

OLP40 and RLP40 lathe inspection touch probes

Introducing Renishaw's new range of lathe inspection probes

Two new inspection touch probes for lathes and turning centres are now available with either optical or radio transmission.

OLP40 is Renishaw's smallest inspection probe with optical signal transmission for lathe and turning centres, using Renishaw's well established optical interfaces. The OLP40 can use Renishaw's legacy or modulated optical signal transmission systems without any compromise in metrology performance. When used with an OMI-2T interface unit, two OLP40s can be used on the same turning centre.

RLP40 pioneers the application of frequency hopping spread spectrum (FHSS) radio transmission in the turning centre environment. Where line-of-sight between an optical inspection probe and interface cannot always be maintained the application of the RLP40 with an RMI interface unit maintains reliable communications.

Both of these products are specially sealed to withstand the extreme environments of lathes and turning centres. A proven eyelid protection system prevents entry of swarf and chips that would cause damage to the internal components of the probe. The OLP40 and RLP40 are built to the highest of standards and offer a truly unrivalled combination of size, accuracy, reliability and robustness that will benefit their users through reduced set-up times, reduced fixture costs, reduced scrap and improved process control.

A range of shanks are available including parallel and tapered shanks to enable flexibility when mounting an OLP40 or RLP40 into a lathe or turning centre turret.

For lathes or machining centres where part features are inaccessible to the OLP40 and RLP40, Renishaw offers the OMP40M and RMP40M, which enable fitment of adaptors, extensions and Renishaw's LP2 touch probe.

Key benefits

Compact and robust

The OLP40 and RLP40 provide access for turning processes where a short probe length is required. Their robust design is suited to the harshest of machine environments.

Resistant to transmission interference

The modulated transmission method offered by the OLP40 offers increased resistance to light interference. The OLP40 is also backward compatible for legacy transmission.

The radio frequency hopping of the RLP40 ensures reliable communications within the industrial environment.

Ideal for retrofit

Both systems are ideal for retrofitting. The OLP40 features a 360° optical transmission system allowing the probe to operate in any probe orientation.

The RLP40 operates with an RMI which can be positioned anywhere near the machine, resulting in a fast installation.

Innovations

Eyelid protection

The OLP40 and the RLP40 both use an eyelid protection system which ensures that swarf and chips cannot damage the internals of the inspection probes.

Miniaturisation

Miniaturisation of the electronics has allowed the development of ultra-compact lathe transmission inspection probes measuring only 40 mm in diameter and 58.3 mm in length; Renishaw's smallest wireless lathe probe systems.

Providing a solution for all turning centres

The OMI-2T allows the OLP40 to be designated as either PROBE 1 or PROBE 2 to work in twin probe applications.

The radio transmission of the RLP40 allows continuous communication between the inspection probe and the interface even when line-of-sight is lost.



Specification - radio and optical lathe probes

Principal applications	Work piece inspection and job set-up on turning centres		
Dimensions	Diameter: 40 mm (1.57 in) Length: 58.3 mm (2.30 in)		
Sense directions	Omni-directional: ± X, ± Y, +Z		
Uni-directional repeatability	1.0 µm (0.00004 in)*		
Stylus trigger force**	Factory setting	Maximum setting	Minimum setting
XY low force	0.4 N / 40 gf (1.4 ozf)	0.8 N / 80 gf (2.8 ozf)	0.3 N / 30 gf (1.1 ozf)
XY high force	0.8 N / 80 gf (2.8 ozf)	1.6 N / 160 gf (5.6 ozf)	0.6 N / 60 gf (2.1 ozf)
Z	5.3 N / 530 gf (18.7 ozf)	10.0 N / 1000 gf (35.3 ozf)	4.0 N / 400 gf (14.1 ozf)
Stylus overtravel			
XY plane	± 12.5°		
+Z direction	6 mm (0.24 in)		
Battery type	2 x ½ AA (3.6 V) Lithium Thionyl Chloride (LTC)		
Sealing	IPX8 (BS5490, IEC 60529) 1 atmosphere		

Specification - RLP40

Transmission type	Frequency Hopping Spread Spectrum (FHSS) radio	
Weight (without shank)	with batteries	260 g (9.17 oz)
	without batteries	240 g (8.47 oz)
Radio frequency	2.402 – 2.481 GHz	
Territory	EU and USA, Japan and others pending	
Switch ON methods	Radio 'M' code, spin	
Switch OFF methods	Radio 'M' code, spin, time out	
Operating range	Up to 15 m (49.2 ft)	
Battery life	stand by	290 days
(using LTC)	5% usage	170 days
	continuous life	450 hours
Interface/receiver	RMI combined antenna, interface and receiver unit	

Specification - OLP40

Transmission type	360° infra-red optical transmission
Weight (without shank)	with batteries 260 g (9.17 oz)
	without batteries 240 g (8.47 oz)
Radio frequency	N/A
Territory	N/A
Switch ON methods	Optical 'M' code, Auto start
Switch OFF methods	Optical 'M' code, time out
Operating range	Up to 5 m (16.4 ft)
Battery life	(standard power) stand by 250 days
	5% usage 85 days
	continuous life 140 hours
Interface/receiver	OMI-2T, OMI-2, OMI, OMM/MI12



* Performance specification is for a test velocity of 480 mm/min (18.91 in/min) with a 50 mm (1.97 in) ceramic stylus. Test velocity does not constrain performance in application.

** The stylus trigger force is the force exerted on the component when the probe triggers. However, the maximum force applied to the component will occur after the trigger point and will be greater than the trigger force. The magnitude depends on a number of factors affecting probe overtravel including measuring speed and machine deceleration. If the forces applied to the component are critical, contact Renishaw for further information.

More information

Details of the OLP40, RLP40 and other accessories can be found at www.renishaw.com/olp40 and www.renishaw.com/rlp40

For worldwide contact details please visit our main website at www.renishaw.com/contact