

## installation, operation and service instructions

UV condensate pump

KEEP THESE INSTRUCTIONS NEAR THE PUMP FOR USE OF OPERATOR

### INSTALLATION INSTRUCTIONS

**LOCATING PUMP:** Install unit in a clean, dry, well ventilated and drained location for inspection and care, with the cover of the receiver flush with the concrete floor. This unit must be so placed that the condensate will flow into the receiver by gravity, otherwise the returns will be wet and the system cannot free itself of air.

**PIPING:** Connect returns to inlet of receiver with a gate valve in each return and with a union or flange joint next to the receiver. Connect discharge of pump to boiler with a union, swing check valve and a gate valve; with the swing check valve as close to the pump as is possible. If discharge pipe is longer than 50 feet, increase piping to the next size larger. Piping must be of correct length to prevent any pipe strain upon the unit.

**WIRING:** The electrical connections between the motor, float switch and automatic starter (if furnished) are made at the factory. Connect the electric service to the float switch or automatic starter using conduit and wire sizes as required by local power companies. Provide a fused main line switch in motor circuit. **CAUTION:** The motor is wired and connected at the factory to operate on the voltage specified. If voltage is other than originally specified, consult motor manufacturer's instructions accompanying unit for proper wiring. Where a polyphase motor is furnished with only a float switch, IT WILL BE NECESSARY TO INSTALL A SUITABLE PHASE PROTECTOR SWITCH IN THE MOTOR CIRCUIT TO PREVENT MOTOR BURNOUTS SHOULD A SINGLE PHASE CONDITION OCCUR.

**FUSES:** Be sure fuses are installed and comply in size with National Electrical Code recommendations. When a fuse blows out it indicates that something is wrong either in the motor, pump, switch, fuse rating or electric service. Do not replace fuse until the cause for its blowing out has been determined. If a thermal cut-out is used, an element with a maximum tripping current rating 50% greater than motor nameplate Amps. may be selected. Condensate boiler feed pumps are only operating intermittently and therefore it is permissible.

### OPERATING INSTRUCTIONS

**CAUTION:** New or repaired heating systems should be operated several days with the returns open to sewer until water appears clear, in order to thoroughly flush and clean the lines and prevent clogging of the pump when it is put in operation. This may take from a few days to two weeks.

**LUBRICATION:** The motor bearings and the pump shaft ball bearing are packed with grease when shipped from the factory, and lubrication is usually not required until after six months of operation. When the motor bearings need lubrication, **DO NOT OVER-LUBRICATE TOP BEARINGS OF ANY VERTICAL MOTOR** because grease will leak past the grease seals inside of the motor and cause serious damage to the stator windings and armature windings and commutator.

### INSPECTION BEFORE STARTING UNIT FOR FIRST TIME:

- 1 - Check motor bearings for lubrication, but do not lubricate unless absolutely necessary-- See preceding paragraph regarding instructions.
- 2 - Turn shaft and see that it rotates freely by hand. Failure of shaft to turn freely may be caused by packing glands drawn too tightly, motor bearings too tight or not lubricated or dirt clogging pump or becoming lodged in motor.
- 3 - Be sure current characteristics of voltage, phase and frequency on motor nameplate are the same as the service available. Also be sure that wires are connected to motor as per motor manufacturer's instructions for voltage and phase used, and that the correct size fuses and thermal cut-outs are installed.

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- 4 - Be sure that piping connections have been made as per instructions, and that the air vent pipe leading from receiver is open to atmosphere.
- 5 - Be sure that the engineering characteristics of the complete pumping unit are identical to the capacity, discharge pressure, and other requirements of the heating system.
- 6 - Be sure that the float in the receiver is free to operate float switch.

**STARTING:** Open valves in discharge and return lines, close valve on drains and throw in fused knife switch. If an automatic starter with selector switch is installed, be sure selector switch is in "Automatic" position.

**AFTER STARTING:**

- 1 - With vent pipe open to atmosphere, air and steam can escape as fast as condensation flows into the receiver. If vent is restricted or clogged receiver will not fill.
- 2 - Be sure pump and motor rotate in proper direction. Correct direction of rotation is clockwise when looking at top of motor. If rotation is reversed the trouble may be corrected in polyphase motors by simply reversing any pair of leads. If motor is single phase adjust brush setting. (See motor instruction card.) If motor is D. C. reverse armature leads.
- 3 - Be sure bearings of motor do not overheat.
- 4 - Be sure float switch closes and opens properly as receiver fills and is emptied by the pump. Normally this need not be touched. If required, however, refer to float switch instruction card.
- 5 - Be sure all connections are tight.
- 6 - Observe operation of unit closely for approximately three hours after starting and at regular intervals for ten days. A new unit is frequently stiff and bearings are tight, and therefore should be watched to note performance.

**CARE**

- 1 - **INSPECTION** - To insure the best operation of the unit, make a systematic inspection at least once a week.
- 2 - **CLEANLINESS** - Keep the interior and exterior of motor and automatic switches free from moisture, oil and dirt. When necessary blow out the interiors with compressed air or a bellows. Occasionally drain and flush receiver to remove sediment and scale, frequency depending upon operating conditons.
- 3 - **BEARINGS** - Prevent excessive heating and wear of bearings by proper lubrication at regular intervals, depending upon the type of pump service and cleanliness of location. Avoid overlubrication, which also causes bearings to heat up and produce excessive wear. When bearings are worn and unit is noisy, replace immediately with new bearings so as not to injure the other rotating parts.
- 4 - **AUTOMATIC SWITCHES** - Occasionally examine contacts of automatic switches and see that they make a full firm contact and break the circuit quickly. See that all terminal connections are tight.
- 5 - **STUFFING BOXES** - Keep packing glands just tight enough to allow a slight drip for lubrication, but not too tight so as to bind the pump shaft. Tighten opposite nuts evenly. After tightening nuts turn shaft by hand; if it binds, loosen nuts slightly. Use only metallic packing as originally furnished in pump or any other type such as recommended by SKIDMORE CORPORATION.
- 6 - **SHUTTING DOWN** - At the end of the heating season open main line switch, close valves on return and discharge, and drain receiver and pump. Cover motor and automatic switches to protect them against dirt, etc.
- 7 - **CAUTION** - Never run pump when it is empty or expose it to freezing temperatures when filled with water.

**ORDERING PARTS**

When ordering parts always furnish pump serial number indicated on nameplate, which may be attached to receiver, pump or base depending upon convenience. State quantity, name or description and part number if a casting.

PARTS LIST

1	Receiver C.I.	28	Oval Cover Plate
2	Motor Bracket C.I.	28-A	Sump Cover Gasket
3	Coupling	29	Switch Cover Gasket
3-A	Coupling Insert	30	Switch Cover Plate
4	Bearing Cap - C.I.	31	Upper Push Rod Link - Brz.
5	Felt Grease Retainer	32	Upper Float Lever Link - Brz.
6	Clamp for Packing Gland (2)	33	Float Switch Bracket
7	Split Packing Gland - Brz.	34	Float Switch Support Pipe
8	Packing Retaining Washer	35	Float Switch Actuating Rod
9	Shaft Housing	36	Stop Collars with Set Screws (2)
10	Shaft with Collar - S.S.	37	Actuating Rod Link
11	Copper Float - 4" Dia. - 1/8" Spud.	38	Lever Arm Link
12	Shaft Sleeve Bearing - Brz.	39	Lever Arm Shaft
12-A	Intermediate Bearing Plate	40	Packing Nut
13	Pump Housing - C.I.	41	Packing Follower
14	Centrifugal Impeller - 10-30 or 40 lb.	42	Plug Bushing & Stuffing Box
15	Pump Suction Plate - C.I.	43	Float Link Shaft
16	Impeller Lock Collar and Screw	44	Discharge Pipe - Gasket (2)
17	Wearing Ring - Brz.	45	Discharge Pipe - Locknut (2)
18	Float Rod - Galv.		Discharge Pipe & Elbow
19	Float Link Washer - Brz. (4)	BB	Ball Bearing
20	Float Link Shaft - Brz. (2)	PK	1/8" Metallic Packing - For Lever Arm
21	Float Link - Brz.	PK	1/4" Metallic Packing - For Pump Shaft
22	Lower Push Rod Link - Brz.		Pump Suction Strainer Housing
23	Push Rod Locknut - Brz.		Pump Suction Strainer Screen
24	Float Lever Support - Brz.		Grease Cup or Alemite Fitting
25	Lock Nut - Float Lever Support - Brz.		Packing Gland Stud Bolt & Nut (2)
26	Float Support Pipe - Galv.		
27	Push Rod - Brz.		Electric Motor
28	Sump Cover Plate		Float Switch

