



# SERIES 'AS' SUBMERSIBLE SEAL-LESS MAGNETIC COUPLED PUMP

OPERATION AND  
SERVICE GUIDE  
O-15A  
DEC. 1995

MODEL	PRICE CODE NO.
PP3000AS	44-0746

Refer to Bulletin P-503,  
Parts List P-350.

## ⚠ SAFETY PRECAUTIONS BEFORE STARTING PUMP

1. Read operating instructions and instructions supplied with chemicals to be used.
2. Refer to 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 above.

**⚠ IMPORTANT:** Check compatibility of the pump and "O"-ring with the solution to be pumped. Refer to Product Bulletin PP-503 for pump model and materials of construction, standard and optional "O"-ring.

## PRE-START-UP

Install proper motor starter (with overload protection) if not already included on the assembly. Pump rotation is clockwise when viewed from pump end. Check that pump support feet (12) are tight. Verify power supply is 115V/1/60.

## CHECK SPECIFIC GRAVITY

Pump impeller is designed to provide maximum flow and pressure for water type liquids. Liquids of high specific gravity cannot be pumped (usually indicated by initial pumping and then complete cut-off) unless the overall length of the impeller is reduced. Impellers may be trimmed by sanding or filing, taking care to remove equal amounts at each end of impeller. Remove a maximum of 1/16" and check its performance in the pump before additional material is removed. See chart at end of instruction sheet.

## CHECK FOR FRICTION FREE ROTATION OF DRIVE MAGNET IN RELATION TO PUMP BODY

1. Remove pump cover and turn impeller by hand.

## START-UP AND PRIMING

1. Do not operate pump when dry. Liquid is necessary for lubrication and cooling of motor.
2. Pump must always be submerged in a solution before motor is energized. Maximum solution temperature is 165°F (74°C).
3. Pump is self priming. It can operate in a horizontal or vertical position but always totally submerged.
4. Pump discharge is threaded 3/8" MNPT, which also accommodates a 5/8" I.D. hose.

## OPERATION TIPS

1. If pump remains idle, flush with water or neutral solution to avoid crystallization between impeller magnet assembly (10) and body (7).
2. Inspect impeller magnet and pump body for signs of wear. Excessive clearance between these items indicates replacement is required of either or both. An excessively worn body or impeller assembly can accelerate the wear of the other new component. Therefore, replacement of impeller (10) and Teflon washer (9) is recommended.
3. Install pump with 5/8" discharge hose, rather than pipe, to avoid stress on pump body and permit ease of inspection. Hose connections to rigid pipe can then complete the installation.
4. If motor fails to rotate when energized: Check for proper voltage, starter wiring, wedged impeller magnet or misalignment between pump body and drive magnet. If problem persists, consult Application Engineering Department.
5. If motor rotates, but does not deliver flow check for:
  - A. Impeller and "O"-ring in pump body.
  - B. Solution specific gravity vs. impeller length (see table next page).
  - C. Tighten pump support feet.
6. **IMPORTANT:** An aqueous solution at 130°F, or higher will evaporate a considerable volume of water. The remaining solution will have a greater S.G. and therefore, can cause separation of the impeller from the drive magnet, and zero flow rate will result. Correct by adding water or trimming impeller (see below).

- Solution containing ferrous fines can cause accelerated pump wear due to their magnetic attraction to the impeller magnet. Therefore do not use with magnetic fines or other abrasives in the solution.

### PUMP SERVICE

The only replacement pump components are impeller, "O"-ring and Teflon disc. If pump continues to malfunction contact Application Engineering Department.

### MOTOR SERVICE

If motor fails to operate check for correct power supply, open connection in starter or damaged power cord.

If problem persists contact Application Engineering Department.

**Specific Gravity:** The length of the impeller supplied on all standard seal-less pumps is designed for use on water-like liquids. Solutions which have a higher specific gravity can be pumped if: 1) the outlet flow is restricted so that the impeller magnet stays in synchronization with the drive magnet, 2) The restrictions from a filter or other head loss is sufficient to keep the impeller magnet in synchronization. 3) the overall length of impeller is reduced according to the table.

SPECIFIC GRAVITY	1.1	1.2	1.3	1.4
IMPELLER DIAMETER	2-5/16	2-1/4	2-3/16	2-1/8



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