

# OPERATOR'S MANUAL

# 650820

## INCLUDING: OPERATION, INSTALLATION AND MAINTENANCE.

INCLUDE MANUALS: NP322XXXXR7-XX Extrusion System (pn 97999-1416), 651500 Extrusion Gun (pn 97999-21) & S-636 General Information (pn 97999-636), 65178X-X-B Regulator (pn 97999-559)

RELEASED: 10-1-15  
REVISED: 7-10-20  
(REV: B)

**3" AIR MOTOR**  
**22:1 RATIO**  
**3" STROKE**

## 650820 PUMP SYSTEM



### 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.

**637316** for repair of **66915** air motor section.

**104453** for repair of **P39344-100** Filter/Regulator

**104302** for repair of **R37121-100** regulator

**637290-P43** for repair of **67100-P43** lower pump section.

**637465** for repair of Lift/Ram seals

#### GENERAL DESCRIPTION

**⚠ WARNING DO NOT EXCEED MAXIMUM OPERATING PRESSURE OF 3,300 PSIG (227.6 BAR) AT 150 PSIG (10.3 BAR) AIR INLET PRESSURE.**

**⚠ WARNING REFER TO GENERAL INFORMATION MANUAL INCLUDED FOR OPERATING AND SAFETY PRECAUTIONS AND OTHER IMPORTANT INFORMATION.**

By delivering a smooth, continuous bead of the proper size, an ARO system helps the operator maintain both production rate and produce high quality standards. Maintained quality standards assures that the material benefits are realized. To further maximize operator production time, the ARO system has a built-in lift / ram feature for quick and easy drum changeover and easy lifting of the pump assembly from the container.

ARO systems are totally enclosed, sealing the material in the system from air and moisture, preventing premature cure-out of the material. This allows for either continuous or intermittent use of the system and reduces the need for daily system clean-up.

The 22:1 ratio is an expression of the relationship between the effective air motor area and the effective lower pump area. When 150 psig (10.3 bar) of air pressure is supplied to the air motor, the lower pump area will develop a maximum of 3,300 psig (227.6 bar) of 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.

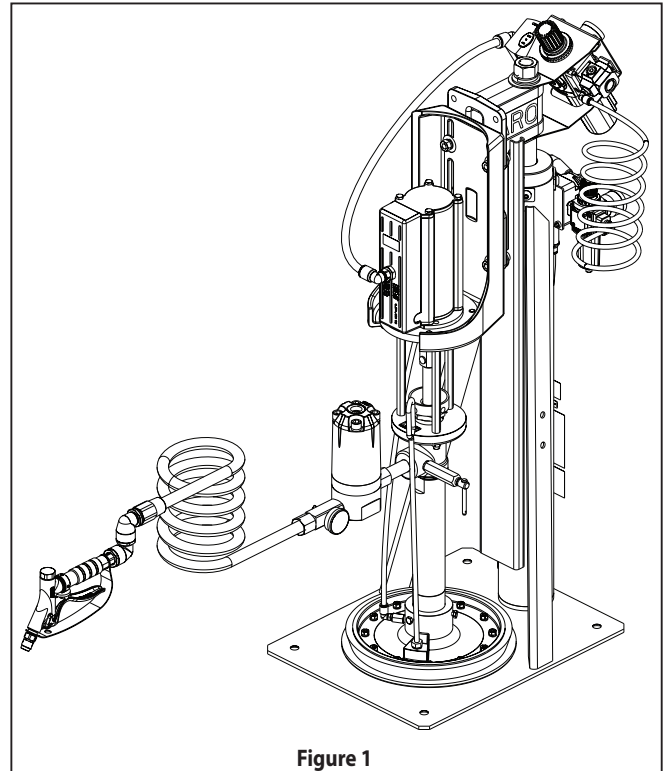


Figure 1

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## INSTALLATION

The 650820 Extrusion System comes completely assembled. Remove the unit from the crate and place on a level surface. Install the material hose and dispensing device as required.

When the following instructions are observed, heavy paste materials can be pumped directly from their original 5 gallon / 25 liter drum without air inclusion or excessive waste. The follower plate creates an air tight seal as well as clean-wiping action in its progressive downward movement into the drum.

## OPERATING INSTRUCTIONS

### OPERATING INSTRUCTIONS / INITIAL SET-UP PROCEDURE

**⚠ WARNING** Stand clear when raising or lowering the lift.

Read the warnings on Single Post Lift / Ram Operator's Manual (pn 97999-1335).

### LIFT / RAM, PUMP AND FOLLOWER PLATE AIR CONTROLS

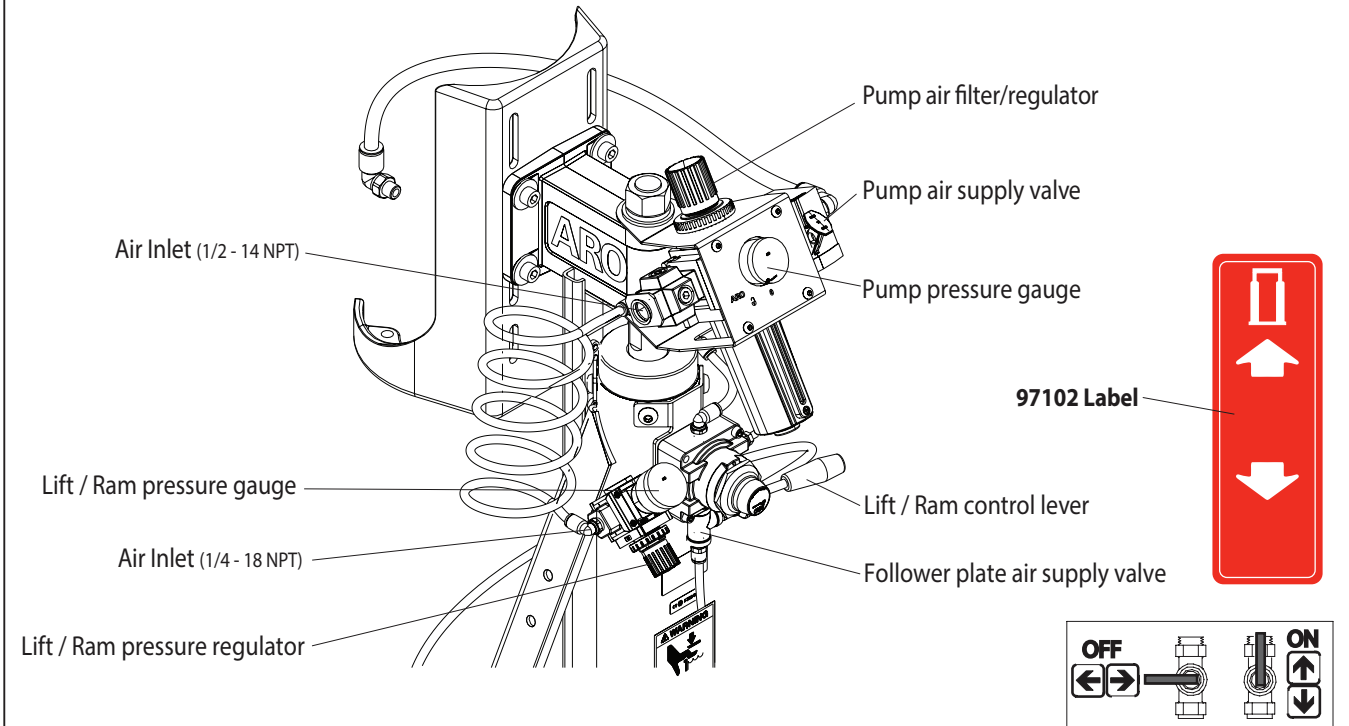


Figure 2

#### TO RAISE THE LIFT, (the first time):

1. Take note of the pump / drum clearance above. Be certain the lift / ram is clear of any objects above. Also, refer to "Operating and Safety Precautions" found in "Lifts and Rams General Information Manual" (pn 97999-635).
2. Connect the air supply (150 psig / 10.3 bar maximum) to the air inlet. Adjust the air pressure on the lift / ram pressure regulator (turn the knob clockwise) to 20 psig (1.4 bar).
3. Shift the control valve lever to the "up" position.
4. Raise the lift / ram high enough to clear the height of the drum. Stop the lift / ram's upward travel by moving the control valve lever to the "neutral" (center) position.

#### REFER TO PAGE 3:

1. Once the lift / ram assembly and pump are in the "up" position, place and center an opened 5 gallon / 25 liter drum of material on the lift / ram base. Use the stops on the base to center the 5 gallon / 25 liter drum. Tighten the thumb screw to secure the drum.
2. Lubricate the lower follower wiper plate seal with grease. This ensures a smooth fit into the drum, as well as prevents curing type compounds from bonding to the seal.  
**NOTE:** Make certain the grease is compatible with the material being dispensed.

3. Check the vent plug on the follower plate to be sure it easily threads in and out. It is recommended to lubricate the threads of the plug to help prevent possible set-up of the compound at this point (see 65184X-X Operator's Manual).

#### TO LOWER LIFT:

**⚠ WARNING** PINCH HAZARD. Follower can descend quickly, causing injury. Keep hands clear when aligning with container. Read the warnings in "Lifts and Rams General Information Manual" (pn 97999-635).

**NOTE:** Be certain the follower plate vent plug has been removed so that the air trapped between the follower and the material is allowed to escape from this vent. Captured air between the follower plate and drum will escape.

**NOTE:** The lift / ram may hesitate momentarily before starting downward. The air pressure inside the post air chamber must decrease before it will begin to descend.

1. Shift the control valve lever to the "down" position and proceed to lower the pump.
2. Replace the vent plug once the material begins to ooze from the vent opening.
3. The unit is now ready for operation. Adjust the air pressure on the pump filter / regulator (turn the pump regulator knob clockwise) until the pump begins to cycle.
4. Trigger the gun to prime the pump with material.

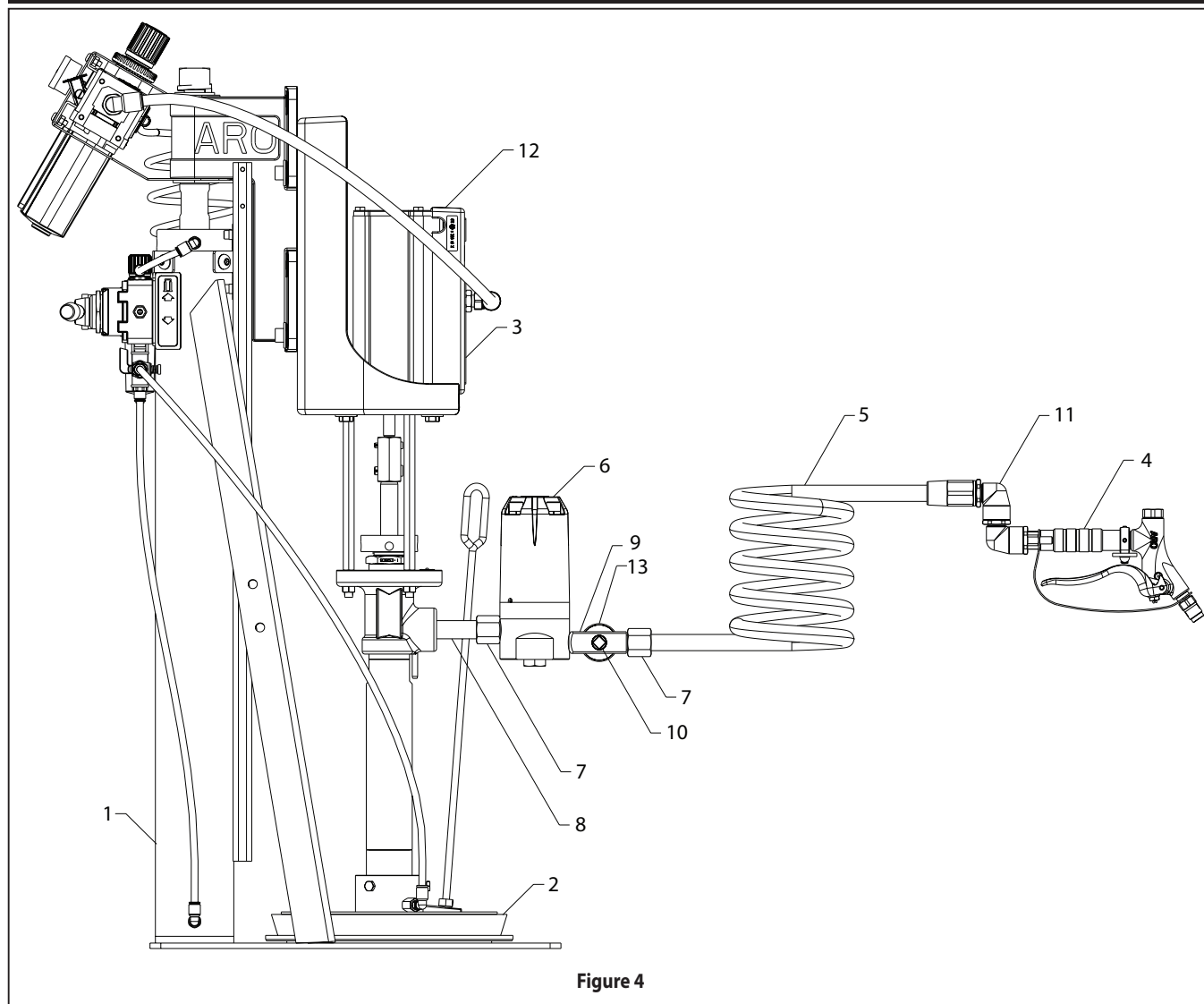
**TO RAISE LIFT, (normal operation):**

1. Adjust the follower plate air valve pressure up to approximately 8 psig (0.55 bar). **DO NOT OVER PRESSURIZE THE DRUM** to avoid damage. **NOTE:** Air from this valve will only pass when the control valve lever is in the “up” position.
2. Shift the control valve lever to the “up” position.
3. Raise the lift / ram high enough to clear the height of the drum. Stop the lift / ram’s upward travel by moving the control valve lever to the “neutral” (center) position.

**TO CHANGE THE DRUM:**

**NOTE:** The control valve lever must be in the “neutral” position.

1. Unscrew the thumb screw and remove the old 5 gallon / 25 liter drum.
2. Place and center a new drum into position. Remove the cover. Tighten the thumb screw.

**PARTS LIST / 650820****Figure 4**

Item	Description	Qty	Part No
1	Single Post Ram Assembly	1	RM051S-C
2	Follower Plate	1	67486-1
3	Basic pump Assembly	1	NM2322E-11-P43
4	Extrusion Gun	1	651500
5	Hose	1	628084-10
6	Material Regulator	1	651780-B1A-B
7	Connector (Reducing Pipe)	2	Y167-3

Item	Description	Qty	Part No
8	Nipple	1	Y44-33-S
9	Adapter	1	92968
10	Pipe Plug	1	Y17-12-C
11	Swivel (Pipe Threaded)	1	635106
12	Ram Package (Includes Items 1, 2 & 3)	1	NP322EP43R7-10
13	Pressure Gage	1	93505-1
	Portability Kit (Optional) (Not Shown)		67425

## DIMENSIONAL DATA

Dimensions shown are for reference only, they are displayed in inches and millimeters (mm).

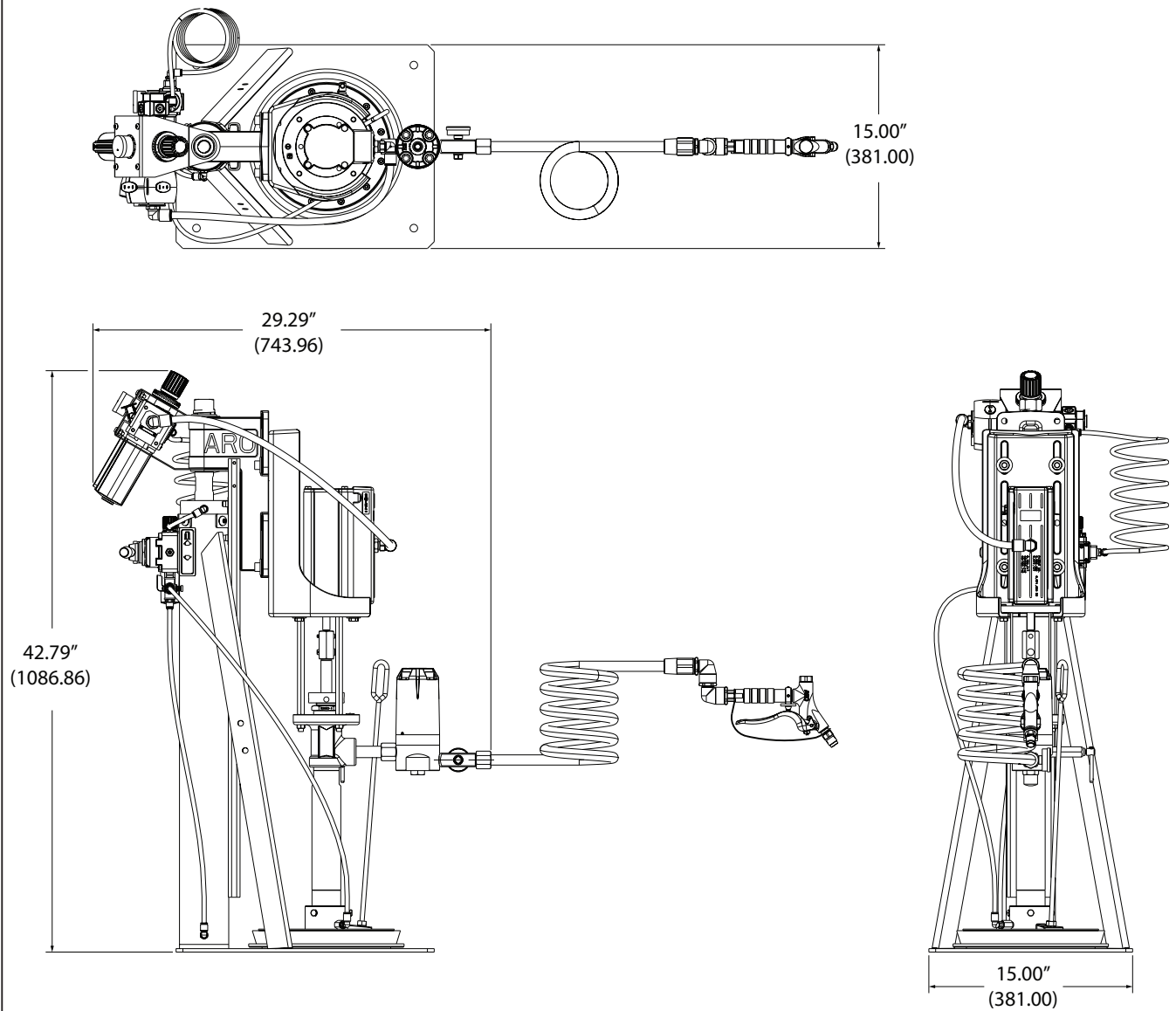


Figure 4