

# OPERATOR'S MANUAL

# 650438-X

INCLUDES: SERVICE KITS, GENERAL DESCRIPTION & TROUBLESHOOTING  
ALSO INCLUDE MANUALS: 6544X-X AIR MOTOR, 6694X-X LOWER PUMP, FORM 3637-2  
GENERAL INFORMATION SHEET

RELEASED: 8-25-92  
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(REV. 02)  
IPP

4 1/4" AIR MOTOR  
3:1 RATIO  
6" STROKE

## BASIC PUMP (300 SERIES STAINLESS STEEL)

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

(PACKINGS ARE UPPER AND LOWER UNLESS NOTED)

### PUMP OPTION DESCRIPTION CHART 650438-XXX

**PACKING MATERIAL**  
C UHMW-PE  
F UHMW-PE/LEATHER STAG'D (UPPER)  
UHMW-PE (LOWER)  
K C-G FLD PTFE W/BUNA N E'GIZER  
L MINERAL FILLED PTFE  
M POLYMYTE POLYPAK

**PACKING MATERIAL** — **PLUNGER TYPE**  
—  
**SPRING ARRANGEMENT**

**SPRING ARRANGEMENT**  
3 NO SPRING  
6 WAVE SPRING

**PLUNGER TYPE**  
A SS W/HD CHROME PLATE

### SERVICE KITS

- Use only genuine ARO® replacement parts to assure compatible pressure rating and longest service life.
- 61268 for general repair of the Air Motor Section.
- 637211-XXX for general repair of the 66942-XXX Lower Pump End.

### GENERAL DESCRIPTION

**WARNING: DO NOT EXCEED MAXIMUM OPERATING PRESSURE OF  
429 PSI (29.5 BAR) AT 150 PSI (10.3 BAR) INLET PRESSURE.**

**WARNING: REFER TO GENERAL INFORMATION SHEET FOR ADDI-  
TIONAL SAFETY PRECAUTIONS AND IMPORTANT  
INFORMATION.**

- This MODEL MANUAL is one of four documents needed to properly support an ARO pump model. Ref: Part A. 650XXX-XXX-X MODEL (OPERATOR'S) MANUAL, Part B. GENERAL INFORMATION, Part C. AIR MOTOR (OPERATOR'S) MANUAL, Part D. LOWER PUMP END (OPERATOR'S) MANUAL. These forms are available from the factory if needed.
- The Large Two-Ball pumps are primarily designed for the pumping of medium viscous material. 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 allows for lubrication of the upper packing gland and prevents motor contamination because of normal wear and eventual leakage through the material packing gland.

### PUMP DATA

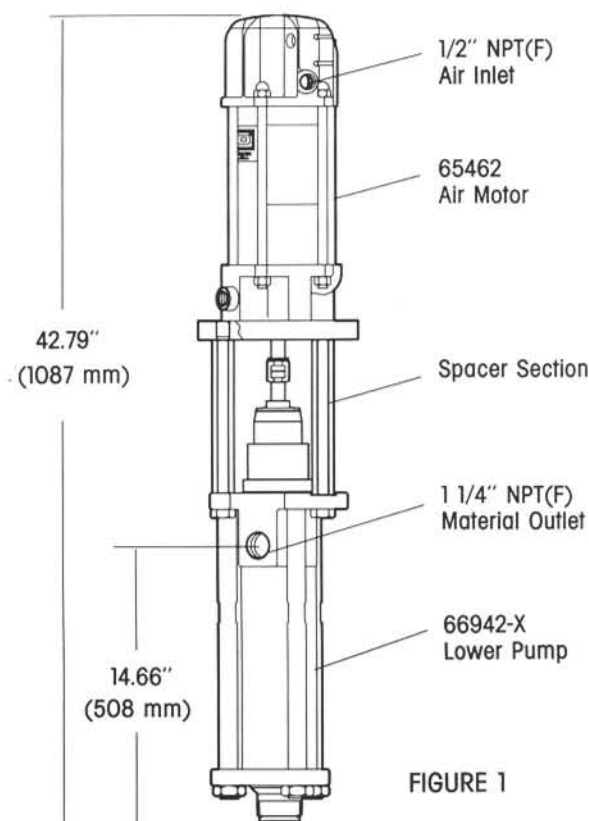


FIGURE 1

## PUMP DISASSEMBLY

Refer to Figure 2

1. Lay the pump assembly on a workbench.
2. Unscrew the three (103) cap screws.
3. Pull the air motor from the lower pump end until air motor piston rod is in the "down" position and lower pump end rod is in the "up" position.
4. Remove the three (102) spacer rods only if disassembly of air motor is necessary.
5. Slide (106) retaining ring upward.  
NOTE: A retaining ring tool is recommended for proper handling of retaining ring.
6. Slide (105) sleeve towards air motor on the air motor piston rod.
7. Remove two (104) connectors and lay air motor aside.

## PUMP ASSEMBLY

Refer to Figure 2

1. Align Lower End Pump Rod with Air Motor Piston rod. Position air inlet of motor 60° from material outlet of pump.
2. Position two (104) connectors in place and slide (105) sleeve over two (104) connectors.
3. Slide (106) retaining ring into groove.
4. If three (102) spacer rods were removed in disassembly of air motor from lower pump end, screw spacer rods into lower pump end.
5. Push air motor and lower pump end together so (102) spacer rods align with the holes located in air motor base.
6. Secure air motor to lower pump end using three (103) cap screws.

## TROUBLE SHOOTING

### • PROBLEM

\_\_\_Cause, solution.

### • Pump will not cycle.

\_\_\_No pressure to motor, See motor manual.

\_\_\_Restricted return lines, clean obstruction.

\_\_\_Damaged motor, service motor.

\_\_\_Be sure to eliminate any possible non-pump problems before suspecting pump malfunction and continuing.

### • Pump problems will typically occur in one of two areas:

1. The Air Motor Section.

2. The Lower Pump Section.

\_\_\_Determine which section is affected.

## SPACER SECTION

REF	PART NO.	DESCRIPTION
102	93315 (3)	SPACER ROD
103	79186 (3)	CAP SCREW
104	91644 (2)	CONNECTOR
105	91546	SLEEVE
106	91547	RETAINING RING

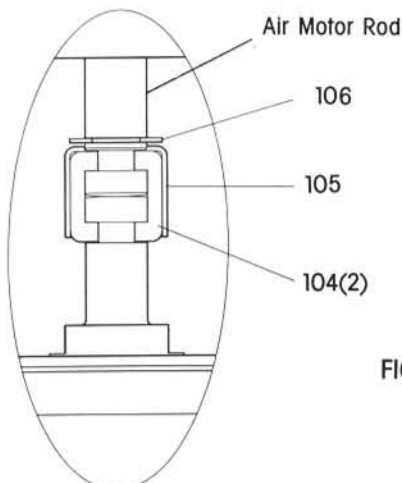


FIGURE 2

