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I & M Mark 25

Installation & Maintenance Instructions for Mark 25 Tempilot™ Temperature Controller

Warning: Jordan Valve Temperature Controllers 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.



Operation

A temperature change in the medium being controlled creates a change in length of the sensitive tube (1). An increase in temperature lengthens the sensitive tube (1) and moves the Invar rod (2) away from the lever (3). The lever (4), which pivots at Point A, is moved to close the exhaust valve (4) by spring (5). This permits the supply (air or water) (S) to increase the pressure in the control line (R) and close the normally open valve. A decrease in temperature shortens the sensitive tube (1) and moves the Invar rod against the lever (3). The lever (3) moves against the pressure spring (5), to open the exhaust valve (4). This exhausts the pressure in the control line and opens the valve.

The sensitivity adjustment screw (6) regulates the rate of flow of the supply air (or water) to the controller to a change in temperature. Turning the screw clockwise increases the sensitivity by reducing the flow and increas-

ing the response time. Turning the screw counterclockwise decreases the sensitivity by increasing the flow and reducing the response time.

Sensitivity

The sensitivity of the Tempilot controller is adjusted by turning the restriction screw. (The restriction screw is factory set for air operation.) For water operation, the restriction screw should be opened a minimum of 1/2 turn and recalibrated. Restriction screw must NEVER be fully closed. Make adjustments slowly, allowing about two minutes after each adjustment for the controller to balance.

NOTE: If sensitivity is changed, controller must be recalibrated.

Installation

The Jordan Tempilot requires a clean, reliable supply of compressed air or cold water at 15 - 25 pounds pressure. Other fluids may be used, such as gas, oil, etc., providing provision is made for safe disposal.

AIR OPERATION – The Tempilot should normally be installed in the horizontal position; however, other positions may be used if the supply and control connections are parallel with the ground and calibration is checked after installation.

WATER OPERATION – The Tempilot must be installed in the horizontal position with the drain connection at the bottom. Drain piping should be 3/8" minimum for positive draining at all times.

1. Select the sensitive element location with care to assure satisfactory results. Bulb must project entirely into the water or air being controlled.
2. Flush or blow out all lines before making final connections. Put supply pressure through all control lines and check for leaks.
3. Always locate the Tempilot as close to the control valve as possible. Piping between the Tempilot and the control valve should be 1/8" brass pipe or 1/4"

PROTECT VALVES WITH LINE STRAINERS

O.D. copper tubing.

- The difference in height between the Tempilot and the control valve should be kept to a minimum. When the regulator is below the control valve, the elevation cannot exceed 10' with a 15 psi supply pressure. If the Tempilot is above the control valve, adjust springs on the valve to compensate for the static head pressure.

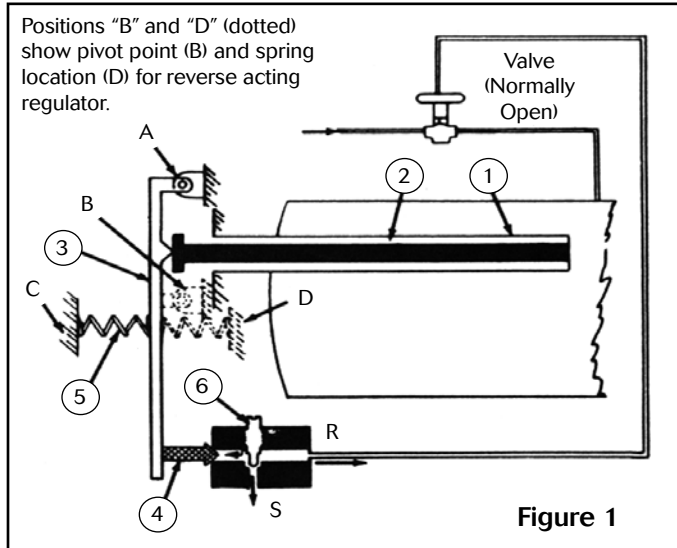


Figure 1

Calibration

- To calibrate the Tempilot, turn the adjusting knob until a 7-1/2" psi control pressure shows on the gauge.
- Read the temperature at the bulb with an accurate thermometer.
- Loosen the set screw in the adjusting knob and turn the adjusting knob to indicate the temperature at the bulb.
- Tighten the set screw.
- Now set the Tempilot for the desired temperature for your process.

Both Air and Water Controller

A. Disassembly (Refer to Figure 4 on page 3)

- Remove Knob (3) after loosening its Set Screw.
- Remove Cover Assembly (2).
- Remove Lever Spring Retainer (8) and Lever Spring (9).
- Back up one Lever Pivot (21) and remove Lever (6).
- Unscrew Sensitive Tube Assembly (20) from Body (1).

B. Assembly

- Install new Sensitive Tube Assembly (20) to body (1).

- Install Lever (6). Tighten the Lever Pivot Screws (21) as required. The Lever must be in the exact center of the body and must move freely but without side play. (For Water only – seal Lever Pivot Screws with Loctite Grade E.)
- Install Screws (22).
- Install parts (8) and (9). (Note relationship for Direct and Reverse Acting.)
- Back up Adjustment Screw (5) until Collar (19) touches the Pivots on Lever (6).
- Install Cover Assembly (2).
- Install Adjustment Knob (3). The notch on Knob (3) should be opposite the dial marking corresponding to the room temperature. Tighten the Knob Set Screw very firmly.
- Turn the Adjustment Knob to the desired control temperature for an approximate calibration.
- Recalibrate as required after the controller is installed and connected to the supply and control lines.

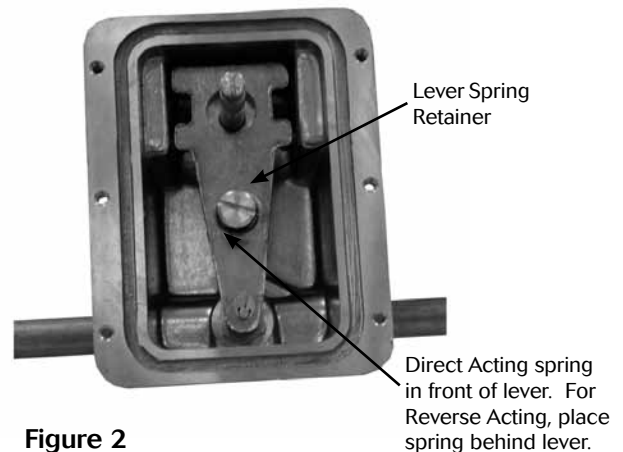


Figure 2

Please note Figure 2. This figure shows how the lever spring and the lever spring retainer should be assembled in front of the lever for direct acting regulators. Also note that the lever pivots and the lever pivot set screws are assembled in the top two pivots for a direct acting Tempilot

Reversing Tempilot Action

Please note Figure 3. Since this is a reverse acting Tempilot, the lever spring retainer is in front of the lever, and the lever spring is behind the lever. Also, the lever pivots and the lever pivot set screws are in the lower two pivot points.

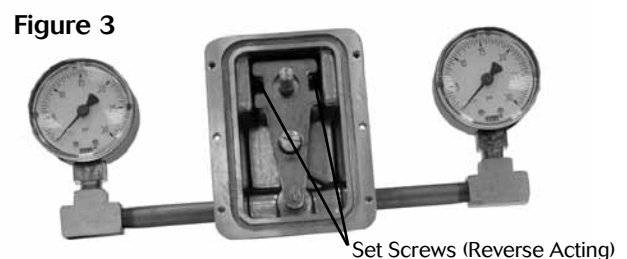
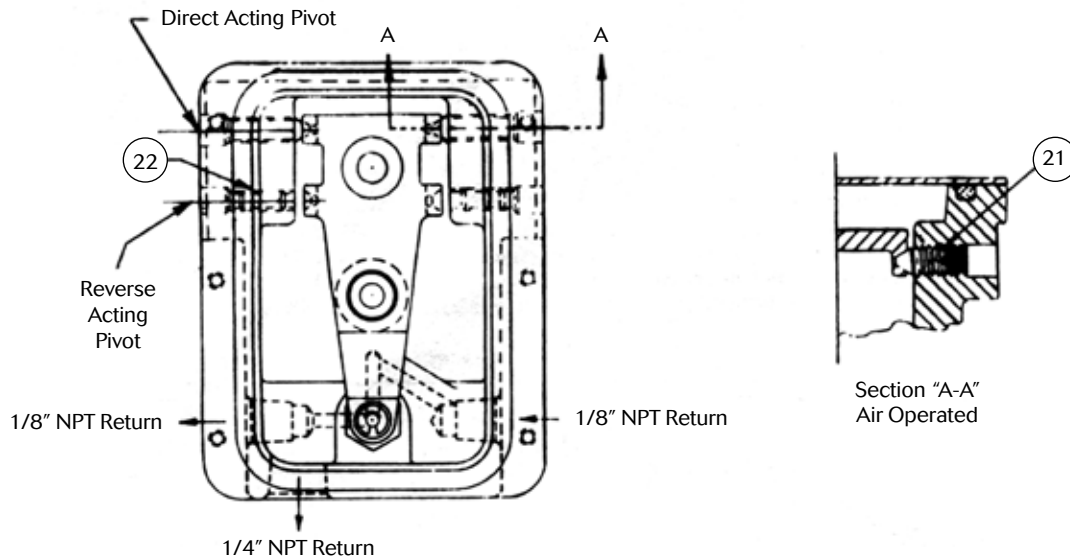


Figure 3

Air Service Only:

1. Turn the Adjusting knob clockwise to remove tension.
2. Remove the adjusting knob set screw and remove the adjusting knob (3).
3. Remove the cover screws (10) and the cover (2).
4. Remove the lever spring retainer (8) and lever spring (9).
5. Relocate the lever pivot (21) to change the pivot point.
6. Turn lever pivots in to be snug without binding.
7. Replace the lever spring retainer and lever spring to obtain the desired action.
8. Replace the cover and the adjusting knob.
9. Recalibrate.

Figure 4

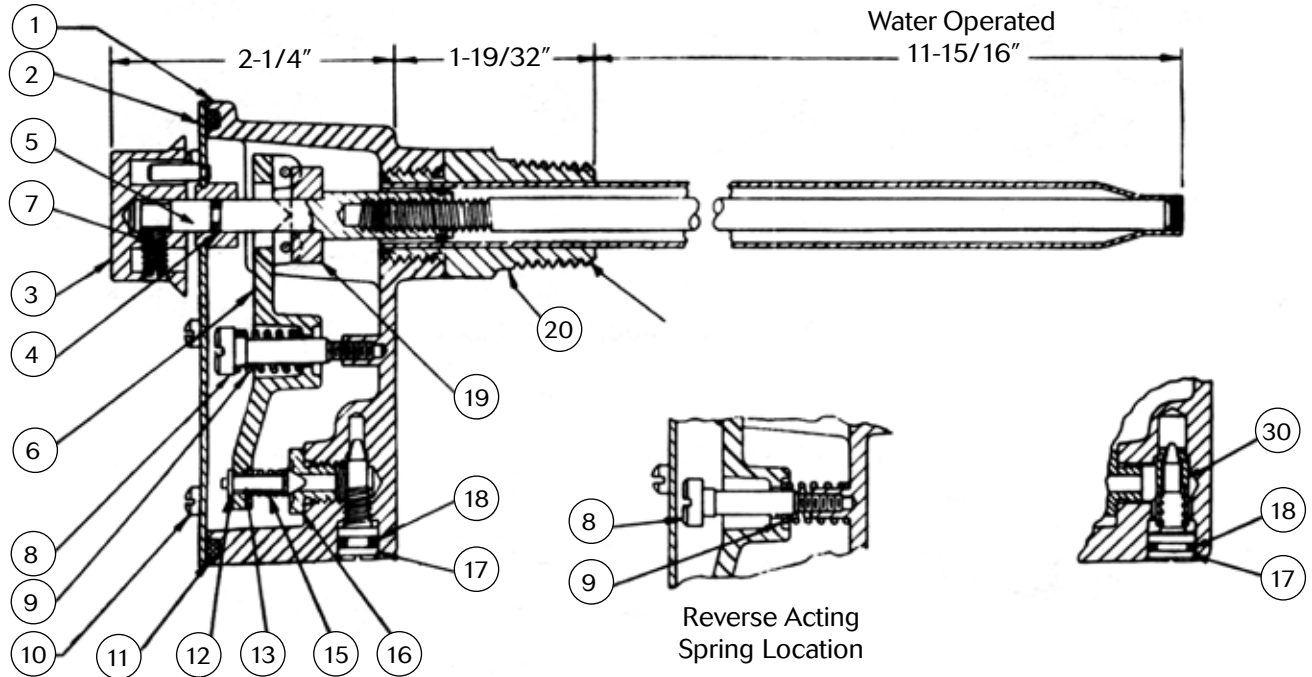


Ordering Spare Parts

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.	Item	Description	Qty.
1	Body	1	13*	Valve	1
2	Cover Plate	1	15	Valve Spring	1
3	Adjusting Knob	1	16*	Valve Seat	1
4	Quad Ring	1	17	Restriction Screw	1
6	Lever	1	18*	O-Ring	1
7	Set Screw	1	19	Thrust Collar	1
8	Spring Retainer Screw	1	20	Sensitive Tube Assembly	1
9	Lever Spring	1	21	Lever Pivot	2
10	Cover Screw	6	30*	Insert	1
11	O-Ring	1	31	Sealing Screw	4
12*	Retaining Ring	1	32*	Gasket	4
*	Recommended Spare Parts				

Note: Accessory parts included with controller:

Pipe Nipple, QTY 2

1/8" Brass Tee, QTY 2

0-30 psi Gauge, QTY 2

Optional thermowell available is SST or Copper