

# METROFORM

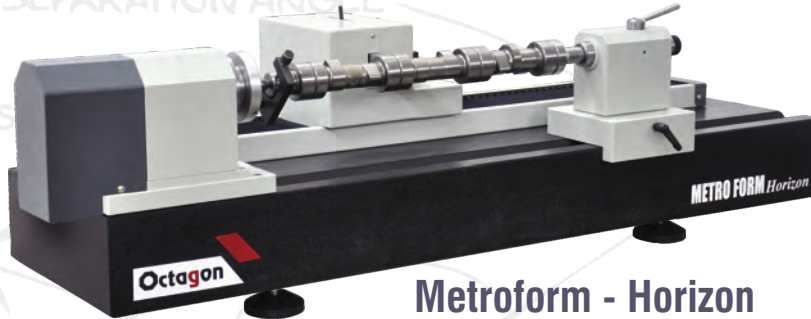
## Crankshaft & Camshaft Metrology





Octagon Metro-Form Horizon and Octagon Metro-Form Multi Scan are metrology systems designed for rigorous metrological analysis of cylindrical parts specially automobile camshafts by using computerised analysis. Horizon series of Metroform provides facilitates easy loading / unloading of the component.

The MetroLab software is designed to measure multiple lobes for its various dimensional parameters including lobe tip angles. Cam lobe data is automatically captured by rotating camshaft manually or with motorised spindle. Measurement can be taken using a round or flat measuring probes. Data is mathematically converted to the correct engine follower type and size. The machine is designed for standard room as well as shop floor measurements.



- Camshaft measurement with single adjustable radial measuring head, for universal cam lobes measurement.

## Metroform - Horizon

### Camshaft Metrology System

Measurement & analysis of camshaft

System Specifications:	
Part length	500 mm
Centre Height	125 mm
Follower stroke	50 mm
Part weight	40 kg
Spindle rpm (Programmable)	6 rpm

System Specifications:		
Radial Resolution	0.1 µm	
Angular Resolution	0.1/0.01/0.0005 deg	
Machine Dimensions :	Height	350 mm
	Width	375 mm
	Length	1300 mm
Weight	250 kg	

(Design / Specifications subjects to change without notice)

## MetroForm Multi-Scan

### Camshaft Metrology System

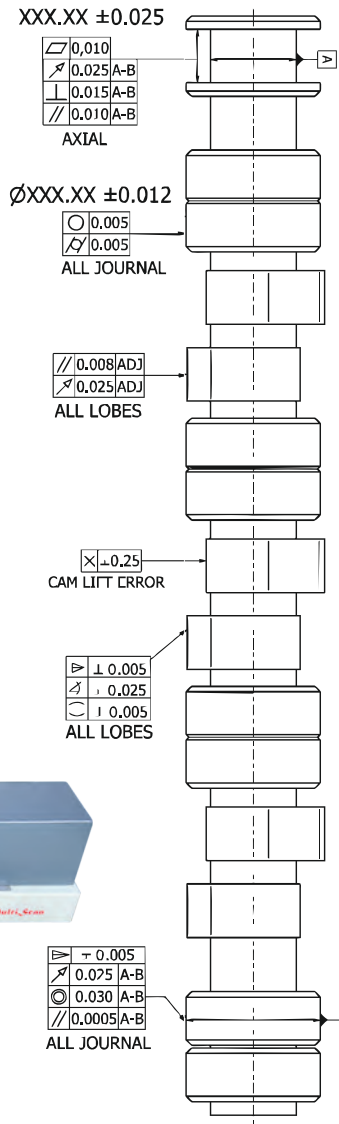
Measurement & analysis of camshaft



- Camshaft measurement with multiple radial measuring heads, for simultaneous measurement of number of cam lobes in just a single rotation
- Semi automatic cycle • Cycle time < 40 sec/



Customised solutions for shaft floor measurement



## MetroForm Mini

### Camshaft Metrology System

Measurement & analysis of camshaft

- Cam Profile measurement specially designed for Single Cylinder Engine Camshaft
- Multiple radial measuring heads for simultaneous measurement of number of cam lobes in just a single rotation.
- Semi automatic cycle
- Cycle time < 40 sec/ shaft

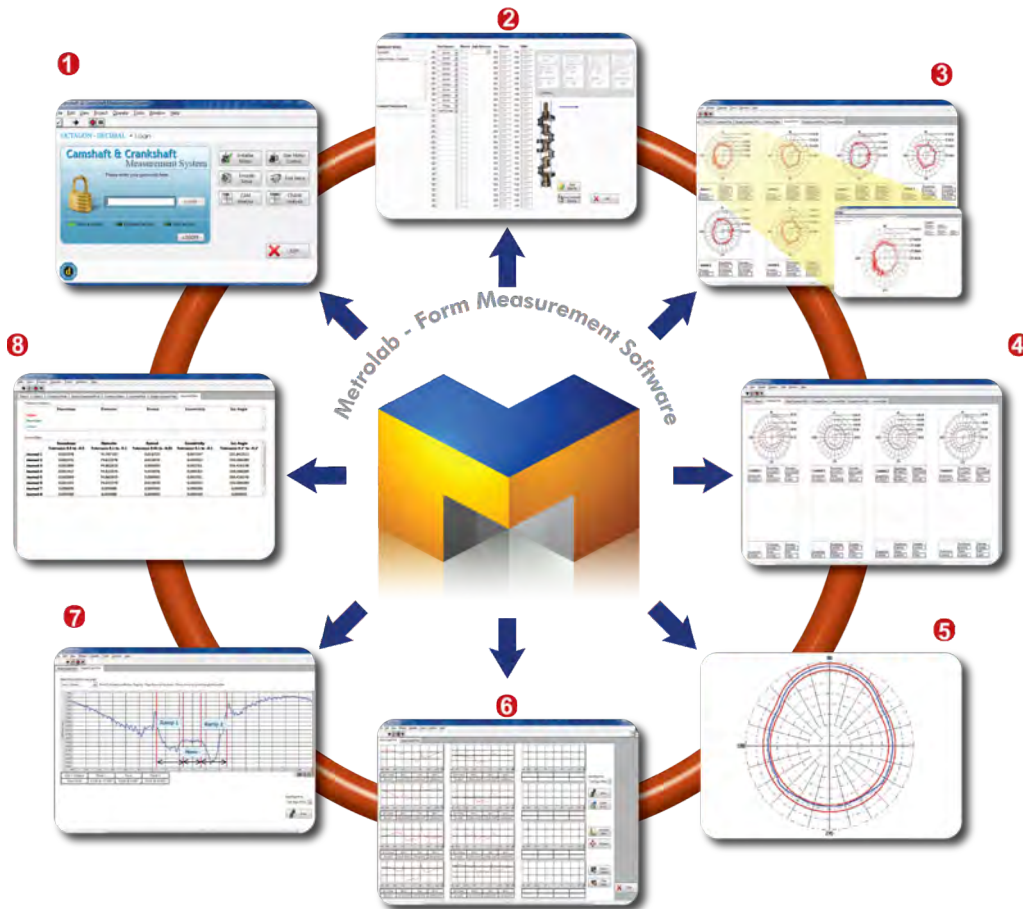
### Common Features :

- Available in Manual / Motorised / CNC versions
- Precision flat granite bed (for large size) facilitates high degree of Thermal or structural stability.
- Durable carbide followers (flat and disc) as well as head/tailstock centres
- High resolution rotary and radial encoder system provides precise measurement data.
- Automated data acquisition reduces cycle time and eliminates manual errors.
- Lobe scanning with Fix measuring probe, regardless of engine follower size.
- Complete lobe measurement, graphical display and analysis of: lift, velocity, acceleration, jerk (3rd derivative), radius of curvature, pressure angle.
- Lobe data corrected to zero base circle runout.
- Angular position listing for all lobe tip angles
- Comparison of measured data with design data graphically as we as in tabular format.
- Graphic displays for all motion curves.
- Printed reports of screen graphics and tabular data
- Compare base circle radius, run-out and lobe tip angles to design data showing tolerance limits
- Inch or metric data input and output

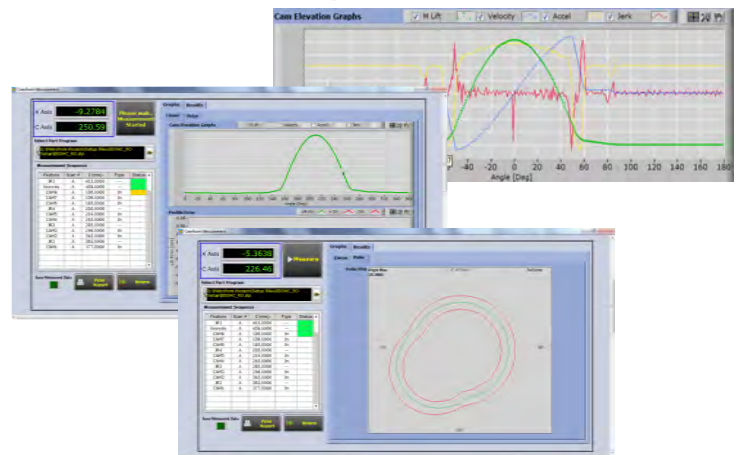
CAMSHAFT MEASURING PARAMETERS			
• Roundness (LSC, MZC)	• Surface Chatter	• Lift / Lift Error	• Index Angle to Reference(s)
• Cylindricity	• Taper	• Center Deviation	• Base Circle Radius
• Diameter	• Eccentricity	• Velocity	• Lobing.
• Radius	• Runout ( radial)	• Acceleration	• Jerk
• Radius of Curvature	• Pressure Angle		



MetroLab is windows based software specifically designed for further mathematical analysis of measurement data of the cam profile to evaluate one degree output for lift, velocity, acceleration, jerk and radius of curvature. Different filters are provided for data smoothing. Output options include data analysis to the screen or a printer. Original data can be analyzed, smoothed and corrected for shaft eccentricity and base circle runout . The corrected data can saved for easy recall.



### Cam profile measurement and analysis



### MetroLab - Form Analysis Software

- Menu driven and easy to use GUI's. Multilevel login allows the user to define and secure test setups and parameters.
- Single page test setup with drop down menus and graphics offer quick and error free configurations.
- Polar representation of crankpin and journal geometry.
- Polar representation of cam profile with user defined tolerance zone.
- Software can be configured to evaluate upto twelve cam lobes per test. Each cam lobe can be individually observed and plotted.
- Individual graphical analysis of cam lobes.
- Journal evaluated for various radial parameters.

**decimal**  
**metrology**

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PRECISION

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