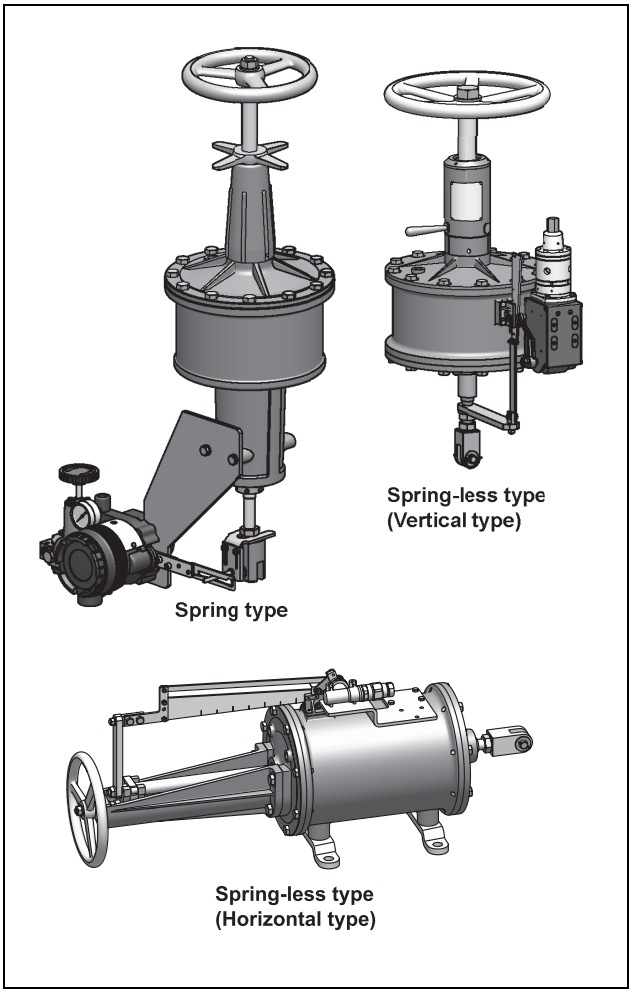
G-O-Motor
Spring or Spring-less Type Piston Cylinder Actuator
Model GOM

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 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 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 2.

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: 10Nl/min or less.
With model AVP/HEP positioner: 4Nl/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 and Table 3.

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

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 {kgf} 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}	9520 {934}	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)

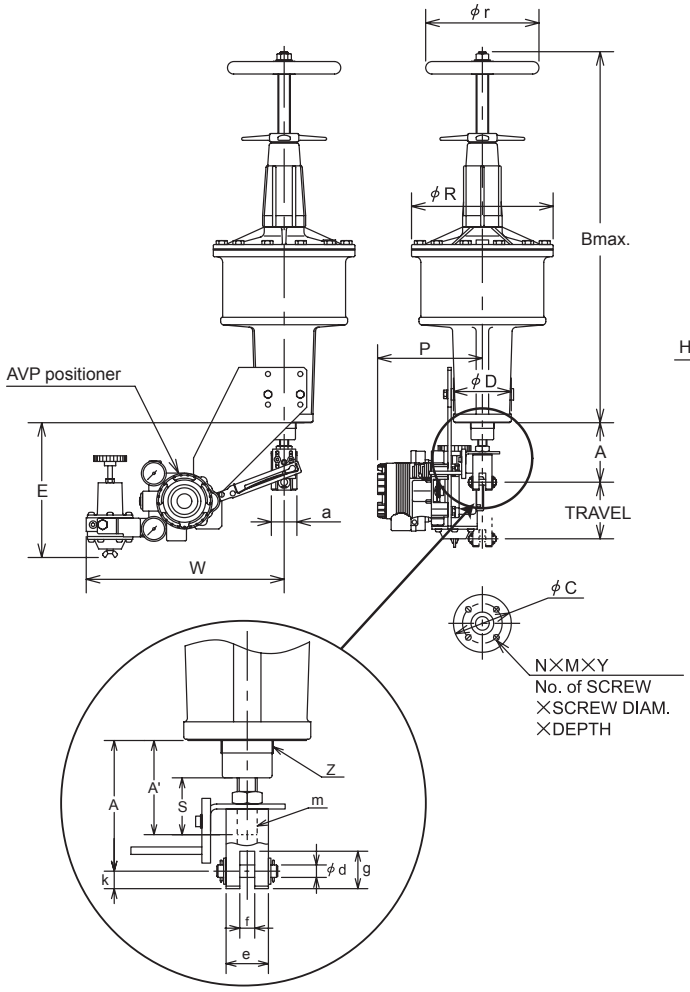


Figure 1-1. Spring type (With AVP positioner)

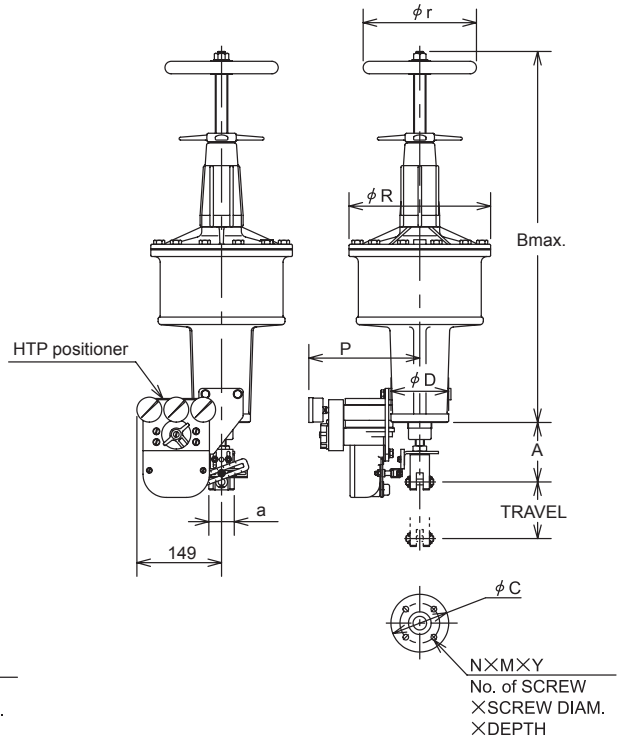


Figure 1-2. Spring type (With HTP positioner)

Figure 1 Spring type

Table 4 Dimensions & weights for spring type (With HTP positioner)

Dimension (mm) / Weight (kg) / Basic Model No.	B MAX	P	φr	φR	φD	Z	φCpc	J×M×Y	A	k	g	e	f	a	φd	w/o Fork-end			Travel	Weight
																A'	m	S		
GOM 83S	532	200	200	250	100	M42×1.5	70	4×M10×15	100	13	29	30	12	40	10^{f7}	78	M14	41	75	30
GOM 84S	655	200	200	250	102	M42×1.5	70	4×M10×15	105	14	30	34	12	45	10^{f7}	80	M16	44	100	35
GOM 103S	633	205	250	302	116	M45×1.5	80	4×M10×18	123	14	30	34	12	45	10^{f7}	100	M16	56	75	45
GOM 104S	779	220	280	363	134	M48×1.5	90	4×M10×20	136	15	33	34	15	45	12^{f7}	110	M16	50	100	69

Note) Numbers in "weight" is for G-O-Motor with HTP positioner.

Table 5 Dimensions & weights for spring type (With AVP positioner)

Dimension (mm) / Weight (kg) / Basic Model No.	B MAX	P	W	φr	φR	φD	Z	φCpc	N×M×Y	A	k	g	e	f	a	φd	w/o Fork-end			Travel	Weight	E
																	A'	m	S			
GOM 83S	532	185	350	200	250	100	M42×1.5	70	4×M10×15	100	13	29	30	12	40	10^{f7}	78	M14	41	75	29	230
GOM 84S	655	185	350	200	250	102	M42×1.5	70	4×M10×15	105	14	30	34	12	45	10^{f7}	80	M16	44	100	35	240
GOM 103S	633	190	350	250	302	116	M45×1.5	80	4×M12×18	123	14	30	34	12	45	10^{f7}	100	M16	56	75	44	220
GOM 104S	779	205	350	280	363	134	M48×1.5	90	4×M16×20	136	15	33	34	15	45	12^{f7}	110	M16	50	100	68	275

Note) Numbers in "weight" is for G-O-Motor with AVP positioner.

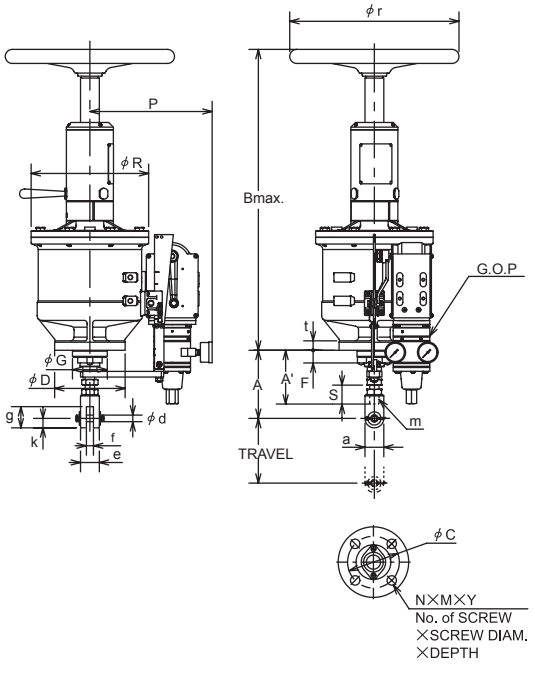


Figure 2-1. Spring-less type (Vertical type, with manual hand wheel) (GOM64LM, 84LM type)

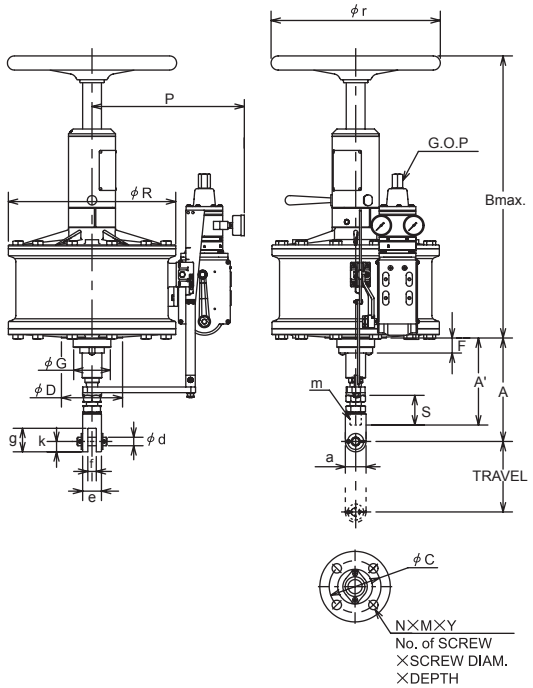


Figure 1-2. Spring-less type (Vertical type, with manual hand wheel) (GOM124LM, 154LM type)

Figure 2 Spring-less type

Table 6 Dimensions & weights for spring-less type (Vertical type, with manual hand wheel)

Dimension (mm) / Weight (kg) / Basic Model No.	B MAX	P	ϕr	ϕR	ϕD	t	ϕG	F	ϕC_{pc}	N×M×Y	A	k	g	e	f	a	ϕd	w/o Fork-end			Travel	Weight
																		A'	m	S		
GOM 64LM	630	250	200	202	150	20	74	27	110	4×M20×20	145	20	45	40	15	40	14^{f7}	115	M20	46	100	45
GOM 84LM	640	275	360	250	150	20	74	27	110	4×M20×20	145	20	45	40	15	40	14^{f7}	115	M20	46	100	60
GOM 124LM	600	335	360	356	130	-	74	32	104	4×M14×17	220	22	47	440	18	44	18^{f7}	185	M24	64	100	80
GOM 154LM	665	380	360	455	166	-	94	40	130	4×M16×22	240	25	55	50	21	50	22^{f7}	200	M30×2	80	100	105

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

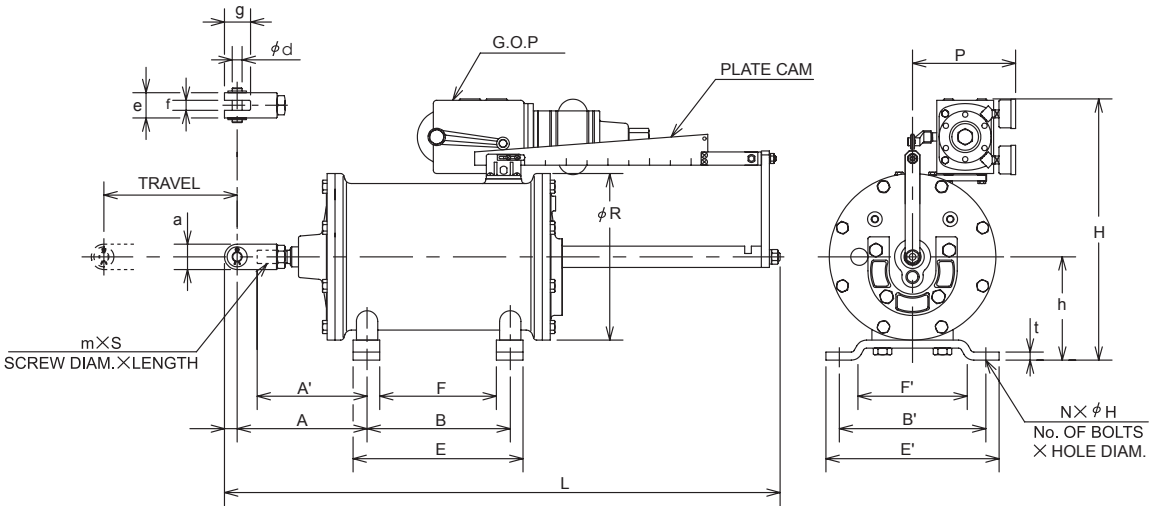


Figure 3 Spring-less type (Horizontal type)

Table 7 Spring-less type (Horizontal type)

Dimension (mm) / Weight (kg) / Basic Model No.	L	P	ϕR	H	h	t	E	E'	F	F'	B	B'	N×ϕH	A	k	g	e	f	a	ϕd	w/o Fork-end			Stroke	Weight
																					A'	m	S		
GOM 44L	541	165	144	265	80	10	99	144	25	70	75	120	4×11	165	15	33	35	15	30	12^{f7}	136	M16	45	100	22
GOM 410L	835	175	144	274	90	10	236	150	160	70	210	120	4×11	175	15	33	35	15	30	12^{f7}	145	M16	45	250	30
GOM 64L	561	185	202	317	105	10	146	166	76	92	120	140	4×14	170	19	39	38	15	38	15^{f7}	143	M20	50	100	25
GOM 66L	663	183	202	315	110	10	150	170	60	80	120	140	4×14	195	19	39	38	15	38	15^{f7}	167	M20	50	150	37
GOM 610L	886	175	202	327	115	10	250	170	160	70	220	140	4×14	200	19	39	38	15	38	15^{f7}	170	M20	50	250	41
GOM 84L	529	200	250	372	140	9	116	226	64	148	90	200	4×14	180	19	39	38	15	38	15^{f7}	150	M20	50	100	45
GOM 86L	635	180	250	367	135	9	146	226	94	148	120	200	4×14	195	19	39	38	15	38	15^{f7}	163	M20	50	150	50
GOM 810L	833	175	250	397	155	12	255	260	175	164	215	220	4×18	195	19	39	38	15	38	15^{f7}	165	M20	50	250	60
GOM 1210L	1080	175	352	505	210	12.7	240	310	140	194	190	260	4×21	335	15	33	35	15	30	25^{f7}	277	M38×1.5	76	250	80
GOM 1510L	1120	175	455	595	250	16	240	460	120	310	180	400	4×28	345	15	33	35	15	30	25^{f7}	290	M38×1.5	77	250	130

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

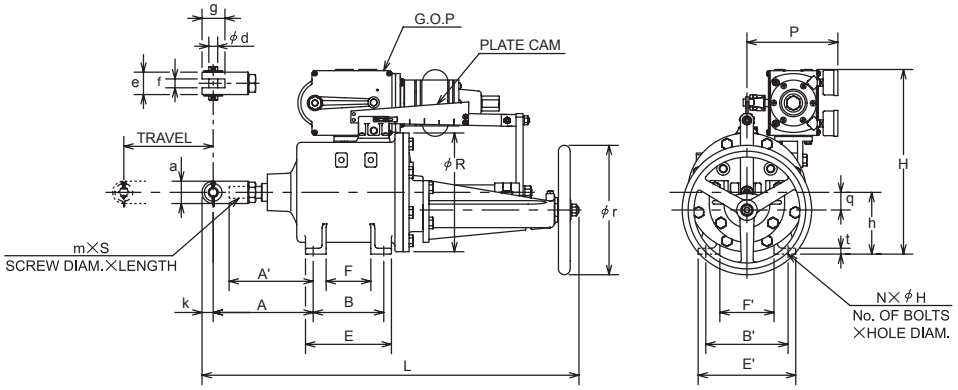


Figure 4-1. Spring-less type
(Horizontal type, with manual hand wheel)
(Except GOM 610LM, GOM 410LM)

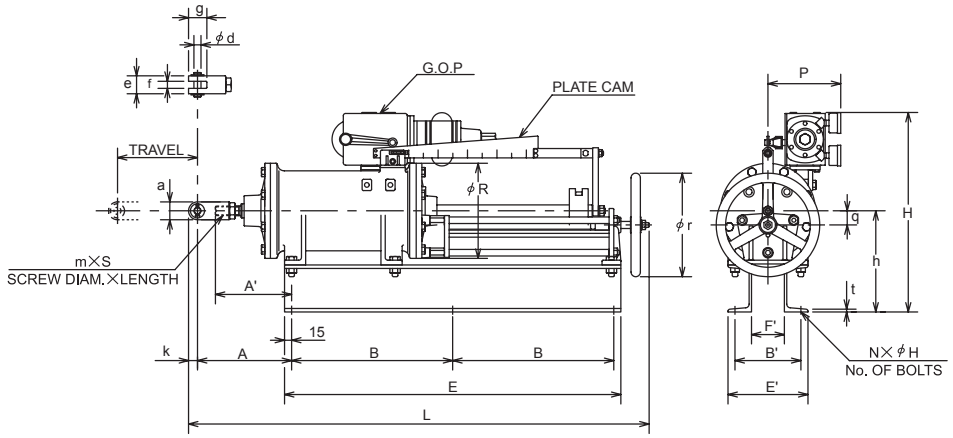


Figure 4-2. Spring-less type
(Horizontal type, with manual hand wheel and channel base)
(GOM 610LM, GOM 410LM)

Figure 4 Spring-less type (Horizontal type)

Table 8 Spring-less type (Horizontal type, with manual hand wheel)

Dimension (mm) Weight (kg) / Basic Model No.	L	P	ϕr	q	ϕR	H	h	t	E	E'	F	F'	B	B'	N×ϕH	A	k	g	e	f	a	ϕd	w/o Fork-end A'	w/o Fork-end m	w/o Fork-end S	Stroke	Weight
GOM 44LM	624	165	140	30	144	265	80	10	99	144	25	70	75	120	4×11	165	15	33	35	15	30	12^{f7}	136	M16	45	100	24
GOM 410LM	923	175	140	30	144	*350	*165	*5	*685	*150	-	*70	*327.5×2	*120	*6×11	*175	15	33	35	15	30	12^{f7}	145	M16	45	250	40
GOM 64LM	641	185	220	30	202	317	105	10	146	166	76	92	120	140	4×14	170	19	39	38	15	38	15^{f7}	143	M20	50	100	30
GOM 66LM	729	183	220	30	202	315	110	10	150	170	60	80	120	140	4×14	195	19	39	38	15	38	15^{f7}	167	M20	50	150	42
GOM 610LM	978	175	220	30	202	*427	*215	*5	*715	*170	-	*70	*342.5×2	*140	*6×14	*200	19	39	38	15	38	15^{f7}	170	M20	50	250	65
GOM 84LM	590	200	220	30	250	372	140	9	116	226	64	148	90	200	4×14	180	19	39	38	15	38	15^{f7}	150	M20	50	100	50
GOM 86LM	697	180	220	30	250	367	135	9	146	226	94	148	120	200	4×14	195	19	39	38	15	38	15^{f7}	163	M20	50	150	55
GOM 810LM	895	175	220	30	250	397	155	12	255	260	175	164	215	220	4×18	195	19	39	38	15	38	15^{f7}	165	M20	50	250	80
GOM 1210LM	1201	175	400	55	352	505	210	12.7	240	310	140	194	190	260	4×21	335	30	65	60	26	60	25^{f7}	277	M38×1.5	76	250	130
GOM 1510LM	1234	175	400	60	455	595	250	16	240	460	120	310	180	400	4×28	345	30	65	60	26	60	25^{f7}	290	M38×1.5	77	250	200

Note) 1) Channel base is proveded for models GOM410LM and 610LM. (Represents the figures with channel base.)*
2) Numbers in "weight" is for G-O-Motor with G-O-Pilot.

Note

Specifications are subject to change without notice.

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