



Every bridge-type Aberlink CMM fully supports the range of probe heads and both touch trigger and scanning probes supplied by Renishaw. The following are common options:



#### TP8 Probe

The TP8 probe offers an entry level option for customers that require infrequent indexing of the probe and no indexing during the running of a measurement programme. The TP8 is supplied with two knuckle joints to allow infinite alignment of the probe to the feature being measured, but this alignment is non-repeatable, meaning that the stylus will need to be re-qualified following each index. The TP8 probe accepts the M3 range of styli.



#### MH20i Probe Head

The MH20i probe offers repeatable manual indexing of the probe head from 0° to 90° in the A axis and through 360° in the B axis, in 15° increments. Ideal for manual CMMs, it can also be used on CNC models, but will require intervention from the operator whenever indexing is required. The MH20i uses a TP20 stylus module, which in turn accepts the M2 range of styli.

#### RTP20 Probe Head

The RTP20 probe offers a really cost effective solution for customers that require automatic indexing on CNC machines. Modelled on the MH20i body, the RTP20 uses the CNC motion of the CMM to position itself using a post mounted to the bed of the machine. Like the MH20i it is able to index from 0° to 90° in the A axis and through 360° in the B axis, in 15° increments and uses a TP20 stylus module, which in turn accepts the M2 range of styli. The RTP20 is also fully compatible with the MCR20 change rack to provide an option that provides both automatic stylus changing as well as automatic indexing.

#### PH10T Probe Head

The PH10T is a fully motorised probe head that offers immediate indexing from 0° to 105° in the A axis and through 360° in the B axis, in 7.5° increments. This probe head should be used by customers requiring frequent indexing or when more precise alignment to the features being measured is required.

Common probe options for the PH10T:

#### TP20

The TP20 is a robust probe for general purpose measurement that can be used in conjunction with the MCR20 change rack to facilitate automatic stylus changing. The TP20 stylus modules can be supplied with different trigger forces which accept M2 styli up to 60mm long, and with different length modules to assist with probing at greater depths.

#### TP200

The TP200 probe utilises strain gauge technology and so does not exhibit lobing characteristics and therefore should be considered by customers requiring more accurate measurement of form. It can be used with the SCR200 change rack for automatic stylus changing and the TP200 modules are available as standard or low force for use with M2 styli up to 100mm long.



PH10T probe head fitted with TP20 probe

## Probing & Camera Configurations



PH10M with SP25M scanning probe

#### PH10M Probe Head

Like the PH10T probe head, the PH10M is also a fully motorised probe head that offer immediate indexing from 0° to 105° in the A axis and through 360° in the B axis, in 7.5° increments. The M head, however, incorporates an auto-joint with multiwire capability, which is necessary for the SP25M scanning probe. The PH10M probe head can also be fitted with either TP20 or TP200 probes and should be chosen in preference to the PH10T when using these probes if the future use of a scanning technology may be required.

#### PH6M Probe Head

This head provides a fixed auto-joint for when an SP25M scanning probe is needed without the requirement for indexing.

#### SP25M Scanning Probe

The SP25M scanning probe uses an isolated optical metrology transducer system to enable extremely accurate measurements to be taken with the stylus in continuous contact with the feature being inspected. This enables more data to be taken which is important when form is critical. A range of modules are available for the SP25M to provide optimized scanning performance using M3 styli up to 400mm long.



PH6M with SP25M scanning probe

Probe Head Comparison	Integral Probe	Index Motion	Maximum Length	Index Resolution	Index Positions	Repeatable Indexing	Repeatable Stylus Changing
TP8	Yes	Manual	105mm	Infinite	Infinite	No	No
MH20i	Yes	Manual	150mm	15°	168	Yes	Yes
RTP20	Yes	Automated	168mm	15°	168	Yes	Yes
PH10T	No	Motorised	450mm	7.5°	720	Yes	Yes
PH6M	No	No	450mm	No	No	No	Yes
PH10M	No	Motorised	450mm	7.5°	720	Yes	Yes

## CMM CAMERA TOUCH & VISION ON THE SAME MACHINE

Aberlink's camera system offers a non-contact facility on any Aberlink CMM. A clever design of magnetic, kinematic joint allows the probe and camera to be swapped in just seconds. This means that components can be inspected using both touch trigger and vision inspection technology on the same machine.

The camera incorporates a telecentric lens that gives a distortion-free image on the monitor. It also contains a fully programmable 16-LED light ring which contains alternate white and UV LEDs. The white LEDs provide surface illumination in the normal manner while the UV LEDs provide an ingenious solution to the perennial problem of backlighting on a CMM - the component to be measured is simply placed on a plate containing special reflective paper.

#### Key Features:

- Swap between touch probe and CMM camera in seconds
- Use touch and vision technology within the same inspection programme
- High precision edge detection for feature inspection
- Thread measurement - min/max/mean pitch, left/right angles, effective diameter
- Fully programmable digital zoom (no need to change lenses)
- Directional overhead lights and back light for profile and surface feature inspection
- Telecentric lens measures accurately even when the feature is out of focus

A collimated back light option is available for when measuring 3D or small turned components - see accessories (inside back cover)



#### Specification:

- Sensor: 3 Mega pixel high speed colour camera
- Resolution: 2048 x 1536 (QXGA)
- Stand off: min 125mm | max 1000mm (manually adjusted)
- Field Of View: min 9.5mm | max 125mm
- Pixel Size: min 4.8µm | max 48µm