



ए आर ए आई  
**ARAI**  
Progress through Research

# METROLOGY LABORATORY

ISO 9001, ISO 14001 & OHSAS 18001 Certified



# METROLOGY OVERVIEW

Metrology laboratory is an ISO9001, ISO14001 and OHSAS18001 certified laboratory and has capabilities to measure the various parameters of engineering & automotive components such as length, diameter, inside diameter, taper, angle, threads, profiles, surface roughness, contour of vehicular / engineering / 3D modeling / reverse engineering components. the reference standards used in the laboratory have traceability's to national / international standards.



## Facilities / Services

Universal Measuring Microscope

Measuring Projector MP 320

Cam Shaft Tester

Height Measuring Equipment ( Trimos V4 )

Surface Roughness & Conturograph Measuring Instrument (Form Talysurf i-Series 1 )

Flexi Arm Portable Coordinate Measuring Machine with Scanner attachment

Tangential Load Measuring Equipment

Slip Gauges, Length bars, Angle gauges, Bore gauges, Dial gauges

Micrometers, Digital, Caliper, Bubble clinometer etc.



### **SURFACE ROUGHNESS & CONTUROGRAPH**

Range : 0 - 120 mm (Max. Tracing Length )

Contour Measurement Vertical Range : + /- 14 mm

Surface Roughness Meas. Accuracy : < 0.25  $\mu$ m

Application : Surface Roughness & Contour Measurement of Cylinder Head, Roller Bearings, Gears Crankshaft, Ball screw, Radii, Angle, Height, Length, Distance etc.



### **HEIGHT MEASURING EQUIPMENT**

Range : 0 - 700 mm

Least count : 0.001 mm

Application : Measurement of Height, Bore, Center Distances & Squareness and Parallelism.



### **FLEXI ARM PORTABLE COORDINATE MEASURING MACHINE (CMM) WITH SCANNER ATTACHMENT :**

The Edge Scan Arm HD is the Most Affordable, High Performance Contact /Non-Contact Measurement System

Application : Dimensional Analysis, CAD-Based Inspection, Reverse Engineering, Non-Contact Inspection.

Model : FARO Edge Measuring Axis : 7

Measuring Range : 1.8 meter

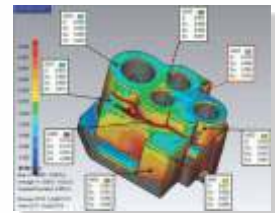
Single Point Repeatability : 0.024 mm

Volumetric Accuracy :  $\pm$  0.034 mm

FARO Laser line probe Specification:

Accuracy :  $\pm$  35  $\mu$ m, Repeatability : 35  $\mu$ m

Stand-off : 80 mm, Depth of field : 85 mm





### UNIVERSAL MEASURING MICROSCOPE

Range : X-axis : 0- 200 mm, Y-axis : 0 - 100 mm  
Least count : Linear : 0.0002 mm, Angular : 1 minute  
Application : Measurements of Tools, Cutting Dies, Profile Gauges, Tapers, Templates, Radial and Axial Cams, Hobs, Gears, Thread & Linear Dimensions etc.



### MEASURING PROJECTOR MP 320

Range : X-axis : 0 - 75 mm, Y-axis : 0 - 50 mm  
Least count : Linear : 0.001 mm, Angular : 2 minute  
Application : Tools, Templates, Form Cutting Tools, Threads, Gears and Rubber Components. Profile Comparison.



### CAM SHAFT TESTER

Range : 0 - 100 mm Radius, 1600 mm Length  
Least count : Linear : 0.001mm, Angular : 1 Second  
Application : Opto-Mechanical Instrument used for Linear & Angular Measurement Such as Cam Profile & Valve lift etc.



### PISTON RING TANGENTIAL LOAD TESTER

Range : 0-5 kg  
Least count : 10 gm  
Application : Used for Measuring the Tangential Load of the Piston Ring Satisfying Both Conditions i.e. Nominal Diameter and Closed Gap.



The Automotive Research Association of India  
(Affiliated to Ministry of Heavy Industries, Govt. of India)

Regd. Office :  
Survey No. 102, Vetal Hill, Off Paud Road,  
Kothrud, Pune - 411 038, INDIA  
Tel. : +91-20-6762 1400  
E-mail : deshpande.aed@araiindia.com | pankhawala.dts@araiindia.com  
Website : www.araiindia.com