



KUDALE INSTRUMENTS (P) LTD.
AN ISO 9001-2008 COMPANY

DUPLEX AUTOMATIC GEAR ROLL TESTER

A New Approach to Shop Floor Gear Inspection



Useful for inspection of Gears for

- Total composite Error (Fi")
- Tooth to tooth Error (ft")
- Radial run Out (Fr")
- High spot

This is a two station Gear Roll Tester for inspection of two identical gears with respect to master gear.

While one gear is being inspected, the previous inspected gear is unloaded and another gear loaded for next inspection.

1.Design Features:

- The design of machine is rigid base having Master gear is centrally located on Arbor of the machine. The Master Gear is a driver Gear.
- Both the component Gears are identical and mounted on arbors on either sides of master gear on adjustable and floating slides.
- The Range of machine to inspect the Gears for center distances from master gear, for the gears from 40 to 130 mm
- Floating slide is mounted above the adjustable slide on the both sides (called as station one & station two) and can be operated by using pneumatic cylinders mounted on adjustable slides.(two Pneumatic cylinders operating pressure required is 3 Bar).
- At the both ends component gears mounted on suitable Arbors and henceforth is called as station 1 and 2.
- The Master gear is rotated by using suitable motor and drive.
- The test gear from station one is meshed with the master gear by using Hand held unit.
- The rotation RPM can be set initially in Digital Read Out unit from 3 RPM to 15 RPM in step of one RPM.
- The Rotation of master gear, rotates the test gear on station one at selected RPM.
- The movement of floating slide is sense by the Tesa probe at station one and transfer the data to DRO.
- The DRO will collect the data and give the errors in Component gear at station One. After completion of inspection of gear from station one, data will display on DRO Or by using PC software, we can view the data on PC.
- While test is in progress at station one, we can unload previous inspected gear from station two and load new gear for inspection at station two.

2) The features of Digital Read Out system are as follows:

- Microcontroller based Duplex CGRT with 20 X 4 Jumbo LCD Display.
- Multi color Soft touch Keypad.
- Servo Drive Interface, 2 LVDT Probe Interface.
- Auto meshing of Test gear with Master
- Auto roll test with servo motorized revolution
- Programmable Gear parameter. Key switch protection for Programming parameter
- Pneumatic loading of the component Gear with master Gear.
- Calculate following Errors:
 - 1) Total composite Error (F_i'')
 - 2) Tooth to tooth Error (f_i'')
 - 3) Radial run Out (F_r'')
 - 4) High spot
- Test speed settable from 1 RPM to 15 RPM in steps of 1 RPM.
- Clock wise and anticlockwise Test direction of gear.
- Audio / Visual indication for Accept/ Reject.

3) Motor and Drive specification

- Panasonic make Servo Motor, A5 Series, Watt – 750 Watt.
- Servo Drive A5 Series.

4) Probe specification

- Make Tesa, Range : 0 to 2 mm., Least
- Count = 0.001 mm.



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