OPERATOR'S MANUAL 6737X-XXX

INCLUDING: SERVICE KITS, TROUBLESHOOTING, PARTS LIST, DISASSEMBLY & REASSEMBLY.

RELEASED: 2-2-09
REVISED: 6-3-10
(REV. 02)

TWO-BALL STYLE LOWER PUMP ENDS

Also covers 637444-XXX service kits

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.
The original language of this manual is English.

SERVICE KITS

Use only genuine ARO® replacement parts to assure compatible pressure rating and longest service life.
637444-XXX for general repair of 6737X-XXX lower pump ends.

GENERAL DESCRIPTION

⚠WARNING DO NOT EXCEED MAXIMUM OPERATING PRESSURE AS INDICATED ON PUMP MODEL PLATE.

⚠WARNING REFER TO GENERAL INFORMATION SHEET FOR ADDITIONAL SAFETY PRECAUTIONS AND IMPORTANT INFORMATION.

- This manual covers the lower pump section. It is one of four documents which support an ARO pump. Replacement copies of these forms are available upon request.
  - ☐ NMXXXXX-XX-XXX Pump Model Operator's Manual.
  - ☐ General Information for Air / Hydraulically Operated Piston Pumps.
  - ☒ Lower Pump End Operator's Manual.
  - ☐ Air / Hydraulic Motor Operator's Manual.
- The two-ball design provides better priming of the lower foot valve. 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.

MAINTENANCE

The air / hydraulic motor is completely separate from the lower pump end. This helps to keep the motor from being contaminated by the material being pumped. Periodically, flush entire pump system with a solvent that is compatible with the material being pumped.
Keep solvent cup filled with this compatible solvent. This will keep the material from drying on the piston rod, which would drag through the packings, ruin them and eventually scour the piston rod.
Provide a clean work surface to protect sensitive internal moving parts from contamination from dirt and foreign matter during disassembly and reassembly.
Before reassembling, lubricate parts as required. When assembling "O" rings, or parts adjacent to "O" rings, exercise care to prevent damage to "O" rings and "O" ring groove surface.

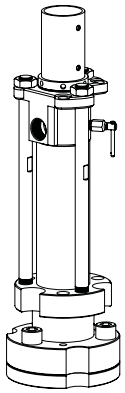


Figure 1

LOWER PUMP END DESCRIPTION CHART

6737 X - X X X

Pump Material
1 - 400 series stainless steel
2 - 300 series stainless steel

Packing Material
C - UHMW-PE (upper and lower)
K - Carbon and Graphite filled PTFE with nitrile energizer (upper and lower)
L - Mineral filled PTFE (upper and lower)
P - UHMW-PE / Mineral filled PTFE staggered (upper) UHMW-PE (lower)
R - Mineral filled PTFE / UHMW-PE staggered (upper) Mineral filled PTFE (lower)

Spring Arrangement
3 - No spring
6 - Wave spring
8 - No spring with alternate solvent cup
C - No spring with alternate seat material
D - Wave spring with alternate seat material
E - Wave spring with alternate solvent cup
F - No spring with alternate seat material and alternate solvent cup
G - Wave spring with alternate seat material and alternate solvent cup

Plunger Type
D - Hardened stainless steel with hard chrome plating
F - Stainless steel with hard chrome plating

Service Kit Selection

Example: Lower Pump End # 67371-C6D
Service Kit # 637444-C6D

6737X - X X X
637444 - X X D
Packing — Spring

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

CCN 15262132

ARO

Ingersoll Rand
Industrial Technologies

PARTS LIST

Item	Description (size)	(Qty)	Part No.	Mtl
1	**Solvent Cup**			
	(models 6737X-X3X, -X6X, -XCX, -XDX)	(1)	67369	[SS]
	(models 6737X-X8X, -XEX, -XFX, -XGX)	(1)	66730	[SS]
6	**Outlet Body**	(1)	96436	[SS]
❶ 8	**"O" Ring** (0.103" x 3.365" o.d.)			
	(models 6737X-KXX)	(2)	93333	[B]
	(models 6737X-CXX, -LXX, -PXX, -RXX)	(2)	92619	[T]
9	**Tube** (models 67371-XXX)	(1)	92599-1	[SH]
	(models 67372-XXX)	(1)	79164	[SS]
10	**Connecting Rod**	(3)	79156	[SS]
12	**Nut** (1" - 14)	(3)	79184	[SS]
15	**Inlet Body**	(1)	96437	[C]
19	**Ball Guide**	(4)	96435	[SS]
20	**Ball Stop**	(1)	96434	[SS]
21	**Ball** (3.000" dia.)	(1)	96783	[SH]
22	**Ball Seat**	(1)	96433	[SS]
❶ 23	**"O" Ring** (3/16" x 5" o.d.)	(2)	Y327-350	[V]
24	**Plate**	(1)	96438	[C]
26	**Plunger** (models 6737X-XXD)	(1)	67204	[PSH]
	(models 6737X-XXF)	(1)	67205	[PSS]
27	**Ball** (1.000" dia.)(models 67371-XXX)	(1)	Y16-132	[SH]
	(models 67372-XXX)	(1)	90948	[SS]
28	**Ball Seat** (models 67371-X3X, -X6X, -X8X, -XEX)	(1)	92610	[SH]
	(models 67372-X3X, -X6X, -X8X, -XEX)	(1)	77430	[SS]
	(models 6737X-XCX, -XDX, -XFX, -XGX)	(1)	95770	[TC]

Item	Description (size)	(Qty)	Part No.	Mtl
❶ 29	**Gasket**	(1)	92612	[SS]
36	**Seat Body**	(1)	93234	[SS]
40	**Retaining Ring**	(1)	93225	[SS]
❶ 44	**Wavy Spring Washer** (models 6737X-X6X, -XDX, -XEX, -XGX)	(1)	79175	[SH]
❶ 45	**Retaining Washer**	(1)	93041	[Ny]
49	**Cap Screw** (1/4" - 20 x 1")	(2)	Y6-45-T	[SS]
❶ 50	**Washer** (models 6737X-CXX, -PXX)	(1)	93756-4	[UH]
	(models 6737X-LXX, -RXX)	(1)	93756-5	[T]
❶ 51	**"V" Packing** (models 6737X-CXX, -PXX)	(2)	93683-4	[UH]
	(models 6737X-LXX, -RXX)	(2)	93683-5	[T]
❶ 52	**"V" Packing** (models 6737X-CXX, -RXX)	(2)	93683-4	[UH]
	(models 6737X-LXX, -PXX)	(2)	93683-5	[T]
❶ 53	**Male Packing Washer** (models 6737X-CXX, -LXX, -PXX, -RXX)	(1)	92602	[SS]
62	**Cap Screw** (1" - 14 x 3")	(3)	96447	[SS]
❶ 71	**"W" Packing** (models 6737X-CXX, -PXX)	(1)	93758-4	[UH]
	(models 6737X-LXX, -RXX)	(1)	93758-5	[T]
❶ 72	**Wiper** (models 6737X-CXX, -PXX)	(1)	93757-4	[UH]
	(models 6737X-LXX, -RXX)	(1)	93757-5	[T]
❶ 75	**Packing Set** (models 6737X-KXX)	(1)	93568-1	[T]
❶ 76	**Packing Set** (models 6737X-KXX)	(1)	93567-1	[T]
88	**Valve**	(1)	62113	[SS]
❶	**Items included in Service Kit**		637444-XXD	

MATERIAL CODE

[B] = Nitrile
[C] = Carbon Steel
[Ny] = Nylon
[PSH] = Hard Chrome Plated Hardened Stainless Steel
[PSS] = Hard Chrome Plated Stainless Steel
[SH] = Hardened Stainless Steel
[SS] = Stainless Steel
[T] = PTFE
[TC] = Tungsten Carbide
[UH] = UHMW-PE
[V] = Viton®

LOWER PUMP DISASSEMBLY

NOTE: All threads are right hand.

1. Unscrew and remove three (12) nuts from (10) connecting rods.
2. Remove (15) inlet body and components from (9) tube.
3. Remove three (62) cap screws, releasing (24) plate, (22) ball seat and components.
4. Remove two (49) cap screws and (20) ball stop, releasing (21) ball.
5. Pull (9) tube and (26) plunger from (6) outlet body.
6. Push (26) and components out lower end of (9) tube.
7. Unscrew (36) seat body and remove (29) gasket, (27) ball and (28) ball seat. NOTE: (36) seat body has four 1/4" dia. x 3/16" deep holes. Use a spanner wrench to loosen.
8. Remove (40) retaining ring from (36) seat body.
9. Remove (8) "O" ring from (6) outlet body.
10. Unscrew (1) solvent cup from (6) outlet body. NOTE: (1) solvent cup has six 3/8" dia. x 5/16" deep holes. Use a rod or spanner wrench to loosen.
11. Remove (45) retaining washer, releasing (75) packing set or (44) wavy spring washer, (53) male packing washer, (51 and 52) "V" packings and (50) washer.

LOWER PUMP REASSEMBLY

NOTE: All threads are right hand.

1. **Models 6737X-CXX, -LXX, -PXX, -RXX:** Assemble (50) washer, (52 and 51) "V" packings, (53) male packing washer and (44) wavy spring washer into (1) solvent cup.
   Models 6737X-KXX: Assemble (75) packing set into (1) solvent cup.
2. Assemble (45) retaining washer into (6) outlet body and screw (1) solvent cup and components into (6) outlet body. NOTE: Do not tighten.
3. Lubricate and assemble (8) "O" ring to groove in (6) outlet body.
4. Lubricate (26) plunger and upper packings with Wet-Sol "Plus". Carefully slide (6) outlet body, (1) solvent cup and components over the top of (26) plunger. Retain (6) outlet body in a bench vise and tighten (1) solvent cup. Carefully lay assembled parts aside for future assembly.
5. Assemble (76) packing set or (72) wiper and (71) "W" packing onto (36) seat body.
6. Assemble (40) retaining ring on (36) seat body and lay aside for future assembly.
7. Lubricate and assemble (8) "O" ring to groove in (15) inlet body.
8. Assemble four (19) ball guides to (22) ball seat.
9. Assemble (21) ball and (20) ball stop, retaining with two (49) cap screws.
10. Assemble (23) "O" rings to grooves in (22) ball seat and assemble (22) ball seat into (15) inlet body.
11. Assemble (24) plate to (15) inlet body, securing with three (62) cap screws. NOTE: Tighten (62) cap screws to 295 - 305 ft lbs (400.0 - 413.5 Nm).
12. Place (26) plunger, (6) outlet body and (1) solvent cup upside down in a vise, clamping on flats of (26) plunger at (solvent cup end. NOTE: (26) plunger to be vertical.
13. Place (27) ball into end of (26) plunger. Place (29) gasket on sealing surface above ball guide. Apply Loctite 242 to threads of (26) plunger. Place (28) ball seat, bevel side toward (27) ball, into (36) seat body and assemble (36) and components to (26) plunger. NOTE: Tighten (36) seat body to 100 - 110 ft lbs (135.6 - 149.1 Nm).
14. The lip of (72) wiper is to be rolled inward using a flat surfacxe with no sharp edges (such as a steel dowel) to prevent damage to wiper, plus easier assembly. This process may have to be

(continued on page 4)

Models 6737X-X8X
6737X-XEX
6737X-XFX
6737X-XGX

Models 6737X-X3X
6737X-X6X
6737X-XCX
6737X-XDX

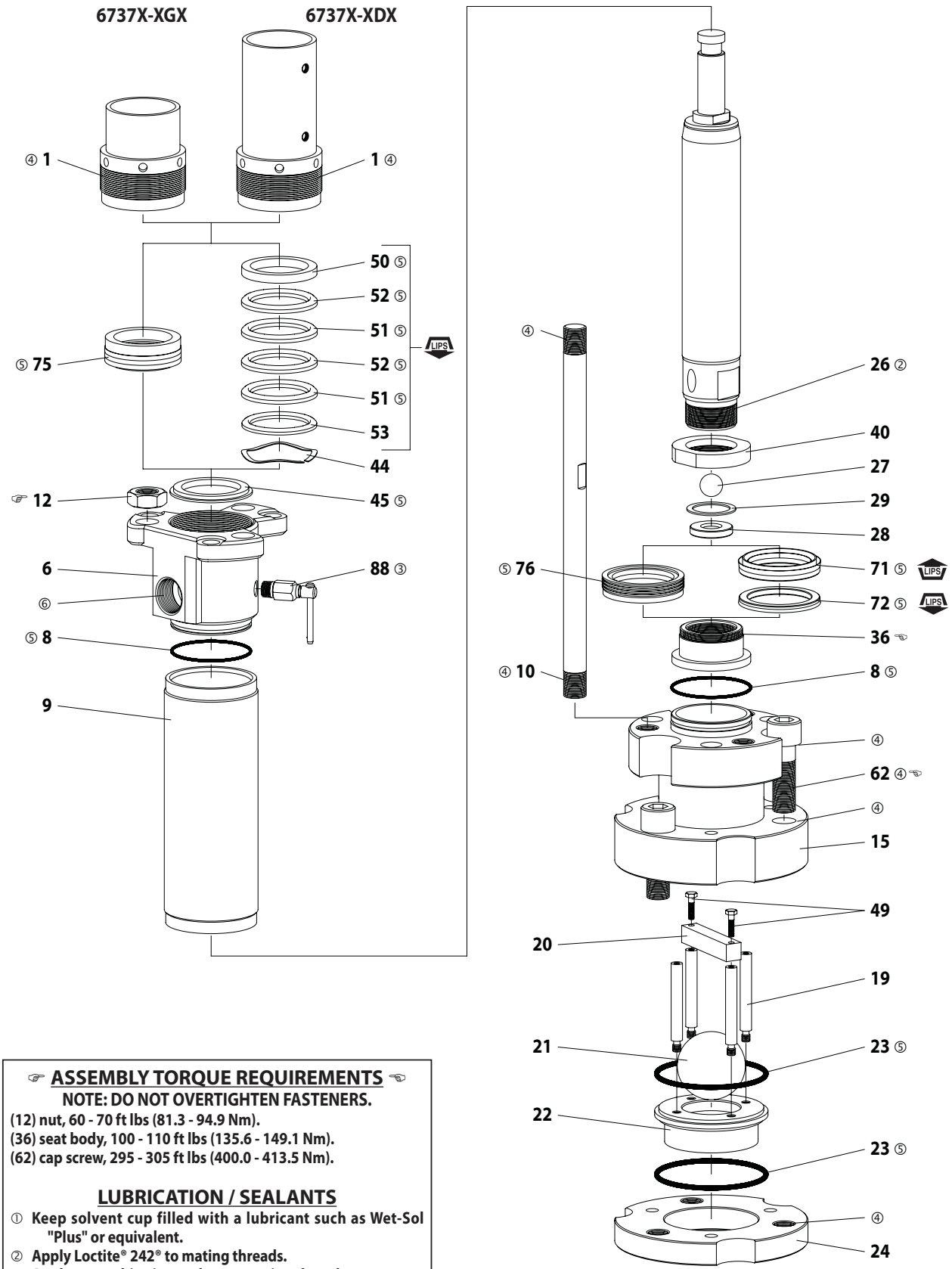


Figure 2

☞ ASSEMBLY TORQUE REQUIREMENTS ☜

NOTE: DO NOT OVERTIGHTEN FASTENERS.

(12) nut, 60 - 70 ft lbs (81.3 - 94.9 Nm).
(36) seat body, 100 - 110 ft lbs (135.6 - 149.1 Nm).
(62) cap screw, 295 - 305 ft lbs (400.0 - 413.5 Nm).

LUBRICATION / SEALANTS

① Keep solvent cup filled with a lubricant such as Wet-Sol "Plus" or equivalent.
② Apply Loctite® 242® to mating threads.
③ Apply anaerobic pipe sealant to mating threads.
④ Apply Loctite nickel anti-seize to mating threads and faces.
⑤ Lubricate items with Wet-Sol "Plus".

⑥ 1-1/4 - 11-1/2 NPTF - 2

repeated several times to assure small enough diameter has been achieved to insure proper assembly.

15. Apply lubricant to inside of (9) tube and carefully slide (9) tube over the (72) wiper and (71) "W" packing or (76) packing set, and onto (6) outlet body. NOTE: Once the (9) tube has cleared the packings, a rubber mallet may be used to drive (9) tube into place.
16. Apply Loctite nickel anti-sieze to threads of (10) connecting rods and assemble three (10) connecting rods to (15) inlet body.
17. Assemble (15) inlet body and components to (9) tube, aligning three (10) connecting rods with holes in (6) outlet body.
18. Assemble three (12) nuts to (10) connecting rods, securing assembly. NOTE: Tighten (12) nuts to 60 - 70 ft lbs (81.3 - 94.9 Nm). NOTE: Draw (12) nuts equally together and then tighten.

TROUBLE SHOOTING

No material at outlet (pump continually cycles).

- Check material supply. Disconnect or shut off the air supply and replenish the material. Reconnect.

Material on one stroke only (fast downstroke).

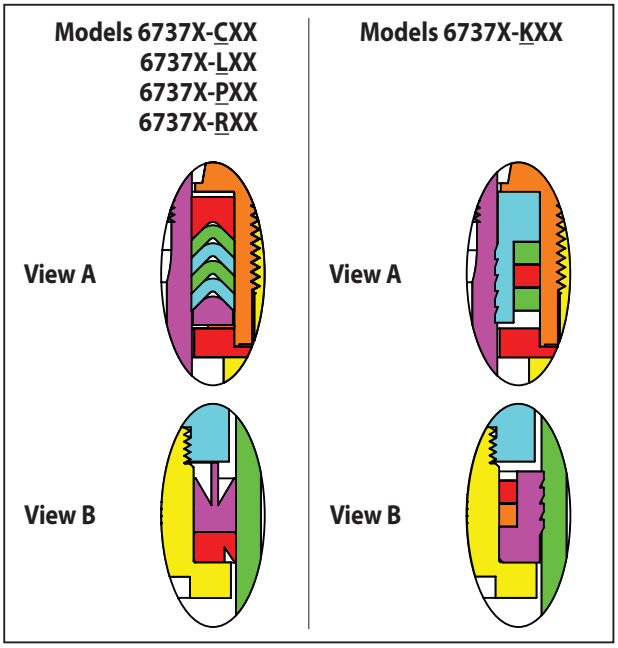
- The (21) lower ball may not be seating in the (22) ball seat (see lower pump disassembly). Remove the ball from the seat, clean and inspect the ball and seat area. If the ball or seat is damaged, replace.

Material on one stroke only (fast upstroke).

- The (27) ball may not be seating in the (28) ball seat (see lower pump disassembly). Remove (27) ball from (28) ball seat, clean and inspect. If the (27) ball is damaged, replace. Check for worn or damaged packings and seals. Replace the packings and seals as necessary.

Material leakage out of the solvent cup or material appears on the pump plunger rod.

- Relieve the pressure in the pump and tighten the solvent cup until leakage discontinues. If this procedure does not aid in stopping the leakage problem, the upper packings may be worn (see lower pump disassembly). Replace the packings as necessary.



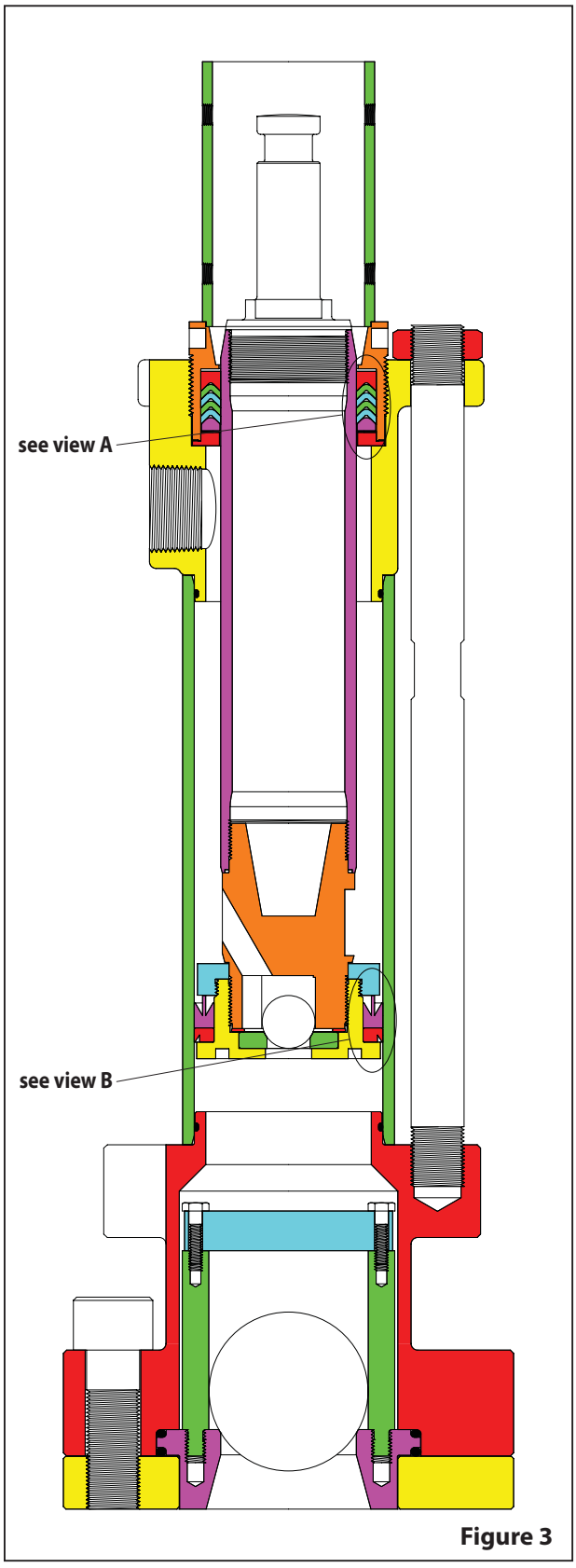


Figure 3