

JWGP Series

Glycol Make-up System
With Top Mounted Components
For Closed Loop Heating & Cooling Systems



Glycol Make-up System

APPLICATION

1. The JWGP glycol make-up systems are designed to maintain minimum system pressure levels. They are completely automatic and operate as needed to add water or water-glycol solution to a closed-loop heating, chilled water, snowmelt, or radiant heating system.
2. A pressure switch controls the flow of the glycol solution to the closed-loop system. When the system pressure drops to the cut in pressure setting, the pump will start. As the pump runs and feeds the glycol solution to the system, pressure in the system will increase. When the system pressure reaches the cut-out pressure setting, the pump shuts off.

OPERATION

1. When pressure in the closed-loop system falls to the minimum allowable pressure, the field supplied pressure regulator valve will open, allowing the pressurized glycol solution to flow from the expansion tank to the closed-loop system. **IMPORTANT:** The pressure regulator valve must be selected so that the adjustment range is suitable for the operating pressures of the closed-loop system.
2. As the glycol solution flows from the pressurized tank into the system, the pressure upstream of the pressure regulator valve will begin to decrease. When the pressure falls to the cut-in pressure switch setting, the pump starts running.
3. As the make-up system feeds the glycol solution to the closed-loop system, the pressure in the loop begins to increase. When the loop pressure rises above the set pressure of the pressure regulator valve, the valve closes, allowing the system to refill the expansion tank.
4. As the expansion tank fills, the pressure in the make-up system increases. When the pressure rises to the cut-out pressure switch setting, the pump shuts off.
5. The cycle will repeat each time the pressure in the closed-loop system falls to the set point of the pressure regulator valve.
6. A low level safety switch is provided for the glycol holding tank. When the glycol solution level falls below the low level point, the safety switch stops the pump.

SAFETY INSTRUCTIONS

1. When storing the JWGP glycol make-up system for longer periods, keep it covered to prevent corrosion and dirt build-up. Store the unit in a clean and dry location. Make sure the unit is dry prior to connecting the power source.
2. At the receiving dock, check the system for damage that may have occurred during transit. Identify and document any damage immediately with the freight carrier.
3. The operating temperature range for the make-up unit is 32 to 140° F.
4. A terminal for a dedicated ground wire is provided. A separate ground wire must be attached. Conduit grounds are not acceptable.
5. Power wire types and sizes must be selected in accordance with the National Electric Code and local code requirements.

INSTALLATION INSTRUCTIONS

1. Locate the JWGP glycol make-up system for ease of inspection, maintenance, and service. Secondary containment may be required to catch leaks or spills.
2. Place the tank on a level and secure surface.
3. See the diagram on page 4 for general piping requirements. When connecting the make-up system discharge line to the closed-loop system piping, carefully tighten the ½" NPT system discharge fitting. Use a back-up wrench on the fitting.
4. Check the system interconnections and all visible fittings for leaks. Tighten the fittings if any leaks are found.
5. Support the discharge line independently using pipe hangers or anchors.
6. Install a three (3) valve by-pass in the make-up line. See the diagram on page 4 for details.
7. **IMPORTANT:** Do not install the make-up unit in a closed-loop system unless properly sized safety and control devices are installed in the system.

INSTRUCTION MANUAL

Form 902M

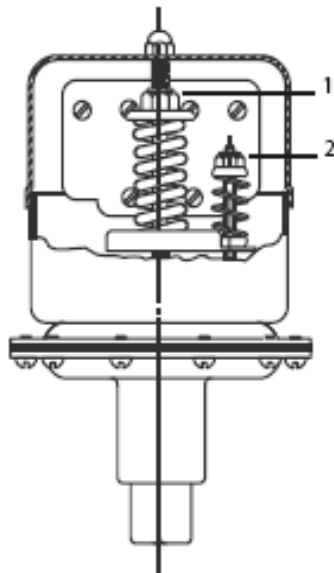
INSTALLATION INSTRUCTIONS (CONTINUED)

8. Refer to the wiring diagram on page 5 prior to installing the electrical connections. A 120 VAC power supply with a dedicated ground wire is required.
9. **IMPORTANT:** Fill the suction line with the glycol mixture prior to starting the make-up unit. Locate the BMI tee on the suction line, remove the top plug, and fill with fluid.
10. **⚠ WARNING** Do not run the pump dry. Damage to the seals and motor may occur.
11. Verify the correct settings for the pressure switch. The pressure switch is factory set to operate at 40 PSI (cut-in) and 60 PSI (cut-out).
12. Check the setting on the pressure relief valve. The PRV is factory set to operate at 125 PSI.

PRESSURE SWITCH OPERATION

1. The pressure switch has two operating points – one on rising pressure and one on falling pressure. The operating point on rising pressure is the cut-out setting, and the operating point on falling pressure is the cut-in setting.
2. The differential is the difference between the cut-in setting and the cut-out setting.
3. The range indicates the pressure limits for the pressure operating settings. The range is referenced to the operating point on rising pressure. The differential is subtracted from the cut-out pressure setting. During normal operation, the system pressure should not exceed the upper limit of the range.
4. Maximum allowable pressure is the pressure highest pressure to which the switch can be subjected without causing a change in operating characteristics, shift in settings, or damage to the unit.
5. Pressure surges may occur in a system during start-up. Surges are not normally detrimental to the life of a switch if the surge is within the maximum allowable pressure rating of the switch. Diaphragm actuated switches should not be subject to more than 10 surges per day. More frequent surges will greatly reduce the life of the diaphragm.

SETTING THE PRESSURE SWITCH



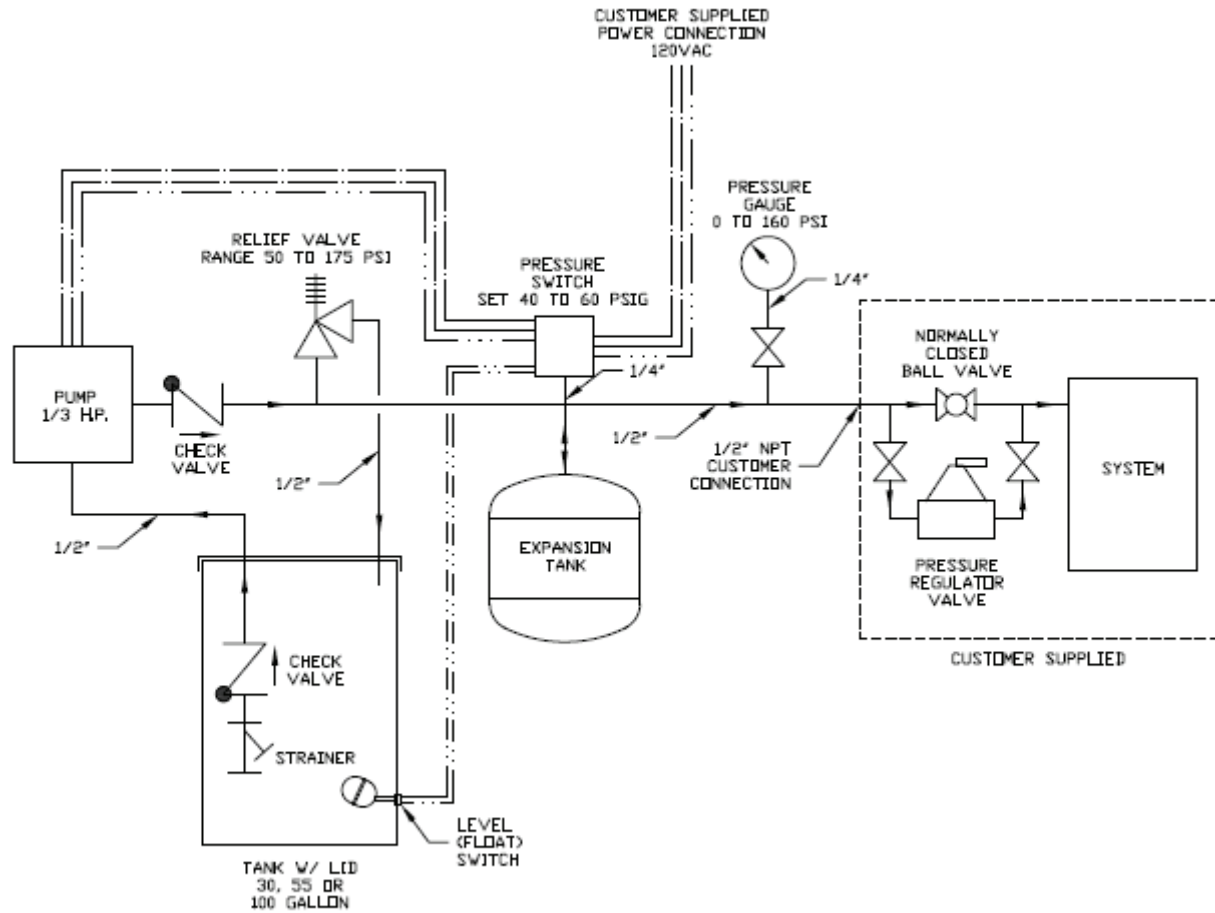
1. When setting the pressure switch, adjust the switching point on falling pressure (cut-in) first and then adjust the point on rising pressure (cut-out).
2. **Switching point on falling pressure:** set the cut-in pressure by adjusting screw-nut 1.
3. **Switching point on rising pressure:** set the cut-out pressure by adjusting screw-nut 2.

PRESSURE SWITCH REFERENCES

1. Adjustable range for the pump cut-in setting: 40 – 170 PSIG
2. Adjustable range for the pump cut-out setting: 60 – 200 PSIG
3. Differential pressure: 20 – 40 PSIG
4. Maximum permissible pressure: 200 PSIG

Glycol Make-up System

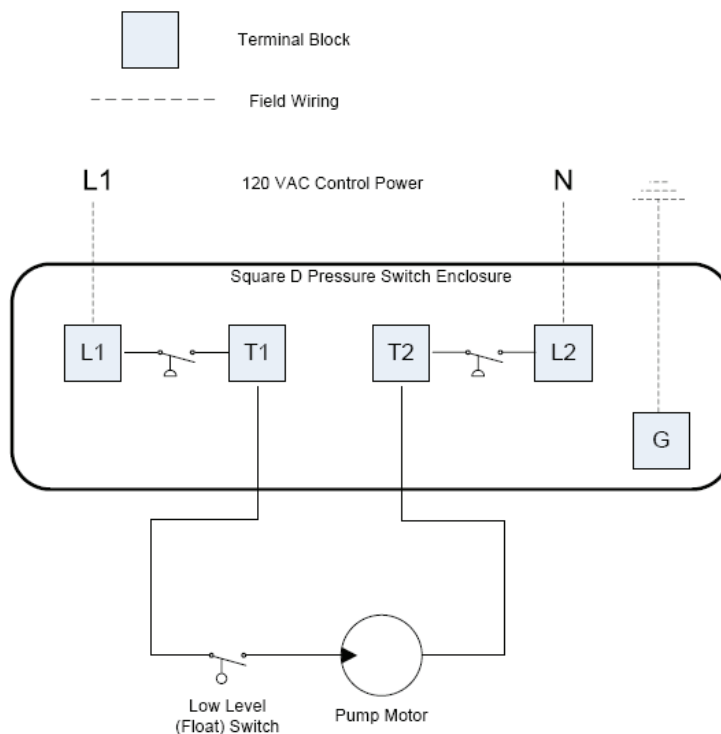
SINGLE GLYCOL P&ID (JWGP SERIES — TOP MOUNTED)



INSTRUCTION MANUAL

Form 902M

WIRING DIAGRAM (JWGP SERIES — TOP MOUNTED)



SPARE PARTS LIST

DESCRIPTION	PART NUMBER
Expansion tank	100099150
Pump	100099115
Pressure switch	11099120
Pressure gauge	060563006
Float switch	3BY58
Tank, 30 gallon	100199068
Tank lid, 30 gallon	100199078
Tank, 55 gallon	100199070
Tank lid, 55 gallon	100199080
Tank, 100 gallon	100199072
Tank lid, 100 gallon	100199082



THE JOHN WOOD COMPANY
 AN ALCO INDUSTRIES COMPANY
 98 Highland Avenue, Oaks, PA 19456
 T 610-666-1220 | 800-537-5581
 F 610-666-0193