

OPERATOR'S MANUAL

651613-C

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

INCLUDE MANUALS: S-635 GENERAL INFORMATION (PN 97999-635)

RELEASED: 6-29-04

REVISED:

(REV. 01)

TWO POST MINI LIFT / RAM

For use with 5 Gallon Drums



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

It is the responsibility of the employer to place this information into the hands of the operator.

SERVICE KITS

104158 for repair of 127122-000 miniature regulator.

104176 for repair of F25241-100 filter.

104177 for repair of R27241-100 regulator.

116772 for repair of E512LM valve.

GENERAL DESCRIPTION

The ARO Model 651613-C Two Post Mini Lift / Ram uses two 3-1/4" i.d. air-powered cylinders connected by a steel cross member and is welded to a heavy gauge base plate. It is normally used to raise and lower a fluid handling pump and follower in and out of a standard 5 gallon drum, or when used as a ram, it can force high viscosity flowable material into the pump inlet.

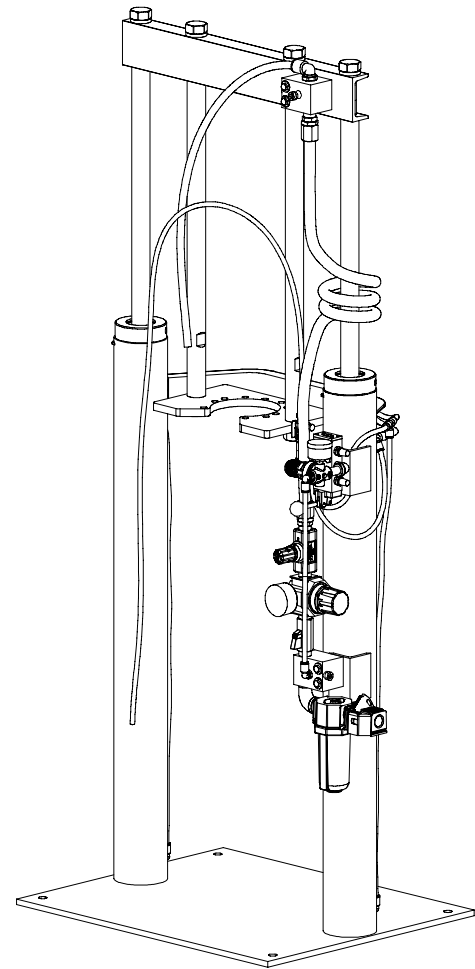
When properly secured (see "General Information - Air Operated Lifts and Rams"), this unit has the ability to raise a pump to clear a standard 5 gallon drum. The operator is then able to easily remove the pump from the drum.

This Lift / Ram uses a hand lever 4-way control valve which controls the air necessary to raise and lower the lift.

IMPORTANT

This is one of the five documents which support the system. Replacement copies of these forms are available upon request.

- ☒ 651613-C Model Operator's Manual (pn 97999-1082)
- ☐ General Information - Air Operated Lifts And Rams (pn 97999-635)
- ☐ 1251X1-XXX Miniature F-R-L Operator's Manual (pn 103988)
- ☐ F252XX-XXX Filter Operator's Manual (pn 100400-5)
- ☐ R272X1-XXX Regulator Operator's Manual (pn 100400-6)



651613-C
TWO POST MINI LIFT / RAM

Figure 1

BASE DIMENSIONS: 19-3/4" (501.7 mm) x 24" (609.6 mm)

HEIGHT: LOWERED 59-3/16" (150.3 cm)

RAISED: 88-23/32" (225.3 cm)

STROKE: 29-17/32" (749.8 mm)

OPERATING AND SAFETY PRECAUTIONS

- ◇ Read and heed all Warnings, Cautions and Safety Precautions before operating.
- ◇ Use only genuine ARO replacement parts to assure compatible pressure rating and longest service life.

⚠ WARNING ANCHOR THE LIFT BASE SECURELY TO A CONCRETE FLOOR. An improperly secured lift could be unsafe. Do not attempt to use the lift until all possible measures have been taken to insure that the lift has been properly installed and the base has been secured. It is the duty of the installer to provide anchor bolts / studs (not included) and for them to be securely embedded in concrete which is more than 2" thick.



Shock hazard.
Striking electrical fixtures can cause injury.

Keep the area overhead clear of electrical devices.

⚠ WARNING PREVENT ELECTRIC SHOCK. Be certain the area above the lift is clear of electrical fixtures, devices and wiring. Examine the working area and take necessary action to assure adequate clearance for the lift and pump assembly to raise to the fullest limit and function properly.



Pinch hazard.
Follower can descend quickly causing injury.

Keep hands clear when aligning with container.

⚠ WARNING PINCH HAZARD. Follower can descend quickly, causing injury. Keep hands clear when aligning with container. In the raising and lowering function, the lift could get hung up or the descent could be temporarily restricted. The lift could, in some situations, drop suddenly and be hazardous. If the follower plate does not enter the drum properly, DO NOT ATTEMPT TO REPOSITION IT WITH YOUR HANDS; release the downward pressure, raise the lift, realign the drum and restart.

⚠ WARNING STAND CLEAR. When raising or lowering the lift, keep clear and operate from a safe position.



Hazardous pressure.
Can result in injury or property damage.

Do not exceed maximum inlet air pressure.

⚠ WARNING HAZARDOUS PRESSURE. Do not exceed maximum inlet air pressure of 120 p.s.i. (8.3 bar). Operating lift at higher pressure may cause lift damage and / or personal injury and / or property damage. Do not service or clean pump, hoses or dispensing valve while the system is pressurized.

⚠ WARNING DO NOT EXCEED DRUM PRESSURE LIMITS.

Know the pressure limitations of the drum and regulate the air pressure within safe limits when supplying air to the follower plate.

⚠ CAUTION Be certain all operators of this equipment have been trained for safe working practices, understand it's limitations and wear their safety goggles / equipment as required.

LIFT / RAM INSTALLATION

⚠ WARNING Failure to properly install the lift assembly can result in severe personal injury and property damage. Read the warning on page 2.

1. This lift / ram assembly comes completely assembled.
2. Establish the desired location for the lift / ram and pay special attention to work area above. This area above the lift must be open, without obstructions and safely away from any electrical devices.
3. **THE LIFT MOUNTING PLATE BASE MUST BE SECURELY ANCHORED TO THE CONCRETE FLOOR.** The mounting plate itself

can be used for a template for establishing the proper anchor locations.

4. Assemble the pump to the mounting plate.
5. Install the check and follower plate air hose from the control valve.
6. Assemble the vent plug to the follower plate.

NOTE: The ram was tested at the factory. The unit should be generally checked over for leakage, because the fittings on the system may have loosened in shipment.

OPERATING INSTRUCTIONS

OPERATING INSTRUCTIONS / INITIAL SETUP PROCEDURE

⚠ WARNING **STAND CLEAR.** When raising or lowering the lift. Read the warning on page 2.

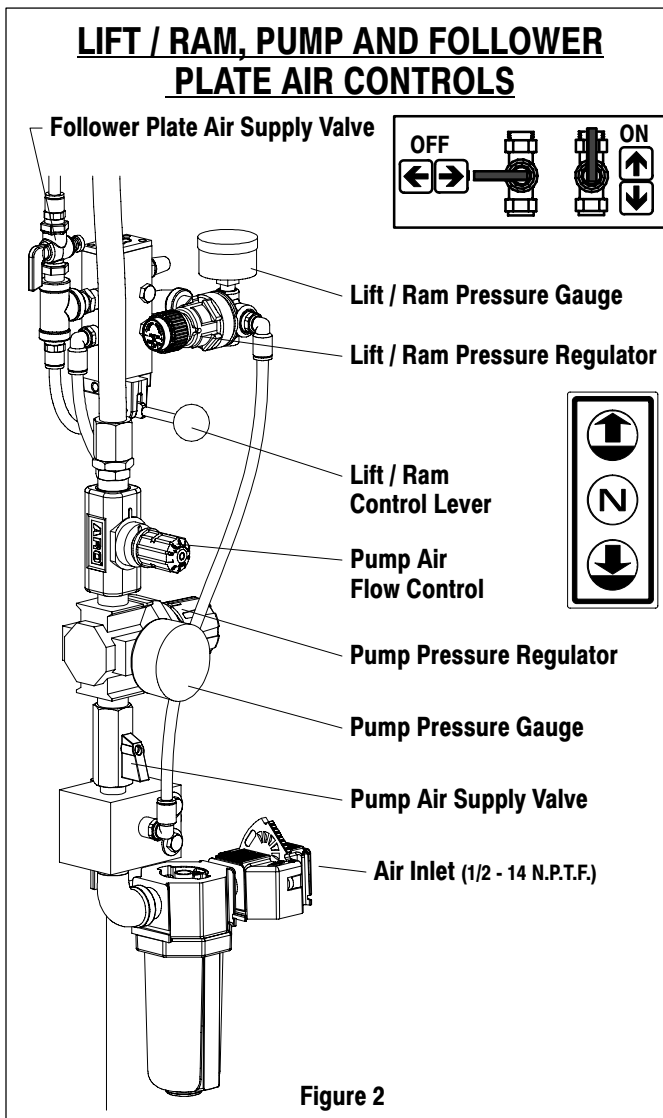


Figure 2

TO RAISE 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 on page 2.
2. Connect the air supply (120 p.s.i. / 8.3 bar maximum) to the air inlet.

Adjust air pressure on lift / ram pressure regulator (turn knob clockwise) to 20 p.s.i. (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 upward travel by moving the control valve lever to the "neutral" (center) position.
5. Once the lift / ram assembly and pump are in the "up" position, place and center an opened 5 gallon drum of material on the lift / ram base.
6. Lubricate the lower follower wiper plate seal with grease. **NOTE:** Make certain the grease is compatible with the material being dispensed. This ensures a smooth fit into the drum, as well as prevents curing type compounds from bonding to the seal.
7. 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.

TO LOWER LIFT:

⚠ WARNING **PINCH HAZARD.** Follower can descend quickly, causing injury. Keep hands clear when aligning with container. Read the warning on page 2.

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. **DO NO OVERPRESSURIZE THE DRUM** to avoid damage.
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 upward travel by moving the control valve lever to the "neutral" (center) position.

TO CHANGE DRUM:

NOTE: The control lever should be in the "neutral" position.

1. Place and center a new drum into position. Remove cover.

PARTS LIST / 651613-C

Item	Description (size in inches)	(Qty)	Part No.
1	Piston Rod	(2)	94014
2	Bolt (7/8" - 14 x 2")	(2)	95145
3	Lock Washer (7/8")	(6)	Y14-875
4	Rod	(2)	96136
5	Mounting Arm	(1)	96132
6	Screw (7/8" - 14 x 4")	(4)	94009
7	Tubing (1/2" o.d. x 27")	(1)	94978-(●)
8	Pipe Plug (1/4 - 18 N.P.T.)	(3)	Y17-51-N
9	Washer (1/4")	(4)	Y13-4-C
10	Hex Cap Screw (1/4" - 20 x 2-1/2")	(4)	Y6-411-C
11	90° Male Fitting (1/2 N.P.T. x 1/2" o.d.)	(1)	59756-362
12	Manifold	(2)	96140
13	Coil Hose (1/2" I.d. x 10' long)	(1)	67331
14	Tubing (5/16" o.d. x 57")	(1)	94980-(★)
15	90° Male Fitting (1/4 N.P.T. x 5/16" o.d.)	(5)	59756-158

Item	Description (size in inches)	(Qty)	Part No.
16	Tubing (5/16" o.d. x 32")	(1)	94980-(★)
17	Ram Welding Assembly	(1)	67329
18	Mounting Plate	(1)	96133
19	Tubing (5/16" o.d. x 25")	(1)	94980-(★)
20	Tubing (5/16" o.d. x 57")	(1)	94980-(★)
21	"O" Ring (3/16" x 3-1/4" o.d.)	(2)	Y325-336
22	Cap	(2)	95173
23	Retaining Spring Wire	(2)	90503
24	Seal	(2)	94010
25	Retaining Washer	(2)	90509
26	Retaining Ring (2.210" o.d.)	(2)	Y147-200
★	Bulk Tubing (5/16" o.d. x 100')	(1)	94980-100
●	Bulk Tubing (1/2" o.d. x 100')	(1)	94978-100

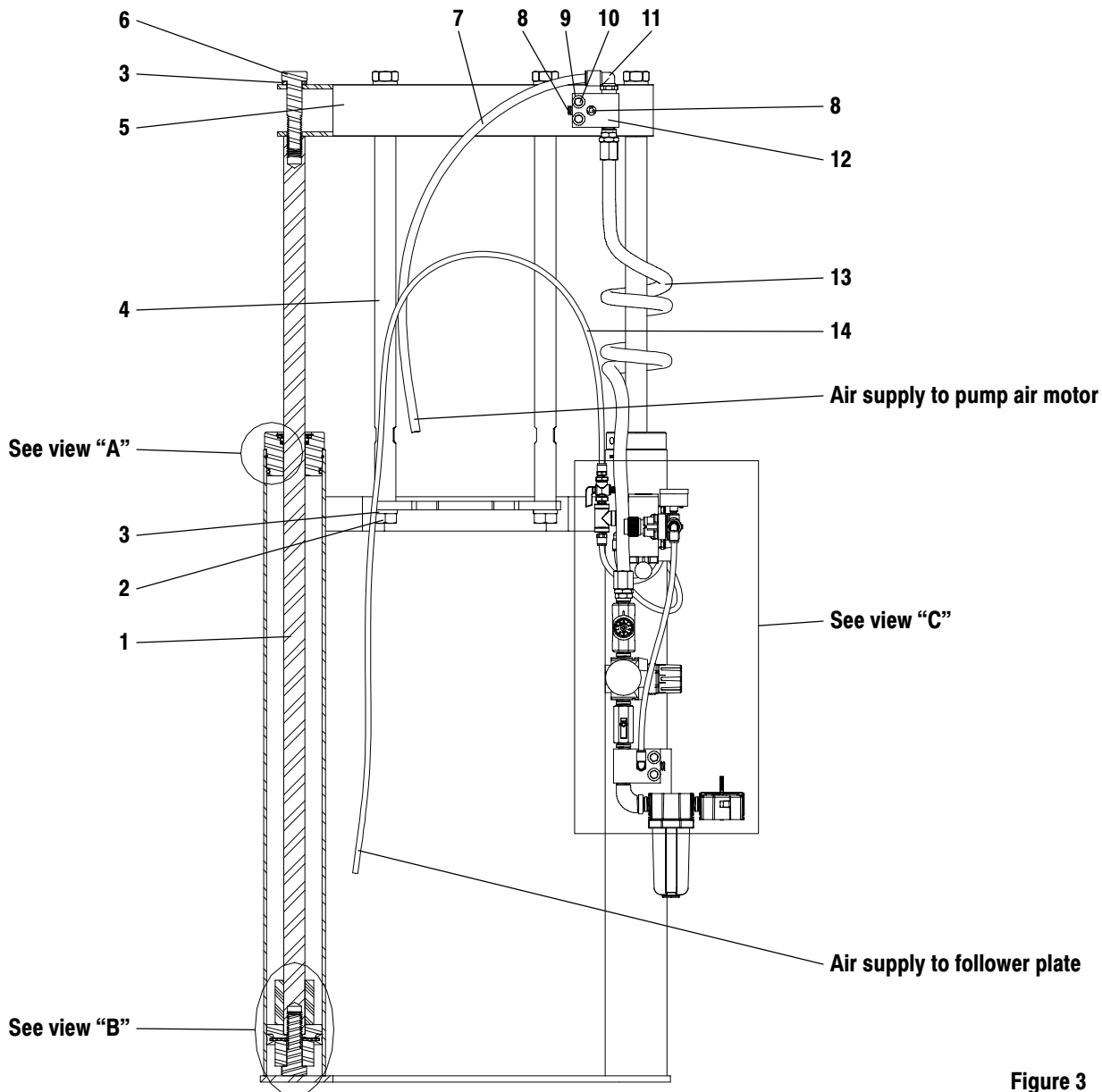
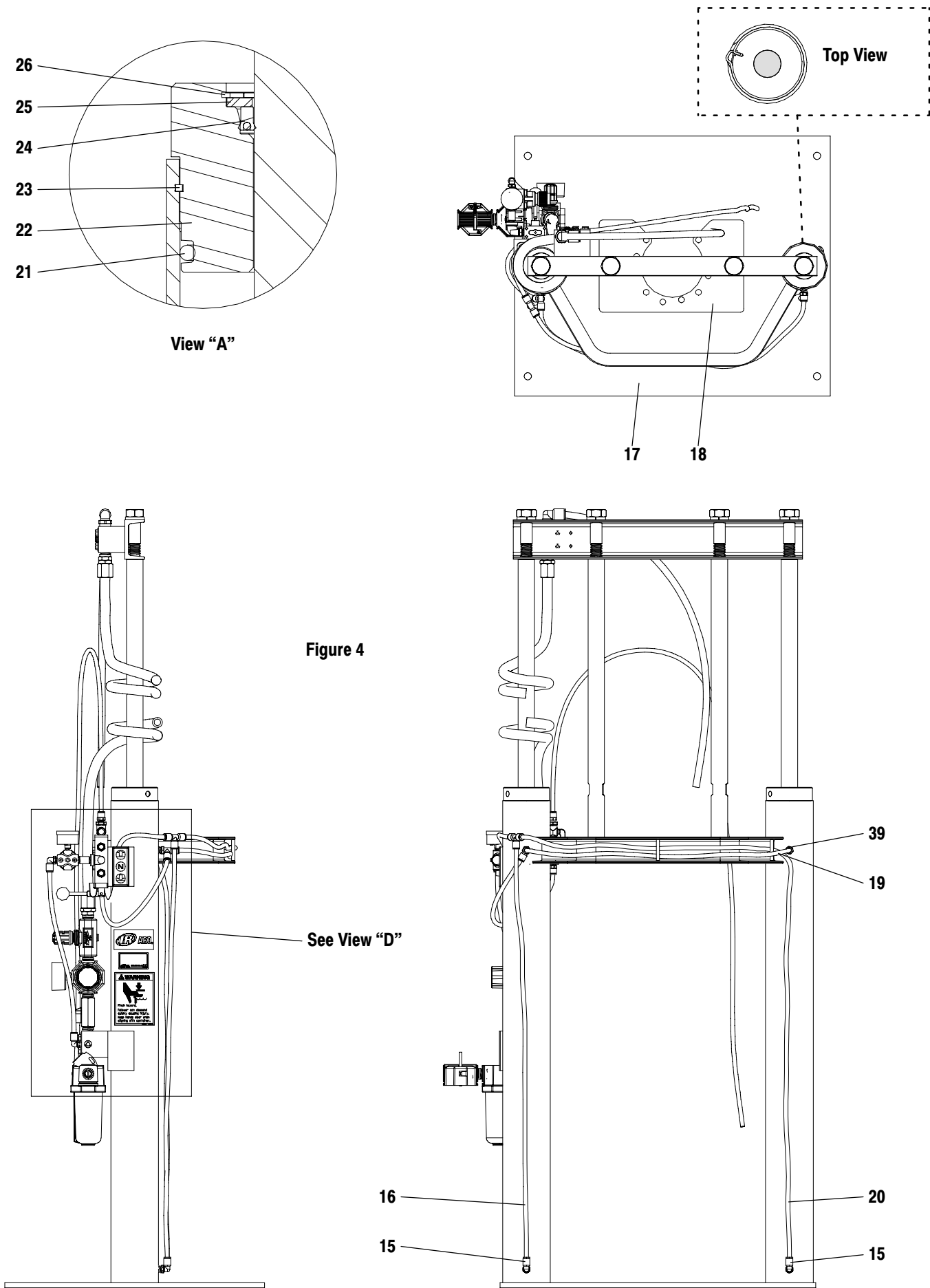
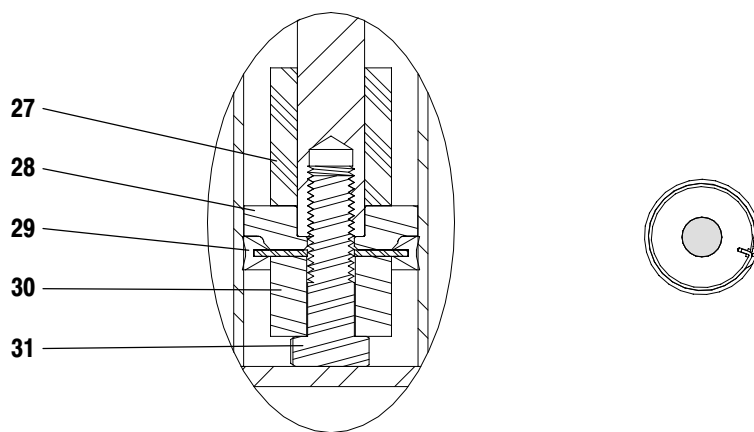
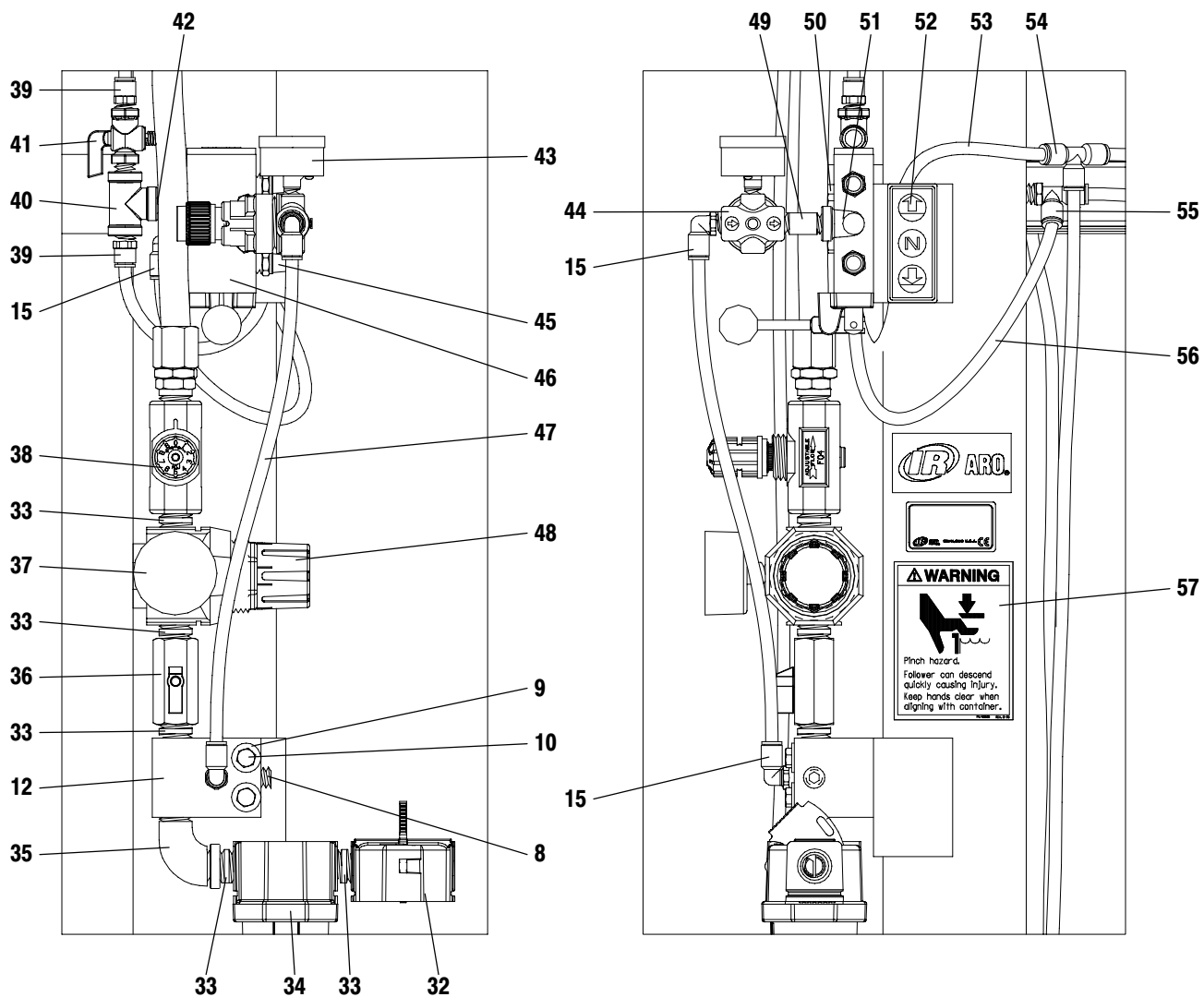


Figure 3





View "B"



View "C"

View "D"

Figure 5

PARTS LIST / 651613-C

Item	Description (size in inches)	(Qty)	Part No.
27	Stop	(2)	96233
28	Back-Up	(2)	94123
29	Piston	(2)	94005
30	Stop	(2)	96130
31	Screw (7/8" - 14 x 3")	(2)	96234
32	Valve Ass'y (1/2 - 14 P.T.F. SAE short)	(1)	104174-4
33	Nipple (1/2 - 14 N.P.T. x 1-1/8")	(5)	Y27-4-C
34	Filter (1/2 - 14 N.P.T.)	(1)	F25241-100
35	90° Street Elbow (1/2 - 14 N.P.T.)	(1)	Y43-4-C
36	Valve (1/2 - 14 N.P.T.)	(1)	104077-4
37	Gauge (0 - 160 p.s.i. / 0 - 11 bar)	(1)	100067
38	Flow Control (1/2 - 14 N.P.T.F.)	(1)	104104-F04
39	Male Connector (1/4 N.P.T. x 5/16" o.d.)	(3)	59474-158
40	Tee (1/4 - 18 N.P.T.)	(1)	Y43-32-C
41	Shut-Off Valve (1/4 - 18 N.P.T.)	(1)	Y28-1
42	Nipple (1/4 - 18 N.P.T.F. - 1)	(1)	1950
43	Gauge (0 - 160 p.s.i. / 0 - 11 bar)	(1)	29850

DISASSEMBLY

1. Remove the top cross support bar from the cylinder pistons.
 2. Remove the air valve assembly from the right post.
- The following piston removal instructions are the same for both sides.
- Piston removal requires the following tools:
- Screwdriver (flat blade)
 - .400" diameter rod, 12" - 18" long
 - E - Ring pliers
3. Using the E - ring pliers, remove the (26) snap ring which retains the (25) retaining washer and (24) upper piston "U" cup seal.
 4. Locate one of the two service holes in the (22) cap and insert the .400" diameter rod.
 5. Locate the end of the square (23) retaining spring wire found 1" down from the top of the cylinder.
 6. The bent tip of the wire protrudes slightly. Using a screwdriver, carefully pry out the wire slightly while using the rod to rotate the (22) cap in a clockwise direction 360°. Unwind the wire and expose the end with the 90° bend.
 7. Remove the wire from the machined hole.
 8. Remove the (22) cap from the cylinder and remove from the (1) piston rod. Remove the (25) retaining washer and (24) upper seal.
 9. Remove the piston assembly. Disassemble as required to replace worn seals.

Item	Description (size in inches)	(Qty)	Part No.
44	Miniature Regulator (1/4 - 18 N.P.T.)	(1)	127122-000
45	Muffler (1/4 - 18 N.P.T.)	(2)	20312-2
46	Valve Assembly ■	(1)	E512LM
47	Tubing (5/16" o.d. x 14")	(1)	94980-(★)
48	Regulator (1/2 - 14 N.P.T.)	(1)	R27241-100
49	Nipple (1/4 - 18 N.P.T. x 1-1/2")	(1)	Y27-52-C
50	Hex Cap Screw (1/4" - 20 x 5/8")	(2)	Y6-42-C
51	90° Street Elbow (1/4 - 18 N.P.T.)	(1)	Y43-2-C
52	Directional Label	(1)	92449
53	Tubing (5/16" o.d. x 13-1/2")	(1)	94980-(★)
54	Tee (5/16" o.d. tube)	(1)	59761-58
55	Male Run Tee (1/4 N.P.T. x 5/16" o.d.)	(1)	59758-158
56	Tubing (5/16" o.d. x 14")	(1)	94980-(★)
57	Decal (Warning)	(1)	93922
■	Repair kit for Valve E512LM		116772
★	Bulk Tubing (5/16" o.d. x 100')	(1)	94980-100

REASSEMBLY

1. Thoroughly lubricate the cylinder wall, all seals and especially lubricate the groove where the retaining wire is located to aid in reassembly.
2. Replace the (22) cap, aligning the hole with the access slot. Place the 90° bend of the (23) retaining spring wire into the machined hole and snap in place. Using the .400" diameter rod, rotate the (22) cap clockwise and feed the retaining wire into position.
3. Place the new (24) seal (with lips down) on the piston, reinstall the (25) retaining washer, place a sleeve over the piston rod to help "seat" the upper seal.

DIMENSIONAL DATA

