

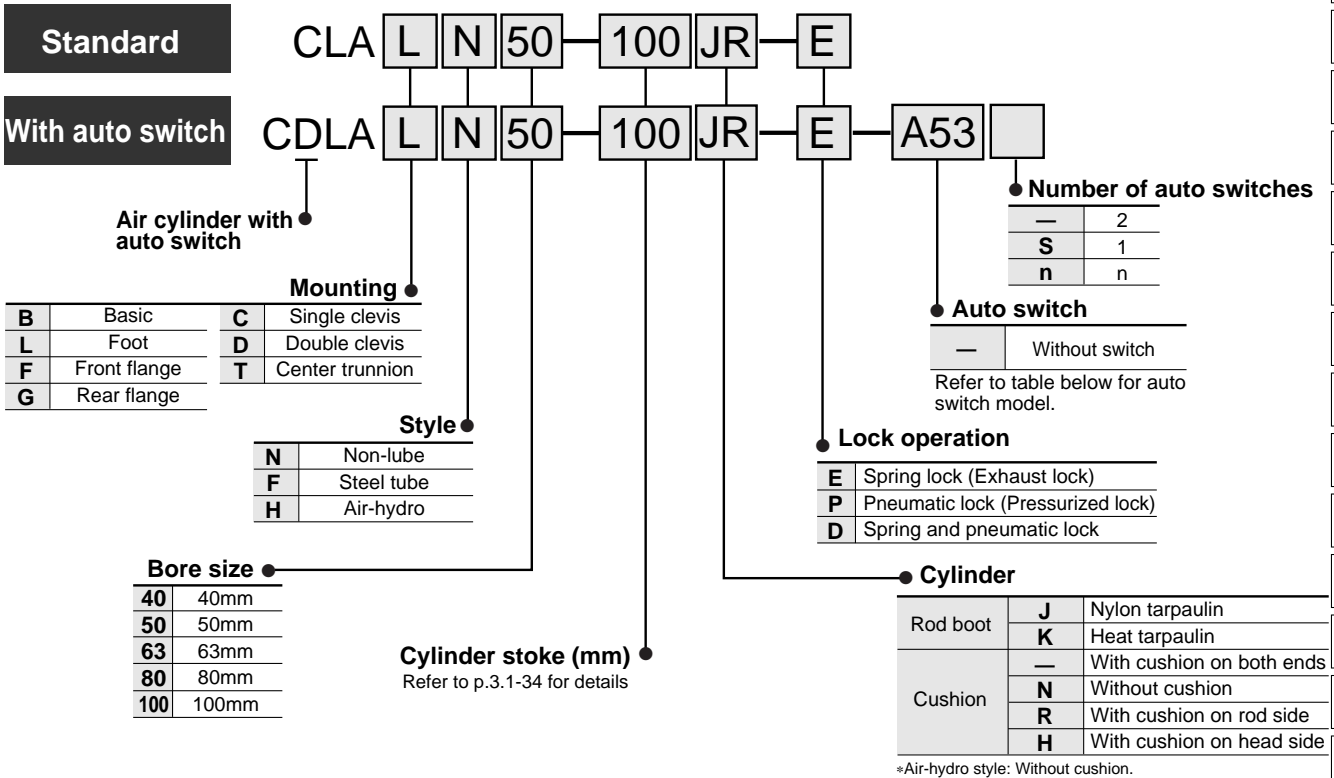
Fine Lock Cylinder/Double Acting Single Rod

Series CLA



ø40, ø50, ø63, ø80, ø100

How to order



CL

MLGC

CNA

CB

CV/MVG

CXW

CXS

CXT

MX

MXU

MXS

MXQ

MXF

MXW

MXP

Applicable Auto Switches/Refer to p.5.3-2 for further information on auto switch.

Style	Special function	Electrical entry	Indicator	Wiring (Output)	Load voltage		Auto switch model		Lead wire (m)*				Applicable load																													
					DC	AC	Tie-rod mounting	Band mounting	0.5 (—)	3 (L)	5 (Z)	None																														
Reed switch	—	Grommet	Yes	3 wire (NPN equiv.)	24V	5V	—	A56	—	●	●	—	—	IC	—																											
						12V	—	A53	B53	●	●	●	—	—	PLC																											
						12V	100V, 200V	A54	B54	●	●	●	—	—	Relay, PLC																											
						5V, 12V	—	A67	—	●	●	—	—	—	IC	PLC																										
		Terminal conduit	Yes	DIN terminal	2 wire	24V	5V, 12V	200V or less	A64	B64	●	●	—	—	—	Relay, PLC																										
							—	—	A33C	A33	—	—	—	●	—	PLC																										
							—	100V, 200V	A34C	A34	—	—	—	—	—	—																										
Diagnostic indication (2 color)	Grommet	—	—	—	—	A59W	B59W	●	●	—	—	—	Relay, PLC																													
Solid state switch	—	Grommet	Yes	3 wire (NPN)	24V	5V, 12V	—	F59	G59	●	●	○	—	IC	Relay, PLC																											
						3 wire (PNP)	—	F5P	G5P	●	●	○	—	—																												
						2 wire	—	J51	—	●	●	○	—	—																												
						12V	100V, 200V	J59	K59	●	●	○	—	—																												
						3 wire (PNP)	5V, 12V	G39C	G39	—	—	—	●	—		IC																										
						2 wire	12V	K39C	K39	—	—	—	●	—		—																										
		Terminal conduit	Yes	Grommet	3 wire (NPN)	24V	5V, 12V	—	—	F59W	G59W	●	●	○		—	IC																									
																		3 wire (PNP)	F5PW	G5PW	●	●	○	—																		
																		2 wire							J59W	K59W	●	●	○	—												
																		12V													F5BA	G5BA	—	●	○	—						
																		3 wire (NPN)																			F5NT	G5NT	—	●	○	—
																		5V, 12V																								
2 wire	F5LF	—	●	●	○	—																																				
12V							—	—	—	—	—	—																														
3 wire (PNP)													—	—	—	—	—	—																								
5V, 12V																			—	—	—	—	—	—																		
4 wire (NPN)																									—	—	—	—	—	—												
—																															—	—	—	—	—	—						

* Lead wire length symbol 0.5m..... (Example) A53
3m.....L (Example) A53L
5m.....Z (Example) A53Z

* Solid state switches marked with a "○" are manufactured upon receipt order.

MG

MGP

MGQ

MGG

MGC

MGF

CY1

MY1

Series CLA

Provided with a compact locking mechanism, it is suitable for intermediate stops, for emergency stops, and for drop prevention.



Style

Series	Style	Action	Bore size (mm)	Lock style
CLA□N	Non-lube style	Double acting	40, 50, 63, 80, 100	Spring lock, Pneumatic lock, Spring and pneumatic lock
CLA□H	Air-hydro style			

Specifications

Style	Non-lube	Air-hydro
Fluid	Air	Turbine oil (Lock portion is air)
Proof pressure	1.5MPa	
Max. operating pressure	1.0MPa	
Min. operating pressure	0.08MPa	0.2MPa
Piston speed	50 to 500mm/s*	15 to 300mm/s*
Ambient and fluid temperature	Without auto switch: -10°C to 70°C With auto switch: -10°C to 60°C (No freezing)	
Cushion	Air cushion	None
Thread tolerance	JIS class 2	
Stroke length tolerance	to 250: $^{+1.0}_0$; 251 to 1000: $^{+1.4}_0$; 1001 to 1500: $^{+1.8}_0$	
Mounting	Basic, Axial direction foot, Front flange, Rear flange, Single clevis, Double clevis, Center trunnion	

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

Lock Specifications

Lock	Spring lock (Exhaust lock)	Spring/pneumatic lock	Pneumatic lock (Pressurized lock)
Lock release pressure (MPa)	0.3 or more		0.1 or more
Lock starting pressure (MPa)	0.25 or less		0.05 or more
Max. operating pressure (MPa)	0.5		
Lock direction	Both directions		

Standard Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke
40	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500	800
50, 63	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600	1200
80	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700	1400
100	25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 450, 500, 600, 700	1500

Note) Intermediate stroke except stroke mentioned above is also available. Contact SMC.

Minimum Strokes for Auto Switch Mounting

Refer to p.1.9-4 because it is same as air cylinder CDA1 series (Standard/Double acting: Single Rod) style.

Rod Boot Material

Symbol	Material	Max. ambient temp.
J	Nylon tarpaulin	60°C
K	Heat resistant tarpaulin	110°C*

* Maximum ambient temperature for the rod boot itself.

Accessories

Rod end nut (Standard equipment), Single knuckle joint, Double knuckle joint, Knuckle pin*, Clevis pin*, Rod boot

* Only the Double knuckle and the double clevis are provided as standard equipment.

Mounting Bracket Part No.

Bore size (mm)	40	50	63	80	100
Foot*	CA1-L04	CA1-L05	CA1-L06	CA1-L08	CA1-L10
Flange	CA1-F04	CA1-F05	CA1-F06	CA1-F08	CA1-F10
Single clevis	CA1-C04	CA1-C05	CA1-C06	CA1-C08	CA1-C10
Double clevis**	CA1-D04	CA1-D05	CA1-D06	CA1-D08	CA1-D10

* When ordering foot brackets, 2pcs. should be ordered for each cylinder.

** Clevis pin, plain washer and cotter pin are packed with the double clevis style.

Caution

Recommended Pneumatic Circuit/Caution on Handling

Refer to p.3.1-2 to 3.1-5 for details of CLA series specifications mentioned above.

Auto Switch Mounting Bracket Part No.

Auto switch model	Bore size				
	40	50	63	80	100
D-A5/A6/A59W D-F5□/J5□/F5W□/J59W D-F5NT, F5BA, F59F	BT-04	BT-04	BT-06	BT-08	BT-08
D-A3/A44/G39/K39	BD1-04M	BD1-05M	BD1-06M	BD1-08M	BD1-10M
D-B5/B6/B59W D-G5□/K59/G5□W/K59W D-G5BA/G59F/G5NTL	BA-04	BA-05	BA-06	BA-08	BA-10
D-A3□C/A44C/G39C/K39C	BA3-040	BA3-050	BA3-063	BA3-080	BA3-100

* Mounting brackets are provided with D-A3□C, A44C, G39C, and K39C.

When ordering, indicate as described below, in accordance with the cylinder size.

Example) ø40—D-A3□C-4, ø50—D-A3□C-5, ø63—D-A3□C-6,

ø80—D-A3□C-8, ø100—D-A3□C-10

To order the mounting brackets separately, use the part number shown above.

Fine Lock Cylinder/Double Acting Single Rod *Series CLA*

Weight/(): Value at steel tubing (kg)

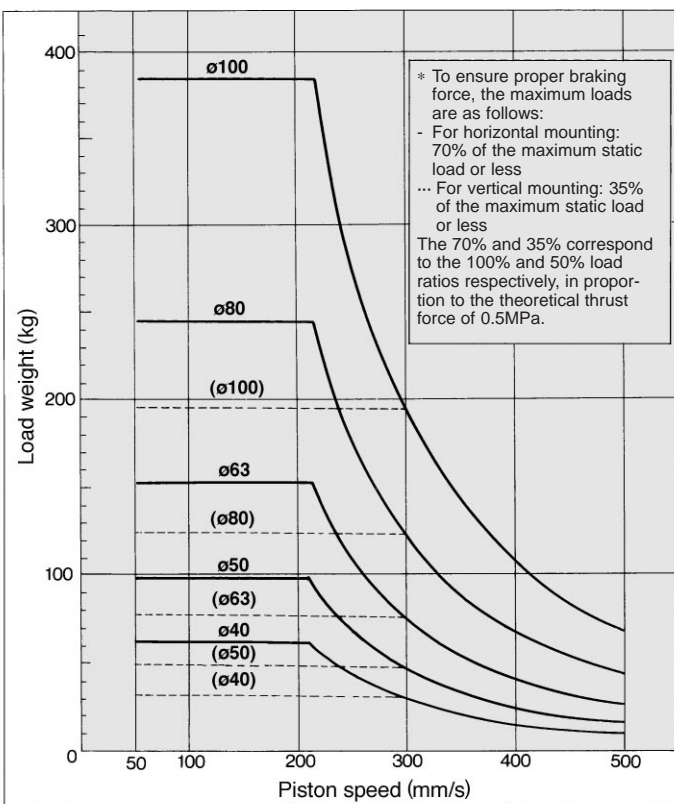
Bore size (mm)		40	50	63	80	100
Basic weight	Basic	1.82 (1.87)	2.79 (2.83)	4.41 (4.45)	7.20 (7.36)	10.29 (10.50)
	Foot	2.01 (2.06)	3.01 (3.05)	4.75 (4.79)	7.87 (8.03)	11.28 (11.49)
	Flange	2.19 (2.24)	3.24 (3.28)	5.20 (5.24)	8.65 (8.81)	12.21 (12.42)
	Single clevis	2.05 (2.10)	3.13 (3.17)	5.04 (5.08)	8.31 (8.47)	12.07 (12.28)
	Double clevis	2.09 (2.14)	3.22 (3.26)	5.20 (5.24)	8.60 (8.76)	12.59 (12.80)
	Trunnion	2.27 (2.37)	3.32 (3.42)	5.30 (5.50)	8.90 (9.19)	12.69 (13.08)
Additional weight per 50mm stroke	Aluminum tubing All brackets	0.22	0.28	0.37	0.52	0.65
	Steel tubing Mounting bracket except trunnion	0.28	0.35	0.43	0.70	0.87
	Trunnion	0.36	0.46	0.65	0.86	1.07
Accessory	Single knuckle joint	0.23	0.26	0.26	0.60	0.83
	Double knuckle joint	0.32	0.38	0.38	0.73	1.08
	Knuckle pin	0.05	0.05	0.05	0.14	0.19

Calculation Example: **CLAL40-100-E** Basic weight.....2.01(Foot style, ø40)
 Additional weight.....0.22/50 stroke
 Cylinder stroke.....100 stroke
 2.01+0.22 X 100/50=2.45kg

⚠ Caution/Allowable Kinetic Energy when Locking

Bore size (mm)	40	50	63	80	100
Allowable kinetic energy J	1.42	2.21	3.53	5.69	8.83

- In terms of specific load conditions, the allowable kinetic energy indicated in the table above is equivalent to a 50% load ratio at 0.5MPa, and a piston speed of 300mm/sec. Therefore, if the operating conditions are below these values, calculations are unnecessary.
- Apply the following formula to obtain the kinetic energy of the load.
 $E_k = \frac{1}{2} m v^2$
 Ek: Load kinetic energy (J)
 m: Load weight (kg)
 v: Piston speed (m/s)
- 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 the load, use 1.2 times the average speed as a guide.
- The relationship 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 sustain the thrust of the cylinder itself, in addition to absorbing the energy of the load. Therefore, even within a given allowable kinetic energy level, there is an upper limit to the size of the load that can be sustained. Thus, a horizontally mounted cylinder must be operated below the solid line, and a vertically mounted cylinder must be operated below the dotted line.



Fine Lock Cylinder with Auto Switch

Refer to p.1.9-4 for auto switch setting position and mounting height since it is same as air cylinder CDA1 series (Double acting single rod) style.

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

Lock style	Piston speed (mm/sec)			
	50	100	300	500
Spring lock	± 0.4	± 0.5	± 1.0	± 2.0
Pneumatic lock Spring and pneumatic lock	± 0.2	± 0.3	± 0.5	± 1.5

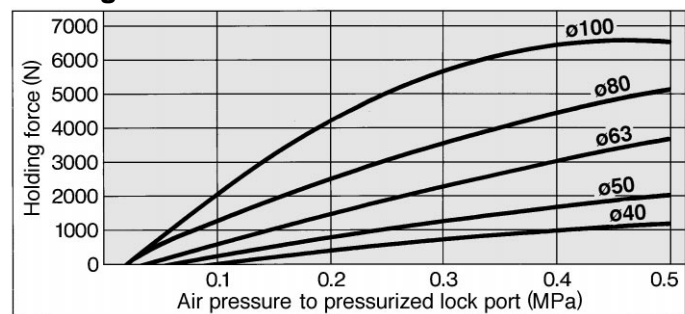
Condition/load: 25% of thrust force at 0.5MPa
 Solenoid valve: mounted to the lock port

Holding Force of Spring Lock (Max. static load)

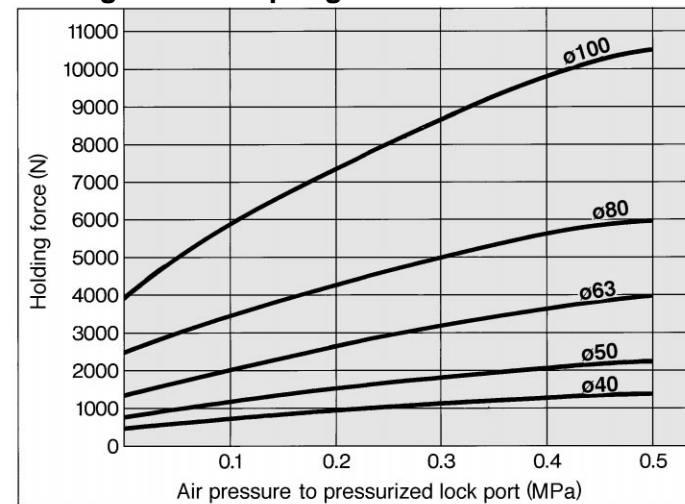
Bore size (mm)	40	50	63	80	100
Holding force N	882	1370	2160	3430	5390

Note) Holding force at piston rod retracted side decreases approx. 15%.

Holding Force of Pneumatic Lock



Holding Force of Spring and Pneumatic Lock



⚠ Caution

Cautions when Locking

The holding force is the lock's ability to hold a static load that does not involve vibrations or impacts, when it is locked without a load. Therefore, when normally using the cylinder near the upper limit of the holding force, be aware of the points described below.

- If the piston rod slips because the lock's holding force has been exceeded, the brake shoe could be 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.

CL

MLGC

CNA

CB

CV/MVG

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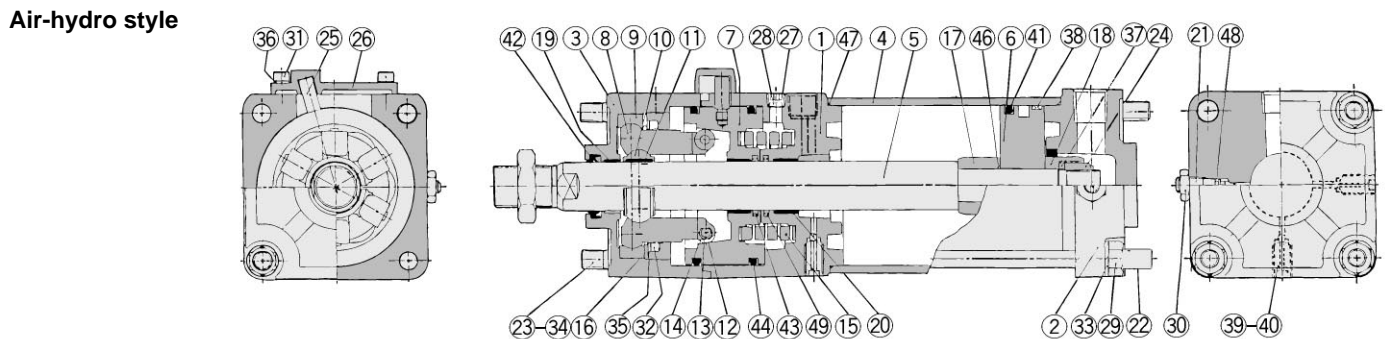
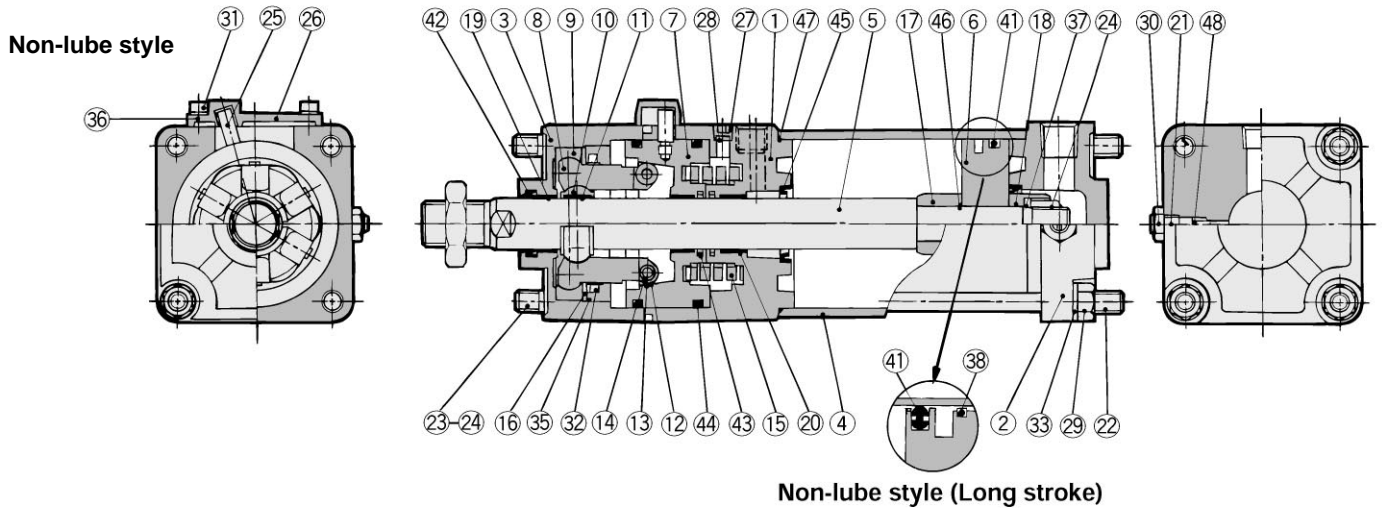
MGF

CY1

MY1

Series CLA

Construction



Component Parts

No.	Description	Material	Note
①	Rod cover	Aluminum alloy	Black coated after hard anodized
②	Head cover	Aluminum alloy	Black coated
③	Cover	Aluminum alloy	Black coated after hard anodized
④	Cylinder tube	Aluminum alloy	Hard anodized
⑤	Piston rod	Carbon steel	Hard chrome plated
⑥	Piston	Aluminum alloy	Chromated
⑦	Brake piston	Carbon steel	Nitrided
⑧	Brake arm	Carbon steel	Nitrided
⑨	Arm holder	Carbon steel	Nitrided
⑩	Brake shoe holder	Carbon steel	Nitrided
⑪	Brake shoe	Special friction material	
⑫	Roller	Chrome molybdenum steel	Nitrided
⑬	Pin	Chrome bearing steel	Heat treated
⑭	Snap ring	Carbon tool steel	Nickel plated
⑮	Brake spring	Steel wire	Dacrodized
⑯	Retainer	Rolled steel	Zinc chromated
⑰	Cushion ring A	Rolled steel	Zinc chromated
⑱	Cushion ring B	Rolled steel	Zinc chromated
⑲	Bushing	Lead bronze casting	
⑳	Bushing	Lead bronze casting	
㉑	Cushion valve	Rolled steel	Electroless nickel plated
㉒	Tie rod	Carbon steel	Chromated
㉓	Unit fixing tie rod	Carbon steel	Chromated

No.	Description	Material	Note
㉔	Piston nut	Rolled steel	Zinc chromated
㉕	Non rotating pin	Carbon steel	Induction hardening
㉖	Pin guide	Carbon steel	Black coated after nitrided
㉗	Hex. socket head pulg	Chrome molybdenum steel	Black zinc chromated
㉘	Elememnt	Bronze	
㉙	Tie rod nut	Rolled steel	Black zinc chromated
㉚	Lock nut	Rolled steel	Nickel plated
㉛	Hex. socket head cap screw	Chrome molybdenum steel	Black zinc chromated
㉜	Hex. socket head cap screw	Chrome molybdenum steel	Nickel plated
㉝	Spring seat	Steel wire	Black zinc chromated
㉞	Spring seat	Steel wire	Black zinc chromated
㉟	Spring seat	Steel wire	Black zinc chromated
㊱	Spring seat	Steel wire	Black zinc chromated
㊲	Spring seat	Steel wire	Zinc chromated
㊳	Wearing	Resin	
㊴	Exhaust valve	Chrome molybdenum steel	
㊵	Check ball	Chrome bearing steel	

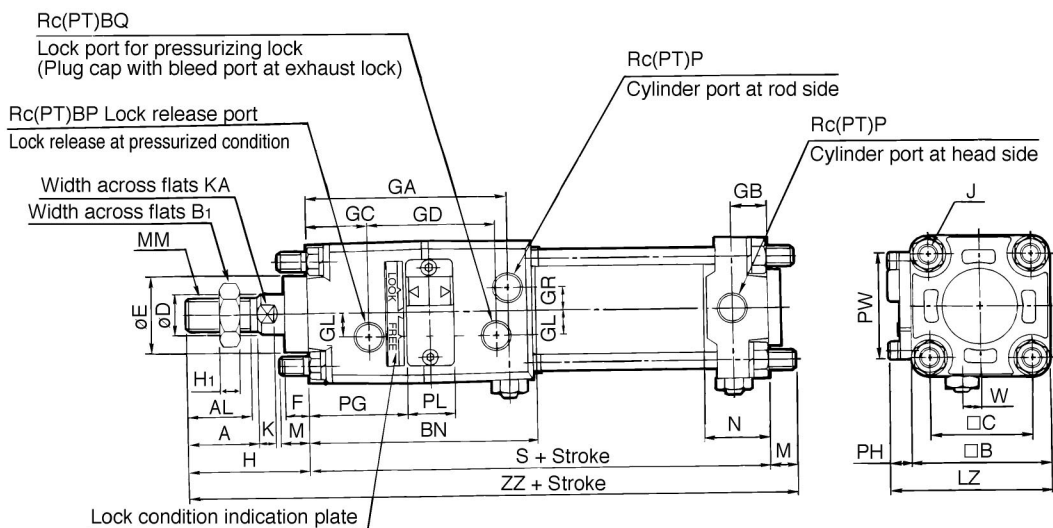
Component Parts

No.	Description	Material
㊶	Piston seal	NBR
㊷	Rod seal A	NBR
㊸	Rod seal B	NBR
㊹	Brake piston seal	NBR
㊺	Cushion seal	NBR
㊻	Piston gasket	NBR
㊼	Tube gasket	NBR
㊽	Cushion valve seal	NBR
㊾	Rod seal C	NBR

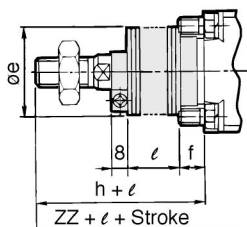
Note) Contact SMC if the fine lock unit must be disassembled.

Fine Lock Cylinder/Double Acting Single Rod *Series CLA*

Basic/CLAB



With rod boot



Bore (mm)	Stroke range (mm)		A	AL	B	B ₁	BN	BP	BQ	C	D	E	F	GA	GB	GC	GD	GL	GR	H ₁	J
	Without rod boot	With rod boot																			
40	to 500	20 to 500	30	27	60	22	96	1/4	1/4	44	16	32	10	85	15	26	54	10	10	8	M8 X 1.25
50	to 600	20 to 600	35	32	70	27	108	1/4	1/4	52	20	40	10	95	17	27	59	13	12	11	M8 X 1.25
63	to 600	20 to 600	35	32	86	27	115	1/4	1/4	64	20	40	10	102	17	26	67	18	15	11	M10 X 1.25
80	to 750	20 to 750	40	37	102	32	129	1/4	1/4	78	25	52	14	113	21	30	72	23	17	13	M12 X 1.75
100	to 750	20 to 750	40	37	116	41	140	1/4	1/4	92	30	52	14	124	21	31	76	25	19	16	M12 X 1.75

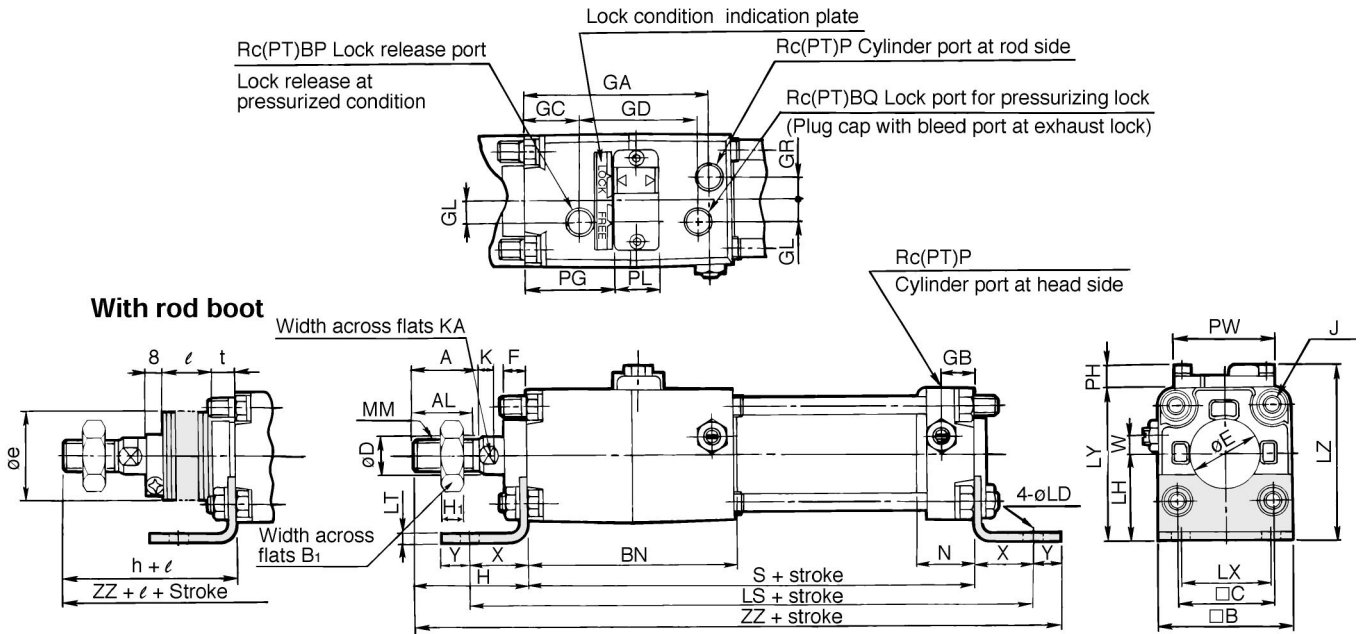
Bore (mm)	K	KA	LZ	M	MM	N	P	PG	PH	PL	PW	S	W	Without rod boot		With rod boot				
														H	ZZ	e	f	h	l	ZZ
40	6	14	71	11	M14 X 1.5	27	1/4	42	11	20	45	153	8	51	215	43	11.2	59	1/4 Stroke	223
50	7	18	80	11	M18 X 1.5	30	3/8	46	10	21	50	168	0	58	237	52	11.2	66	1/4 Stroke	245
63	7	18	99	14	M18 X 1.5	31	3/8	48.5	13	23	60	182	0	58	254	52	11.2	66	1/4 Stroke	262
80	11	22	117	17	M22 X 1.5	37	1/2	55	15	23	70	208	0	71	296	65	12.5	80	1/4 Stroke	305
100	11	26	131	17	M26 X 1.5	40	1/2	56.5	15	25	80	226	0	72	315	65	14	81	1/4 Stroke	324

- CLAB40.....SCLA40, #1 (#1+#11)
- CLAB50.....SCLA50, #1 (#1+#11)
- CLAB50.....SCLA50, #1 (#1+#11)
- CLAB63.....SCLA63, #1 (#1+#11)
- CLAB80.....SCLA80, #1 (#1+#11)
- CLAB100.....SCLA100, #1 (#1+#11)

- CL
- MLGC
- CNA
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- CV/MVG
- CXW
- CXS
- CXT
- MX
- MXU
- MXS
- MXQ
- MXF
- MXW
- MXP
- MG
- MGP
- MGQ
- MGG
- MGC
- MGF
- CY1
- MY1

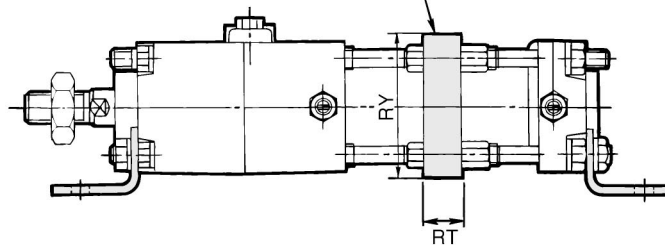
Series CLA

Foot/CLAL



Long stroke (ø50 to ø100)

Tie rod support ring should be mounted when stroke is over 1001mm.



Long stroke

Bore (mm)	Stroke range (mm)	RT	RY
40	501 to 800	—	—
	601 to 1000	—	—
50	1001 to 1200	30	76
	601 to 1000	—	—
63	1001 to 1200	40	92
	751 to 1000	—	—
80	1001 to 1400	45	112
	751 to 1000	—	—
100	1001 to 1500	50	136
	751 to 1000	—	—

(mm)

Bore (mm)	Stroke range (mm)		A	AL	B	B ₁	BN	BP	BQ	C	D	E	F	GA	GB	GC	GD	GL	GR
	Without rod boot	With rod boot																	
40	to 500	20 to 500	30	27	60	22	96	1/4	1/4	44	16	32	10	85	15	26	54	10	10
		20 to 600	35	32	70	27	108	1/4	1/4	52	20	40	10	95	17	27	59	13	12
50	to 600	20 to 600	35	32	86	27	115	1/4	1/4	64	20	40	10	102	17	26	67	18	15
		20 to 750	40	37	102	32	129	1/4	1/4	78	25	52	14	113	21	30	72	23	17
63	to 750	20 to 750	40	37	116	41	140	1/4	1/4	92	30	52	14	124	21	31	76	25	19
		20 to 750	40	37	116	41	140	1/4	1/4	92	30	52	14	124	21	31	76	25	19

Bore (mm)	H ₁	J	K	KA	LD	LH	LS	LT	LX	LY	LZ	MM	N	P	PG	PH	PL	PW	S	W	X
40	8	M8 X 1.25	6	14	9	40	207	3.2	42	70	81	M14 X 1.5	27	1/4	42	11	20	45	153	8	27
50	11	M8 X 1.25	7	18	9	45	222	3.2	50	80	90	M18 X 1.5	30	3/8	46	10	21	50	168	0	27
63	11	M10 X 1.25	7	18	11.5	50	250	3.2	59	93	106	M18 X 1.5	31	3/8	48.5	13	23	60	182	0	34
80	13	M12 X 1.75	11	22	13.5	65	296	4.5	76	116	131	M22 X 1.5	37	1/2	55	15	23	70	208	0	44
100	16	M12 X 1.75	11	26	13.5	75	312	6	92	133	148	M26 X 1.5	40	1/2	56.5	15	25	80	226	0	43

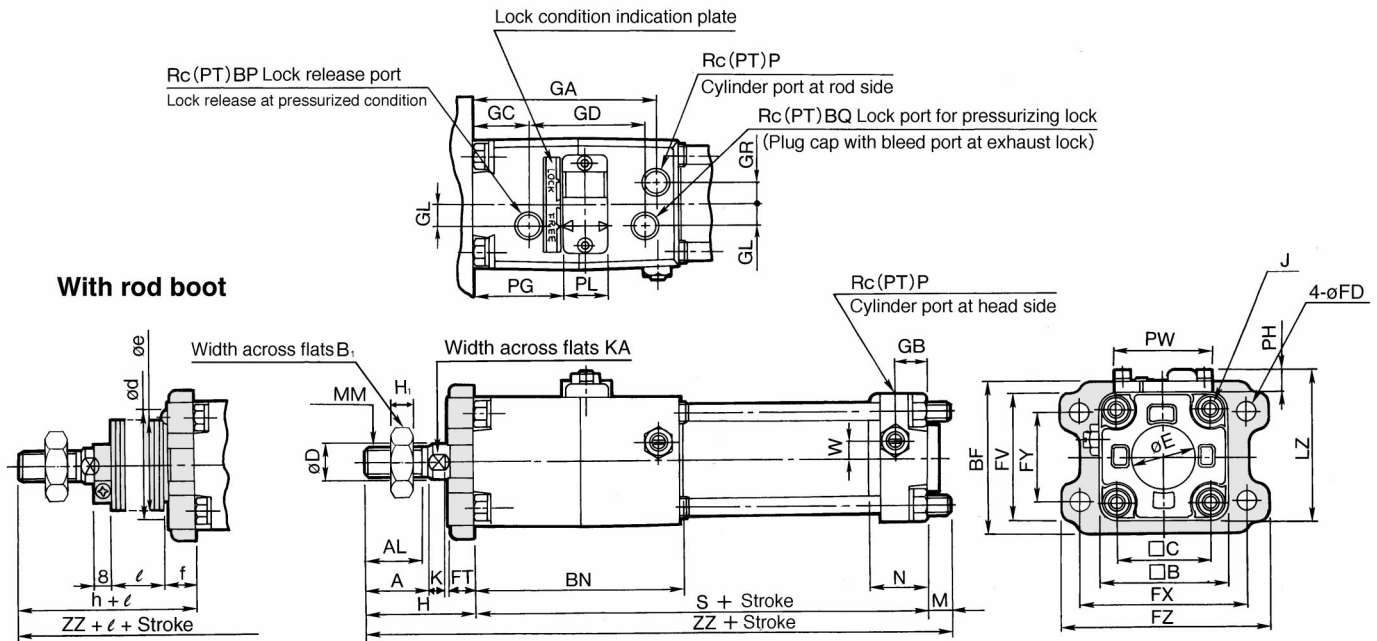
Bore (mm)	Y	Without rod boot		With rod boot				
		H	ZZ	e	f	h	l	ZZ
40	13	51	244	43	11.2	59	1/4 Stroke	252
50	13	58	266	52	11.2	66	1/4 Stroke	274
63	16	58	290	52	11.2	66	1/4 Stroke	298
80	16	71	339	65	12.5	80	1/4 Stroke	348
100	17	72	358	65	14.0	81	1/4 Stroke	367



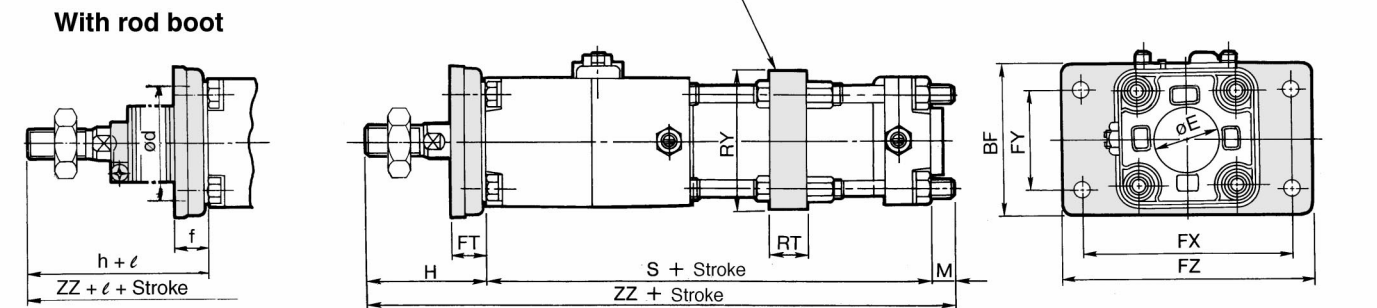
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 CLAL50.....SCLA50, #2 (#1+#2+#11)
 CLAL63.....SCLA63, #2 (#1+#2+#11)
 CLAL80.....SCLA80, #2 (#1+#2+#11)
 CLAL100.....SCLA100, #2 (#1+#2+#11)

Fine Lock Cylinder/Double Acting Single Rod *Series CLA*

Front Flange/CLAF



Long stroke
(ø50 to ø100)



Bore (mm)	Stroke range (mm)		Long stroke range (mm)	Dimensions (mm)																			
	Without rod boot	With rod boot		A	AL	B	B ₁	BF	BN	BP	BQ	C	D	E	GA	GB	GC	GD	GL	GR	H ₁	J	K
40	to 500	20 to 500	501 to 800	30	27	60	22	71	96	1/4	1/4	44	16	32	85	15	26	54	10	10	8	M8 X 1.25	6
50	to 600	20 to 600	601 to 1000	35	32	70	27	81	108	1/4	1/4	52	20	40	95	17	27	59	13	12	11	M8 X 1.25	7
63	to 600	20 to 600	601 to 1000	35	32	86	27	101	115	1/4	1/4	64	20	40	102	17	26	67	18	15	11	M10 X 1.25	7
80	to 750	20 to 750	751 to 1000	40	37	102	32	119	129	1/4	1/4	78	25	52	113	21	30	72	23	17	13	M12 X 1.75	11
100	to 750	20 to 750	751 to 1000	40	37	116	41	133	140	1/4	1/4	92	30	52	124	21	31	76	25	19	16	M12 X 1.75	11

Bore (mm)	KA	LZ	M	MM	N	P	PG	PH	PL	PW	S	W	FV	FD	FT	FX	FY	FZ	W/o rod boot				W/ rod boot			
																			H	ZZ	d	e	f	h	h	l
40	14	71	11	M14 X 1.5	27	1/4	42	11	20	45	153	8	60	9	12	80	42	100	51	215	52	43	15	59	1/4 Stroke	223
50	18	80	11	M18 X 1.5	30	3/8	46	10	21	50	168	0	70	9	12	90	50	110	58	237	58	52	15	66	1/4 Stroke	245
63	18	99	14	M18 X 1.5	31	3/8	48.5	13	23	60	182	0	86	11.5	15	105	59	130	58	254	58	52	17.5	66	1/4 Stroke	262
80	22	117	17	M22 X 1.5	37	1/2	55	15	23	70	208	0	102	13.5	18	130	76	160	71	296	80	65	21.5	80	1/4 Stroke	305
100	26	131	17	M26 X 1.5	40	1/2	56.5	15	25	80	226	0	116	13.5	18	150	92	180	72	315	80	65	21.5	81	1/4 Stroke	324

Long stroke

Dimensions except those below are same as one in table above.

Bore (mm)	Stroke range (mm)	BF	M	RT	RY	FT	FX	FY	FZ	Without rod boot			With rod boot		
										H	ZZ	f	h	h	ZZ
50	1001 to 1200	88	6	30	76	20	120	58	144	67	241	19	66	240	
63	1001 to 1200	105	10	40	92	23	140	64	170	71	263	19	66	258	
80	1001 to 1400	124	12	45	112	28	164	84	198	87	307	21	80	300	
100	1001 to 1500	140	12	50	136	29	180	100	220	89	327	21	81	319	

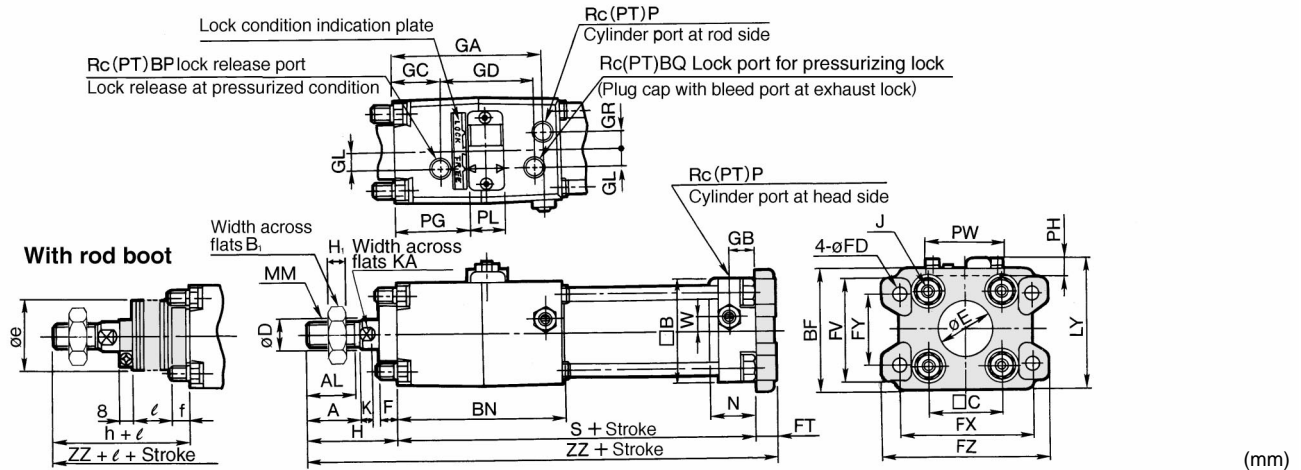


CLAF40.....SCLA40, #3 (#1+#3+#11)
 CLAF50.....SCLA50, #3 (#1+#3+#11)
 CLAF63.....SCLA63, #3 (#1+#3+#11)
 CLAF80.....SCLA80, #3 (#1+#3+#11)
 CLAF100.....SCLA100, #3 (#1+#3+#11)

- CL
- MLGC
- CNA
- CB
- CV/MVG
- CXW
- CXS
- CXT
- MX
- MXU
- MXS
- MXQ
- MXF
- MXW
- MXP
- MG
- MGP
- MGQ
- MGG
- MGC
- MGF
- CY1
- MY1

Series CLA

Rear Flange/CLAG



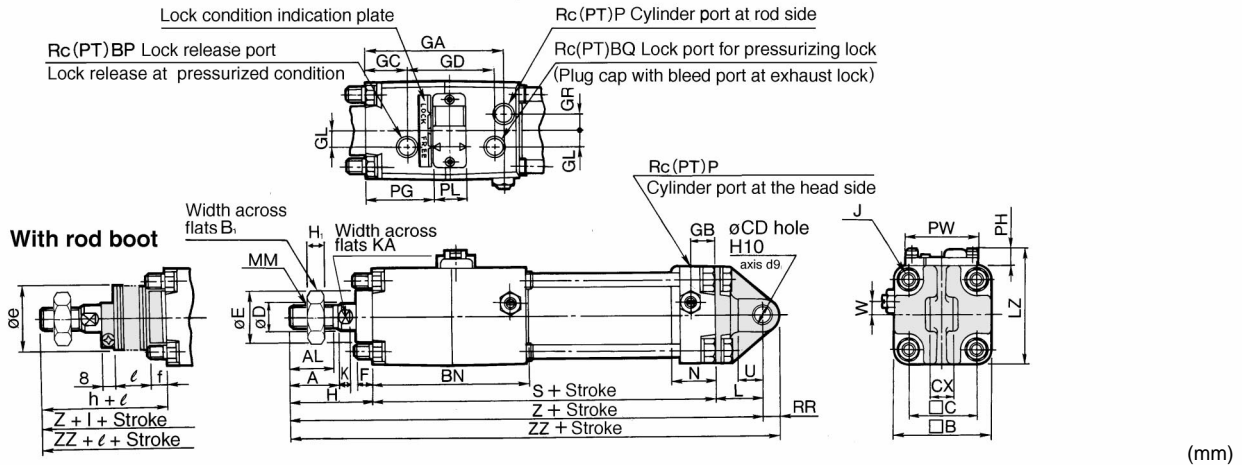
Bore (mm)	Stroke range (mm)		A	AL	B	B ₁	BF	BN	BP	BQ	C	D	E	F	FV	FD	FT	FX	FY	FZ	GA	GB	GC	GD	GL
	W/o rod boot	W/ rod boot																							
40	to 500	20 to 500	30	27	60	22	71	96	1/4	1/4	44	16	32	10	60	9	12	80	42	100	85	15	26	54	10
50	to 600	20 to 600	35	32	70	27	81	108	1/4	1/4	52	20	40	10	70	9	12	90	50	110	95	17	27	59	13
63	to 600	20 to 600	35	32	86	27	101	115	1/4	1/4	64	20	40	10	86	11.5	15	105	59	130	102	17	26	67	18
80	to 750	20 to 750	40	37	102	32	119	129	1/4	1/4	78	25	52	14	102	13.5	18	130	76	160	113	21	30	72	23
100	to 750	20 to 750	40	37	116	41	133	140	1/4	1/4	92	30	52	14	116	13.5	18	150	92	180	124	21	31	76	25

Bore (mm)	GR	H ₁	J	K	KA	LY	MM	N	P	PG	PH	PL	PW	S	W	W/o rod boot		W/ rod boot				
																H	ZZ	e	f	h	l	ZZ
40	10	8	M8 X 1.25	6	14	76.5	M14 X 1.5	27	1/4	42	11	20	45	153	8	51	216	43	11.2	59	1/4 Stroke	224
50	12	11	M8 X 1.25	7	18	85.5	M18 X 1.5	30	3/8	46	10	21	50	168	0	58	238	52	11.2	66	1/4 Stroke	246
63	15	11	M10 X 1.25	7	18	106.5	M18 X 1.5	31	3/8	48.5	13	23	60	182	0	58	255	52	11.2	66	1/4 Stroke	263
80	17	13	M12 X 1.75	11	22	125.5	M22 X 1.5	37	1/2	55	15	23	70	208	0	71	297	65	12.5	80	1/4 Stroke	306
100	19	16	M12 X 1.75	11	26	139.5	M26 X 1.5	40	1/2	56.5	15	25	80	226	0	72	316	65	14.0	81	1/4 Stroke	325



CLAG40.....SCLA40, #4 (#1+#4+#11)
CLAG50.....SCLA50, #4 (#1+#4+#11)
CLAG63.....SCLA63, #4 (#1+#4+#11)
CLAG80.....SCLA80, #4 (#1+#4+#11)
CLAG100.....SCLA100, #4 (#1+#4+#11)

Single Clevis/CLAC



Bore (mm)	Stroke range (mm)		A	AL	B	B ₁	BN	BP	BQ	C	CD	CX	D	E	F	GA	GB	GC	GD	GL	GR	H ₁	J
	W/o rod boot	W/ rod boot																					
40	to 500	20 to 500	30	27	60	22	96	1/4	1/4	44	10	15 ^{-0.1} _{-0.3}	16	32	10	85	15	26	54	10	10	8	M8 X 1.25
50	to 600	20 to 600	35	32	70	27	108	1/4	1/4	52	12	18 ^{-0.1} _{-0.3}	20	40	10	95	17	27	59	13	12	11	M8 X 1.25
63	to 600	20 to 600	35	32	86	27	115	1/4	1/4	64	16	25 ^{-0.1} _{-0.3}	20	40	10	102	17	26	67	18	15	11	M10 X 1.25
80	to 750	20 to 750	40	37	102	32	129	1/4	1/4	78	20	31.5 ^{-0.1} _{-0.3}	25	52	14	113	21	30	72	23	17	13	M12 X 1.75
100	to 750	20 to 750	40	37	116	41	140	1/4	1/4	92	25	35.5 ^{-0.1} _{-0.3}	30	52	14	124	21	31	76	25	19	16	M12 x 1.75

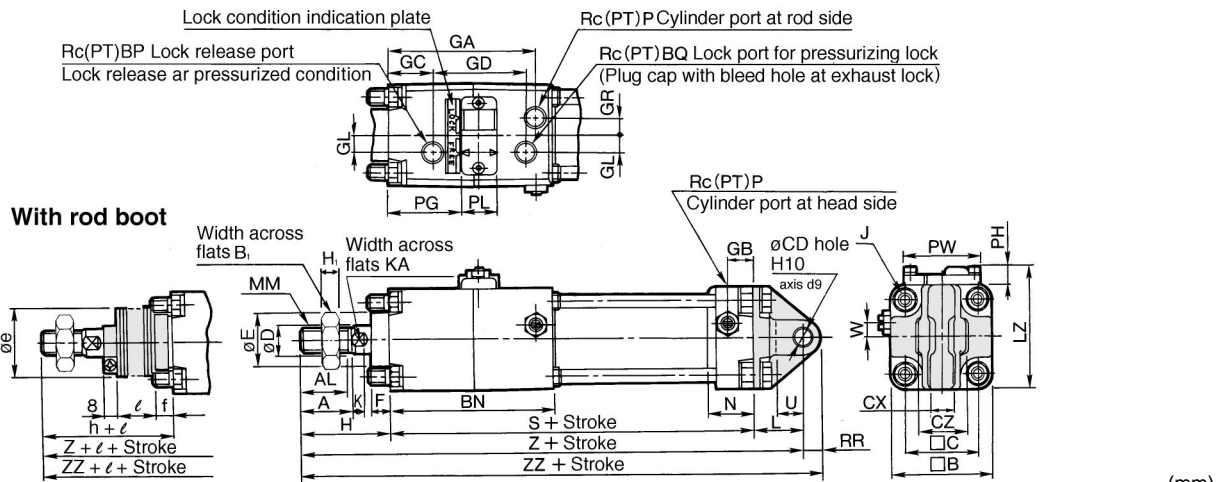
Bore (mm)	K	KA	L	LZ	MM	N	P	PG	PH	PL	PW	RR	S	U	W	W/o rod boot			W/ rod boot					
																H	Z	ZZ	e	f	h	l	Z	ZZ
40	6	14	30	71	M14 X 1.5	27	1/4	42	11	20	45	10	153	16	8	51	234	244	43	11.2	59	1/4 Stroke	242	252
50	7	18	35	80	M18 X 1.5	30	3/8	46	10	21	50	12	168	19	0	58	261	273	52	11.2	66	1/4 Stroke	269	281
63	7	18	40	99	M18 X 1.5	31	3/8	48.5	13	23	60	16	182	23	0	58	280	296	52	11.2	66	1/4 Stroke	288	304
80	11	22	48	117	M22 X 1.5	37	1/2	55	15	23	70	20	208	28	0	71	327	347	65	12.5	80	1/4 Stroke	336	356
100	11	26	58	131	M26 X 1.5	40	1/2	56.5	15	25	80	25	226	36	0	72	356	381	65	14.0	81	1/4 Stroke	365	390



CLAC40.....SCLA40, #5 (#1+#5+#11)
CLAC50.....SCLA50, #5 (#1+#5+#11)
CLAC63.....SCLA63, #5 (#1+#5+#11)
CLAC80.....SCLA80, #5 (#1+#5+#11)
CLAC100.....SCLA100, #5 (#1+#5+#11)

Fine Lock Cylinder/Double Acting Single Rod *Series CLA*

Double Clevis/CLAD



Bore (mm)	Stroke range (mm)		A	AL	B	B ₁	BN	BP	BQ	C	CD	CX	CZ	D	E	F	GA	GB	GC	GD	GL	GR	H ₁
	W/o rod boot	W/ rod boot																					
40	to 500	20 to 500	30	27	60	22	96	1/4	1/4	44	10	15 ^{+0.3} _{+0.1}	29.5	16	32	10	85	15	26	54	10	10	8
50	to 600	20 to 600	35	32	70	27	108	1/4	1/4	52	12	18 ^{+0.3} _{+0.1}	38	20	40	10	95	17	27	59	13	12	11
63	to 600	20 to 600	35	32	86	27	115	1/4	1/4	64	16	25 ^{+0.3} _{+0.1}	49	20	40	10	102	17	26	67	18	15	11
80	to 750	20 to 750	40	37	102	32	129	1/4	1/4	78	20	31.5 ^{+0.3} _{+0.1}	61	25	52	14	113	21	30	72	23	17	13
100	to 750	20 to 750	40	37	116	41	140	1/4	1/4	92	25	35.5 ^{+0.3} _{+0.1}	64	30	52	14	124	21	31	76	25	19	16

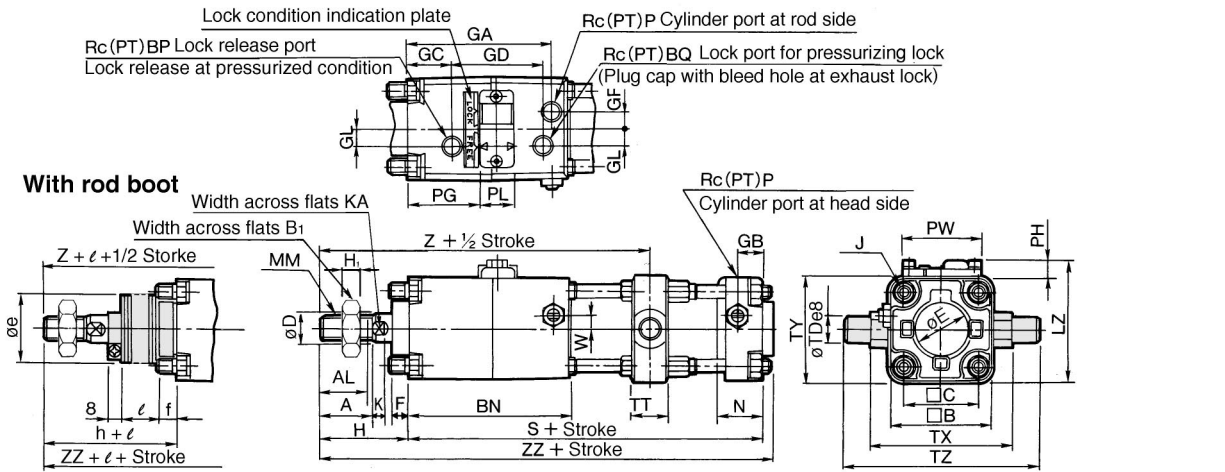
Bore (mm)	J	K	KA	L	LZ	MM	N	P	PG	PH	PL	PW	RR	S	U	W	W/o rod boot			W/ rod boot					
																	H	Z	ZZ	e	f	h	ℓ	Z	ZZ
40	M8 X 1.25	6	14	30	71	M14 X 1.5	27	1/4	42	11	20	45	10	153	16	8	51	234	244	43	11.2	59	1/4 Stroke	242	252
50	M8 X 1.25	7	18	35	80	M18 X 1.5	30	3/8	46	10	21	50	12	168	19	0	58	261	273	52	11.2	66	1/4 Stroke	269	281
63	M10 X 1.25	7	18	40	99	M18 X 1.5	31	3/8	48.5	13	23	60	16	182	23	0	58	280	296	52	11.2	66	1/4 Stroke	288	304
80	M12 X 1.75	11	22	48	117	M22 X 1.5	37	1/2	55	15	23	70	20	208	28	0	71	327	347	65	12.5	80	1/4 Stroke	336	356
100	M12 X 1.75	11	26	58	131	M26 X 1.5	40	1/2	56.5	15	25	80	25	226	36	0	72	356	381	65	14.0	81	1/4 Stroke	365	390

*Clevis pin, flat washer and cotter pin are packed.



CLAD40.....SCLA40, #6 (#1+#6+#11) CLAD80..... SCLA80, #6 (#1+#6+#11)
 CLAD50.....SCLA50, #6 (#1+#6+#11) CLAD100.....SCLA100, #6 (#1+#6+#11)
 CLAD63.....SCLA63, #6 (#1+#6+#11)

Trunnion/CLAT



Bore (mm)	Stroke range (mm)		A	AL	B	B ₁	BN	BP	BQ	C	D	E	F	GA	GB	GC	GD	GL	GR	H ₁	J	K	KA	LZ	MM
	W/o rod boot	W/ rod boot																							
40	25 to 500	25 to 500	30	27	60	22	96	1/4	1/4	44	16	32	10	85	15	26	54	10	10	8	M8 X 1.25	6	14	71	M14 X 1.5
50	25 to 600	25 to 600	35	32	70	27	108	1/4	1/4	52	20	40	10	95	17	27	59	13	12	11	M8 X 1.25	7	18	80	M18 X 1.5
63	32 to 600	32 to 600	35	32	86	27	115	1/4	1/4	64	20	40	10	102	17	26	67	18	15	11	M10 X 1.25	7	18	99	M18 X 1.5
80	41 to 750	41 to 750	40	37	102	32	129	1/4	1/4	78	25	52	14	113	21	30	72	23	17	13	M12 X 1.75	11	22	117	M22 X 1.5
100	45 to 750	45 to 750	40	37	116	41	140	1/4	1/4	92	30	52	14	124	21	31	76	25	19	16	M12 X 1.75	11	26	131	M26 X 1.5

Bore (mm)	N	P	PG	PH	PL	PW	S	W	TDes	TT	TX	TY	TZ	W/o rod boot			W/ rod boot					
														H	Z	ZZ	e	f	h	ℓ	Z	ZZ
40	27	1/4	42	11	20	45	153	8	15 ^{-0.032} _{-0.059}	22	85	62	117	51	162	209	43	11.2	59	1/4 Stroke	170	217
50	30	3/8	46	10	21	50	168	0	15 ^{-0.032} _{-0.059}	22	95	74	127	58	181	232	52	11.2	66	1/4 Stroke	189	240
63	31	3/8	48.5	13	23	60	182	0	18 ^{-0.032} _{-0.059}	28	110	90	148	58	191	248	52	11.2	66	1/4 Stroke	199	256
80	37	1/2	55	15	23	70	208	0	25 ^{-0.040} _{-0.073}	34	140	110	192	71	221	286	65	12.5	80	1/4 Stroke	230	295
100	40	1/2	56.5	15	25	80	226	0	25 ^{-0.040} _{-0.073}	40	162	130	214	72	235	306	65	14.0	81	1/4 Stroke	244	315

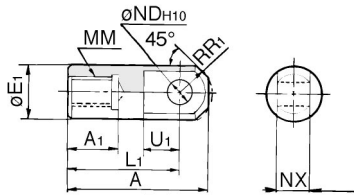
CLAT40.....SCLA40, #7 (#1+#7+#11) CLAT80..... SCLA80, #7 (#1+#7+#11)
 CLAT50.....SCLA50, #7 (#1+#7+#11) CLAT100.....SCLA100, #7 (#1+#7+#11)
 LAT63..... SCLA63, #7 (#1+#7+#11)

- CL
- MLGC
- CNA
- CB
- CV/MVG
- CXW
- CXS
- CXT
- MX
- MXU
- MXS
- MXQ
- MXF
- MXW
- MPX
- MG
- MGP
- MGQ
- MGG
- MGC
- MGF
- CY1
- MY1

Series CLA

Accessory Dimensions

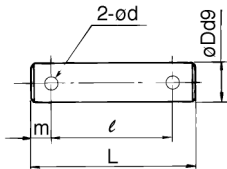
I type single knuckle joint



Material: Sulfur free-cutting steel

Part No.	Tube I.D. (mm)	A	A1	øE1	L1	MM	R1	U1	øND ^{H10}	NX
I-04	40	69	22	24	55	M14 X 1.5	15.5	20	12 ^{+0.070/0}	16 ^{-0.1/-0.3}
I-05	50/63	74	27	28	60	M18 X 1.5	15.5	20	12 ^{+0.070/0}	16 ^{-0.1/-0.3}
I-08	80	91	37	36	71	M22 X 1.5	22.5	26	18 ^{+0.070/0}	28 ^{-0.1/-0.3}
I-10	100	105	37	40	83	M26 X 1.5	24.5	28	20 ^{+0.084/0}	30 ^{-0.1/-0.3}

Clevis pin/Knuckle pin



Material: Carbon steel

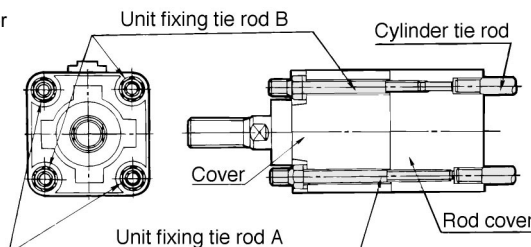
(mm)

Part No.	Tube I.D.		Dd9	L	l	m	d Cut through	Used cotter pin	Used flat washer
	Clevis	Knuckle							
CDP-2A	40	—	10 ^{-0.040/-0.076}	46	38	4	3	ø3 X 18ℓ	*MIGAKIMARU*10
CDP-3A	50	40/50/63	12 ^{-0.050/-0.093}	55.5	47.5	4	3	ø3 X 18ℓ	*MIGAKIMARU*12
CDP-4A	63	—	16 ^{-0.050/-0.093}	71	61	5	4	ø4 X 25ℓ	*MIGAKIMARU*16
CDP-5A	—	80	18 ^{-0.050/-0.093}	76.5	66.5	5	4	ø4 X 25ℓ	*MIGAKIMARU*18
CDP-6A	80	100	20 ^{-0.065/-0.117}	83	73	5	4	ø4 X 30ℓ	*MIGAKIMARU*20
CDP-7A	100	—	25 ^{-0.065/-0.117}	88	78	5	4	ø4 X 36ℓ	*MIGAKIMARU*24

⚠ Caution

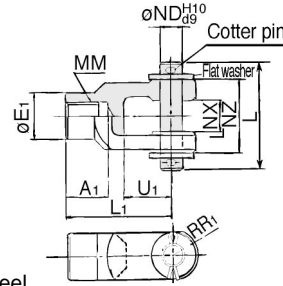
Caution on Handling

- After mounting and adjusting, follow the procedures for changing the lock to the locked state shown on p.3.1-5. Rotate the pin, and put the cylinder into the locked state before using.
- Precautions for using the basic body or replacing the support bracket:**
The lock unit and the cylinder rod cover are assembled as shown in the diagram below. Therefore, unlike the ordinary air cylinder that uses the basic type, it is not possible to mount it directly by screwing the cylinder tie rods into a machine. Furthermore, the tie rods for securing the unit could become loosened when the support bracket is replaced. If this occurs, make sure to retighten the tie rods. Use a socket wrench when replacing the support bracket or to retighten the tie rods for securing the unit.



Unit fixing tie rod A has hole (ø2, depth 1mm) at end side.

Y type double knuckle joint * Knuckle pin, cotter pin and flat washer are packed.

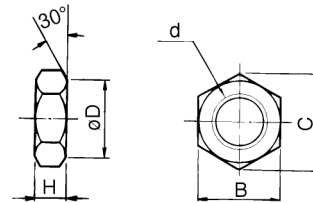


Material: Casting steel

(mm)

Part No.	Tube I.D. (mm)	A1	E1	L1	MM	RR1	U1	ND	NX	NZ	L	Cotter pin size	Flat washer
Y-04C	40	22	24	55	M14 X 1.5	13	25	12	16 ^{+0.3/0.1}	38	55.5	ø3 X 18ℓ	*MIGAKIMARU*12
Y-05C	50/63	27	28	60	M18 X 1.5	15	27	12	16 ^{+0.3/0.1}	38	55.5	ø3 X 18ℓ	*MIGAKIMARU*12
Y-08C	80	37	36	71	M22 X 1.5	19	28	18	28 ^{+0.3/0.1}	55	76.5	ø4 X 25ℓ	*MIGAKIMARU*18
Y-10C	100	37	40	83	M26 X 1.5	21	38	20	30 ^{+0.3/0.1}	61	83	ø4 X 30ℓ	*MIGAKIMARU*20

Rod end nut



Material: Rolled steel

Part No.	Tube I.D. (mm)	d	H	B	C	D
NT-04	40	M14 X 1.5	8	22	25.4	21
NT-05	50/63	M18 X 1.5	11	27	31.2	26
NT-08	80	M22 X 1.5	13	32	37.0	31
NT-10	100	M26 X 1.5	16	41	47.3	39