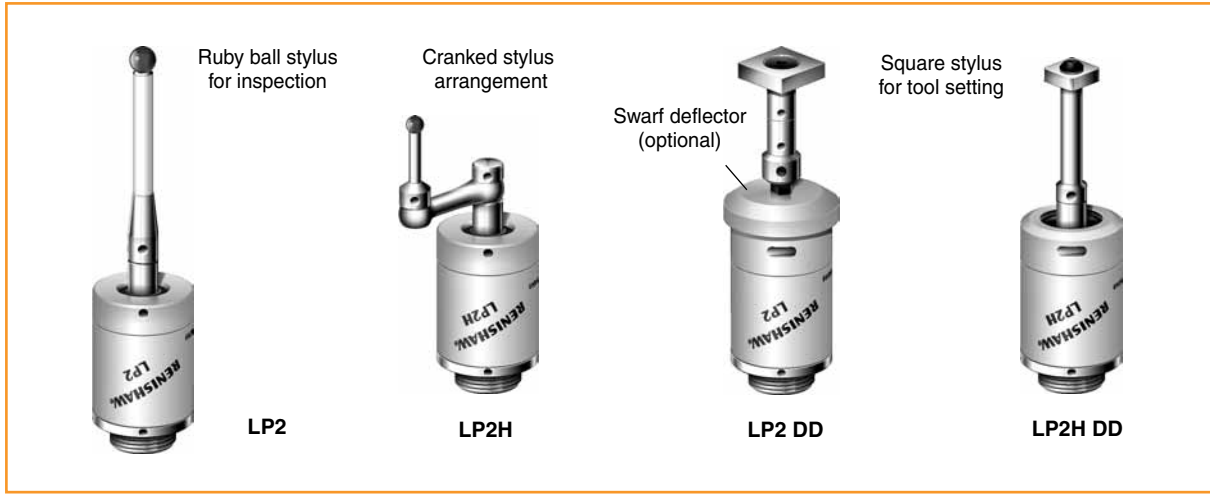


LP2 modular probe system for tool setting and workpiece inspection

www.renishaw.com/lp2



LP2 probe systems include a wide range of styli and accessories to provide customised installations

LP2 compact probes are sealed for use within the machine's hostile environment of coolant and hot metal chips.

H versions have a higher spring force, which allows use of longer styli, and greater resistance to machine vibration.

DD versions are specified for applications subject to particle laden coolant. The diaphragm material is resistant to coolants and elevated temperatures. However, if the probe is subjected to continual exposure to hot metal chips, use of the swarf deflector is recommended.

System features

Principal application

- **Horizontal lathes**
Small enough to fit on turret for part measuring, tool setting and broken tool detection when mounted in a suitable position.
- **Machining centre applications**
Set-up and part measuring when spindle mounted. Tool setting and broken tool detection when table mounted.

Compact and robust

Ø25 x 40.8 mm long (Ø0.98 x 1.6 in long).

Probe sealing

Sealed to IPX8.

Repeatability

Inherent repeatability with all stylus configurations.

Modular extensions and adaptors

Provide ready made installation solutions.

Stylus weak link protects probe in event of a collision (optional)

Signal transmission systems

- **Hard wired** - for machining centres with manual tool change. The LP2 is used with the MA2 probe holder.
- **Inductive** - for machining centres and lathes, eliminates the need for probe batteries.
- **Optical** - for lathes.
Easy installation, particularly in retrofit applications as there is no need for prepared passageways required for inductive transmission cables. The LP2 fits onto LTO2/LTO2S/LTO2T/LTO3T optical modules.

Software for probe routines

- Renishaw supplies an extensive suite of probing routines for the majority of machine controllers.

Data sheet
LP2 probe system

LP2 system

Representative examples of the LP2 modular system are shown below. More comprehensive information is provided on the Data sheets listed on the next page. Please consult your local supplier for installation advice.

Maintenance

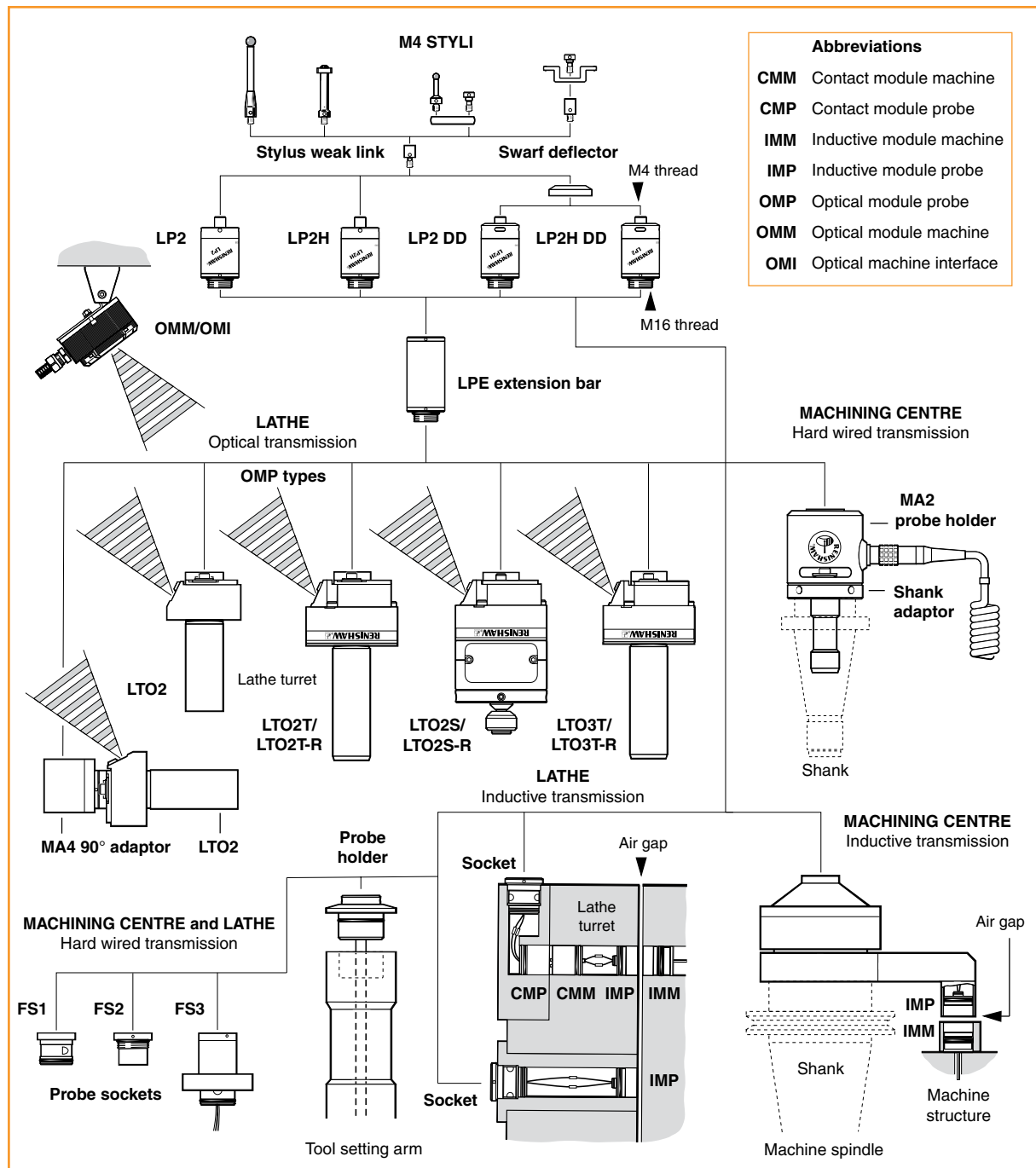
The probe system requires only minimum maintenance. Periodically clean the probe's front seal and check the security of wiring.

Stylus alignment

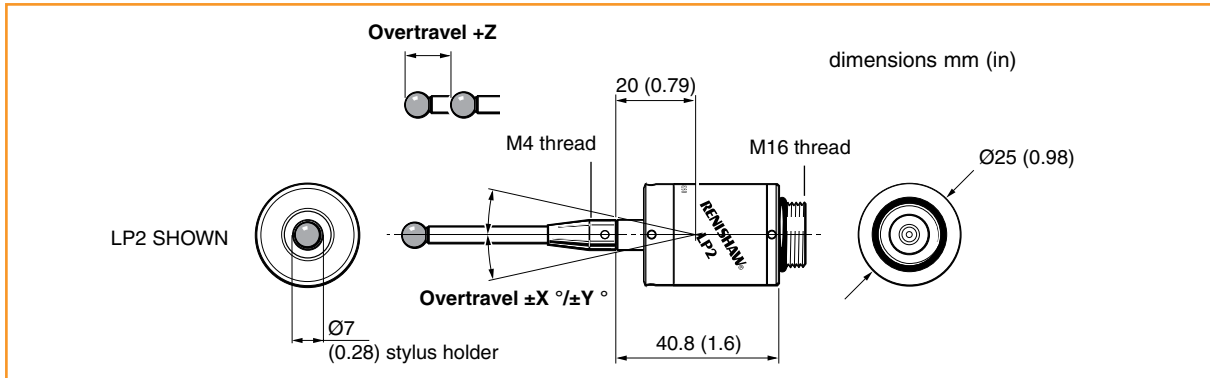
Workpiece inspection Adaptors and holders incorporate adjusters to enable the stylus to be aligned with the spindle centre line.

Tool setting

Square tip styli can be adjusted to align with the machine's X/Y axes. Further fine rotational adjustment is provided with probe socket FS1.



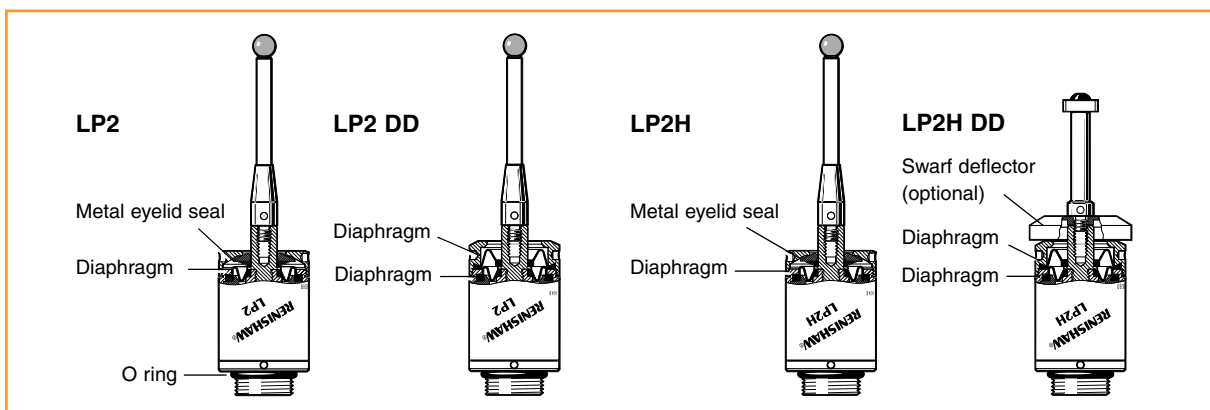
LP2 dimensions



Specification

	LP2 and LP2 DD specification		LP2H and LP2H DD specification	
Probing directions	$\pm X, \pm Y, +Z$			
Stylus overtravel	LP2: X and Y direction Z direction	$\pm 12.5^\circ$ 6.5 mm (0.25 in)	LP2: X and Y direction Z direction	$\pm 12.5^\circ$ 5.0 mm (0.25 in)
	LP2 DD: X and Y direction Z direction Z when fitted with swarf deflector	$\pm 15^\circ$ 6.5 mm (0.25 in) 4.5 mm (0.18 in)	LP2 DD: X and Y direction Z direction Z when fitted with swarf deflector	$\pm 15^\circ$ 5.0 mm (0.20 in) 4.5 mm (0.18 in)
Uni-directional repeatability with 35 mm (1.37 in) stylus	1.0 μm (0.00004 in) valid for test velocity of 480 mm/min (1.5 ft/min) at stylus tip		2.0 μm (0.00008 in) valid for test velocity of 480 mm/min (1.5 ft/min) at stylus tip	
Trigger force adjustable XY plane - lowest force XY plane - highest force +Z direction	adjustable - factory setting given 0.5 N (50 gf) 1.76 ozf 0.9 N (90 gf) 3.17 ozf 5.85 N (585 gf) 20.6 ozf		NOT adjustable 2.0 N (200 gf) 7.05 ozf 4.0 N (400 gf) 14.10 ozf 30 N (3.0 kgf) 6.6 lbf	
Weight	65g (2.3 oz)			
Stylus length Standard Longest	50 mm (1.97 in) 100 mm (3.94 in)		50 mm (1.97 in) 150 mm (5.51 in)	
Mounting	M16 thread, for LT extension bars and adaptors			
Interface for transmission system Hard wired Inductive Optical	MI 5 or MI 8 or MI 8-4 MI 5 MI 12 + OMM or OMI		Hard wired MI 5 or MI 8 or MI 8-4 Inductive MI 5 Optical MI 12 + OMM or OMI	

Probe sealing



Parts list – please quote the part number when ordering equipment

Type	Part no.	Description
LP2	A-2063-6098	LP2 probe supplied with two C spanners and TK1 tool kit.
LP2H	A-2064-0002	LP2H probe supplied with two C spanners and TK1 tool kit.
LP2 DD	A-2063-8020	LP2 DD probe supplied with two C spanners and TK1 tool kit.
LP2H DD	A-2064-0032	LP2H DD probe supplied with two C spanners and TK1 tool kit.
TK1	A-2053-7531	Probe tool kit comprising: Ø1.98 mm stylus tool, 1.5 mm AF hexagon key, 2.0 mm AF hexagon key, 2.5 mm AF hexagon key, 3.0 mm AF hexagon key and 4.0 mm AF hexagon key.
C spanner	A-2063-7587	C spanner: One required for fitting probe to machine. Two required to connect probe to extension bar or removing front cap for cleaning.
DK2 kit	A-2063-7542	Service kit for LP2 and LP2H comprising: Front cap, metal eyelid, spring and rear O ring.
DDCK kit	A-2063-8023	Diaphragm conversion kit: Converts LP2 to LP2DD or LP2H to LP2H DD comprising: Two C spanners, front ring, outer diaphragm and rear O ring.
DDRK kit	A-2063-8030	Diaphragm replacement kit for LP2 DD and LP2H DD comprising: Outer diaphragm and rear O ring.
SA8	M-5000-7582	Stylus adaptor with break protection.
SD1	M-2063-8003	Swarf deflector.
Publications. These can be downloaded from our web site at www.renishaw.com		
Styli	H-1000-3200	Brochure. Styli and accessories
Adaptors/extensions holders/ socket	H-2000-2120	Data sheet. Adaptors, extensions and holders.
Probe holder	H-2000-2115	Data sheet. High precision arm with LP2 holder.
Hard wired transmission	H-2000-2091	Data sheet. LP2 hard wired transmission.
Inductive transmission	H-2000-2140	Data sheet. Inductive transmission system.
MI 5 interface	H-2000-2180	Data sheet. MI 5 interface unit.
MI 8 interface	H-2000-2191	Data sheet. MI 8 interface unit.
MI 8-4 interface	H-2000-2185	Data sheet. MI 8-4 interface unit.
Optical transmission	H-2000-2268	Data sheet. LTO2S and LTO2R optical modules.
Optical transmission	H-2000-2271	Data sheet. LTO2 optical module.
OMM	H-2000-2275	Data sheet. Optical module machine.
OMI	H-2000-2285	Data sheet. Optical machine interface.
MI 12 interface	H-2000-2195	Data sheet. MI 12 interface unit.
Software	H-2000-2289	Data sheet. Probe software for machine tools.
LP2 RK	H-2000-4028	Diaphragm replacement/conversion kit instructions.
DK2	H-2000-4027	DK2 LP2 service kit instructions.

For worldwide contact details, please visit our main web site at www.renishaw.com/contact

