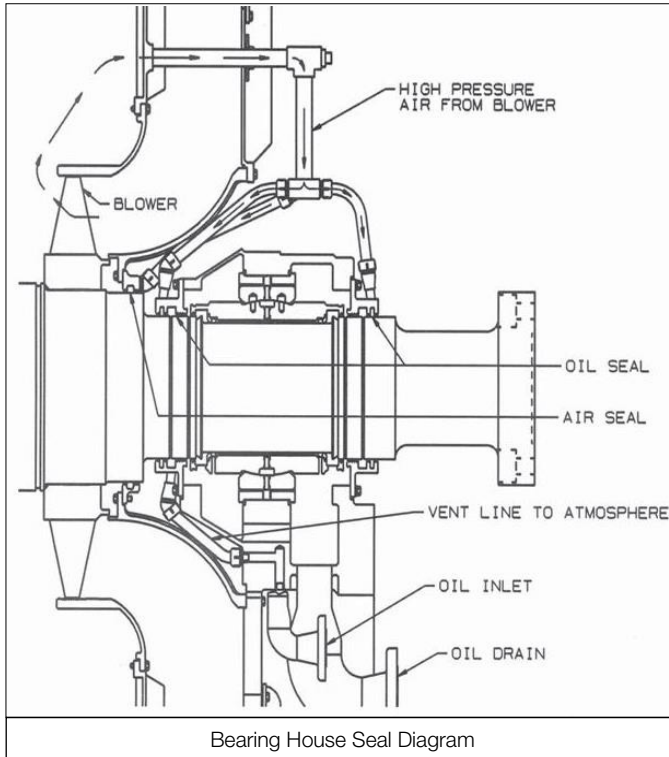


2-Pole Turbine Generators

Bearings and Seals

Bearing housings are bracket (and shield) mounted and provide easy access. Pressurized seals prevent ingress of dirt. Pressurized oil seals prevent the loss of oil or oil vapor.



Bearing House Seal Diagram

Lubrication

The amount of oil entering the bearing is metered so that just the right quantity comes in contact with the journal. The oil flows over the bearing surface in a fan-shaped pattern. Oil flows outward toward each end of the bearing where it is collected in drain grooves and discharged into the bearing housing.

If any oil passes the shaft seals which are located outside the drain groove, it is thrown into a secondary drainage area by a shaft slinger. Metal labyrinth seals pressurized by rotor fans prevent leakage of oil and vapor from the housing.

Bearing Sleeves

Precision machined split type bearings are designed with a spherical seat for alignment. After removing surface silicon and graphite, the ductile iron bearing shells are electrolytically etched by the Kolene process. The shells are then tinned and babbitted by centrifugal casting which insures a strong metallurgical bond between the ductile iron and the babbitt. Only tin based babbitt with high resistance to corrosion is used.

The bearings incorporate a generous load supporting area in the lower sleeve. Carefully designed clearances insure proper lubrication and cooling. Adequate drains are provided for end leakage. The bore is elliptical to prevent oil whip.

A bearing temperature detector is inserted in the lower half of each bearing in the load carrying area. These detectors monitor bearing temperatures and may be used to actuate alarms or shut-down circuitry.

Bearing Sealing

The bearing housings are part of the bearing bracket structure and are completely external to internal air passages of the machine. Each bearing housing has three labyrinth type seals that are pressurized with high pressure air from the shaft mounted blower. Along with slingers machined in the shaft, an oil seal is provided at the end of each journal to prevent oil from escaping along the shaft. The inner chambers of the oil seals are vented to the atmosphere. An air seal is provided at the entrance to the machine to prevent foreign material or oil from entering the machine.

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