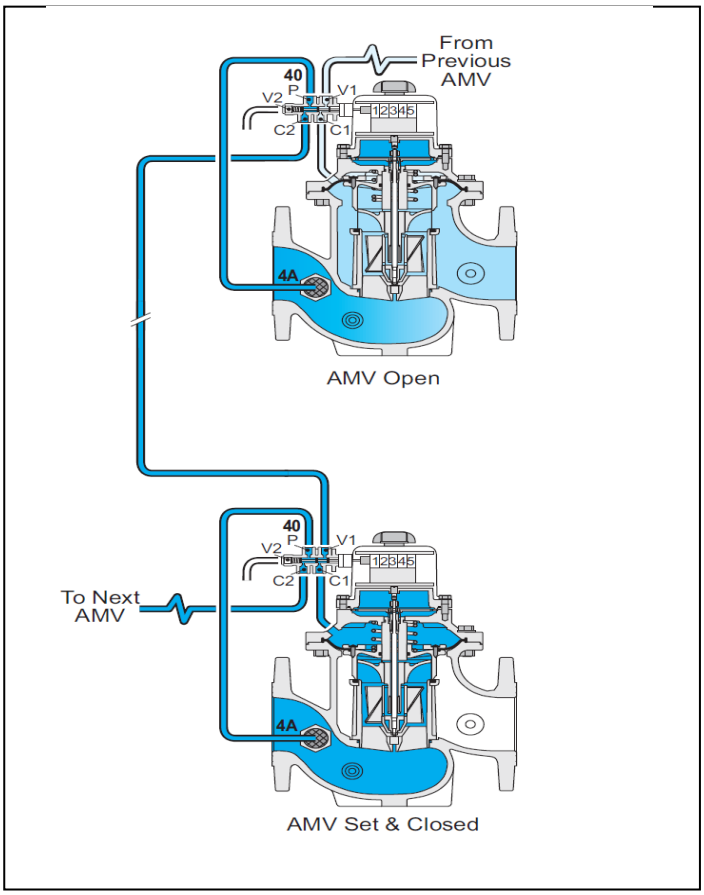
Automatic Metering valve (AMV) for Sequential irrigation

(Sizes 1.5"- 10"; DN40-250)

Description:

The BERMAD Automatic Metering Valve for Sequential Irrigation integrates a vertical turbine Woltman-type water meter with a diaphragm actuated hydraulic control valve, equipped with a mechanical sequential shut-off pilot. The BERMAD IR-900-E2 automatically shuts itself after accurately delivering a preset quantity of water. Working in a group of manually preset AMV's connected to each other by control tube and operating in sequence, it enables semi-automatic irrigation in non-computerized systems.



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. Connect the control tube between the AMV's as it appears in the attached drawing.

Commissioning & Calibration:

1. Confirm that the In-line filter arrow [4A] direction is in the valve flow direction.
2. Adjust the required amounts of water in all the AMV's in a sequence by pressing down the black knob on the top plastic cover and then turn it according the arrow, Begin with adjusting the first AMV in the sequence and then the second AMV in the sequence and so on.
3. Open fully the upstream isolating valve and slowly open the downstream isolating valve, to fill-up, carefully, the consumers' line downstream from the Valve.
4. Vent air from the AMV's control loop by loosening cover tube fitting at the highest point, allowing all air to bleed. Then Retighten the tube fitting.

Trouble-Shooting:

Symptoms	Cause	Remedy
Valve fails to open	1. Water quantity chosen. 2. Previous AMV not closed. 3. Not sufficient inlet pressure. 4. Not sufficient flow. 5. Shut-Off Pilot (40).	1. Confirm that you chose amount of water with the black knob. 2. Confirm that Previous AMV is finished deliver water. 3. Check for sufficient inlet pressure. 4. Create demand/flow. 5. Check for any debris trapped in Shut-Off Pilot.
Valve fails to close	1. Shut-off pilot (40). 2. Control command. 3. Control command tube. 4. Control circuit is clogged. 5. Debris. 6. Diaphragm.	1. Confirm that the chosen amount of water is reaching the end. 2. Confirm for control command in the control chamber. 3. Confirm proper command tube between the AMV's. 4. Check for any debris trapped in the valve control circuit. 5. Check for any debris trapped in the valve body. 6. Check diaphragm is not leaking.

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.