

Probing systems for co-ordinate measuring machines

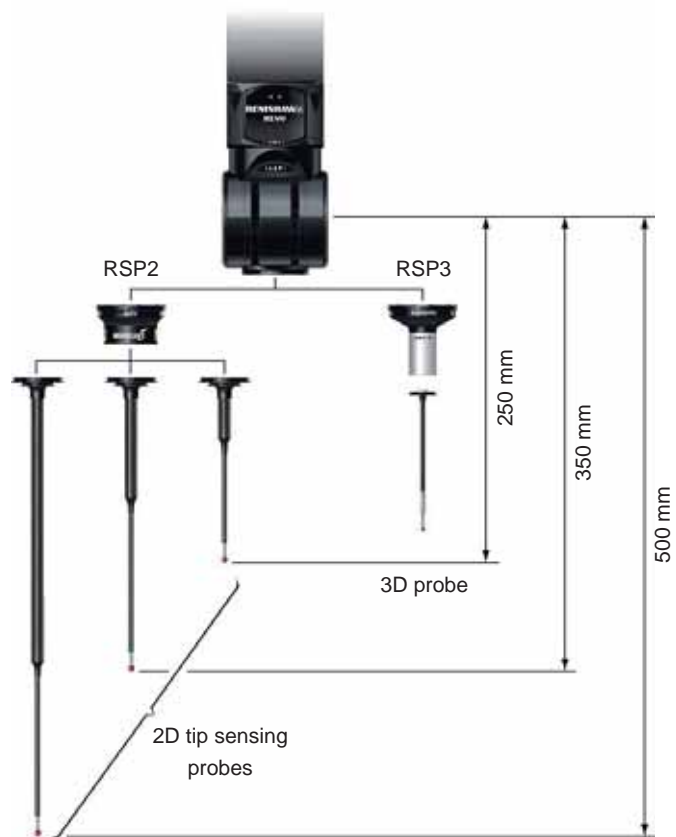
REVO™

The REVO™ measuring head features spherical air bearing technology in each of its two axes, driven by brushless motors linked to high-resolution encoders to provide fast, ultra-high accuracy positioning.

REVO™ system overview

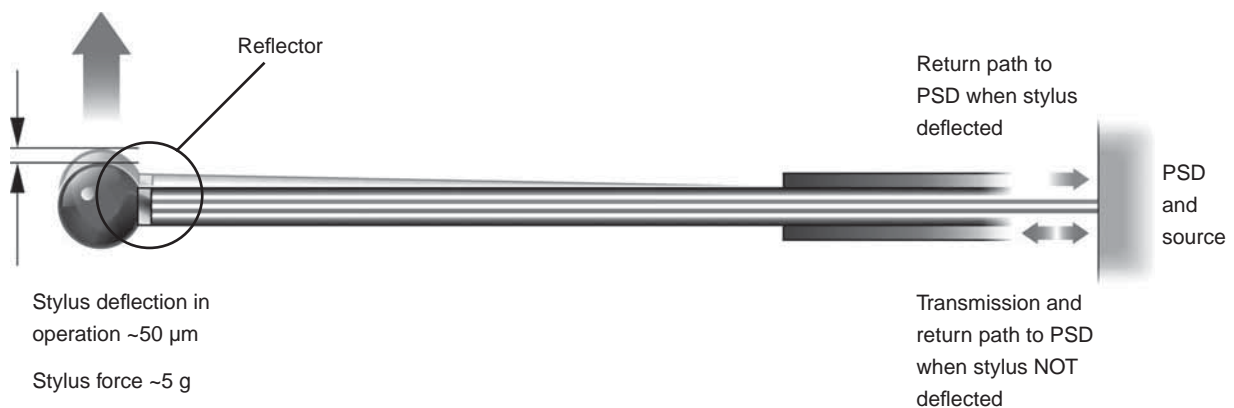
The system comprises the following elements:

- REVO™ head
- RSP2 2D tip sensing probe and associated stylus holders and accessories
- RSP3 3D probe and associated accessories
- **UCC2** universal CMM controller
- REVO™ PCI interface card (for **UCC2**)
- **SPA2** servo power amplifier
- Air filter unit



REVO™ - 'tip sensing' probe technology

- Enclosed laser directed onto a reflector at the stylus tip.
- The stylus touches the part and bends.
- The reflector is displaced.
- The altered return path of the laser is sensed by a PSD.
- The exact tip position is known because the reflector and the stylus ball are close together.
- Stylus wear is minimised by using a low scanning force.



REVO™ features and benefits:

- Incorporates **Renscan5™** five axis scanning technology minimising CMM motion and the associated CMM dynamic errors
- Increased measuring speed, up to 500 mm/sec resulting in increased measurement throughput
- Data collection rates up to 6,000 points per second
- Infinite positioning and five axis motion reduces nonproductive transitions between features
- Stylus wear minimised by extremely low scanning forces
- Infinite positioning and five axis motion aid access to difficult features
- Rapid calibration with all positions inferred means more time measuring
- Maximum reach up to 500 mm with maintained effective working length
- Standard M2 styli for convenience
- Probe and stylus changing capability allowing flexibility and future probing technology compatibility

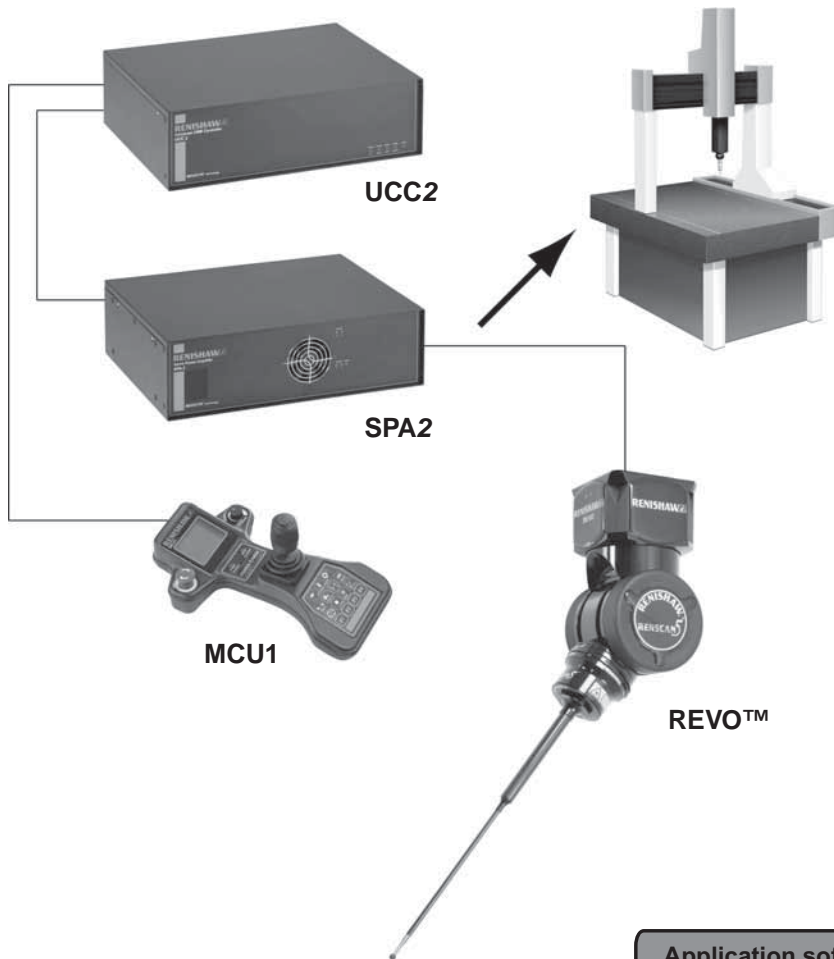


Specification summary		REVO™			
OPERATING TEMPERATURE		14 °C to + 30 °C (57 °F to 86 °F)			
STORAGE TEMPERATURE		-10 °C to +70 °C (14 °F to 158 °F)			
WEIGHT (excluding probe and cables)		1.75 kg			
DIMENSIONS	Height (overall)	239 mm (9.41 in)			
	B axis	86 mm (3.40 in) square			
	A axis swept diameter	118 mm (4.65 in)			
AIR SPECIFICATION	Incoming supply to filter specification (ref: ISO8537.1)	Particle size	Class 4	15 µm	Line pressure of 6 to 6.5 bar
		Dirt concentration	Class 4	8 mg/m³	
		Dewpoint	Class 4	+3 °C	
		Oil	Class 4	5 mg/m³	
	After filtration air specification (ref: ISO8537.1)	Particle size	Class 2	1 µm	Pressure 5 Bar.
		Dirt concentration	Class 2	1 mg/m³	
		Dewpoint	Class 3	-20 °C	
		Oil	Class 2	0.1 mg/m³	
MOVEMENT SPEED		3 revs/sec			
ROTATION ANGLES	A axis	-5° to +120°			
	B axis	Continuous			
ANGULAR RESOLUTION		0.08 arc sec			
BEARINGS		Air			
CHANGE RACK SYSTEM		Allowing both probe changing and stylus holder changing			

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Hardware integration

- The **UCC2** is fundamental to the REVO™ system
- The **UCC2** controller features **Renscan5™** scanning routines particular to five-axis motion and scanning
- **SPA2** is a servo power amplifier used to drive the head and CMM
- **MCU1** is the multi-function hand control unit required for the system



Software integration

- The Renishaw **UCCserver™** software application will provide the interface for REVO™ control
- **UCCserver™** is based on I++DME command protocol

