ROMER Absolute Arm
Product Brochure
ROMER Absolute Arm. The all-purpose metrology tool.
THE ROMER ABSOLUTE ARM. ABSOLUTELY GROUNDBREAKING.

The ROMER Absolute Arm represents Hexagon Metrology’s expertise in portable CMMs. Mobility, stability, low weight and high-performance laser scanning packages make it an all-purpose 3D measurement tool.

Absolute encoders, which assign an absolute value to each position of the arm, are a unique feature. Initialization is not necessary. Simply take the measuring arm to the part, switch it on and start measuring.

A hot tip for cool calculation

A ROMER portable measuring arm is a good investment. The time required to train users is minimal. Even inexperienced personnel will produce reliable measuring results in a short time due to the user-friendliness of the ROMER Absolute Arm. Inspection and control throughput is increased dramatically, and because the ROMER Absolute Arm helps to ensure quality, there is a fast return on investment. The ROMER Absolute Arm increases productivity and minimises off-spec production – in the long run and with absolute efficiency.

ROMER – absolutely portable CMMs.
Absolute Encoders:
Referencing and warm-up time was for yesterday – just switch the arm on and measure.

Measurement Volume:
Size does matter: The ROMER Absolute Arm is available in seven lengths between 1.5 m and 4.5 m.

SmartLock:
If the ROMER Absolute Arm is not in use, lock it comfortably and safely. SmartLock also allows to fix the arm in any intermediate position.

Certification:
All ROMER Absolute Arms including scanning systems pass through B89.4.22 certification. Additional certification according to VDI/VDE 2617-9 is available.

Feature Packs:
The ROMER Absolute Arm is ready for more. Feature Packs extend the arm’s functions the easy way. They enable battery operation, laser scanning and WiFi communication.
Automated Probe Recognition:
Switch between different probe types or between tactile probes and scanners any time. No re-calibration, no probe selection, no tools: The unique probe connection allows a quick and easy probe exchange.

RDS:
ROMER proprietary RDS software is the virtual double of the ROMER Absolute Arm. For high-speed accuracy checks, calibration and simple measurements.

Laser Scanning:
The ROMER Absolute Arm is available with a completely integrated high-performance laser scanner or the external laser scanner CMS 108 for the most challenging scanning jobs. It is also open for third party laser scanners.

Automated Probe Recognition:
Switch between different probe types or between tactile probes and scanners any time. No re-calibration, no probe selection, no tools: The unique probe connection allows a quick and easy probe exchange.
THE ROMER ABSOLUTE ARM EXPERIENCE.

WHAT USERS THINK

“When you are standing in the middle of the fixture, the absolute encoders on the ROMER arm are superb, because you don’t have to reference them.”

Peter Haase, Bombardier
Bautzen, Germany

“We’ve been using portable measuring arms from ROMER for many years now. The ROMER Absolute Arm is a class of its own. Thanks to absolute encoders, the operation is much easier than before, we can measure faster and achieve accurate, reliable results at any time.”

Marc Rohr, Liebherr Hydraulikbagger
Kirchdorf, Germany

“The reliability of the measurements with the ROMER Absolute Arm creates transparency in our relationship with our customers, who also benefit from the excellent quality of the photovoltaic backsheet foils.”

Mario Egger, AT&S
Leoben, Austria

“With the ROMER Absolute Arm, we are now capable of CNC machining simple to complex 3D surface parts and cut our design time down by up to 80%. It is an extremely productive tool with almost limitless opportunities.”

Donovan Barnes, Habitat Industries
Cape Town, South Africa

“Each inspection is different. We have never yet measured the same part twice! Working with the ROMER Absolute measuring arm is just great.”

Jacky Pierre
Primarette, France

INCREASING PRODUCTIVITY ACROSS ALL INDUSTRIES.

Typical Industries:

Automotive
Aerospace
General Industries
Power Generation / Wind Energy
Universities / Schools
Medical Equipment
Piping & Tubing
Agriculture & Heavy Equipment
Shipbuilding
Railway
Archaeological

Typical Measuring Applications:

Sheet Metal Parts
Dies & Molds / Tooling
Machined Parts
Jigs & Fixtures
Crash Test
Tubes & Tube Assembly
CAD-to-Part comparison
Alignment
Reverse Engineering
User-friendly design and a wide range of accessories such as Feature Packs, stands and tripods or probes make the ROMER Absolute Arm a comfortable tool.
ACCURACY MADE EASY

Carbon fibre structure. Absolute operational safety with SpinGrip and a wrist with an incorporated mouse function. Illumination of the part and an integrated digital camera. The ROMER Absolute Arm is an all-around balanced measuring instrument. It is the featherweight among the CMMs. Its operation is a matter of routine after a short time, even with one hand and in locations where traditional CMMs could never perform.

SpinGrip and SpinKnob handles, infinite rotation of the principal axes and SmartLock complete the ROMER Absolute Arm’s consequent user-friendliness. The sophisticated “Zero G” counter balance design lets the arm float in the user’s hand.

AS INDIVIDUAL AS YOUR APPLICATION.

Feature Packs

ROMER Feature Packs unfold the full potential of a portable measuring arm. These functional extensions are perfectly coordinated with the ROMER Absolute Arm and are part of an integrated system. The ROMER Mobility Pack includes a battery and WiFi communication – maximum flexibility for the ROMER Absolute Arm. The ROMER Scanning Pack is the interface for laser scanners. They connect directly to the arm.

Accessories

Different probes, tripods and stands for different applications. All ROMER Absolute Arms are ready for a multitude of environments. Hundreds of accessories are available à la carte.
THE CHOICE IS YOURS.
The ROMER Absolute Arm with six rotational axes is designed for highly accurate tactile measurements on countless work pieces. The six axis ROMER Absolute Arm allows reliable part inspection on features of sheet metal parts, plastic components or carbon fibre structures. In case your measurement jobs require laser scanning later, an upgrade is possible at any time.

Freedom of movement: with a fully integrated and certified laser scanner system, this is an all-purpose metrology system for a multitude of applications. 3D digitizing, 3D modelling, point cloud inspection, reverse engineering, rapid prototyping or copy milling are the most frequent laser scanner applications. The laser scanner is tuned for a vast variety of materials without compromise in accuracy. ROMER’s integrated laser scanner does not need warm-up time or additional cables and controllers. Changing from scanning to probing and vice versa is possible at any time.
The ROMER Absolute Arm with external scanner is a modular high-end laser scanning platform designed for the CMS 108 from Hexagon Metrology. With CMS 108, the ROMER Absolute Arm offers first-class performance even on complex surfaces and on work pieces made up of the most challenging material types. Teaching of the material is not required: the automatic laser power control of the CMS 108 automatically adapts to the surface conditions. CMS 108 is the first ever laser scanner with a zoom function which provides three different line widths. Third party scanners can also be connected.

The ROMER Tube Inspection Solution represents a unified system covering all 3 main tasks of tube measurement: Tube inspection and definition, geometry measurement and bender interfacing with on-line bending program correction. The ROMER system is the only portable tube inspection solution on the market. It can be taken to the work piece to measure pipes, lines, hoses and tubes in situ, thereby saving time and effort. Reverse engineering tube geometry for replacement parts is fast and straightforward, even on the assembly without removing the tube.
### 7-Axis Probing and Scanning Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Measuring Range</th>
<th>Probing Point Repeatability</th>
<th>Probing Volumetric Accuracy</th>
<th>Scanning System Accuracy SI</th>
<th>Scanning System Accuracy SE</th>
<th>Arm Weights SI</th>
<th>Arm weights SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320S/SE</td>
<td>2.0 m / 6.6 ft</td>
<td>0.044 mm</td>
<td>± 0.061 mm / 0.0007 in.</td>
<td>0.079 mm / 0.0010 in.</td>
<td>0.075 mm / 0.00115 in.</td>
<td>8.9 kg / 19.6 lbs</td>
<td>19.0 kg / 41.8 lbs</td>
</tr>
<tr>
<td>725S/SE</td>
<td>2.5 m / 8.2 ft</td>
<td>0.049 mm</td>
<td>± 0.099 mm / 0.00091 in.</td>
<td>0.084 mm / 0.00133 in.</td>
<td>0.080 mm / 0.00131 in.</td>
<td>8.6 kg / 19.0 lbs</td>
<td>19.1 kg / 42.4 lbs</td>
</tr>
<tr>
<td>730S/SE</td>
<td>3.0 m / 9.8 ft</td>
<td>0.079 mm</td>
<td>± 0.100 mm / 0.00103 in.</td>
<td>0.119 mm / 0.00147 in.</td>
<td>0.113 mm / 0.00144 in.</td>
<td>8.9 kg / 19.6 lbs</td>
<td>19.2 kg / 43.0 lbs</td>
</tr>
<tr>
<td>7345S/SE</td>
<td>4.5 m / 14.8 ft</td>
<td>0.150 mm</td>
<td>± 0.120 mm / 0.00104 in.</td>
<td>0.147 mm / 0.00130 in.</td>
<td>0.141 mm / 0.00127 in.</td>
<td>9.2 kg / 20.3 lbs</td>
<td>19.5 kg / 43.3 lbs</td>
</tr>
</tbody>
</table>

### 6-Axis Probing Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Measuring Range</th>
<th>Z-Axis Probing</th>
<th>Y-Axis Probing</th>
<th>X-Axis Probing</th>
<th>Volumetric Accuracy</th>
<th>Arm Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320</td>
<td>2.0 m / 6.6 ft</td>
<td>± 0.061 mm / 0.0014 in.</td>
<td>± 0.125 mm / 0.0024 in.</td>
<td>± 0.150 mm / 0.0013 in.</td>
<td>± 0.147 mm / 0.0014 in.</td>
<td>8.9 kg / 19.6 lbs</td>
</tr>
<tr>
<td>7325</td>
<td>2.5 m / 8.2 ft</td>
<td>± 0.099 mm / 0.0017 in.</td>
<td>± 0.191 mm / 0.0039 in.</td>
<td>± 0.214 mm / 0.0037 in.</td>
<td>± 0.201 mm / 0.0036 in.</td>
<td>9.2 kg / 20.3 lbs</td>
</tr>
<tr>
<td>7330</td>
<td>3.0 m / 9.8 ft</td>
<td>± 0.039 mm / 0.0007 in.</td>
<td>± 0.058 mm / 0.00091 in.</td>
<td>± 0.063 mm / 0.0010 in.</td>
<td>± 0.058 mm / 0.0010 in.</td>
<td>8.9 kg / 19.6 lbs</td>
</tr>
<tr>
<td>7345</td>
<td>4.5 m / 14.8 ft</td>
<td>± 0.150 mm / 0.00104 in.</td>
<td>± 0.147 mm / 0.00130 in.</td>
<td>± 0.141 mm / 0.00127 in.</td>
<td>± 0.147 mm / 0.00130 in.</td>
<td>9.2 kg / 20.3 lbs</td>
</tr>
</tbody>
</table>

### 7-Axis Probing and Scanning Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Measuring Range</th>
<th>Probing Point Repeatability</th>
<th>Probing Volumetric Accuracy</th>
<th>Scanning System Accuracy SI</th>
<th>Scanning System Accuracy SE</th>
<th>Arm Weights SI</th>
<th>Arm weights SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7320S/SE</td>
<td>2.0 m / 6.6 ft</td>
<td>0.023 mm</td>
<td>± 0.033 mm / 0.0009 in.</td>
<td>0.058 mm / 0.00131 in.</td>
<td>0.053 mm / 0.00121 in.</td>
<td>8.6 kg / 18.9 lbs</td>
<td>19.0 kg / 41.8 lbs</td>
</tr>
<tr>
<td>725S/SE</td>
<td>2.5 m / 8.2 ft</td>
<td>0.027 mm</td>
<td>± 0.038 mm / 0.0015 in.</td>
<td>0.083 mm / 0.00165 in.</td>
<td>0.080 mm / 0.00163 in.</td>
<td>8.9 kg / 19.5 lbs</td>
<td>19.1 kg / 42.4 lbs</td>
</tr>
<tr>
<td>730S/SE</td>
<td>3.0 m / 9.8 ft</td>
<td>0.042 mm</td>
<td>± 0.058 mm / 0.0023 in.</td>
<td>0.083 mm / 0.00233 in.</td>
<td>0.080 mm / 0.00231 in.</td>
<td>9.2 kg / 19.9 lbs</td>
<td>19.4 kg / 42.6 lbs</td>
</tr>
<tr>
<td>7345S/SE</td>
<td>4.5 m / 14.8 ft</td>
<td>0.084 mm</td>
<td>± 0.098 mm / 0.0039 in.</td>
<td>0.138 mm / 0.0054 in.</td>
<td>0.133 mm / 0.0052 in.</td>
<td>10.1 kg / 22.3 lbs</td>
<td>21.4 lbs</td>
</tr>
</tbody>
</table>

### ROMER ABSOLUTE ARM. LASER SCANNERS.

<table>
<thead>
<tr>
<th>Integrated scanner SI</th>
<th>External scanner Hexagon CMS 108</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Point acquisition rate</td>
<td>30’000 Points/s</td>
</tr>
<tr>
<td>Points per Line</td>
<td>1000</td>
</tr>
<tr>
<td>Line Rate</td>
<td>30 Hz</td>
</tr>
<tr>
<td>Line width (mid range)</td>
<td>65 mm</td>
</tr>
<tr>
<td>Stand off (mid range)</td>
<td>150 mm ± 50 mm</td>
</tr>
<tr>
<td>Minimum point spacing (mid range)</td>
<td>0.046 mm</td>
</tr>
<tr>
<td>Laser power control</td>
<td>Semi-automatic – per line</td>
</tr>
<tr>
<td>Accuracy (2 sigma)</td>
<td>30 μm</td>
</tr>
<tr>
<td>Weight</td>
<td>340 g</td>
</tr>
<tr>
<td>Controller</td>
<td>No</td>
</tr>
<tr>
<td>Laser Safety</td>
<td>Class 2M</td>
</tr>
</tbody>
</table>

Working temperature: 5°C – 40°C (41°F – 104°F) | 10°C – 42°C (50°F – 108°F)
Coordinate measuring machines for research, development, production and assembly in their most mobile form – this is what ROMER stands for in the global Hexagon Metrology network. The portable measuring arms in which ROMER specialises are produced in Europe and the United States in compliance with stringent quality and environmental standards.

ROMER measuring arms permit tactile or optical 3D measurement. Stability, low weight and simple operation are their key advantages.

ROMER. Metrology to go.

E-Mail info@hexagonmetrology.com
www.hexagonmetrology.com

Regional sales & support centres:
www.romer.com