OPERATION AND
SERVICE GUIDE
O-2801
JUNE 2006

SERIES 'TM' SERIES 316 SS, POLYPRO, AND PVDF CENTRIFUGALS

Refer to Bulletin P-513

To obtain optimum performance from your SERFILCO pump please review these instructions carefully. Failure to follow these recommendations may result in severe pump damage and premature failure, along with voiding your factory warranty.

INSTALLATION

NOTE: The vast majority of pumping problems occur as a result of poor suction conditions. This section in particular should be reviewed carefully.

1. Locate the pump as close to the liquid supply source as possible.
2. The pump inlet should be well below the supply tank liquid level to avoid vortexing.
3. The suction line should be rigid (vacuum service), and as straight and short as possible.
4. Long radius elbows are preferred and increased size is recommended.
5. The suction line should never be a smaller ID than the pump suction port.
6. The suction line should continuously decline to the pump to avoid air pockets.
   NOTE: Reducers on the suction should be of the eccentric type.
7. A motor starter is recommended to:
   - Prevent accidental re-start after a power failure
   - Provide a safe, moisture-proof switch enclosure
   - Protect the motor with a correctly sized overload
   - Withstand high starting current and prevent arcing & contact wear

START-UP AND RUNNING

1. Check that the suction side valve is open and liquid supply is sufficient.
   NOTE: If pump is started before opening the valve it may become air-locked and run dry.
2. Bump start the motor to check that rotation is clockwise facing the pump (CCW facing motor fan).
3. Discharge valve should be partially closed and opened gradually after starting.

ESSENTIAL RUNNING PRECAUTIONS

1. **DO NOT RUNDRY**
   Mag-drive pumps are cooled and lubricated with product.
2. Avoid pumping liquids containing abrasive particles.
   NOTE: SERFILCO pumps are suitable for filter feed of plating solutions containing small solids. Consult SERFILCO for guidance.
3. A 40-80 mesh suction strainer is recommended if solids are likely.
4. To reduce flow partially close the discharge valve (suction valve is always fully open).
5. If the fluid being pumped tends to crystallize, the pump should be flushed prior to extended shut down.

OPERATING LIMITS

1. FLOW: Pumps may be operated at any point along the related published performance curves of the particular impeller diameter being used. The minimum flow required is indicated by the end of the curve to the left, and maximum flow by the end of the curve to the right.
2. OPERATING PRESSURE: Non-metallic Pumps - 110 psi maximum internal pressure 316SS Pumps - 275 psi maximum internal pressure
3. TEMPERATURE:
   Polypropylene Pumps - 160°F continuous, 180°F intermittent
   PVDF Pumps - 190°F continuous, 220°F intermittent
   316SS Pumps - 300°F continuous, 350°F intermittent

SERFILCO pumps are intended for use with liquids up to 45 cPs viscosity and 1.8 S.G. For services beyond these limits contact SERFILCO'S applications engineering department.

MAINTENANCE

In General, SERFILCO pumps require no routine or regular maintenance. Depending on the nature of the process fluid, a periodic check of the impeller thrust and sleeve bearings is advised. Excessive wear may result in misalignment of the impeller magnet and if left unchecked, interference with the rear casing.

DISASSEMBLY

1. Isolate the pump from the rest of the system by closing related valves.
2. Drain the pump and adjacent piping.
3. Remove pump case bolts.
4. Carefully separate pump head from the bracket and internal assembly.
5. Remove impeller-magnet assembly from shaft.
6. Examine thrust bearings, shaft, and sleeve bearings for excessive radial play.

RE-ASSEMBLY

1. Replace worn components.
2. Insert shaft into rear casing. NOTE: Flat end of shaft mates to flat on rear washer.
3. Check that impeller mouth ring is in proper position.
4. Check that ceramic casing mouth ring is pressed into proper position.
5. Place rear casing into adapter bracket and hand press into position.
6. Place bracket on bench with rear casing facing up
7. Carefully place impeller-magnet assembly into rear casing.
8. Place O-Ring into seat on face of rear casing.
9. Place pump case into position
10. Check position of discharge port in relation to adapter weep hole
11. Secure casing bolts. **DO NOT OVER TIGHTEN**
12. Set assembly on to motor flange (tap into place with rubber mallet if necessary).
13. Secure four motor adapter bolts. Again, do not over tighten.

NOTE: For installing external magnet on motor see Dwg. #S0299EXTM for location dimension.

MAG-DRIVE PUMPS

PUMP ASSEMBLY TO MOTOR

DO NOT DISASSEMBLE PUMP END

1. Remove white cardboard packing from inside the pump/motor adapter housing.
2. Remove external magnet from pump assembly.
   Note: the external magnet is held in place with magnetic attraction to internal magnet so there will be some resistance.
3. Place external magnet (Item 11) on to motor shaft, locating magnet so set screws will tighten into motor key way (no key on magnet). Use rubber mallet if necessary.
4. Locate proper setting of magnet per "External Magnet Location" drawing (see back).
5. Stand motor on end.
6. Holding it tightly (the magnets will attract during assembly) carefully place the entire assembly onto motor.
7. Locate housing bolt holes on adapter with tapped motor bolt holes and thread in screws by hand several threads. Be certain to place discharge in desired position. Typically this is facing up, but can also be mounted to either side.
8. Use rubber mallet to snug down motor adapter flush to motor. **DO NOT ATTEMPT TO SNUG TIGHT WITH BOLTS AS THIS COULD DISTORT THE PUMP MOTOR ADAPTER AND CAUSE MISALIGNMENT.**
9. Secure adapter bolts to motor. **DO NOT OVER TIGHTEN**
   The unit is now ready for installation. **DO NOT RUN DRY**

SERFILCO®, LTD.
2900 MacArthur Blvd. 847-509-2900
Northbrook, IL 60062-2005 U.S.A. 800-323-5431
e-mail: sales@serfilco.com FAX: 847-559-1995
www.serfilco.com