MEASURING INSTRUCTIONS

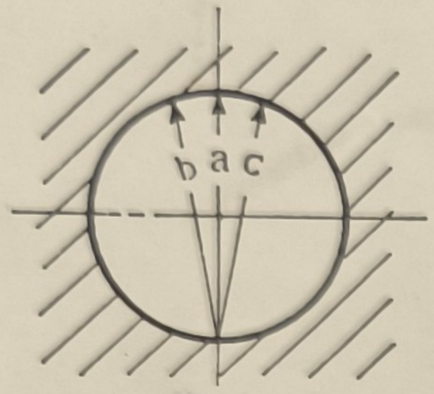

Fig. 1

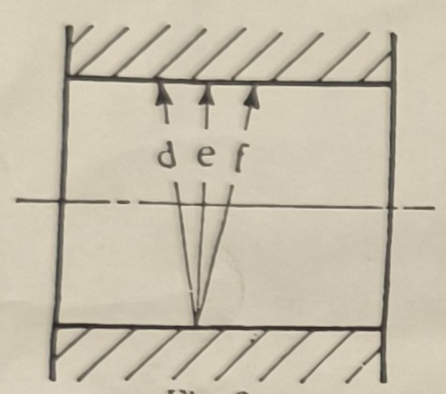

Fig. 2

1. Install dial indicator on cylinder gauge shank.
2. Install such an interchangeable rod and washer on the gauge as are suited to applicable range including the bore to be measured.
3. Make adjustment so that dial indicator is set at zero.

The zero adjustment is accomplished alternatively by the following methods.

a) Adjustment with master ring

This method is suitable for a mass-production or regular production model. Prepare a master ring and insert it into the gauge for zero adjustment of the dial indicator. Fit the gauge into a cylinder whose bore to be measured. The gauge is guided with a guide piece normal to the measuring line (the central axis connecting the center lines of the gauge head and interchangeable rod,), so that its both measuring ends automatically are brought in line with the diametral section, as represented by position (a) in Fig. 1. In this case, the measuring line never comes off position as shown by positions (b) and (c), Fig. 2, however, points out such possible deviation as (d) or (f). In this case, if measurement is conducted with the minimum value (e), actual bore can readily be obtained. Read, therefore, the scale value when the pointer deflects to the right for a minimum value.

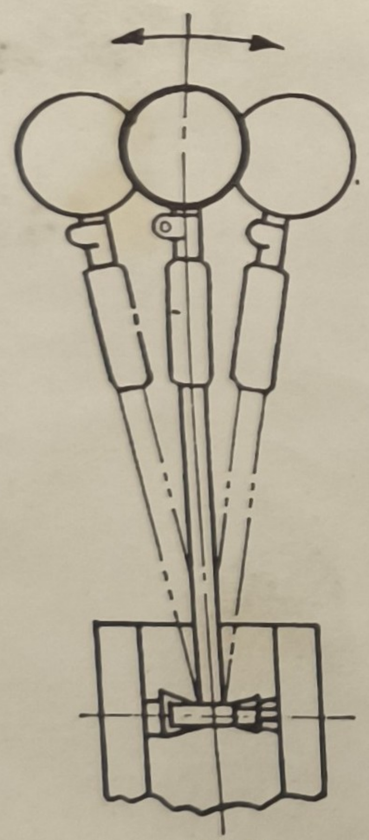
Fig. 3

In actual operation, fit the gauge into a cylinder obliquely first and then shift it toward the center, and the pointer moves rightwardly. As it reaches the diametral point (Shortest point) and goes beyond it, the pointer reverses leftwardly. Therefore, the center line can readily be found.

b) Zero adjustment with outside micrometer

This method is often employed as a shop practice where no master ring is available. Insert the gauge head into the outside micrometer as shown in Fig. 4. The micrometer has been adjusted in advance to a required length. Bring the interchangeable rod to the measuring surface of the micrometer anvil. Then, move the spindle measuring head to allow the indicator to show the minimum value. Regard it as the zero point.

This adjusting technique requires some skillness and makes the range of accuracy a little wider, and yet it is very practically and finds widespread use because it facilitates zero adjustment.

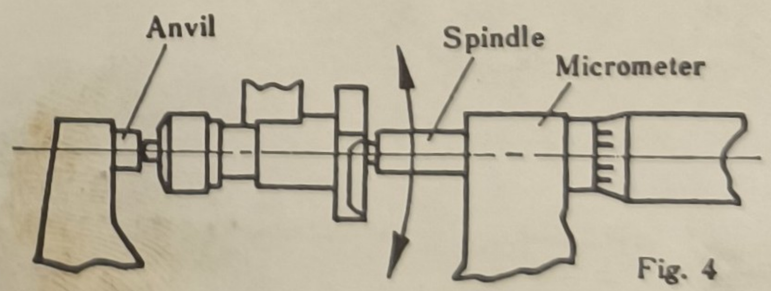

Fig. 4