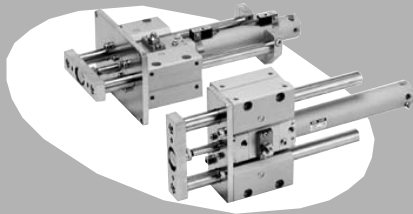
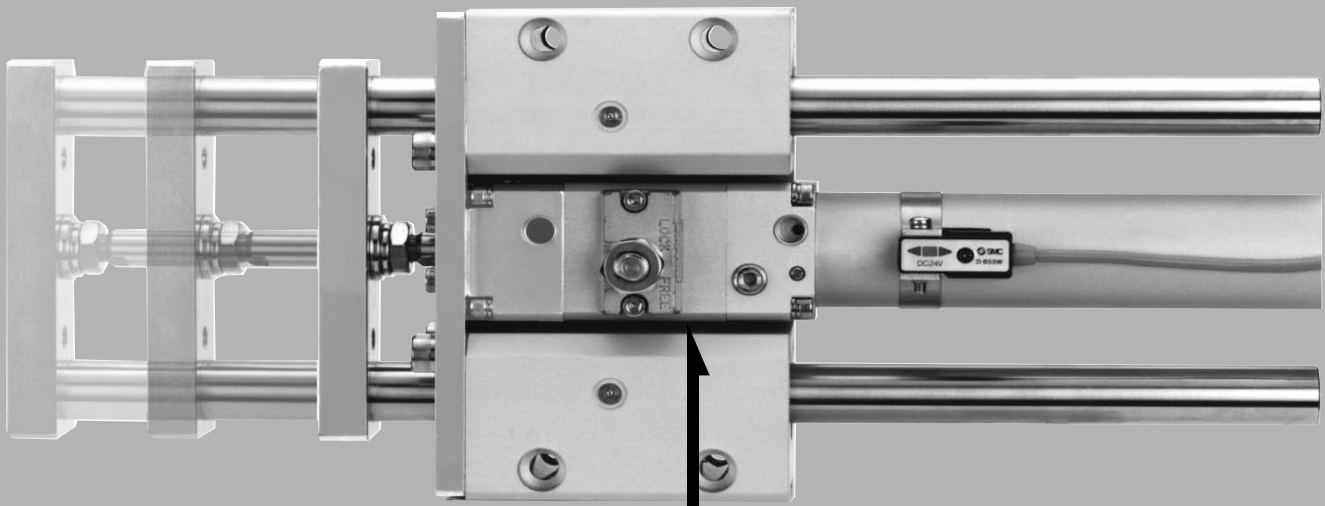


# Fine Lock Cylinder with Guide

## Series *MLGC*

ø20, ø25, ø32, ø40

A linear transfer cylinder unit with a built-in locking mechanism and a guide rod integrated in a compact design.



### High level of stopping accuracy

Locking method	Spring locking	Pneumatic locking	Spring and pneumatic locking
Stopping accuracy	±1.0 mm	±0.5 mm	
Characteristics	<ul style="list-style-type: none"> <li>Works on the safety side. (Exhaust locking)</li> </ul>	<ul style="list-style-type: none"> <li>High precision</li> <li>Holding power can be adjusted freely.</li> </ul>	<ul style="list-style-type: none"> <li>High precision</li> <li>Holding power can be adjusted freely.</li> <li>Works on the safety side.</li> </ul>

### Locking in both directions is possible.

Locking in either side of cylinder stroke is possible, too.

### Maximum piston speed: 500 mm/s

It can be used at 50 to 500 mm/s provided that it is within the allowable kinetic energy range.

### Air cushion is standard.

Enables the impact to be absorbed at the stroke end when the cylinder is operated at high speeds.

### Cylinder position can be detected.

Built-in magnet for auto switches is provided in all models.

CL

CL1

**MLGC**

CNG

MNB

CNA

CNS

CLS

CLQ

MLGP

RLQ

MLU

ML1C

D-

-X

**20-**

Data

# Fine Lock Cylinder with Guide

## Series **MLGC**

ø20, ø25, ø32, ø40

### How to Order

**MLGC L B 32 100 R E H7BW S**

**Guide cylinder**  
(Compact style with fine lock)

**Bearing type**

M	Slide bearing
L	Ball bushing bearing

**Mounting style**

B	Basic style
F	Front mounting flange style

**Bore size**

20	20 mm
25	25 mm
32	32 mm
40	40 mm

**Cylinder stroke (mm)**  
Refer to "Standard Stroke" on page 9-4-3.

**Number of auto switches**

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

**Auto switch**

Nil	Without auto switch (Built-in magnet)
-----	---------------------------------------

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

**Lock operation**

E	Spring locking (Exhaust locking)
P	Pneumatic locking (Pressure locking)
D	Spring and pneumatic locking

**Rear plate**

Nil	Without rear plate
R	With rear plate

### Applicable Auto Switch/Refer to page 9-15-1 for further information on auto switches.

Type	Special function	Electrical entry	Indicator/light	Wiring (Output)	Load voltage		Auto switch model			Lead wire length (m)*				Pre-wire connector	Applicable load		
					DC	AC	Switch mounting screw in-line direction			Vertical	0.5 (Nil)	3 (L)	5 (Z)		None (N)	IC circuit	Relay, PLC
							ø20, ø25	ø32	ø40								
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	24 V	5 V	—	C76			B76*	●	●	—	—	IC circuit	—
				2-wire		12 V	100 V	C73		B73*	●	●	●	—	—	—	Relay, PLC
	12 V	100 V, 200 V				(B54)	B54	—	●	●	●	—	—				
	Diagnostic indication (2-color indication)	Grommet		—		(B59W)	B59W	—	●	●	—	—	—	—	PLC		
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	H7A1		G79*	●	●	○	—	○	IC circuit	Relay, PLC
				3-wire (PNP)				H7A2		—	●	●	○	—	○		
	2-wire	H7B		K79*		●	●	○	—	○							
		H7C		K79C*		●	●	●	—	—							
	Diagnostic indication (2-color indication)	Connector		3-wire (NPN)		5 V, 12 V	—	H7NW		—	●	●	○	—	○	IC circuit	
				3-wire (PNP)				H7PW		—	●	●	○	—	○		
	Water resistant (2-color indication)	Grommet		2-wire		12 V	H7BW		—	●	●	○	—	○	—		
							H7BA		—	—	●	○	—	○			
	With diagnostic output (2-color indication)	—		4-wire (NPN)		5 V, 12 V	H7NF		—	●	●	○	—	○	IC circuit		

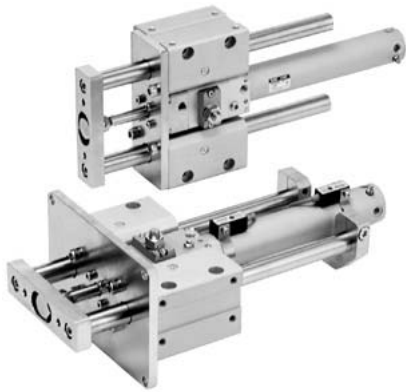
\* Lead wire length symbols: 0.5 m ..... Nil (Example) C73C  
 3 m ..... L (Example) H73CL  
 5 m ..... Z (Example) C73CZ  
 None ..... N (Example) C73CN

\* Solid state switches marked with "○" are produced upon receipt of order.  
 \* For detailed specifications, please contact SMC.

- Since there are other applicable auto switches than listed, refer to page 9-4-10 for details.
- For details about auto switches with pre-wire connector, refer to page 9-15-66.

**⚠ Caution** When using auto switches shown inside ( ), stroke end detection may not be possible depending on the One-touch fitting or speed controller model. Please contact SMC in this case.

# Fine Lock Cylinder with Guide Series **MLGC**



## Specifications

Model		MLGC□□20	MLGC□□25	MLGC□□32	MLGC□□40	
Basic cylinder		CDLG1BA	Bore size	Stroke	Lock operation	Auto switch
Bore size (mm)		20	25	32	40	
Action		Double acting				
Fluid		Air				
Proof pressure		1.5 MPa				
Maximum operating pressure		1.0 MPa				
Minimum operating pressure		0.2 MPa (Horizontal with no load)				
Ambient and fluid temperature		-10 to 60°C				
Piston speed		50 to 500 mm/s *				
Cushion		Air cushion				
Base cylinder lubrication		Non-lube				
Thread tolerance		JIS Class 2				
Stroke length tolerance		+1.9 +0.2 mm				
Non-rotating accuracy (Except deflection of guide rods)	Slide bearing	±0.06°	±0.05°	±0.05°	±0.04°	
	Ball bushing bearing	±0.04°	±0.04°	±0.04°	±0.04°	
Piping port size	Cylinder port	M5 x 0.8		Rc 1/8		
	Lock port	Rc 1/8				
Lock operation		■ Spring locking (Exhaust locking) ■ Pneumatic locking (Pressure locking) ■ Spring and pneumatic lock				

\* Constraints associated with the allowable kinetic energy are imposed on the speeds at which the piston can be locked.

\* The maximum speed of 750 mm/s can be accommodated if the piston is to be locked in the stationary state for the purpose of drop prevention.

## Fine Lock Specifications

Lock operation	Spring locking (Exhaust locking)	Spring and pneumatic locking	Pneumatic locking (Pressure locking)
Fluid	Air		
Maximum operating pressure	0.5 MPa		
Unlocking pressure	0.3 MPa or more		0.1 MPa or more
Lock starting pressure	0.25 MPa or less		0.05 MPa or less
Locking direction	Both directions		



## Made to Order Specifications (For details, refer to page 9-16-1.)

Symbol	Specifications
-XC79	Machining tapped hole, drilled hole and pin hole additionally.

## Auto Switch Mounting Bracket Part No. (Band and screw are included.)

Auto switch model	Bore size (mm)			
	20	25	32	40
D-C7/C8	BMA2	BMA2	BMA2	BMA2
D-H7	-020	-025	-032	-040
D-B5/B6	BA	BA	BA	BA
D-G5/K5	-01	-02	-32	-04
D-B7/B8	BM1	BM1	BM1	BM1
D-G7/K7	-01	-02	-32	-04

<Mounting screws set made of stainless steel>

The following set of mounting screws made of stainless steel is also available. Use it in accordance with the operating environment. (Please order the mounting band separately, since it is not included.)

**BBA3:** For D-B5/B6/G5/K5

**BBA4:** For D-C7/C8/H7

"D-G5BAL/H7BAL" switch is set on the cylinder with the stainless steel screws above when shipped.

When only a switch is shipped independently, "BBA3" or "BBA4" screws are attached.

## Standard Stroke

Model	Bearing type	Bore size (mm)	Standard stroke (mm)	Long stroke (mm)
MLGCM	Slide bearing	20	75, 100, 125, 150, 200	250, 300, 350, 400
		25	75, 100, 125, 150,	350, 400, 450, 500
MLGCL	Ball bushing bearing	32	200, 250, 300	350, 400, 450, 500, 600
		40		350, 400, 450, 500, 600, 700, 800

\* Intermediate strokes and short strokes other than the above are produced upon receipt of order.

## Theoretical Output



Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm <sup>2</sup> )	Operating pressure (MPa)										
				0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
20	8	OUT	314	62.8	94.2	126	157	188	220	251	283	314		
		IN	264	52.8	79.2	106	132	158	185	211	238	264		
25	10	OUT	491	98.2	147	196	246	295	344	393	442	491		
		IN	412	82.4	124	165	206	247	288	330	371	412		
32	12	OUT	804	161	241	322	402	482	563	643	724	804		
		IN	691	138	207	276	346	415	484	553	622	691		
40	16	OUT	1260	252	378	504	630	756	882	1010	1130	1260		
		IN	1060	212	318	424	530	636	742	848	954	1060		

Note) Theoretical output (N) = Pressure (MPa) x Piston area (mm<sup>2</sup>)

# Series MLGC

## Weight (kg)

Bore size (mm)		20	25	32	40
Basic weight	Basic style	2.6	4.07	4.17	7.28
	Front mounting flange style	3.24	4.92	5.03	8.55
Bearing weight	Slide bearing	0.44	0.6	0.6	1.32
	Ball bushing bearing	0.28	0.35	0.35	0.88
Additional weight with rear plate		0.3	0.49	0.49	0.86
Additional weight per each 50 mm of stroke		0.21	0.32	0.34	0.54
Additional weight for long stroke		0.01	0.01	0.02	0.03

Calculation: (Example)  
 MLGCLB32-500-R-D (Basic type, Ball bushing, With rear plate)  
 $\phi 32/500$  st

Basic weight..... 4.17 (Basic style)  
 Bearing weight ..... 0.35 (Ball bushing bearing)  
 Additional weight with rear plate..... 0.49  
 Additional stroke weight..... 0.34/50 st  
 Stroke..... 500 st  
 Additional weight for long stroke..... 0.02  
 $4.17 + 0.35 + 0.49 + 0.34 \times 500/50 + 0.02 = 8.43$  kg

## Allowable Kinetic Energy when Locking

Bore size (mm)	20	25	32	40
Allowable kinetic energy (J)	0.26	0.42	0.67	1.19

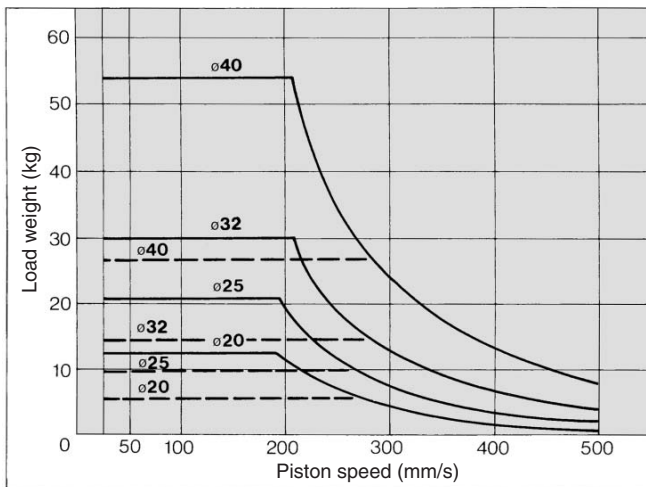
In terms of specific load conditions, the allowable kinetic energy indicated in the table above is equivalent to a 50% load ratio at 0.5 MPa, and a piston speed of 300 mm/sec. Therefore, if the operating conditions are below these values, calculations are unnecessary.

1. Apply the following formula to obtain the kinetic energy of the load.

$$E_k = \frac{1}{2} m v^2$$

$E_k$ : Kinetic energy of load (J)  
 $m$ : Load weight (kg)  
 (Weight of load + Weight of moving parts)  
 $v$ : Piston speed (m/s) (Average speed x 1.2)

- The piston speed will exceed the average speed immediately before locking. To determine the piston speed for the purpose of obtaining the kinetic energy of load, use 1.2 times the average speed as a guide.
- The relation between the speed and the load of the respective tube bores is indicated in the diagram below. Use the cylinder in the range below the line.
- During locking, the lock mechanism must absorb the thrust of the cylinder, in addition to the kinetic energy of the load. Therefore, in order to insure the proper braking force, even within a given allowable kinetic energy level, there is an upper limit to the size of the load. Thus, a horizontally mounted cylinder must be operated below the solid line, and a vertically mounted cylinder must be operated below the dotted line.



## Holding Force of Spring Locking (Maximum static load)

Bore size (mm)	20	25	32	40
Holding force (N)	196	313	443	784

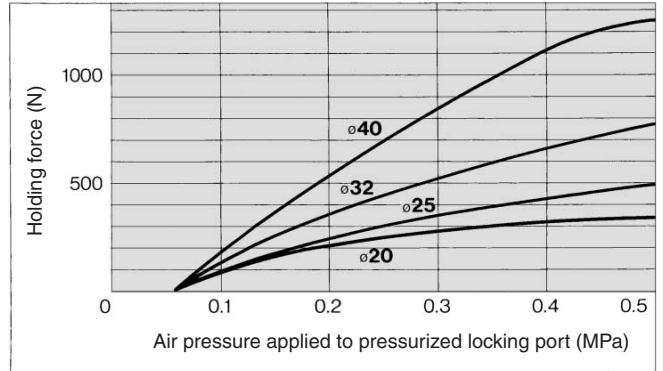
Note) Holding force at piston rod extended side decreases approximately 15%.

## Weight of Moving Parts (kg)

Bore size (mm)	20	25	32	40
Moving parts basic weight	0.62	1.1	1.1	2.07
Additional weight with rear plate	0.3	0.49	0.49	0.86
Additional weight per each 50 mm of stroke	0.16	0.25	0.25	0.39

Calculation: (Example)  
 MLGCLB32-500-R-D  
 Moving parts basic weight..... 1.1  
 Additional weight with rear plate..... 0.49  
 Additional stroke weight..... 0.25/50 st  
 Stroke..... 500 st  
 $1.1 + 0.49 + 0.25 \times 500/50 = 4.09$  kg

## Holding Force of Pneumatic Locking (Maximum static load)



- The holding force is the lock's ability to hold a static load that does not involve vibrations or shocks, after it is locked without a load. Therefore, to use the cylinder near the upper limit of the constant holding force, be aware of the following:
  - If the piston rod slips because the lock's holding force has been exceeded, the brake shoe could become damaged, resulting in a reduced holding force or shortened life.
  - To use the lock for drop prevention purposes, the load to be attached to the cylinder must be within 35% of the cylinder's holding force.
  - Do not use the cylinder in the locked state to sustain a load that involves impact.

## Stopping Accuracy (Not including tolerance of control system.) (mm)

Locking method	Piston speed (mm/s)			
	50	100	300	500
Spring locking (Exhaust locking)	±0.4	±0.5	±1.0	±2.0
Pneumatic locking (Pressure locking)	±0.2	±0.3	±0.5	±1.5
Spring and pneumatic lock				

Condition/ Load: 25% of thrust force at 0.5 MPa  
 Solenoid valve: mounted to the lock port

## Caution

### Recommended Pneumatic Circuit/Caution on Handling

For detailed specifications about the fine lock cylinder Series CLG1, refer to pages 9-2-4 to 9-2-7.

## ⚠ Precautions

Be sure to read before handling. Refer to pages 9-19-3 to 9-19-6 for Safety Instructions and Actuator Precautions.

### Mounting and Adjustment

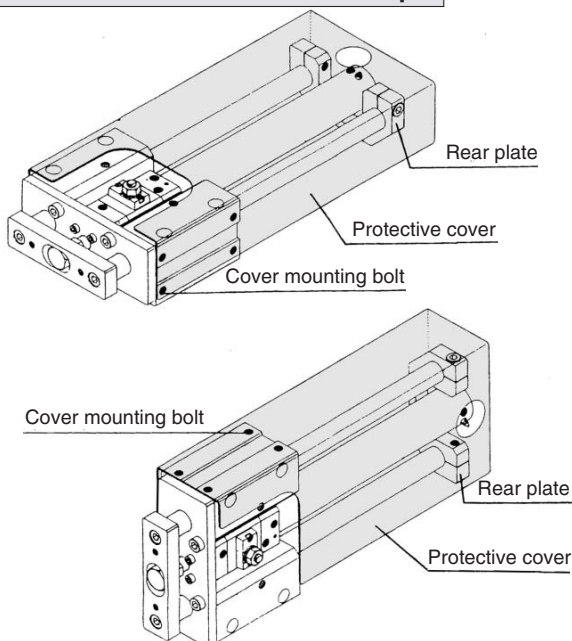
#### ⚠ Warning

##### 1. Installing a protective cover (In the case of rear plate)

During mounting, handling and operation, the rear plate makes reciprocating movements. Therefore, pay careful attention not to insert your hand, etc., between the cylinder and the rear plate.

When you are going to fit this product to the outside of your equipment, take preventative measures such as installing a protective cover.

##### Protective cover installation example



#### ⚠ Caution

##### 1. Caution on handling the fine-lock cylinder

For details, make sure to refer to "Fine Lock Cylinder (Series CLG1)" on pages 9-2-27 to 9-2-34.

#### ⚠ Caution

##### 1. Use caution that no scratch or dent will be given to the slide part of the guide rod.

Because the outer circumference of the guide rod is manufactured with precise tolerances, even a slight deformation, scratch, or gouge can lead to faulty operation or reduced durability.

##### 2. When fitting the guide body, use the guide body which has high flatness of the fitting surface.

If the guide rod has twisted, operation resistance will become abnormally higher and the bearing will wear at an early stage, thereby resulting in poor performance.

##### 3. Allow an ample space around the cylinder.

Ensure enough clearance around the cylinder to allow for unobstructed maintenance and inspection work.

##### 4. Do not adjust the rod stroke by moving the rear plates.

The resulting impact cannot be absorbed easily, the stroke position cannot be maintained, and faulty operation may ensue.

##### 5. Lubrication

To prevent foreign particles from mixing with the grease, use a grease applicator that has a check valve. Use a high-quality lithium soap-based no. 2 grease.

CL

CL1

MLGC

CNG

MNB

CNA

CNS

CLS

CLQ

MLGP

RLQ

MLU

ML1C

D-

-X

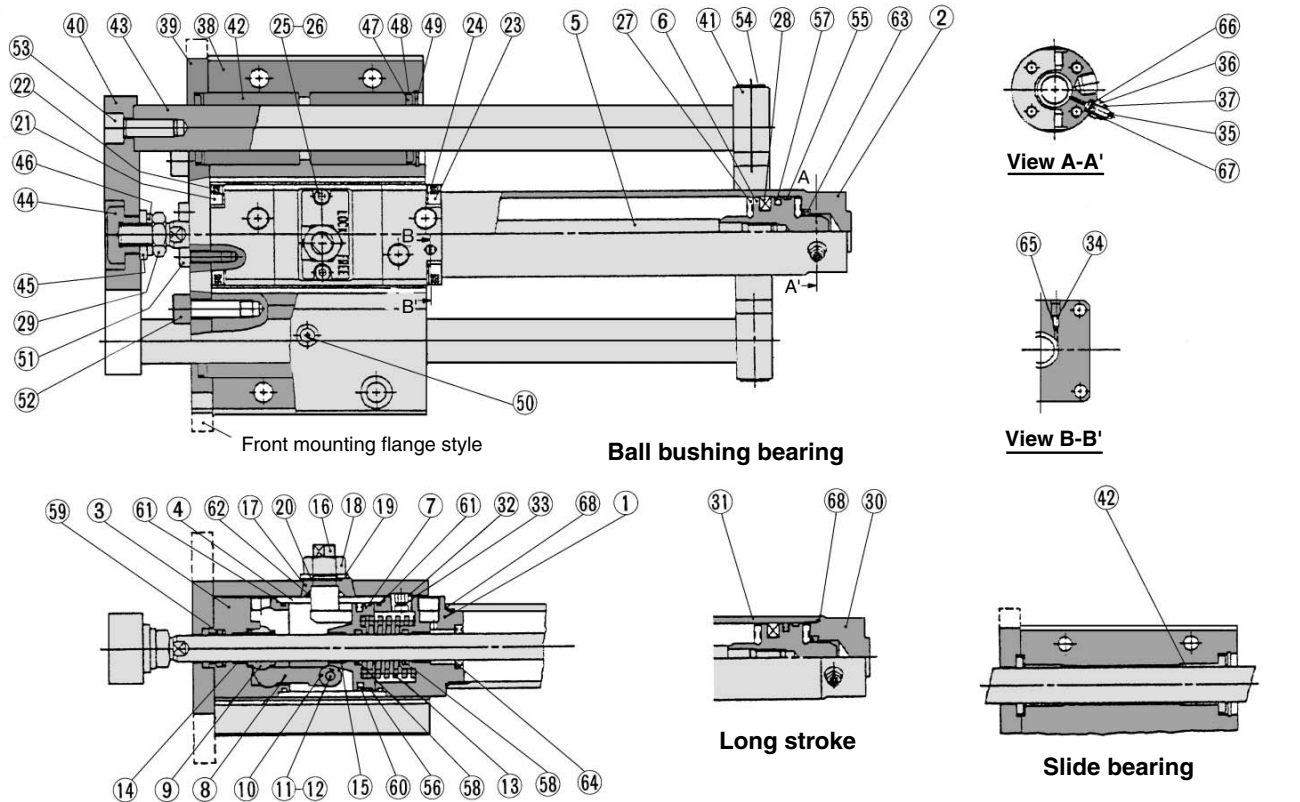
20-

Data



# Series MLGC

## Construction: With Rear Plate



### Component Parts

No.	Description	Material	Description
①	Rod cover	Aluminum alloy	Black hard anodized
②	Tube cover	Aluminum alloy	Hard anodized
③	Cover	Carbon steel	Nitrided
④	Intermediate cover	Aluminum alloy	Hard anodized
⑤	Piston rod	Carbon steel	Hard chrome plated $\phi 20, \phi 25$ are stainless steel
⑥	Piston	Aluminum alloy	Hard anodized
⑦	Brake piston	Carbon steel	Nitrided
⑧	Brake arm	Carbon steel	Nitrided
⑨	Brake shoe	Special friction material	
⑩	Roller	Carbon steel	Nitrided
⑪	Pin	Carbon steel	Heat treated
⑫	Snap ring	Carbon tool steel	Nickel plated
⑬	Brake spring	Spring steel wire	Dacrodized <span style="float: right;">Spring locking For Spring/Pneumatic locking</span>
⑭	Bushing	Oil-impregnated sintered alloy	
⑮	Bushing	Oil-impregnated sintered alloy	
⑯	Manual lock release cam	Chromium molybdenum steel	Nickel plated
⑰	Cam guide	Carbon steel	Nitrided, painted
⑱	Lock nut	Roller steel	Nickel plated
⑲	flat washer	Roller steel	Nickel plated
⑳	Snap ring	Carbon tool steel	Nickel plated
㉑	Hexagon socket head cap screw	Chromium molybdenum steel	Black zinc chromated
㉒	Spring washer	Steel wire	Black zinc chromated
㉓	Hexagon socket head cap screw	Chromium molybdenum steel	Black zinc chromated
㉔	Spring washer	Steel wire	Black zinc chromated
㉕	Hexagon socket head cap screw	Chromium molybdenum steel	Black zinc chromated
㉖	Spring washer	Steel wire	Black zinc chromated
㉗	Bumper	Urethane	
㉘	Magnet	—	
㉙	Rod end nut	Roller steel	Nickel plated
㉚	Head cover	Aluminum alloy	Black hard anodized
㉛	Cylinder tube	Aluminum alloy	Hard anodized
㉜	Hexagon socket head plug	Carbon steel	Black hard chromated
㉝	Element	Bronze	
㉞	Cushion valve A	Brass	Electroless nickel plated
㉟	Cushion valve B	Roller steel	Electroless nickel plated
㊱	Cushion valve retainer	Roller steel	Electroless nickel plated
㊲	Lock nut	Carbon steel	Nickel plated
㊳	Guide body	Aluminum alloy	Clear anodized

Note) ④, ⑤④ will not be required for the one without rear plate.

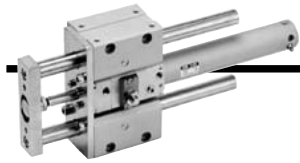
No.	Description	Material	Description
③⑨	Small flange	Roller steel	Flat nickel plated
④①	Large flange	Roller steel	Flat nickel plated
④②	Front plate	Roller steel	Flat nickel plated
④③	Rear plate	Cast iron	Metallic gold
④④	Slide bearing	Special friction material	For slide bearing
④⑤	Ball bushing bearing	—	For ball bushing bearing
④⑥	Guide rod	Carbon steel	Hard chrome plated
④⑦	End bracket	Carbon steel	Flat nickel plated
④⑧	Washer	Roller steel	Nickel plated
④⑨	Spring washer	Steel wire	Nickel plated
④⑩	Felt	Felt	
④⑪	Holder	Stainless steel	
④⑫	Type C snap ring for hole	Carbon tool steel	Nickel plated
④⑬	Grease nipple	—	Nickel plated
④⑭	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
④⑮	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
④⑯	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
④⑰	Hexagon socket head cap screw	Chromium molybdenum steel	Nickel plated
④⑱	Wear ring	Resin	
④⑲	Wear ring	Resin	

### Replacement Parts

No.	Description	Material	Description
⑤⑦	Piston seal	NBR	
⑤⑧	Rod seal A		
⑤⑨	Rod seal B		
⑥①	Brake piston seal		
⑥②	Intermediate cover gasket		
⑥③	Cam gasket		
⑥④	Cushion seal A		
⑥⑤	Cushion seal B		
⑥⑥	Valve seal A		
⑥⑦	Valve seal B		
⑥⑧	Valve retaining gasket		
⑥⑨	Cylinder tube gasket		

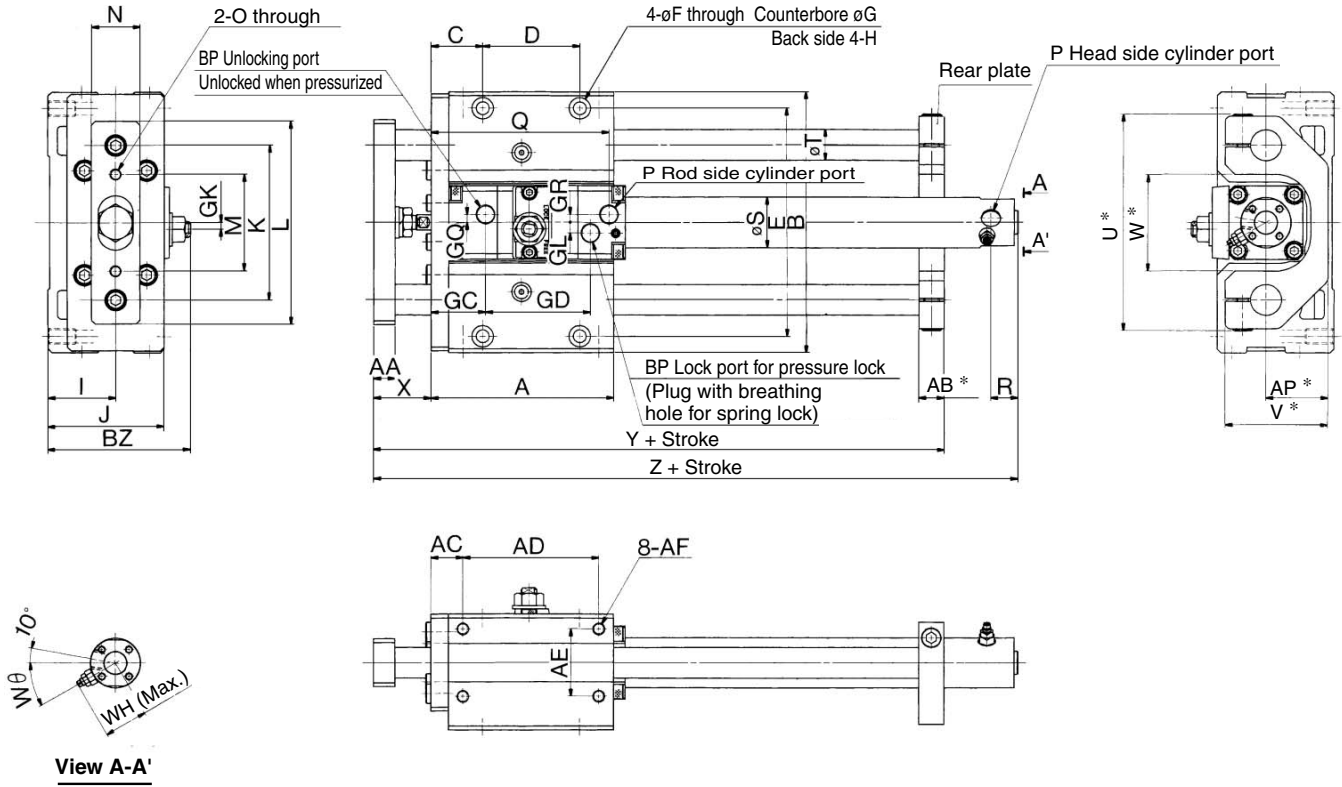
Note) Please consult with SMC when disassembling fine lock unit.

# Fine Lock Cylinder with Guide Series **MLGC**



## Dimensions

Basic style: With rear plate  
MLGC□B□-□-R□



- CL
- CL1
- MLGC**
- CNG
- MNB
- CNA
- CNS
- CLS
- CLQ
- MLGP
- RLQ
- MLU
- ML1C
- D-
- X
- 20-
- Data

### Standard Stroke

Bore size (mm)	Stroke range (mm)	A	AA	AB	AC	AD	AE	AF	AP	B	BP	BZ	C	D	E	F	G	GC
20	75, 100, 125, 150, 200	94	12	13	16.5	70	35	M6 x 1 depth 12	32	135	Rc 1/8	73.5	26.5	50	118	6.8	11 depth 8	28
25	75, 100, 125, 150, 200, 250, 300	104	16	16	19	75	40	M8 x 1.25 depth 16	37	160	Rc 1/8	86.5	31.5	50	140	8.6	14 depth 10	29
32		104	16	16	19	75	40	M8 x 1.25 depth 16	37	160	Rc 1/8	86.5	31.5	50	140	8.6	14 depth 10	30
40		142	19	19	22	110	45	M10 x 1.5 depth 20	42	194	Rc 1/8	95	37	80	170	10.5	17 depth 12	35

Bore size (mm)	GD	GK	GL	GQ	GR	H	I	J	K	L	M	N	O	P	Q	R	S
20	54	3.5	5.5	4	4	M8 x 1.25 depth 14	35	60	80	105	50	25	M6 x 1	M5 x 0.8	93	14	26
25	62	4	9	7	7	M10 x 1.5 depth 18	40	70	95	125	60	32	M8 x 1.25	M5 x 0.8	103	14	31
32	62	4	9	7	7	M10 x 1.5 depth 18	40	70	95	125	60	32	M8 x 1.25	Rc 1/8	104	13	38
40	67	4	11	8	8	M12 x 1.75 depth 21	45	82.5	115	150	75	38	M8 x 1.25	Rc 1/8	115	14	47

Bore size (mm)	T	U	V	W	WH	Wθ	X	Y	Z
20	16	112	53	50	23	30°	30	146	182
25	20	132	63	60	25	30°	37	167	199
32	20	132	63	60	28.5	25°	37	167	202
40	25	162	73	70	33	20°	44	210	227

### Without Rear Plate

Bore size (mm)	Y
20	129
25	146
32	146
40	191

### Long Stroke

Bore size (mm)	Stroke range (mm)	R	Z
20	250 to 400	14	190
25	350 to 500	14	207
32	350 to 600	14	210
40	350 to 800	15	236

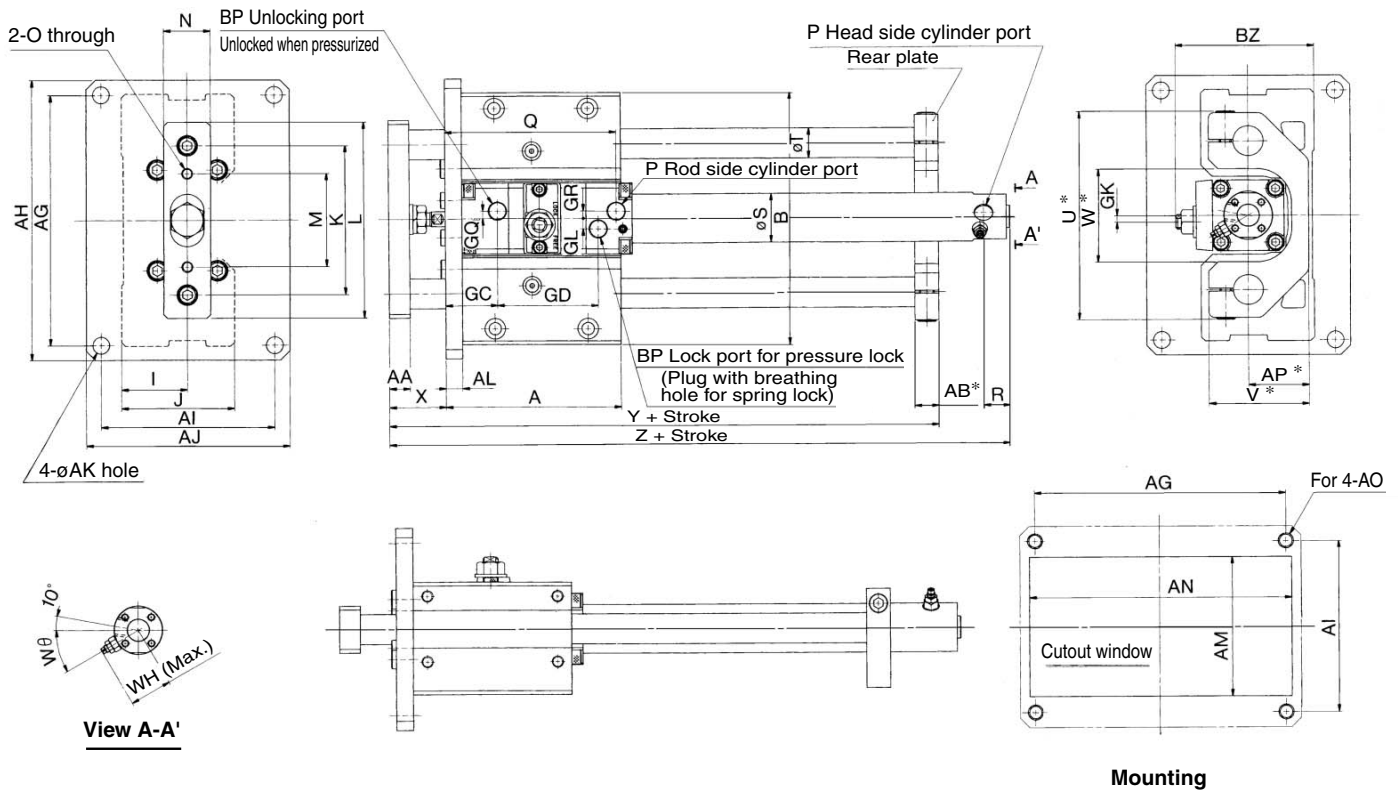
Note) Dimensions marked with "\*" are not required for the one without rear plate.

# Series MLGC



## Dimensions

Front mounting flange style: With rear plate  
MLGC□F□-□-R-□



### Standard Stroke

Bore size (mm)	Stroke range (mm)	A	AA	AB	AG	AH	AI	AJ	AK	AL	AM	AN	AO	AP	B	BP	BZ	GC	GD	GK
20	75, 100, 125, 150, 200	94	11	13	134	150	92	108	9	9	75	140	M 8	32	135	Rc 1/8	73.5	28	54	3.5
25	75, 100, 125, 150, 200, 250, 300	104	15	16	160	176	110	125	9	9	88	165	M 8	37	160	Rc 1/8	86.5	29	62	4
32		104	15	16	160	176	110	125	9	9	88	165	M 8	37	160	Rc 1/8	86.5	30	62	4
40		142	18	19	190	210	115	135	11	12	96	200	M10	42	194	Rc 1/8	95	35	67	4

Bore size (mm)	GL	GQ	GR	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
20	5.5	4	4	35	60	80	105	50	25	M6 x 1	M5 x 0.8	93	14	26	16	112	53	50
25	9	7	7	40	70	95	125	60	32	M8 x 1.25	M5 x 0.8	103	14	31	20	132	63	60
32	9	7	7	40	70	95	125	60	32	M8 x 1.25	Rc 1/8	104	13	38	20	132	63	60
40	11	8	8	45	82.5	115	150	75	38	M8 x 1.25	Rc 1/8	115	14	47	25	162	73	70

Bore size (mm)	WH	Wθ	X	Y	Z
20	23	30°	30	146	182
25	25	30°	37	167	199
32	28.5	25°	37	167	202
40	33	20°	44	210	227

### Without Rear Plate

Bore size (mm)	Y
20	129
25	146
32	146
40	191

### Long Stroke

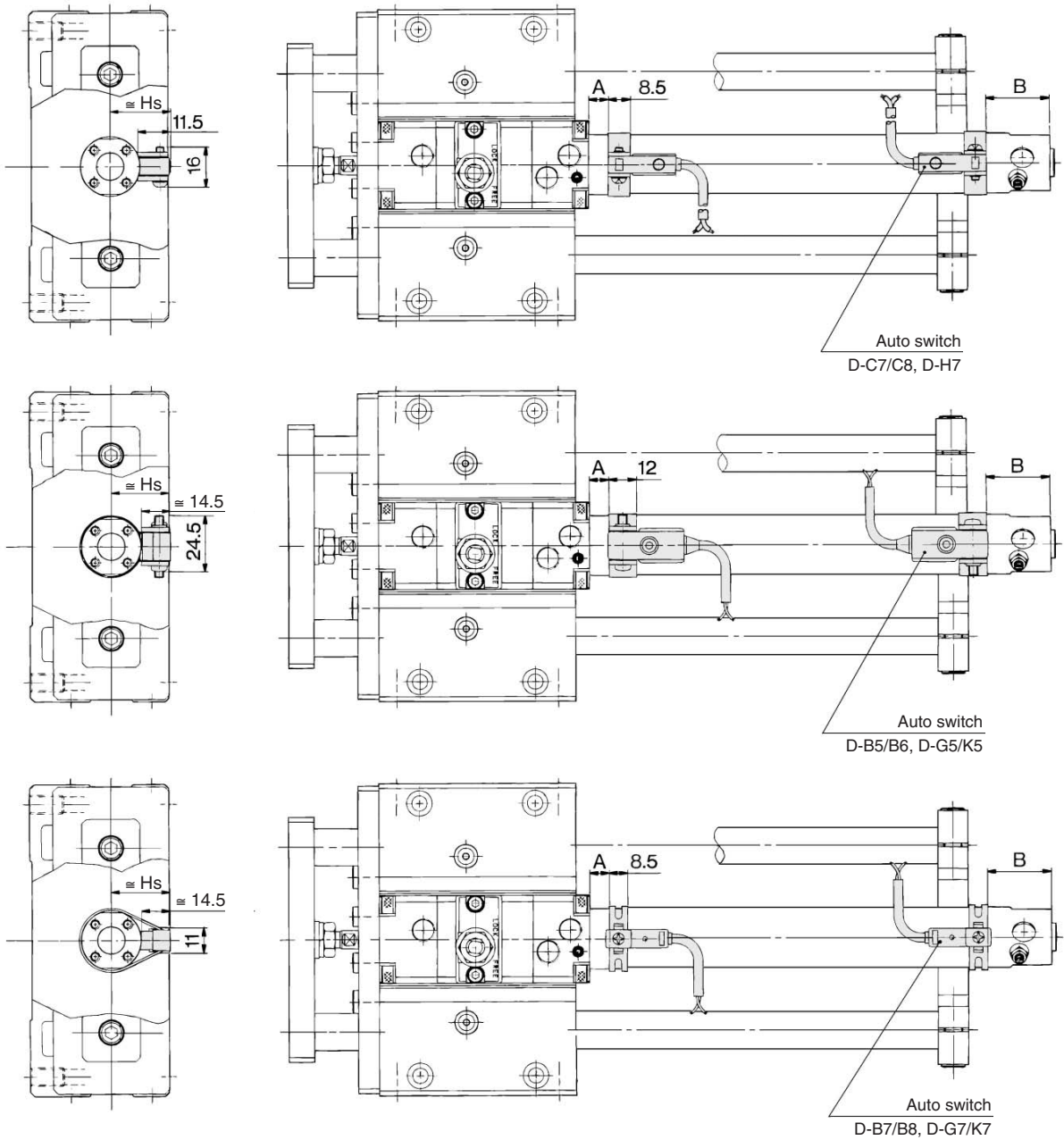
Bore size (mm)	Stroke range (mm)	R	Z
20	250 to 400	14	190
25	350 to 500	14	207
32	350 to 600	14	210
40	350 to 800	15	236

Note) Dimensions marked with "\*" are not required for the one without rear plate.



# Fine Lock Cylinder with Guide Series **MLGC**

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



- CL
- CL1
- MLGC**
- CNG
- MNB
- CNA
- CNS
- CLS
- CLQ
- MLGP
- RLQ
- MLU
- ML1C
- D-
- X
- 20-
- Data

### Proper Auto Switch Mounting Position

Auto switch model	D-B7/B8 D-B73C D-B80C D-G7/K7 D-K79C		D-C7/C8 D-C73C D-C80C		D-B5/B6 D-G59F		D-B59W		D-H7□ D-H7C D-H7□W D-H7BAL D-H7NF		D-G5□ D-K59 D-G5NTL D-G5□W D-K59W D-G5BAL	
	A	B	A	B	A	B	A	B	A	B	A	B
20	10	21.5 (29.5)	9	20.5 (28.5)	3	15 (22.5)	6	17.5 (25.5)	8	19.5 (27.5)	4.5	16 (24)
25	10	21.5 (29.5)	9	20.5 (28.5)	3	15 (22.5)	6	17.5 (25.5)	8	19.5 (27.5)	4.5	16 (24)
32	11	22.5 (30.5)	10	21.5 (29.5)	4	15.5 (23.5)	7	18.5 (26.5)	9	20.5 (28.5)	5.5	17 (25)
40	15.5	25 (34)	14.5	24 (33)	8.5	20 (27)	11.5	21 (30)	13.5	23 (32)	10	19.5 (28.5)

### Auto Switch Mounting Height

D-C7/C8 D-H7□ D-H7□W D-H7NF D-H7BAL	D-C73C D-C80C	D-B7/B8 D-B73C D-B80C D-G7/K7 D-K79C D-H7C	D-G5□ D-K59 D-G5□W D-K59W D-G5NTL D-B5/B6 D-B59W D-G5BAL D-G59F
Hs	Hs	Hs	Hs
24.5	27	27.5	27.5
27	29.5	30	30
30.5	33	33.5	33.5
35	37.5	38	38

\* ( ): Denotes the values of long strokes.

# Series MLGC

## Operating Range

Auto switch model	Bore size (mm)			
	20	25	32	40
D-B7□/B80 D-B73C/B80C	8	10	9	10
D-C7□/C80 D-C73C/C80C	8	10	9	10
D-B5□/B64 D-B59W	8	10	9	10
D-G79/K79/K79C	13	13	14	14
D-H7BAL D-H7□/H7□W/H7NF	8	10	9	10
D-H7C	4	4	4.5	5
D-G5□/K59 D-G5□W/K59W D-G5NTL/G5BAL	7	8.5	9	10
D-G59F	4	4	4.5	5
D-G5NBL	5	5	5.5	6
	35	40	40	45

\* 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.

Other than the applicable auto switches listed in “How to Order”, the following auto switches can be mounted. For detailed specifications, refer to page 9-15-1.

Type	Model	Electrical entry (Fetching direction)	Features	Applicable bore size (mm)
Reed switch	D-B80*	Grommet	Without indicator light	20 to 40
	D-B80C*	Connector		
	D-C80	Grommet		
	D-C80C	Connector		
Solid state switch	D-B53	Grommet	—	
	D-B64		Without indicator light	
	D-G59	Grommet	—	
	D-G5P			
	D-K59			
	D-G59W		Diagnostic indication (2-color indication)	
	D-G5PW		Water resistant (2-color indication)	
	D-K59W		With diagnostic output (2-color indication)	
D-G5BAL	With timer			
D-G59F				
D-G5NTL				

\* With pre-wire connector is available for solid state auto switches. For details, refer to page 9-15-66.  
\* Wide range detection type, solid state auto switch (D-G5NBL type) is also available. For details, refer to page 9-15-65.  
\* When using Reed switch (D-B53/B64) and Solid state switch (D-G59/G5P/K59/G59W/G5PW/K59W/G5BAL/G59F/G5NTL) for bore size of  $\phi 32$  or less, please consult with SMC, because there may be the case that cannot be detected at the stroke end, depending on some models of One-touch fittings and speed controllers. \* For detailed specifications, please contact SMC.