Glands

Figure 1 shows the type of gland used to prevent leakage at the points where the rotor shaft passes through the cylinder. When the pressure inside the gland is below atmospheric, the gland must, of course, seal against leakage of air inward, while when the pressure within the cylinder is above atmospheric, the glands must seal against the leakage of steam outward into the atmosphere.

These glands are of the conventional carbon ring type and the case is split in the horizontal plane to facilitate dismantling and assembling. The carbon rings are made in three segments, and the ends fitted so that a clearance as given on the "Rotor Clearance" drawing exists between the shaft and the inner surface of the ring when cold. It is also essential that the joints at the ends of the carbon ring segments be perfectly square and radial in order to prevent leakage of steam at these points. Each complete ring fits in a separate groove in the gland case and is held around the shaft by a garter spring which also serves to keep the joints at the ends of the segments tight. The ring is prevented from turning by a key "9" secured in the gland case, which engages a slot in the ring "7". If the gland is dismantled, it is important to reassemble each segment in the same position as found originally.

When fitting the carbon rings, every precaution must be taken to see that they are free to move radially in their individual grooves. If the rings are tight in the grooves, they will wear rapidly and in extreme cases may injure the shaft. The axial clearance necessary to insure this freedom of movement is given on the "Rotor Clearance" drawing. No oil should be used in fitting the rings.

As shown in the illustration, there are two openings for pipe connections in each gland case. These should be connected as follows:

For Non-Condensing Operation

1. The opening at bottom of the gland case serves as a steam leak-off and drain and should be connected to some point at atmospheric pressure, where a slight amount of escaping steam is not objectionable.

2. When sealing against moderate pressures, the opening in the top of the gland case should be plugged. When sealing against high pressures, this upper opening may be used as an additional leak-off and should be connected in accordance with special instructions supplied in each case.

For Condensing Operation

1. The opening at the top of the gland case serves as a steam inlet and should be connected to a supply of low pressure steam which serves as the sealing medium.

2. The opening at the bottom serves as a drain and steam leak-off and should be connected to some point at atmospheric pressure where a slight amount of escaping steam is not objectionable.

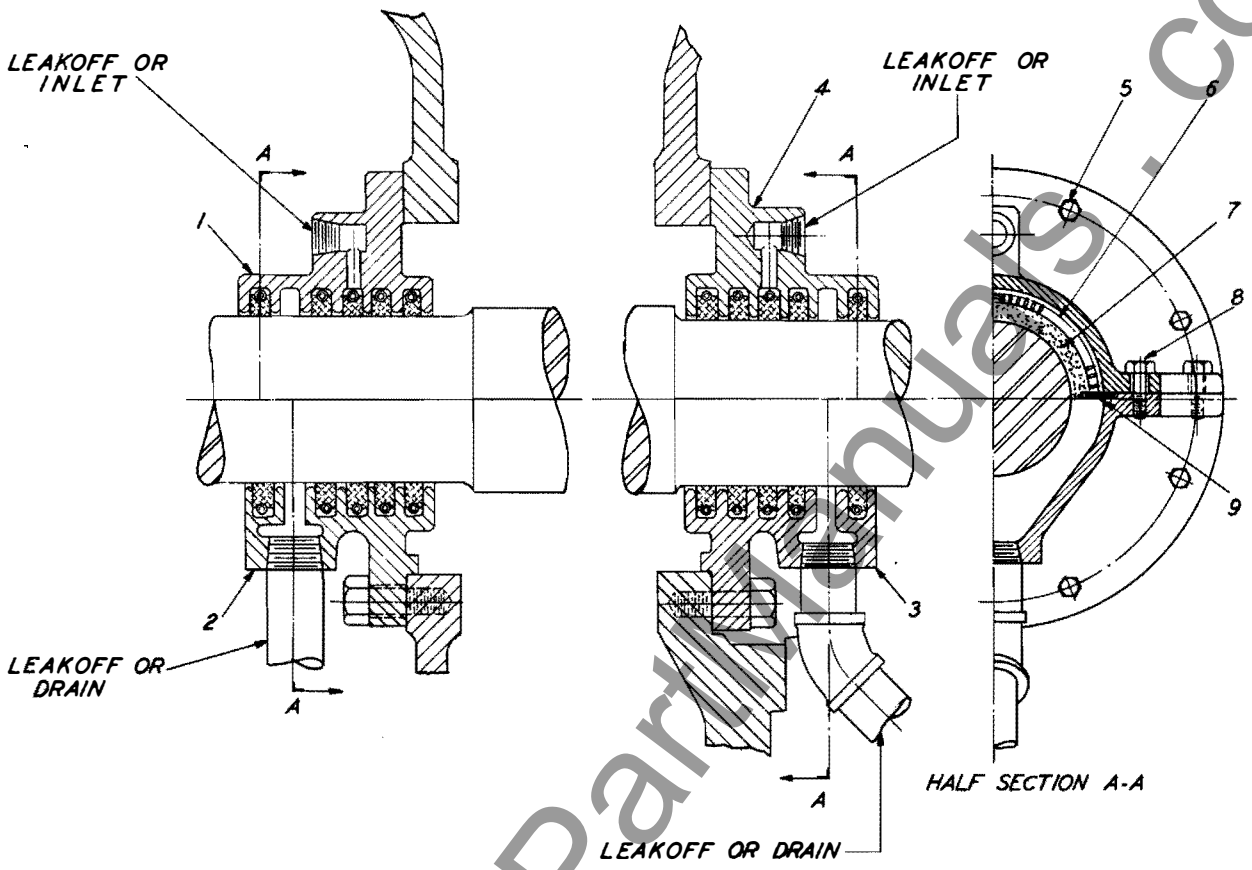

Fig. 1

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	Gland Case (Upper Half) (Coupling End)
2	Gland Case (Lower Half) (Coupling End)
3	Gland Case (Lower Half) (Inlet End)
4	Gland Case (Upper Half) (Inlet End)
5	Gland Case Tap Bolt (Vertical Flange)
6	Carbon Ring Spring
7	Carbon Packing Ring (Complete)
8	Gland Case Tap Bolt (Horizontal Flange)
9	Carbon Ring Stop

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