

## Camshaft Measurement

Engine Data Sheet

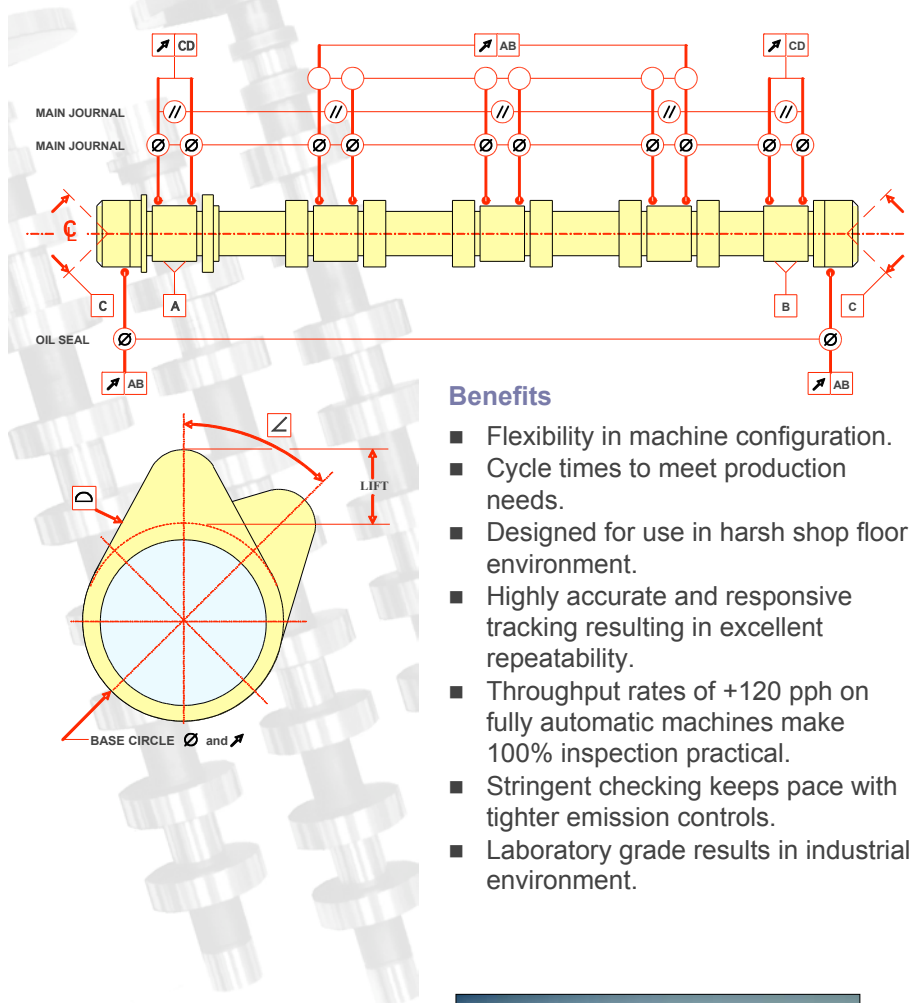


Profile Inspection in Production

Motorists expect reliability and demand ever-higher performance! And manufacturers need tighter tolerances to match increasingly tighter emission controls.

Working closely with the manufacturer, Intra design and build systems that meet the entire in-process and post-process criteria.

Important measurement characteristics such as journal diameters, "post" diameter base circle and lift can be implemented to within 4µm tolerance with 100% production profile check (if required).



### Features

- A cost-effective build approach using standard modular construction.
- Universally applicable, reliable proven designs.
- Dynamic error compensation.
- Multi-dimensions and geometric features gauged simultaneously.
- 100% in production profile check.
- CRITERION - Computerised measuring and Control Systems

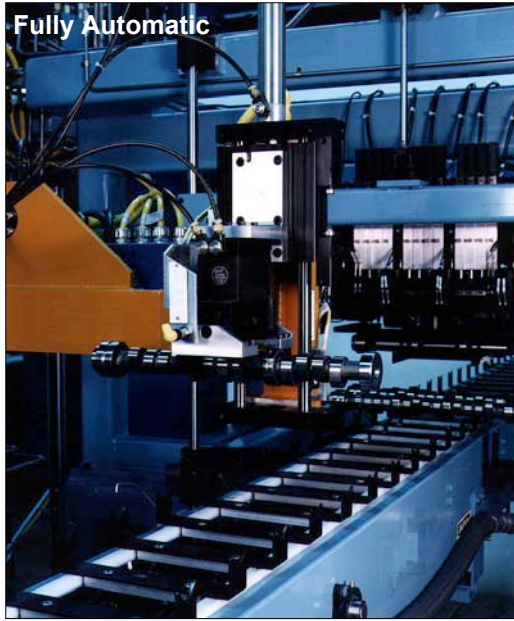
### Benefits

- Flexibility in machine configuration.
- Cycle times to meet production needs.
- Designed for use in harsh shop floor environment.
- Highly accurate and responsive tracking resulting in excellent repeatability.
- Throughput rates of +120 pph on fully automatic machines make 100% inspection practical.
- Stringent checking keeps pace with tighter emission controls.
- Laboratory grade results in industrial environment.



# CAMSHAFT MEASUREMENT

Manual, Semi and Fully Automatic Systems



Fully Automatic



Semi Automatic

## Measured Characteristics:

Journal, Flange and Post Diameters measured in 1 or 2 places.

- Diameter
- Runout or Concentricity \*
- Roundness or Ovality
- Taper
- \* To centres and / or datum journals

## Face Checks

- Length.
- Position
- Width
- Runout
- Perpendicularity

## Lobes

- Profile
- Velocity and Acceleration deviations
- Chatter magnitude
- Maximum lift
- Lobe taper and crown
- Phase angles lobe to keyway and lobe to lobe

Measured with use of ball, roller or flat followers.

## Base Circle

- Diameter / Radius
- Runout total or sectional

## Casting & Forgings

- Straightness
- Excess Material

## Fabricated Camshafts

- Grind Stock Allowance

Complete manual, semi and automatic control of sophisticated processes:

	Manual	Semi Automatic	Fully Automatic
Location	Bench Top	Bench top or freestanding	In line, straddling conveyer. Off line robot or gantry pick & place loaded
User Requirements	Operator loaded and cycled	Operator loaded and automatically cycled	No operator attendance required
Functionality	Generally used for tooling set up and post process audit	Generally used for post process or final audit	Utilises standard measuring system specifically developed for cam inspection.
Characteristics	Diameters and lengths	See measured characteristics	See measured characteristics
Measuring Elements	Receiver gauges. Dial indicators. Air plugs and snaps with P/E. Electronic probes	Electronic probes for cam profile, diameters and lengths. Air snaps with P/E for diameters	As semi auto plus: Automatic mastering - min and max calibration masters
CRITERION support	series 100 to 500	series 500 or 700	series 900

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