

TurnCheck

Series-6 Benchtop Shaft Measurement Systems

Fast, Easy Shaft Measurements

High Speed Optical Metrology

QVI TurnCheck™ Series-6 are precision shaft measurement systems designed for the people who use them. Built with rugged materials for thermal stability and advanced optics for consistent, accurate measurements, TurnCheck systems are intelligent and easy to use systems that let you focus on what you want to measure, rather than how to measure it.

TurnCheck systems scan and measure a part in seconds using fully telecentric, very low distortion optics. With 300 mm of vertical travel and a 60 mm field of view, TurnCheck Series-6 systems can handle a wide range of turned or ground parts.

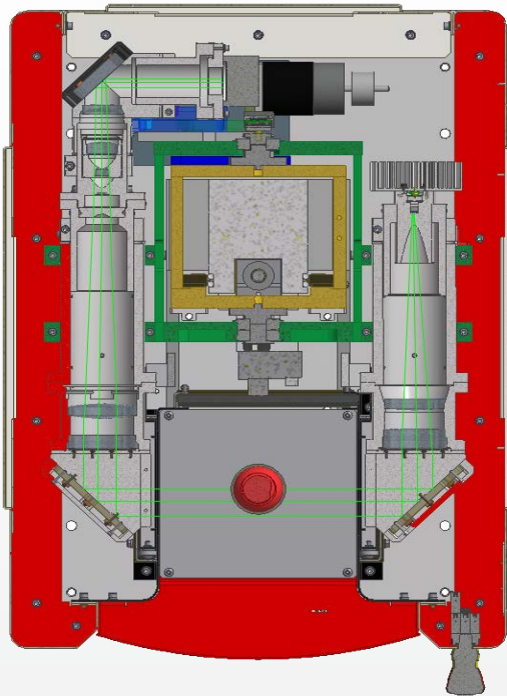
TurnCheck software allows easy measurement of diameters, lengths, distances, angles, radii, form, position, cylindricity, and runout – and can output full 3D point data for external analysis.

A Rugged Design that is Easy To Use

The movable tailstock assembly is designed to be easily operated with one hand for precision mechanical alignment of the workpiece. An optional live tailstock can be built into the base assembly, minimizing the cost of tooling for different size parts. Additional optional workholding kits that fit into the spindle accommodate workpieces that do not have centers.

Series-6	6 ³⁰
Measuring Capacity & Unit Size	
Vertical Measuring Range (mm)	300
Maximum Diameter Measuring Range (mm)	60
Maximum Part Size (mm)	170Ø x 300L
Machine Size (mm)	525 x 745 x 975
Performance*	
Vertical Scanning Speed (mm/sec)	100
Rotational Scanning Speed (RPM)	60
Vertical Scale Resolution (µm)	0.1
Video Edge Resolution (µm)	0.5
Rotational Scale Resolution (Degrees)	0.001
Rated Spindle Load (kg)	20
Optional Helix Angle Adjustment (Degrees)	±15
Accuracy*	
Diameter Measurement (µm)	1.8 + L/100 ^{1,2,3}
Diameter Repeatability (µm)	0.5
Length Measurement (µm)	3.5 + L/150 ^{1,2,3}
Length Repeatability (µm)	2.0
Rotational Accuracy (Arc Seconds)	20
Rated Environment & Facilities	
Operating Temperature (°C)	15 - 30 °C ²
Rated Environment (°C)	Temperature 18-22 °C; 30-80% humidity; vibration <0.001g below 15 Hz
Power Requirements	100 - 120 VAC or 200 - 240 VAC, 50/60 Hz, 1-Phase, 650 W
Notes	1. Where L = measuring length in mm. Applies to thermally stable system in rated environment. 2. Maximum rate of temperature change: 1 °C/hour. Maximum vertical temperature gradient: 1 °C/meter. 3. Applies to a work piece with its center of mass located on the spindle axis

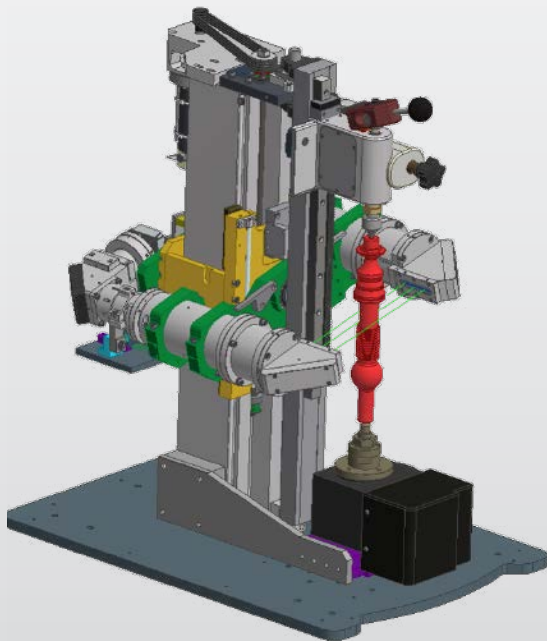
*Preliminary Specs



Advanced Optics Make the Difference

TurnCheck Series-6 optics are designed to produce distortion-free images over the full 60 mm field of view. The optics produce a truly telecentric image, for accurate size measurements on all shapes and surface finishes.

The illumination optics are carefully matched to the imaging optics to supply highly collimated light for nearly perfect back lighting of the workpiece.

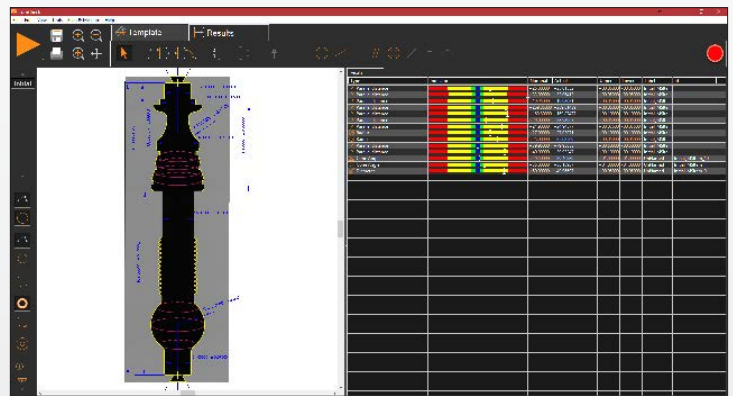
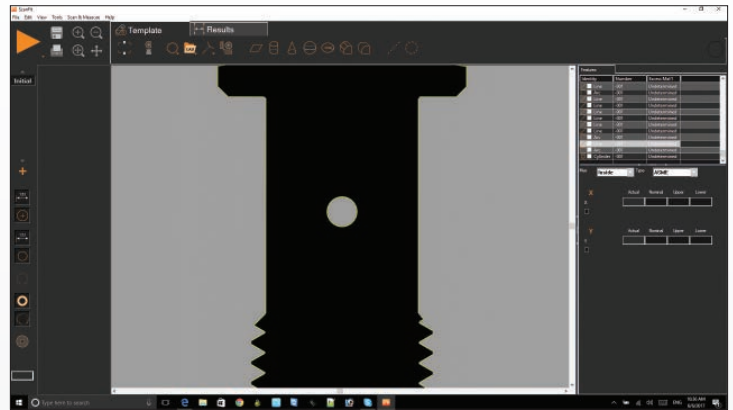
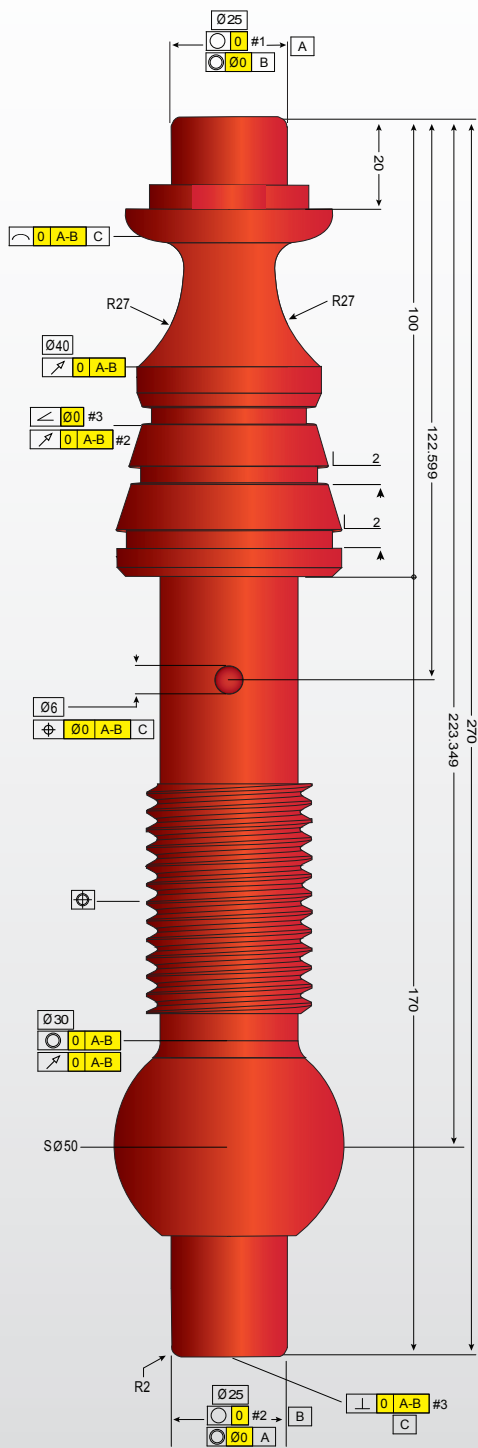


Helix Motion for Correct Thread Form Measurement

Proper optical thread form measurement often requires that the imaging optics be oriented normal to the thread's helix angle.

TurnCheck Series-6 optics include an optional precision helix motion mechanism to orient the optics within a $\pm 15^\circ$ range to enable correct thread measurements.

The TurnCheck vertical scanning arrangement tilts the optics to orient the imaging system normal to the threads on the staged part. The helix mechanism is motorized and programmable under computer control.



A New Paradigm in Shaft Measurement

TurnCheck system software offers advanced image analysis technology for high speed optical measurement. Set up is fast and easy. Automatic feature extraction immediately finds and measures all part features in a single scan. Pre-programmed parts report dimensions and apply tolerances automatically, allowing fast and intelligent one-touch measurement every time.

TurnCheck offers integral GD&T and best-fitting, and can output all point data for external analysis or reverse engineering. TurnCheck software enables measurement of a variety of thread types, including ISO Triangular Profile, ISO Trapezoidal Profile, UNC-UNF-UNEF and ACME.



Confidence. When Results Matter.™

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