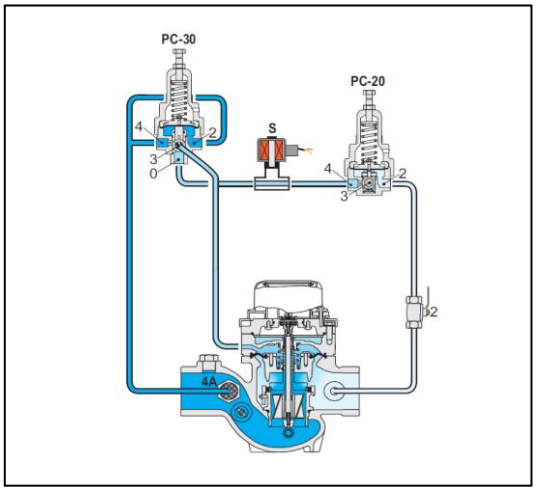
Pressure Reducing & Sustaining Valve Magnetic Drive with Solenoid Control

(Sizes 1.5"- 4"; DN40-100)



Description:

The BERMAD Model IR-923-M0-55-R integrates a vertical Turbine Woltman-type water meter with a diaphragm Actuated hydraulic control valve. As the system's Flow Meter and Main Valve, it controls irrigation together with the Irrigation controller. The BERMAD Hydrometer sustains the Preset minimum upstream pressure; reduces downstream Pressure to a constant preset maximum and either opens or shuts in response to an electric signal.

Installation:

1. Ensure enough space around the valve assembly for future maintenance and adjustments.
2. Prior to valve installation, flush the pipeline to insure flow of clean fluid through the valve.
3. For future maintenance, install Isolation gate valves upstream and downstream from Bermad control valve.
4. Install the valve in the pipeline with the valve flow direction arrow in the actual flow direction.
5. For best performance, it is recommended to install the valve horizontally and upright.
6. After installation carefully inspect/correct any damaged accessories, piping, tubing, or fittings.
7. It is highly recommended to install a strainer Bermad model 70F upstream from the pressure reducing hydrometer, to prevent debris from damaging valve operation.
8. Cross-Check solenoid specifications with design requirements and solenoid/coil label.
9. Ensure approved cable protection. Confirm that the wires data meet solenoid specifications.

   Note: Energizing the solenoid coil when it is not fixed in its place, is dangerous and might burn the coil.

Commissioning & Calibration:

1. Confirm that the In-line filter (4A) arrow direction is in the valve flow direction.
2. Confirm that the cock valve (2) is open (handle parallel to cock-valve body).
3. Allow the valve to open by using the solenoid manual override or by: Operating the solenoid.
4. Open fully the upstream isolating valve and slowly open the downstream isolating valve, to fill-up, carefully, the consumers' line downstream from the Valve.
5. Vent air from the valve's control loop by loosening cover tube fitting at the highest point, allowing all air to bleed. Then Retighten the tube fitting.
6. The IR-923-M0-55-R is factory set according to the design. The set pressure is marked on each of the pilot's label.
   - 6.1. Pressure Sustaining Pilot [PSP]: the pilot with port 4&2 connected to the valve upstream.
   - 6.2. Pressure reducing Pilot [PRP]: the pilot with port 2 connected to the valve downstream.
7. If the set pressure is either different from the design or the requirements have been changed, change settings according to the following:
   - 7.1. Unlock the PRP locking nut and slowly turn the pilot adjusting screw Clock-Wise to increase set pressure and Counter Clock-Wise to decrease it. Allow the 923-M0-55-R to react and the downstream pressure to stabilize.
   - 7.2. Close the upstream isolating valve to reduce 923-M0-55-R inlet pressures. Ensure that the 923-M0-55-R sustains the upstream pressure, preventing it from decreasing below setting, even when the upstream isolating valve is almost closed.
   - 7.3. Unlock the PSP locking nut and slowly turn the pilot adjusting screw Clock-Wise to increase set pressure and Counter Clock-Wise to decrease it. Allow the 923-M0-55-R to react and the upstream pressure to stabilize.
   - 7.4. After the pressure is stabilized, lock the pilots locking nut and open fully the upstream isolating valve.
8. Check valve solenoid control feature by De-Energizing & Energizing the solenoid to close & open the valve.

Trouble-Shooting:

Symptoms	Cause	Remedy
Valve fails to open	1. Cock valve (2) is closed. 2. Not sufficient inlet pressure. 3. Not sufficient flow. 4. Adjusting screws. 5. Solenoid functioning	1. Confirm cock valve (2) handle is parallel to the valve body. 2. Check for sufficient inlet pressure. 3. Create demand/flow, confirm pilot setting. 4. Check that the PRP adjusting screw. Is not loose and that the PSP adjusting screw is not too tighten. 5. Check solenoid power supply, coil & Manual Override Handle position.
Valve fails to close	1. Control circuit is clogged. 2. Solenoid functioning. 3. Debris. 4. Diaphragm.	1. Check for any debris trapped in the valve control circuit. 2. Check solenoid power supply, coil & Manual Override Handle position. 3. Check for any debris trapped in the valve body. 4. Check diaphragm is not leaking.
Valve fails to regulate	1. Not sufficient inlet pressure. 2. Not sufficient flow. 3. Solenoid functioning 4. Pilots setting. 5. Air trapped in the control chamber.	1. Check for sufficient inlet pressure. 2. Create demand/flow, confirm pilot setting. 3. Check solenoid power supply, coil & Manual Override Handle position. 4. Check PRP and PSP Pilot's setting. 5. Release air trapped in the control chamber by loosening cover tube fitting at the highest point.

Preventive Maintenance:

1. System operating conditions that effect on the valve should be checked periodically to determent the required preventative maintenance schedule.
2. Maintenance instructions:
   - 2.1. Tools required:
     - 2.1.1. Metric and imperial wrenches
     - 2.1.2. Anti-seize grease
     - 2.1.3. Visual inspection to locate leaks and external damages
   - 2.2. Functional inspection including: closing, opening and regulation.
   - 2.3. Close upstream and downstream isolating valves (and external operating pressure when used)
   - 2.4. Once the valve is fully isolated vent pressure by loosening a plug or a fitting.
   - 2.5. Open the screw nuts and remove the cover unit from the valve body. Disassemble necessary control tubs.
   - 2.6. It is highly recommended to stock a reserve parts assembly for each size. This allows minimum system field work. And system down time.
   - 2.7. Disassemble the cover and examine the inside parts carefully for signs of wear, corrosion, or any other abnormal conditions.
   - 2.8. Replace worn parts and all the Elastomers. Lubricate the bolts and screws threads with Anti seize grease.
   - 2.9. Winterizing /freezing prevention: drain the valve & the valve accessories (pilot, solenoid) on time.

Spare Parts

Bermad has a convenient and easy to use ordering guide for valve spare-parts and control system components.
For solenoid valves refer to model and S/N on solenoid tags.