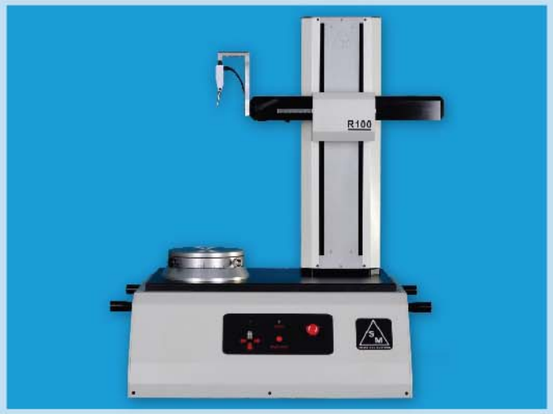
CONFIGURATION



R100 CNC Code: 4.100

The CNC configuration comes with the granite metrological column with reference and motorized positioning arm, this configuration allows to emphasize the cilindricity and the straightness of the detail and also to perform measurement automatic cycles granting a very big time saving and high flexibility.

R100 manual Code: 4.104

The roundness-tester R100 version with manual column and arm is ideal for those who don't need to perform automatic positioning cycles and straightness or cilindricity measurements.
With this configuration the column run length is of 320 mm while the arm run length if of 150 mm.

ACCESSORIES

EXPANSION PLATFORM Code: 4.400

Allows to expand the table to a diameter of 250 mm when there are very big pieces to be measured.

6 JAW AUTO-CENTERING CHUCK Code: 4.406

Fittable directly on the table, external grip diameter 1÷35mm, internal grip diameter 25÷95mm.

3 JAW AUTO-CENTERING CHUCK Code: 4.405

Fittable directly on the table, internal/external reversible jaws, external grip diameter 1÷32mm, internal grip diameter 18÷80mm.

CALIBRATION SAMPLE GUIZZO Code: 6.201

Allows the calibration and verification of pickup and electronic board sensitivity, 17 µm nominal step.

ROUNDNESS SAMPLE Code: 6.200

Sample hemisphere made of optical glass, typical error <0.05 µm, allows control of the table oscillation.

SAMPLE CYLINDER Code: 6.203

High precision steel cylinder, allows the alignment and verification of parallelism and straightness of the Z axis. Diameter 80 mm, height 300 mm, typical deviation 1 µm.

EXTENSION TERMINALS

Extension terminals can be easily interchanged thanks to their threaded coupling.
- Terminal L= 32 mm Code 4.300
- Terminal L= 72 mm Code 4.301
- Terminal L= 112 mm Code 4.302
- T like Terminal L= 72 mm Code 4.303

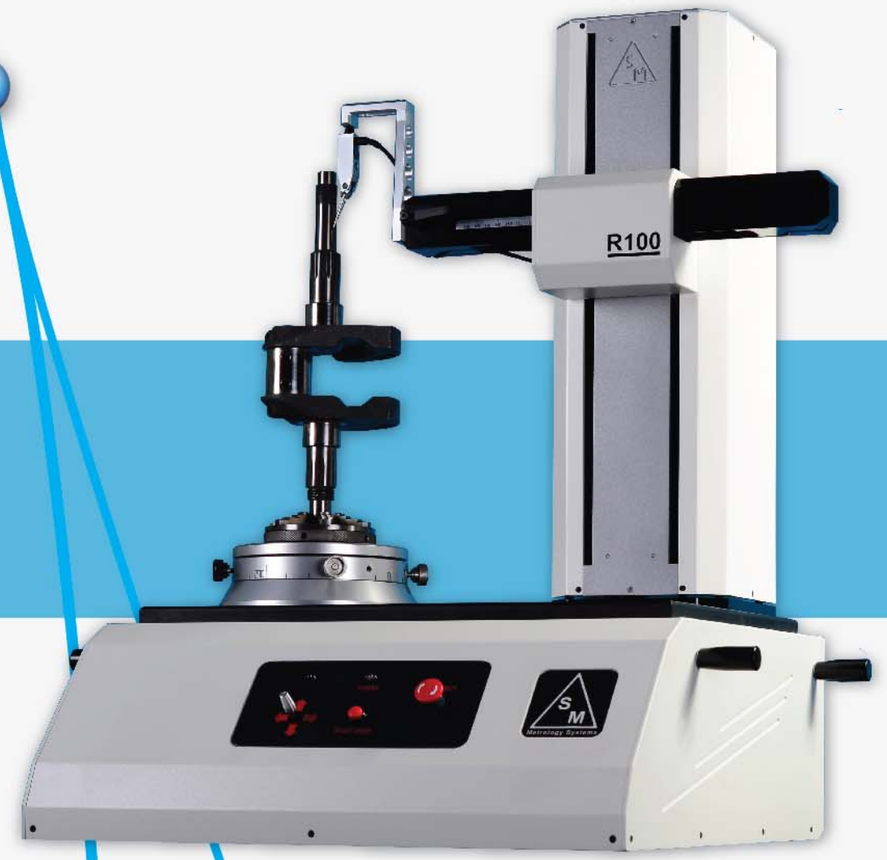
TECHNICAL CHARACTERISTICS

	R100 CNC	R100 MANUAL
C table axis	Table diameter 160 mm Maximum load 200 N Centering and leveling: ± 3mm -- ± 2° Table precision: 0,1 µm	Table diameter 160 mm Maximum load 200 N Centering and leveling: ± 3mm -- ± 2° Table precision: 0,1 µm
Z Column axis	Effective stroke: 400 mm Motorized, of measurement Straightness error on 100 mm: 0,3 µm Straightness error on 400 mm: 0,8 µm Measurement speed: 0,5-1-2 mm/s Positioning speed: 0-15 mm/s	Effective stroke: 300 mm Manual
R arm axis	Effective stroke: 175 mm Motorized, of positioning Positioning speed: 0-15 mm/s	Effective stroke: 175 mm Manual
Calculables parameters	roundness, straightness, cilindricity, conicity, cone shape, concentricity, parallelism, coaxiality, run-out, total run-out, thickness variation	roundness, flatness, concentricity, coaxiality, run-out, total run-out
Pickup	Bi-directional with impact protection Measurement range: 0,6 mm Resolution: 0,001 µm	Bi-directional with impact protection Measurement range: 0,6 mm Resolution: 0,001 µm
Dimensions	530 x 520 x 815 mm (L x P x H)	530 x 520 x 815 mm (L x P x H)
Weight	58 kg	52 kg
Power supply	110-240 V 50-60 Hz	110-240 V 50-60 Hz

Metrology Systems

Roundness-Tester R100

The best way to measure



www.sm-instruments.com

Centro ACCREDIA
LAT N° 041

Can the control of a part be more difficult that its construction? We think not!
The roundness-tester R100 is the Synthesis of our philosophy: ease of installation both in production environments than in metrological rooms, big versatility and precision on measurements to be sure of the gotten results.
Controlling the circular geometries directly on board has always been too much difficult? It won't be this way with the new R100!

10 reasons to choose the roundness-tester R100

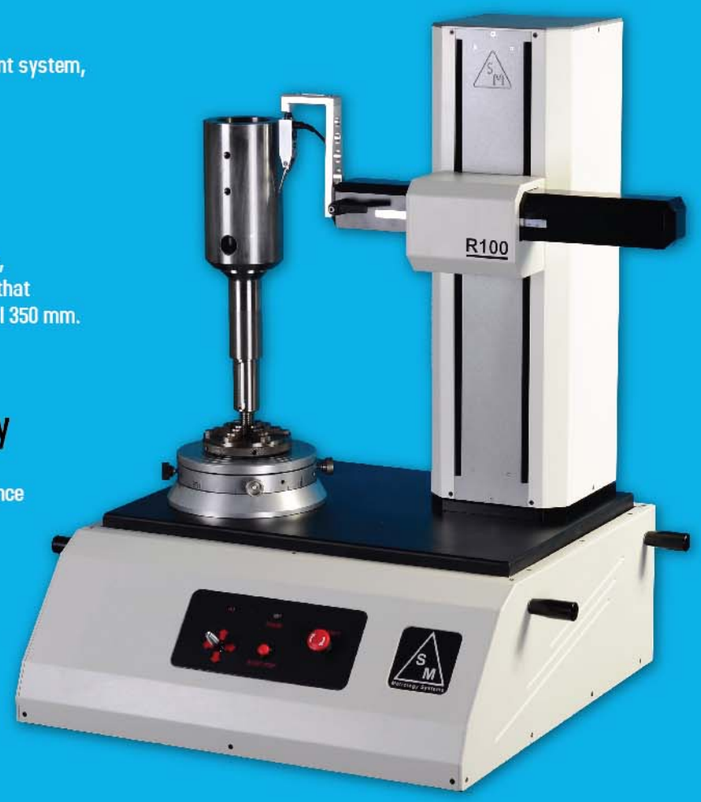
R100

Maneuverability
Full mechanic column and table movement system, no need of compressed air.

Performances
High measurement volume, 160mm table, 400mm metrological and 175 mm R arm that grants measurements on diameters until 350 mm.

Measurement accuracy
Nanometric measurement resolution, metrological granite column with reference to grant always accurate and reliable measurements.

Ease of use
High level Windows© software that lets the user to analyze also the most complex parameters of circular geometries.



Speed
Capability to perform measurement and positioning automatic cycles with all three axles: table, column and arm.

Practicality
Small dimensions and great weight reduction thanks to the "all in one" philosophy.

Reports
Capability to display and print various kinds of 2D and 3D with surface rendering reports.

Flexibility
The pickup can be rotated of 90° to enter by side in hollows.

Storage
Measurements can be stored on files or in the internal software database.

Connectivity
USB interface towards the PC and only one power supply cable to be instantly operative.

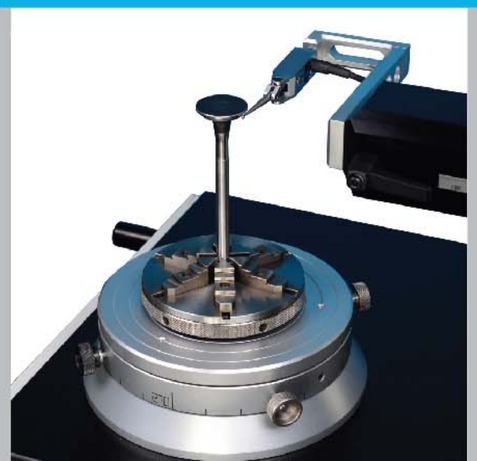
R100

By following an "all in one" logic, the roundness-tester R100 with few operations is quickly ready to work and has the capability to emphasize all the circular geometries and even the more complex ones measured on a detail.

The instrument comes combined with Circom software that is developed to be extremely intuitive and ease of use, that allows to quickly instruct an operator with a dramatic reduction of training and testing costs.

With the software it is possible to control every movement of the instrument along the three measurement/positioning axles (table, column, arm) by finding for example with only one "click" the contact point on the piece, thus making the positioning operation faster. Thanks to this flexibility it is possible to quickly build programmable measurement cycles to perform serial or complex controls.

Standard measurement cycles are available directly on screen. With them the positioning and profile acquisition phases are already predisposed and a confirmation is enough to go to next phase, performing the measure and quickly getting the results.



The software allows to analyse the following geometrical tolerances:
roundness, straightness, cilindricity, conicity, cone form, concentricity, parallelism, coaxiality, run-out, total run out, thickness variation.
For complex surfaces where interruptions are present, Circom software can exclude them automatically or the operator can operate manually by excluding not compliant profile sections.

For more complex procedures the Wizard philosophy is used, this means that the operator is guided step by step in simple single operations, thus simplifying a lot the whole procedure. This kind of help is used for example for the pickup calibration or for the centering-leveling phase of the detail on the table.

Optional integrative packets can be added to the base module, as for example the harmonic analysis that with the use of the FFT proprietary algorithm allows to analyze each single sinusoidal component of the measured profile, essential in the bearings field.

CIRCOM Software