

Precision is our business.



HOMMEL OPTICLINE  
WMS  
Optical shaft  
measurement systems

High precision for  
large workpieces



WMS



# WMS- Optical shaft measurement systems: High precision for large workpieces

## Application examples



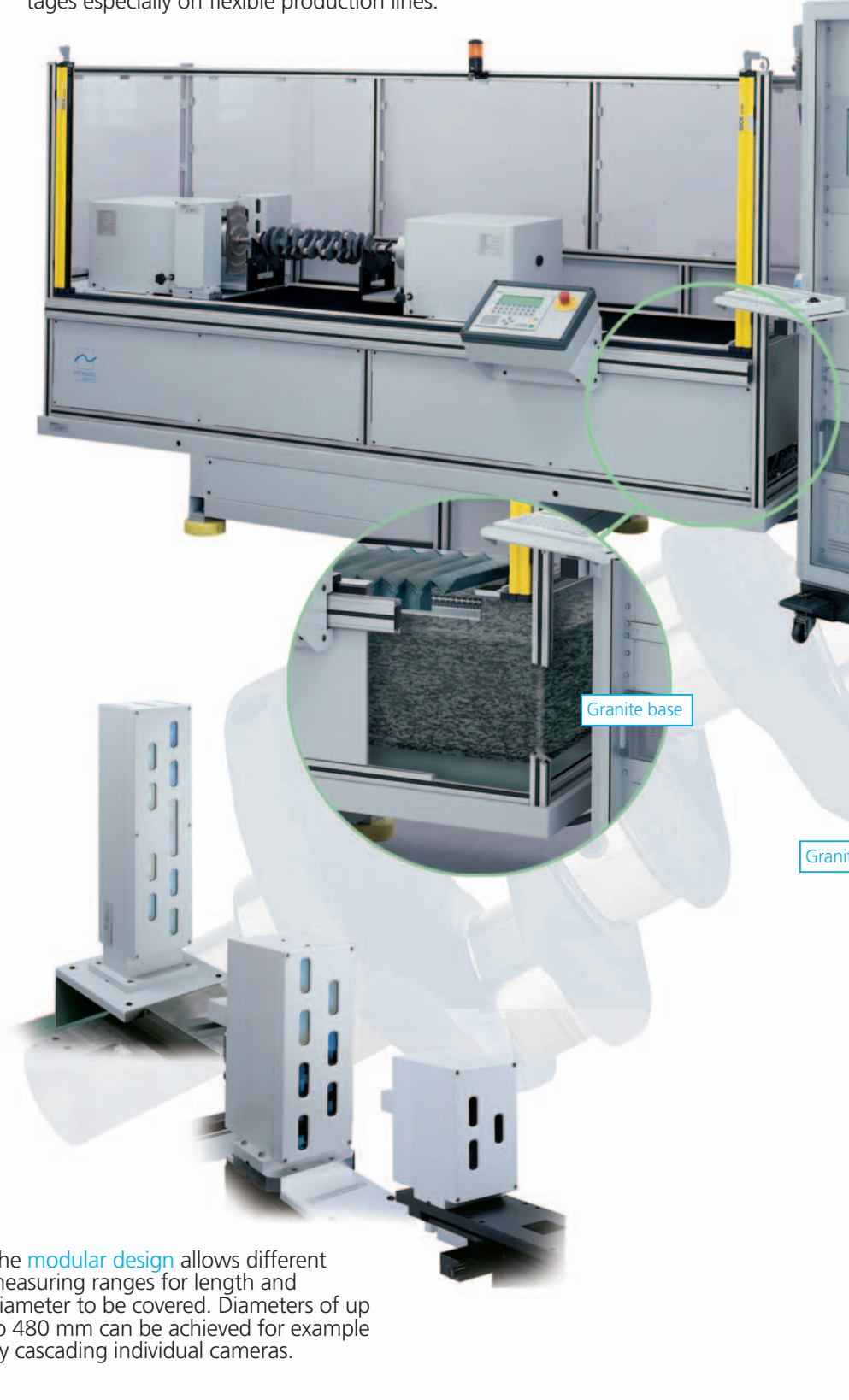
Crankshaft



Gear shaft

## Post-process gauging machine WMS 1532H

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



Granite base

Grani

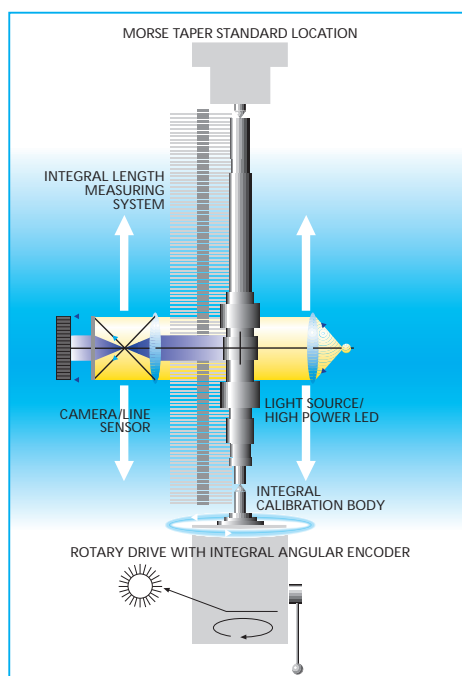
The **modular design** allows different measuring ranges for length and diameter to be covered. Diameters of up to 480 mm can be achieved for example by cascading individual cameras.



## 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.

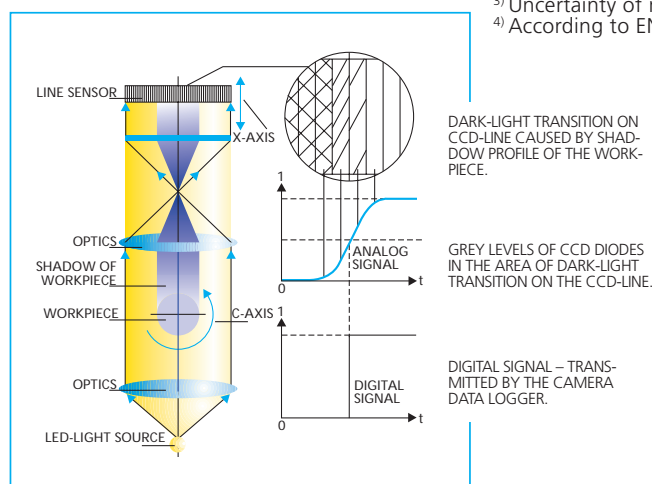
## Measuring principle- structure of the measuring system



## WMS – Technical Specifications

	<b>823</b>	<b>832</b>	<b>1523</b>	<b>1532</b>
<b>Measuring capacity (mm)</b>				
Diameter	230	320	230	320
Length <sup>1)</sup>	800	800	1,500	1,500
<b>Workpiece capacity</b>				
Diameter (mm)	322	322	322	322
Length <sup>1)</sup> (mm)	850	850	1,550	1,550
Weight (N)	750	750	750	750
<b>Resolution</b>				
Diameter (Y-Axis)	0.5 µm			
Length (X-Axis)	0.5 µm			
Rotation (C-Axis)	0.0018°			
<b>Accuracy</b>				
Diameter:				
Error of measurement <sup>2)</sup>	± (2 + D[mm]/100) µm			
Uncertainty of measurement <sup>3)</sup>	± 1 µm			
Length:				
Error of measurement <sup>2)</sup>	± (5 + L [mm]/100) µm			
Uncertainty of measurement <sup>3)</sup>	± 5 µm			
<b>Operating conditions<sup>4)</sup></b>				
Operating temperature	5 – 40 °C			
Atmospheric humidity	max. 50% at 40°C			
<b>Dimensions measuring system (mm)</b>	<b>vertical</b>			
W x D x H	1,250 x 1,250 x 2,700		1,500 x 1,500 x 3,450	
	<b>horizontal</b>			
	2,500 x 1,200 x 1,730		3,250 x 1,000 x 1,950	
<b>Weight (N)</b>	20,000		25,000	
<b>Accommodation chucking device</b>	MT4			
<b>Power supply</b>	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.

<sup>1)</sup> The length may be reduced dependent on the clamping device used.

<sup>2)</sup> 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

<sup>3)</sup> Uncertainty of measurement (95%) according to DIN EN ISO 14253

<sup>4)</sup> According to EN 60204

Hommelwerke GmbH  
 Alte Tuttlinger Straße 20  
 D-78056 VS-Schwenningen  
 Phone +49/77 20/602-0  
 Fax +49/77 20/602-1 23  
 E-mail info@hommelwerke.de  
 Internet http://www.hommelwerke.de