OPERATOR'S MANUAL

662025-X
66203X

INCLUDING: SPECIFICATIONS, SERVICE KITS, GENERAL INFORMATION, PARTS, TROUBLESHOOTING

INCLUDE MANUAL: 67271-B Hydraulic Motor (pn 97999-1238), 640015-X (pn 97999-87) or 640152 (pn 97999-409) Follower Plate, 651784 High Pressure Material Regulator (pn 97999-1006) & S-632 General Information (pn 97999-624).

RELEASED: 9-11-01
REVISED: 10-13-11
(REV. F)

2.062" SQ. HYDRAULIC MOTOR
7.8:1 RATIO
4" STROKE

662025-X & 66203X PUMP ASSEMBLY

READ THIS MANUAL CAREFULLY BEFORE INSTALLING, OPERATING OR SERVICING THIS EQUIPMENT.

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

SERVICE KITS

- Use only genuine ARO® replacement parts to assure compatible pressure rating and longest service life.
- **637449 for repair of hydraulic motor section.**
- **637365 for repair of lower pump end packing.**

SPECIFICATIONS

Model Series		66203X
System Type		Hydraulic Operated Grease Pump
Drum Size	models 662030	400 lb (55 gallon)
	models 662031	120 lb (16 gallon)
Basic Pump	models 662030	662025-1
	models 662031	662025-2
Ratio		7.8:1
Hydraulic Motor		67271-B
Motor Repair Kit		637449
Motor Size		2.062 sq." (13.3 sq. cm)
Stroke		4" (10.2 cm)
Hydraulic Inlet (female)		3/8 - 18 N.P.T.F. - 1
Hydraulic Return (female)		1/2 - 14 N.P.T.F. - 2
Material Outlet (female)		1/2 - 14 N.P.T.
Dimensional Data		See chart
Weight (basic pump)		See chart

PERFORMANCE

Hydraulic Inlet Pressure Range	65 - 961.5 p.s.i. (4.5 - 66.3 bar)
Fluid Pressure Range	507 - 7500 p.s.i. (35.0 - 517.2 bar)
Maximum Rec'd Cycles / Minute	50
Displacement In^3 Per Cycle	2.13
Volume / Cycle	1.18 oz. (34.89 ml)
Cycles Per Lb.	14.4
Maximum Delivery / Minute	9.6 lbs (4.4 kg)
Noise Level	N/A
Maximum Temperature Limit	130° F (54° C)

GENERAL DESCRIPTION

Model 662025-X series grease pump is intended to be used primarily for grease delivery systems. It uses carbon steel and other materials which make it compatible with most petroleum based lubrication products.
NOTE: If this pump was purchased separately (not part of a system), consult your sales representative for compatible dispensing accessories which will best match the application. All accessories must be able to withstand the maximum pressure developed by the pump.

PUMP DATA

MODEL 662025-X

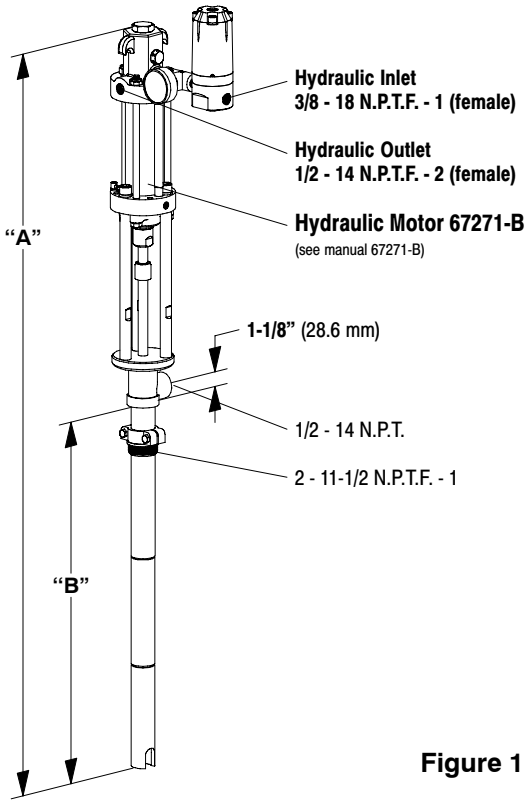

Figure 1

NOTE: Dimensions are shown in inches and (mm) and are supplied for reference only.

Model	"A" (mm)	"B" (mm)	Weight (kg)
662025-1	66-5/32" (1680.0)	36-11/32" (923.1)	53.03 (24.05)
662025-2	58-1/32" (1473.5)	28-7/32" (716.7)	51.17 (23.21)

IMPORTANT

This is one of six documents which support the pump. Replacement copies of these forms are available upon request.

- ☑ **662025-X** Model Operator's Manual (pn 97999-985)
- ☐ **S-632** General Information Lubrication Piston Pumps (pn 97999-624)
- ☐ **67271-B** Hydraulic Motor Operator's Manual (pn 97999-1238)
- ☐ **640015-X** Follower Plate Operator's Manual (pn 97999-87)
- ☐ **640152** Follower Plate Operator's Manual (pn 97999-409)
- ☐ **651784** High Pressure Material Regulator Operator's Manual (pn 97999-1006)

INGERSOLL RAND COMPANY LTD
209 NORTH MAIN STREET – BRYAN, OHIO 43506
(800) 495-0276 • FAX(800) 892-6276
www.ingersollrandproducts.com

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PARTS LIST / 662025-X, 66203X

Item	Description (size)	Qty	Part No.	[Mtl]
1	Hydraulic Motor	(1)	67271-B	
2	Cap Screw (5/8" - 18 x 2")	(3)	93342-1	[C]
3	Lock Washer (5/8")	(3)	Y14-625-C	[C]
4	Retaining Ring	(1)	91547	[SH]
5	Sleeve	(1)	91546	[SS]
6	Connector	(2)	91644	[SH]
7	Tie Rod	(3)	95589	[C]
8	Connector Rod	(1)	95588	[C]
9	Pump Body	(1)	95586	[DI]
✓ 10	Seal	(1)	95587	[U]
✓ 11	Washer	(1)	90142	[C]
✓ 12	Spring	(1)	90143	[C]
✓ 13	Washer	(1)	90140	[Co]
14	Extension Tube (models 662025-1)	(1)	90128	[C]
	(models 662025-2)	(1)	92292	[C]
15	Piston Rod (models 662025-1)	(1)	90127	[C]
	(models 662025-2)	(1)	92291	[C]
16	Ball (0.3437" o.d.)	(1)	Y16-211	[PC]
17	Piston	(1)	90126	[C]
18	Cylinder	(1)	90132	[C]
19	Piston and Cylinder Assembly (includes items 17 and 18)	(1)	65036	[C]
20	Pressure Tube	(1)	90135	[C]
✓ 21	Washer	(1)	90136	[Co]
✓ 22	Primer Rod	(1)	90131	[C]
23	Washer	(1)	90133	[C]
24	Washer	(1)	90138	[C]
25	Nut (1/4" - 28)	(1)	95977302	[SS]
✓ 26	Retaining Ring (0.859")	(1)	Y147-77	[C]
✓ 27	"U" Cup	(1)	90757	[GFT]
28	Body	(1)	90756	[C]
29	Spacer Sleeve	(1)	4170	[C]
✓ 30	Gasket	(1)	92845	[SS]
31	Foot Valve Seat	(1)	4169	[C]
32	Primer Tube	(1)	90129	[C]
33	Bung Adapter	(1)	4148	[DI]
34	Cap Screw (3/8" - 16 x 1-1/2")	(2)	Y6-67-C	[C]
35	Nipple (3/8 - 18 N.P.T. x 1-7/16")	(2)	95591	[C]
36	Pipe Tee (3/8 - 18 N.P.T.)	(1)	Y43-233-C	[C]
37	Material Regulator	(1)	651784	
38	Reducing Bushing (3/8 - 18 N.P.T. male x 1/4 - 18 N.P.T. female)	(1)	Y45-103-C	[C]
39	Gauge (0 - 3000 p.s.i. / 0 - 210 bar)	(1)	93505-1	
✓	Parts in Repair Kit		637365	
The following are Major System Components (not shown)				
	Basic Pump (includes items 1 thru 39)			
	(models 662030)	(1)	662025-1	
	(models 662031)	(1)	662025-2	
	Follower Plate (models 662030)	(1)	640015-2	
	(models 662031)	(1)	640152	
	Drum Cover (models 662030)	(1)	71060-1	
	(models 662031)	(1)	94421	
	Drum Tie Down Kit (662030)	(1)	71027-1	
	(662031)	(1)	640164	

OPERATING AND SAFETY PRECAUTIONS

⚠WARNING HAZARDOUS PRESSURE. Do not exceed maximum operating pressure of 7500 p.s.i. (517.2 bar) at 961.5 p.s.i. (66.3 bar) inlet hydraulic pressure.

PUMP RATIO X INLET PRESSURE TO PUMP MOTOR	=	MAXIMUM PUMP FLUID PRESSURE

Pump ratio is an expression of the relationship between the pump motor area and the lower pump end area. EXAMPLE: When 150 p.s.i. (10.3 bar) inlet pressure is supplied to the motor of a 5:1 ratio pump it will develop a maximum of 750 p.s.i. (52 bar) fluid pressure (at no flow) - as the fluid control is opened, the flow rate will increase as the motor cycle rate increases to keep up with the demand.

⚠WARNING Refer to general information sheet for additional safety precautions and important information.

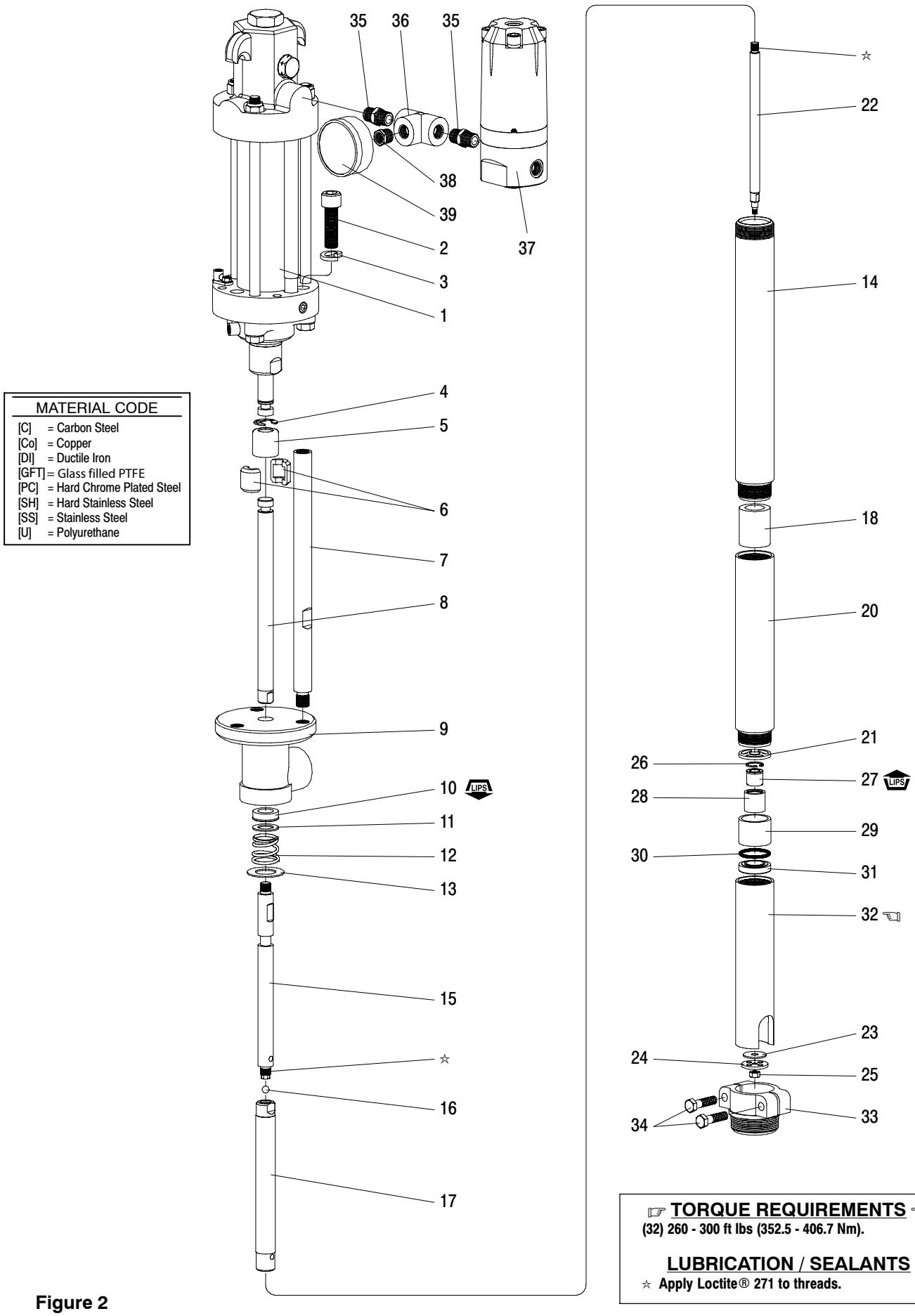
- The grease pumps are primarily designed for the pumping of heavy viscous material with or without fibrous content. The models can be used with a gravity feed single post lift as a topper type assembly or with a two post lift as a force feed type assembly. The lower pump is designed for easy priming and the double acting feature is standard in all ARO industrial pumps. Material is delivered to the pump discharge outlet on both the up and down stroke.
- The motor is connected to the lower pump end by a spacer section. This prevents motor contamination because of normal wear and eventual leakage through the material packing gland.

PUMP DISASSEMBLY

NOTE: All threads are right hand. Refer to figure 2 (page 3). Carefully remove the parts, inspect for damage, nicks or excessive wear and determine if any parts will need replacement.

1. Lay the pump assembly on a workbench.
2. Remove the three (2) cap screws and (3) lock washers.
3. Pull the hydraulic motor from the lower pump end until the motor piston is in the "down" position and the (8) lower pump end connector rod is in the "up" position.
4. Using e-ring pliers, slide the (4) retaining ring up far enough to allow the (5) sleeve to move upward, releasing the two (6) connectors.
5. Secure the lower pump end in a vise, clamping on (9) pump body.
6. Remove (25) nut, releasing (24 and 23) washers.
7. Using a strap wrench on (20) pressure tube and a rod thru slots in (32) primer tube, unthread and remove (32) primer tube.
8. Remove (21) washer, (28) body, (29) spacer sleeve, (30) gasket and (31) foot valve seat.
9. Remove (26) retaining ring, releasing (27) "U" cup.
10. Using a strap wrench on (14) extension tube, unthread and remove from (9) pump body and off rod assembly.

(continued on page 4)



MATERIAL CODE	
[C]	= Carbon Steel
[Co]	= Copper
[DI]	= Ductile Iron
[GFT]	= Glass filled PTFE
[PC]	= Hard Chrome Plated Steel
[SH]	= Hard Stainless Steel
[SS]	= Stainless Steel
[U]	= Polyurethane

☞ TORQUE REQUIREMENTS ☜

(32) 260 - 300 ft lbs (352.5 - 406.7 Nm).

LUBRICATION / SEALANTS

☆ Apply Loctite® 271 to threads.

Figure 2

PUMP DISASSEMBLY

11. Push (8) connector rod and components out the bottom of (9) pump body, being careful not to damage the finish on (8) connector rod.
12. Remove (13) washer, (12) spring, (11) washer and (10) seal from (9) pump body.
13. Using wrenches on flats, unthread and remove (22) primer rod, (17) piston and (15) piston rod from (8) connector rod. NOTE: Disassembly of (17) piston from (15) piston rod releases (16) ball.
14. Unthread and remove (20) pressure tube from (14) extension tube, releasing (18) cylinder.

PUMP REASSEMBLY

Note: Refer to the illustration (figure 2, page 3) for "U" cup lip seal direction.

1. Assemble (10) seal, (11) washer, (12) spring (small end against (11) washer) and (13) washer into (9) pump body.
2. Slide (8) connector rod thru (9) pump body and components from the top, being careful not to damage (10) seal.
3. Assemble (15) piston rod to (8) connector rod, using wrenches on flats to tighten.
4. Apply Loctite 271 to threads of (15) piston rod and assemble (16) ball and (17) piston to (15) piston rod, using wrenches on flats to tighten.
5. Apply Loctite 271 to threads of (22) primer rod and assemble to (17) piston, using wrenches on flats to tighten.
6. Assemble (18) cylinder and (14) extension tube to (20) pressure tube and tighten, using strap wrenches on (14) extension tube and (20) pressure tube.
7. Assemble (14) extension tube and components over (22) primer rod and thread into (9) pump body, using a strap wrench on (14) extension tube to tighten.
8. Assemble (27) "U" cup into (28) body, securing with (26) retaining ring.
9. Assemble (21) washer and (28) body and components onto (22) primer rod.
10. Assemble (31) foot valve seat, (30) gasket and (29) spacer sleeve into (32) primer tube.
11. Assemble (32) primer tube to (20) pressure tube, using a strap wrench on (20) pressure tube and a rod thru slots of (32) primer tube to tighten. NOTE: Tighten to 260 - 300 ft lbs (352.5 - 406.7 Nm).
12. Assemble (23) washer and (24) washer to (22) primer rod, securing with (25) nut.
13. Align the hydraulic motor with the lower pump end.
14. Assemble the two (6) connectors and retain with (5) sleeve.
15. Assemble (4) retaining ring, securing (5) sleeve.
16. Assemble three (7) tie rods to (9) pump body.
17. Bring the hydraulic motor and lower pump end together and secure with three (3) lock washers and (2) cap screws.
18. Assemble two (35) nipples and (38) reducing bushing to (36) pipe tee.
19. Assemble (36) pipe tee to (1) hydraulic motor.
20. Assemble (39) gauge to (38) reducing bushing.
21. Assemble (37) high pressure material regulator to (35) nipple.

TROUBLE SHOOTING

Pump problems can occur in either the hydraulic motor section or the lower pump end section. Use these basic guidelines to help determine which section is affected.

If the pump will not cycle.

- Be certain to first check for non-pump problems including kinked, restrictive or plugged inlet / outlet hose or dispensing device. Depressurize the pump system and clean out any obstructions in the inlet / outlet material lines.
- Refer to the motor manual for trouble shooting if the pump does not cycle and / or hydraulic fluid leaks from the hydraulic motor.

No material at outlet (pump continuously cycles).

- Empty material supply. Replenish the material supply.
- Foreign material is holding the foot valve seat open in the lower pump end. Remove (32) primer tube and clean the valve seat.

CROSS SECTION

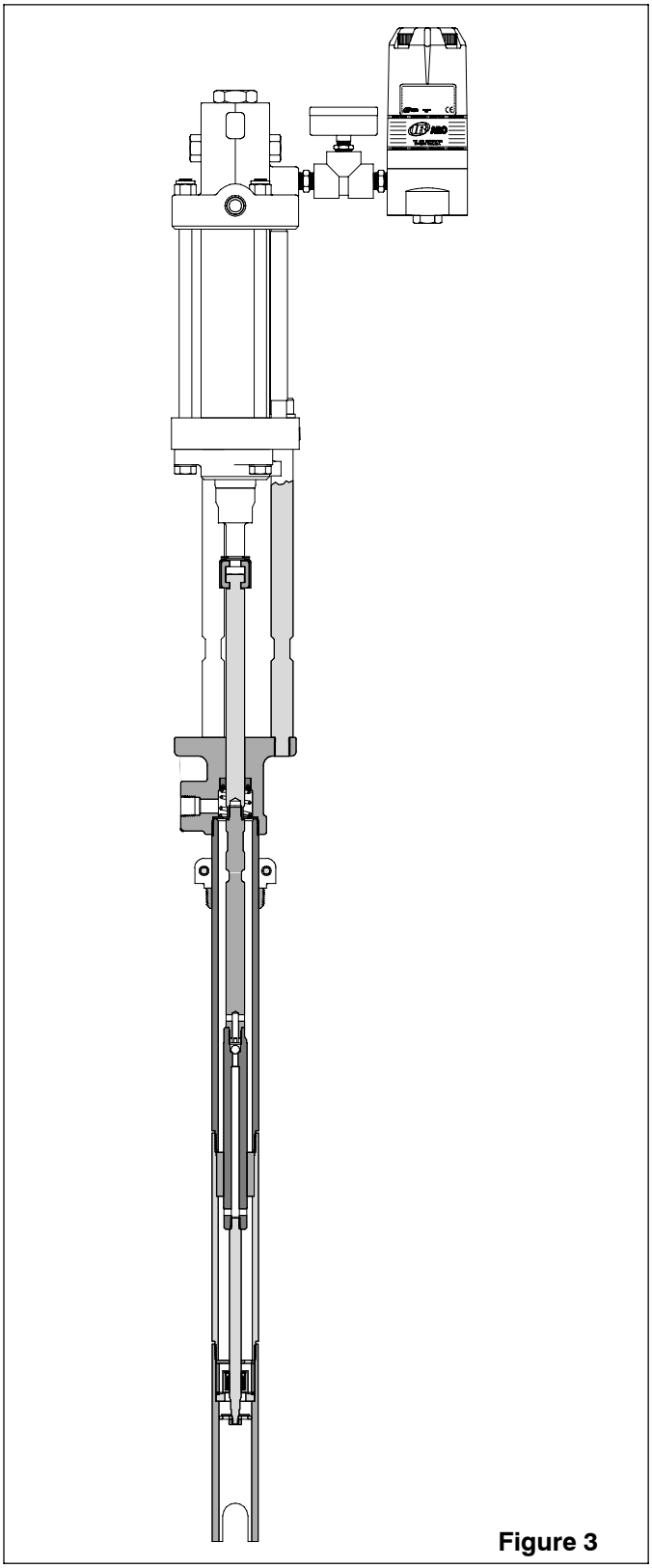


Figure 3