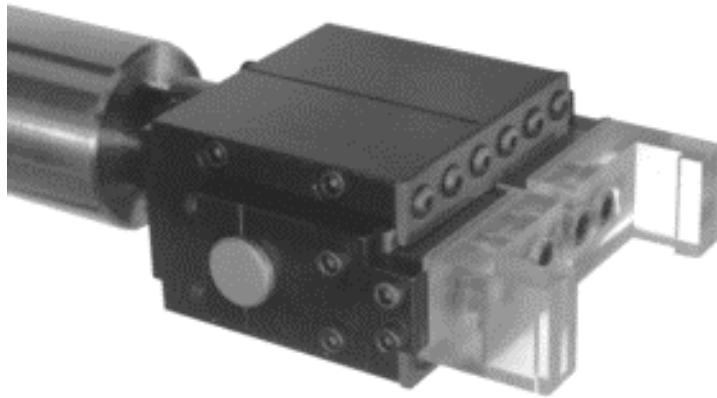


ZAYTRAN Parallel Grippers

Machine Tool Quality

Thousands of ZAYTRAN parallel grippers have demonstrated machine tool quality in die casting, forging, and other torturous environments. Bodies are hardcoated to a Rockwell(c) 70 hardness. All cylinder bores are roller burnished and TFE impregnated to improve seal life and minimize friction. The pistons are ground and electroless

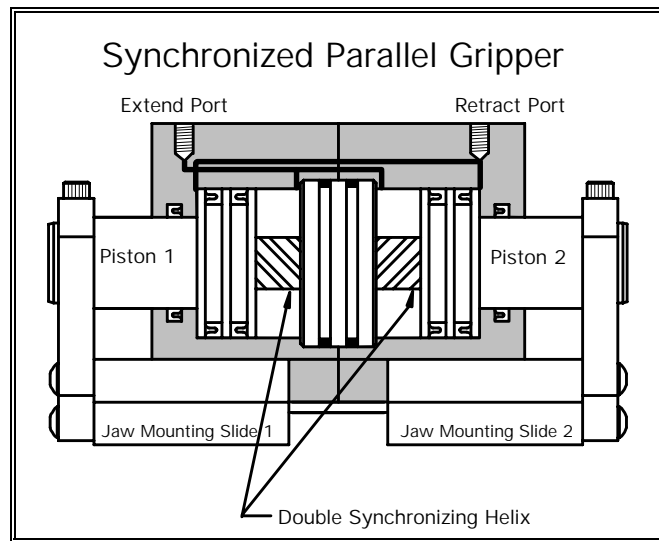
nickel-plated for environmental hardening and to minimize seal friction. Gib plates are hardened and ground and the solid steel movable, jaw-mounting slide is electroless nickel-plated. ZAYTRAN parallel grippers are engineered to go **10,000,000 cycles** and beyond!



Patented Synchronous Technology - Extended Life

Synchronous grippers utilize ZAYTRAN US patent number 4591199. The force and synchronizing double helix are independent systems. The double helix works only to center the part to ± 0.001 inches. All of the gripping

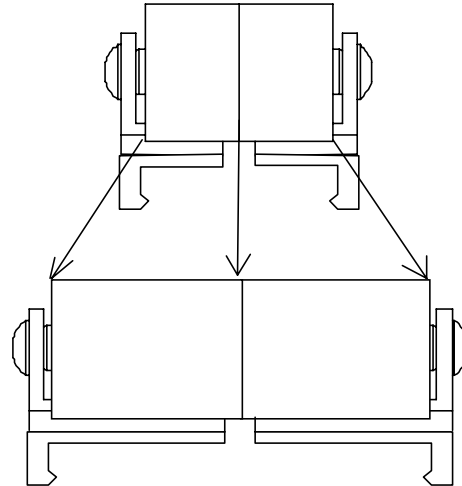
force is provided by two pistons that are driven either pneumatically or hydraulically. The independence of the force and synchronization systems provides precision over the typical 10,000,000+ cycle life of the unit.



ZAYTRAN Grippers

Special Capabilities

ZAYTRAN offers the broadest line of parallel grippers available today. The GPL Long stroke grippers provide unsurpassed flexibility in handling a wide variety of parts.

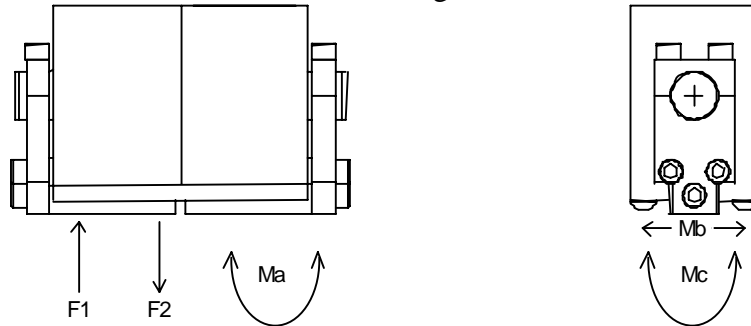


Ultra Long Stroke

To handle a wide variety of parts

JAW TORQUE & FORCE

The forces and moments indicated in the chart below are for loads after the gripper has grasped the part and the jaws have completed their motion. If force and torque is applied to the gripper while the jaw is moving please see the ZAYTRAN XRAY® series catalog.

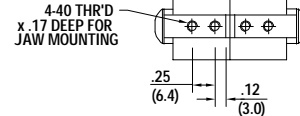
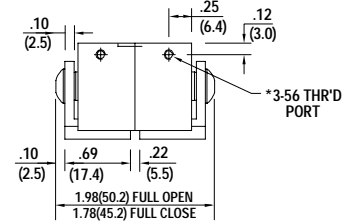
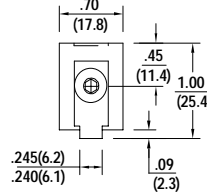
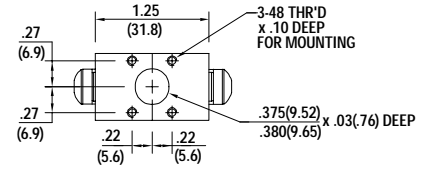
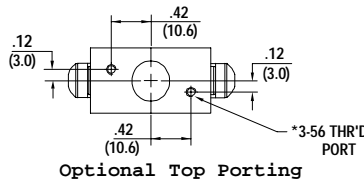


Model	Ma IN-Lbs (kgf-CM)	Mb IN-Lbs (kgf-CM)	Mc IN-Lbs (kgf-CM)	F1 Lbs (kgf)	F2 Lbs (kgf)
GP to GPUL-5	32 (35)	43 (50)	54 (60)	5 (2.3)	5 (2.3)
GP & GPL-10	97 (100)	162 (190)	86 (100)	12 (5.5)	14 (6.4)
GP & GPL-20	162 (180)	270 (300)	130 (150)	24 (10.9)	28 (12.7)
GP & GPL-40	295 (340)	432 (500)	302 (350)	62 (28.0)	42 (19.2)
GP & GPL-100	648 (750)	1080 (1250)	1231 (1400)	246 (111.8)	169 (77.0)
GP & GPL-200	1095 (1250)	1825 (2100)	2020 (2300)	750 (340.9)	556 (252.5)
GP & GPL-400	1743 (2000)	2905 (3350)	3424 (4000)	1000 (454.5)	928 (421.7)

GP-5

Standard Stroke

- Stroke: 0.20 in.(5.08 mm)
- Gripping Force - Closing: 6.9 lbs.(3.1kgf)
- Gripping Force - Opening: 13.5 lbs.(6.1 kgf)
- Gripping Force: @ 100 PSI(6.80 bar)
- Approximate Weight: 1.63 oz.(45.36 g)
- Operating displacement. $\text{in}(\text{cm})$: $\sqrt[3]{.030(.491)}$
- Maximum Operating Pressure: 150 PSI(10.20 bar), Air only

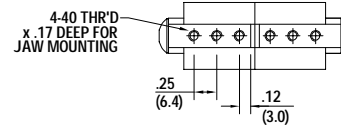
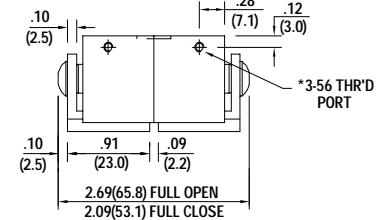
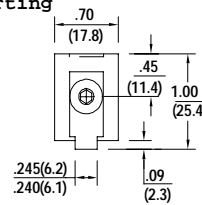
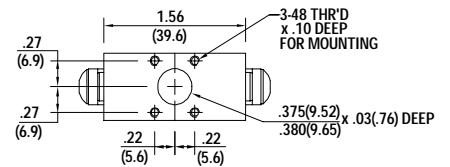
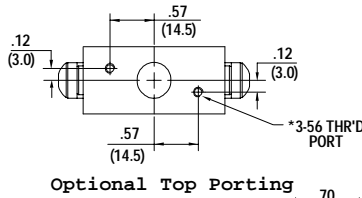


*BARBED FITTING FOR 1/16 I.D. TUBE SUPPLIED BY ZAYTRAN INC.

GPL-5

Long Stroke

- Stroke: 0.50 in.(12.7 mm)
- Gripping Force - Closing: 6.9 lbs.(23.1 kgf)
- Gripping Force - Opening: 13.5 lbs.(6.1 kgf)
- Gripping Force: @ 100 PSI(6.80 bar)
- Approximate Weight: 2.02 oz.(57.27 g)
- Operating displacement. $\text{in}(\text{cm})$: $\sqrt[3]{.075(1.23)}$
- Maximum Operating Pressure: 150 PSI(10.20 bar), Air only

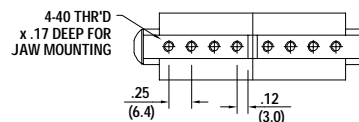
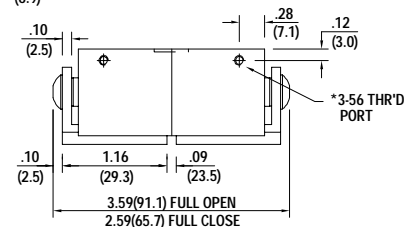
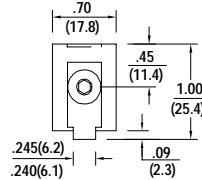
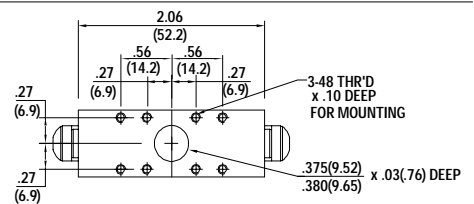
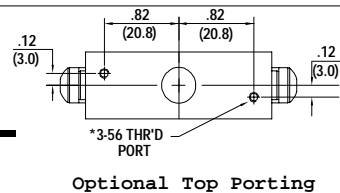


*BARBED FITTING FOR 1/16 I.D. TUBE SUPPLIED BY ZAYTRAN INC.

GPUL-5

Ultra Long Stroke

- Stroke: 1.00 in.(25.4 mm)
- Gripping Force - Closing: 6.9 lbs.(3.1 kgf)
- Gripping Force - Opening: 13.5 lbs.(6.1 kgf)
- Gripping Force: @ 100 PSI(6.80 bar)
- Approximate Weight: 2.53 oz.(71.72 g)
- Operating displacement. $\text{in}(\text{cm})$: $\sqrt[3]{.150(2.46)}$
- Maximum Operating Pressure: 150 PSI(10.2 bar), Air only



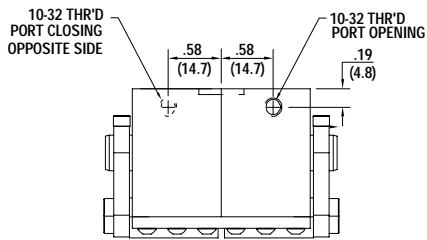
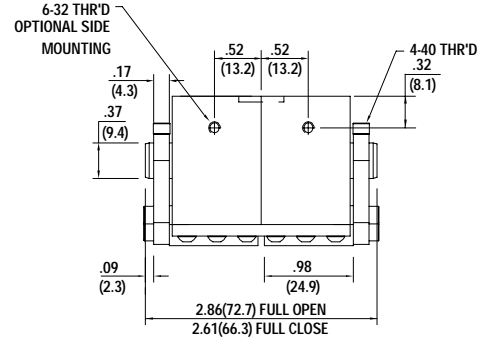
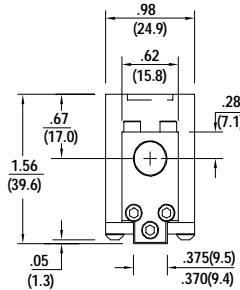
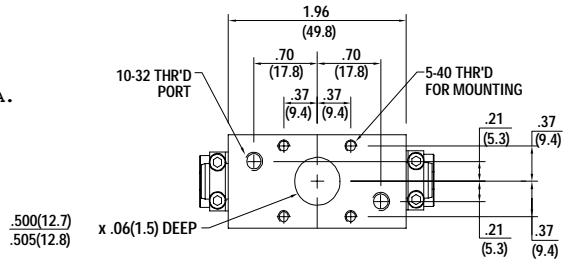
*BARBED FITTING FOR 1/16 I.D. TUBE SUPPLIED BY ZAYTRAN INC.

GP-10

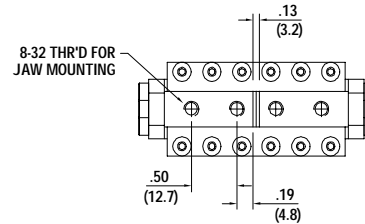
Standard Stroke

* ALL MTG. HOLES 1-1/2 DIA.
MIN. THREAD DEPTH.

Stroke: 0.25 in.(6.35 mm)
 Gripping Force - Closing: 17.2 lbs.(7.8 kgf)
 Gripping Force - Opening: 26.9 lbs.(12.2 kgf)
 Gripping Force: @ 100 PSI(6.8 bar)
 Approximate Weight: .51 lbs.(231.33 g)
 Operating displacement. in(cm) : .075(1.23)
 Maximum Operating Pressure: 250 PSI(17.0 bar)



Optional Side Porting

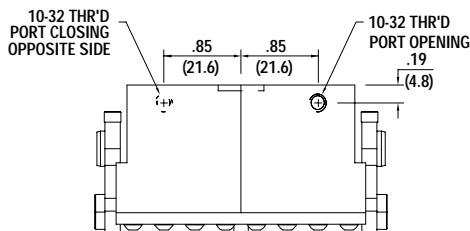
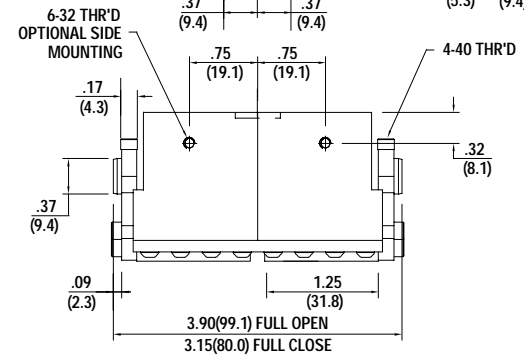
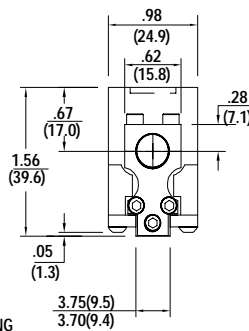
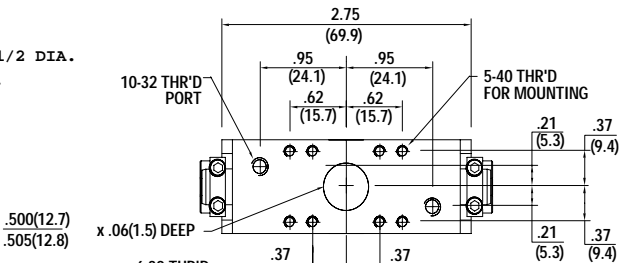


GPL-10

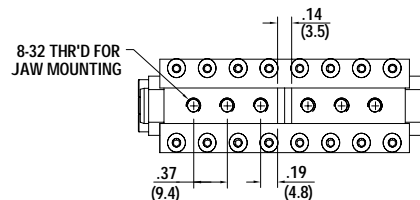
Long Stroke

* ALL MTG. HOLES 1-1/2 DIA.
MIN. THREAD DEPTH.

Stroke: 0.75 in.(19.1mm)
 Gripping Force - Closing: 17.2 lbs.(7.8 kgf)
 Gripping Force - Opening: 26.9 lbs.(12.2 kgf)
 Gripping Force: @ 100 PSI(6.8 bar)
 Approximate Weight: .75 lbs.(340.2 g)
 Operating displacement. in(cm) : .225(3.69)
 Maximum Operating Pressure: 250 PSI(17.0 bar)



OPTIONAL SIDE PORTING

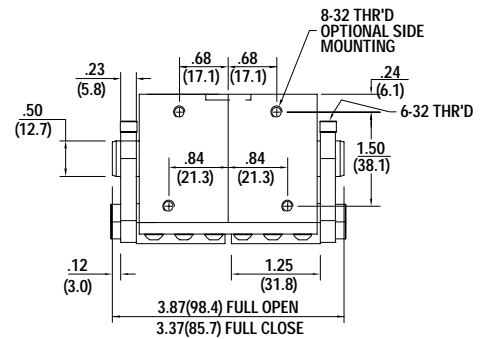
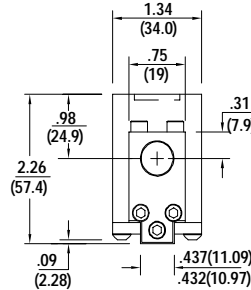
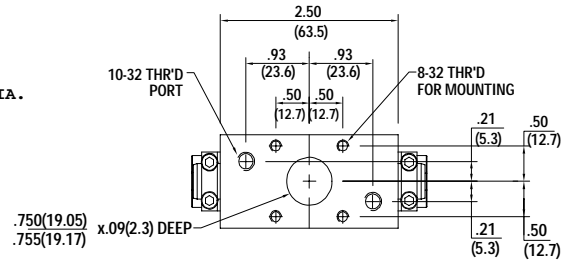


GP-20

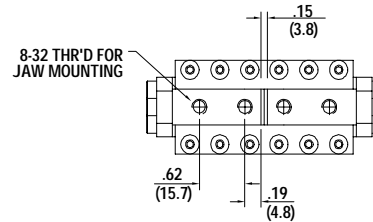
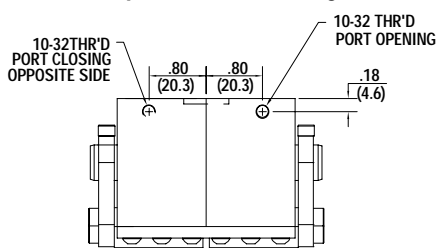
Standard Stroke

Stroke: 0.50 in.(12.7 mm)
 Gripping Force - Closing: 30.4 lbs.(13.8 kgf)
 Gripping Force - Opening: 52.5 lbs.(23.8 kgf)
 Gripping Force: @ 100 PSI(6.8 bar)
 Approximate Weight: 1.15 lbs.(521.63 g)
 Operating displacement. in(cm) : .293(4.80)
 Maximum Operating Pressure: 250 PSI(17.0 bar)

* ALL MTG. HOLES 1-1/2 DIA.
 MIN. THREAD DEPTH.



Optional Side Porting

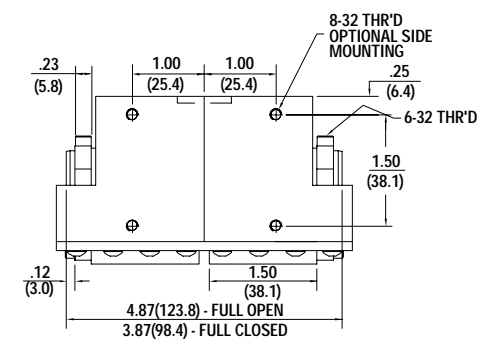
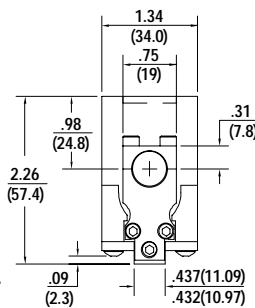
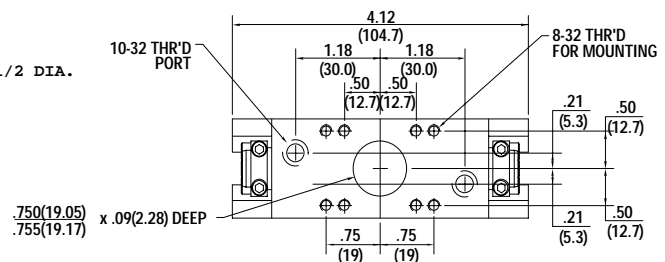


GPL-20

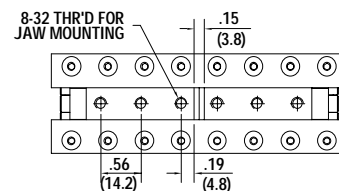
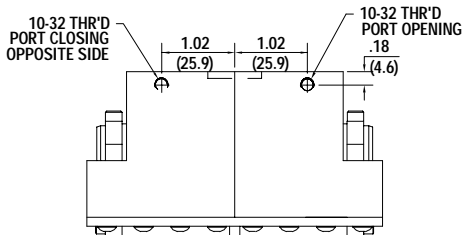
Long Stroke

Stroke: 1.00 in.(25.4mm)
 Gripping Force - Closing: 30.4 lbs.(13.8 kgf)
 Gripping Force - Opening: 52.5 lbs.(23.8 kgf)
 Gripping Force: @ 100 PSI(6.8 bar)
 Approximate Weight: 1.43 lbs.(648.64 g)
 Operating displacement. in(cm) : .586(9.60)
 Maximum Operating Pressure: 250 PSI(17.0 bar)

* ALL MTG. HOLES 1-1/2 DIA.
 MIN. THREAD DEPTH.



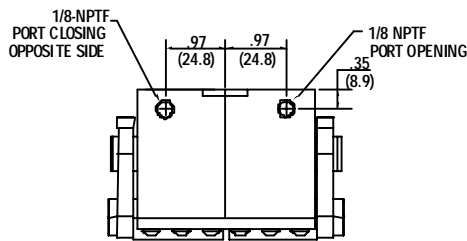
Optional Side Porting



GP-40

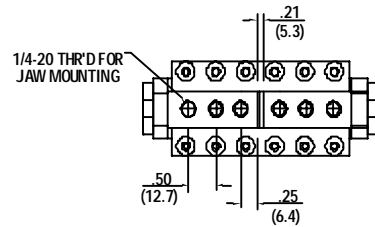
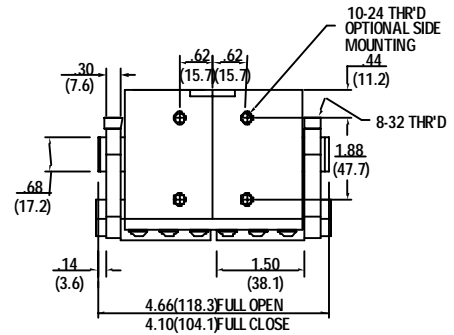
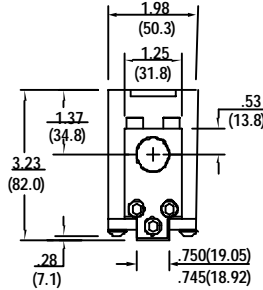
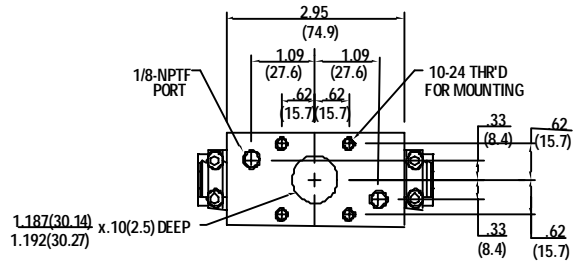
Standard Stroke

Stroke:	0.56 in.(14.2 mm)
Gripping Force - Closing:	58.2 lbs.(26.4 kgf)
Gripping Force - Opening:	97.9 lbs.(44.4 kgf)
Gripping Force:	@ 100 PSI(6.8 bar)
Approximate Weight:	2.95 lbs.(1338.10 g)
Operating displacement. in(cm): ³	.614(10.06)
Maximum Operating Pressure:	250 PSI(17.0 bar)



OPTIONAL SIDE PORTING

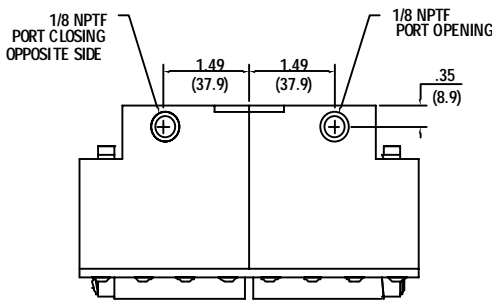
* ALL MTG. HOLES 1-1/2 DIA. MIN. THREAD DEPTH.



GPL-40

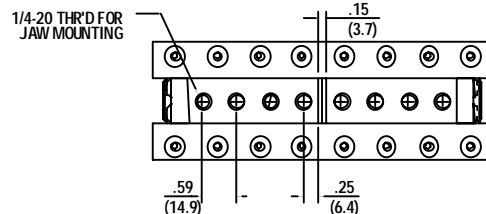
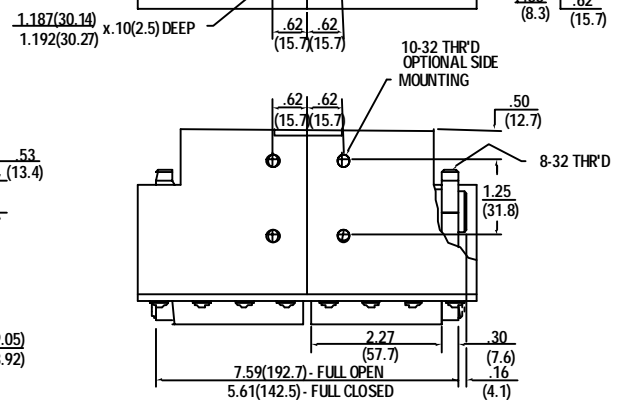
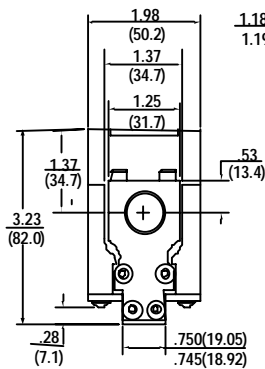
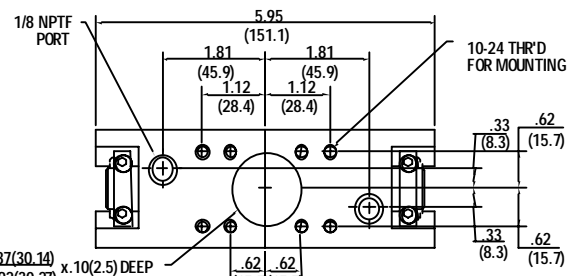
Long Stroke

Stroke:	2.00 in.(50.8mm)
Gripping Force - Closing:	58.2 lbs.(26.4 kgf)
Gripping Force - Opening:	97.9 lbs.(44.4 kgf)
Gripping Force:	@ 100 PSI(6.8 bar)
Approximate Weight:	4.33 lbs.(1964.06 g)
Operating displacement. in(cm): ³	2.184(35.78)
Maximum Operating Pressure:	250 PSI(17.0 bar)



OPTIONAL SIDE PORTING

* ALL MTG. HOLES 1-1/2 DIA. MIN. THREAD DEPTH.



GP-100

Standard Stroke

Stroke: 1.00 in.(25.4 mm)

Gripping Force - Closing: 136.8 lbs.(62.0 kg)

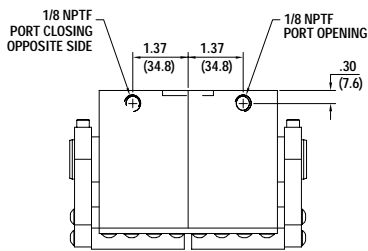
Gripping Force - Opening: 216.5 lbs.(98.2 kg)

Gripping Force: @ 100 PSI(6.8 bar)

Approximate Weight: 6.00 lbs.(2721.55 g)

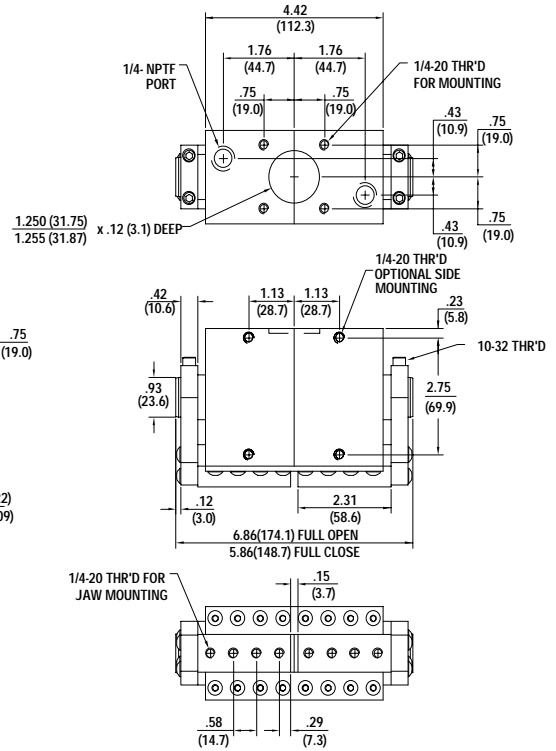
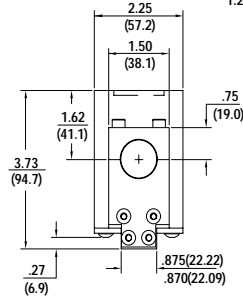
Operating displacement. $\frac{3}{32}$ in($\frac{3}{32}$ cm): 2.408 (39.459)

Maximum Operating Pressure: 250 PSI(17.0 bar)



Optional Side Porting

* ALL MTG. HOLES 1-1/2 DIA.
MIN. THREAD DEPTH.



GPL-100

Long Stroke

Stroke: 3.00 in.(76.2mm)

Gripping Force - Closing: 136.8 lbs.(62.0 kgf)

Gripping Force - Opening: 216.5 lbs.(98.2 kgf)

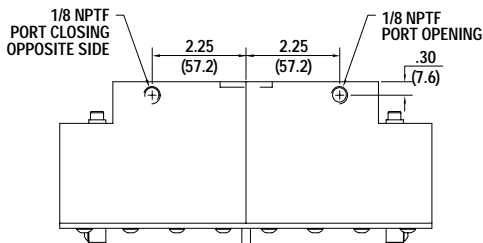
Gripping Force: @ 100 PSI(6.8 bar)

Approximate Weight: 9.24 lbs.(4191.19 g)

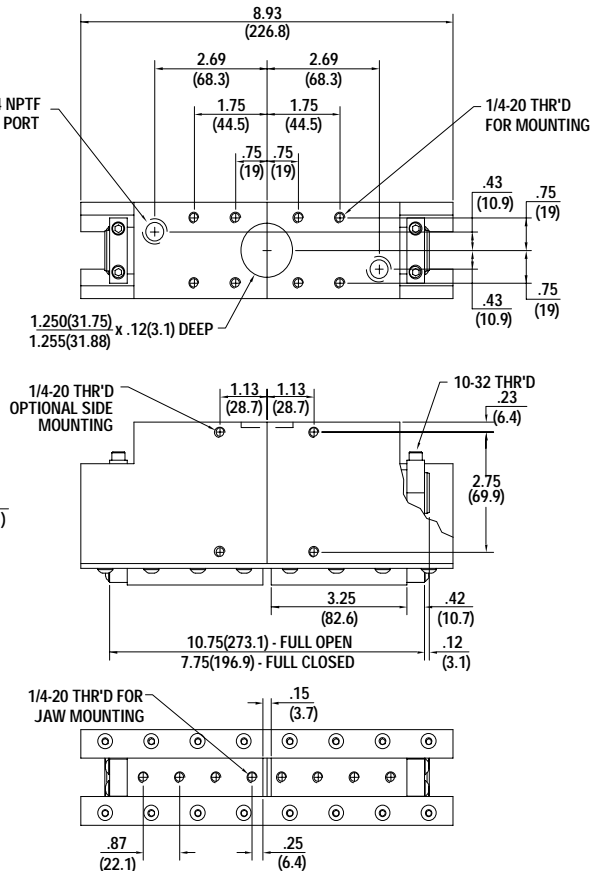
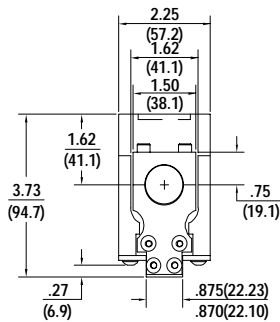
Operating displacement. $\frac{3}{32}$ in($\frac{3}{32}$ cm): 7.216(118.24)

Maximum Operating Pressure: 250 PSI(17.0 bar)

OPTIONAL SIDE PORTING



* ALL MTG. HOLES 1-1/2 DIA.
MIN. THREAD DEPTH.



GP-200

Standard Stroke

* ALL MTG. HOLES 1-1/2 DIA.
MIN. THREAD DEPTH.

Stroke: 1.62 in.(41.15 mm)

Gripping Force - Closing: 223.1 lbs.(101.2 kgf)

Gripping Force - Opening: 311.7 lbs.(141.4 kgf)

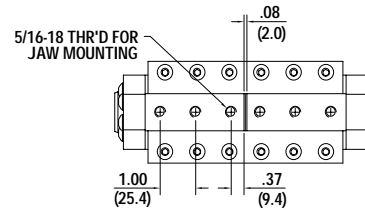
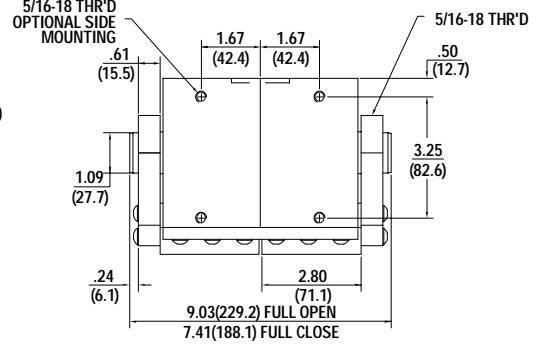
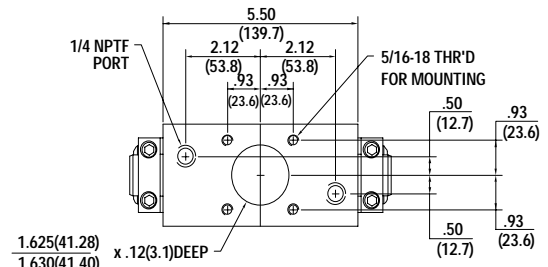
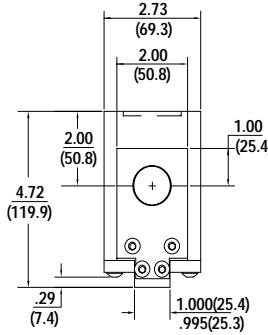
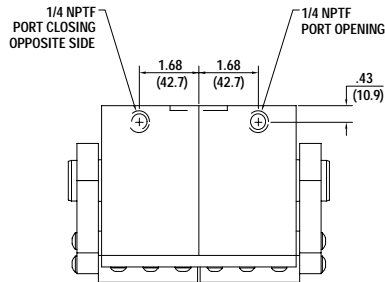
Gripping Force: @ 100 PSI(6.8 bar)

Approximate Weight: 11.63 lbs.(5275.28 g)

Operating displacement. in(cm) : 5.780 (94.72)

Maximum Operating Pressure: 250 PSI(17.0 bar)

OPTIONAL SIDE PORTING



GPL-200

Long Stroke

* ALL MTG. HOLES 1-1/2 DIA.
MIN. THREAD DEPTH.

Stroke: 4.00 in.(101.6mm)

Gripping Force - Closing: 223.1 lbs.(101.2 kgf)

Gripping Force - Opening: 311.7 lbs.(141.4 kgf)

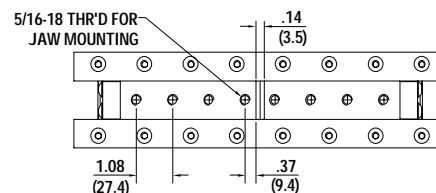
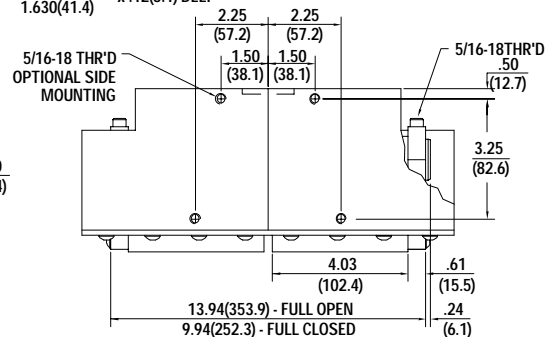
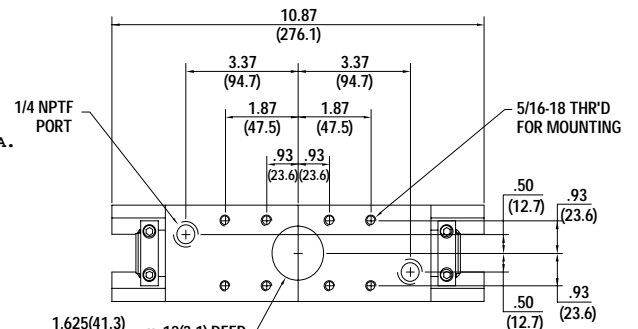
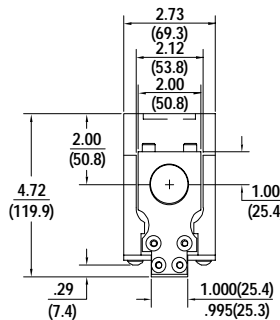
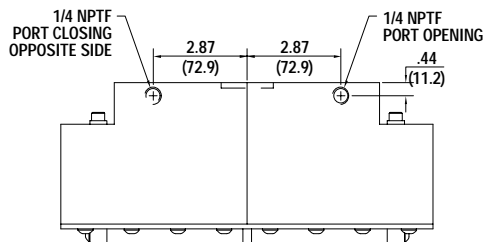
Gripping Force: @ 100 PSI(6.8 bar)

Approximate Weight: 16.38 lbs.(7429.84 g)

Operating displacement. in(cm) : 13.894(227.68)

Maximum Operating Pressure: 250 PSI(17.0 bar)

OPTIONAL SIDE PORTING



GP-400

Standard Stroke

* ALL MTG. HOLES 1-1/2 DIA.
MIN. THREAD DEPTH.

Stroke: 2.50 in.(83.5 mm)

Gripping Force - Closing: 503.5 lbs.(228.4 kgf)

Gripping Force - Opening: 636.2 lbs.(288.7 kgf)

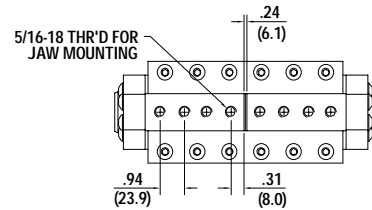
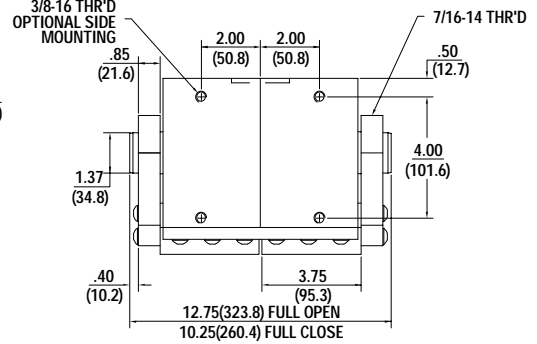
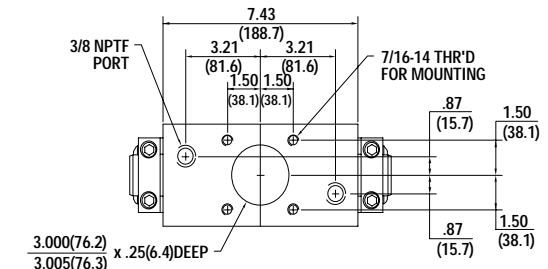
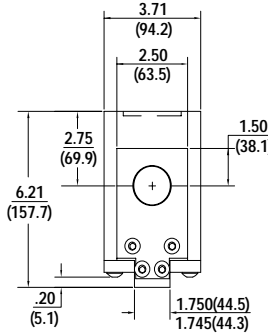
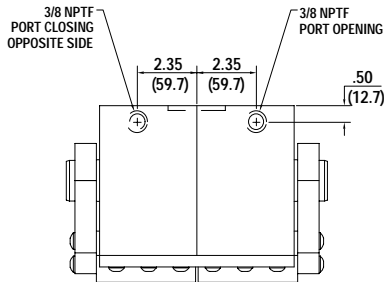
Gripping Force: @ 100 PSI(6.8 bar)

Approximate Weight: 28.5 lbs.(12927.38 g)

Operating displacement. in(cm) : 17.671 (289.6)

Maximum Operating Pressure: 250 PSI(17.0 bar)

OPTIONAL SIDE PORTING



GPL-400

Long Stroke

* ALL MTG. HOLES 1-1/2 DIA.
MIN. THREAD DEPTH.

Stroke: 6.00 in.(152.4mm)

Gripping Force - Closing: 503.5 lbs.(228.4 kgf)

Gripping Force - Opening: 636.2 lbs.(288.7 kgf)

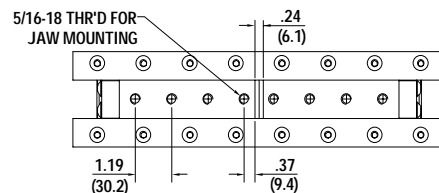
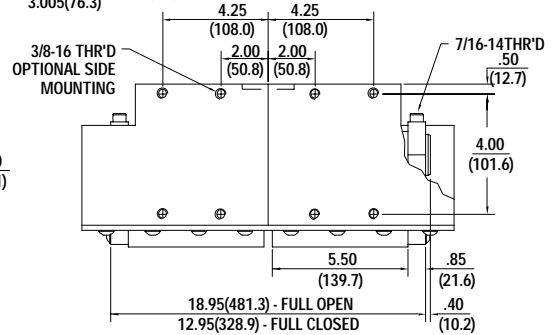
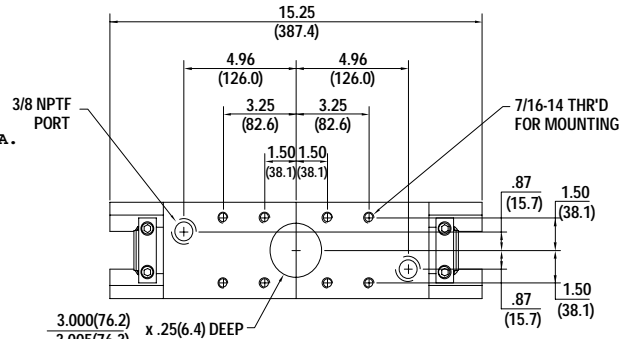
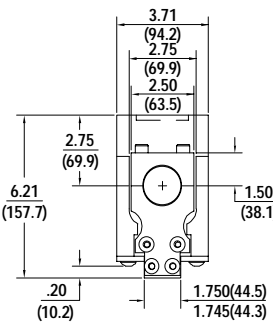
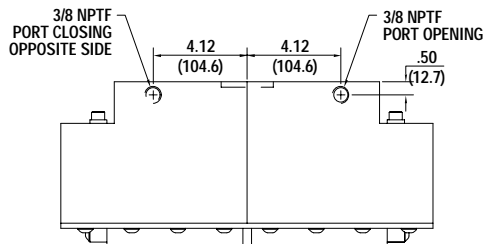
Gripping Force: @ 100 PSI(6.8 bar)

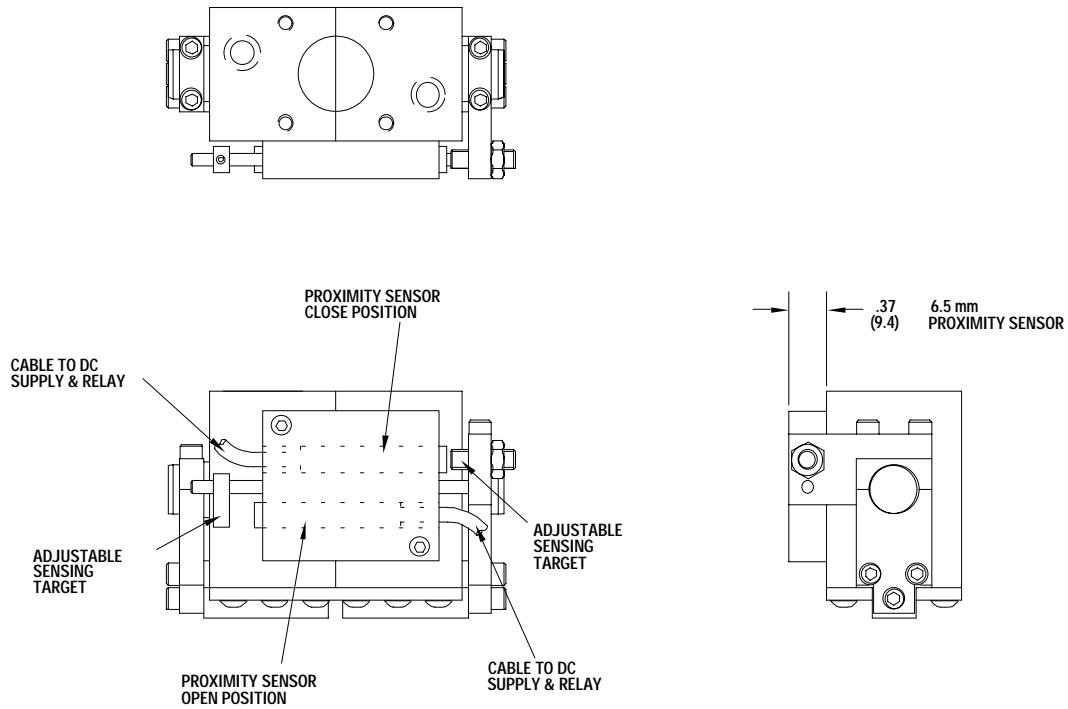
Approximate Weight: 39.88 lbs.(18089.26 g)

Operating displacement. in(cm) : 42.411(695.0)

Maximum Operating Pressure: 250 PSI(17.0 bar)

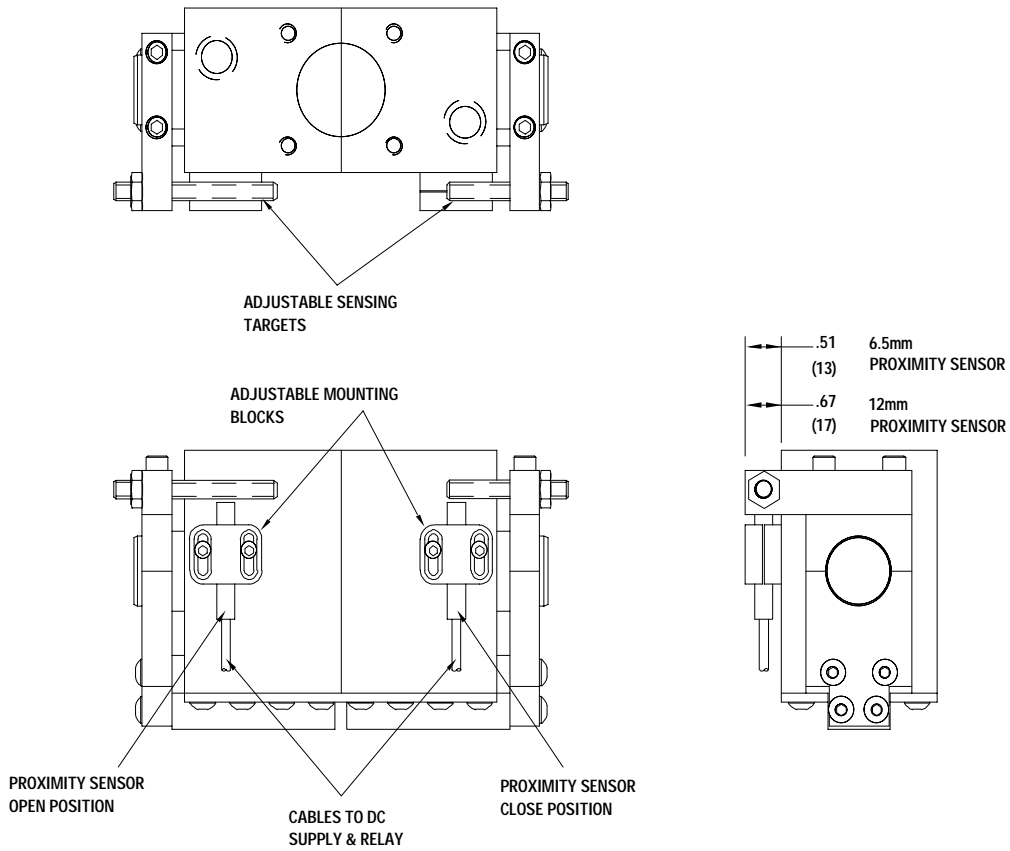
OPTIONAL SIDE PORTING





Specifications & Dimensions

Model	
	6.5 mm/DC
Voltage Range	10-60VDC
Output	Sourcing (PNP)
	Sinking (NPN)
Operating Temperatures	-14°F - +158°F
Shielded	Yes
Overload Protected	Yes

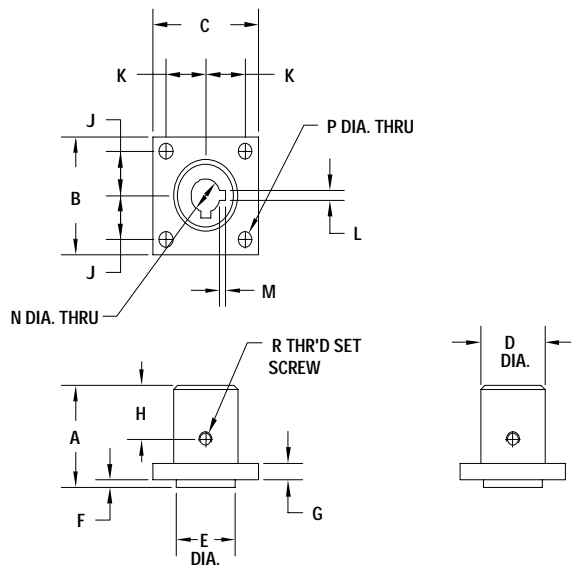


Specifications & Dimensions

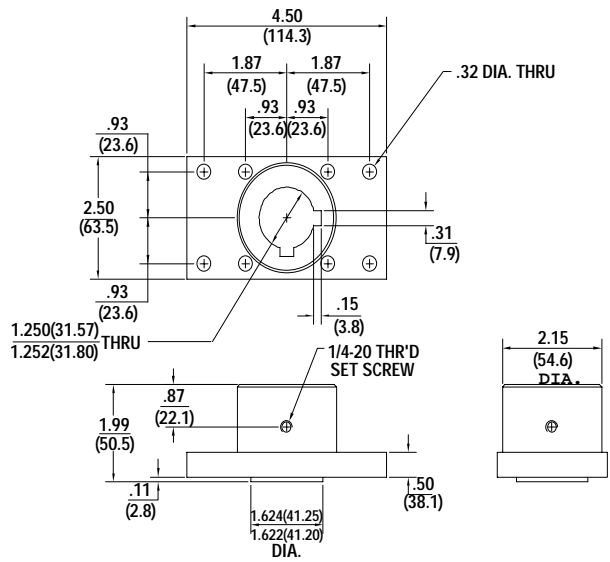
Model		
	6.5 mm/DC	12 mm/AC
Voltage Range	10-60VDC	90-130VAC
Output	Sourcing (PNP)	N.O.
	Sinking (NPN)	N.C.
Operating Temperatures	-14° F - +158° F	-14° F - +158° F
Shielded	Yes	Yes
Overload Protected	Yes	NO

TA Series FOR ROTARY ACTUATORS

Transitional Adapters



SEE CHART BELOW

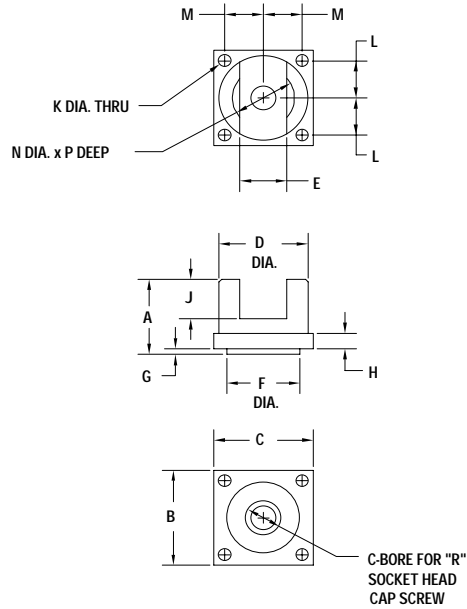


Model: TA-L200 From: RAM-250 to GPL-200

From:	RAM-10	RAM-35	RAM-35	RAM-75	RAM-75	RAM-250
To:	GP-10	GP-10	GP-20	GP-40	GP-100	GP-200
	GPE-10	GPE-10	GPE-20	GPE-40	GPE-100	
	GPL-10	GPL-10	GPL-20	GPL-40	GPL-100	
	GPEL-10	GPEL-10	GPEL-20	GPEL-40	GPEL-100	
Model:	TA-10	TA-15	TA-20	TA-40	TA-100	TA-200
A	0.75 (19.05)	1.10 (27.94)	1.15 (29.21)	1.30 (33.02)	1.30 (33.02)	1.99 (50.55)
B	0.97 (24.63)	0.97 (24.63)	1.33 (33.78)	1.60 (40.64)	1.98 (50.29)	2.50 (63.50)
C	0.97 (24.63)	0.97 (24.63)	1.33 (33.78)	1.60 (40.64)	1.98 (50.29)	2.50 (63.50)
D	0.81 (20.57)	0.81 (20.57)	0.81 (20.57)	1.37 (34.80)	1.37 (34.80)	2.15 (54.6)
E	.498/.496	.498/.496	.748/.746	1.186/1.185	1.248/1.246	1.624/1.622
E (metric)	(12.65/12.60)	(12.65/12.60)	(19.00/18.95)	(30.12/30.10)	(31.70/31.65)	(41.25/41.20)
F	0.05 (1.27)	0.05 (1.27)	0.08 (2.03)	0.10 (2.54)	0.10 (2.54)	0.11 (2.79)
G	0.12 (3.05)	0.17 (4.19)	0.19 (4.83)	0.26 (6.60)	0.26 (6.60)	0.50 (3.05)
H	0.39 (9.91)	0.61 (15.49)	0.61 (15.49)	0.56 (14.22)	0.56 (14.22)	0.87 (22.10)
J	0.37 (9.40)	0.37 (9.40)	0.50 (12.70)	0.62 (15.75)	0.75 (19.05)	0.93 (23.62)
K	0.37 (9.40)	0.37 (9.40)	0.50 (12.70)	0.62 (15.75)	0.75 (19.05)	0.93 (23.62)
L	0.09 (2.29)	0.12 (3.05)	0.12 (3.05)	0.18 (4.57)	0.18 (4.57)	0.31 (7.87)
M	0.04 (1.02)	0.06 (1.52)	0.06 (1.52)	0.09 (2.29)	0.09 (2.29)	0.15 (3.81)
N	.375/.376	.375/.376	.375/.376	.625/.626	.625/.626	1.250/1.252
N(metric)	(9.53/9.55)	(9.53/9.55)	(9.53/9.55)	(15.88/15.90)	(15.88/15.90)	(31.75/31.80)
P	0.13 (3.30)	0.13 (3.30)	0.18 (4.57)	0.20 (5.08)	0.26 (6.60)	0.32 (8.13)
R	8-32	8-32	8-32	10-32	10-32	1/4-20

TAL Series FOR LINEAR ROTARY ACTUATORS

Transitional Adapters



From:	LRA-10	LRA-35	LRA-35	LRA-75	LRA-75	LRA-250	LRA-250
To:	GP-10	GP-20	GP-40	GP-40	GP-100	GP-100	GP-200
	GPE-10	GPE-20	GPE-40	GPE-40	GPE-100	GPE-100	
	GPL-10	GPL-20	GPL-40	GPL-40	GPL-100	GPL-100	
	GPEL-10	GPEL-20	GPEL-40	GPEL-40	GPEL-100	GPEL-100	
Model:	TAL-10	TAL-20	TAL-40	TAL-45	TAL-100	TAL-150	TAL-200
A	1.00 (25.40)	1.16 (29.46)	1.26 (32.00)	1.26 (32.00)	1.26 (32.00)	1.60 (40.64)	1.60 (40.64)
B	.98 (24.89)	1.34 (34.04)	1.61 (40.89)	1.61 (40.89)	1.99 (50.55)	2.22 (56.39)	2.73 (69.34)
C	.98 (24.89)	1.34 (34.04)	1.61 (40.89)	1.61 (40.89)	1.99 (50.55)	2.22 (56.39)	2.73 (69.73)
D	----	1.06 (26.92)	1.25 (31.75)	1.44 (36.58)	1.50 (38.10)	1.68 (42.67)	2.12 (53.85)
E	.442/.447	.505/.510	.505/.510	.755/.760	.755/.760	1.000/1.005	1.000/1.005
E (metric)	(11.23/11.35)	(12.83/12.95)	(12.83/12.95)	(19.18/19.30)	(19.18/19.30)	(25.40/25.53)	(25.40/25.53)
F	.498/.496	.748/.746	1.186/1.185	1.186/1.185	1.249/1.247	1.249/1.247	1.624/1.623
F (metric)	(12.65/12.60)	(19.00/18.95)	(30.12/30.10)	(30.12/30.10)	(31.72/31.67)	(31.72/31.67)	(41.25/41.22)
G	.05 (1.27)	.08 (2.03)	.10 (2.54)	.10 (2.54)	.10 (2.54)	.11 (2.79)	.11 (2.79)
H	----	.17 (4.32)	.26 (6.60)	.26 (6.60)	.26 (6.60)	.50 (12.70)	.50 (12.70)
J	.63 (16.00)	.67 (17.02)	.67 (17.02)	.67 (17.02)	.67 (17.02)	.94 (23.88)	.94 (23.88)
K	.14 (3.56)	.19 (4.83)	.20 (5.08)	.20 (5.08)	.27 (6.86)	.29 (7.37)	.34 (8.64)
L	.38 (9.65)	.50 (12.70)	.63 (16.00)	.63 (16.00)	.75 (19.05)	.75 (19.05)	.93 (23.62)
M	.38 (9.65)	.50 (12.70)	.63 (16.00)	.63 (16.00)	.75 (19.05)	.75 (19.05)	.93 (23.62)
N	.625/.627	.750/.752	.750/.752	1.000/1.003	1.000/1.003	1.250/1.252	1.250/1.252
N (metric)	(15.88/15.93)	(19.05/19.10)	(19.05/19.10)	(25.40/25.48)	(25.40/25.48)	(31.75/31.80)	(31.75/31.80)
P	.38 (9.65)	.42 (10.67)	.42 (10.67)	.42 (10.67)	.42 (10.67)	.66 (16.76)	.66 (16.76)
R	10-32	5/16-18	5/16-18	3/8-16	3/8-16	3/8-16	3/8-16

High Efficiency Seals & Lubricants

Seal Composition

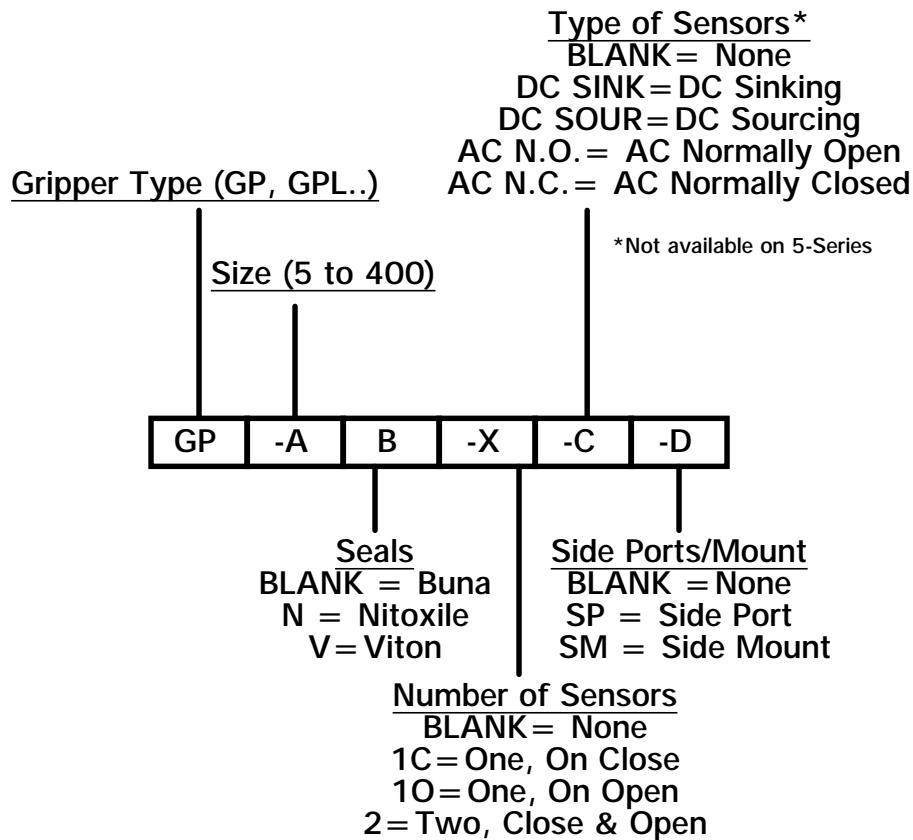
Three types of seals are available:

Standard - Buna-N; -40 to 180°F
 High Temp- Viton; -40 to 300°F
 Non-Lube- Nitroxile; -40 to 180 °F

Lubricants

All grippers are pre-lubricated with "lifetime" lubricant that is designed to last approximately 10,000,000 cycles in typical applications.

ORDERING INFORMATION



Example: GP-20-V-2-DC SINK

Gripper, 20 Size, Viton Seals, two position DC proximity sensors-sinking

ZAYTRAN AUTOMATION

ZAYTRAN, Incorporated
41535 Schaden Rd. : PO Box 1660 : Elyria, Ohio, 44036
Tel: 440-324-2814 Fax: 440-324-3552

<http://www.grippers.com>

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