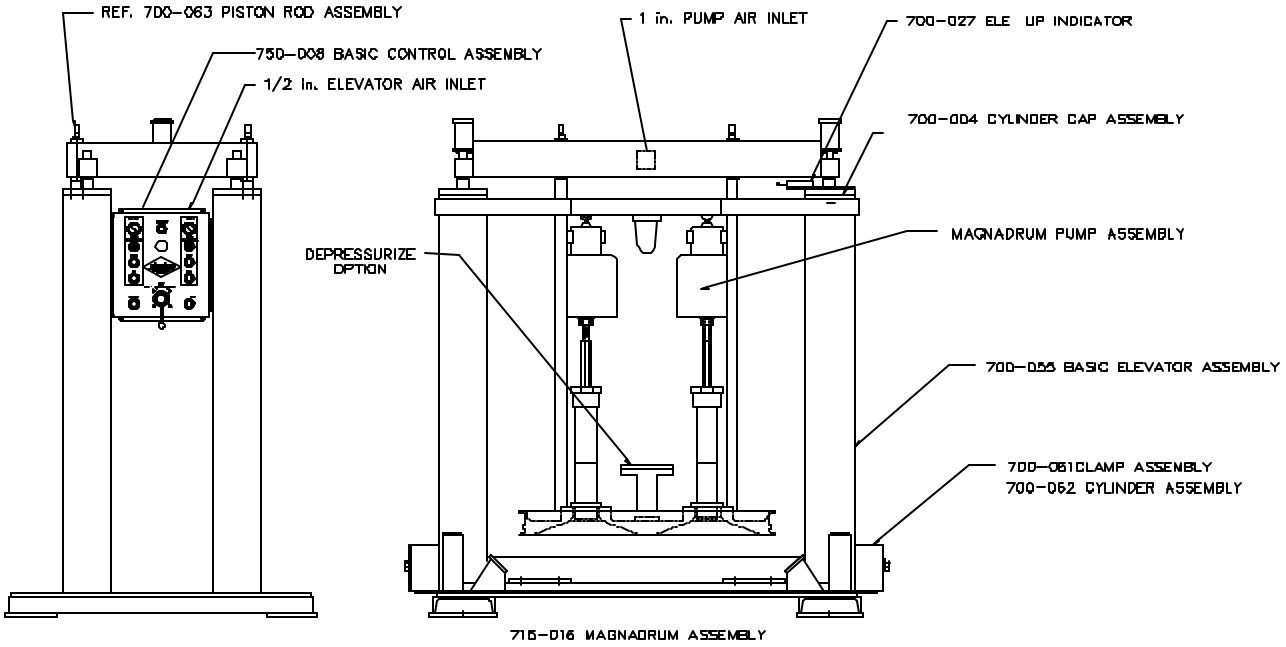
# 715-016

MAGNADRUM ELEVATOR ASSEMBLY

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



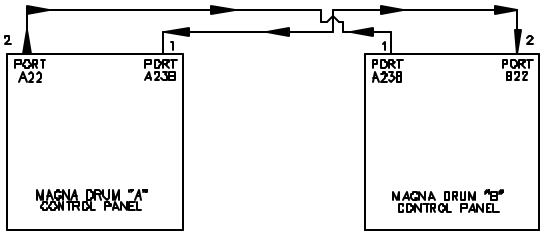

## INSTALLATION INSTRUCTIONS

### SIGNAL UNIT APPLICATION

1. Place Magnadrum in desired location and anchor to the floor.
2. Install a 1in. supply hose to the Upper Pump Accumulator.
3. Install a ½ in. supply hose to the Control box.
4. Install a 1 ¼ in. Material hose to the pump outlet fluid piping.
5. Put the elevator in the down position and set the down pressure.
6. Close the Air Motor ball valves and start the pumps. The Air Motor pressure can be set.

### DUAL UNIT APPLICATION

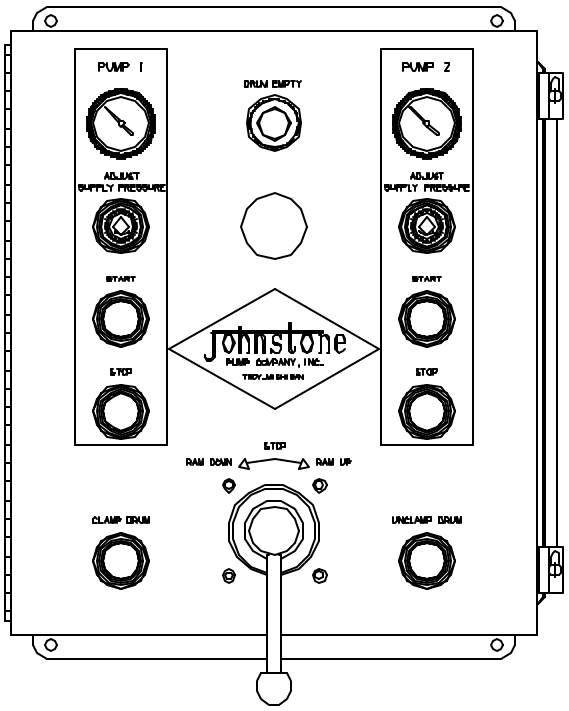
1. Place the Magnadrums so that the control boxes face each other.
2. Follow procedures in step 1 – 6 in the signal unit application instructions.
3. Run two M4 tubing lines from port 22B to 23B of the control panels.

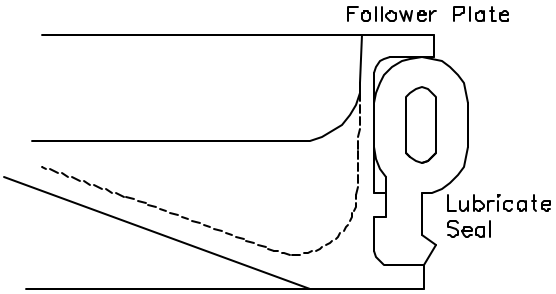


# OPERATING PROCEDURE:

1. Ensure that the Air Supply ball valves for the control box and pump accumulator are open.
2. Close both of the Air Motor ball valves.
3. Raise the elevator by moving the hand valve on the Control Box to the Up position.
4. Unclamp the Drum Locators by depressing the Unclamp button.
   a. The elevator must be fully raised and the Elevator Fully Raised limit switch must be engaged before the Locators will move.
5. Clean the bottom of the Follower Plate and check the Air Relief Valves. Material could plug them.
6. Lubricate the follower plate seal and Relief Valves.
7. Load New Drum and remove top.
8. Depress the Clamp Drum Button on the Control Box.
   a. Verify that both Drum Locators are fully engaged.
9. Open the Follower Plate Bleeder Valves.
10. Turn the elevator hand valve to the down position (located on the control box).
    a. The elevator will start to slowly move in the down direction.
    b. As the follower plate enters the barrel air will exhaust through the Air Relief Valve and bleeder valves. When the follower plate touches the material it will push the Air Relief Valves closed.
11. Open the follower plate bleeder valves until Air stops coming out.
12. Bleed the Air that is trapped in the Foot Valve. This must be done to Both Foot Valves.
    a. Open the bleeder valves that are opposite the Side Port Check Valve.
    b. Depress the Start button on the control box. The pumps will not run because the Air motor ball valves are closed.
    c. Slowly open the Air motor ball valve until the pump is slowly moving.
       *i.* Continue bleeding until all of the air is out of the Foot Valve.
    d. Close the Air motor ball valve
    e. Close the Foot Valve bleeder valves.
13. Open the Air Motor Ball Valves and the pump is ready for operation.

NOTE: ON AN AUTOMATIC CROSSOVER SYSTEM, DEPRESS BOTH STOP BUTTONS AND THE PUMPS WILL START WHEN THE OPPOSITE DRUM EMPTIES.

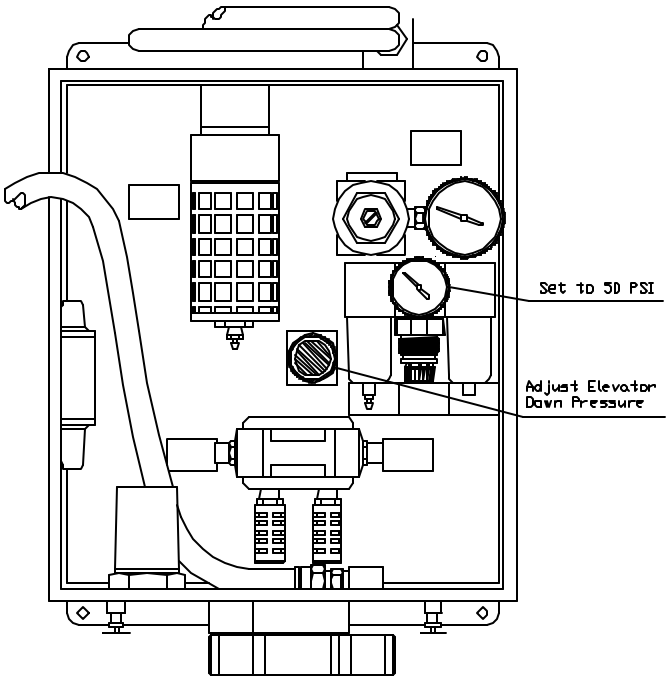


# ADJUSTING PRESSURES:

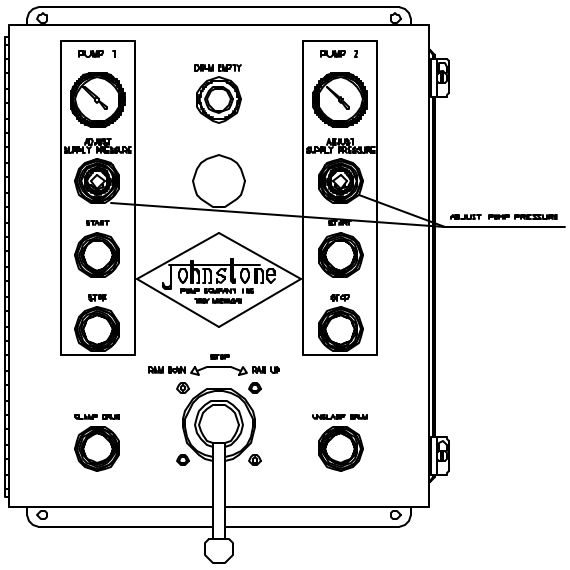
### SETTING THE ELEVATOR DOWN PRESSURE

1. Turn the Elevator Hand Valve to the Down position.
2. Adjust the Regulator inside of the Control box to desired setting.
   a. The Factory default setting is 40 PSI.




### SETTING THE AIR MOTOR PRESSURE

1. Depress both Start buttons on the Control box.
2. Adjust the Pump Pressure Regulator and read the air pressure on the Gauge above the regulator.
3. Both regulator should be adjusted to the same pressure.



# FOLLOWER PLATE REBUILDING PROCEDURES:

1. Remove the Follower plate from the drum and remove the drum.

2. Lower the elevator so that the follower is about ½ of the way down.

3. Remove the old Banding Strap (360-724) and discard.

4. Remove the old Clamp Ring (701-050) and clean if not bent or damaged.

5. Using two long screwdriver pry off the on Wiper seal (360-467) .

6. Clean the follower plate.

7. Install the new Follower Plate Wiper (360-467).
   a. Wiper should have the leading tapered edge facing down.
   b. Install ¾ of the wiper around the Follower plate.
   c. Using two screwdrivers pry the remaining wiper over the retaining lip.
   d. The wiper has a square groove that matches a groove on the follower plate. The wiper must be seated into this groove.

8. Place the Clamp Ring (701-050) into the groove on the follower plate.

9. Slide the band thru the clamp (360-724) and bend the band about 8 in. after it passes thru the clamp.

10. Place the Band and Clamp assembly around the Clamp Ring so that the clamp is in-between the gap of the clamp ring.

11. Tighten the Banding using the banding tool (360-667).

12. Tighten the setscrew on the Clamp.

13. Cut the banding using the banding tool cutoff and bend the end of the banding over the clamp.

# MAINTENANCE SCHEDULE:

| | | |
|---|---|---|
| DAILY | 1. | Assure that the packing gland oil cup is full. (Fill with #10 weight oil or D.I.D.P. oil) |
| | 2. | Assure that both pumps are functioning correctly. (Correct by adjusting air regulator pressure on the control panel) |
| | 3. | Lubricate follower plate seal. |
| | 4. | Lubricate and or clean Gravity Relief Valves #700-065B Located on the follower plate assembly (2 per unit). |
| WEEKLY | 1. | Fill the air line lubricators that are above the pumps. (Fill to designated level with #10 weight oil) |
| | 2. | Check Control box elevator down pressure. (Set to required specification) |
| MONTHLY: | 1. | Check air line filters. (Clean or replace filter element as required) |
| | 2. | Check follower plate wiper ring and banding. (replace if damaged) |
| | 3. | Check all Fittings and Connections to make sure that they are tight. |
| QUARTERLY | 1. | Add #90 oil to the Elevator Assembly (Thru the bleeder valves at the piston guide assembly) |
| PUMPS: | Follow recommended maintenance requirements, as outlined in this section of this manual. | |

# TROUBLE SHOOTING:

| *PROBLEM* | *CAUSE* | *SOLUTION* |
|---|---|---|
| **PACKING GLAND** | | |
| Material Leakage Past seal | Misalignment of connecting parts. | Tighten all connections evenly. |
| | No lubrication on the displacement rod, using non compatible oils. | Add compatible oils to oil cup; after cup is cleaned out. |
| | Packing seals loose. | Tighten packing if its adjustable. |
| | Cured material on displacement rod. | Remove cured material, add compatible oil. |
| | Rod seal worn out. | Replace packing seal. |
| | Displacement rod worn out or scored. | Disassemble pump and replace displacement rod. |
| | Seals not compatible with material. | Replace seals with compatible style. |

# TROUBLE SHOOTING:

| *PROBLEM* | *CAUSE* | *SOLUTION* |
|---|---|---|
| **FOOT VALVE** | | |
| Material leakage from pump housing | Loose connections. | Tighten threads on housings. |
| | Cut o ring. | Disassembly and replace o ring. |
| | Check seated crooked in housing. | Check for worn seat area in housings. |
| | Cracked housing. | Replace housing. |
| Pump running but not valve delivering material (not creating presssure) | Air lock in foot valve. | Open bleeder valve of foot (opposite of outlet) |
| | Not enough down pressure on material with follower plate. | See elevator (down pressure on material). |
| | No material available. | Check material supply. |
| | Lower check valve not closing or seating | Check for foreign object or worn parts, replace if needed |
| | Worn displacement rod, worn shovel rod, on O.D. | Replace rods. |
| | Worn checks on I.D. | Replace checks. |
| Pump not delivering material on up stroke (not creating pressure) | Foreign object on upper check, holding check open. | Clean checks. |
| | Worn out upper check. | Replace upper check (See tolerance chart). |
| | Worn out displacement rod. | Replace displacement rod (See tolerance chart). |
| | Check for elevator down. pressure. | See elevator (down pressure). |
| | Air lock in foot valve. | Open bleeder valve of foot valve. |

## TROUBLE SHOOTING:

| *PROBLEM* | *CAUSE* | *SOLUTION* |
|---|---|---|
| **FOOT VALVE (continued)** | | |
| Pump not delivering material on down stroke (not creating pressure) | Foreign objects on lower checks, holding checks open. | Clean checks. |
| | Worn out lower check. | Replace lower check (See tolerance chart). |
| | Worn out shovel rod. | Replace shovel rod (See tolerance chart). |
| | Check for elevator down pressure. | See elevator (down pressure). |
| | Air lock in foot valve. | Open bleeder valve of foot valve (opposite of outlet) |
| Pump completely inoperative | Check air supply to pump | Turn on air. |
| | Check air motor for proper cycling. | See air motor (not cycling). |
| | Check for proper connector settings. | Check Connector for tightness. |
| | Check for elevator down pressure. | See elevator (down pressure). |
| | Check for foreign objects in pump. | Disassemble and clean. |
| | Check for clogged or cured material in outlet line. | Disassembly and clean or replace. |

# TROUBLE SHOOTING:

| PROBLEM | CAUSE | SOLUTION |
|---|---|---|
| **AIR VALVE/AIR MOTOR** | | |
| Air blowing out exhaust port | Loose valve body. | Tighten (4) bolts. |
| | Worn slide valve. | Lap surface or replace. |
| | Worn slide plate. | Lap surface or replace. |
| | Worn valve gasket. | Replace gasket. |
| | Worn o ring of air motor cylinder. | Replace o ring lubricator air motor. |
| | Air motor piston resting against upper or lower poppet. | Adjust connector assembly (900-021 or 900-022). |
| | Check control valve for dirt or damage. | Replace valve (360-604). |
| | Worn seals on spool. | Replace seal (360-518). |
| Air blowing out bottom of air motor | Worn guide bushing. | Replace bushing. |
| | Damaged o ring in guide bushing. | Replace o ring, lubricator air motor. |
| | Damage or loose gasket. | Replace gasket. |
| | Worn or damaged piston rod. | Replace piston rod. |
| | Crack in casting. | Replace casting. |
| Air motor stalling at end of stroke | Connector assembly out of adjustment. | See connector drawing |
| | Internal piston parts loose. | Disassembly air motor and reassemble parts. |
| Air motor piston rod stuttering at top of stroke | Lower poppet being held open with dirt or bent pin. | Clean seat of seal or replace lower poppet. |

## TROUBLE SHOOTING:

| PROBLEM | CAUSE | SOLUTION |
|---|---|---|
| **AIR VALVE/AIR MOTOR** Continued: | | |
| | Damaged or dirty control valve | Clean or replace valve (#360-604) |
| Air motor piston rod stuttering at bottom of stroke | Upper poppet being held open, by dirt or bent pin. | Clean set of seal or replace upper poppet. |
| | Damaged or dirty control valve | Clean or replace valve (#360-604). |

# TROUBLE SHOOTING:

| *PROBLEM* | *CAUSE* | *SOLUTION* |
|---|---|---|
| **ELEVATOR** | | |
| Follower plate not applying down pressure on material | Hand valve in neutral position | Put hand valve in down positon |
| | Insufficient regulated air or no air pressure. | Check air supply and air pressure regulator. |
| | Check for damaged or dented barrel. | Replace barrel. |
| | Cured material. | Replace material. |
| | Pistons, rods binding. | Lubricate cylinders. |
| | Plugged hand valve or lines (tubing). | Remove plug. |
| Excessive exhaust out of hand valve muffler | Cut out damaged o ring on pistons. | Replace o ring. |
| | Damaged hand valve. | Replace hand valve. |

# TROUBLE SHOOTING:

| PROBLEM | CAUSE | SOLUTION |
|---|---|---|
| **FOLLOWER PLATE** | | |
| Material leakage past seal | Excessive down pressure. | Lower regulated down pressure (See elevator). |
| | Cut or damaged seals. | Replace seals. |
| | Follower plate cocked in barrel. | Align barrel properly. |
| | Damaged barrel. | Replace barrel. |
| | Material not compatible with seals. | Replace with compatible seals. |
| | Loose banding. | Check and or replace band. |
| Unable to insert in barrel | No lubrication on seal. | Lubricate seal. |
| | Not enough down pressure. | Adjust down pressure regulator. |
| | Dented or damaged barrel. | Replace barrel. |
| | I.D. of barrel wrong size. | Use standard barrel. |
| Unable to retract from empty barrel | Barrel lifting up. | Adjust barrel hold downs. |
| | Clogged blow out assembly (unable to put air under follower plate). | Clean ports, check push button valve. |
| | Material has cured between follower plate and the I.D. of the barrel. | Add solvent to break down the material. |