

## OIL PUMP (MOTOR DRIVEN)

Figure 1 shows the motor driven, vertical shaft, centrifugal type pump used to supply oil to the generator hydrogen seals.

The unit as shown in the illustration is designed for mounting on the auxiliary reservoir, which is integral with the main 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 "13" is bolted to the reservoir housing, and the lower distance piece "12" is bolted to the reservoir through an expansion joint.

The pump impeller "5" is threaded on the shaft "15" and secured by a set screw. Leakage from the discharge side back to the suction is limited to a minimum by the small clearance between the pump body liners "3" and the impeller hubs. The sheet metal screen "1" is used to protect the impeller against debris.

A centrifugal type blower, consisting of items "16" and "17" is mounted above the pump and driven by the shaft "15". This blower, in conjunction with special baffles between the main and auxiliary reservoirs, is used to thoroughly deaerate the oil and thus maintain a supply for the generator seals, free of entrained air or hydrogen gas. The blower impeller is keyed to the shaft and locked by the shaft sleeve "21". Leakage from the discharge side is prevented by a conventional type adjustable gland using soft graphite impregnated packing. Care should be taken to see that the gland flange "20" is not pulled down too tightly. The blower discharge should be led to a point at atmospheric pressure outside of the building.

The shaft is carried by a thrust bearing and three shaft bearings. The thrust bearing consists of the collar "9" which is pinned to the shaft, running against the babbitt faced disc "8". The upper shaft bearing consists of a sleeve "25" and an oilite bushing "26" which requires no continuous lubrication. Provision is made for reimpregnating the oilite bushing with oil when it is required. The intermediate bearing "14" is of the split shell babbitt lined type, and the lower bearing "7" is of the sleeve type babbitt lined. Each of these bearings is lubricated by oil supplied from the pump discharge chamber. The connection to the intermediate bearing is made by means of an external pipe and drilled passages. The thrust and lower bearings are supplied through drilled passages.

The shaft "15" is connected to the driving motor by the flexible coupling "24". The motor is of standard type with two ball bearings, one of which serves as the motor thrust bearing. 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.

### *Oil Pump (Motor Driven)*

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 unit.

<u>Item No.</u>	<u>Name</u>
1	Pump Impeller Screen
2	Pump Body Cover
3	Pump Body Liner
5	Pump Impeller
6	Pump Body
7	Pump Shaft Bearing (Lower)
8	Pump Thrust Bearing Disc
9	Pump Thrust Bearing Collar
10	Pump Thrust Bearing Pin
11	Expansion Joint
12	Pump Distance Piece (Lower)
13	Pump Distance Piece (Upper)
14	Pump Shaft Bearing (Intermediate) (In Halves)
15	Pump Shaft
16	Blower Body
17	Blower Impeller
18	Blower Impeller Key
19	Blower Gland Packing
20	Blower Gland Flange (In Halves)
21	Shaft Sleeve
22	Motor
23	Motor Support
24	Flexible Coupling
25	Shaft Bearing Sleeve
26	Shaft Bearing Oilite Bushing
27	Handhole Cover

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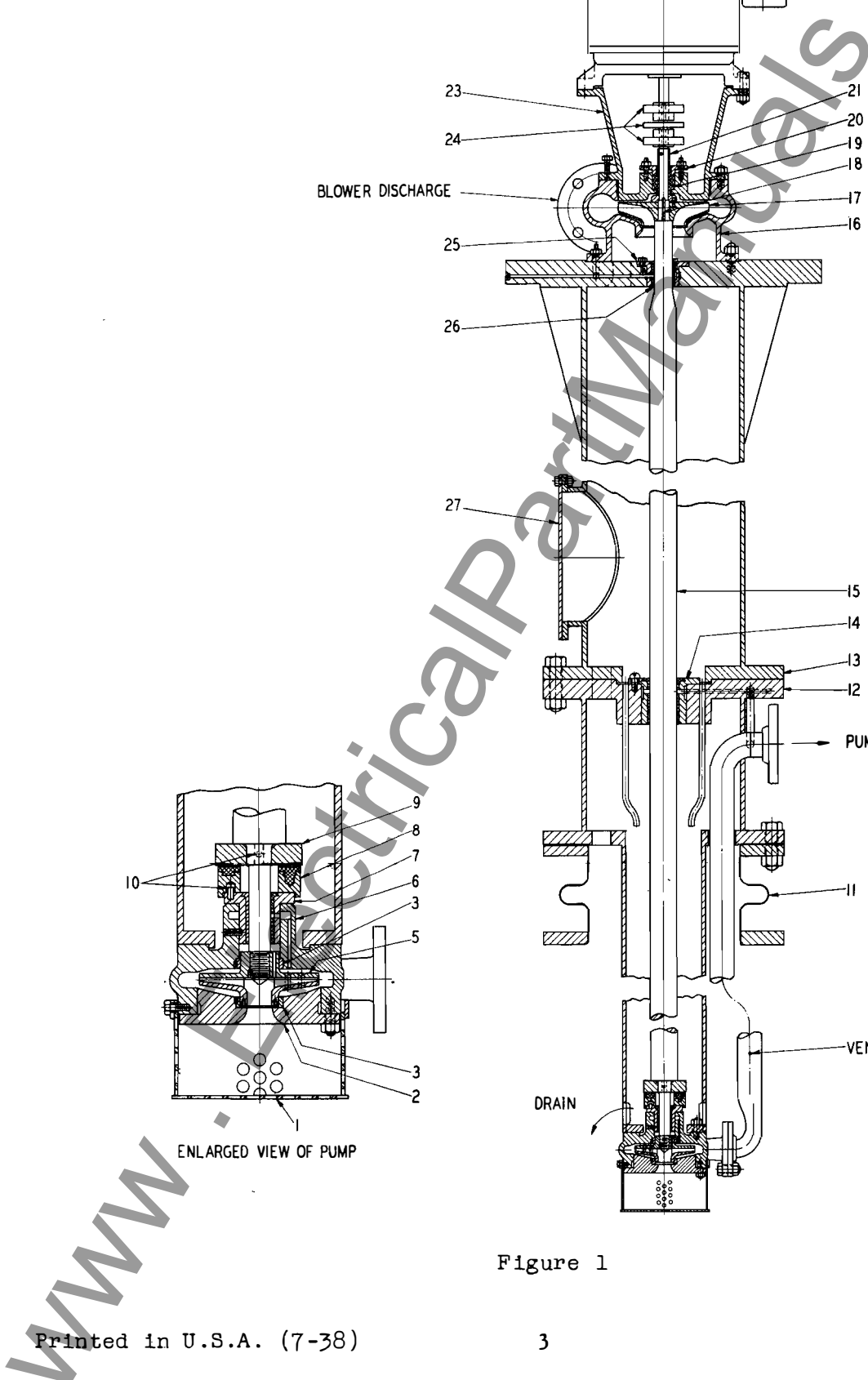


Figure 1