



Digital Dial Gauge



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Digital Dial Gauge



WARNINGS



This instrument must be utilized only for the application it has been designed for, OTR declines all responsibility for any improper use.



Do not connect the instrument to the readout unit with wet hands;



Do not put the instrument in flammable liquids or potentially explosive gases.



Do not use the instrument in water where an electric dissipation is in progress.



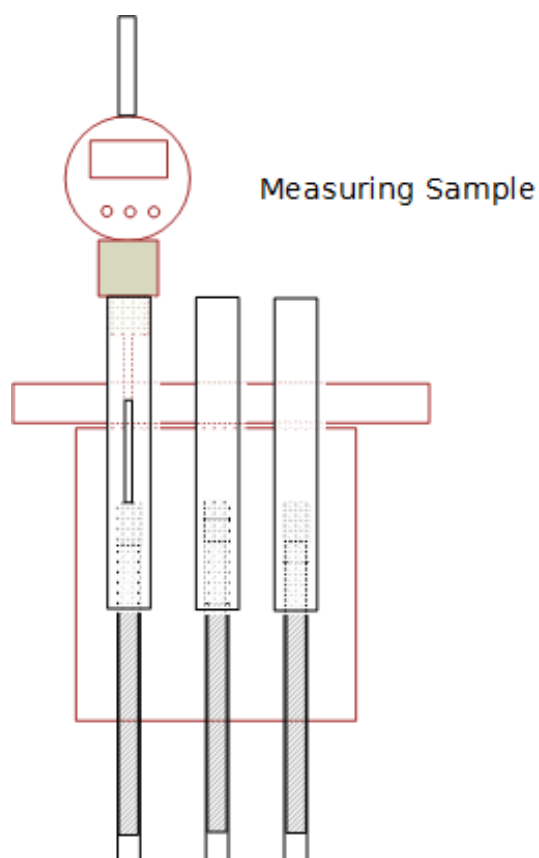
Use protective gloves.

Furthermore

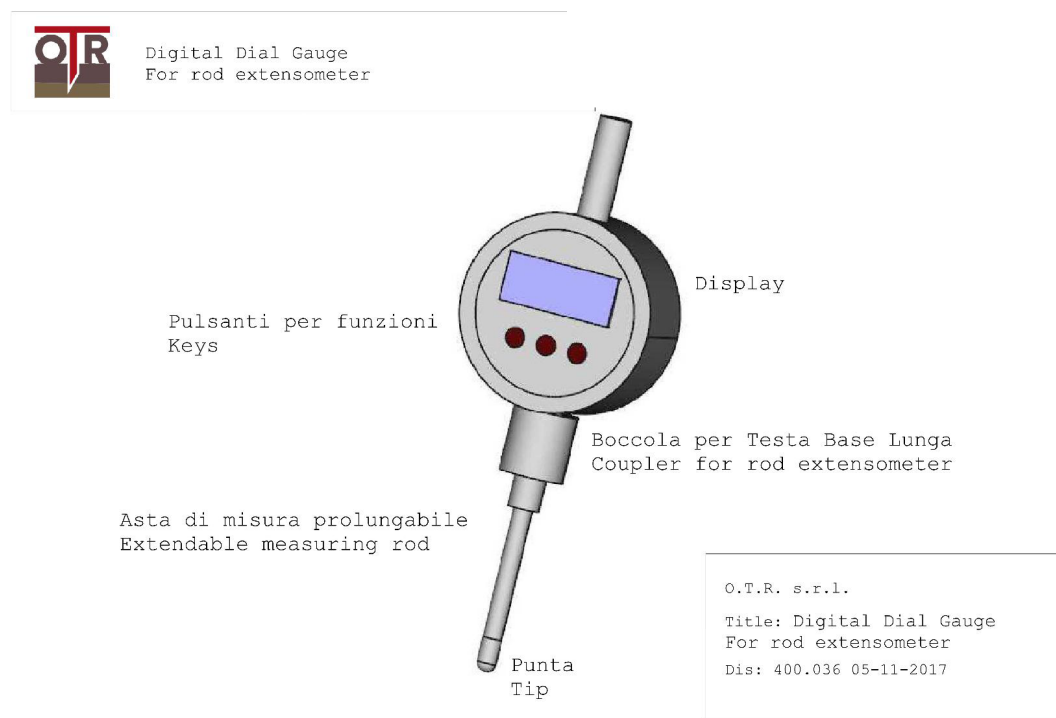
- Do not open the instrument, contact the manufacturer for checks and repairs;
- Keep out of reach of children;
- Clean the instrument with alcohol or water, do not use acetone or aggressive liquids for plastics or labels;

Application

Digital dial gauge is used for measuring the heads of rod extensometers with precision and repeatability.



Description



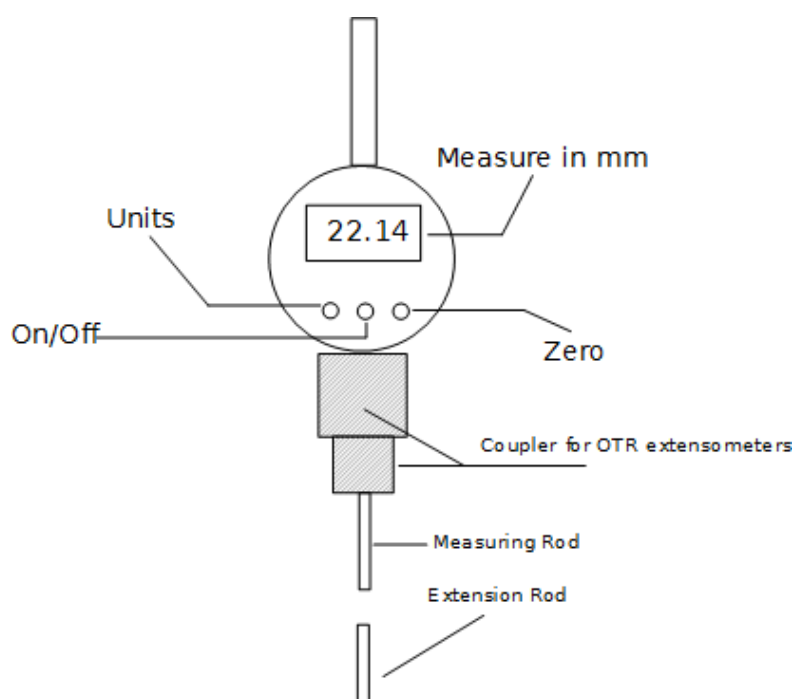
Device is composed of :

- 1) A display that indicates measure in mm or inches;
- 2) A rod and an extension rod;
- 3) On/Off , Zero, Units buttons
- 4) A pre-installed coupler to position the indicator on the OTR rod extensometers;

Identification

Every Digital Dial Gauge Indicator has a label that shows:

- Serial number associated with test and calibration;
- Identification of the model ;
- Unit of measure (mm & inches);



Taking Measurements

Measuring a Rod Extensometer:

- 1) Turn On device pressing button ON/OFF ;
- 2) Leave Dial Gauge free, totally open and press Zero button;
- 3) Mates the dial gauge with the rod extensometer head;
- 4) Read the measure on display;
- 5) Repeat operation for checking repeatability;
- 6) Turn Off device pressing button ON/OFF

If reference of the rod is too deep before these operations install the extension rod.



Datas' elaboration

Considering the usual pattern of a multy rod extensometer:

- The increasing value of the measure stroke is the result of the removal from the measured base and its deep anchoring point.
- The decreasing of the measure stroke take place when the measured base approach its deep anchoring point.

The data should be corrected using the sensibility's factor.

Let's try to calibrate a Digital Dial Gauge:

OTR s.r.l.

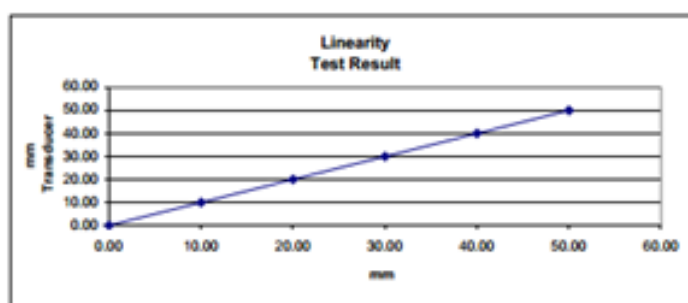
Calibration Chart

Model	:	COMP	Customer	:	xxxx
Serial N.	:	xxxx	Date	:	13/09/2016
Range	:	50 mm	Operator	:	xxxx
			Temp.	:	24

Internal specific SLI50. Calibrated using : Oriental Motors model EZ5M3D020K s.n. OR81501301 checked by dial gauge
Kafer s.n.MET09120303 certificate 0455012 2012-06-12 s10767

Data		
Calibrator [mm]	Display [mm]	Delta [mm]
0.00	0.00	0.00
10.00	9.96	-0.04
20.00	19.97	-0.03
30.00	29.94	-0.06
40.00	39.95	-0.05
50.00	49.93	-0.07

Average Sensitivity 0.99797 Display/mm

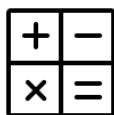


Calculations & Formulas

Approach situation:



Starting measure is $L_0 = 12\text{mm}$ and first measure is $L_1 = 11.5\text{mm}$. The Average Sensitivity is 0.99797 Display Digits / mm:



$$Spostamento = \frac{L_1 - L_0}{AverageSensitivity} = \frac{11.5 - 12}{0.99797} = -0.501\text{mm}$$

* The correction through the average sensitivity does not lead, in normal differential measurement situations, to real improvements in the overall precision of the instrument. However, it is also reported as testing and testing of the instrument.

Maintenance & Battery Replacement

Turn off the device then open the grey battery holder, extract the old battery and change it.

Keep instrument clean and dry when it is not used. If not used for long time extract the battery. Measuring Rod is very important part of the instrument, do not bend or force it for any reason.