GOVERNOR VALVE

Governing Valve

The steam chest "14", (see Fig. 1), which encloses the governing valve is located below and to one side of the governor servo-motor and is bolted and dowelled to the cylinder base.

The governing valve "13" is of the double seated, balanced, poppet type and operates within the cage "15". The valve is pinned to the stem "11" which is guided at the inner end by the cage and at the outer end by the bushing "19". The stem is connected to the operating piston rod by the bell-crank and linkage, items 1-8 inclusive, and the valve operating stem.

The bushing "9" serves also to reduce to a minimum the leakage of steam along the stem. The leakoff should be connected to a point at atmospheric pressure where a small amount of escaping steam is not objectionable. No other form of stem packing is used and if excessive leakage occurs, it should be corrected by installing a new bushing.

The surface of the valve stem must be kept smooth and free from galled spots, paint, rust, or dirt. Any binding or sticking of the stem will cause unstable governor action.

It will be noted that the valve and seats form line contacts and not surface contacts. Therefore, this valve cannot be ground in to stop leakage. A leaky valve and its cage must be remachined to correct the condition.

A test to determine whether or not the valve is leaking too badly for use may be applied as follows:

1. With the turbine operating at no load, press inward on the valve stem spring seat "7" to hold the governing valve on its seat.

2. If the steam leakage is sufficient to keep the turbine rotating, it is evident that the valve is leaking too badly for practical use.

If it should be necessary to reseat the valve, the inner disc must be faced off maintaining a 90° angle, and the bevel on the outer disc faced off the same amount. The seats in the cage must be bored in the same manner, maintaining a 90° angle on the outer seat and a bevel on the inner seat. If this is not done accurately, the areas of the valve discs will be changed, thus throwing the valve out of balance which will undoubtedly cause "hunting" of the governor. It is difficult to do this work without proper facilities and, since the parts are relatively inexpensive, it is recommended that new parts be obtained from the factory when such repairs are necessary. From the above it will be obvious that the cage and valve should be ordered and replaced together because these parts are made in sets and are not furnished separately.

When removing the cage, the steam chest should be heated by turning steam into it, and the cage cooled by ice or water (preferably ice). The cage can then be pulled out of the steam chest. Likewise, the steam chest should be heated when installing the cage in order to avoid galling the press fit.

Adjustment of Governing Valve

The valve travel is very important and is set accurately at the factory when the turbine is tested. Therefore, it is recommended that the travel be checked on each new machine when first received, and recorded in a permanent record. Then at any future time, the travel can be checked

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against the original setting.

In order to check the travel, proceed as follows:

1. With the turbine at rest measure the distance "P" between the valve stem spring seat "7" and the steam chest cover "2".

2. Operate the turbine at approximately half speed with no load. At this speed the governor valve will be wide open. Again measure the distance "P".

3. The difference between the two measurements is the valve travel and is the figure to be recorded.

Note: It is advisable to go through the checking process a second time to insure a correct reading.

Item No.	Name of Part
1	Operating Stem Bushing
2	Steam Chest Valve Body Cover
3	Operating Stem Spool
4	Bell Crank Lever
5	Bell Crank Fulcrum Pin Bushing
6	Bell Crank Fulcrum Pin
7	Governor Valve Stem Spring Seat
8	Governor Valve Stem Spring
9	Governor Valve Stem Bushing
10	Governor Valve Cage Stop Pin
11	Governor Valve Stem
12	Governor Valve Stem Pin
13	Governor Valve
14	Steam Chest Body
15	Governor Valve Cage

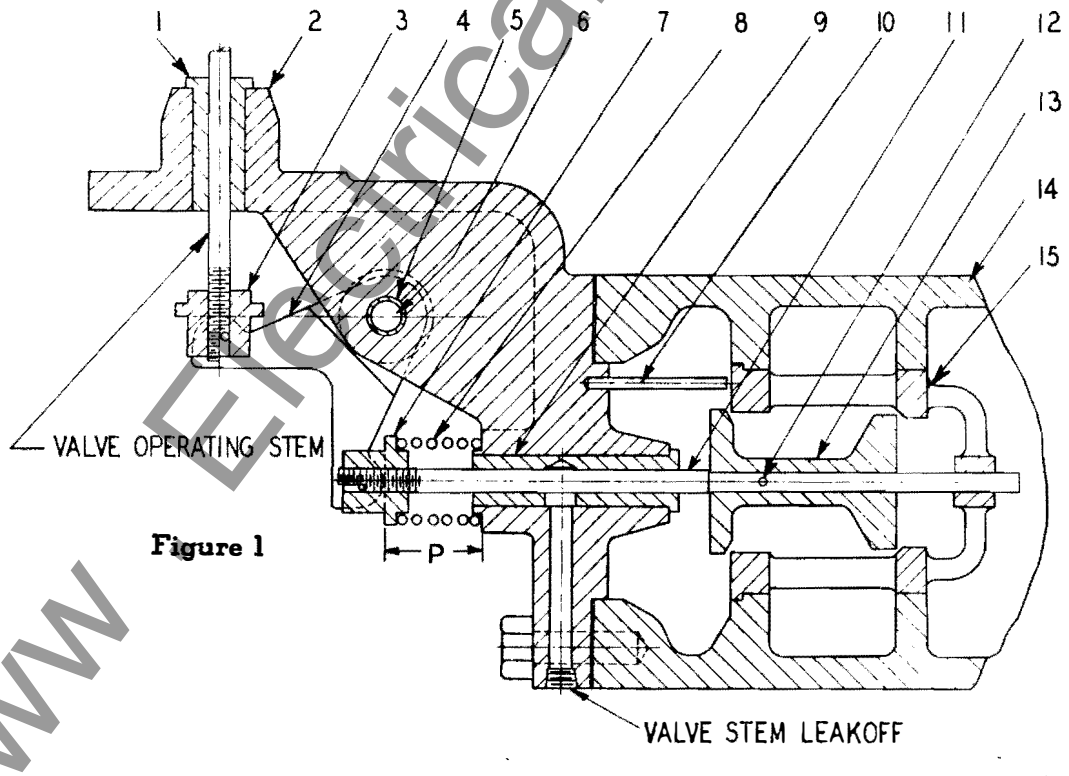

Figure 1

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