

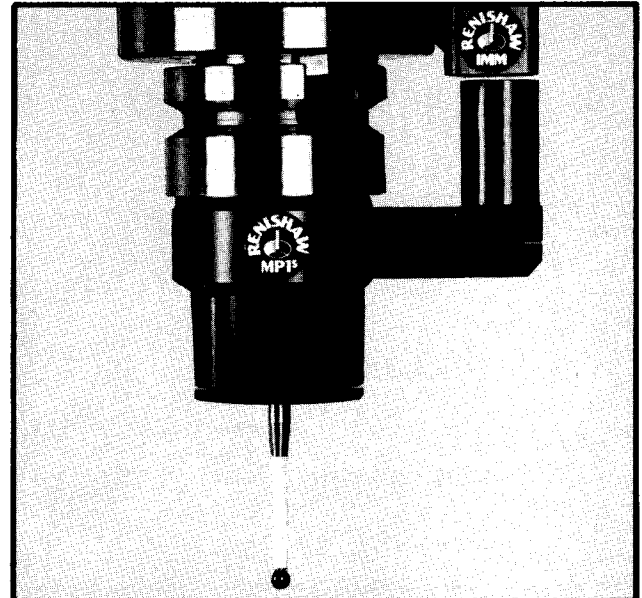
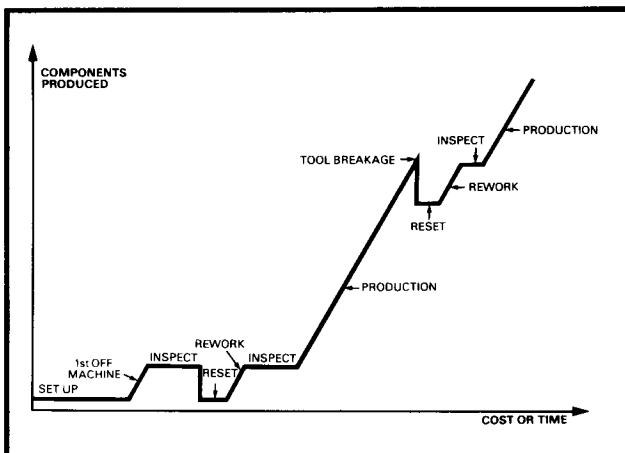
MP1 Probe

Probes for Machining Centres from the originators of Touch Trigger Probes

The Touch Trigger Probe is a simple and brilliant idea. When the stylus touches a workpiece feature, the CNC machine control automatically records the contact position, providing instant, accurate setting or inspection data.

- Good design provides inherent repeatability for all stylus configurations.
- Reliability and long life assured.
- Modular range of extensions and adaptors available.
- Proven by experience.
- Supported worldwide by expert advice and specialist service facilities.

Conventional use of NC



Real Cost Savings

Automation of job set up
– Lower fixture costs.

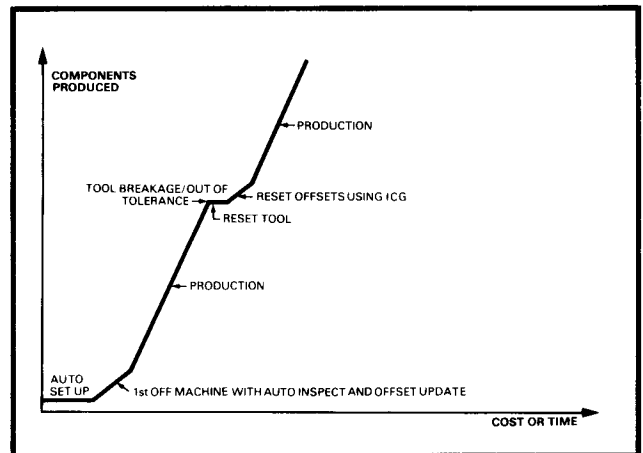
Verification of castings
– Eliminate fresh air cutting.

Automatically update tool offsets
– Improved quality control.

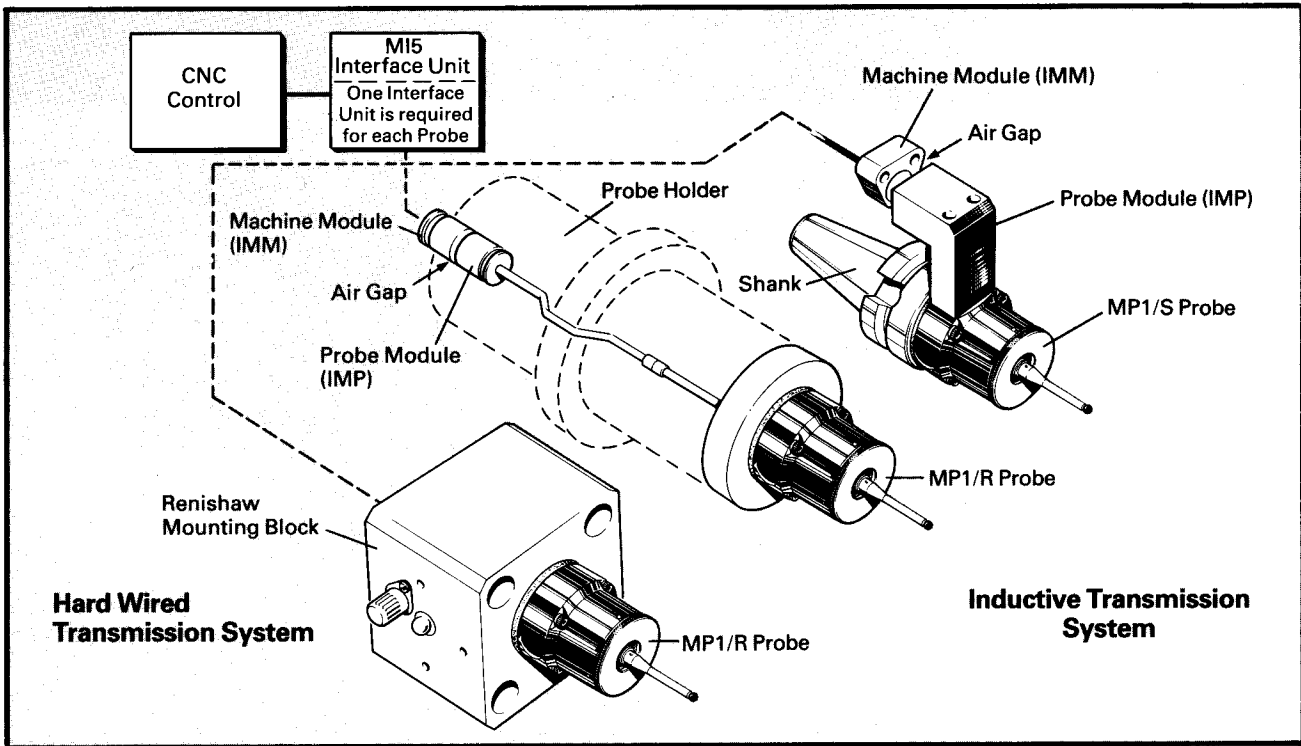
Rapid checking of first off's
– Speed batch production.

Monitoring machining process
– Minimize operator intervention.

NC machining with In-Cycle Gauging



Probe Systems



MP1 Probe

The MP1 Probe is available in two versions. The MP1/S with side electrical connection and the MP1/R with rear electrical connection. This probe is ideal for small machining centre applications.

Transmission Systems

Probe signals are transmitted to the machine control either by an inductive system, which allows automatic tool change of the probe or by a hard wired system.

The inductive system is maintenance free. Power and probe signal pass across a small air gap, between two modules, one attached to the probe and one to the machine. The module on the machine is linked to the machine control via an interface unit.

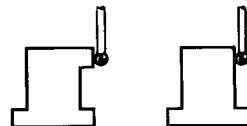
Hard wired systems apply to installations where the MP1/R probe is directly wired to the interface unit.

System Data Sheets related to the MP1 Probe

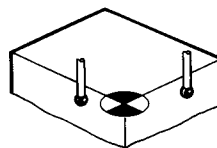
- DS MTS – Machine Tool Styli
- DS AEH – Adaptors, Extensions and Holders
- DS ITS – Mk IV Inductive Transmission System
- DS MI5 – MI5 Interface Unit
- DS PSU – PSU3 Power Supply Unit
- DS PF – Programs for Probes – Fanuc

Programs for Probes

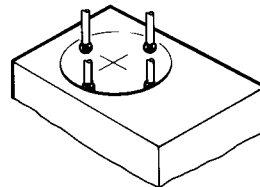
Probe software is now readily available from most machine tool builders and control manufacturers. In addition Renishaw have developed software for certain control systems. Some examples of typical applications are shown below.



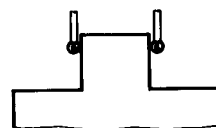
Component identification



Workpiece datuming to any specified feature (corner shown)

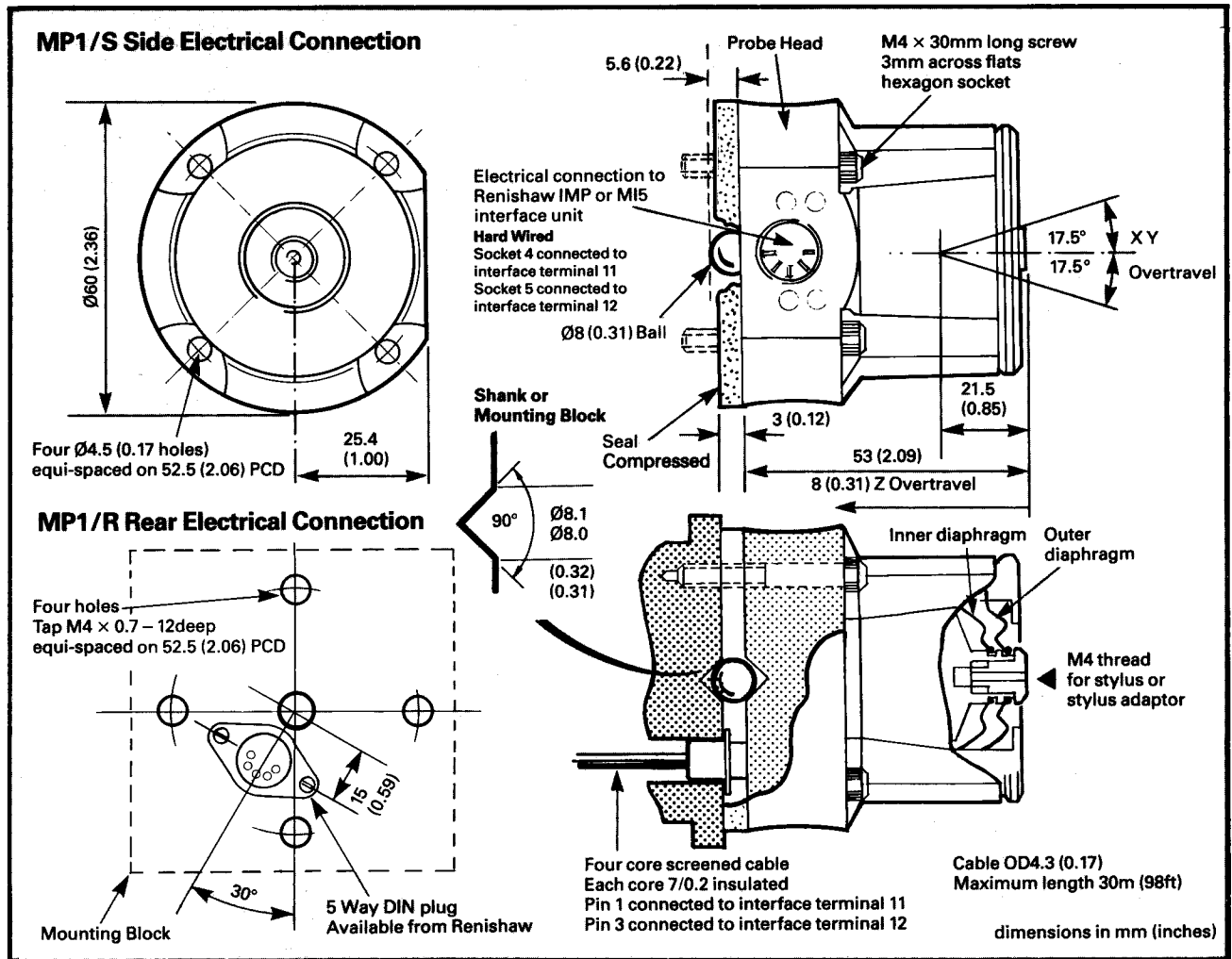


Bore measurement location or centering



Measurement, centering or location of webs/bosses etc.

Specification



Specification

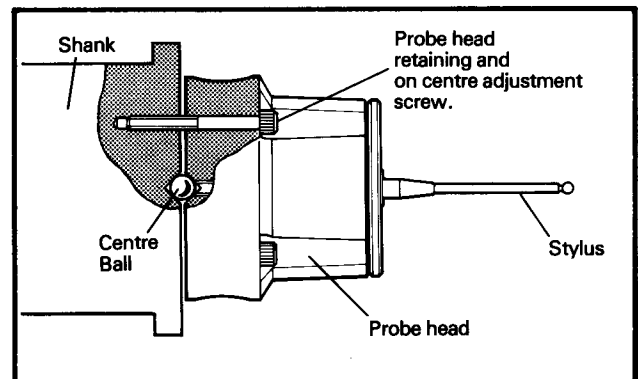
Sense directions	Omni directional $\pm X \pm Y + Z$
Stylus overtravel	$17.5^\circ X$ and Y directions 8mm (0.31in) Z direction. Repeatability of $1.0\mu\text{m}$ (40μ inch) is valid for test velocity of 480mm/min (1.57ft/min) at stylus tip
● Unidirectional Repeatability Max 2 – Sigma (2σ) value	
● Stylus trigger force	
○ X and Y directions	Set at 57g (2.01oz) giving 115g (4.05oz) max
Z direction	380g (13.40oz)
● Using a stylus 50mm (1.97in) long.	
● A Renishaw Calibration certificate is supplied with each probe.	
○ X and Y direction gauging forces have a three lobed characteristic.	

Shank Size

ISO 35-45 taper shank
or equivalent

Stylus on Centre Adjustment


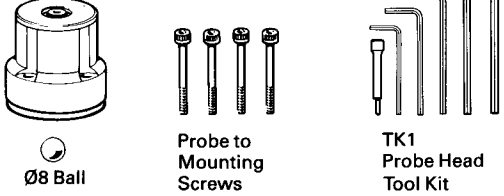
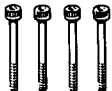




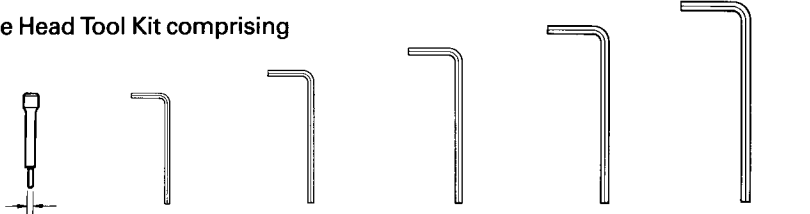
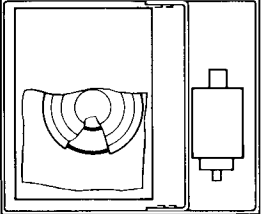
Adjustment is provided to align the stylus with the centre line axis of the machine spindle. Alignment is achieved by slackening the four probe head retaining screws. The probe head pivots on a central ball which permits adequate stylus adjustment in the X or Y direction. When the stylus is correctly aligned the probe head retaining screws are tightened to lock the probe head in position.



Stylus on centre adjustment

Parts List

Please quote the Part No. when ordering equipment.

Type	Part No.	Description
MP1/S	A/2051/4576	<p>MP1/S Probe Head (Side electrical connection) complete with Seal Ø8 Ball 4 socket cap head screws M4 × 0.7 – 30mm long (3mm AF hexagon socket) Probe to shank and TK1 Probe Head Tool Kit</p> 
MP1/R	A/2051/4577	<p>MP1/R Probe Head (Rear electrical connection) complete with Seal Ø8 Ball 4 socket cap head screws M4 × 0.7 – 30mm long (3mm AF hexagon socket) Probe to mounting and TK1 Probe Head Tool Kit</p> 
<p>Part Numbers given for ordering individual items</p>		
	P/SC01/0430	<p>Socket Cap Head Screw M4 × 0.7 – 30mm long – Four required Probe to Shank/Mounting</p> 
	M/2051/4522	<p>Seal for MP1/S</p> 
	M/2054/6583	<p>Seal for MP1/R</p> 
	P/BA03/0800	<p>Ø8 Ball</p> 
	P/CN07/2002	<p>5 Way DIN plug for MPI/R mounting block.</p> 
TK1	A/2053/7531	<p>Probe Head Tool Kit comprising</p>  <p>Stylus Tool Ø1.98 Hexagon Key 1.5mm A/F Hexagon Key 2.0mm A/F Hexagon Key 2.5mm A/F Hexagon Key 3.0mm A/F Hexagon Key 4.0mm A/F</p>
DK1	A/2051/7105	<p>Outer Diaphragm Replacement Kit comprising Outer Diaphragm Large 'O' Ring Small 'O' Ring Assembly Tool for Small 'O' Ring Fitting Instructions Sheet</p> 

Renishaw reserves the right to change specifications without notice.

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