mida

DIAMOND

ULTRA PRECISION PROBING

MARPOSS

Ever since the company was founded, Marposs has supplied state-of-the-art measurement and control products for a variety of manufacturing applications, becoming a by-word for quality and reference point for the industry.
In particular, the MIDA range includes work piece control and tool check solutions for numerical control machines that offer excellent metrological performance specifications.

But Marposs has also concentrated its efforts in highly demanding areas, such as the aerospace, aeronautical, biomedical and mould manufacturing sectors, where the need for ever-greater precision redefines the rules of in-machine tool and piece measurement on an almost daily basis.

As a result of a philosophy based on innovation and the desire to satisfy its customers, Marposs presents Diamond, the new range of high-precision products. Diamond, which represents the cutting edge of the MIDA range, consists of a complete set og applications, capable of monitoring every stage of the manufacturing process.

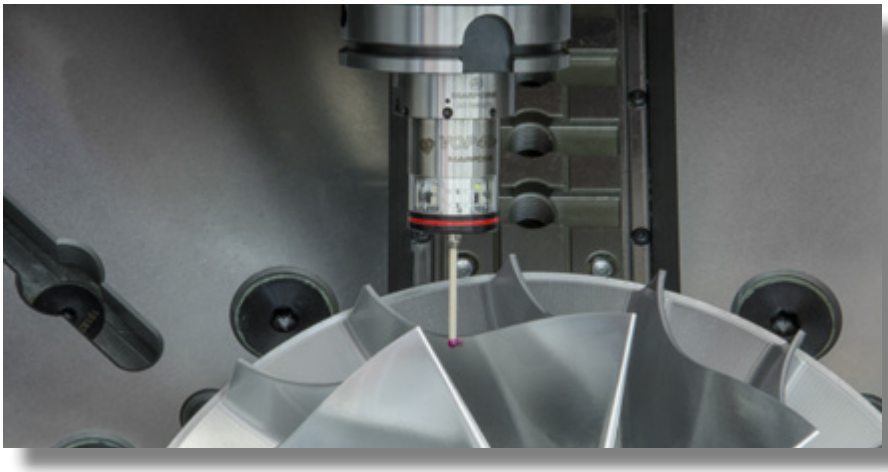
Diamond guarantees the required precision when positioning the work piece, pre-setting the tool and when carrying out tool checks and piece measurements.

Diamond consolidates and expands the MIDA range so that it includes the high precision sector, while maintaining the quality and reliability that customers have come to expect from Marposs products.

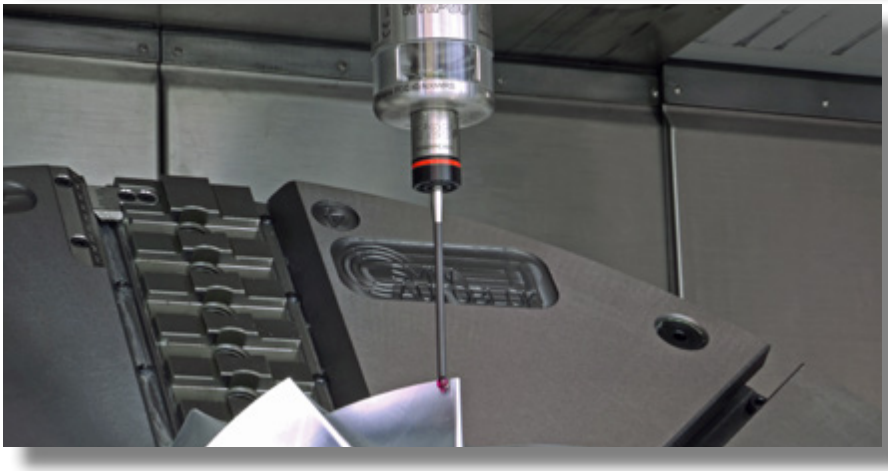
Diamond Touch Probes: the highlights
Thanks to the power of piezo-electric technology, Diamond probes guarantee excellent metrological performance:

- excellent repeatability, within 0.25 µm (2σ);
- null pre-travel, which makes them ideal for checks on softer materials since the touch force is less than other probes;
- these results are confirmed by the spatial and planar isotropy of the Diamond probes (2D lobing in X, Y: ±0.25 µm; 3D lobing in X,Y,Z: ±1 µm) hence, they are also guaranteed for complex 3D surfaces.

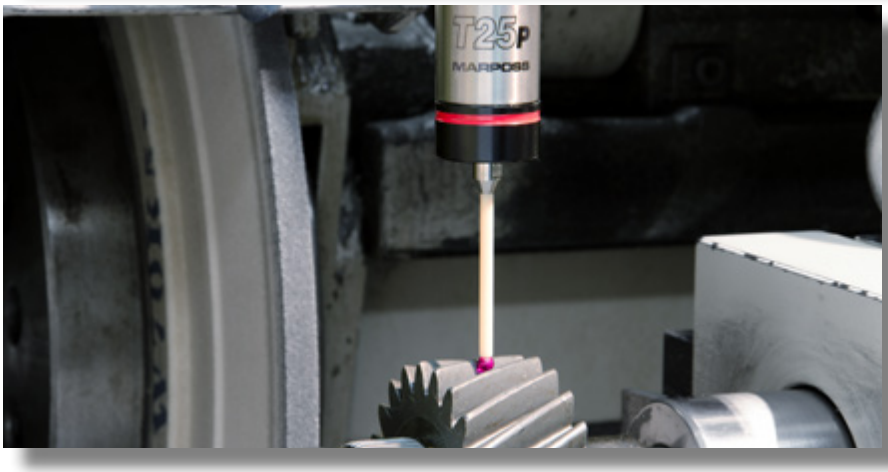
VTS: the highlights
Thanks to a resolution of 0.1 µm (0.4 µm for WF85 version), VTS is capable of measuring micro-tools with a minimum diameter of 10 µm (40 µm for WF85 version), and a maximum of 40 mm (up to 80 mm for WF85 version). It can be used to measure tool length, dynamic and static diameter, TIR, cutting edge radius under real working conditions, with the tool rotating at up to 80 Krpm. In addition, the profile check may be carried out with the tool stationary or in rotation.



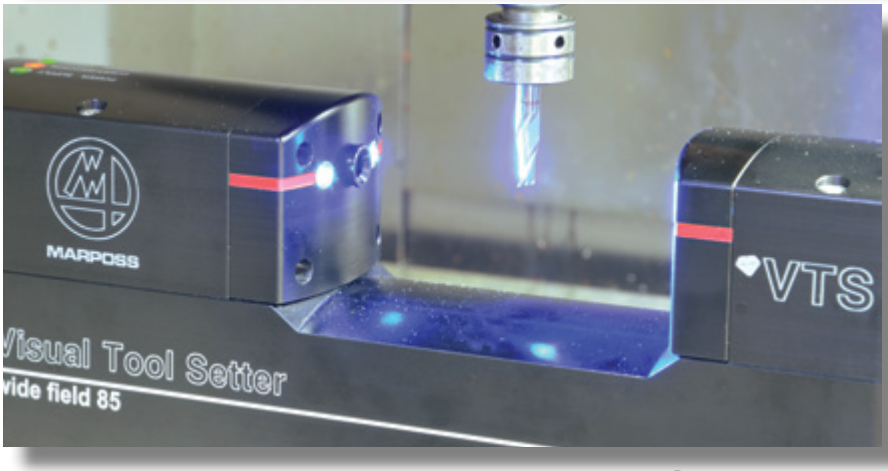
VOP40p is the Diamond **optical transmission** probe. It represents the Marposs High precision solution for small and medium scale milling machines and work stations. The incredible life means that it is possible to achieve up to 270 days of autonomy at a usage rate of 5% (low power mode).



WRP60p and **WRP45p** are the **Diamond** radio transmission probes for high precision milling machines and 5 axis work stations. Thanks to the multi-channel, radio transmission system, they are ideal for use on large scale machines, given their transmission range of up to 15 metres, and excellent immunity to interference.



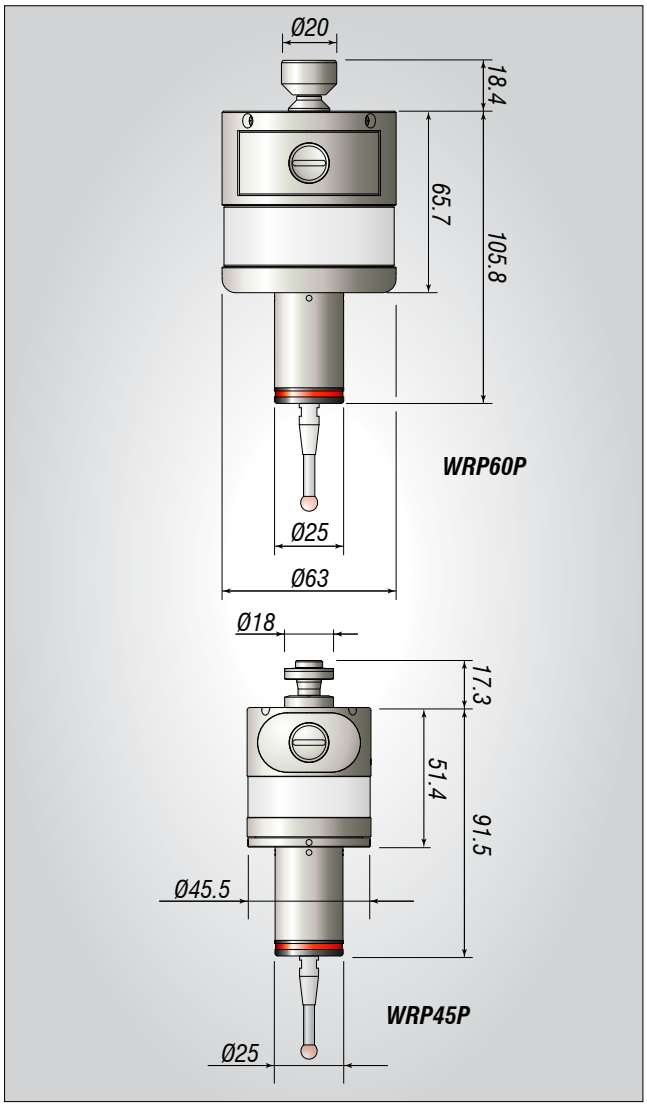
T25p is the **Diamond** cable transmission probe. Despite its small size it offers excellent measurement specifications. T25p is the perfect solution for grinders and sharpeners.



VTS is the **Diamond** image processing tool setter, perfect for high precision monitoring applications during micro-machining processes since it is able to measure tools to a limit of 10 µm (40 µm for WF85 version). The new, compact structure means that it is also ideal for use on small scale machines.

WRP45P/WRP60P Diamond touch probe

WRP45P and WRP60P are the Diamond radio transmission touch probes for high precision in-machine work piece checks. WRP45P is ideal for small and medium scale, 5 axis work stations, whereas WRP60P has been designed for use on large scale 5 axis machines. Furthermore, thanks to its modular design, the latter probe may also be fitted with an extension of up to 1 metre in length, in order to measure deep holes.
The WRP45p and WRP60P probes are used together with the radio receiver with built-in WRI interface, with which they communicate via a 2.4 GHz, multi-channel radio transmission system that enables then operate at a distance of up to 15 m while remaining immune from interference.

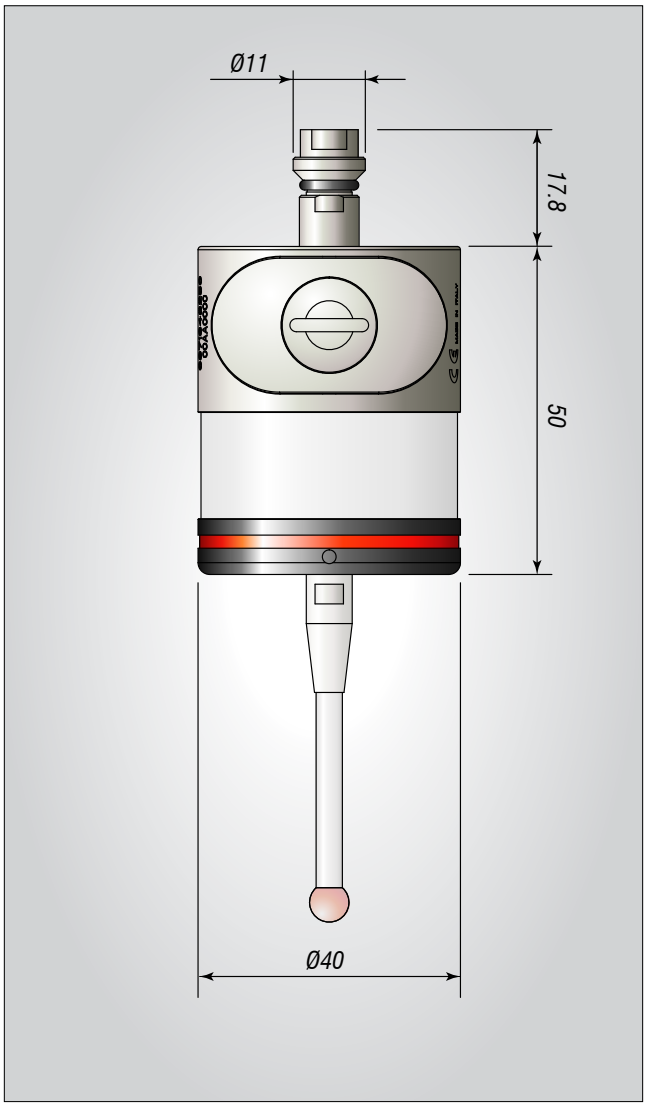


		WRP45P	WRP60P
UNIDIRECTIONAL REPEATABILITY (2σ) *With standard 35 mm stylus and 600 mm/min speed*		0.25 µm	
LOBING 2D in X/Y*		±0,25 µm	
LOBING 3D in X/Y/Z*		±1 µm	
MEASUREMENT FORCE*		0.07 N (*Plane XY / Direct. Z*)	
OVERTRAVEL*		12° (*Plane XY*) 6 mm (*Direct. Z*)	
TRANSMISSION TYPE		Multichannel radio	
TRANSMISSION/ACTIVATION/ DEACTIVATION DISTANCE		15 m	
NUMBER OF AVAILABLE CHANNELS		79	
NUMBER OF SUB-CHANNELS		4	
TRANSMISSION ACTIVATION		Machine M code	
TRANSMISSION DEACTIVATION		Programmable timer Machine M code	
BATTERY TYPE		2 x CR2 lithium	2 x CR123 lithium
BATTERY LIFE**	*Stand-by*	1 y	1.5 y
	5% usage	180 d	270 d
	Continuous usage	450 h	750 h
PROTECTION RATING *(Standard IEC 60529)*		IP68	
WORKING TEMPERATURE		0 - 60 °C	

(*) = Specifications based on the 35 mm stylus
(**) = Typical performance values, may vary depending on programming mode

VOP40P Diamond touch probe

VOP40P is the Diamond optical transmission probe, it is ideal for controlling and checking high precision work pieces on small and medium scale work stations. It combines compact design with incredible performance.
The probe is used together with an optical receiver with built-in VOI interface, with which it communicates via a modulated optical transmission system that guarantees high immunity to interference and large operating range with a wide transmission angle.

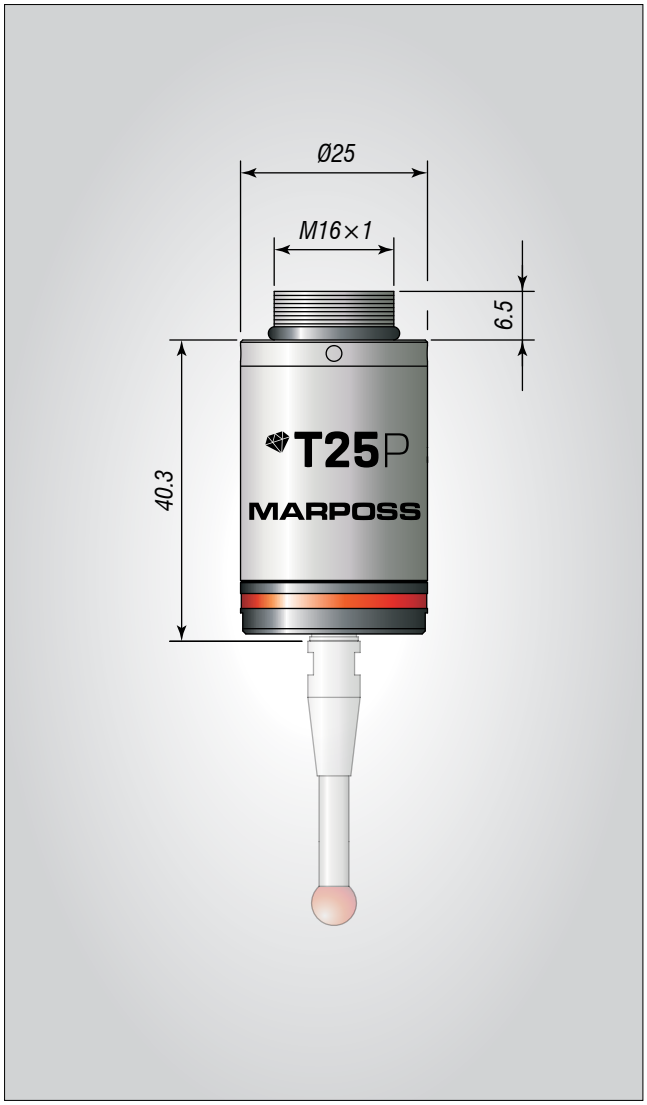


UNIDIRECTIONAL REPEATABILITY (2σ) *With standard 35 mm stylus and 600 mm/min speed*		0.25 µm	
LOBING 2D in X/Y*		±0,25 µm	
LOBING 3D in X/Y/Z*		±1 µm	
MEASUREMENT FORCE*		*XY plane* 0.07 N	*Direction Z* 0.07 N
OVERTRAVEL*		*XY plane* 12°	*Direction Z* 6 mm
TRANSMISSION TYPE		Multi-channel optical transmission	
TRANSMISSION/ACTIVATION/ DEACTIVATION DISTANCE		6 m *(HP)* 3.5 m *(LP)*	
TRANSMISSION ANGLE		360° on the probe axis 110° on a perpendicular axis	
NUMBER OF TRANSMISSION CHANNELS		6 *max.*	
TRANSMISSION ACTIVATION		Automatic Machine M code	
TRANSMISSION DEACTIVATION		Programmable timer Machine M code	
BATTERY TYPE		2 x 1/2 AA lithium thionyl	
BATTERY LIFE**	*Stand-by*	160 d *(HP)* 330 d *(LP)*	
	5% usage	200 d *(HP)* 270 d *(LP)*	
	Continuous usage	800 h *(HP)* 1300 h *(HP)*	
PROTECTION RATING *(Standard IEC 60529)*		IP68	
WORKING TEMPERATURE		0 - 60 °C	

(HP) = High Power mode
(LP) = Low Power mode
(*) = Specifications based on the 35 mm stylus
(**) = Typical performance values, may vary depending on programming mode

T25P Diamond touch probe

T25P is the Diamond cable transmission probe. Thanks to its small size (diameter of just 25 mm), it is ideally suited for applications where working space is restricted, such as grinders and sharpeners.
It is perfect for applications that require very high repeatability, such as three-dimensional analysis of sculpted surfaces, such as the profiles of gear wheels and cutting tools. Measurement accuracy is further guaranteed by using long styli.
The 25P probe is compatible with all the accessories in the Mida range and may also be used for retrofit applications thanks to its full compatibility with the pre-existing wiring schemes for T25, TT25 and similar probes.

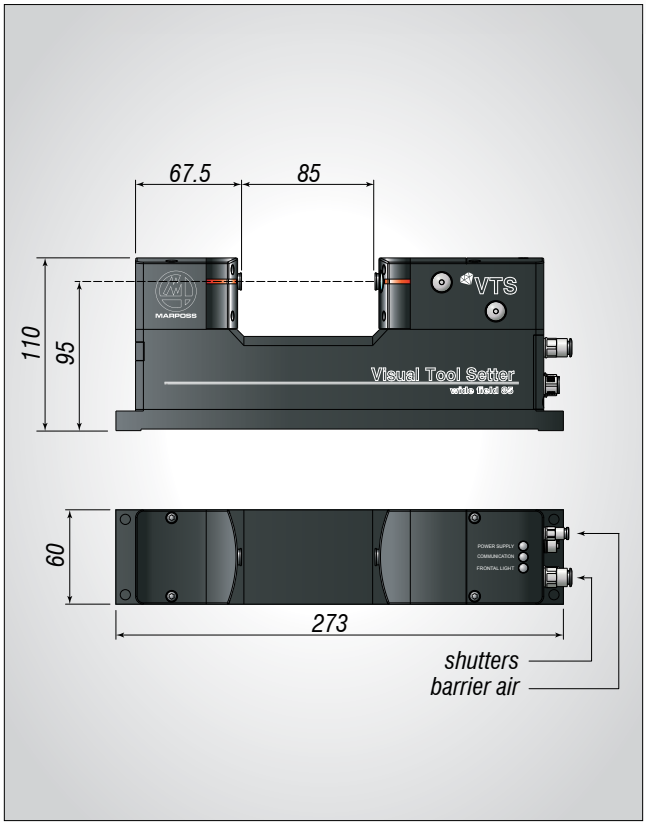


	T25P	TL25P
UNIDIRECTIONAL REPEATABILITY (2σ)*	0.25 µm	
2D LOBING IN X/Y*	±0.25 µm	
3D LOBING IN X/Y/Z*	±1 µm	
TRIGGER FORCE	0.12 N	0,07 N
OVERTRAVEL FORCE*	1.5 N *XY plane* 7 N *Z direction*	1 N *XY plane* 7 N *Z direction*
OVERTRAVEL	12° *XY plane* 6 mm *Z direction*	
PROTECTION DEGREE *(Standard IEC 60529)*	IP67	

(*) = data refer to 35 mm stylus

VTS Visual Tool Setter

Marposs VTS is a non-contact measurement system that uses visual technologies to guarantee extremely accurate results, even on micro-tools. Thanks to a CCD sensor and dedicated software functions, VTS guarantees precision and speed, since it is able evaluate tool length, dynamic and static diameter, TIR, cutting edge radius, micro-tool dynamic centre of rotation and machine axes thermal drift compensation from a single position and in a single measurement cycle. Additionally, the tool is measured under real operating conditions, meaning that the resulting in an effective measurement of the tool itself.



ACTIVATION TYPE		Pneumatic	
DEVICE DESCRIPTION		No-contact tool checks for CNC machines	
MEASURABLE DIAMETERS	*min*	40 µm	
	max	2.9 mm *double side*	80 mm *single side*
RESOLUTION		0.4 µm	
REPEATABILITY 6σ		0.8 µm	
WEIGHT		VTS-SU: 2.7 kg	
		VTS-EU: 1.1 kg	
WORKING TEMPERATURE		5 - 50° C	
RELATIVE HUMIDITY		90% max	
PROTECTION DEGREE *(IEC 60529)*		IP67	

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www.marposs.com

For a full list of address locations, please consult the Marposs official website

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Marposs implements an ISO 9001, ISO 14001 and OHSAS 18001 certified, integrated Company quality, environmental and safety management system. Marposs has also been awarded the EAQF 94 qualification and the Q1-Award.

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