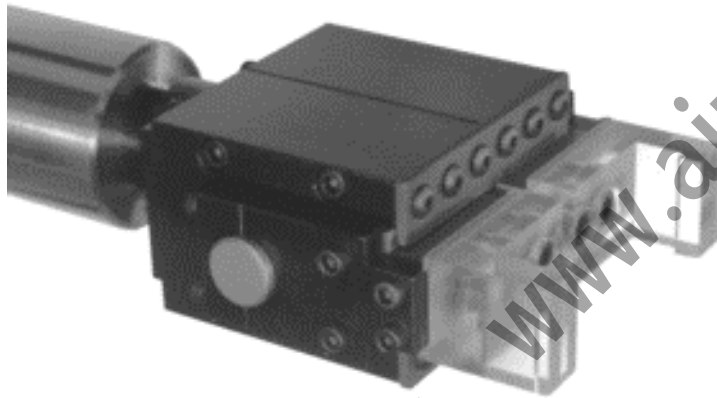


# ZAYTRAN Parallel Grippers

## 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

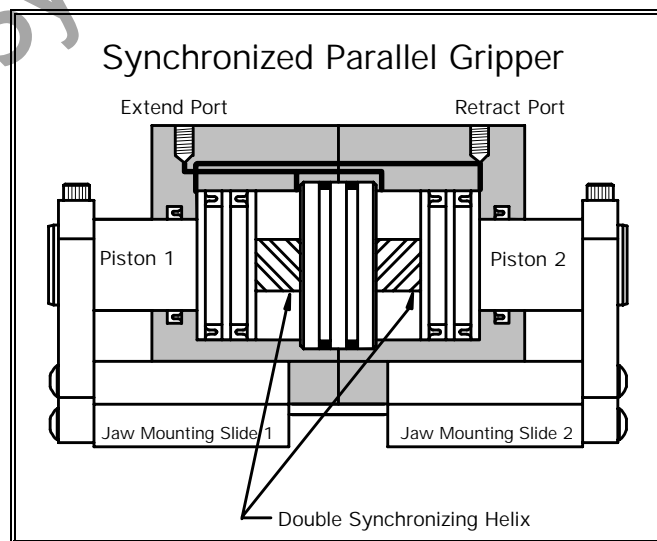
nickel-plated for environmental hardening and to minimize seal friction. Gib plates are hardened and ground and the solid steel movable, jaw-mounting slide is electroless nickel-plated. ZAYTRAN parallel grippers are engineered to go **10,000,000 cycles** and beyond!



## 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  $\pm 0.001$  inches. All of the gripping

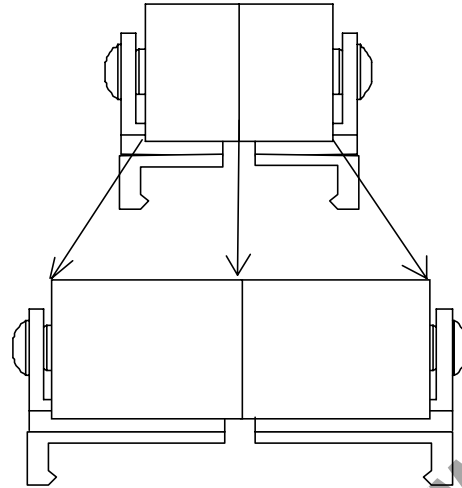
force is provided by two pistons that are driven either pneumatically or hydraulically. The independence of the force and synchronization systems provides precision over the typical 10,000,000+ cycle life of the unit.



# 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.

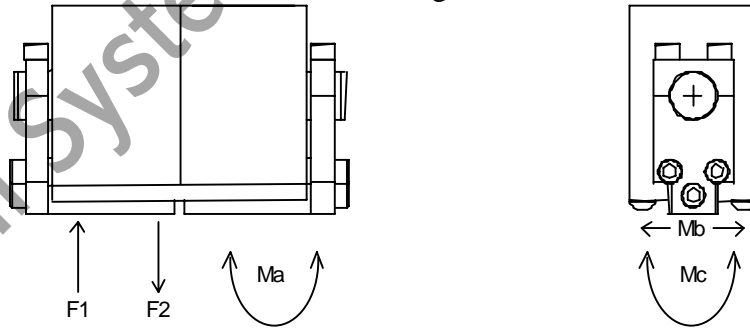


### Ultra Long Stroke

To handle a wide variety of parts

## JAW TORQUE & FORCE

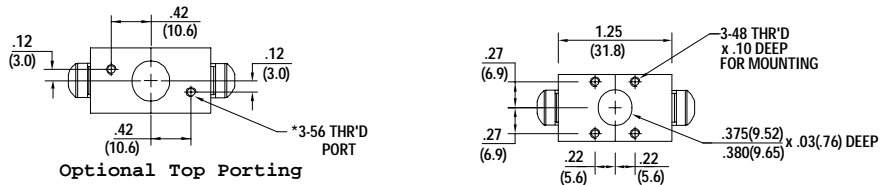
The forces and moments indicated in the chart below are for loads after the gripper has grasped the part and the jaws have completed their motion. If force and torque is applied to the gripper while the jaw is moving please see the ZAYTRAN XRAY® series catalog.



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



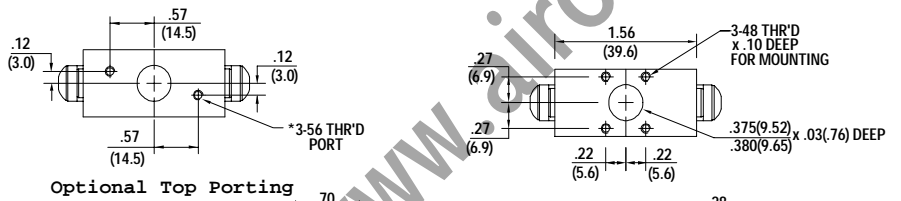
Optional Top Porting

- 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.  $\text{in}(\text{cm})^3$  : .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



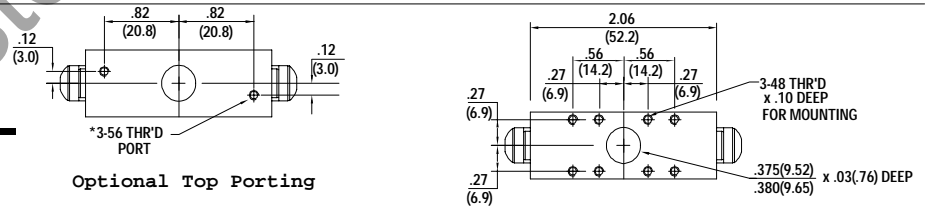
Optional Top Porting

- 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.  $\text{in}(\text{cm})^3$  : .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



Optional Top Porting

- 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.  $\text{in}(\text{cm})^3$  : .150(2.46)
- Maximum Operating Pressure: 150 PSI(10.2 bar), Air only

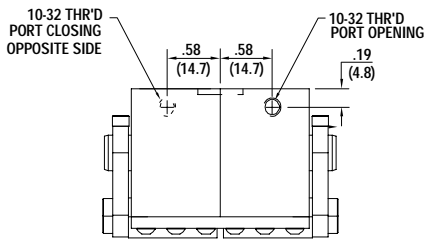
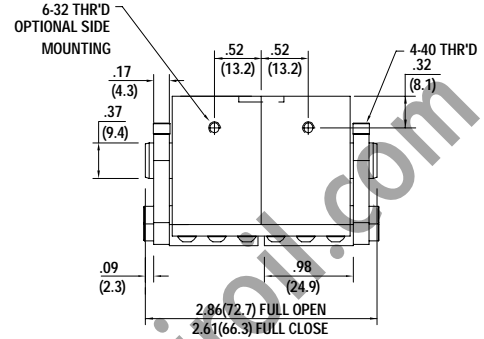
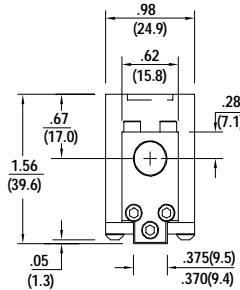
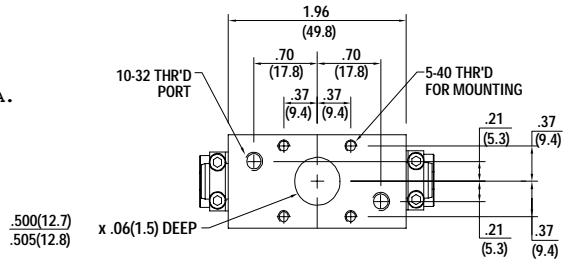
\*BARBED FITTING FOR 1/16 I.D. TUBE SUPPLIED BY ZAYTRAN INC.

# GP-10

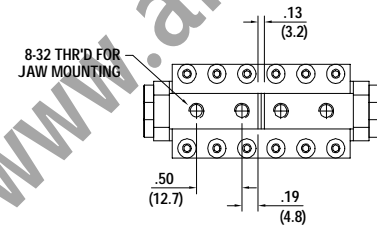
Standard Stroke

\* 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

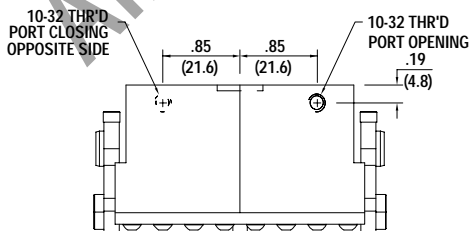
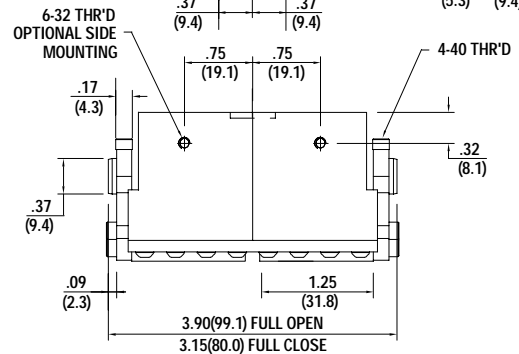
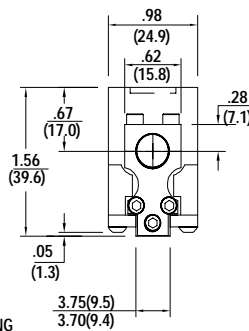
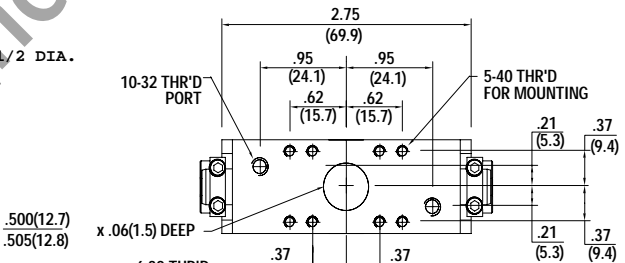


# GPL-10

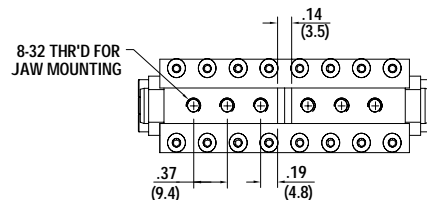
Long Stroke

\* 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

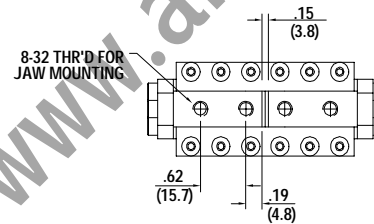
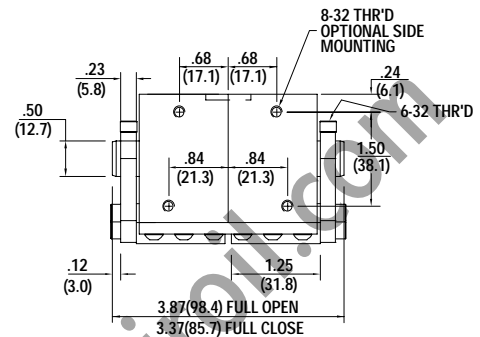
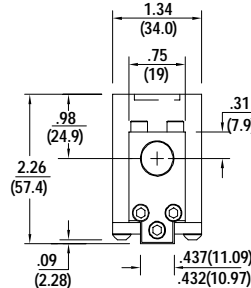
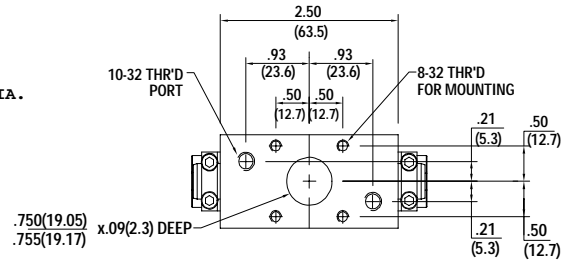


# GP-20

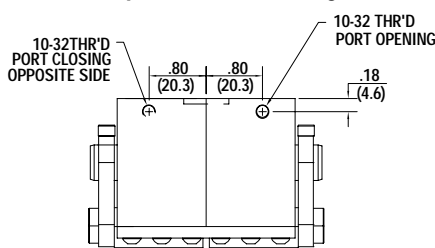
Standard Stroke

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

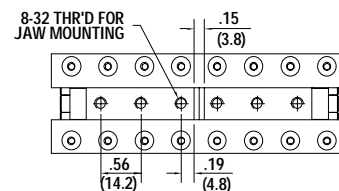
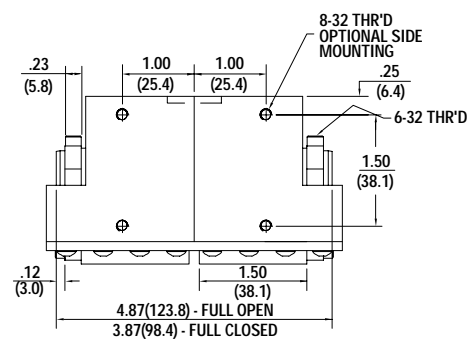
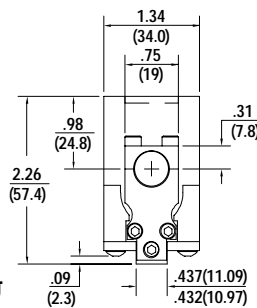
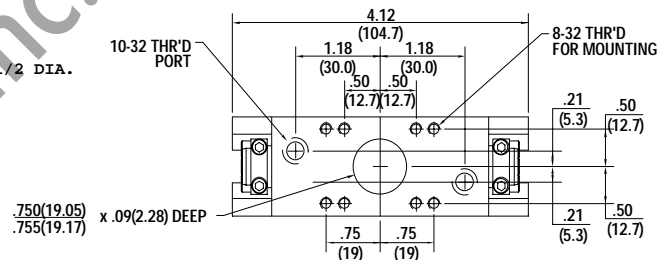


# GPL-20

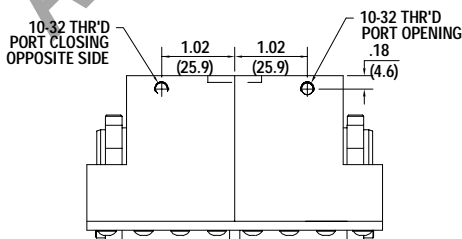
Long Stroke

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.



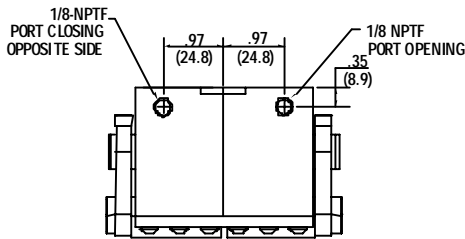
### Optional Side Porting



# GP-40

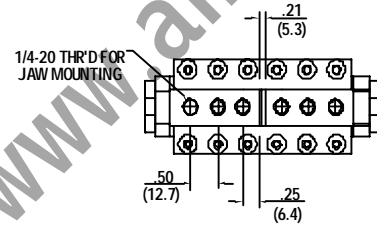
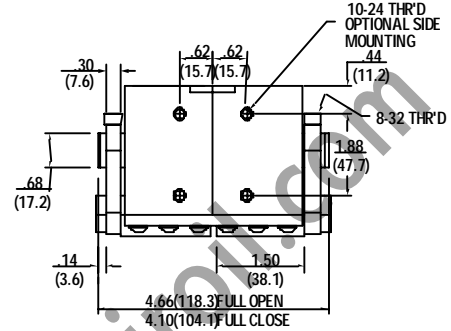
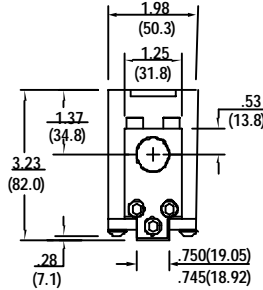
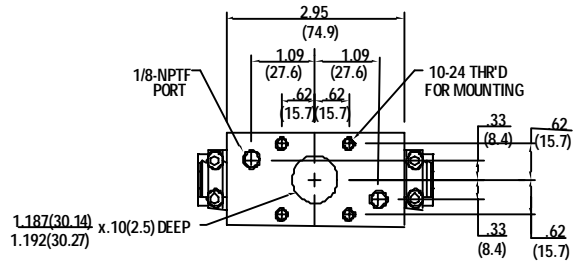
Standard Stroke

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 <sup>3</sup> (cm) <sup>3</sup> :	.614(10.06)
Maximum Operating Pressure:	250 PSI(17.0 bar)



OPTIONAL SIDE PORTING

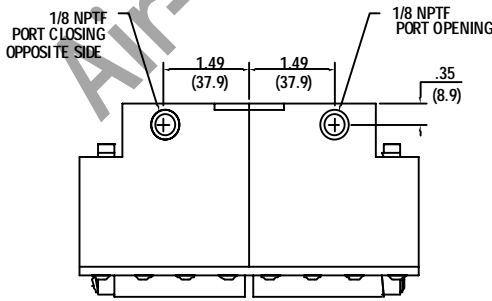
\* ALL MTG. HOLES 1-1/2 DIA. MIN. THREAD DEPTH.



# GPL-40

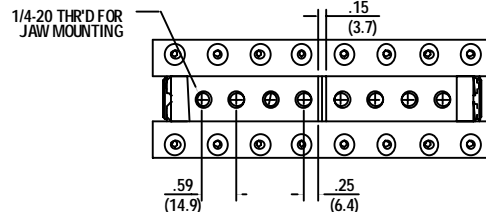
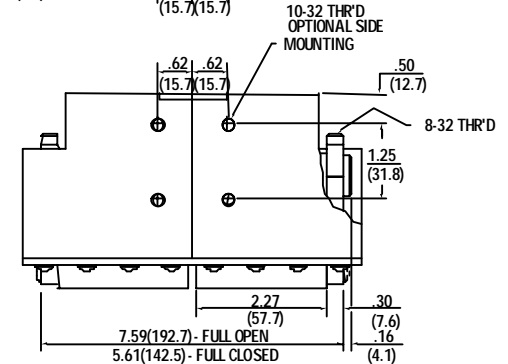
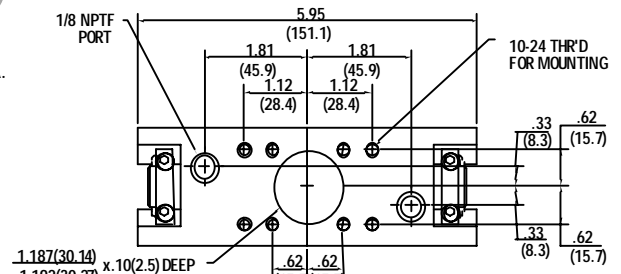
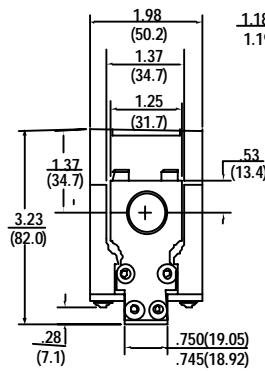
Long Stroke

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 <sup>3</sup> (cm) <sup>3</sup> :	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)

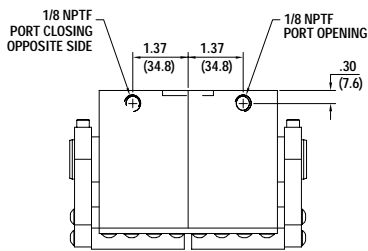
Gripping Force - Opening: 216.5 lbs.(98.2 kg)

Gripping Force: @ 100 PSI(6.8 bar)

Approximate Weight: 6.00 lbs.(2721.55 g)

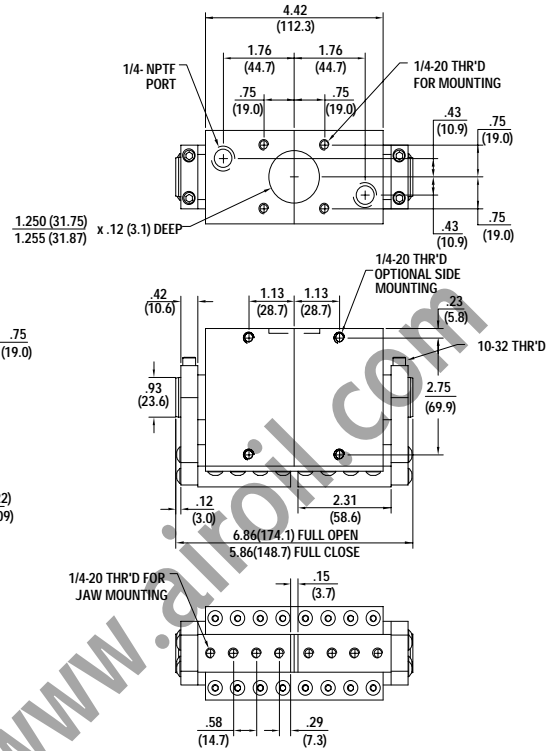
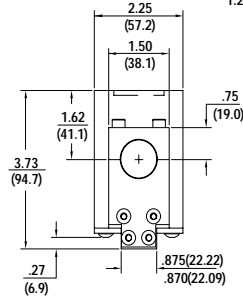
Operating displacement.  $\text{in}^3(\text{cm}^3)$ : 2.408 (39.459)

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)

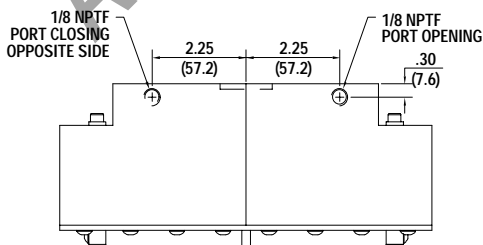
Gripping Force: @ 100 PSI(6.8 bar)

Approximate Weight: 9.24 lbs.(4191.19 g)

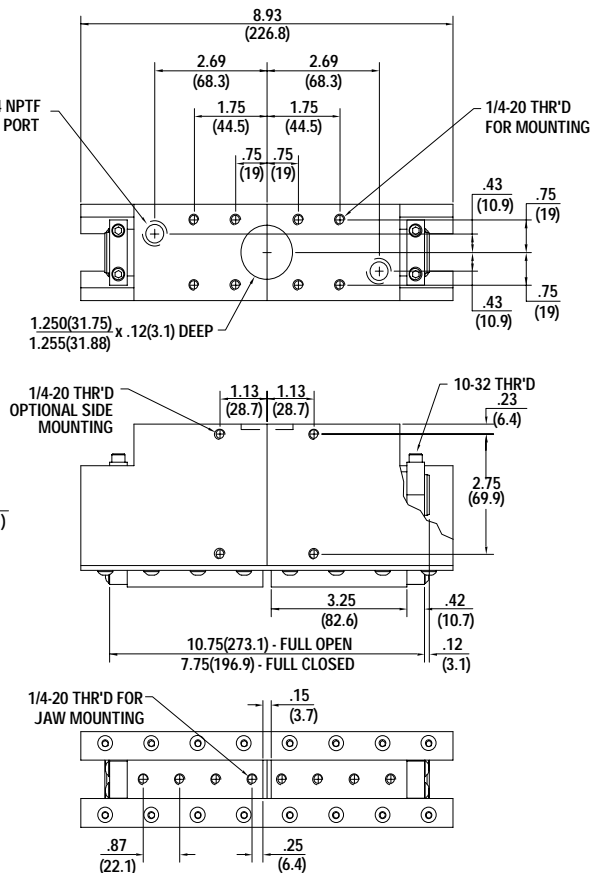
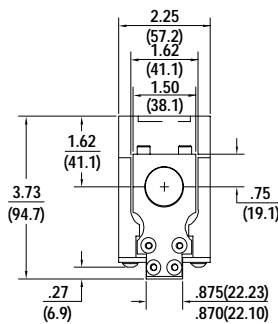
Operating displacement.  $\text{in}^3(\text{cm}^3)$ : 7.216 (118.24)

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)

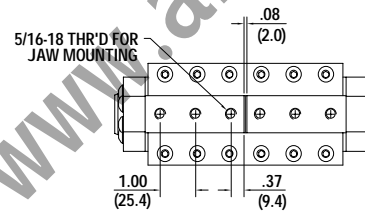
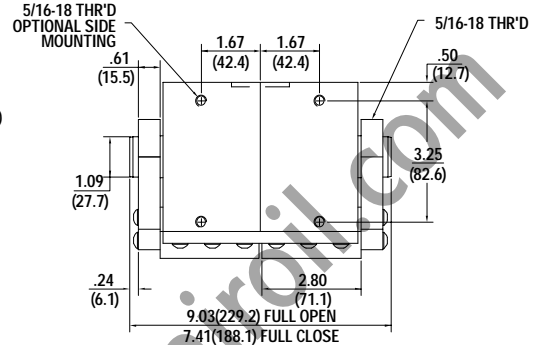
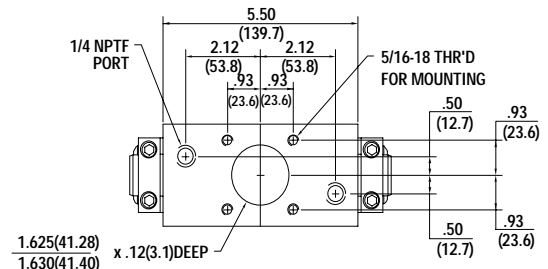
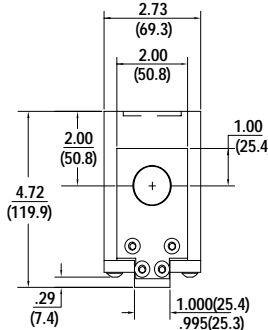
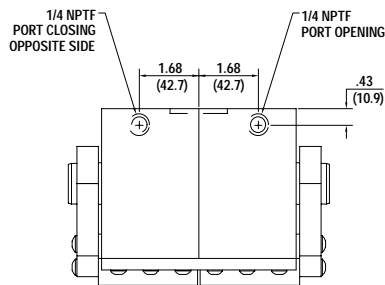
Gripping Force: @ 100 PSI(6.8 bar)

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)

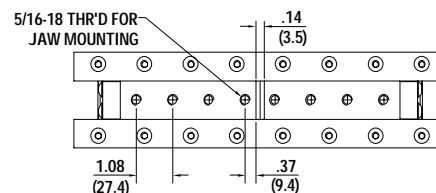
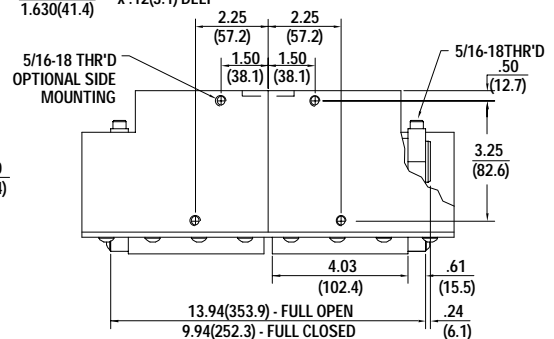
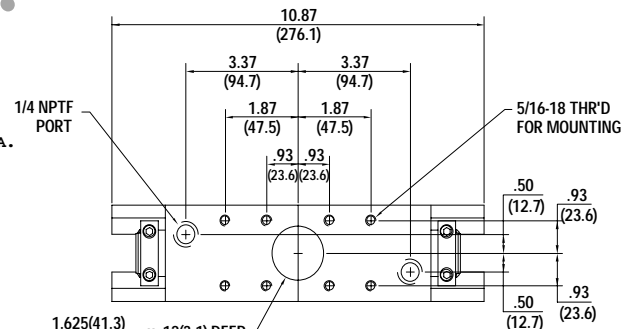
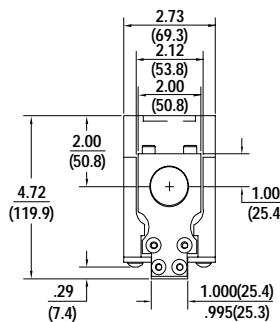
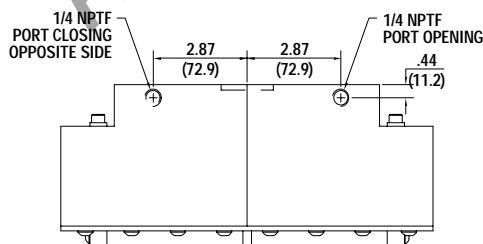
Gripping Force: @ 100 PSI(6.8 bar)

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)

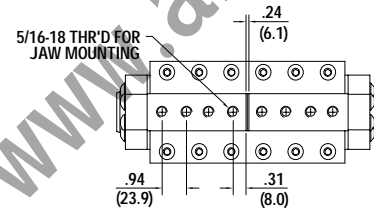
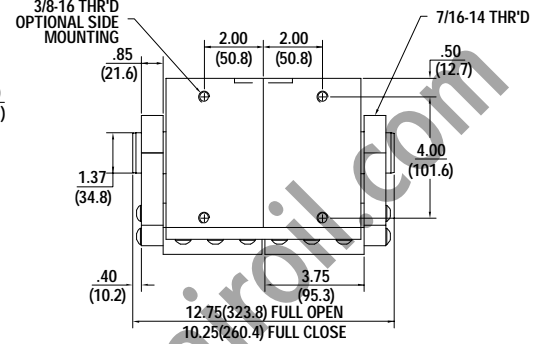
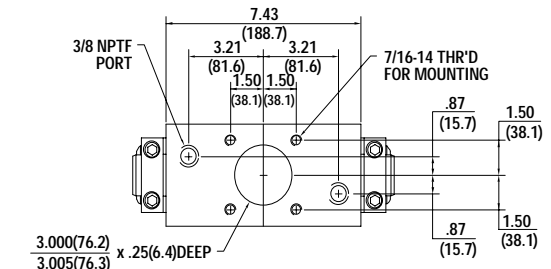
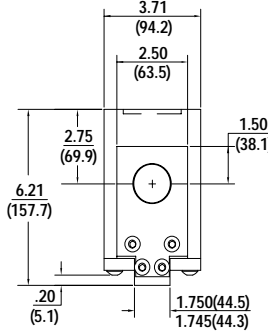
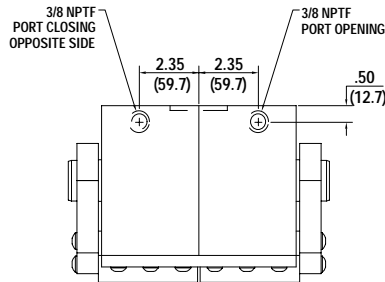
Gripping Force: @ 100 PSI(6.8 bar)

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)

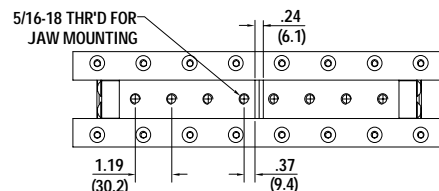
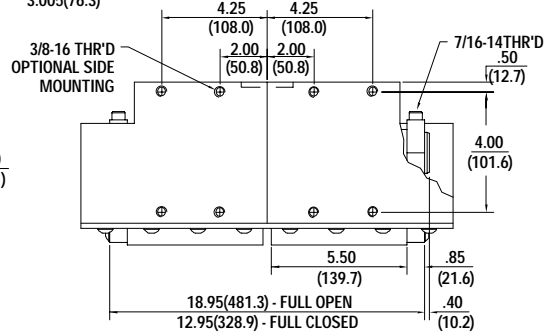
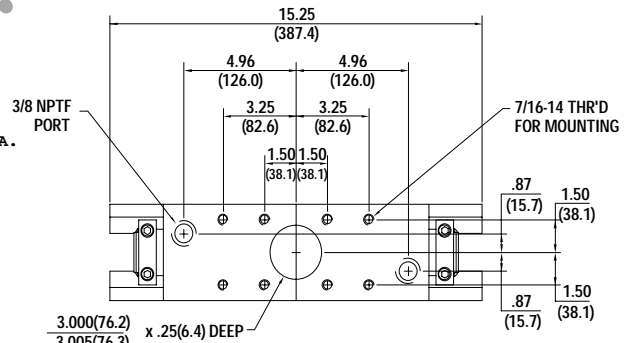
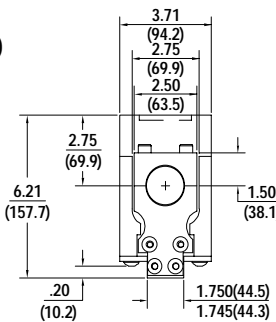
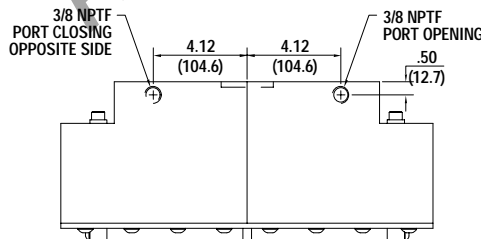
Gripping Force: @ 100 PSI(6.8 bar)

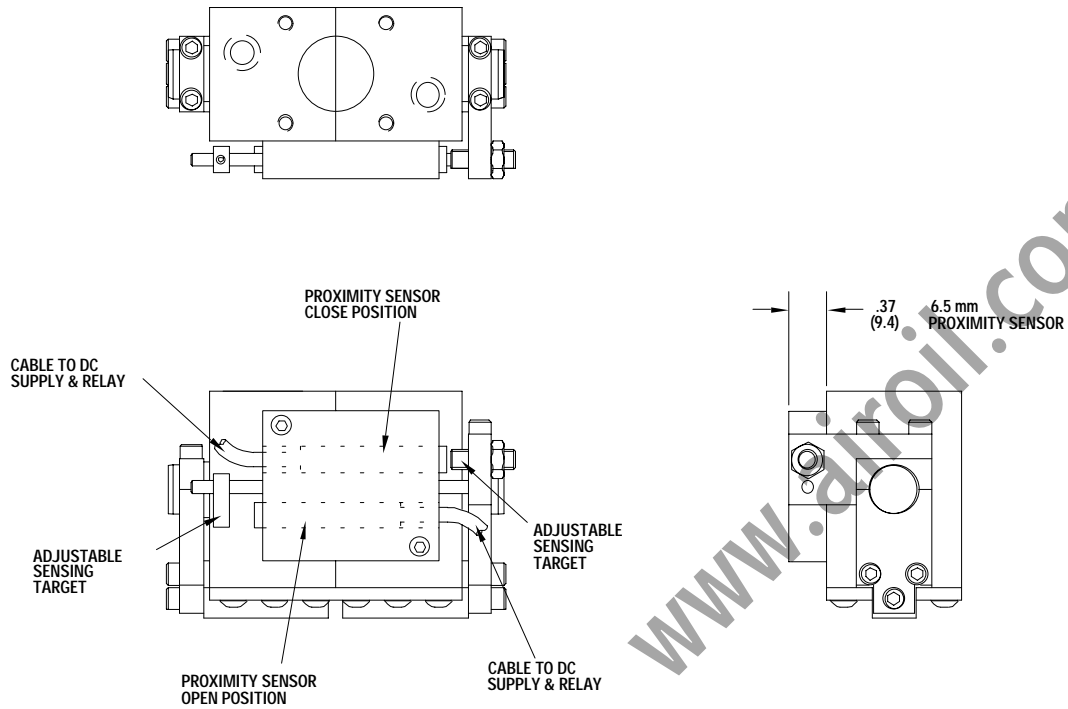
Approximate Weight: 39.88 lbs.(18089.26 g)

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

Maximum Operating Pressure: 250 PSI(17.0 bar)

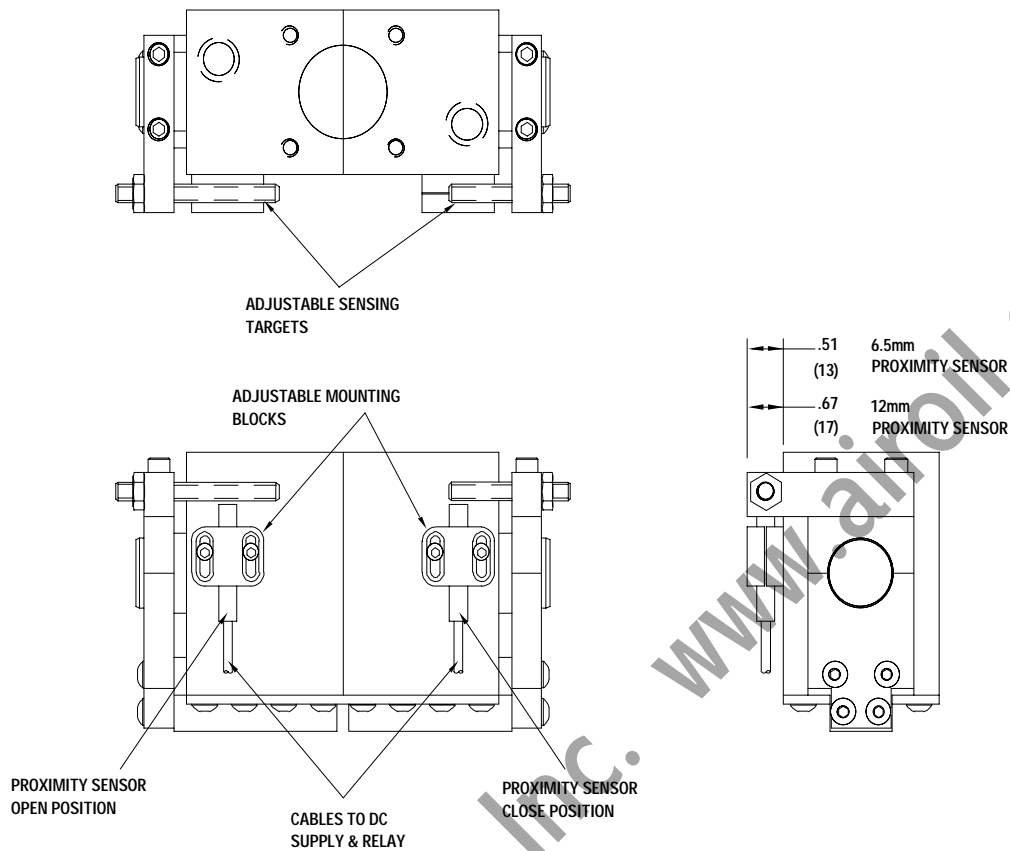
## OPTIONAL SIDE PORTING





### 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

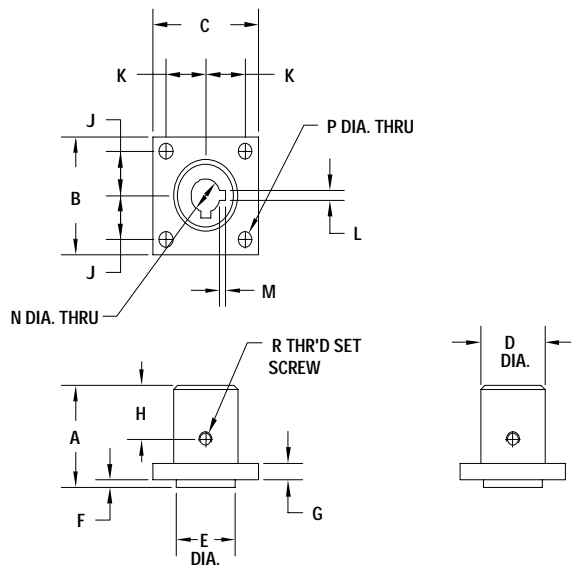


### Specifications & Dimensions

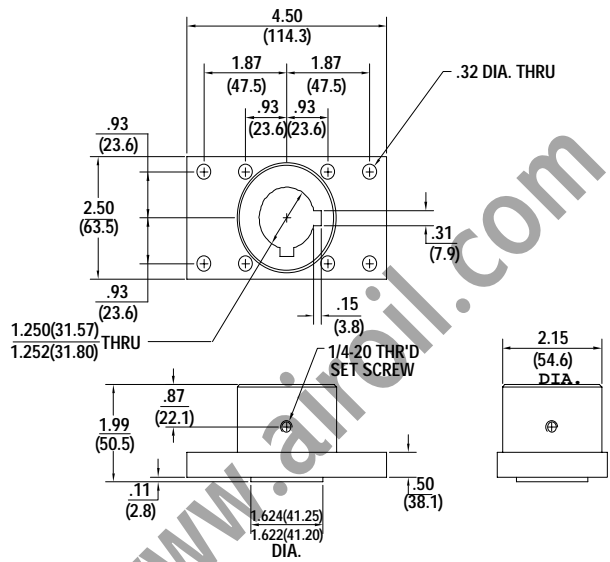
Model		
	6.5 mm/DC	12 mm/AC
Voltage Range	10-60VDC	90-130VAC
Output	Sourcing (PNP)	N.O.
	Sinking (NPN)	N.C.
Operating Temperatures	-14 F - +158 F	-14 F - +158 F
Shielded	Yes	Yes
Overload Protected	Yes	NO

# TA Series FOR ROTARY ACTUATORS

Transitional Adapters



SEE CHART BELOW

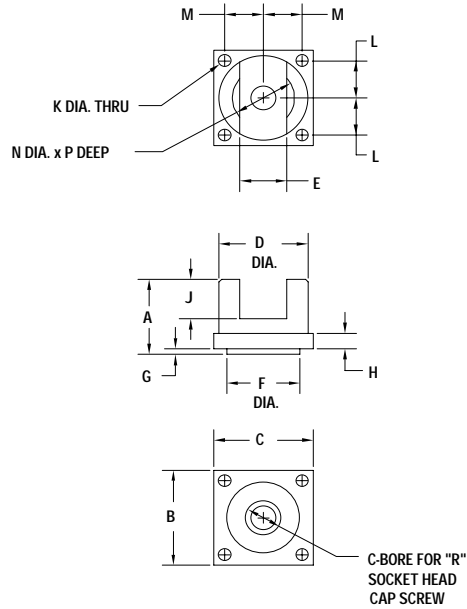


Model: TA-L200 From: RAM-250 to GPL-200

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

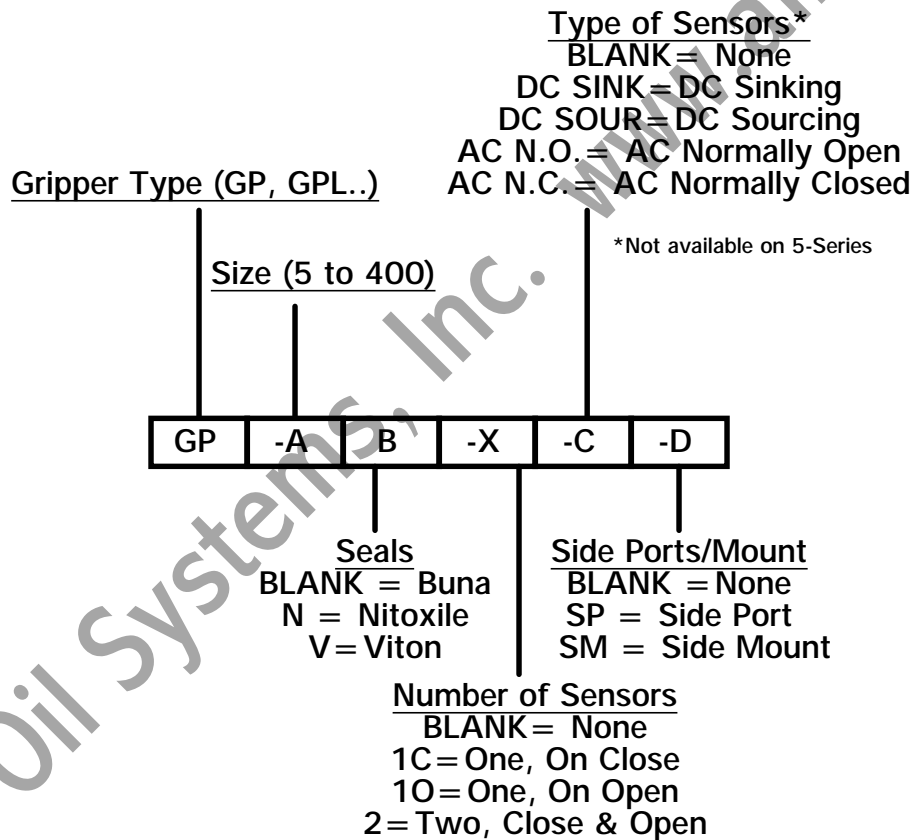
Three types of seals are available:

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>

## ZAYTRAN, INCORPORATED LIMITED WARRANTY AND DISCLAIMER

Zaytran Inc. warrants for one year from the date of purchase for normal use and service that its products are free from defects in materials, workmanship and design. In no instance shall the foregoing be construed as a warranty of fitness for a particular application, and Zaytran Inc. accepts no responsibility of any kind for any of its products that have been subject to improper installation, application, negligence, tampering or abuse or that have been repaired or altered outside the Zaytran factory. Seals and o-rings are specifically excluded from any warranty. The obligation of Zaytran Inc. under this warranty is limited to repair, replacement or correction of any part or product determined by our inspection to be defective. We will not pay for loss of time, inconvenience, loss of use of your Zaytran product, or property damage caused by your Zaytran product or its failure to work, or any other incidental or consequential damages. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above exclusions or limitations may not apply to you. Zaytran Inc. makes no other warranties and disclaims responsibility for any damages resulting from use by any buyer or user. The liability of Zaytran Inc. hereunder is limited to the lesser of the value of the product sold and the obligation to replace, repair or correct the defective part. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Written permission must be obtained from Zaytran Inc. prior to returning any goods for warranty inspection purposes.

Zaytran Inc. reserves the right to change designs and specifications without notice. All data and dimensions in catalogs have been thoroughly checked for accuracy; however, Zaytran Inc. cannot assume responsibility for possible errors or omissions.

MAGNUM and XRAY are registered Trademarks of ZAYTRAN, Inc.