



WALL MOUNTED GLYCOL FEED SYSTEM

OPERATION & MAINTENANCE MANUAL



PLEASE RECORD THE FOLLOWING DATA

(Information is located on the product label or packing slip)

Model Number: _____

Pressure Settings: _____

Serial Number: _____

Installation Date: _____

Installation Location / Application: _____

The above information will help when ordering replacement parts and accessories for your Wingert Wall Mounted Glycol Feed System.

J.L. WINGERT CO. MANUFACTURED PRODUCTS

Mixers, Bypass Feeders, Filter Feeders, Bromine Feeders, Sample Coolers, Sludge Traps, Separators, Separator Systems, Tank Stands, Tank Package Systems, Glycol Feed Systems, Coupon Racks, Control Stations, NEMA Enclosures, Custom Packaged Systems and Specialty Welding

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1.0 INTRODUCTION

These heavy duty automated systems deliver a comprehensive package at a modest cost. Wingert Wall Mounted Glycol Feed Systems offer the flexibility of varying pressure control ranges, drum sizes, pump sizes, instrumentation and much more. J. L. Wingert Co. also offers three additional standard glycol feed system models and a long list of custom options to fit your specific need.

2.0 WARRANTY

Wingert Wall Mounted Glycol Feed Systems are warranted against manufacturing defects in material and workmanship for one year from the date of shipment. Applications outside the service for which the product is designed will automatically void any warranty. J. L. Wingert Co. will repair or replace a defective unit when returned to the factory with transportation prepaid. Final determination will be made upon inspection. J. L. Wingert Co. assumes no liability for labor and/or other expenses in making repairs or adjustments. All replacements will be F.O.B. factory. There are no other implied or expressed warranties.

Motors and pumps are not manufactured by J. L. Wingert Co. and thus are warranted by the original manufacturer. Repair or replacement is contingent upon inspection and determination by the original manufacturer. Their findings are final and beyond our control.

3.0 UNPACKING

Do not store outdoors unless the model has been purchased with a Totally Enclosed Fan Cooled (TEFC) motor. Wingert Wall Mounted Glycol Feed Systems are assembled and ready for installation. Inspect packaging upon receipt for any damage. Unpack and inspect the product for physical damage and verify that goods received correlate with packing list. The factory must be notified within 3 days after receipt of any discrepancies. If any product is damaged due to freight handling, contact the freight carrier to register a claim and contact the factory immediately for further assistance.

NOTE: Most freight carriers only allow 3-5 days after receipt of goods to file a freight claim.

3.1 CHECKLIST

Please verify receipt of your product by using the following table and model numbers to identify the contents.

WGL55 - E 1 - 1 / B - C

OPTIONS	
B	95 Decibel audible alarm and silence switch
C	Remote dry contact on low level, (PLC interface, control room alarm)
ET	Expansion tank, 4.5 gallon with adjustable pressure reducing valve (70 PSI Max. Pressure)
HTM	High temperature steel discharge manifold with high temperature hoses
TEFC	TEFC (Totally Enclosed Fan Cooled) pump motor in place of standard motor

PRESSURE CODE			
OPTIONS	CUT-IN RANGE (PSI)	CUT-OUT RANGE (PSI)	PRESSURE DIFFERENTIAL (PSID)
1*	10 - 45	20 - 60	10 - 30
2	40 - 80	65 - 100	20 - 40
3	3 - 10	9 - 30	6 - 20
D**	0 - 149	1 - 150	1 - 149
X	No Pressure Switch		

**D Represents Digital Glycol Feed System

*Pressure code which is the factory standard

Note: Other settings available upon request

PUMP HORSEPOWER/OUTPUT	
1	1/4 HP pump, 1.7 GPM @ 50 PSI
2	1/2 HP pump, 3.6 GPM @ 50 PSI

SUCTION / DISCHARGE MATERIAL	
E	Economy with PVC Sch 80 drum suction assembly and PVC Sch 80 discharge manifold

TANK OR DRUM VOLUME	
35	35 Gallons
55	55 Gallons

NOTE: Custom systems are offered when your needs are not met by the listed standard model numbers. Check the product label for the units pressure setting or consult the factory for assistance at customerservice@jllwingert.com or (714) 379-5519.

4.0 SAFETY

J. L. Wingert Co. manufactured equipment is designed and built with safety in mind. However, proper installation and operation is necessary for your overall safety.

DO NOT INSTALL, OPERATE OR REPAIR THIS EQUIPMENT WITHOUT READING THIS MANUAL AND THE SAFETY PRECAUTIONS CONTAINED THROUGHOUT.

BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.

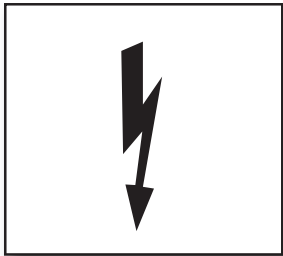
4.1 SAFETY HIGHLIGHTS

Read and understand the following safety highlights before installation and operation.



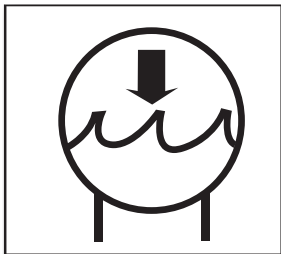
ELECTRICAL SHOCK CAN KILL

Do not perform any services without first disconnecting electrical service to all equipment. Electrical power is present at the motor, pressure switch and inside the electrical enclosure.



ELECTRICAL SERVICE CONNECTION

Install and ground equipment in accordance with the National Electrical Code, all local codes and the manufacturer's recommendations. Electrical installation and repair should be performed by a qualified individual.



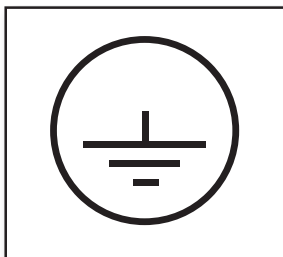
PRESSURE INSIDE THE UNIT

See design specification for maximum operating pressure. Do not perform maintenance or repair without first releasing all pressure and draining any fluid from the unit.



EQUIPMENT IDENTIFICATION LABEL

Equipment Identification Label provides equipment information. Be sure the voltage, phase and frequency of the input power are as specified on the Equipment Identification Label and conform with your requirements.



GROUND CONNECTION

Input power and ground system for safe operation of the equipment. See the National Electrical Codes and all local codes for proper grounding methods. Electrical installation and repair should be performed by a qualified individual.

5.0 LOCATION AND ENVIRONMENT

Although the control box is NEMA 4X, the pump motor is an open motor unless the TEFC option is ordered. Wingert Glycol Feed Systems should be installed indoors in a dry, covered location and should not be exposed to direct weather conditions, unless the model has been purchased as an outdoor system.

6.0 INSTALLATION

6.1 MOUNTING

Utilizing the four 15/32" x 9/32" slots located at the top and bottom of both the left and right side, firmly secure the Wall Mounted Glycol Feed System to a wall using adequate anchors. Be sure that the mounting wall can support the unit, which weighs approximately 34 lbs.

6.2 PLUMBING

- 1) On the discharge of the Wall Mounted Glycol Feed System, install a union. The Wall Mounted Glycol Feed System's discharge connection is 1/2" FNPT.
- 2) Plumb the discharge of the Wall Mounted Glycol Feed System per the recommendations of the Project's Design Engineer.
- 3) Plumb the Wall Mounted Glycol Feed System within 10 feet of the injection point. Failure to do so can result in a drop in the Wall Mounted Glycol Feed System's pump performance, and the pump's output pressure might have to be adjusted, (see Section 10.2 on how to adjust the pump's output pressure).

6.3 SUCTION ASSEMBLY

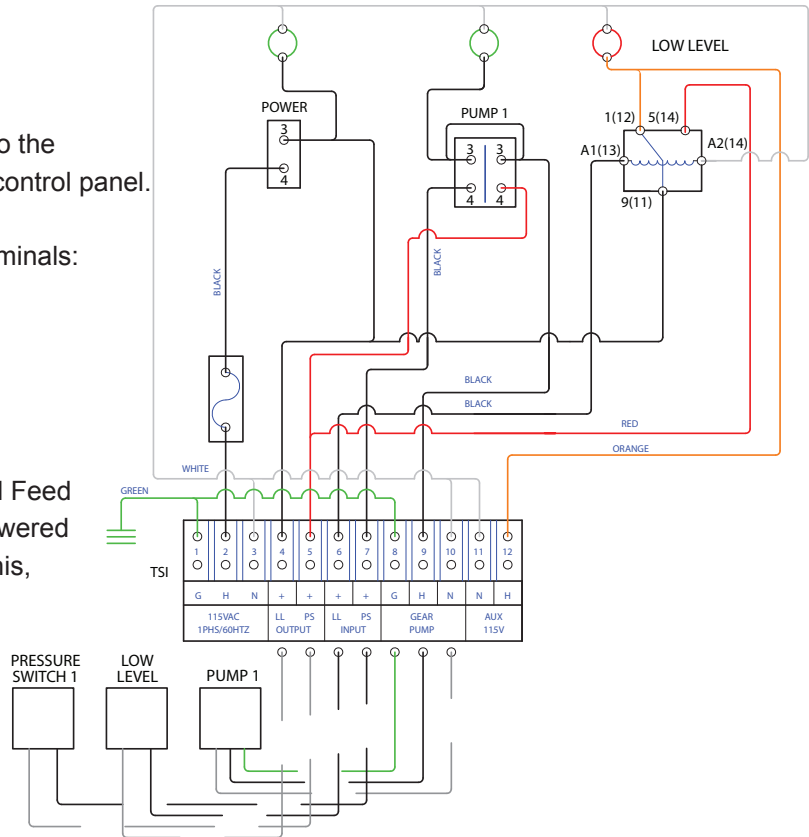
- 1) Thread the Suction Assembly onto the drum utilizing the 2" MNPT fitting.
- 2) Connect the low level cable by screwing the two circular connectors together. **Note: The circular connector is keyed, so it can only be connected one way.**
- 3) Connect the pump suction hose to the Suction Assembly by plugging the valved female quick disconnect fitting onto the valved male fitting on the Suction Assembly. **Note: These fittings are valved so if the discharge isolation valve isn't closed, the hydronic system will not backflow through the female quick disconnect fitting.**
- 4) Connect the 1/2" compression nut and tubing to the fitting on the discharge of the pressure relief valve.

6.4 WIRING

J.L. Wingert Co. Glycol Feed Systems are supplied with an 8 foot, 14 gauge, 115VAC power cord. Plug the Glycol Feed System into a 115VAC, 15 amp minimum receptacle. If you have ordered a custom unit other than 115VAC power, please consult the factory for wiring instructions.

6.5 HARDWIRING

- 1) Install a disconnect box.
- 2) Connect power from the Disconnect to the Wall Mounted Glycol Feed System's control panel.
- 3) Connect the wires to the following terminals:
Terminal 1: Ground (Green wire)
Terminal 2: Hot (Black wire)
Terminal 3: Neutral (White wire)
- 4) OPTIONAL: The Wall Mounted Glycol Feed System is supplied with a 115VAC powered remote low level indicator. To utilize this, connect to the following terminals:
Terminal 1: Ground (Green wire)
Terminal 11: Low Level Alarm Output Neutral (White wire)
Terminal 12: Low Level Alarm Output Hot (Orange Wire)



7.0 OPERATION OF A WGL[]-[]-[1,2,3 or D]

- 1) With the system installed and connected to the hydronic system and the power connected, turn the MAIN POWER switch to the ON position.
- 2) Turn the PUMP switch to the HAND "H" position to manually feed glycol in the system.
- 3) Verify that there are no leaks and turn the PUMP switch to the OFF "O" position.
- 4) Turn the PUMP switch to the AUTO "A" position to operate in automatic mode. In automatic mode the system will turn on based on a loss of pressure. To adjust the pressure switch refer to Section 10.1.

7.1 OPERATION OF A WGL[]-[]-X

NOTE: The WGL[]-[]-X does not come with a pressure switch.

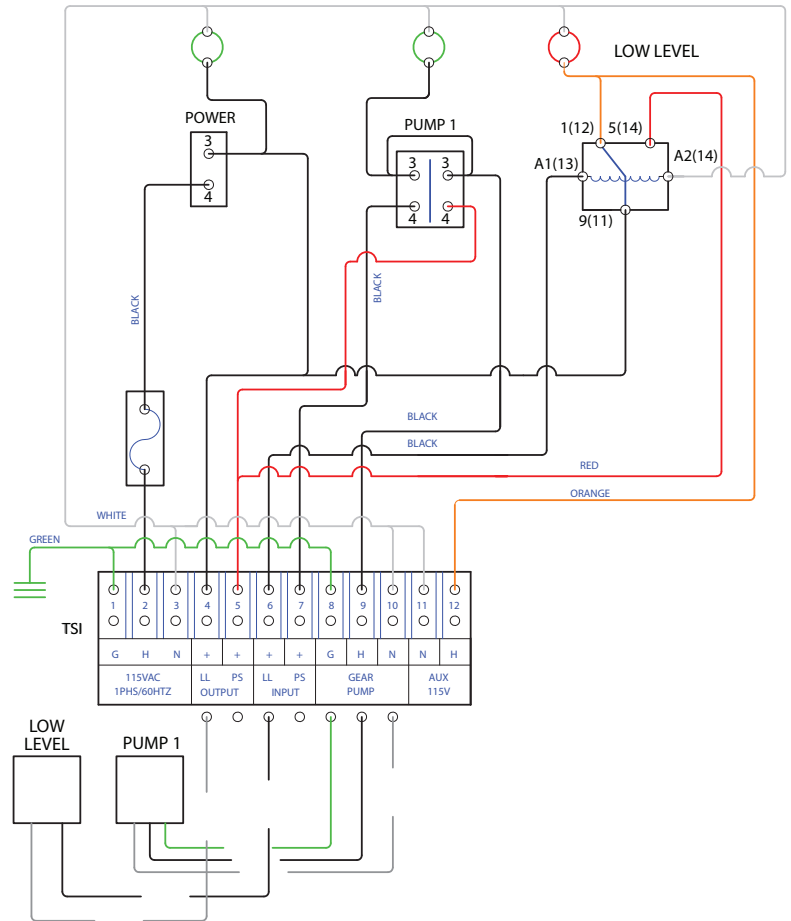
- 1) With the system installed and connected to the hydronic system and the power connected, turn the MAIN POWER switch to the ON position.
- 2) Turn the PUMP switch to the HAND "H" position to manually feed glycol in the system.
- 3) Verify that there are no leaks and turn the PUMP switch to the OFF "O" position.
- 4) To feed glycol into the system, turn the PUMP switch to the HAND "H" position.
- 5) Once the desired amount is fed, turn the Pump switch to the OFF "O" position.

7.2 OPERATION OF A WGL[]-[]-X BY AN EXTERNAL CONTROL

NOTE: The WGL[]-[]-X does not come with a pressure switch.

7.2 OPERATION OF A WGL[]-[]-X BY AN EXTERNAL CONTROL (continued)

- 1) Open the control panel and connect the external switch to Terminals # 5 and 7.
NOTE: The external control switch needs to be rated for a 10 AMP inductive load. See page 7 for the wiring diagram.
- 2) With the system installed and connected to the hydronic system and the power connected, turn the MAIN POWER switch to the ON position.
- 3) Turn the PUMP switch to the HAND "H" position to manually feed glycol in the system.
- 4) Verify that there are no leaks and turn the PUMP switch to the OFF "O" position.
- 5) Turn the PUMP switch to the AUTO "A" position to operate in automatic mode. In automatic mode the system will turn on based on the external control.



8.0 PRESSURE SWITCH SETTINGS / FACTORY STANDARD SETTINGS

PRESSURE CODE	CUT-IN RANGE (PSI)	CUT-OUT RANGE (PSI)	PRESSURE DIFFERENTIAL (PSID)	DEFAULT SETTING CUT-IN (PSI)	DEFAULT SETTING CUT-OUT (PSI)
1	10 - 45	20 - 60	10 - 30	10	40
2	40 - 80	65 - 100	20 - 40	40	80
3	3 - 10	9 - 30	6 - 20	3	10
D	0 - 149	1 - 150	1 - 149	10	40
X	NO PRESSURE SWITCH				

9.0 PRESSURE AND TEMPERATURE LIMITATIONS

	PVC MANIFOLD WGL[]-E[]-[]	HIGH TEMPERATURE MANIFOLD WGL[]-E[]-[]/HTM
MAXIMUM OPERATING PRESSURE:	100 PSI (6.9 BAR)	150 PSI (10.3 BAR)
MAXIMUM OPERATING TEMPERATURE:	85 ° F (29.4 ° C)	150 ° F (65.5 ° C)

10.0 PRESSURE ADJUSTMENTS

10.1 HOW TO ADJUST THE PRESSURE SWITCH (FOR NON-DIGITAL MODELS)

(See page 10 for the Pressure Switch parts locations).

***NOTE:** For instructions on changing the Cut-In and Cut-Out values for a Digital Glycol, please see the Digital Glycol Programming Guide. The factory typically sets the pump discharge pressure 20PSI above the Cut-Out pressure. To adjust the pump output pressure, see Section 10.2. If the Wall Mounted Glycol Feed System has the OPTION ET, the pressure switch does not need to be changed, only the pressure reducing valve. See Section 10.3 on how to adjust the pressure reducing valve.

- 1) In order to field adjust the pressure switch part #1640-669, Glycol Adjustment Kit, must be ordered.
- 2) Turn off the Main Power switch on the Wall Mounted Glycol Feed System control panel.
- 3) Disconnect the Wall Mounted Glycol Feed System from the closed loop system it is to feed into.
- 4) Install the ball valve and hose assembly from part #1640-669 on the discharge of the Wall Mounted Glycol Feed System.
- 5) Route the free end of the hose from part #1640-669 into the glycol drum.
- 6) Remove the cover to the Pressure Switch.
- 7) Turn the Cut-In adjustment nut (#4) clockwise a couple of turns.
- 8) Turn the Main Power switch to the ON position and then turn the Pump H-O-A switch to the hand "H" position.
- 9) With the pump on, adjust the ball valve until the Wall Mounted Glycol Feed System's pressure gauge displays the desired Cut-In pressure.
- 10) Adjust the pressure switch Cut-In adjustment nut (#4) until the contacts on the pressure switch close. This will make an audible "click."
- 11) Open the ball valve to drop the pressure back down to 0.
- 12) Close the ball valve until the Wall Mounted Glycol Feed System's pressure gauge displays the desired Cut-Out pressure.
- 13) Adjust the Cut-Out adjustment nut (#5) until the contacts on the pressure switch open. This will make an audible "click."
- 14) Turn the Pump H-O-A switch to the OFF position "O" and turn the Main Power switch to the OFF position.
- 15) Replace the pressure switch cover.
- 16) Remove the Pressure Adjustment Kit and connect the Wall Mounted Glycol Feed System to the closed loop system.
- 17) Turn the Main Power switch to the ON position and the Pump H-O-A to the Auto "A" position. The Wall Mounted Glycol Feed System will now feed glycol once the pressure drops to the desired Cut-In pressure and will stop at the desired Cut-Out pressure.

10.2 HOW TO ADJUST THE PUMP'S OUTPUT PRESSURE

(See page 11 for the pump parts locations).

***NOTE:** The factory typically sets the pump discharge pressure 20 PSI above the Cut-Out pressure.

- 1) To adjust the pump's output pressure, the Wall Mounted Glycol Feed System can remain connected to the closed loop system.
- 2) Close the system isolation valve.
- 3) Remove the acorn nut (#5) from the side of the pump.

10.2 HOW TO ADJUST THE PUMP'S OUTPUT PRESSURE (continued)

- 4) Turn the pump on by turning the pump switch to the "H" hand position and adjust the screw clockwise to increase the pressure and counter-clockwise to decrease the pressure.
- 5) Verify the desired pump's output pressure by looking at the Wall Mounted Glycol Feed System's pressure gauge.
- 6) Once the desired pressure is reached, turn the adjustment screw counter-clockwise 1/8 turn.
- 7) Turn the pump off and install the acorn nut (#5).
- 8) Open the isolation valve and turn the Pump H-O-A switch to the Auto "A" position to resume the automatic feed.

10.3 HOW TO ADJUST THE PRESSURE REDUCING VALVE (OPTION ET)

- 1) To adjust the pressure reducing valve, the Glycol Feed System can remain connected to the closed loop system.
- 2) Loosen the jam nut on the pressure reducing valve's adjustment screw.
- 3) To increase the discharge pressure of the pressure reducing valve, turn the adjustment screw clockwise, and to reduce the discharge pressure of the pressure reducing valve, turn the adjustment screw counter-clockwise. **Note:** The pressure reducing valve is preset to 16 PSI and has a minimum discharge pressure of 10 PSI and a maximum discharge pressure of 70 PSI.
- 4) Once the desired discharge pressure is shown on the top pressure gauge, tighten the jam nut. The discharge pressure is now set and this should match the system pressure.

10.4 HOW TO REPLACE THE PUMP HEAD AND / OR HOSES

- 1) Turn off the Main Power switch on the Glycol Feed System Control Panel.
- 2) Close the suction valve and the system isolation valve.
- 3) With a pair of channel locks or vise grips, securely hold the crimped portion of the hose and then use a wrench on the hex portion to unthread the hose. **NOTE:** For an E1, the lower fitting on the hose uses an 11/16" wrench and the upper fitting use a 7/8" wrench. For an E2, the upper and lower fittings both use a 7/8" wrench.
- 4) Using a 5/16" or 8mm socket or nut driver, loosen the V-Band clamp (#2 on page 11).
- 5) Once the V-Band clamp is sufficiently loosened, the pump head can be removed.
- 6) Follow the reverse directions to install the new pump head.

11.0 MAINTENANCE

Maintenance and care will depend upon the usage and environment in which the Wall Mounted Glycol Feed System is subjected to. The following is the suggested regular maintenance required to keep the Wall Mounted Glycol Feed System operating properly.

11.1 PLUMBING

Periodic checking of the piping and tubing is required to insure proper discharge of the glycol solution. The foot valve and screen should be periodically checked for clogging and wear.

11.2 PUMP AND MOTOR

The pump should be checked for proper operation. If any noises, leaks or changes in operation are detected, the pump should be removed and examined by a certified technician.

11.3 LUBRICATION

The motors are permanently lubricated and do not require any additional lubrication. If the Glycol Feed System has a Totally Enclosed Fan Cooled (TEFC) motor, or is an outdoor rated unit that has a grease fitting, lubricate every 12,000 hours with EXXON Polyrex EM grease using .08 ounces per grease fitting. The following instructions are for regreasing the motors that have grease fittings.

Caution: Over lubricating can cause excessive bearing temperatures, premature lubrication can cause breakdown and bearing failure.

- 1) With the motor stopped, clean all grease fittings with a clean cloth.
- 2) Remove grease outlet plug.
- 3) Add the recommended amount of grease.
- 4) Operate the motor for 15 minutes with grease plug removed. This allows excess grease to purge.
- 5) Re-install grease outlet plug.

11.4 PRESSURE SWITCH

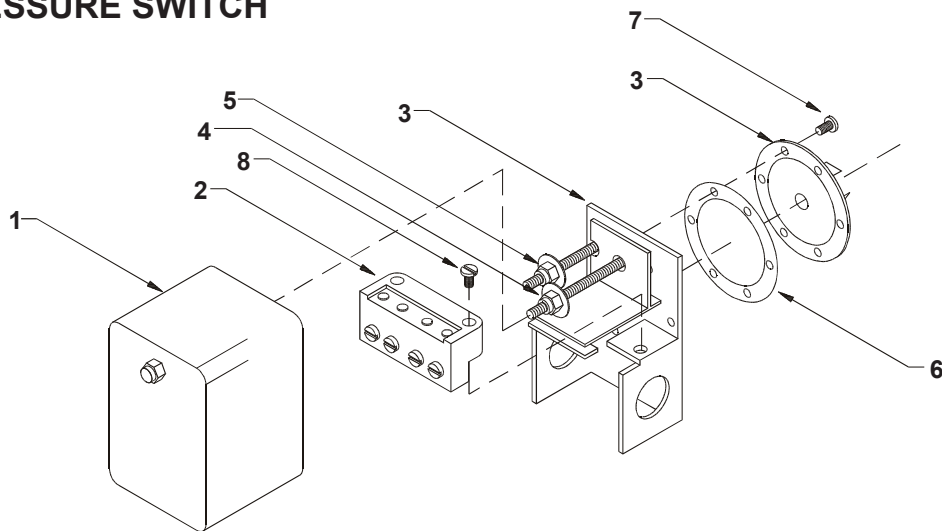
The only maintenance required is a periodic check for wear on the contacts. The pressure switch should be replaced if damaged or worn.

11.5 PRESSURE RELIEF VALVE

Periodic checking of the seat is the only maintenance required. The brass pressure relief valve must be removed from the line for servicing.

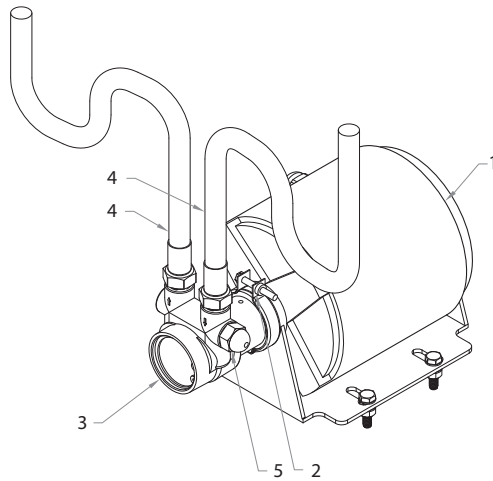
12.0 PARTS LISTING

12.1 PRESSURE SWITCH



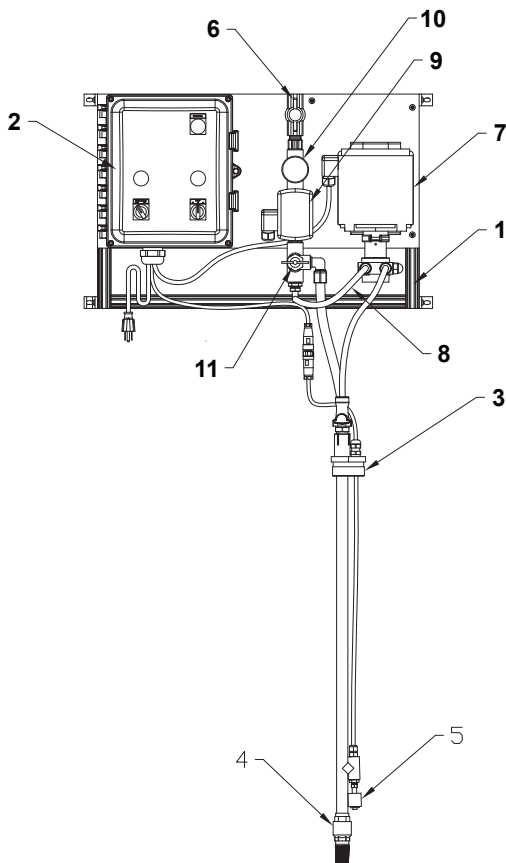
KEY	DESCRIPTION
1	Plastic Cover, Glass Filled Polycarbonate
2	Contact Block
3	Pressure Switch and Back Plate, 1/4" FNPT, Zinc Plated Gauge Steel
4	Cut-In (or On Setting) Adjustment Nut
5	Cut-Out (or Off Setting) Adjustment Nut
6	Pressure Bladder, Nitrile (Butadiene) Rubber
7	Diaphragm Screw
8	Contact Block Screw

12.2 GLYCOL FEED PUMP



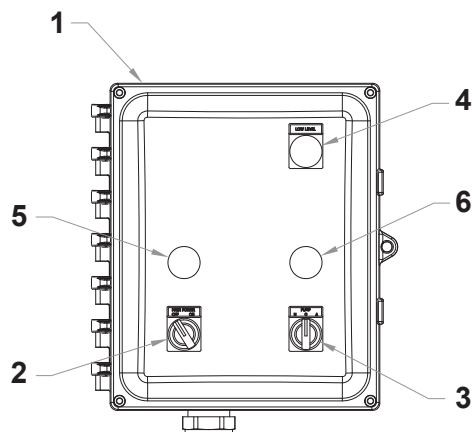
KEY	DESCRIPTION
1	Motor
2	V-Band clamp
3	Brass Rotary Vane Pump Head
4	Suction and Discharge hose
5	Acorn nut, pump pressure adjustment

12.3 WALL MOUNTED GLYCOL FEED SYSTEM



MODEL	WGL []-E []-[]	DESCRIPTION
KEY	PART #	
1	N/A	Wall mount frame
2	1640-67	Nema 4X control panel, polycarbonate
3	1640-826	35 Gallon suction assembly
	1640-827	55 Gallon suction assembly
4	1640-828	1/2" brass foot valve
5	1640-829	Vertical float switch dry
6	1625-005-PVC	1/2" PVC ball valve
	1625-005-BR	1/2" PVC ball valve (only on HTM option)
7	1640-529	1/3Hp 1.7 GPM @ 50 PSI pump and motor
	1640-684	1/3Hp 1.7 GPM @ 50 PSI pump only
	1640-682	1/2Hp 3.6 GPM @ 50 PSI pump and motor
	1640-697	1/2Hp 3.6 GPM @ 50 PSI pump only
8	1640-830	3/8" MNPT x 1/2" MNPT x 15" braided hose (for use with E1 pump)
	1640-831	3/8" MNPT x 1/2" MNPT x 20" high temp hose (for use with E1 pump and HTM option)
	1640-832	1/2" MNPT X 1/2" MNPT x 15" braided hose (for use with E2 pump)
	1640-833	1/2" MNPT X 1/2" MNPT x 20" high temp hose (for use with E2 pump and HTM option)
9	1640-649	Pressure code # 1 pressure switch 10-40
	1640-54	Pressure code # 2 pressure switch 40-100
	1640-55	Pressure code # 3 pressure switch 3-10
10	1640-58	2" 0-30PSI pressure gauge 1/4" MNPT (used on Pressure Code # 2)
	1640-56	2" 0-60PSI pressure gauge 1/4" MNPT (used on Pressure Code # 1)
	1640-57	2" 0-200PSI pressure gauge 1/4" MNPT (used on Pressure Code # 3)
11	1640-675	1/2" Brass adjustable pressure relief valve

12.4 NEMA CONTROL PANEL



KEY	PART #	DESCRIPTION
1	Consult Factory	NEMA 4x polycarbonite enclosure
2	1640-510	Main 2-position power switch
3	1640-704	Pump 3-position H-O-A switch (two for dual unit)
4	1640-685	Red low level indicator light
5	1640-713	Green main power indicator light
6	1640-713	Green pump power indicator light (two for dual unit)
	1640-534	15 Amp slow blow fuse (located inside control panel)

13.0 TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Low flow rate	Piping and/or equipment is dirty or fouled	Verify that all piping is clear from obstructions and the Y-Strainer is clean.
	Suction or discharge is restricted	Verify that all valves are fully open and the Y-Strainer is clean.
	Pump may be worn out	Consult factory.
Pump runs but no fluid is pumped	Pump suction valve may be closed	Verify that all valves are fully open.
	Y-Strainer may be clogged	Clean the Y-Strainer.
	Pump may be worn out	Consult factory.
Low pressure	Unit was ordered with a pressure settings below closed loop system pressure	Refer to Sections 10.1 and 10.2 to adjust the pressure settings.
	Pump may be worn out	Consult factory.
Pump does not turn off at low level	Level switch is stuck or defective	With the power off and using a multimeter, check continuity between terminals #4 and #6. In the low level state there should not be continuity.
	Low level relay is burnt out or defective	Perform test described above, if there is no continuity then replace the relay.
Tank is over flowing	Check valve is not seating	Close pump suction isolation valve and turn the Pump H-O-A Switch to Off "O", if tank or drum continues to overflow then the pressure relief valve is the problem. If it does not continue to overflow then remove and inspect the check valve. Replace if necessary.
	Pressure relief valve is relieving pressure into Glycol Feed Tank	To increase the pressure relief valve setting by first loosening the knurled jam nut and turning the T-bolt clockwise. Then tighten the knurled jam nut.
Pump cycles on and off repetitively	Leak in discharge or system piping	Inspect piping for leaks and repair.
	Pressure settings are not adequate	Refer to Sections 10.1 and 10.2 to adjust the pressure settings. Replace the pressure switch to the correct model if desired pressure settings are outside of the existing pressure switches capabilities.