

ROTOR POSITION MICROMETER

A hole is provided in the overspeed trip end cover through which a standard depth micrometer can be inserted to determine the axial location of the rotor, relative to the cylinder, while the unit is in operation.

When a reading is desired, the micrometer spindle is inserted in the hole which is drilled in the central boss of the overspeed trip end cover until the spindle makes contact with the end of the rotor shaft. When the micrometer is not in use, the hole through the end cover is closed by a cover plate.

In order to obtain a reading of the rotor position, proceed as follows:

1. Open the micrometer hole in the end cover. This is done by rotating the cover plate to clear the hole.
2. Screw the micrometer thimble outward so as to make sure that the face of the sleeve will rest against the end cover before the spindle touches the rotor shaft.
3. Insert the micrometer spindle. Then hold the sleeve firmly against the boss on the end cover and screw the thimble inward until it just touches the end of the rotor shaft.
4. Withdraw the micrometer and read and record the measurement.
5. Rotate the cover plate to close the micrometer hole.

When a reading is being taken, great care must be exercised to get just a light touch of the micrometer spindle against the rotor shaft. It is quite evident that if the thimble is screwed inward too far, the spindle will rest against the shaft and force the micrometer sleeve away from the boss on the end cover, thus giving a false reading. It is also important to see that the boss, against which the micrometer sleeve rests, is perfectly clean and free of paint.

The readings thus obtained are comparative only. Such readings should be taken just after the turbine is installed and just after any inspection or repair which involves a re-check of the axial location of the rotor, and these readings carefully recorded. Then at any future time, readings can be taken and compared with those on record. In order to obtain accurate comparisons, a new reading should be taken under the same load conditions as the original reading with which it is to be compared. For this reason, it is advisable to record readings taken with one quarter, one half, three quarters and full loads on the unit.

If the micrometer is used frequently over a considerable period of time, the end of the spindle may become worn, thus giving an incorrect reading. It can be checked to determine the amount of wear by measuring (with micrometers) the length of the spindle protruding beyond the face of the sleeve. It is suggested that such a measurement be taken when the micrometer is first received and recorded for future reference.