

OPERATOR'S MANUAL

662612

INCLUDING: SERVICE KITS, GENERAL DESCRIPTION & TROUBLESHOOTING
ALSO INCLUDE MANUALS: 6641X-X AIR MOTOR MANUAL,
FORM 3637-2 GENERAL INFORMATION SHEET.

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(REV. B) IPP

6" AIR MOTOR
48:1 RATIO
4" STROKE

BASIC PUMP
55 GALLON DRUM

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

SERVICE KITS

- 637133 for repair of Lower Pump Section (See Fig. 3).
- 61355 for repair of Air Motor Section.
- Use ARO replacement parts to assure compatible pressure rating.
- Order Lower Pump End service parts separately. See Fig. 3.

GENERAL DESCRIPTION

- The Aro 48:1 ratio basic pump assembly consists of a 6" air motor, spacer section, and lower pump end. The 6" air motor is a reciprocating type with pneumatic control circuit and reversing valve.
- The air motor is completely separate from the lower pump to prevent any of the material being pumped from coming in contact with the air motor assembly.
- The ball check design provides for easy priming of the lower foot valve and the double acting feature which is standard in all Aro Industrial Pumps. Material is delivered to the pump discharge outlet on both the up and down stroke.

**RATIO x REGULATED AIR PRESSURE TO AIR MOTOR = MAXIMUM
FLUID PRESSURE**

- The 48:1 ratio is an expression of the relationship between the air motor area and the lower pump end area. When 100 PSI air pressure is supplied to the air motor, the lower pump end will develop a maximum of 4800 PSI (330 Bar) fluid pressure (at no flow) as the fluid control is opened, the flow rate will increase as the air motor cycle rate increases to keep up with the demand.

OPERATING PRECAUTIONS

- HEED ALL WARNINGS.
- WARNING: HIGH PRESSURE DEVICE. Improper usage of this equipment could result in serious injury. The possibility of injection into the flesh is a potential hazard. Never allow any part of the human body to come in front of or in direct contact with the material outlet. An injection injury can be serious. If injection should occur, contact a qualified physician immediately for prescribed treatment of such injuries.
- COMPONENT RUPTURE. This pump is capable of producing high material pressure as stated on pump model plate.
- Be sure material hoses and other components are able to withstand fluid pressures developed by this pump.
- Do not operate pump continuously at speeds in excess of 75 cycles per minute.
- Disconnect air line from pump air motor when system sits idle for long periods of time.
- Materials and solvents being pumped by this pump must be compatible with the parts of this pump that come in contact with the material and solvent.

MAJOR COMPONENTS CHECK LIST

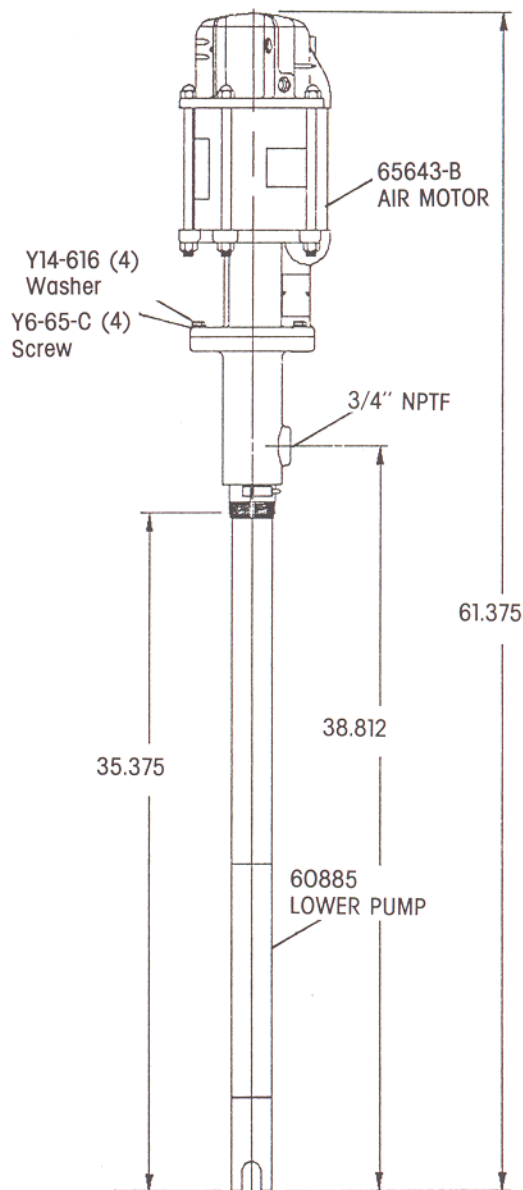


Figure 1

- WARNING: PREVENT STATIC SPARKING if static sparking occurs, fire or explosion could result. Pump, dispensing valve, and containers must be grounded when handling inflammable fluids such as petroleum products, paints, lacquers, etc. and wherever discharge of static electricity is a hazard.



- Use grounded hoses (static wire) and be sure the object you are painting is grounded if it can produce a static charge.
- Check continuity (a good static wire connection) with an ohmmeter. Place one probe on one hose fitting and the other probe on other hose fitting, continuity or proper grounding through hose is good when a reading is obtained on the ohmmeter.
- **PREVENT FIRES.** When pumping, flushing or recirculating volatile solvents, the area must be adequately ventilated.
- Keep solvents away from heat, sparks and open flames. Keep containers closed when not in use.
- **CAUTION:** Do not allow pump to operate when out of material.

AIR AND LUBE REQUIREMENTS

- Excessive air pressure will shorten the life of the pump. **DO NOT OPERATE PUMP ABOVE RECOMMENDED MAXIMUM AIR PRESSURE.**
 - For maximum operating efficiency. The following air supply specification should be maintained to this pump.
 - **AIR PRESSURE** — up to 100 P.S.I. (7 Bar)
 - **AIR FILTRATION** - 50 micron
 - **LUBRICATED AIR SUPPLY**
 - **AIR INLET SIZE** - 1/2" NPTF
 - Filtered and oiled air will allow the pump to operate more efficiently and yield a longer life to operating parts and mechanisms.
 - Lack of or an excessive amount of lubrication will affect the performance and life of this pump. Use only recommended lubricants.
 - **DAILY** — fill air line lubricator reservoir with a good grade of S.A.E. NO. 90W non-detergent gear oil, adjust to 1 to 2 drops per minute.
 - If pump is to be inoperative for more than a few hours at a time, disconnect air supply and relieve all pressure from the system.
- It is recommended that an oiler be installed in the air line as close as possible to the pump. This increases the service life of the pump by reducing wear of the air motor's internal parts.

INSTALLATION

- The 662612 pump is to be mounted in a 2" bung of 55 gallon drum.
 - The 662612 pump is to be wall mounted. A 61113 pump mounting bracket may be used to mount pump to wall.
- Flush Pump
- ___ Connect fluid hose to pump outlet. Be sure all fittings are tight.
 - ___ Turn air regulator knob counter-clockwise until it turns free.
 - ___ Pump as been tested in oil and a small amount remains for protection against rusting. Immerse lower pump end in compatible solvent.
 - ___ Connect air hose coupler to connector on FRL.
 - ___ Turn air regulator knob clockwise until air motor starts.
 - ___ Flush pump until oil is removed.
 - **CAUTION:** Solvent used for flushing may not be compatible with material to be pumped. If this is the case, flush again with a compatible solvent.
 - Mount 662612 in a 2" bung.
 - If pump is to be inoperative for an unspecified period of time, disconnect air and relieve all pressure.
 - If pump does not function properly, disconnect air and relieve all pressure. Refer to Trouble Shooting.

OPERATING INSTRUCTIONS

- ___ Turn air regulator knob clockwise until air motor starts to cycle.
- ___ Allow pump to cycle slowly until it is primed and all air is purged from the fluid hose or dispensing valve.
- ___ Turn off dispensing valve and allow pump to stall — check all fittings for any leakage.
- ___ Change air regulator setting until desired pressure and flow is obtained.
- ___ Inspect airline filter, open petcock, to flush moisture or residue from bowl.
- Pump recommended to operate between 30 PSI and 100 PSI (not to exceed 75 cycles per minute).

MAINTENANCE

- **SERVICING.** Before servicing or cleaning pump, or removing fluid hose or gun from a unit that has been used be sure to disconnect air lines and carefully bleed pressure off of the system.

The Basic Pump consists of two major components: 1. Air Motor, 2. Lower Pump End. The air motor is removable and is to be serviced separately. Refer to Air Motor manual for service and parts.

- Periodically flush entire pump system with a solvent that is compatible with the material being pumped.
- Disassembly should be done on a clean work bench with clean cloths to keep parts clean.
- If replacement parts are necessary, consult drawing containing parts for identification.
- Before assembling, lubricate parts where required. When assembling "O" rings or parts adjacent to "O" rings, care must be exercised to prevent damage to "O" rings and "O" ring groove surfaces.
- See pump Disassembly.

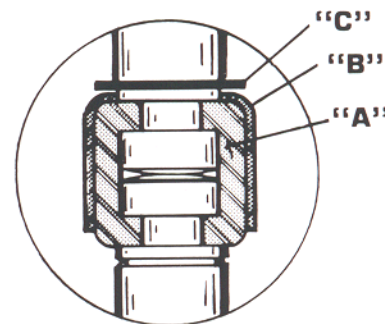


Figure 2

SPACER KIT PARTS LIST

REF.	DESCRIPTION
A 90096 (2)	CONNECTOR
B 90109	SLEEVE
C 90102	RETAINING RING

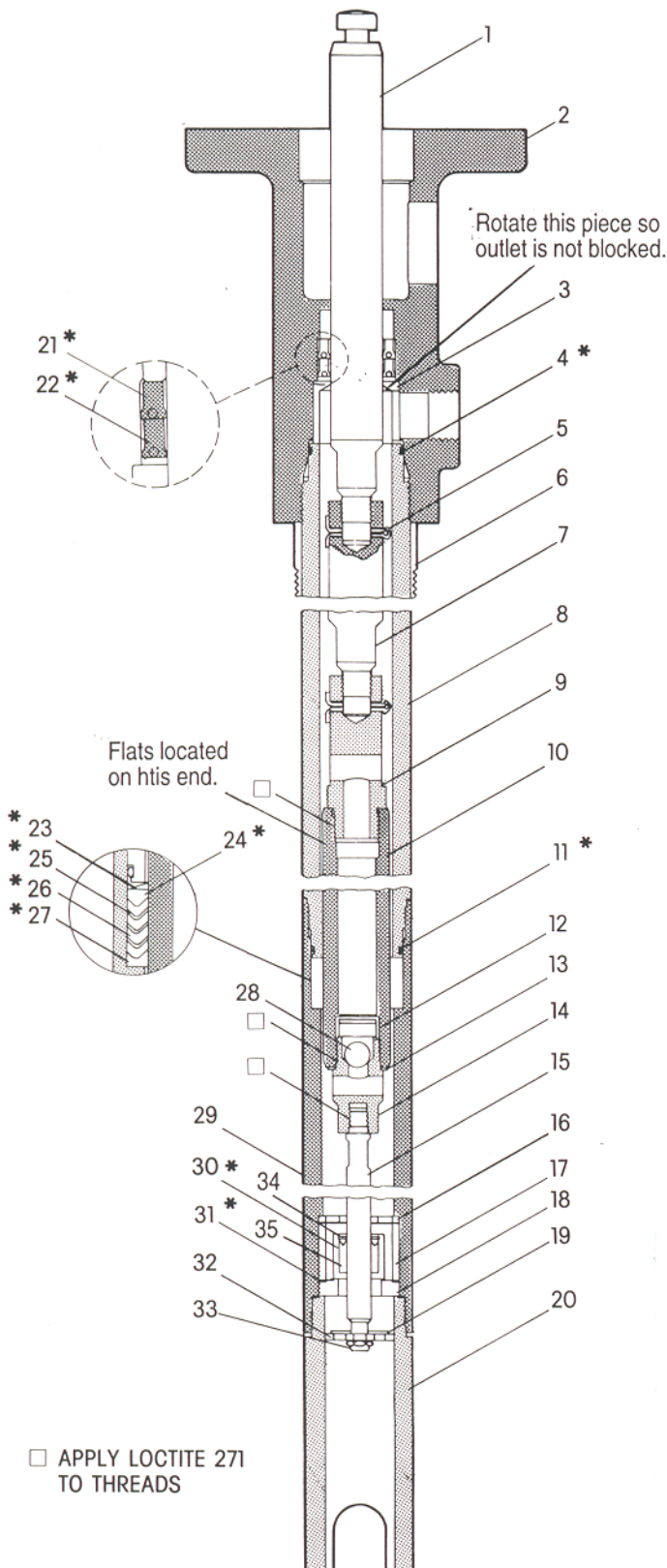


Figure 3

REF.	DESCRIPTION	PART NO.
1	Rod	93153
2	Base Asm	60963
3	Sleeve	93152
4	"O" Ring	Y330-131 *
5	Pin	(2 Req'd) Y15-44-C
6	Bung Asm.	60870
7	Adapter	93148
8	Tube	93150
9	Adapter	93143
10	Tube	93145
11	"O" Ring	Y330-130*
12	Pin	93146
13	Gasket	93154
14	Adapter	93157
15	Rod	90131
16	Washer	90136
17	Sleeve	4170
18	Seat	93269-1
19	Washer	90133
20	Primer Tube	92626
21	Packing	93155 *
22	Packing	93205 *
23	Washer	93147 *
24	Male Washer	93208 *
25	Packing	(3 req'd.) 73042 *
26	Packing	(4 req'd.) 73043 *
27	Female Washer	93207 *
28	Ball	Y16-16
29	Tube	93144
30	Packing	90757 *
31	Gasket	F21-56 *
32	Washer	90133
33	Nut	Y109-428
34	Ring	Y147-77
35	Body	90756

637133

PACKING SERVICE KIT

* SERVICE KIT: Includes items 4,11,21,22,23,24,25 (three req'd.), 26 (four req'd.), 27, 30, and 31. This kit will service Lower Pump End 60885

LOWER PUMP END DISASSEMBLY

NOTE: All threads are right hand

- Vise the lower pump assembly on (2) base assembly.
- Place strap wrench (Aro part #640081-B) around the (29) tube and hold securely. Place a rod thru the slots on (20) primer tube and disassemble from the tube.
- Unscrew and remove the (33) nut, (32) washer and (19) washer.
- Place strap wrench around (8) tube and disassemble from (2) base assembly and off (1) rod.
- Push (1) rod down and out the bottom of (2) base assembly, using caution not to mar or damage the finish on (1) rod.)
- From the (2) base assembly, remove (3) sleeve, (21) packing, and (22) packing.
- Disassemble (15) rod, (14) adapter, (13) gasket, (28) ball, (12) pin, (10), tube (9) adapter, (7) adapter, and two (5) cotter pins from (1) rod.
- Remove (18) seat, (31) gasket, (17) sleeve, (30) valve ass'y. and (16) washer from (29) tube.
- Disassemble (29) tube from (8) tube and remove items (23) thru (27). Also remove (11) "O" ring, and (4) "O" ring from (8) tube. (See figure)

LOWER PUMP END ASSEMBLY

NOTE: All packing and rubber goods should be lubricated with a compatible lubricant prior to assembly.

- Place (21) packing, (22) packing, and (3) sleeve into (2) base assembly.
- Slide (1) rod thru (21) packing and (22) packing from the top of (2) base assembly.
- Assemble (7) adapter and (9) adapter to (1) rod using two (5) pins. CAUTION: Be sure cotter pin heads are flattened during assembly.
- Apply Loctite 271 to threads on (9) adapter and assemble (10) tube to (9) adapter.
- Place (4) "O" ring and (11) "O" ring on (8) tube.
- Apply Loctite 271 to threads on (14) adapter and assemble (12) pin, (28) ball, (13) gasket, to (10) tube.
- Apply Loctite 271 to threads on (15) rod and assemble to (14) adapter.
- Place items (23) thru (27) into (29) tube.
- Assemble (29) tube to (8) tube.
- Assemble (16) washer, (17) sleeve, (30) valve ass'y, (31) gasket, and (18) seat to (29) tube.
- Assemble (19) washer, (32) washer and (33) nut to (15) rod.
- Assemble (20) tube to (29) tube and tighten.

TROUBLE SHOOTING

PROBLEM

No Material at outlet (Pump continuously cycles)

CAUSE

Empty material supply.

REMEDY

Disconnect the air, replenish the material supply.

CAUSE

Foreign matter is holding foot valve seats open in lower pump tube assembly.

REMEDY

Remove lower pump tube assembly and clean valve seats.

PROBLEM

Pump operates sluggishly, tends to stick when air is applied or control is opened.

CAUSE

Air motor is dirty or lacks lubrication.

REMEDY

Clean air motor.

CAUSE

Insufficient air pressure or volume of air.

REMEDY

Check air supply.

PROBLEM

Air bypasses through exhaust port

CAUSE

Foreign matter is holding air valve open or lacks lubrication.

REMEDY

Consult factory for nearest Service Center.

PROBLEM

Motor stalls

CAUSE

Foreign matter in pump, hose, control valve or spray tip obstructing material flow.

REMEDY

Check material supply hose and control valve or tip.

CAUSE

Air not getting to pump.

REMEDY

Check air supply.

