OPERATION AND
SERVICE GUIDE
O-925H
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SERIES 'E' VERTICAL PUMPS, ADMIRAL 'EL' & SUB-ADMIRAL SYSTEMS

Refer to Bulletin P-300 (E Pump), F-511 (Admiral EL System), F-506 (Sub-Admiral Systems), and Parts List P-2175 (E Pump), P-2180 (Admiral EL Systems) and P-7310 (Sub-Admiral Systems).

SAFETY PRECAUTIONS BEFORE STARTING PUMP

1. Read operating instructions and instructions supplied with chemicals to be used.
2. Refer to a chemical resistance data chart for compatibility of material in pump with solution to be used.
3. Note temperature and pressure limitations.
4. Personnel operating pump should always wear suitable protective clothing: face mask or goggles, apron and gloves.
5. All piping must be supported and aligned independently of the pump.
6. Always close valves slowly to avoid hydraulic shock.
7. Ensure that all fittings and connections are properly tightened.

BEFORE CHANGING APPLICATION OR PERFORMING MAINTENANCE

1. Wear protective clothing as described in Item 4 above.
2. Flush pump thoroughly with a neutralizing solution to prevent possible harm to personnel.
3. Verify compatibility of materials as stated in Item 2 of Safety Precautions.

IMPORTANT

The pump is constructed entirely of CPVC or PVDF with a sleeved stainless steel shaft. The pump may be chemically compatible with the solution, but care should be taken to protect the pump components against unnecessary wear and physical abuse. For pumps operated with float type or probe type level controls, refer to supplemental Operating Instructions FSI-802 before energizing motor. Record all model and serial numbers for future reference when contacting factory.

PRE-START-UP

1. Verify that materials of construction are compatible with solution being pumped. Solution contact is CPVC with ethylene propylene "O"-rings (standard). PVDF has Viton 'O'-rings (standard).
2. Verify that operating temperature is not in excess of pump and/or chamber design temperature.
3. ADMIRAL EL users
   a. Remove cover and empty contents of filter chamber. Installing filter cartridge at this point is not recommended.
   b. Replace cover back on chamber. Check that the 'O'-ring is properly seated in groove of cover. Install cover on chamber checking engagement of cover groove.
   c. Install hose (supplied) onto vent valve barb. Make sure hose will discharge into tank once installed.
4. Place pump or admiral system into sump or tank and secure using bolts, clamps, etc.
5. SUB-ADMIRAL users
   a. Insert filter cartridge into cartridge adapter and tighten thumbscrews to hold filter in place.
   b. Insert filter plug (99-0645) into hole on bottom of filter cartridge.
   c. Install Ser-Ductor onto elbow. Point Ser-Ductor towards bottom of tank. With clamp provided, secure pump to lip of tank.
6. If using level controls, adjust accordingly for proper control.
7. Minimum solution depth for start-up is indicated by label on pump column. Solution must always be at the back of the pump impeller when the pump starts for proper priming.
8. Maximum solution height of tank for in-tank mounting should not exceed the relief drain located on pump column. Maximum solution height for out-of-tank mounting MUST be 1/2 inch below relief drain.
9. Relief port on pump column may weep liquid if the discharge is restricted. Position pump so this liquid is directed back into tank. If the pump is mounted outside of tank, attach a suitable drain line from the threaded 1/2" NPT relief port in pump column back to the tank.
10. All pumps are single phase and come with cord and plug. Motor is wired for 115 volts 60 Hz. If motor is to be used for 230 volt 50 or 60 Hz, change wires in conduit box per schematic located on motor nametag. Remove plug from cord. Plug is for 115-volt operation only. Motor does not have reversing rotation. Pump will start immediately after being plugged in. Using a disconnect switch and/or starter is recommended.

START-UP

1. With pump/system running, listen for any unusual noise, vibration or other abnormal conditions which could affect pump performance.
2. At maximum flow conditions, measure amperage on all power lines. If in excess of motor nameplate ratings, stop pump and consult factory.
3. ADMIRAL EL users
   a. Ten-inch chambers use a cartridge guide. Twentyinch and up use a cross post. Insert appropriate guide into base of chamber. Insert filter cartridge. Cartridges of varying lengths can be combined tofill the chamber. The shortest should be postioned at the top of chamber.
   b. A rubber spacer is supplied with chamber. It is used, if necessary, either between or at top of filter cartridge if stacked height is insufficient to assure a pressure tight seal.
   c. Check that 'O'-ring is properly seated in groove of cover. Install cover on chamber checking engagement of cover groove. Tighten thumb knobs.

d. Open vent plug to bleed entrapped air. Close when liquid flows through hose.

4. If using level controls, verify proper high level and low level trip points are correct.

PUMP SERVICE

1. REMOVAL OF SUCTION CASING AND/OR 'O'-RINGS
   a. Screw a 1" x 12" NPT nipple into suction casing. Pull outward with a gentle rocking motion.
   b. Inspect 'O'-rings. Replace if necessary.
2. REMOVAL OF IMPELLER
   a. Remove polyethylene cap (33-1660) from back of motor.
   b. Insert a screwdriver into slot on motor shaft.
   c. Impeller thread is left-hand. Turn impeller clockwise to remove.
3. REMOVAL OF COLUMN/MOUNTING PLATE ASSEMBLY
   a. Mark orientation of column/mounting plate assembly to motor.
   b. Remove the four polyethylene caps from mounting plate.
   c. Remove nuts from counterbore of mounting plate holding column assembly to motor.
   d. Pull column assembly away from motor.
4. REPLACING MOTOR/SHAFT
   a. Shaft is part of the motor. It can not be removed. Check run-out of shaft by plugging in motor, then unplugging motor. Watch shaft for wobble. Shaft should come to a smooth halt with no vibrations.
   b. Remove the four nuts from the studs of the old motor.
   c. Screw the nuts onto studs of the new motor. Nuts must bottom-out on motor face.
5. REPLACING COLUMN SUCTION CASING
   a. Note the orientation of mounting plate to motor . Install mounting plate over studs of motor.
   b. Place flat washer, lockwasher, then nut over each stud and tighten.
6. REPLACING IMPELLER
   a. Screw impeller assembly onto motor shaft. Impeller threads are left-handed. Check for concentricity between column and impeller. Impeller should be in the center of the column. Adjust the four nuts up or down for concentricity.
7. INSTALLING SUCTION CASING COVER AND PROTECTIVE CAPS.
   a. Lubricate 'O'-rings of suction casing cover and install into suction casing. Make sure grooves are facing up when re-installing. Install the four polyethylene caps onto mounting plate and on motor fan cover.

PUMPING TIPS

SERIES 'E' VERTICAL PUMP

1. Maximum suction lift after priming is 18 feet.
2. Pump motor should always be above lip of tank. Motor life could be greatly diminished due to extremely corrosive environment closer to solution.
3. When discharging overhead where there may be a considerable volume of liquid in the piping, it is recommended that a check valve be installed in the pump discharge. This will prevent unnecessary back syphoning which could cause cycling of automatic level control, or flood the motor.
4. Pumps provided with suction extensions must be started with liquid above the impeller.
5. Review parts list and maintain an inventory of recommended spare parts for emergency replacement. This will assure that the pump is returned to operation with minimum delay.

SUB-ADMIRAL SYSTEMS

1. Check to ensure that the intake port on side of pump column is submersed at least one inch below solution level. This is necessary for pump to properly self-prime and to increase life of filter media. If intake hole is too close to the top of the solution level, the pump will suck air.
2. The various adapters are designed to accept any of a wide selection of filter cartridges. Single and double column models accept 2-3/8" to 2-1/2" diameter cartridges. Refer to SUB-ADMIRAL product bulletin FSO-413 for description of selections available. Due to the dimensional variances and cartridge selections available, no single Sub-Admiral adapter will fit all cartridges.
3. Unit may be used without the discharge eductor installed. Eductor provides five gallons of clean agitation for each gallon discharged from pump.
4. Unit can be converted into a transfer pump.
   a. Remove filter tube from filter cartridge suction adapter.
   b. Insert the 1" x 12" nipple (supplied) into the suction adapter.
   c. Install the 1/2" NPT plug (supplied) into the intake port on pump column.

ADMIRAL EL

Installing a gauge guard with vent plug onto filter cham- ber cover to monitor pressure increase is a convenient way to determine when to change filters.

For some applications or when in-tank space is not available, it may be necessary to mount the pump on the outside of the tank. The pump will operate in this manner, but some inconvenience may be encountered when attempting to initially prime the pump. Necessary valves, pipe, fittings, and hose not furnished with the assembly may be purchased from stock. If the pump is to be operated near or at shut-off (0 GPM), the relief port in the pump body should be provided with a gravity drain to the tank. Elevation to the port must be above top of tank or connected to side opening in the tank.

IMPORTANT: For out-of-tank installations, the relief port **never** can be below liquid level.

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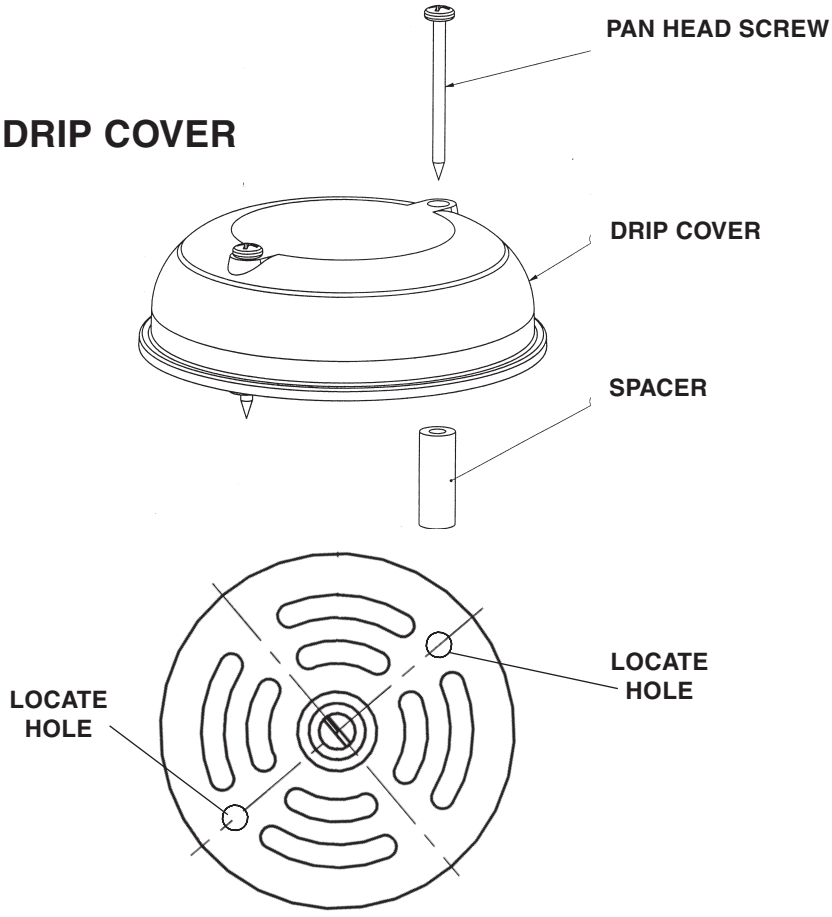
FIELD MOUNT OF MOTOR DRIP COVER KIT
Part No.44-7360

To mount drip cover to existing motor, place drip cover upside down on top of fan cover in order to mark holes. Be sure that the 2 holes are over the large areas of the fan cover. Locate the screw holes using a pencil or punch. Remove drip cover and drill two holes in motor fan cover with a 3/32" drill. Insert 2 self-tapping screws (included), #8-1¾" long through holes in the cover. Put plastic spacers over both screws (included) and locate over 2 drilled holes. Using a Phillips screwdriver, tighten screws down.



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