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SPECIAL MAINTENANCE INSTRUCTION NO. RDSO/2017/EL/SMI/0314 (Rev '0')

Dated 29.09.2017

1. **Title:** Use of Dial Snap Gauges for measurement of shaft diameter of traction motor for Electric Locomotives.
2. **Brief History:**
 - 2.1 For improving the reliability of 3-phase traction motor bearings, RDSO had carried out technical audits of various sheds, workshops & CLW. It is observed that various sheds/workshops are using simple two point micrometers with 10 microns least count for measurement of shaft for bearing fitment which is not in order.

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- 2.2 It is observed that, tolerance for shaft measurements is of the order of 20 to 30 microns only. Hence measurements with micrometer of 10 micron least count is not desirable.
- 2.3 It is recommended to use dial snap gauge with least count of 1 micron for shaft measurements to improve reliability of bearings.
- 2.4 Dial snap gauge is better in terms of repeatability & reproducibility as compared to two point micrometer.
3. **Object:** Use of Dial Snap Gauges for measurement of shaft diameter of traction motors for Electric Locomotives.
4. **Modified Instructions to replace existing instructions:**
- 4.1. Dial Snap Gauges of 1 micron least count as per grade I of IS14271:1995 (or latest) of suitable range shall be used for shaft diameter measurements.
- 4.2. Shaft diameter of various types of traction motor are given below for guidance in selection of suitable range of dial snap gauges:-

TM type	Bearing seating Shaft diameter (in mm)	
	DE	NDE
6FRA6068	180 $+0.043/+0.068$	100 $+0.023/+0.045$
6FXA7059	120 $+0.037/+0.059$	95 $+0.023/+0.045$
HS15250A	150 $+0.043/+0.068$	120 $+0.037/+0.059$
TAO-659	140 $+0.05/+0.07$	90.2 $+0.05/+0.07$

- 4.3. Snap gauges of 1 micron least count with digital indicator can also be used if available. However, no national/international standard for snap gauge with digital indicator is available presently.

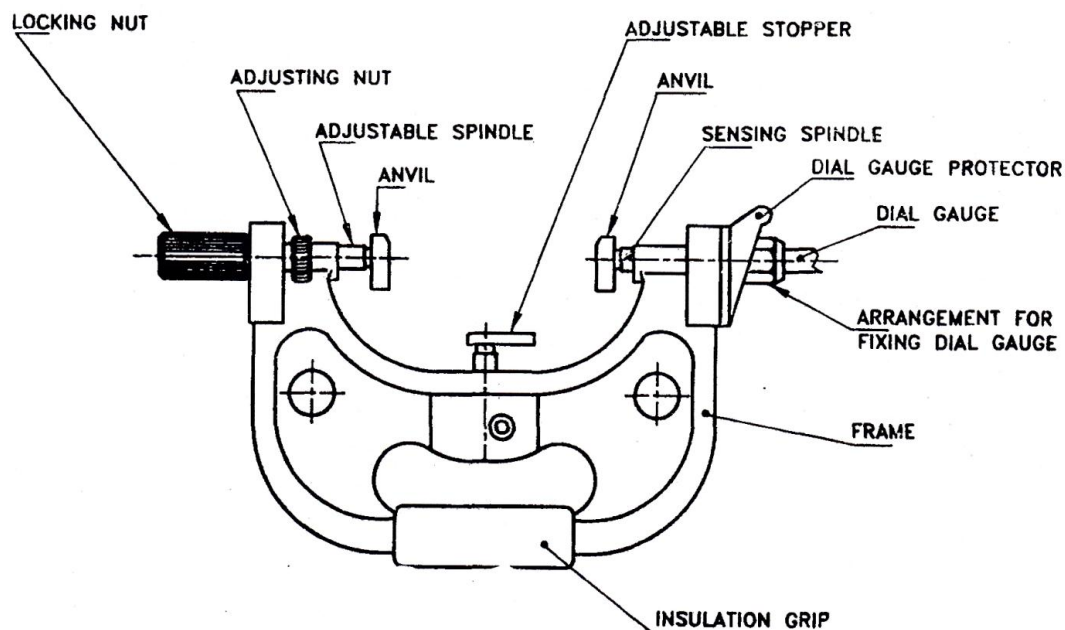


FIG. 1 NOMENCLATURE OF DIAL SNAP GAUGES

5. **Application to class of Locomotives:**
All types of Electric locomotives.
6. **Agency of Implementation:-**
All Electric Loco sheds/Workshops, Production Units and Traction Motor Manufacturers.
7. **Periodicity of Implementation:**
During fitment of traction motor bearings.

424
29.9.17

(P. K. Saraswat)
for Director General/Electrical

Encl: Nil

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