

Precision is our business.



HOMMEL OPTICLINE
AMV
Optical shaft
measurement systems

Flexibility in production

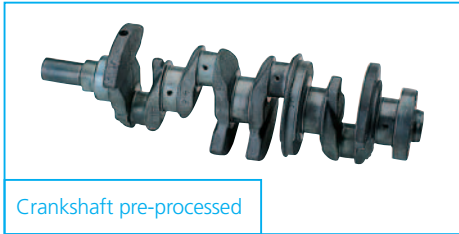


AMV



AMV - Automatic measuring device: Flexibility in production

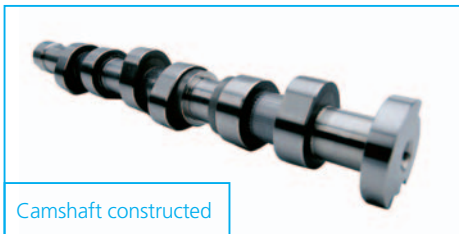
Application examples



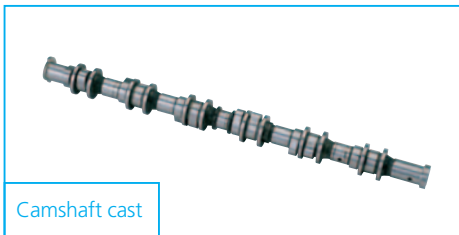
Crankshaft pre-processed



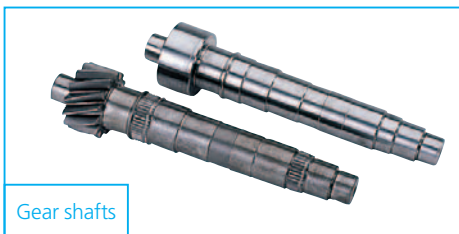
Crankshaft finished



Camshaft constructed



Camshaft cast



Gear shafts



Pistons

Your advantages

- Shaft measurement system for length, diameter, geometry, form & position
- Short measuring times for complex workpiece geometries
- High flexibility due to any measurement positions practically without retooling costs; no retooling times when changing parts
- Fully automatic measuring run with monitoring of the calibration state before every measurement
- Can be integrated in production lines
- Certified Q-DAS interface



Post-process gauging machine
AMV 923H

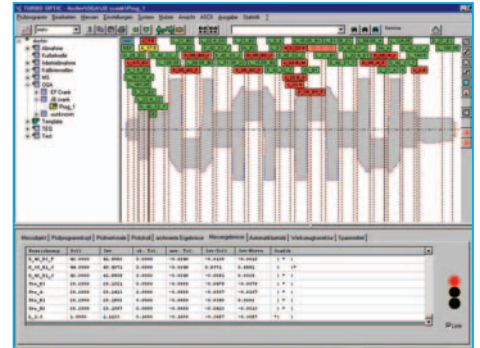
In its horizontal version the gauging machine is specially designed for combined use in production lines with automatic loading. This fully automatic shaft measurement system offers immense advantages especially on flexible production lines.

SPC-measuring station AMV 923V

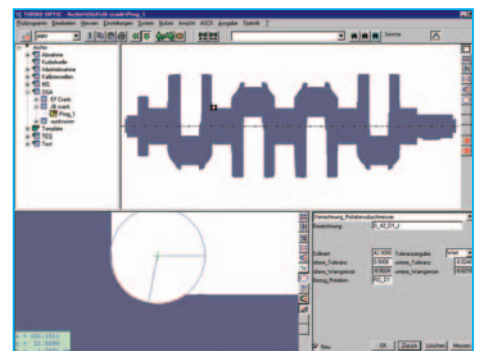
The vertical version of the shaft measurement machine with manual loading is used in the measuring room or in production.



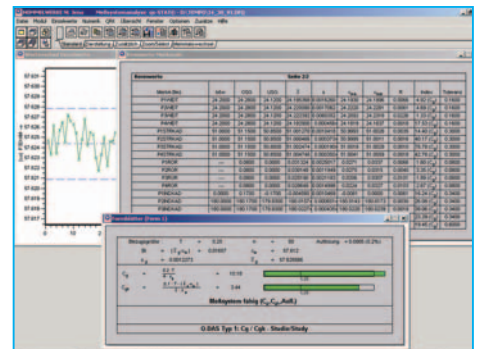
User-friendly TURBO OPTIC software



The TURBO OPTIC graphical user interface for Windows NT offers a simple, clear and intuitive operation of the gauging machine. Here test plans are created and managed as well as results displayed.



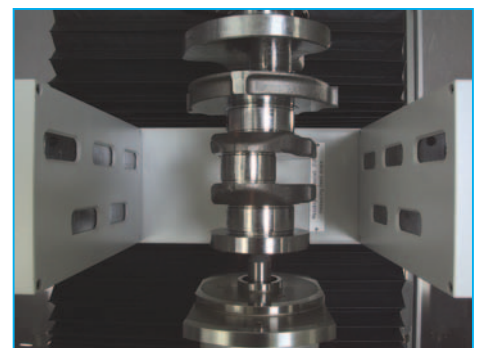
With an integrated software module for graphic contour evaluation, workpiece contours (e.g. a groove radius) are measured similar to that of a profile projector.



The results are evaluated directly with qs-STAT® or PROCELLA® via the integrated SPC interface to Q-DAS. A gauging components capability test with qs-STAT® is standard.

Post-process application

The shaft measurement systems are optimally equipped for integrated use in the production line. The incorporated PLC establishes a connection with the master loading system. The processing machines are also controlled by the PLC. You can correct either one or several processing machines simultaneously with the appropriate software for the tool correction.

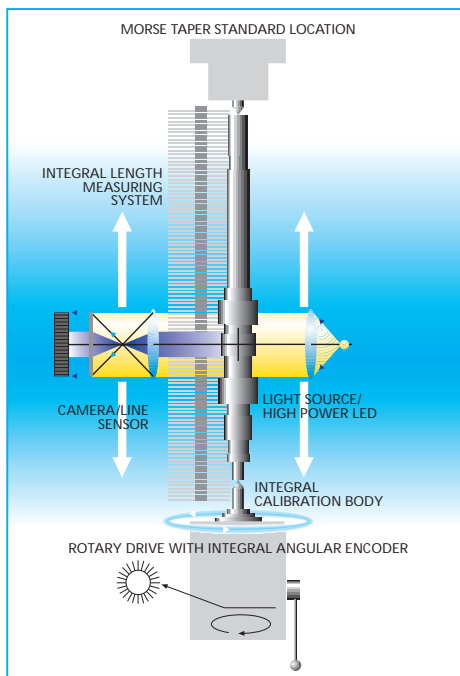


AMV 923V with 5-camera-unit and step pulley as well as clamped crankshaft.

Operating principle

The component profile is automatically scanned using an optoelectronic linear CCD ray. Due to the system's high resolution capabilities the complete workpiece can be measured very quickly and extremely precise.

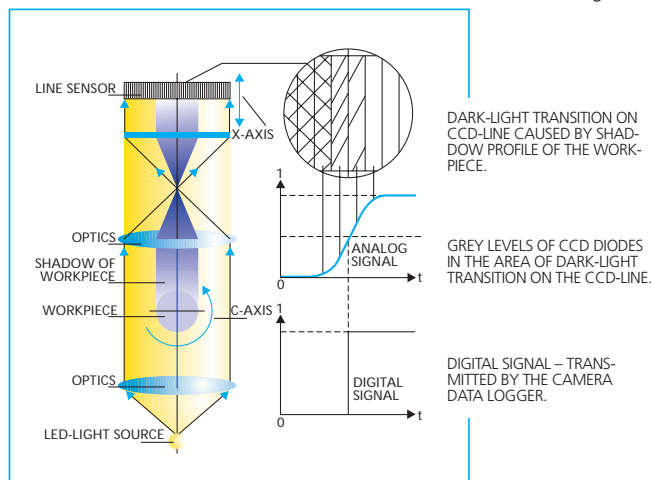
Measuring principle-structure of the measuring system



AMV- TECHNICAL SPECIFICATIONS

	505	510	514	523	905	910	914	923
Measuring capacity (mm)								
Diameter	50	100	140	230	50	100	140	230
Length ¹⁾	500	500	500	500	900	900	900	900
Workpiece capacity								
Diameter (mm)	260	180	260	260	260	180	260	260
Length ¹⁾ (mm)	500	500	500	500	920	920	920	920
Weight (N)	300	300	300	300	300	300	300	300
Resolution								
Diameter (Y-Axis)	0.5 µm							
Length (X-Axis)	0.5 µm							
Rotation (C-Axis)	0.018° / 0.0018° (optional)							
Accuracy								
Diameter:								
Error of measurement ²⁾	± (2 + D[mm]/100) µm							
Uncertainty of measurement ³⁾	± 1 µm							
Length:								
Error of measurement ²⁾	± (5 + L [mm]/100) µm							
Uncertainty of measurement ³⁾	± 5 µm							
Operating conditions⁴⁾								
Operating temperature	5 – 40 °C							
Atmospheric humidity	max. 50 % at 40 °C							
Dimensions measuring system (mm)	vertical							
W x D x H	940 x 940 x 2,300				940 x 940 x 2,700			
	horizontal							
	2,000 x 800 x 2,100				2,450 x 800 x 2,100			
Weight (N)	7,400 – 10,000							
Accommodation chucking device	MT3							
Power supply	400/480V, 50/60Hz, 3 phase, PE, 4 kW							

Operating principle-sensor, image processing



For dynamic measurements, the data from the workpiece profile is recorded whilst it is rotating. The measuring cycle is fully programmable which allows many measuring functions to be combined into one optimum automated measuring run.

- ¹⁾ The length may be reduced dependent on the clamping device used.
²⁾ Grinded workpiece surface, environmental and workpiece temperature = 20°C ± 1 K, variation of temperature < 0,5 K/h, error of measurement according to DIN EN ISO 10360
³⁾ Uncertainty of measurement (95%) according to DIN EN ISO 14253
⁴⁾ According to EN 60204

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