



JORDAN VALVE

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I & M Mark 44

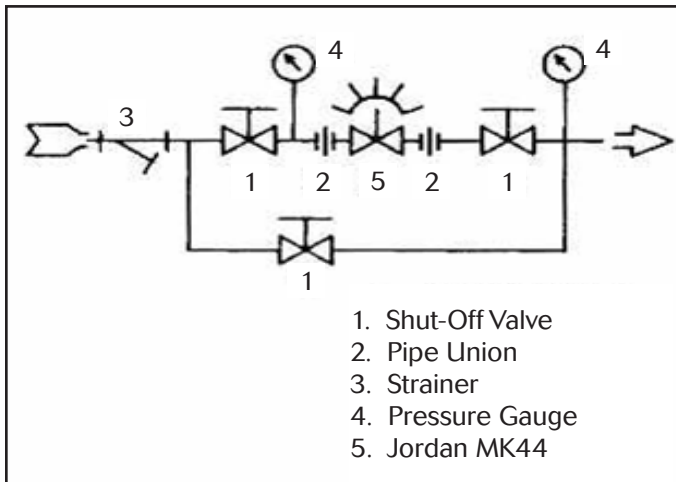
Installation & Maintenance Instructions for Mark 44 Adjustable Cam Valve

Warning: Jordan Valve Regulators and Control Valves 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, trouble-free service if it is correctly installed and maintained. Spending a few minutes now reading these instructions can save hours of trouble and downtime later. When making repairs, use only genuine Jordan Valve parts, available for immediate shipment from the factory.

Installation



- To protect the valve from grit, scale, thread chips and other foreign matter, all pipe lines and piping should be blown out and thoroughly cleaned before the valve is installed.
- Shut-off valves, pressure gauges and bypass piping should be installed as indicated in the diagram to provide easier adjustment, operation, and testing.
- 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 end threads clean. Jordan uses, and recommends, Teflon tape.
- A line strainer should be installed on the inlet side of the regulator to protect it from grit, scale and other foreign matter. A 0.033 perforated screen is usually suitable. Line strainers are available for immediate shipment from Jordan Valve.

- The flow arrow on the valve body must be pointed in the direction of the flow. The valve may be installed in any position. The motor arm may be located on either side of the body. Refer to the "Maintenance" portion for correct bolt torques.
- The motor arm position may be adjusted in 30° increments relative to the rocker. Adjust to suit by removing the slotted nut (30) and washer (25). Then separate the motor arm from the pins in the rocker (23) and reposition it on the pins to suit. Replace the parts in reverse order and tighten the nut as tight as possible, without binding it to the shaft.
- Operate the valve within its rated pressure and temperature limits, which are on the valve nameplate, along with materials of construction.
- The rotation of the valve may be clockwise or counterclockwise to open. This is controlled by the adjustment of the nineteen (19) set screws (24) on the top of the rocker. The screws must be adjusted in progressive steps to cause the rotation of the rocker to stroke the valve. If too large a difference in adjustment between successive screws is attempted the valve may be difficult or impossible to stroke. It is not necessary to utilize the full valve stroke. The adjustability feature allows customizing of the valve operating characteristic to suit your needs.
- The motor arm must be connected to the mechanism that will drive the valve. The motor arm travel is limited to 72° by two set screws (32) threaded into the angle bracket (7). Be sure that your mechanism is adjusted so that it does not try to drive the valve past the stops and cause damage.
- The Jordan MK44 valve is not a tight shut-off device. Other valve means must be provided to insure flow shutoff.

Trouble Shooting

If the operate lever is difficult to operate:

- Slotted nut (30) adjusted too tight. Readjust.
- Set screws (24) are improperly adjusted. Adjust for smooth operation. Do not attempt to make large changes between adjacent screws.
- Defective bearing (13). Replace.
- Stem (4) binding in bonnet or seat. Inspect, repair,

or replace.

If there is external leakage:

- Stem or bonnet o-ring (9) or (5) defective. Replace.

Maintenance

Routine maintenance should be expected due to normal wear and tear, damage from external sources or debris. The regulator components, especially the moving and sealing parts, should be inspected periodically and replaced as necessary. Frequency of inspection/replacement depends upon severity of conditions, but may also be required by local/state/federal law or industry standards.

Warning: Be sure that there is no pressure in the valve before loosening any fittings or joints. The following steps are recommended.

1. Close inlet shut-off valve and by-pass valve.
2. Allow pressure to bleed off through the downstream piping.
3. When pressure gauge indicates that there is no pressure in the valve, it may be serviced or removed.

Refer to the drawing for proper orientation of parts and nomenclature.

Body/Bonnet O-Ring

1. Remove all pressure from the line as outlined in "Warning" above.
2. Remove the low flow end stop set screw (32) and rotate the rocker (23) to disengage the stroke stop bearing (13).
3. Remove the four (4) cap screws (8) and lift the bonnet (6) off of the body (1).
4. Remove the o-ring and clean the mating surfaces on the body and bonnet. Inspect these surfaces for any scratches or defects that could cause seal leakage.
5. Lubricate the new o-ring with DOW CORNING #4 or any other lubricant that is suitable for use with the o-ring material and your product at your operating temperature.
6. It is strongly recommended that the stem o-ring (9) also be replaced if the valve has been disassembled. If you are going to replace it, proceed to section B, step 4, otherwise go on to step 7 below.
7. Remove the seat from the body and place it over the end of the stem. Hold the bonnet upright and take the body and place it over the bonnet and install the bonnet into the body. Continue the reassembly of the valve in the reverse order that you disassembled it and then torque the cap screws according to the "Torque Procedure" at the end of this manual.

Stem O-Ring Replacement

1. Remove all pressure from the line as outlined in "Warning" under the Maintenance Section.
2. Remove the low flow end stop set screw (32) and rotate the rocker (23) to disengage the stroke stop bearing (13).
3. Remove the four (4) cap screws (8) and lift the bonnet (6) off of the body (1).
4. Using a blunt pin punch, drive out the roll pin (15) and thread the stroke stop (12) off of the stem (4).
5. Push the threaded end of the stem into the bonnet and remove the stem from the cage end of the bonnet. (The cage end is the portion of the bonnet that is normally in the body).
6. Remove the o-ring, and clean the stem and the bore in the bonnet where the o-ring operates. Inspect the bore for any scratches that might damage the o-ring.
7. Lubricate the new o-ring with DOW CORNING #4 or any other lubricant that is suitable for use with the o-ring material and your product at your operating temperature.
8. Install the o-ring onto the stem from the threaded end so that the stem flow profile does not cut the o-ring.
9. Carefully reinstall the stem back into the bonnet from the cage end.
10. Remove the seat from the body and place it over the end of the stem. Hold the bonnet upright and take the body and place it over the bonnet and install the bonnet into the body. Continue the reassembly of the valve in the reverse order that you disassembled it and then torque the cap screws according to the Torque Procedure Section.

Seat or Seal Replacement

1. If the seat or stem is to be replaced it is strongly recommended that the body/bonnet o-ring and stem o-ring be replaced also. Therefore follow step A to replace both o-rings.
2. While the stem is out of the bonnet, remove the retaining ring and install it onto the new stem. Otherwise follow the steps in A.

Bearing (Stroke Stop) Replacement

1. Remove all pressure from the line as outlined in "Warning" under the Maintenance Section.
2. Remove the low flow end stop set screw (32) and rotate the rocker (23) to disengage the stroke stop bearing (13).
3. Using a blunt pin punch, drive the roll pin (15) out of the bearing (13).
4. Replace the bearing and reassemble in reverse order.

Rocker Plates, Etc.

1. Remove all pressure from the line as outlined in "Warning" under the Maintenance Section.
2. Remove the low flow end stop set screw (32) and rotate the rocker (23) to disengage the stroke stop bearing (13).
3. Remove the cotter pin (31), slotted nut (30), and washer (25). Remove the rocker from the support stud (26).
4. The sub-assembly containing the rocker plates, and support straps (16) & (20) can now be removed from the rocker and the necessary parts replaced.
5. Reassemble in reverse order.

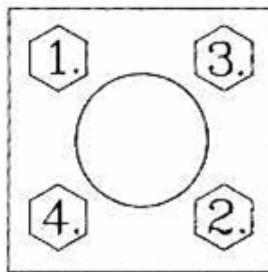
Bearing (Rocker) Replacement

1. Remove all pressure from the line as outlined in "Warning" under the Maintenance Section.
2. Remove the low flow end stop set screw (32) and rotate the rocker (23) to disengage the stroke stop bearing (13).
3. Remove the cotter pin (31), slotted nut (30), and washer (25) and remove the rocker from the support stud (26).
4. Press the bearing out of the rocker. A .75" diameter shaft will be helpful.
5. Press the new bearing into the rocker and then reassemble in reverse order.

Torque Procedure

Caution: Do not over-tighten cap screws.

1. Install all cap screws hand tight.
2. Tighten in the order of the pattern shown below to 75-100 in/lbs., (6-8 ft./lbs.) then repeat to 140 in/lbs. (12 ft./lbs.).

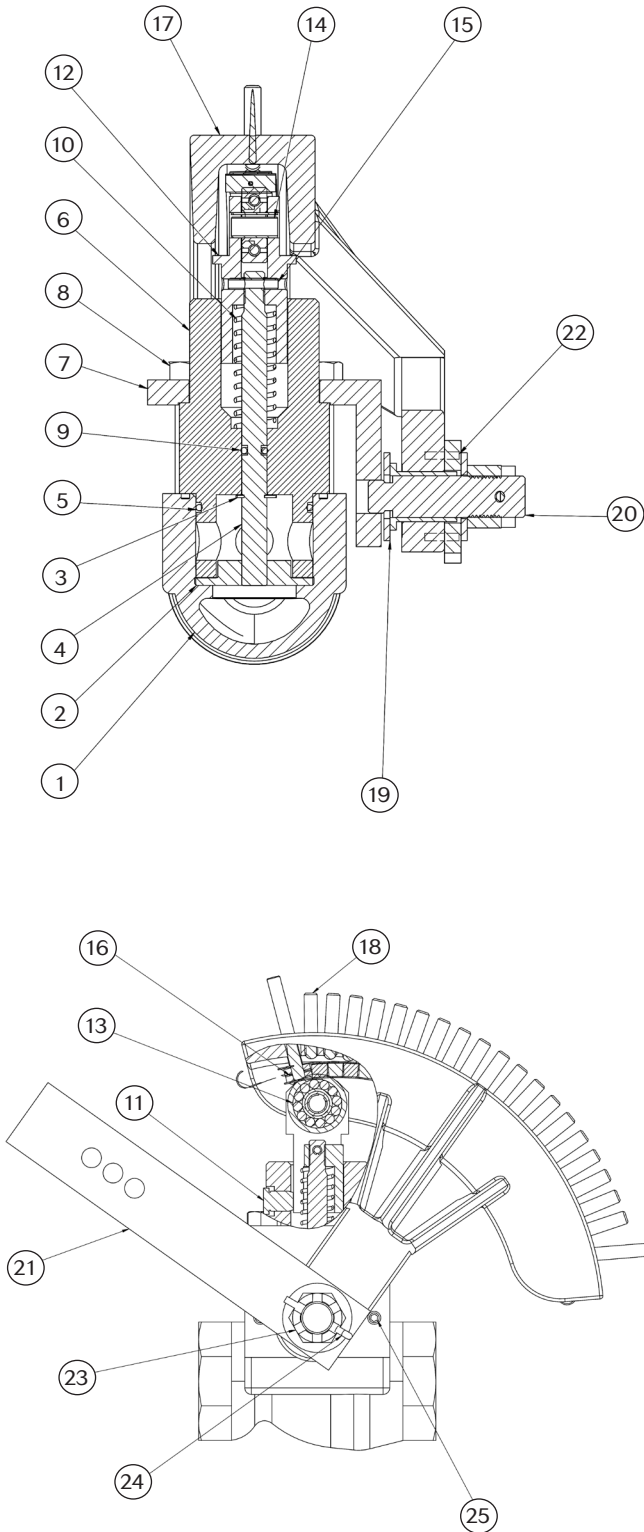


Ordering Spare Parts

Use only genuine Jordan Valve parts to keep your valve in good working order. So we can supply the parts, which were designed for your valve, we must know exactly which product you are using. The only guarantee to getting the correct replacement parts is to provide your Jordan Representative with the valve serial number. This number is located on the valve identification tag. If the serial number is not available, the parts needed for your valve might be determined using the following information: Model number, Valve Body size, Plug Material and Seat Size, Spring Range or Set Point, Trim Material, Part Name - Number and Quantity (see parts list chart).

Note: Without a valve serial number, any parts ordered incorrectly are subject to a minimum 25% restock charge when returned.

Illustration and Parts List



| Item | Description | Qty. | Material |
|------|--------------------|------|--------------------|
| 1 | Body | 1 | Bronze |
| 2 | Seat | 1 | Brass |
| 3 | Retaining Ring | 1 | Stainless Steel |
| 4 | Stem / Plug | 1 | Stainless Steel |
| 5 | O-Ring (Body) | 1 | Viton |
| 6 | Bonnet | 1 | Brass |
| 7 | Angle Bracket | 1 | Steel |
| 8 | Cap Screws | 4 | Alloy Steel |
| 9 | O-Ring (Stem) | 1 | Viton |
| 10 | Spring | 1 | Steel |
| 11 | Guide Pin | 1 | Steel |
| 12 | Stroke Stop | 1 | Steel (NKL Plated) |
| 13 | Bearing | 1 | Steel |
| 14 | Roll Pin (Bearing) | 1 | 410 SST |
| 15 | Roll Pin (Stem) | 1 | 410 SST |
| 16 | Strap Assy. | 1 | Steel |
| 17 | Rocker | 1 | Cast Iron |
| 18 | Set Screws | 19 | Alloy Steel |
| 19 | Washer | 2 | Steel |
| 20 | Support Stud | 1 | Steel |
| 21 | Motor Arm | 1 | Steel |
| 22 | Dowell Pins | 2 | Steel |
| 23 | Slotted Nut | 1 | Steel |
| 24 | Cotter Pin | 1 | Steel |
| 25 | Stop Screws | 2 | Alloy Steel |