawing above shows the locked condition.

	Trote) The Sectional drawing	g above snows the N	
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	Nickel plated
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	Nickel plated
31	Spring pin	Carbon steel	JIS B 2808
32	Parallel pin	Stainless steel	JIS B 1354
33	Rod end nut	Carbon steel	Nickel plated

D-□

-X□ Individual -X□

CLJ2 CLM2

CLG1

CL1

MLGC

CNG

MNB

CNA

CLS

CLQ

RLQ

MLU

MLGP

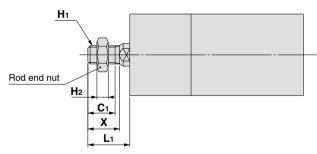
ML1C

Dimensions: ø20, ø25

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

Extension locking M5 x 0.8 2 x ø5.4 through Rod side cylinder port 2 x 2 x ø9 depth of counterbore Q \boldsymbol{H} thread effective depth \boldsymbol{C} M5 x 0.8 unlocking port 5.5 VΗ (Unlocks when pressurized) 7 depth ⋛ Σ ш M5 x 0.8 K 3.2 3.2 Head side cylinder port M 2 x 2 x M5 x 0.8 16 16 Dust cover (Manual unlocking unit) Ε w s G B + Stroke A + Stroke Retraction locking [LOCK 27] VH₁ W۱ <u>□ |Ø</u>| Dust cover (Manual unlocking unit) M5 x 0.8 unlocking port (Unlocks when pressurized)

Rod end male thread



(mm)

																				(,
Bore size	Stroke range	Without a	uto switch	With au	to switch	_		_	G	ш		K		М	0	_		VH	vv	w
(mm)	Olloke range	Α	В	Α	В			D E G	и П		' K		IVI	3	3	U	V11	V V	VV	
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 Fnd Male Thread

Rou Ella Male Tilreau												
Bore size (mm)	C ₁	х	H ₁	H2	L ₁							
20	12	14	M8 x 1.25	5	18.5							
25	15	17.5	M10 x 1.25	6	22.5							

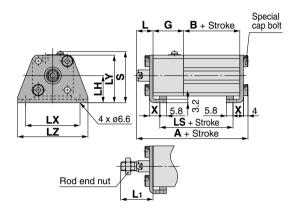
 $[\]ast$ Dimensions for cylinders with a rubber bumper are the same as the standard type above.

^{**} Refer to page 832 for details of rod end nuts and accessory brackets.

Compact Cylinder with Lock Double Acting, Single Rod Series CLQ

Dimensions: ø20, ø25

Foot style: CLQL/CDLQL



Foot Style

CLJ2

CLM2

Foot Style	oot Style (mm)													
Bore size (mm)	Stroke range	Witho	ut auto s	switch	With auto switch									
		Α	В	LS	Α	В	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							

·	CLG1
9.2	CL1

Bore size LY G LH LX LZ L₁ S (mm) 20 27 14.5 28.5 24 48 42 62 45.2 9 25 31 32.5 26 52 46 66 49.2 10.7 15

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

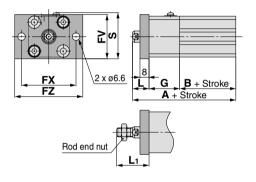
RLQ

MLU

MLGP

ML1C

Rod side flange style: CLQF/CDLQF

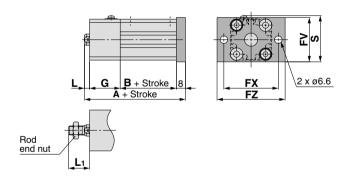


Rod Side Flange Style

(mm)

Bore size	Stroke range		Withou	uto sw	itch	With auto switch			
(mm)	Stroke	range	Α	Α		В		Α	В
20	5 to	61		19.5		71		29.5	
25	5 to 50		68.5		22.5		78.5		32.5
	1								
Bore size (mm)	FV	FX	FZ		G	L	-	L ₁	S
20	39	48	60		27	14	.5	28.5	40.7
25	42	52	64	Г	31	15		32.5	44.2

Head side flange style: CLQG/CDLQG



Head Side Flange Style

39

42 52

48

icaa olac i lalige olyle (mm)												
Bore size	Stroke	Without	uto sw	itch	With auto switch							
(mm)	Sticke	Α		В		Α		В				
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	-	L ₁	s			

60

64

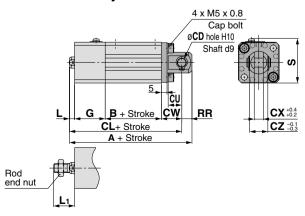
27

31 5

4.5 18.5 40.7

22.5 44.2

Double clevis style: CLQD/CDLQD



Double Clevis Style

20

25

- Cubic Ci	orio oty.						(mm)
Bore size	Stroke range	Witho	ut auto :	switch	With	auto sv	vitch
(mm)	Stroke range	Α	В	CL	Α	В	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	сх	cz	G	L	L ₁	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 832 for details of rod end nuts and accessory brackets.

D-□

-X□

Individual

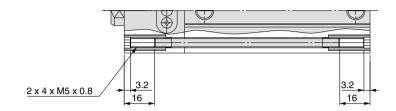
-X□



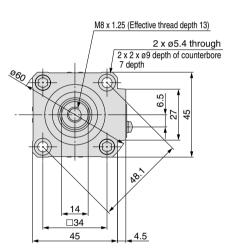
^{**} Double clevis pins and retaining rings are included.

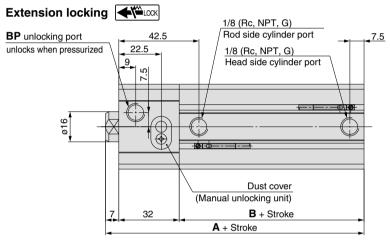
Dimensions: ø32

Both ends tapped style: C□LQA32

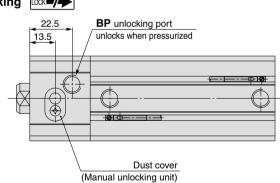


Basic style (Through-hole): C□LQB32





Retraction locking Look

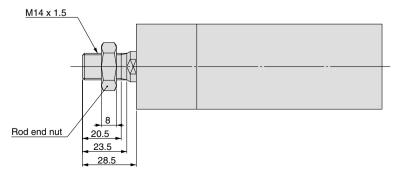


					(mm)
Bore size	Stroke	Without a	uto switch	With au	to switch
(mm)	range	Α	В	Α	В
20	10 to 50	62	23	72	20
32	75, 100	72	33	12	33

Port thread type	BP
Rc	1/0
NPT	1/8
G	M5 x 0.8

- * Dimensions for cylinders with a rubber bumper are the same as the standard type above.
- ** Refer to page 832 for details of rod end nuts and accessory brackets.

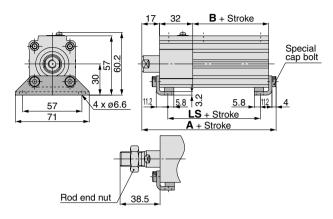
Rod end male thread





Dimensions: ø32

Foot style: C□LQL32



Foot Style

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

CLJ2

CLM2

CLG1

CL₁

MLGC

CNG

MNB

CNA

CNS

CLS

(mm)

В

33

Without auto switch With auto switch

82

В

23

33

72

82

CLQ

RLQ

MLU

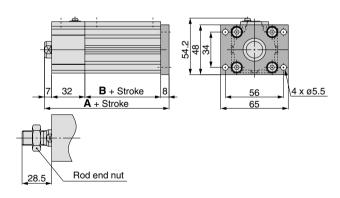
MLGP

ML1C

Rod side flange style: C□LQF32

56 65 4 x ø 5.5	8 17 32 A	B + Stroke + Stroke
Rod end nut	8.5	

Head Side flange style: C□LQG32



Head Side Flange Style

Rod Side Flange Style

Stroke range

10 to 50

75, 100

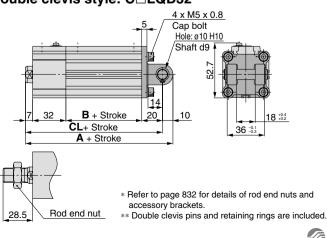
Bore size

(mm)

32

ricaa olac		(mm)			
Bore size	Stroke range	Without a	uto switch	With aut	o switch
(mm)	Stroke range	Α	В	Α	В
22	10 to 50	70	23	80	33
32	75, 100	80	33	80	33

Double clevis style: C□LQD32



Double Clevis Style

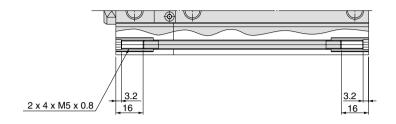
							(,
Bore size	Stroke range	Without auto switch			With auto switch			
(mm)	mm)		В	CL	Α	В	CL	
32	10 to 50	92	23	82	102	33	92	
32	75, 100	102	33	92	102	33	92	
								7

D-□

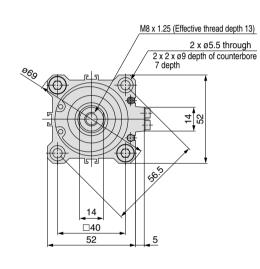
-X□ Individual -X□

Dimensions: ø40

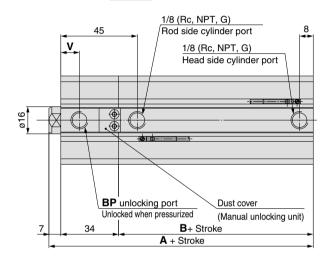
Both ends tapped style: C□LQA40



Basic style (Through-hole): C□LQB40



Extension locking



A. B Dimensions

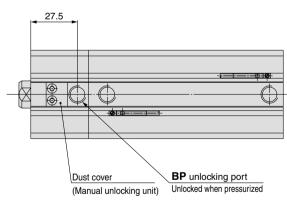
A, B Dimensions (mm)									
Bore size	Stroke range	Without a	uto switch	With aut	to switch				
(mm)	(mm)	Α	В	Α	В				
40	10 to 50	70.5	29.5	00 F	20 F				
40	75, 100	80.5	39.5	80.5	39.5				

(mm)	(mm)	Α	В	Α	В	
40	10 to 50	70.5	29.5	90 E	39.	
40	75, 100	80.5	39.5	80.5	39.	

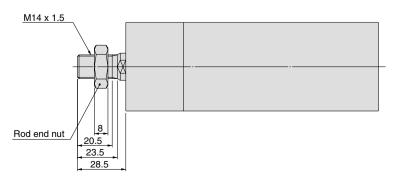
Port thread type	BP	٧
Rc	1/8	11
NPT	1/8	11
G	M5 x 0.8	13

* Dimensions for cylinders with a rubber bumper are the

Retraction locking LOCK



Rod end male thread



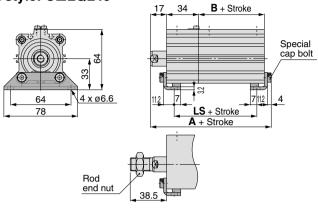


same as the standard type above.

** Refer to page 832 for details of rod end nuts and accessory brackets.

Dimensions: ø40





Foot Style

75, 100

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

39.5

97.7

57.5

Without auto switch With auto switch

90.5

В

29.5

39.5

80.5

90.5

(mm)

В

39.5

CLJ2

CLM2

CLG1

CL₁

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

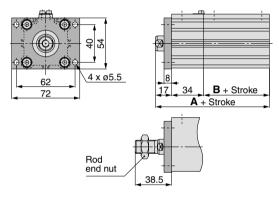
RLQ

MLU

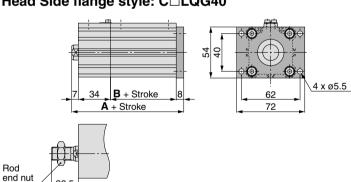
MLGP

ML1C

Rod side flange style: C□LQF40



Head Side flange style: C□LQG40



Head Side Flange Style

Rod Side Flange Style

Stroke range

10 to 50

75, 100

Bore size

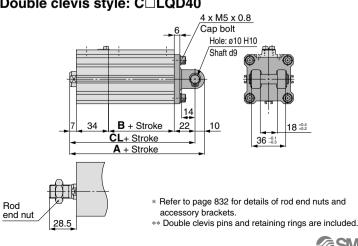
(mm)

40

	i icau Siuc			(mm)		
	Bore size Stroke rand		Without a	uto switch	With aut	o switch
	(mm)	Otroke range	Α	В	Α	В
_	40	10 to 50	78.5	29.5	88.5	39.5
		75, 100	88.5	39.5	88.5	39.5

Double clevis style: C□LQD40

28.5



Double Clevis Style

-				(111111)				
	Bore size	Stroke range	Witho	ut auto :	switch	With	auto sv	vitch
	(mm)	Otrono rango	Α	В	CL	Α	В	CL
	40	10 to 50	102.5	29.5	92.5	112.5	112.5 39.5	102.5
	40	75, 100	112.5	39.5	102.5			102.5

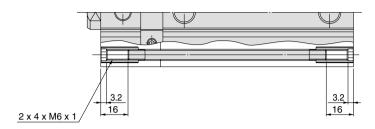
D-□

-X□

Individual -X□

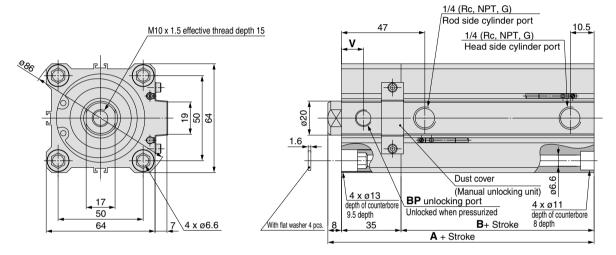
Dimensions: ø50

Both ends tapped style: C□LQA50

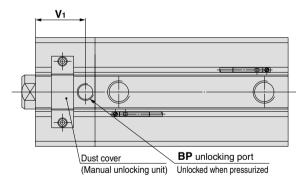


Basic style (Through-hole): C□LQB50

Extension locking



A, D DIIIIE	, b Differsions (iiiii)								
Bore size	Stroke range Without		uto switch	With auto switch					
(mm)	(mm)	Α	В	Α	В				
	10 to 50	73.5	30.5	83.5	40 F				
50	75, 100	83.5	40.5	83.5	40.5				



Rod end male thread

Port thread type	BP	V	V 1				
Rc	1/8	13	20				
NPT	1/8	13	28				
G	M5 x 0.8	15	30.2				
	Dimensions for cylinders with a rubber bumper are same as the standard type above.						
** Refer to page			d end nuts a				

Rod end nut

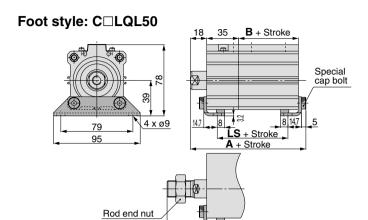
Note) Be sure to use the attached flat washers when mounting a cylinder from the rod side.



26 28.5

accessory brackets.

Dimensions: ø50



Foot Style

CLG1 (mm)

CLJ2

CLM2

CL1

MLGC

CNG

MNB

CNA

CLS

CLQ

RLQ

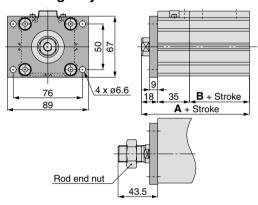
MLU

MLGP

ML1C

Bore size	Stroke range	Witho	ut auto s	switch	With auto switch					
(mm)	Ctrono rango	Α	В	LS	Α	В	LS			
50	10 to 50	91.7	30.5	42.5	101.7	40.5	52.5			
30	75, 100	101.7	40.5	52.5	101.7	40.5	52.5			

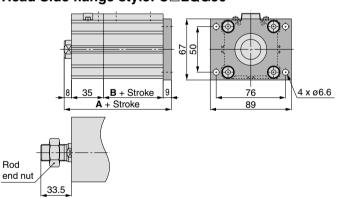
Rod side flange style: C□LQF50



CNS

Rod Sid	Rod Side Flange Style (mm													
Bore size	Stroke range	Without a	uto switch	With auto switch										
(mm)	Otroito rango	Α	В	Α	В									
50	10 to 50	83.5	30.5	93.5	40.5									
50	75, 100	93.5	40.5	93.5	40.5									

Head Side flange style: C□LQG50

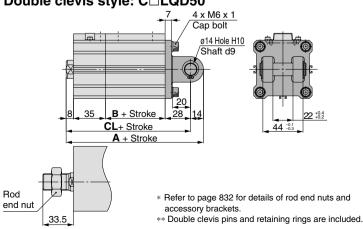


Head Side Flange Style

	(1	1111	111)
uto	sw	ito	h

					()			
Bore size	Stroke range	Without a	uto switch	With auto switch				
(mm)	Otroito rango	Α	В	Α	В			
50	10 to 50	82.5	30.5	92.5	40.5			
30	75, 100	92.5 40.5		92.5	40.5			

Double clevis style: C□LQD50



Double Clevis Style

Double C	mm													
Bore size	Stroke range	Witho	ut auto :	switch	With auto switch									
(mm)	Otroke range	Α	В	CL	Α	CL								
50	10 to 50	115.5	30.5	101.5	125.5	40.5	111.5							
50	75 100	125.5	40.5	111.5	123.3	40.5	111.5							

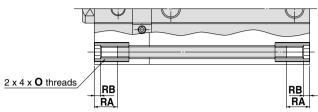
D-□ -X□

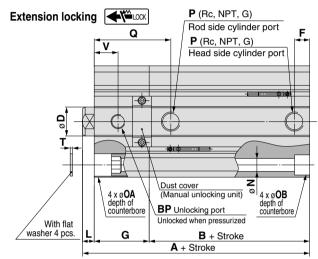
Individual -X□



Dimensions: ø63, ø80, ø100

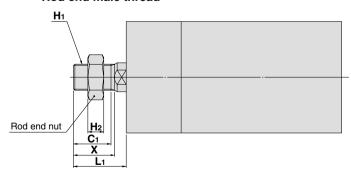
Both ends tapped style: C□LQA63/80/100





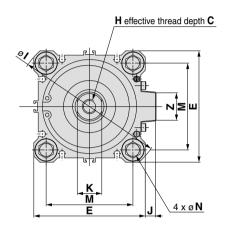
Retraction locking Lock V1 V1 Dust cover (Manual unlocking unit) Unlocked when pressurized

Rod end male thread



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

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



Retraction	Loc	king	9 (mm)
Bore size		٧	' 1
(mm)	Rc	NPT	G
63	30).5	33
80	35	5.5	37.7

40.5

100

Rod End	Rod End Male Thread (mm)													
Bore size (mm)	C ₁	Х	H ₁	H ₂	L ₁									
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									

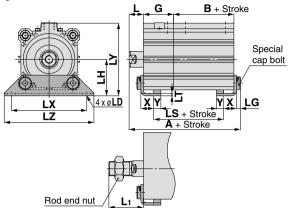
41.5

- * Dimensions for cylinders with a rubber bumper are the same as the standard type above.
- ** Refer to page 832 for details of rod end nuts and accessory brackets.

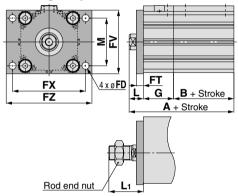
																												(r	mm)								
Bore	Stroke	With auto s	nout	W auto s	ith switch	В	Р	С	,	_	F	_				V			N			0.0	_	_	D.4	D D	_	v	_								
Bore size (mm)	range (mm)	Α	В	Α	В	Rc NPT	G	C	D	E	Г	G	Н	'	J	K	_	M	N	0	OA	ОВ	Р	Q	RA	KB		٧	-								
63	10 to 50	82	36	92	46	1/8	M5 x 0.8	, ,	9		10.		M40 4 5	100	7	47			•	M0 4 05	15.6	14	4/4		16	4.0		10.	10								
- 03	75, 100	92	46	32	40	1/6	0.0 X CIVI	15	20	77	10.5	38	M10 x 1.5	103	1	17	8	60	9	M8 x 1.25	depth 12	depth 10.5	1/4	53	16	4.2	1.6	16.5	19								
80	10 to 50	96.5	43.5	106 5	53.5	1/0	1/0	1/0	1/0	1/0	1/0	1/8	1/0	1/0	1/8	21	25	00	10.5	43	M16 x 2.0	100	•	22	10	77	11	M10 x 1.5	19.6	17.5	3/8	F0	16	4.0	_	10 5	00
00	75, 100	106.5		100.0	30.3	1/0	1/0	21	25	98	12.5	43	W10 X 2.0	132	b	22	10	//	11	WIIU X 1.5	depth 15.5	depth 13.5	3/8	59	16	4.2	2	18.5	26								
100	10 to 50	115	53	125	63	1/4	1/4	27	30	117	10	50	MOONOF	150	6.5	27	12	94	11	M10 v 1 F	19.6	17.5	3/8	73	16	4.2	2	23	26								
	75, 100	125	63	123	UJ	1/4	1/4	21	30	117	10	50	M20 x 2.5	136	0.5	21	12	94	11	M10 x 1.5	depth 15.5	depth 13.5	3/8	13	10	4.2	_	23	20								

Dimensions: ø63, ø80, ø100

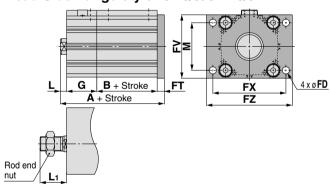
Foot style: CLQL/CDLQL



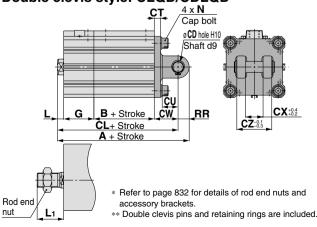
Rod side flange style: CLQF/CDLQF



Head Side flange style: CLQG/CDLQG



Double clevis style: CLQD/CDLQD



Foot Style

			(111111)							
Bore size	Stro	oke	Withou	ut auto	switch	With	auto s	witch	G	
(mm)	ran	ge	Α	В	LS	Α	В	LS	G	_
63	10 to	50	100.2	36	48	110.2	46	58	38	18
63	75,	100	110.2	46	58	110.2	40	30	36	10
90			118	43.5	56.5	128	53.5	66.5	43	20
80			128	53.5	66.5	128	53.5	00.5	43	20
100	10 to	10 to 50 1		53	69	140	60	79	F0	22
100			148	63	79	148	63	79	50	
Bore size (mm)			LG	LH	LT	LX	LY	LZ	Х	Υ
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

Rod Side Flange Style

												(111111)	1
	Bore size	Strol	ke	W	ithout au	uto switch	With a	uto swit	ch	FD		FT	Ī
	(mm)	(mm) range		A		В	Α	В		ги		г	
	63	10 to	50	92		36	102	46		9		9	
	63	75, 100		1	02	46	102	40	40			9	
	80	10 to	10 to 50		06.5	43.5	116.5	5 53.	_	11		11	Ī
	80	75, 1	00	116.5		53.5	110.5	5 55.	3	11		11	
	100	10 to 50		125		53	135	63				11	
	100	75, 1	75, 100		35	63	135	63		11		11	
Ì	Bore size												
	(mm)	FV FX			FZ	G	L	L ₁	I	M			
	63	80	92	2 108		38	18	43.5	43.5				
	80	99	116	3	134	43	20	53.5	3.5				

117

136

154

50

22

100

	Head Side	Fla	nge	• 5	Style)						(mm)
ĺ	Bore size	Strol	ke	W	ithout au	uto switch	With a	uto swit	ch	FD		FT
	(mm)	rang	je	Α		В	Α	В		רט		гі
	63	10 to	50	91		36	101	46		9		9
	03	75, 1	,		01	46	101	140		3		3
	80	10 to			07.5	43.5	117.5	5 53.	5	11		11
	80	75, 100			17.5	53.5	117.5	55.	5	11		11
	100	10 to 50		126		53	136	63		11		11
	100	75, 100		136		63	130	03	03			11
İ	Bore size	FV F		<u> </u>	FZ	G	L	L ₁		М		
	(mm)	nin) -				-						
	63	80	92	2_	108	38	8	33.5	(30		
	80	99	116	3	134	43	10	43.5	7	77		
	100	117	17 136		154	50	12	43.5	(94		

Head Side Flange Style

i icaa oia	C 1 10	inge	, Oty	ic						(mm)
Bore size	Str	oke	Witho	ut auto	switch	With	auto s	witch	CD	СТ
(mm)	rar	nge	Α	В	CL	Α	В	CL	CD	CI
63	10 t	o 50	126	36	112	136	46	122	14	8
03	75,	100	136	46	122	130	40	122	14	0
80	10 t	o 50	152.5	43.5	134.5	162.5	53.5	144.5	18	10
80	75,	100	162.5	53.5	144.5	102.5	55.5	144.5	10	10
100	10 t	o 50	182	53	160	192	63	170	22	13
100	75,	100	192	63	170	192	05	170	22	13
Bore size (mm)	CU	cw	сх	cz	G	L	L ₁	ı	1	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

D-□

-X□

CNS CLS

(mm)

CLJ2

CLM2

CLG1

CL₁

MLGC

CNG

MNB

CNA

CLQ **RLQ**

MLU

53.5

MLGP

ML1C

Accessory Bracket Dimensions

Single Knuckle Joint

Ш

I-G02, I-G03

MM

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

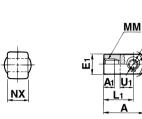
MM

Y-G02, Y-G03

Double Knuckle Joint

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

MM



Material: Rolled steel

Hole: ØND H10

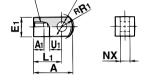
Shaft d9

Material: Cast iron

Hole: ØND H10

Shaft d9

ΝZ



ØNDн10

Material: Rolled steel

Material: Cast iron

ø**ND**н10

(mm)

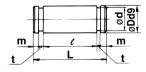
Part no.	Applicable bore size (mm)	Α	A 1	E ₁	L ₁	ММ	RR1	U ₁	ND	NX
I-G02	20	34	8.5	□16	25	M8 x 1.25	10.3	11.5	8 ^{+0.058}	8 -0.2
I-G03	25	41	10.5	□20	30	M10 x 1.25	12.8	14	10 0 0 0	10 -0.2
I-G04	32, 40	42	14	ø22	30	M14 x 1.5	12	14	10 +0.058	18 -0.3
I-G05	50, 63	56	18	ø28	40	M18 x 1.5	16	20	14 ^{+0.070}	22 -0.3
I-G08	80	71	21	ø38	50	M22 x 1.5	21	27	18 ^{+0.070}	28 -0.3
I-G10	100	79	21	ø44	55	M26 x 1.5	24	31	22 ^{+0.084}	32 -0.3

									(mm)
Part no.	Applicable bore size (mm)	A	A 1	E1	L ₁	ММ	RR1	U ₁	ND
Y-G02	20	34	8.5	□16	25	M8 x 1.25	10.3	11.5	8 +0.058
Y-G03	25	41	10.5	□20	30	M10 x 1.25	12.8	14	10 +0.058
Y-G04	32, 40	42	16	ø22	30	M14 x 1.5	12	14	10 +0.058
Y-G05	50, 63	56	20	ø28	40	M18 x 1.5	16	20	14 +0.070
Y-G08	80	71	23	ø38	50	M22 x 1.5	21	27	18 +0.070
Y-G10	100	79	24	ø44	55	M26 x 1.5	24	31	22 +0.084

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	20	25.6	IY-G03
Y-G04	32, 40	18 +0.5	36	41.6	IY-G04
Y-G05	50, 63	22 +0.5	44	50.6	IY-G05
Y-G08	80	28 +0.5	56	64	IY-G08
Y-G10	100	32 +0.5	64	72	IY-G10

^{*} Knuckle pins and retaining rings are included.

Knuckle Pin (Common with double clevis pin)

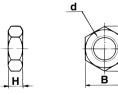


Material: Carbon steel (mm)

Part no.	Applicable bore size (mm)	D	L	d	ı	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

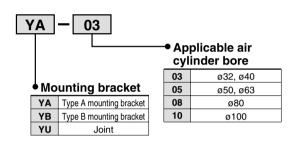
					(111111)
Part no.	Applicable bore size (mm)	d	н	В	С
NT-02	20	M8 x 1.25	5	13	15.0
NT-03	25	M10 x 1.25	6	17	19.6
NT-04	32, 40	M14 x 1.5	8	22	25.4
NT-05	50, 63	M18 x 1.5	11	27	31.2
NT-08	80	M22 x 1.5	13	32	37.0
NT-10	100	M26 x 1.5	16	41	47.3



Simple Joint: ø32 to ø100



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



Bore size	Bore size Joint		ounting bracket
(mm)	Joint	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						

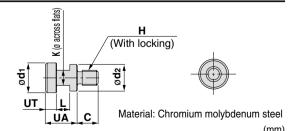
- <Ordering>
- Joints are not included with the A or B type mounting brackets. Order them separately. (Example)

Bore size ø40

Part no.

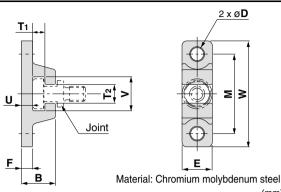
- Type A mounting bracket part number ----- YA-03
-YU-03

Joint



Part no.	Applicable bore size (mm)	UA	С	d ₁	d ₂	Н	K	L	UT	Mass (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

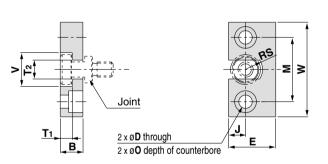
Type A Mounting Bracket



Part no.	Bore size (mm)	В	D	E	F	М	T ₁	T ₂
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	Mass (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

									(111111)	
Part no.	Bore size (mm)	В	D	E	J	М		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	1	1	1	2	٧	w	Mass (g)	
YB-03	32, 40	9	6	.5	1	0	18	50	80	
YB-05	50, 63	11	6	.5	1	2	22	60	120	
YB-08	80	14	8	.5	1	6	28	75	230	
YB-10	100	18	10	.5	5 1		36	90	455	

D-□

CLJ2

CLM2

CLG1

CL₁

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

RLQ

MLU

MLGP

ML1C



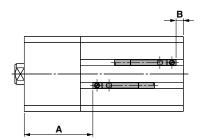
Minimum Auto Switch Mounting Stroke

n	n	r	n	ı١

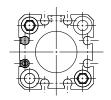
									(11111)
No. of auto switches mounted	D-M9□V D-F7□V D-J79C	D-A9□V D-A7□ D-A80 D-A73C D-A80C	D-A9□ D-M9□	D-M9□WV D-M9□AVL D-F7□WV D-F7BAVL	D-M9□W D-M9□AL D-A7□H D-A80H D-F7□ D-J79	D-A79W	D-F7□W D-J79W D-F7BAL D-F79F	D-P3DW□	D-P4DWL
1 pc.	5	5	10	10	15	15	20	15	15
2 pcs.	5	10	10	15	15	20	20	15	15

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

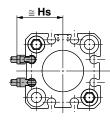
ø20, ø25



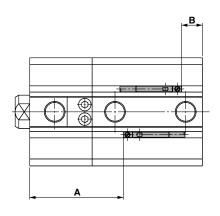
D-A9□ D-M9□ D-M9□W D-M9□AL



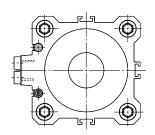
D-A9□V D-M9□V D-M9□WV D-M9□AVL



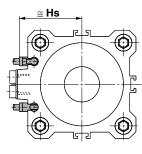
ø32 to ø100



D-A9□ D-M9□ D-M9□W D-M9□AL



D-A9□V D-M9□V D-M9□WV D-M9□AVL



Auto Switch Proper Mounting Position (mm)

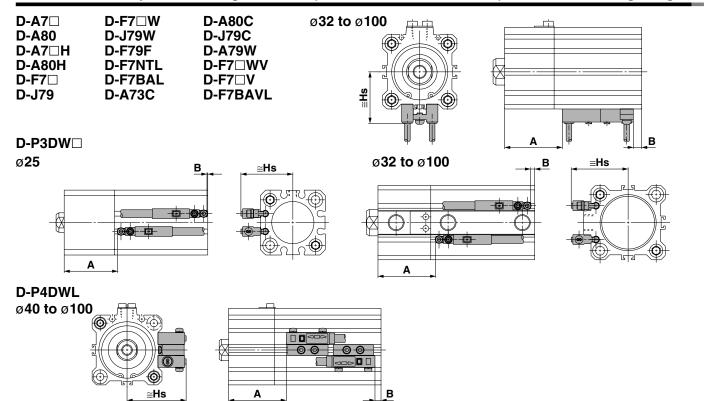
Auto switch model	D-AS		D-M9 U D-M9 U D-M9 U D-M9 U D-M9 AL D-M9 AVL			
(mm)	A	В	Α	В		
20	33	3.5	37	7.5		
25	38	5.5	42	9.5		
32	40	5	44	9		
40	46	7.5	50	11.5		
50	45	10.5	49	14.5		
63	50.5	13.5	54.5	17.5		
80	59.5	17	63.5	21		
100	70	23	74	27		

Auto Switch Mounting Height

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

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



Auto Switch	uto Switch Proper Mounting Position (mm)											
Auto switch model	D- <i>l</i>	173 180	D-A72/A D-A80H/ D-A80C/ D-F7BAI D-F7□W D-J79/F7 D-J79C/ D-F7□W	A73C F7BAVL L/F79F I/F7□ 7□V J79W	D-F7NTL		D-A79W		D-P3DW□		D-P4DWL	
(mm)	Α	В	Α	В	Α	В	Α	В	Α	В	Α	В
20	_	_	_	_	_	_	_	_	_	_	_	_
25	-	_	_	1	-	_	1	_	32.5	0	_	_
32	41	6	41.5	6.5	46.5	11.5	38.5	3.5	34.5	0	_	_
40	47	8.5	47.5	9	52.5	14	44.5	6	40.5	2	43	4.5
50	46	11.5	46.5	12	51.5	17	43.5	9	39.5	4.5	42	7.5
63	51.5	14.5	52	15	57	20	49	12	45	7.5	47.5	10.5
80	60.5	18	61	18.5	66	23.5	58	15.5	53	12	56.5	14
100	71	24	71.5	24.5	76.5	29.5	68.5	21.5	64.5	17.5	67	20

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

Auto Switcl	Auto Switch Mounting Height (mm)										
Auto switch model	D-A7□ D-A80	D-A7□H D-A80H D-F7□ D-J79 D-F7□W D-J79W D-F7BAL D-F79F D-F7NTL	D-A73C D-A80C	D-F7□V D-F7□WV D-F7BAVL	D-J79C	D-A79W	D-P3DW□	D-P4DWL			
(mm)	Hs	Hs	Hs	Hs	Hs	Hs	Hs	Hs			
20	_	_	_	_	_	_	_	_			
25	-	_	_	_	_	_	32	_			
32	31.5	32.5	38.5	35	38	34	34.5	_			
40	35	36	42	38.5	41.5	37.5	38	44			
50	41	42	48	44.5	47.5	43.5	44	50			
63	47.5	48.5	54.5	51	54	50	47.5	56.5			
80	57.5	58.5	64.5	61	64	60	57.5	66.5			
100	67.5	68.5	74.5	71	74	70	67.5	76.5			
·											

Individual

CLJ2

CLM2

CLG1

CL1

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

RLQ

MLU

MLGP

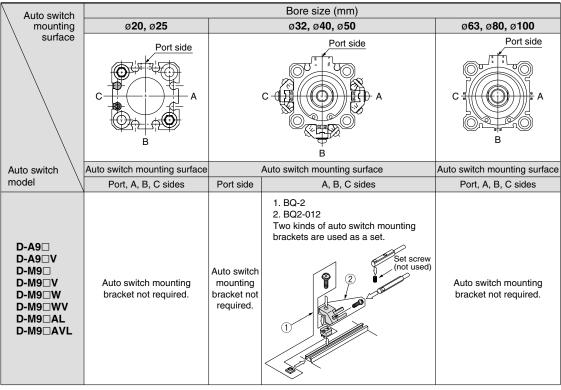
ML1C

Operating Range

								(mm)		
Auto switch model	Bore size (mm)									
Auto Switch model	20	25	32	40	50	63	80	100		
D-A9□/A9□V	10	10	9.5	9.5	9.5	11.5	9	11.5		
D-M9□/M9□V D-M9□W/M9□WV D-M9□AL/M9□AVL	4.5	4.5	5	5	6	6.5	6.5	7.5		
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-F7BAL/F7BAVL D-F7NTL/F79F	_	_	6	6	6	6.5	6.5	7		
D-P3DW□		4.5	4.5	6.5	5.5	7.5	7	8.5		
D-P4DWL		_	_	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 Bracket: Part. No.



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 brackets BQ2-012 are not used for sizes over ø32 of D-A9\(\times(V)/M9\(\time

The above values indicate the operating range when mounted with the conventional auto switch installation groove.

Compact Cylinder with Lock Double Acting, Single Rod Series CLQ

Auto Switch Mounting Bracket: Part. No.

Auto switch model	Bore size (mm)							
Auto switch model	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-F7□WV D-F7BAL/F7BAVL D-F79F/F7NTL	_			ВС	⊋-2			
D-P3DW□	BQ6-032S							
D-P4DWL	— 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-F7BAL/F7BAVL 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 1817 for the details of BBA2.

Note 2) When mounting D-M9□A(V)L 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 Mass

Auto switch mounting bracket part no.	Mass (g)
BQ-2	1.5
BQ2-012	5
BQ6-032S	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 1719 to 1827.

Auto switch type	Model	Electrical entry (Fetching direction)	Features		
	D-A73	Grammat (Parnandiaular)	_		
Reed	D-A80	Grommet (Perpendicular)	Without indicator light		
necu	D-A73H, A76H	Grommet (In-line)	_		
	D-A80H	Grommet (m-ine)	Without indicator light		
	D-F7NV, F7PV, F7BV		_		
	D-F7NWV, F7BWV	Grommet (Perpendicular)	Diagnostic indication(2-color indication)		
	D-F7BAVL		Water resistant (2-color indication)		
Solid state	D-F79, F7P, J79		_		
John State	D-F79W, F7PW, J79W		Diagnostic indication(2-color indication)		
	D-F7BAL	Grommet (In-line)	Water resistant (2-color indication)		
	D-F7NTL		With timer		
	D-P5DWL		Magnetic field resistant (2-color indication)		

* For solid state auto switches, auto switches with a pre-wired connector are also available. Refer to pages 1784 and 1785 for details.

* Normally closed (NC = b contact) solid state auto switches (D-F9G/F9H types) are also available. Refer to page 1746 for details.

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

CLJ2

CLM2

CLG1

CL1

-

MLGC

CNG

MNB

CNA

CNS

CLQ

RLQ

MLU

MLGP

ML1C

D-□ -X□

Individual -X□

