Optical Shaft Measurement

Hommel-Etamic OPTICLINE Specification

Typical Opticline components

The component is scanned opto-electronically according to the silhouette principle. The high resolution per measured value allows the complete component contour to be evaluated quickly and precisely. Data of the outer contour is recording during rotational movement for dynamic measurement.

The Opticline series offers a range of measurement solutions from engine valves, through to turbocharger shafts and drive shafts. Very small geometry elements and hardened turned shafts can be measured easily with the high resolution Opticline camera system.

Evaluation possibilities:
- Diameters and lengths
- Geometry
- Form and position
- Rotation angle
- External thread
- Through hole contour

Specification	C203	C305	C310	C314	C505	C510	C514	C805	C810	C814	C1014	C1023	C1023-75AE
Measuring capacity (mm)													
Diameter	0.2 -30	0.2 -50	6 -100	0.2 - 140	0.2 -50	6 -100	0.2 -140	0.2 -50	6 - 100	0.2 -140	0.2 -140	0.2 -230	0.2 -230
Length	250	300	300	250	550	550	500	850	850	800	1000	1000	1000
Workpiece capacity													
Diameter (mm)	150	150	150	150	150	150	150	150	150	150	300	300	300
Length (mm)	200	300	300	280	550	550	530	850	850	830	1000	1000	1000
Workpiece weight (Kg)	5	10	10	10	15	15	15	20	20	20	40	40	75
Resolution													
Diameter (µm)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1/0.2	0.1/0.2	0.1/0.2
Length (µm)	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1/0.5	0.1/0.5	0.1/0.5
Rotation	0.018°	0.018°	0.018°	0.018°	0.018°	0.018°	0.0018°	0.018°		0.0018°	0.0018°	0.0018°	0.0005/0.001°
Accuracy													
Diameter (µm)	(2 + D [mm]/100)												
Length (µm)	(5 + L [mm]/100)-(DIN EN ISO 10360 / VDI/VDE 2617)												
Repeatability	Typical range at 25 measurements on ground surface												
Diameter (µm)	0.5												
Length (µm)	3.0												
Speed													
Measurement (mm/s)	Automatically optimised measurement: 10 - 80												
Measurement rotation (rps)	1												
Positioning (mm/s)	200												
Positioning rotation (rps)	1												
Measuring time	dependent on type and number of test characteristics - typical 3 to 30s												
Dimensions (mm)													
Measuring system (WxDxH)	774x630x782		780x650x912			780x650x1152			780x875x1420			1785x1700x2650	
Weight													
Measuring system (Kg)	140	140	145	155	170	175	185	270	275	285	2200	2200	2200
Clamping device holder													
Morse taper	MK2										MK3		MK4
Clamping stroke tailstock	20mm										40mm		