

## OIL PUMP (MOTOR DRIVEN)

Figure 1 shows a motor driven, vertical shaft, centrifugal type pump used to supply oil to the turbine lubrication system.

The unit as shown in the illustration is designed for mounting on the reservoir, so that the pump impeller is always below the minimum oil level. This arrangement insures a positive suction head and eliminates the necessity of priming the pump. The upper distance piece "17" is bolted to the reservoir housing, and the intermediate distance piece "26" is bolted to the reservoir through an expansion joint "14".

The pump impeller "5" is keyed on the lower end of the shaft and further secured by the impeller runner nut "2". Leakage from the discharge side back to the suction is limited to a minimum by the small clearance between the body liners "3" and the impeller hubs. The sheet metal screen "1" is used to protect the impeller against debris.

The three shaft bearings are of the split shell, babbitt lined type, and are bolted to the pump distance pieces by tap bolts. The upper bearing receives oil from the pump discharge through an external pipe connection. The intermediate bearing is lubricated by the leakage from the upper bearing. A definite head of oil is maintained on this bearing by inserting nipples of the desired length in the drain passages. The lower bearing is submerged in oil at all times.

The pump shaft is connected to the driving motor by a rigid coupling. The motor is of standard design with two ball bearings. The upper one serves as a thrust bearing, carrying the weight of the rotating elements and the thrust of the pump impeller. These bearings are lubricated by grease which is injected through external pipe connections provided for that purpose. Grease should be added periodically, depending on the total time the motor operates, so as to keep the bearings well lubricated. Avoid adding too much, however, because the excess will be forced outward along the shaft. The kind of grease used should be in accordance with the instructions attached to the motor when it is received from the factory.

The following list has been compiled to facilitate ordering spare or renewal parts by item number and name together with the serial number of the turbine.

<u>Item No.</u>	<u>Name</u>	<u>Item No.</u>	<u>Name</u>
1	Pump Impeller Screen	15	Pump Shaft Bearing (Intermediate) (In Halves)
2	Pump Impeller Nut	16	Handhole Cover
3	Pump Body Liner	17	Pump Distance Piece (Upper)
4	Pump Body	18	Coupling Hub (Pump Half)
5	Pump Impeller	19	Coupling Hub (Motor Half)
6	Pump Impeller Key	20	Coupling Taper Pin
7	Pump Body Cover	21	Motor
8	Tap Bolt	22	Tap Bolt
9	Pump Shaft Bearing Lower (In Halves)	23	Coupling Hub Key (Motor Half)
10	Pump Shaft	24	Coupling Bolt
11	Pump Distance Piece (Lower)	25	Coupling Hub Key (Pump Half)
12	Tap Bolt	26	Pump Distance Piece (Intermediate)
13	Tap Bolt	27	Pump Discharge Pipe
14	Expansion Joint		

Oil Pump (Motor Driven)

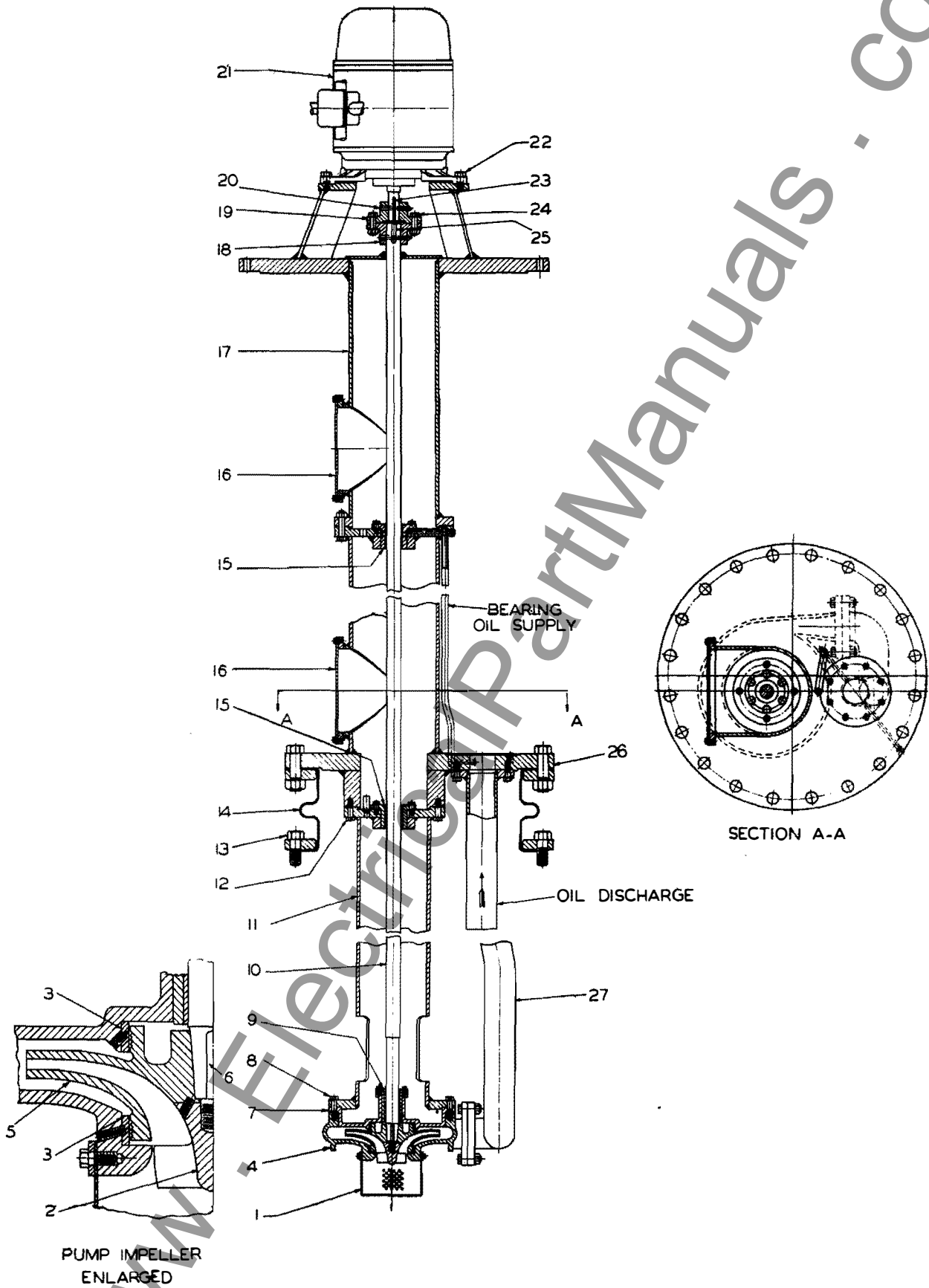


Figure 1