Journal Bearing

The exhaust end journal bearing, as shown in Figure 1, consists of a cast shell, split horizontally to facilitate dismantling and assembly and lined with tin base babbitt. It is bored accurately to provide the proper clearance as shown on the "Rotor Clearance" drawing. This bearing operates equally well with either of two types of lubrication; namely, ring oiled or pressure circulation.

When used on units which require an oil pump for other purposes, such as valve operation or gear lubrication, the bearing is lubricated by a pressure circulating system. This is the arrangement shown in the illustration. Oil is supplied by the main pump and enters the bearing at the top. That passing out at the ends is thrown radially by the revolving throwers "2" and "7" into the guides formed on the ends of the bearing shell, whence it is drained through holes in the bottom into the drain chamber.

Those throwers shown in the illustration are separate rings secured on the shaft by set screws. Whenever practical, these throwers are machined integrally with the shaft.

During the starting and stopping periods, when the pressure delivered by the main pump is not sufficient to supply the bearings, lubrication is provided by the conventional type of revolving ring, shown as item "9". The bottom of the ring dips in oil in the ring cavity and carries it to the top of the journal. The oil ring cavity is automatically kept full of oil from the pressure circulating system after the unit has once been operated.

When used on units which are not equipped with an oil pump, the bearing is ring oiled at all times. In such cases, a hole is drilled through the bottom of the ring cavity connecting it to the main chamber of the bearing bracket which serves as a reservoir. The oil inlet and drain openings (shown in the illustration) are plugged and an oil filling and level gauge fitting is provided on the side of the bracket. The oil level in the bracket reservoir should be maintained at the height indicated by the filling fitting.

Needless to say, on units which are equipped with pressure circulating systems and auxiliary oil pumps, the ring oiled feature is of no consequence. In such cases the revolving oil rings may be omitted.

On some bearings of this type when used in machines which operate with very high steam temperatures, a water cooling chamber is provided in the bearing bracket. When used, connections are provided for the circulation of cooling water. The flow may be in either direction and the quantity used will depend upon the temperature of the water and the results desired.

When the turbine is coupled to a generator not equipped with internal air baffles, it is necessary to guard against windage caused by the rotor. In such instances, the generator rotor may set up a low pressure zone between it and the bearing, thus creating a suction sufficient to draw oil vapor outward from the bearing bracket. To prevent this condition, a baffle "3" is mounted on the end of the bracket.

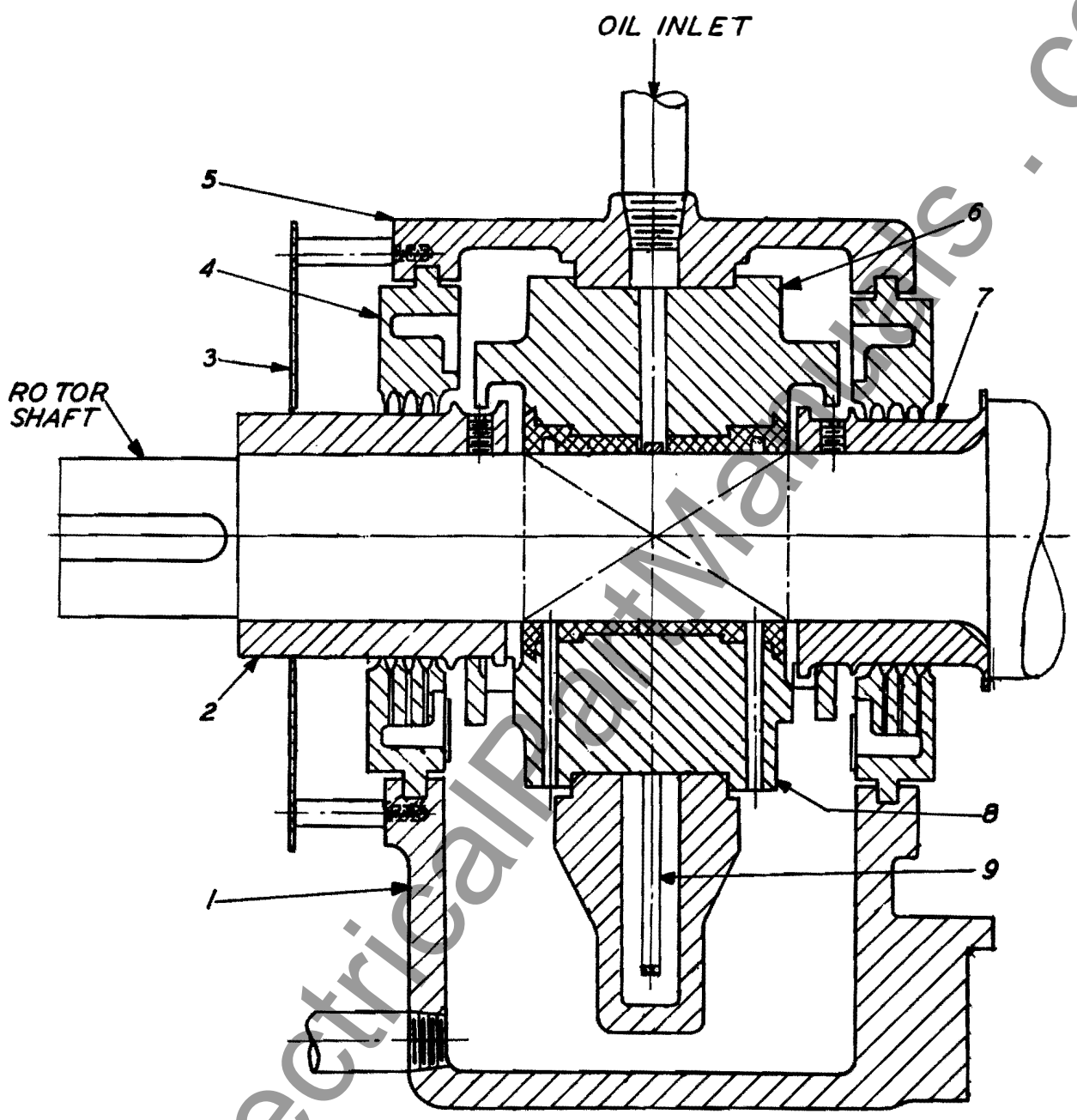

Fig. 1 - Journal Bearing and Bearing Bracket

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

Item No.	Name
1	Bearing Bracket (Lower Half)
2	Shaft Thrower (Outer)
3	Air Baffle
4	Oil Seal Ring (In Halves)
5	Bearing Bracket (Upper Half)
6	Bearing (Upper Half)
7	Shaft Thrower (Inner)
8	Bearing (Lower Half)
9	Oil Ring

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