

OPERATOR'S MANUAL

650318-B

SPECIFICATIONS, SERVICE KITS, GENERAL INFORMATION, TROUBLESHOOTING

INCLUDE MANUALS: 60834 LOWER PUMP END (PN 97999-908), 66913 AIR MOTOR (PN 97999-748) & S-632 GENERAL INFORMATION MANUAL (PN 97999-624).

RELEASED: 2-4-00

REVISED: 6-1-10

(REV. 02)

3" AIR MOTOR

4:1 RATIO

3" STROKE

650318-B

STAINLESS STEEL



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

SERVICE KITS

- Use only genuine ARO® replacement parts to assure compatible pressure rating and longest service life.
- **637316** for repair of air motor section.
- **637331** for repair of lower pump end.

SPECIFICATIONS

Model Series (Refer to option chart)	650318-B
Type	Air Operated, Ball Check
Ratio	4:1
Air Motor	66913
Motor Repair Kit	637316
Motor Diameter	3" (7.62 cm)
Stroke (Double Acting)	3" (7.62 cm)
Air Inlet	1/4" - 18 N.P.T.F. - 1 (f)
Lower Pump End Series	60834
Lower Pump Repair Kit	637331
Material Inlet	1-1/4" - 11-1/2 N.P.S.M. (f)
Material Outlet	3/4" - 14 N.P.T.F. (f)

PERFORMANCE

Air Inlet Pressure Range	0 - 150 p.s.i. (0 - 10.3 bar)
Fluid Pressure Range	0 - 600 p.s.i. (0 - 41.4 bar)
Max. Rec'd Cycles / Minute	120
Displacement In³ Per Cycle	11.0
Volume / Cycle	6.1 oz. (180.2 ml)
Cycles Per Gallon	21
Flow @ 60 Cycles / Minute	2.86 g.p.m. (10.814 l.p.m.)
Noise Level @ 100 Psi	85 db(A) *
Accessories Available	61113 Wall Mount Bracket 66073-1 Air Line Connection Kit

* The pump sound pressure level has been updated to an Equivalent Continuous Sound Level (L_{Aeq}) to meet the intent of ANSI S1. 13-1971, CAGI-PNEUROP S5.1 using four microphone locations.

PUMP DATA

MODEL 650318-B

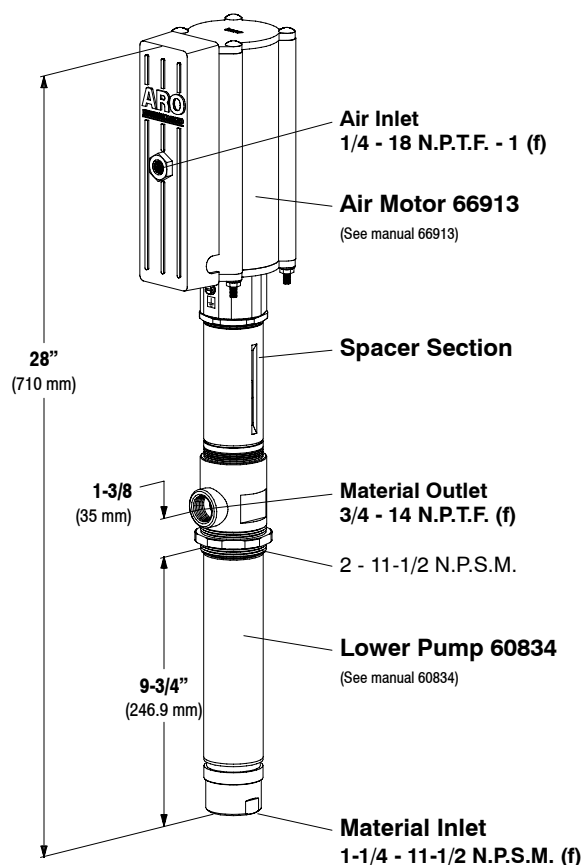


FIGURE 1

NOTE: Dimensions are shown in inches and (mm), supplied for reference only and are typically rounded up to the nearest 1/16 inch.

IMPORTANT

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

- ☒ 650318-B MODEL OPERATOR'S MANUAL
- ☐ GENERAL INFORMATION - INDUSTRIAL PISTON PUMPS
- ☐ 60834 LOWER PUMP END OPERATOR'S MANUAL
- ☐ 66913 AIR MOTOR OPERATOR'S MANUAL

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Industrial Technologies

PUMP OPTION DESCRIPTION CHART

650318 - B

CONTAINER SUITABILITY

Universal (stub)

SPRING ARRANGEMENT

Coil

PACKING MATERIAL

E.P.R. / PTFE (upper)

Glass filled Celcon (lower)

PLUNGER TYPE

Standard (300 Series Stainless Steel)

GENERAL DESCRIPTION

⚠ WARNING **HAZARDOUS PRESSURE.** Do not exceed maximum operating pressure of 600 p.s.i. (41.4 bar) at 150 p.s.i. (10.3 bar) inlet air 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 4:1 ratio pump it will develop a maximum of 600 p.s.i. (41.4 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 ball check design provides for easy 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.
- The motor is connected to the lower pump end with a spacer tube.

TROUBLE SHOOTING

Pump problems can occur in either the Air Motor Section or the Lower Pump End Section. Use these basic guidelines to help determine which section is affected. Be sure to eliminate any possible non-pump problems before suspecting pump malfunction.

Pump will not cycle.

- No pressure to the motor. See motor manual.
- Restricted return lines. Clean obstruction.
- Damaged motor. Service motor

No material at the outlet (pump continually cycles).

- Check the material supply, disconnect or shut off the air supply and replenish the material, reconnect.

Material on one stroke only (fast downstroke).

- The lower check may not be seating in the foot valve (see lower pump disassembly). Remove the check from the foot valve, clean and inspect the valve seat area. If check or foot valve are damaged, replace.

Material on one stroke only (fast upstroke).

- The middle packings may be worn (see lower pump disassembly). Replace the seals as necessary.

Material leakage out of the spacer tube or material appears on the pump plunger rod.

- Tighten the spacer tube 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 seals as necessary.

PUMP CONNECTION - UPPER / LOWER

NOTE: All threads are right hand.

1. Loosen (90606) lock nut and unscrew entire pump from the air motor. This will expose (94445) adapter (see figure 2).
2. Unscrew (94445) adapter to remove pump assembly from the air motor.
3. Remove (Y15-21) cotter pin and (94048) clevis pin to remove (94445) adapter.

PUMP CONNECTOR DETAIL

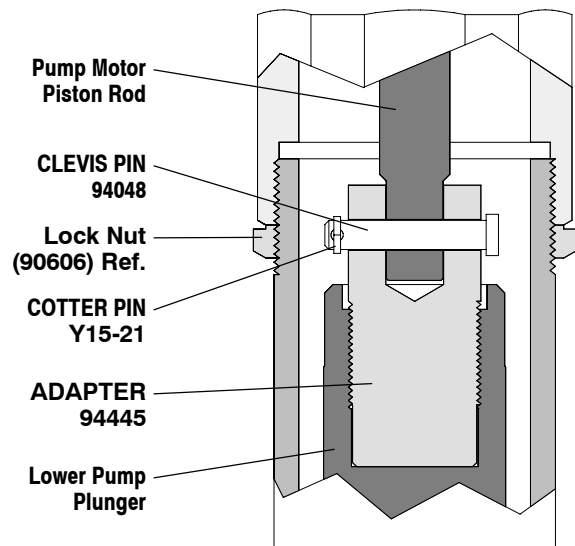


FIGURE 2

REASSEMBLY

1. Assemble (94445) adapter to air motor rod, aligning through holes.
2. Assemble (94048) clevis pin through hole, securing adapter.
3. Assemble (Y15-21) cotter pin through hole in clevis pin.
4. Apply Loctite 242 to threads of (94445) adapter and screw (94445) adapter into (90606) plunger.
5. Screw the lower pump assembly to the air motor.
6. Screw (90615) lock nut against air motor base and tighten to 50 - 65 ft lbs (67.8 - 88.1 Nm).