

G-O-Motor

Spring or Spring-less Type Piston Cylinder Actuator

Model GOM

OVERVIEW

The G-O-Motor is a pneumatic actuator that features compact in size, powerful in output and long stroke. G-O-Motors have wide range of application such as actuators for butterfly valves, vane control of blowers, variable resistors or any other mechanical controls requiring a proportional position control. Both spring type and spring-less type are available.

SPECIFICATIONS

Spring Types

Types

Vertical type, spring type piston actuator

Action

Direct action

Material

- Cylinder
Cast iron FC200
- Piston
Cast iron FC200
- Piston rod
Stainless steel SUS403
- O-ring
Nitril butadiene rubber

Input

With Model HTP pneumatic positioner

20 to 100 kPa {0.2 to 1.0 kgf/cm²}

20 to 60 kPa {0.2 to 0.6 kgf/cm²}

60 to 100 kPa {0.6 to 1.0 kgf/cm²}

With model AVP/HEP electro-pneumatic positioner

4~20mA DC, 4 to 12mA DC, 12 to 20mA DC

Spring range

20 to 98 kPa {0.2 to 1.0 kgf/cm²}

Supply pressure

140 kPa {1.4 kgf/cm²}

Air consumption (normal state)

With model HTP pneumatic positioner: 7Nl/min or less.

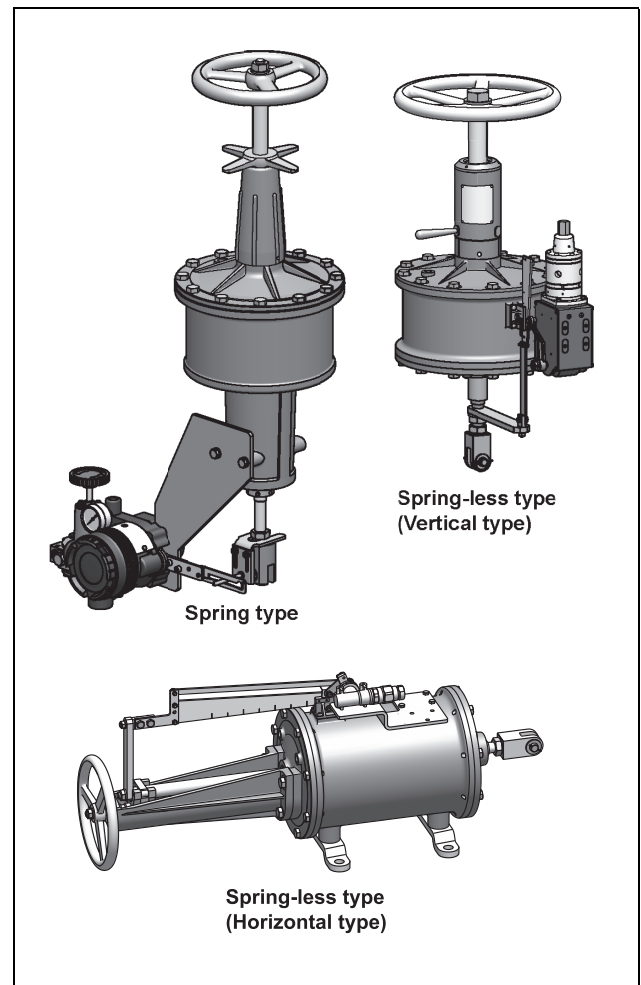
With model AVP/HEP positioner: 4Nl/min or less.

Air connection (normal state)

Rc1/4 internal thread

Ambient temperature

0°C to +70°C



Optional accessories

Positioner*, pressure regulator with filter, hand wheel*, limit switch, solenoid valve, motion transmitter, booster relay, lock-up valve, and others.

Note) 1) For the optional items, refer to the specification sheets and installation drawing of respective accessories.

2) Accessories with the asterisk mark (*) are selected from the following types depending on the actuators to be combined.

Actuator	Positioner		Hand wheel	
	P/P	I/P	Top	Side
Spring type GOM	HTP	AVP/HEP	THM	-

Performance

Output

Refer to Table 1.

Accuracy

Hysteresis error: Within 1%F.S.

Linearity: Within ±1%F.S.

Dimensions and weight

Refer to Figure 1 and Table 4.

Finish

Blue (Munsell 10B5/10), silver or other specified colors.

Spring-less Types

Types

Vertical or horizontal type, spring-less type piston actuator

Action

Direct or reverse action

Material

- Cylinder
Cast iron FC200
- Piston
Cast iron FC200
- Piston rod
Stainless steel SUS403
- O-ring
Nitril butadiene rubber
- G-O-pilot
Body: Aluminum alloy
Feedback mechanism case: Cast iron FC200

Input

With Model G-O-Pilot pneumatic positioner

20 to 100 kPa {0.2 to 1.0 kgf/cm²}

20 to 60 kPa {0.2 to 0.6 kgf/cm²}

60 to 100 kPa {0.6 to 1.0 kgf/cm²}

With model AVP/HEP electro-pneumatic positioner

4 to 20mA DC, 4 to 12mA DC, 12 to 20mA DC

Supply pressure

200 kPa {2.0 kgf/cm²}

Air consumption (normal state)

With model G-O-Pilot pneumatic positioner: 10NI/min or less.

With model AVP/HEP positioner: 4NI/min or less.

Air connection (normal sate)

Rc1/4 internal thread

Ambient temperature

0°C to +70°C

Optional accessories

Positioner*, pressure regulator with filter, hand wheel*, limit switch, solenoid valve, motion transmitter, booster relay, lock-up valve, and others.

Note) 1) For the optional items, refer to the specification sheets and installation drawing of respective accessories.

2) Accessories with the asterisk mark (*) are selected from the following types depending on the actuators to be combined.

Actuator	Positioner		Hand wheel	
	P/P	I/P	Top	Side
Spring-less type GOM (Vertical type)	G-O-Pilot	AVP *1	THM	-
Spring-less type GOM (Horizontal type)	G-O-Pilot	AVP *2	-	SHM

*1: Only available for GOM64LM, GOM84LM, and GOM124LM.

*2: Remote type AVP (Model# AVP2__)shuold be sellected.

Performance

Output

Refer to Table 1.

Accuracy

Hysteresis error: Within 2%F.S.

Linearity: Within ±1%F.S.

Dimensions and weight

Refer to Figure 2,3,4 and Table 5 to 7.

Finish

Blue (Munsell 10B5/10), silver or other specified colors.

Notes on Installation

In case of outside installation, please apply waterproof and dust-proof measures to G-O-Motor.

Table 1 Output power (Spring type)

Basic Model No.	Cylinder dia.x Travel (mm)	Power N {kgf}	
		Downward	Upward
GOM 83 S	φ200×75	2740 to 930 {280 to 95.0}	440 to 2300 {45.0 to 235}
GOM 84 S	φ200×100	2740 to 930 {280 to 95.0}	440 to 2300 {45.0 to 235}
GOM 103 S	φ250×75	4310 to 1420 {440 to 145}	740 to 3630 {75.0 to 370}
GOM 104 S	φ300×100	6280 to 2060 {640 to 210}	1030 to 5200 {105 to 530}

Note) The power are shon for the strokes at upper and lower limits.

Table 2 Output power (Spring-less type (Vertical type, with manual hand wheel))

Basic Model No.	Cylinder dia.x Travel (mm)	Power N {kgf}		Feed back mechanism
		Thrust N {kgf}	Torque N·m {kgf·cm} Rotating angle 60°	
GOM 64LM	φ150×100	2650 {270}	228 {2330}	Plate cam type
GOM 84LM	φ200×100	4610 {470}	399 {4070}	Plate cam type
GOM 124LM	φ300×100	10800 {1100}	934 {9520}	Plate cam type
GOM 154LM	φ380×100	16700 {1700}	1444 {14720}	Plate cam type

Table 3 Output power (Spring-less type (Horizontal type))

Basic Model No.	Cylinder dia.x Travel (mm)	Power N {kgf}	Feed back mechanism
GOM 44L	φ100×100	1180 {120}	Plate cam type
GOM 410L	φ100×250	1180 {120}	Plate cam type
GOM 64L	φ150×100	2650 {270}	Plate cam type
GOM 66L	φ150×150	2650 {270}	Plate cam type
GOM 610L	φ150×250	2650 {270}	Plate cam type
GOM 84L	φ200×100	4610 {470}	Plate cam type
GOM 86L	φ200×150	4610 {470}	Plate cam type
GOM 810L	φ200×250	4610 {470}	Plate cam type
GOM 1210L	φ300×250	10800 {1100}	Plate cam type
GOM 1510L	φ380×250	16700 {1700}	Plate cam type

Note) 1) Suffix letter "M" is added to the model no. for spring-less type (horizontal or vertical) with manual hand wheel.

2) A safety factor of 0.5 to 0.7 to the output power is preferable to be taken for spring-less type when the control element is subjected to severe operating conditions (Poor stability or large inertia)

Table 4-1 Dimensions and weights for spring type

(Unit: mm)

Actuator	L	H	φr	φD	φO	Stem guide	A	φh	P(P.C)	X×Y screw
						Metric thread				
GOM83S	532	55	200	250	100	M42×1.5	53	10 ^{t7}	70	4×M10
GOM84S	655	55	200	250	100	M42×1.5	64	10 ^{t7}	70	4×M10
GOM103S	633	60	250	302	116	M45×1.5	64	10 ^{t7}	80	4×M12
GOM124S	779	75	280	363	134	M48×1.5	70	12 ^{t7}	90	4×M16

Table 4-2 Dimensions and weights for spring type

(Unit: mm)

Actuator	Piston rod					F	A'	φg	Fork end					
	Metric thread	ℓ	ℓ' (Thread length)	φd	E				P×G (Screw dia.× Depth)	φS'	B	t	K	S
GOM83S	M14	45	41	18	78	40	26±2	40	M14×25	40	13	12	29	30
GOM84S	M16	45	44	18	80	50	27±2	40	M16×34	45	14	12	30	34
GOM103S	M16	60	56	22	100	50	28±2	40	M16×34	45	14	12	30	34
GOM124S	M16	55	50	26	110	60	29±2	44	M16×35	45	15	15	33	34

Table 4-3 Dimensions and weights for spring type

(Unit: mm)

Actuator	Stroke	V		W		Z		Weight (kg)	
		With AVP	With HTP	With AVP	With HTP	With AVP	With HTP	With AVP	With HTP
GOM83S	75	185	149	350	200	230	-	29	30
GOM84S	100	185	149	350	200	240	-	34	35
GOM103S	75	190	149	350	205	220	-	44	45
GOM124S	100	205	149	350	220	275	-	68	69

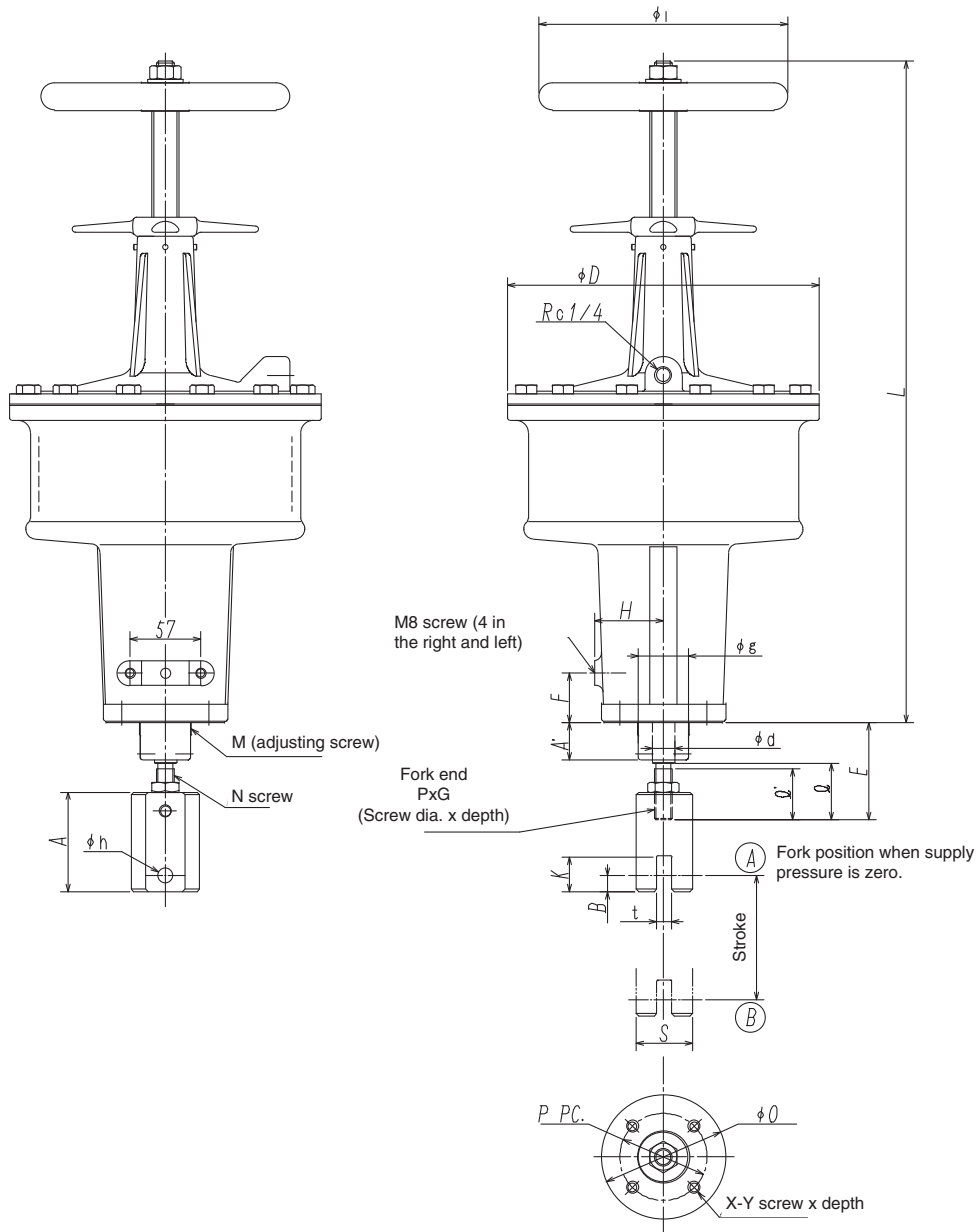


Figure 1-1 Spring type

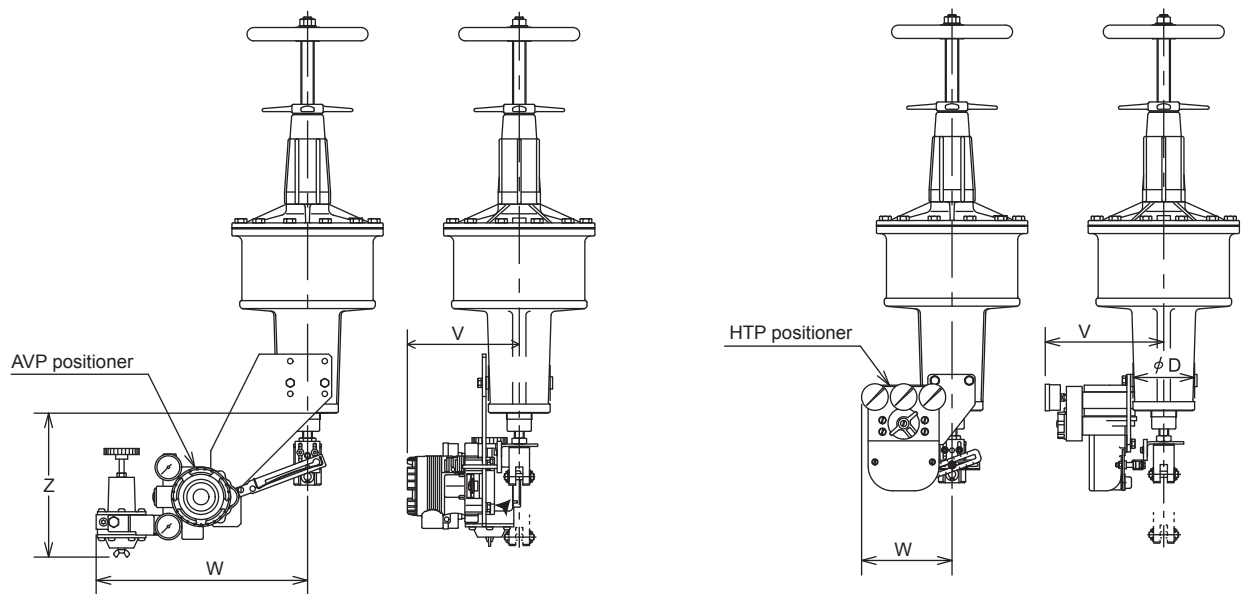


Figure 1-2 Dimensions of Spring type with positioner
M8 screw (4 in the right and left)

Table 5-1 Dimensions and weights for GOM_()LM Spring-less type (Vertical type, with manual hand wheel)
(Unit: mm)

Actuator	Bmax.	P	φr	φR	φD	t	φG	F	φCpc	N×M×Y
GOM64LM	630	250	200	202	150	20	74	27	110	4×M20×20
GOM84LM	640	275	360	250	150	20	74	27	110	4×M20×20
GOM124LM	600	335	360	356	130	-	74	32	104	4×M14×17
GOM154LM	665	380	360	455	166	-	94	40	130	6×M16×22

Table 5-2 Dimensions and weights for GOM_()LM Spring-less type (Vertical type, with manual hand wheel)
(Unit: mm)

Actuator	k	g	e	f	a	φd	Piston rod			
							A'	m	Q	Q'
GOM64LM	20	45	40	15	40	14 ^{f7}	115	M20	60	70
GOM84LM	20	45	40	15	40	14 ^{f7}	115	M20	60	70
GOM124LM	22	47	40	18	44	18 ^{f7}	185	M24	80	90
GOM154LM	25	55	50	21	50	22 ^{f7}	200	M30×2	100	110

Table 5-3 Dimensions and weights for GOM_()LM Spring-less type (Vertical type, with manual hand wheel)
(Unit: mm)

Actuator	A	φd'	Fork end	Stroke	Weight(kg)
			J×K (Screw dia.×Depth)		
GOM64LM	70	30.07	M20×30	100	45
GOM84LM	70	30.07	M20×30	100	60
GOM124LM	82	30.07	M24×35	100	80
GOM154LM	100	41.20	(M30×2)×45	100	105

Note) Number in "Weight" is for G-O-Motor with G-O-Pilot.

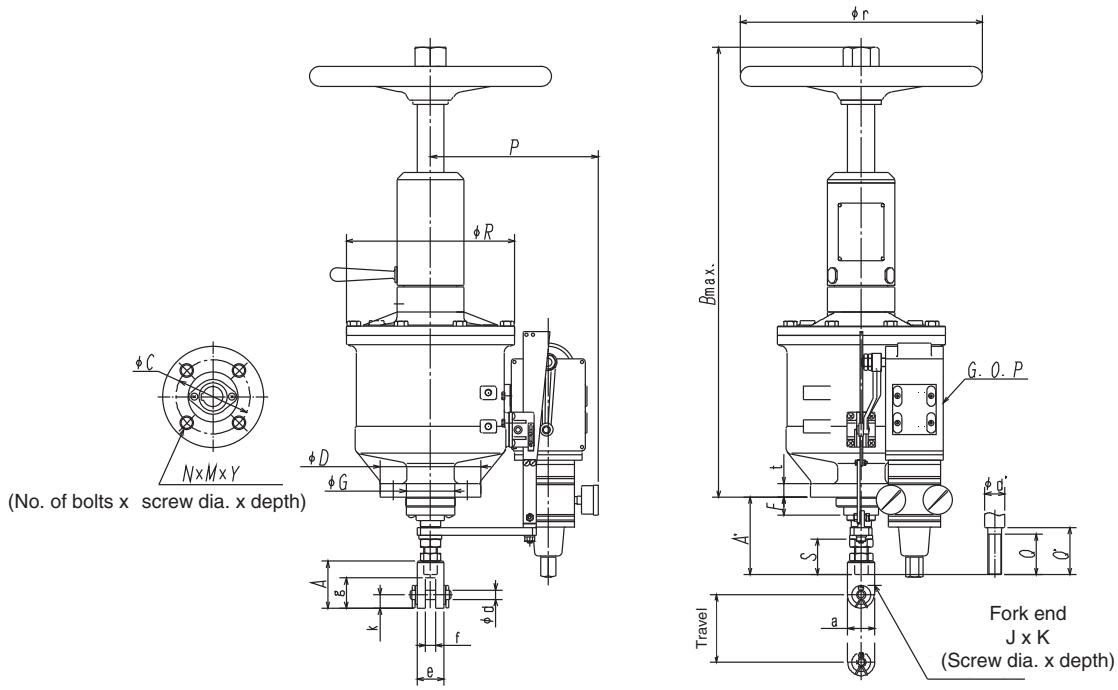


Fig 2-1 Spring-less type (Vertical type, with manual hand wheel)
(GOM 64LM, GOM84LM)

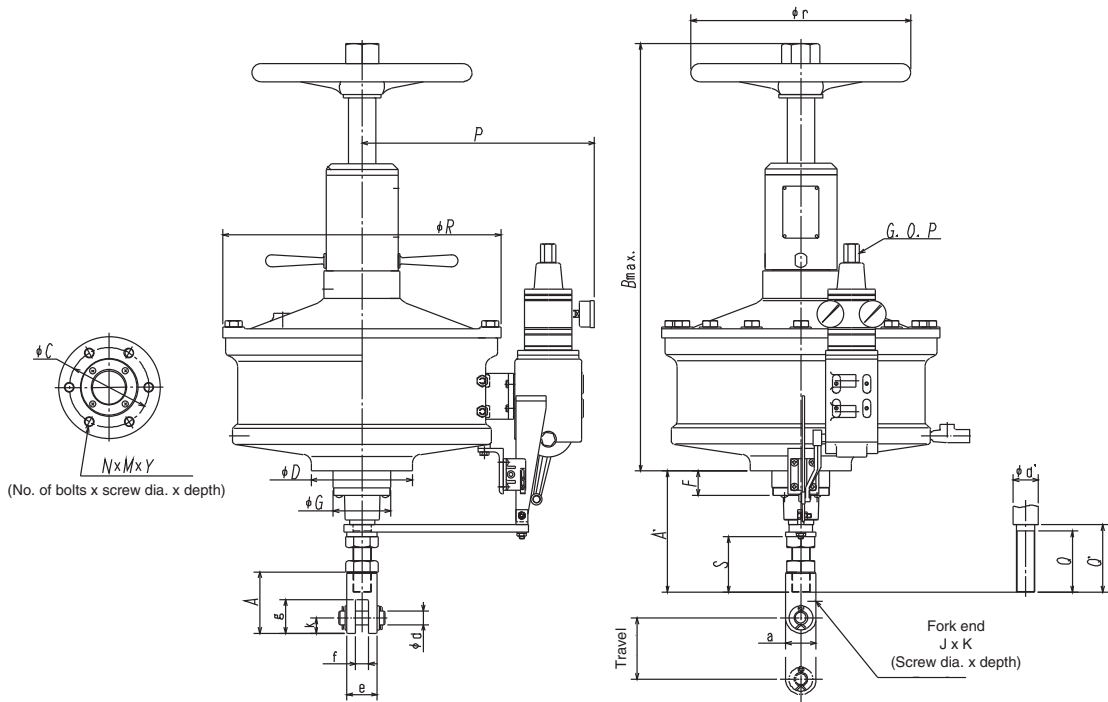


Fig 2-2 Spring-less type (Vertical type, with manual hand wheel)
(GOM124LM, GOM154LM)

Table 6-1 Dimensions and weights for GOM_()L Spring-less type (Horizontal type)

(Unit: mm)

Actuator	L	p	ϕR	H	h	t	E	E'	F	B	B'	N $\times\phi H$
GOM44L	541	165	144	265	80	10	99	144	25	75	120	4 \times 11
GOM410L	835	175	144	275	90	10	236	150	160	210	120	4 \times 11
GOM64L	561	185	202	317	105	10	146	166	76	120	140	4 \times 14
GOM66L	663	183	202	315	110	10	150	170	60	120	140	4 \times 14
GOM610L	886	175	202	327	115	10	250	170	160	220	140	4 \times 14
GOM84L	529	200	250	372	140	9	116	226	64	90	200	4 \times 14
GOM86L	635	180	250	367	135	9	146	226	94	120	200	4 \times 14
GOM810L	833	175	250	397	155	12	255	260	175	215	220	4 \times 18
GOM1210L	1080	175	352	505	210	12.7	240	310	140	190	260	4 \times 21
GOM1510L	1120	175	455	595	250	16	240	460	120	180	400	4 \times 28

Table 6-2 Dimensions and weights for GOM_()L Spring-less type (Horizontal type)

(Unit: mm)

Actuator	A	k	g	e	f	a	ϕd	$\phi d'$	Piston rod			
									A'	m	C	C'
GOM44L	165	15	33	35	15	30	12 ^{f7}	25.32	136	M16	45	50
GOM410L	175	15	33	35	15	30	12 ^{f7}	25.32	145	M16	45	50
GOM64L	170	19	39	38	15	38	15 ^{f7}	30.07	143	M20	50	55
GOM66L	195	19	39	38	15	38	15 ^{f7}	30.07	167	M20	50	55
GOM610L	200	19	39	38	15	38	15 ^{f7}	30.07	170	M20	50	55
GOM84L	180	19	39	38	15	38	15 ^{f7}	30.07	148	M20	50	55
GOM86L	195	19	39	38	15	38	15 ^{f7}	30.07	163	M20	50	55
GOM810L	195	19	39	38	15	38	15 ^{f7}	30.07	165	M20	50	55
GOM1210L	335	30	65	60	26	60	25 ^{f7}	47.55	277	M38 \times 1.5	76	82
GOM1510L	335	30	65	60	26	60	25 ^{f7}	53.90	290	M38 \times 1.5	77	85

Table 6-3 Dimensions and weights for GOM_()L Spring-less type (Horizontal type)

(Unit: mm)

Actuator	G	Fork end	Stroke	Weight (kg)
		M \times Y (Screw dia. \times Depth)		
GOM44L	70	M16 \times 32	100	22
GOM410L	70	M16 \times 32	250	30
GOM64L	79	M16 \times 37	100	25
GOM66L	79	M20 \times 37	150	37
GOM610L	79	M20 \times 37	250	41
GOM84L	79	M20 \times 37	100	45
GOM86L	79	M20 \times 37	150	50
GOM810L	79	M20 \times 37	250	60
GOM1210L	79	(M38 \times 1.5) \times 49	250	80
GOM1510L	79	(M38 \times 1.5) \times 49	250	130

Note) Numbers in "Weight" is for G-O-Motor with G-O-Pilot.

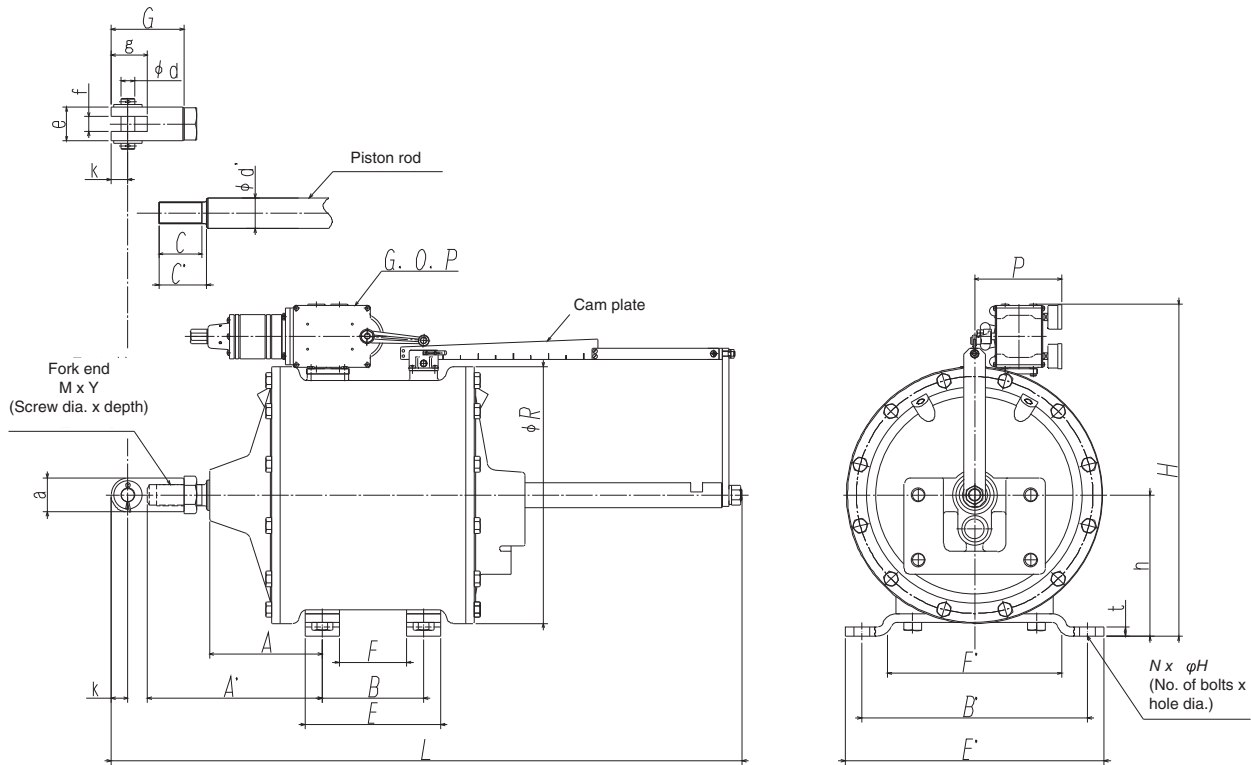


Figure 3-1 GOM_()L Spring-less type (Horizontal type)

Table 7-1 Dimensions and weights for GOM_()LM Spring-less type (Horizontal type, with manual hand wheel)

(Unit: mm)

Actuator	L	p	φr	q	φR	H	h	t	E	E'	F
GOM44LM	624	165	140	30	144	265	80	10	99	144	25
GOM410LM	923	175	140	30	144	*350	*165	*5	*685	*150	-
GOM64LM	641	185	220	30	202	317	105	10	146	166	76
GOM66LM	729	183	220	30	202	315	110	10	150	170	60
GOM610LM	978	175	220	30	202	*427	215	*5	*715	*170	-
GOM84LM	590	200	220	30	250	372	140	9	116	226	64
GOM86LM	697	180	220	30	250	367	135	9	146	226	94
GOM810LM	895	175	220	30	250	397	155	12	255	260	175
GOM1210LM	1201	175	400	55	352	505	210	12	240	310	140
GOM1510LM	1234	175	400	60	455	595	250	16	240	460	120

Note) 1) Channel base is provided for models GOM410LM and 610LM. (* represents the figures with channel base)

2) Numbers in "weight" is for G-O-Motor with G-O-Pilot.

Table 7-2 Dimensions and weights for GOM_()LM Spring-less type (Horizontal type, with manual hand wheel)
(Unit: mm)

Actuator	F'	B	B'	N×φH	A	k	g	e	f
GOM44LM	70	75	120	4×11	165	15	33	35	15
GOM410LM	*70	*327.5×2	*120	*6×11	*175	15	33	35	15
GOM64LM	92	120	140	4×14	170	19	39	38	15
GOM66LM	80	120	140	4×14	195	19	39	38	15
GOM610LM	*70	*342.5×2	*140	*6×14	*200	19	39	38	15
GOM84LM	148	90	200	4×14	180	19	39	38	15
GOM86LM	148	120	200	4×14	195	19	39	38	15
GOM810LM	164	215	220	4×18	195	19	39	38	15
GOM1210LM	194	190	260	4×21	335	30	65	60	26
GOM1510LM	310	180	400	4×28	345	30	65	60	26

Table 7-3 Dimensions and weights for GOM_()LM Spring-less type (Horizontal type, with manual hand wheel)
(Unit: mm)

Actuator	Piston rod				a	φd	φd'	G	φD	Fork end M×Y(Screw dia.×Depth)	Stroke	Weight (kg)
	A'	m	C	C'								
GOM44LM	136	M16	45	50	30	12 ^{F7}	25.32	70	25.32	M16x32	100	24
GOM410LM	145	M16	45	50	30	12 ^{F7}	25.32	70	25.32	M16x32	250	40
GOM64LM	143	M20	50	55	38	15 ^{F7}	30.07	79	30.07	M20x37	100	30
GOM66LM	167	M20	50	55	38	15 ^{F7}	30.07	79	30.07	M20x37	150	42
GOM610LM	170	M20	50	55	38	15 ^{F7}	30.07	79	30.07	M20x37	250	65
GOM84LM	148	M20	50	55	38	15 ^{F7}	30.07	79	30.07	M20x37	100	50
GOM86LM	163	M20	50	55	38	15 ^{F7}	30.07	79	30.07	M20x37	150	55
GOM810LM	165	M20	50	55	38	15 ^{F7}	30.07	79	30.07	M20x37	250	80
GOM1210LM	277	M38×1.5	76	82	60	25 ^{F7}	47.55	130	47.55	(M38×1.5)×49	250	130
GOM1510LM	290	M38×1.5	76	85	60	25 ^{F7}	53.90	130	53.90	(M38×1.5)×49	250	200

Note) 1) Numbers in "weight" is for G-O-Motor with G-O-Pilot.

2) Channel base is provided for models GOM410LM and 610LM. (* represents the figures with channel base.)

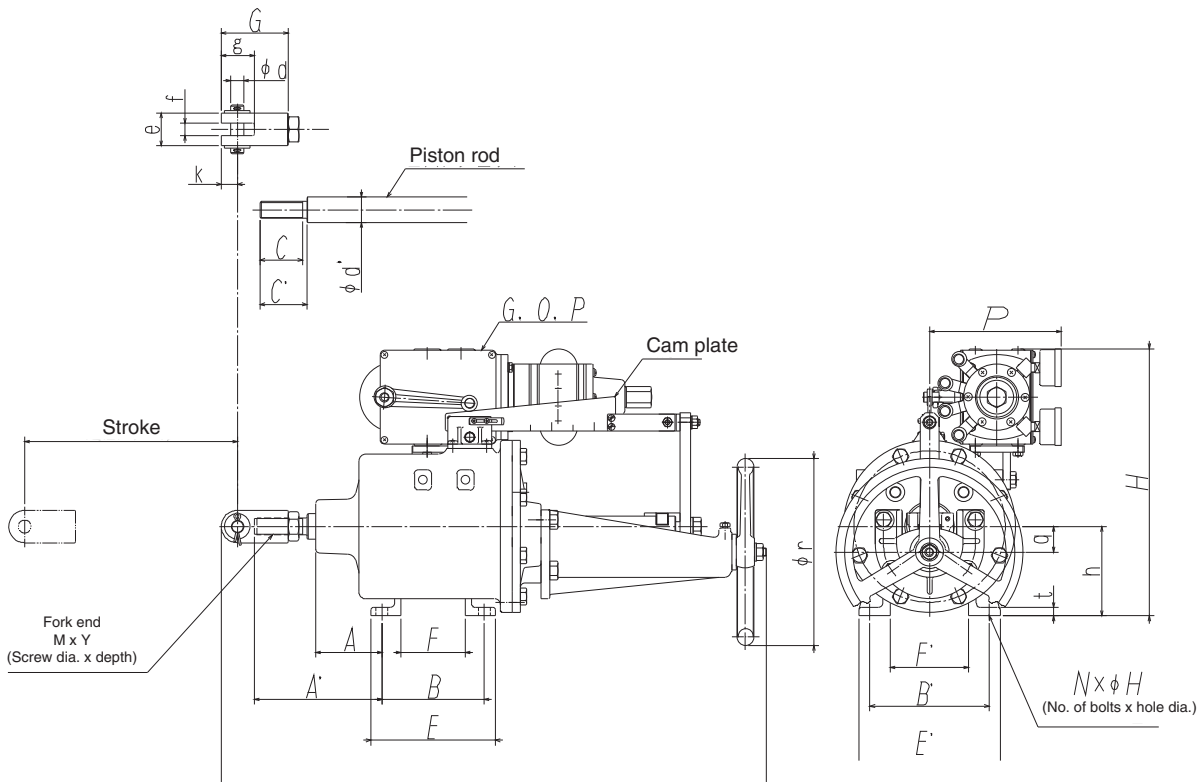


Figure 4-1 Spring-less type (Horizontal type, with manual hand wheel) (GOM64LM)

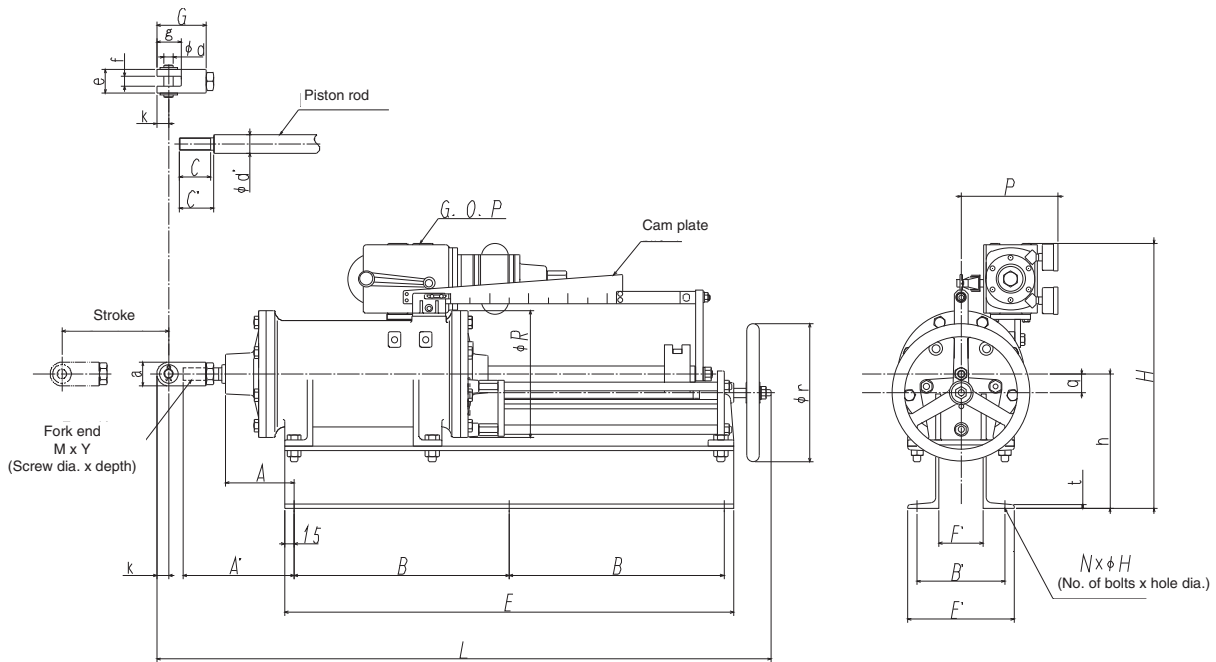


Figure 4-2 Spring-less type (Horizontal type, with manual hand wheel and channel base) (GOM610LM)

Note

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Specifications are subject to change without notice.

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Azbil Corporation

Advanced Automation Company

1-12-2 Kawana, Fujisawa
Kanagawa 251-8522 Japan
URL: <http://www.azbil.com/>

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