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## I & M Mark 508 (1 1/2" & 2")

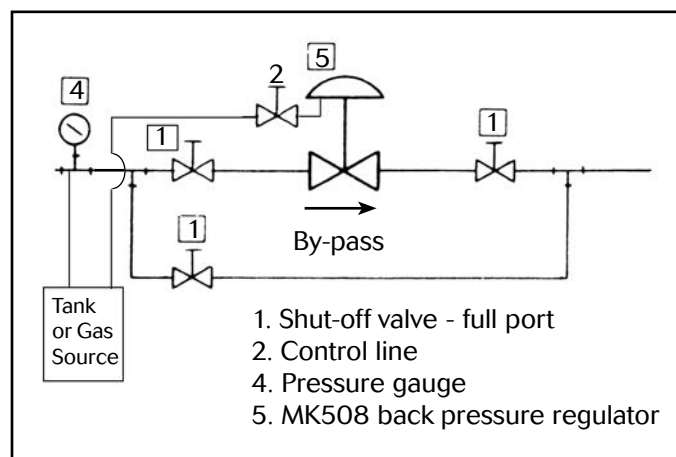
### Installation & Maintenance Instructions for Mark 508 Back Pressure Regulators

**Warning:** Jordan Valve Pressure Regulators must only be used, installed and repaired in accordance with these Installation & Maintenance Instructions. Observe all applicable public and company codes and regulations. In the event of leakage or other malfunction, call a qualified service person; continued operation may cause system failure or a general hazard. Before servicing any valve, disconnect, shut off, or bypass all pressurized fluid. Before disassembling a valve, be sure to release all spring tension.

#### Please read these instructions carefully!

Your Jordan Valve product will provide you with long-term, trouble-free service if it is correctly installed. Spending a few minutes of your time reading these instructions now may save hours of trouble and downtime later.

### Installation



1. To protect the regulator from grit, scale, thread chips, and other foreign matter, all pipe lines and piping components should be blown out and thoroughly cleaned before the regulator is installed.
2. Shut-off valves, pressure gauges, and by-pass piping should be installed as indicated in the diagram to provide easier adjustment, operation, and testing.
3. In preparing threaded pipe connections, care should be exercised to prevent pipe sealing compound from getting into the pipe lines. Pipe sealing compound should be used sparingly, leaving the two lead threads clean. Jordan uses, and recommends, thread sealer Teflon ribbon.
4. A 3/4" control line should be connected to the actuator case.
5. Install the regulators in the highest horizontal line of

piping to provide drainage for inlet and outlet piping, and to obtain faster regulation.

6. The flow arrow on the regulator body must be pointed in the direction of flow. The regulator may be installed vertically or horizontally without affecting its operation.
7. For best control, 3' 0" straight sections of pipe should be installed on either side of the regulator.

### Start-Up Procedure

With the inlet and outlet shutoff valves closed:

1. Throttle the bypass valve so that the pressure to be controlled is maintained near the seat point.
2. Slowly open the inlet shutoff valve.
3. Open the outlet shutoff valve.
4. Slowly close the bypass valve, but do not close it fully until you are certain that the regulator has control of the system.
5. To change the controlled pressure, turn the adjusting screw clockwise to increase pressure, counter-clockwise to decrease pressure.

### Maintenance

**Caution:** Make certain that there is no pressure in the valve before loosening any fittings or joints. The following steps are recommended:

1. Close inlet shutoff valve.
2. Allow pressure to bleed off through downstream piping. Do not cause a reverse flow through valve by bleeding pressure from upstream side of valve.
3. When downstream pressure gauge indicates no pressure in the line, close the outlet shutoff valve.

### Replacing the Main Diaphragm

1. Remove the closing cap (1).
2. Thread the adjusting screw (2) out of the spring tube.
3. If the set range is in psi, remove the spring guide.
4. Remove range spring (3).

5. Remove the actuator flange bolts (8) and nuts (9).
6. Remove the upper case (5).
7. Lift the diaphragm assembly as far up as possible and place a wrench on the valve stem (23).
8. Remove the spring guide (4), diaphragm plate (6), main diaphragm (7). Discard the main diaphragm.
9. Using new replacement parts, reverse the above procedure to reassemble. Lubricate o-rings prior to installation with a suitable lubricant such as Dow Corning #4 grease.

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## Plug and Seat Replacement

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1. Perform all steps in the section on replacing main diaphragm.
2. Remove the seat washer (30) and the thread seal washer (31).
3. Remove the ring nut (11), the lower case (10), and the bonnet seal o-ring (12) and the stem bushing (13). It is recommended that the stem bushing and bonnet seal o-ring be replaced when performing this maintenance.
4. Remove the bolts (26) and lockwashers (27) that secure the bonnet (14) to the body (16).
5. Remove the bonnet (14), and the body/bonnet o-ring (24). It is recommended that the body/bonnet seal o-ring be replaced when performing this maintenance.
6. Grasp the valve stem (23) and remove the stem/plug assembly.
7. Use seat removal tool (Jordan Part Number 15533-110) to remove the seat (22).
8. Remove the seat o-ring (21). Jordan recommends that this o-ring be discarded and replaced with a new one when this maintenance is performed.
9. Lubricate the new seat o-ring (21) prior to installation with a suitable lubricant such as Dow Corning #4 grease. Install the o-ring (21) over the threads and on the seat (22).
10. Carefully thread it into the body (16).
11. Use the seat removal tool to tighten the seat. Do not over tighten! Compressing the seat o-ring into the body bore is all that is required to produce a seal.
12. Place the new stem/plug assembly into the seat (22).
13. Lubricate the new body/bonnet o-ring (24) and place it into the body (16).
14. Place the bonnet (14) over the stem and onto the body (16). Bolt the bonnet in place using the four cap screws (26) and lockwashers (27).
15. Install the new stem bushing (13). Lubricate and install the bonnet seal o-ring (12) into the bonnet (14).
16. Place the lower case (10) over the bonnet (14). Install ring nut (11) on bonnet threads and tighten securely.
17. Place the seal washer (30) and the thread seal

washer (31) on top of the valve stem (23).

18. Proceed to step 9 in the section on replacing main diaphragm.

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## Troubleshooting

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### **If you experience erratic control:**

- Oversizing causes cycling and hunting, and reduces the rangeability of the valve. Make certain that your sizing is correct.
- Excessive foreign matter may be on seats; clean seats.
- Valve stem may not be moving freely; inspect and clean.
- Moving parts may be binding; inspect and realign or replace if necessary.

### **If valve will not operate:**

- Diaphragm may be ruptured and require replacement.
- Adjusting spring may be broken and require replacement.
- Spring may be set improperly and require resetting.

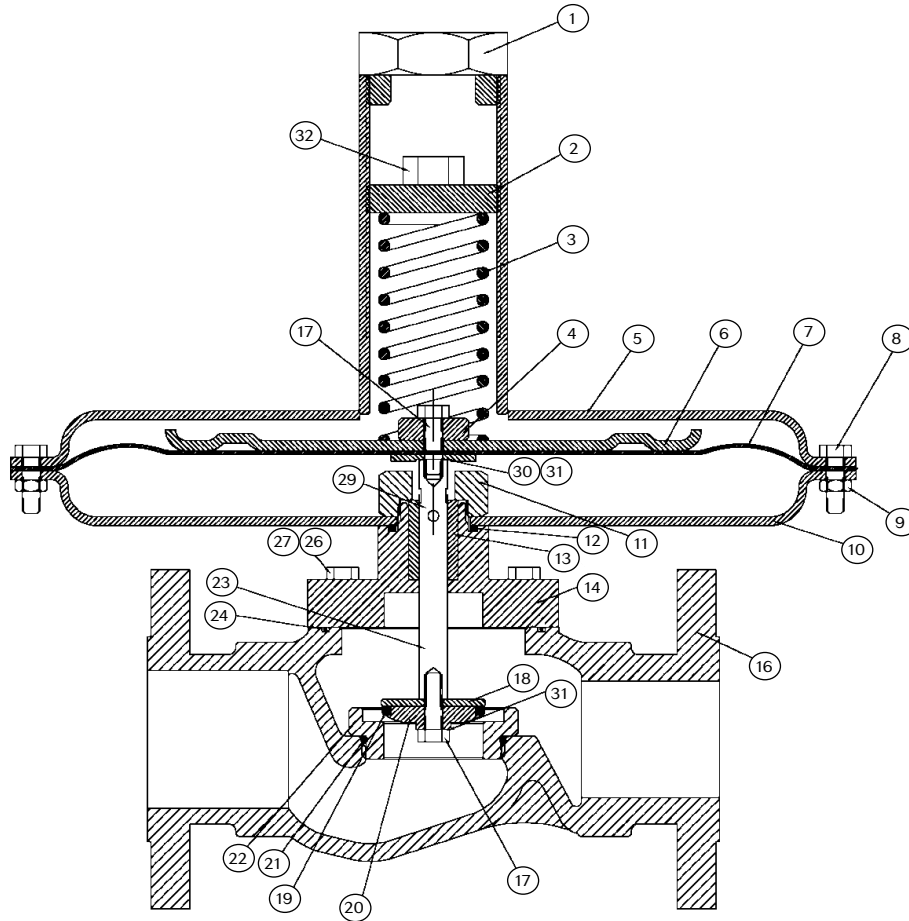
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## Ordering Spare Parts

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Jordan Valves are ruggedly built, carefully assembled to accurate dimensions, and individually tested for performance. A complete stock of finished parts is maintained for immediate delivery. In order to supply you with the precise parts designed for your specific valve, please supply the following: valve serial number (found on nameplate), body material, valve model number, end connections (if flanged, supply flange rating), body size, spring range or set point.

## Illustration and Parts List



| Item | Description             | Qty. | Item | Description                             | Qty. |
|------|-------------------------|------|------|---|------|
| 1    | Closing Cap             | 1    | 16   | Body                                    | 1    |
| 2    | Adjusting Screw         | 1    | 17   | HHCS                                    | 2    |
| 3    | Range Spring            | 1    | †18  | Seat Plate                              | 1    |
| 4    | Spring Guide            | 1    | †19  | Soft Seat                               | 1    |
| 5    | Actuator Case (Upper)   | 1    | †20  | Plug Face                               | 1    |
| 6    | Main Diaphragm Plate    | 1    | *21  | O-Ring                                  | 1    |
| 7    | Main Diaphragm          | 1    | *22  | Seat                                    | 1    |
| 8    | Hex Bolt                | 22   | †23  | Stem                                    | 1    |
| 9    | Hex Nut                 | 22   | *24  | Bonnet Plate O-Ring                     | 1    |
| 10   | Actuator Case (Lower)   | 1    | 26   | HHCS                                    | 4    |
| 11   | Ring Nut                | 1    | 27   | Lockwasher (not shown)                  | 3    |
| *12  | O-Ring                  | 1    | 30   | Seal Washer, Large                      | 1    |
| *13  | Stem Bushing            | 1    | 31   | Seal Washer (not shown)                 | 3    |
| 14   | Bonnet                  | 1    | 32   | Adjusting Bolt                          | 1    |
| *    | Recommended Spare Parts |      | †    | Furnished as an assembly in Repair Kits |      |