

LAWRENCE PUMPS INC.  
371 MARKET STREET  
LAWRENCE, MASS.

#104535

104536

SPECIAL INSTRUCTIONS PERTAINING TO LAWRENCE PROPELLER PUMPS

Pump Serial No. 53864 & -1 Fluid Drive Print None  
Pump Size & Type 24" Capacity USGPM 11000  
Elevation B-21502 Total Dynamic Head, Ft. 5.5  
B-25283 Specific Gravity 0.9  
Assembly A-22065 Pumping Temperature °F 230°F.  
Performance Curve 953 Speed RPM 630  
Seal Print 2D108195 Propeller Furnished/Max 20 1/4"/20 1/4"  
Driver Print GEM 2290D NPSH Required in Feet 18'  
Gear Reduction Unit Print None

PUMP OPERATION

1.0 Align pump properly and dowel motor. Grout base if pump is not spring mounted. Spring mounted pumps will not be level without spring adjustment. Final adjustment is made after system including pump is brought up to temperature. Care should be taken not to use up all of the spring movement for adjustment as this will result in a fixed support.

2.0 Pump is driven by MOTOR Yes STEAM TURBINE ---  
DIESEL ENGINE ---

Motor is prelubricated YES --- NO X

Steam turbine requires lubrication.

3.0 Coupling (if any) lubricated YES --- NO None

4.0 Type of Speed Control is:

V BELT DRIVE Yes GEAR REDUCTION UNIT ---

FLUID DRIVE --- OTHER ---

(a) V Belt drive requires lubrication YES --- NO X

(b) Gear Reduction Unit requires lubrication

(c) Fluid Drive requires lubrication

See attached appropriate component instructions.



5.0 The bearing housing (Part #18) must be filled with neutral mineral oil of about SAE 30 viscosity, (But resulting of no lesser viscosity than 90 SSU at the actual oil temperature) preferably rust and oxidation inhibited and anti-foaming.

5.1 The oil level height in the pump bearing housing is indicated on the assembly drawing and should be maintained for good pump performance.

6.0 Bearing housing is water cooled YES \_\_\_\_\_ NO X

Cooling water if required must be passed through the bearing housing jacket at min. rate of 1 GPM at 10 PSIG min. 40 PSIG max.

7.0 Packing box is water cooled, YES \_\_\_\_\_ NO X

Cooling water if required must be passed through the packing box jacket at min. rate of 1 GPM at 25 PSIG (Min.) 40 PSIG max. Higher flow may be required depending on operating temperature.

8.0 The pump incorporates:

Packing NO Mechanical Seal Yes

Clean, solid free, ambient temperature, compatible liquid (1 GPM @15 PSIG over the pressure @ the packing box) must be passed through the packing box, lantern ring or mechanical seal for sealing, flushing, cooling and lubrication purposes. Do not tighten shaft packing excessively. Some flush leakage is required for good packing performance and longer life.

9.0 Run pump dry to ascertain propeller does not strike the casing. Should the propeller strike the casing this will indicate that the pump discharge and suction flange connections have been preloaded by the weight of the discharge or suction piping or both. This condition must be corrected by disengaging the discharge and suction flange connections and supporting piping by other means.

10.0 Do not start pump with fully or partially closed discharge valve. Do not operate without sufficient NPSH. Prevent vortex formation in the suction vessel. If necessary provide vortex breakers.

11.0 Pump can be operated continuously.

12.0 To prevent lengthy shutdowns keep on hand a complete set of spare parts. See assembly drawing A-22065



PUMP MAINTENANCE

- 1.0 Motor or steam turbine bearings should be lubricated in accordance with instructions from the manufacturer.
- 2.0 The coupling (if any) should be lubricated per coupling instructions attached.
- 3.0 Maintenance and lubrication on the various types of speed control units are per V Belt Drive X  
Gear Reduction                      Fluid Drive                       
Instructions attached.
- 4.0 The oil in the pump bearing housing should be changed every five months or 2000 hours of operation, whichever comes first.
- 5.0 Pump incorporates back pullout feature YES X NO

The back pullout feature (note Part #69) permits removal as a unit the propeller, shaft, bearings, all mounted and carried by the frame Part No. 18 without disturbing the suction piping, discharge piping, speed control unit (V-belt drive, fluid drive or gear reduction unit) and driver (motor or steam turbine). This unique feature results in a low maintenance cost.

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