The *NEW* ROMER ScanShark™ reverse-engineering and inspection system ...

Your scalable laser scanning solution

The V5 scanner

The ScanShark laser scanning system is comprised of a seven-axis INFINITE portable CMM, a ScanShark™ laser scanning probe, PolyWorks™ software and laptop or desktop computer, all in one powerful, turnkey package!

Three configurations are available:

- Reverse-engineering via PolyWorks/Modeler
- Laser scanning inspection via PolyWorks/Inspector
- Inspection and reverse-engineering with PolyWorks/Modeler and Inspector

The ROMER seven-axis INFINITE portable CMM, available in 6-, 8-, 9-, 10- and 12-foot measuring envelopes, brings all the benefits of articulating arm measurement to laser scanning. Its versatility allows access to those difficult-to-reach locations on the inside, topside and underside of the work-piece - anywhere you need to scan.

The arm features our patented infinite rotation, integral low-profile zero-g counterbalance that reduces fatigue and provides ergonomic handling, Heidenhain encoders with “wide-track” bearing support manufactured to our specifications, advanced carbon-fiber arm tubes that are dimensionally stable and lightweight, next-generation electronics with on-board diagnostics, a universal mounting system, and a lightweight design.

The ScanShark is available with either a V4i or V5 laser scanning probe. The V5 is our premium laser scanning probe, capable of scanning 458,400 points per second; the V4i scans 23,000 points per second. These lightweight scanners (.75 lb) can rapidly capture large, geometrically complex areas with direct integration into your configuration of PolyWorks.

Benefits of laser scanning:

- Non-contact laser scanning avoids marring of sensitive surfaces of deflection off thin or soft materials.
- Real-time inspection allows rapid identification of errors, allowing for quick correction.
- Ideal for generating point clouds for reverse engineering (via Polyworks Modeler).

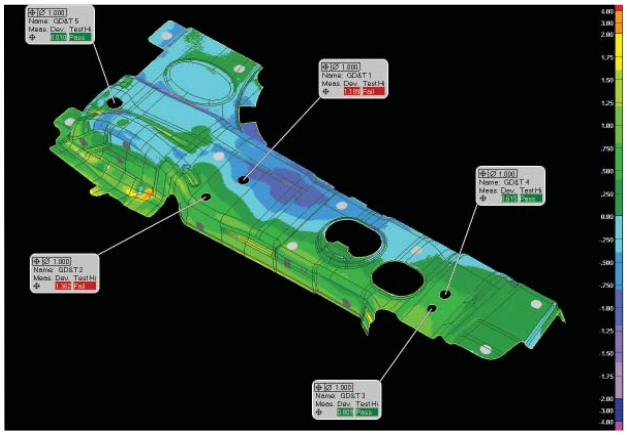
ROMER ScanShark

PolyWorks software solutions

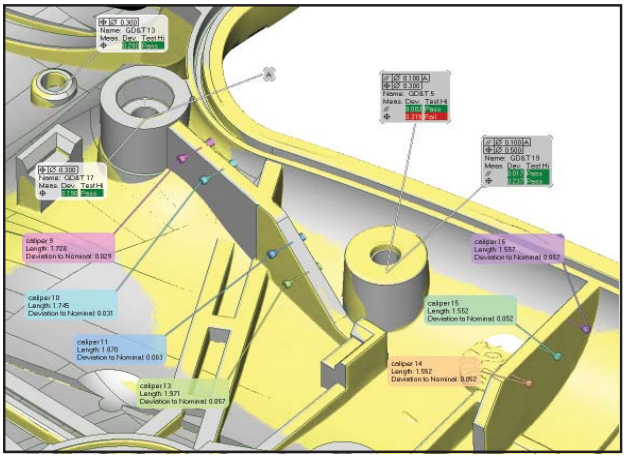
PolyWorks/Inspector™ is a powerful software solution that uses high-density point clouds and contact-probe datasets to control the quality of parts and tools at every phase of your manufacturing process. Inspector allows users to:

- Use high-density point clouds and contact-probe datasets of digitized prototype parts & assemblies to quickly identify deformations and to fix problems in the earlier stage of the manufacturing process.
- Approve your manufacturing process by fully inspecting your first-assembled products.
- Monitor the production cycle by automatically measuring the wear of tools and quickly detecting any abrupt degradation in product quality.
- Verify the compliance of final manufactured and assembled products through sample check inspection using automated techniques. measuring machines bring all the benefits of articulating arm measurement to laser scanning, allowing access to those difficult-to-reach locations on the inside, topside and underside of the work-piece.

PolyWorks/Modeler™ is a comprehensive software solution for creating accurate and smooth polygonal models and NURBS surfaces from high-density point clouds. Preferred by automotive design studios worldwide, PolyWorks/Modeler is the only software solution that has demonstrated the capability of creating class A polygonal models for stringent polygonal manufacturing applications such as 3-axis & 5-axis milling, aerodynamic simulation, and digital review. PolyWorks/Modeler also offers a powerful rapid surfacing methodology that delivers the most usable NURBS surfaces in CAD software such as CATIA and UG.



Above: PolyWorks/Inspector showning high-density "weath-ermap" of point-cloud tolerances and GD&T callouts. Below: thickness gauges and GD&T



INFINITE SC accuracy specifications

INFINITE SC	1.8 m 6 ft.	2.4 m 8 ft.	2.8 m 9 ft.	3.0 m 10 ft.	3.6 m 12 ft.
Point Repeatability	0.024 mm 0.0009 in.	0.028 mm 0.0011 in.	0.045 mm 0.0018 in.	0.050 mm 0.0020 in.	0.070 mm 0.0028 in.
Length Accuracy	0.035 mm 0.0014 in.	0.040 mm 0.0016 in.	0.064 mm 0.0025 in.	0.071 mm 0.0028 in.	0.100 mm 0.0040 in.
Arm Weight	8.05 kg 17.74 lbs.	8.33 kg 18.36 lbs.	8.50 kg 18.73 lbs.	8.85 kg 19.51 lbs.	9.13 kg 20.12 lbs.

Common Engineering Specifications

Humidity: Relative Humidity from 5% to 95%, Non-Condensing
Permissible Angular Accelertion: 105 rad/s2
Vibration: (55 to 2000Hz): < 100 ms / s2 EN 60 068-2-6
Shock & Impact: 6ms (IEC 68-2-27), <1000 ms / s2 EN60 068-2-27
Power Supply: Universal worldwide voltage 110-240
Certification: CE Compliant; EMC (Electromagnetic Compatibility Directive) 89/336/EEC, 92/31/EEC, 93/68/EEC; EN 61326-1 (1997), Group 1, Class "A"; EC 1000-4-2, 3, 4, 5, 6 (1995), IEC 1000-4-11 (1995); EN61000-3-2, EN61000-3-3; Low Voltage Directive 73/23/EEC, 93/68/EEC; EN 61010-1:1993 (includes A1) + A2: 1995

IMPORTANT NOTES (*All specifications are ±*)

Point Repeatability Test (also known as Single Point Articulation Test, or S.P.A.T.): Results analyzed via Range/2 method. The probe is placed within a trihedral seat or conical socket, and individual points are measured from multiple approach angles with maximum articulation of all of the principal joints. Each individual point measurement is analyzed as a range of deviations about the average value for the point locations. This test is intended to assess the arm's ability to provide similar values of a point coordinate, when the arm is articulated through the maximum possible range of motion for that single point.

Volumetric Length Accuracy Test (Volumetric Performance Test): Results analyzed via Range/2 method. Volumetric length accuracy is determined by using certified length standards (included with all arms) that are measured at various locations and orientations throughout the measuring volume of the arm. This test most accurately represents the reasonable expectations for machine performance in practical measuring applications. The Volumetric Length Accuracy Test is the most appropriate test for determining machine accuracy and repeatability since it involves measuring a certified length standard many times in several locations and orientations and compares the resultant measurements to the actual length.

Specifications determined in laboratory environment with experienced operators. Specifications are subject to change without notice. Check with your salesman or our website for up-to-date information.

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