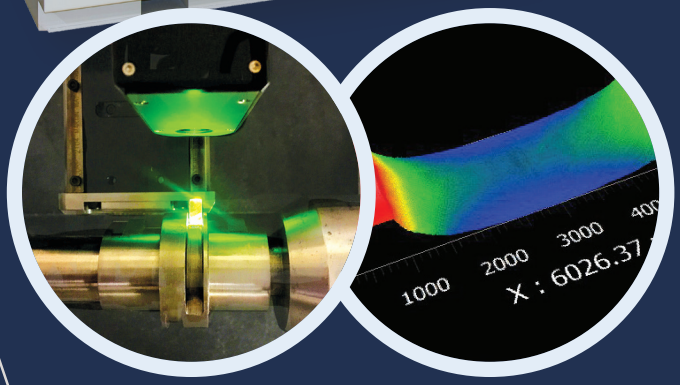
ADCOLE 1000-Z

OPTICAL & TACTILE SURFACE ROUGHNESS GAGE

The Adcole Model 1000-Z features both optical and tactile measuring heads to deliver high precision surface measurements of camshafts, crankshafts and turned parts. The non-contact interferometric probe expands on the measurement capabilities from the diamond tipped contact probe of the standard Adcole 1000 gage, because the optical accessory can precisely measure surface finish of hard-to-reach features such as groove bottoms, sidewalls, and more. Profilometers such as the 1000-Z quantify surface roughness and are relied on to maintain quality and identify potential problems in the manufacturing and coating process.



Features

- Offers fully automated surface finish checks and inspection
- Extends the proven reliability of Adcole 1000 diamond tipped contact probe
- Enables intuitive diagnostics routines and part identification capabilities
- Uses commonly available stylus tip sizes: 2 µm, 5 µm, or 10 µm radius
- Offers ZYGO© (ZeGage™) optical surface finish measurements based on white light interferometry to provide resolutions of less than 1 nm and lateral resolutions of 3.3 micrometers (evaluation region of 3.3 x 3.3mm)
- Provides online or offline programming of measuring sequences and reports via easy-to-use utilities

Benefits

- Provides fully automated, push-of-a-button surface finish inspection system
- Hybrid tactile/optical design provides for the best measurement method for each specific feature
- Affords fast, accurate, repeatable measurements of complex features
- Statistical data can be maintained for process control, or forwarded to centralized SPC data collection point
- Enables easy programming using intuitive menu-driven software and easy-to-use interface with touchscreen monitor

THE MODEL 1000-Z IS ENGINEERED TO MEASURE INTRICATE FEATURES ON:

- Camshafts
- Crankshafts
- Sliding Camshafts
- Gears & Transmission Shafts
- Precision Hydraulic Cylinders
- Balance Shafts
- Eccentric Shafts
- Robotic Shafts & Cylinders
- Pump Lobes / Pump Shafts

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Model 1000-Z Gage Specifications

Sensor Specifications			
Tactile	Diamond tipped skidded inductive		
Optical	Non-contact 3D Coherence Scanning Interferometry (CSI)		
General Specifications			
Part Length Max.[ii]	915mm (36”)		
Swing Diameter	170mm (6.7”)		
Part Weight Max.	100 kg (222 lb)		
Rotational Speed	1 to 20 RPM		
Base Gage Dimensions			
Gage Height	1575mm (62”)		
Gage Width	762mm (30”)		
Gage Depth	1321mm (52”)		
Gage Weight	2495 kg (5,500 lbs)		
Technical Data			
Lateral Resolution (Tactile)	3.3 µm	Lateral Resolution (Optical)	0.5 µm
Evaluation Length (Tactile)	4mm (adjustable)	Evaluation Region (Optical)	3.3mm x 3.3mm
Resolution	< 1 nm		
Stylus Force	0.7 mN to 1 mN selectable		
Stylus Range	40 µm		
Stylus Measuring Speed	1mm/s (adjustable)		
Cut-off Value	0.08 to 8.0 mm (0.003” to 0.3”) configurable		
Filter	2CR, Gaussian, Robust Gaussian		
Overall Error	<10% of typical industry part tolerance		

Gage Capacities

Features Measured	**Roughness Parameters (Tactile)**			**(Optical)**
Main bearing journals	Ra	Rpm	MR1	Ra
Pin journal sidewalls	Rp	RzDIN	MR2	Rsk
Post and flange diameters	Tp (Rmr)	Rp/Rt	R3z	Rpm
Rod journals	Rsk	Rk	RzJIS	RzDIN
Thrust faces	Htp-1/2/3/4/5/6 (Rdc)	Rpk		R3z
Camshaft journals and lobes	Rt	Rvk		Rmax

Gage Support

Adcole machine support is provided by a factory trained field service team that is backed by more than 60 years of industry experience and ISO 9000 certification. Machine and application support, machine retrofit and upgrade services, plus part inspection and gage recertification services are offered to our global customer base. Adcole‘s support regions include Japan, Korea, China, Brazil, Mexico, India, Europe and North America. Regular and after hours email and phone support is available 8am-11pm EST.

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