

## Product Information

### Robotic Testing System 'roboTest R' (Polar) for Metals



Robotic testing system 'roboTest R' for testing of metals

#### Application

The robotic testing system is used for the fully automatic performance of tensile tests on metallic specimens (e.g. according to DIN EN 10002-1, ISO 6892, ASTM E8, JIS Z2201). Additional tests like pendulum impact test, hardness or roughness measuring can be carried out, too.

#### System Configuration

- Materials testing machine 5 kN up to 2000 kN with symmetrically closing, pneumatic or hydraulic specimen grips and an optional extensometer
- Specimen magazine for up to 400 specimens (depends on specimen dimensions)
- Robotic feeding system 'roboTest R' with 6-axial industrial robot
- Barcode scanner (optional)
- Cross-section measuring device (optional)
- Other devices (see options)
- Industry Controller with test software *testXpert*® and automation software *autoEdition2*

#### Advantages of the Robotic Testing System 'roboTest R'

- A high reproducibility of the test results is obtained because operator influences are excluded (hand temperature, moist hands, eccentric or inclined insertion of specimens etc.).
- Qualified laboratory staff is relieved of routine jobs and is thus available for more complex activities.
- The machine can be used during idle times (break, night shift) and thus increases the rate of utilization and allows „quicker“ results.
- For increasing the specimen throughput several materials testing machines can be integrated.
- The modular system makes an economical adaptation to specific customer requirements possible.
- The system reduces the testing costs per specimen and usually pays off within one to two years.
- For manual tests the robot arm can be moved to 'park' position, allowing operator free access to materials testing machine.
- Due to the precise centering of the specimen in the cross-section measuring device and the automation of the measuring sensors, the specimen dimensions can be exactly measured.
- The usage of state-of-the-art web-technologies ensures a constant process control and remote diagnostics of the robotic testing system. Results as well as status messages can be sent directly per email or SMS.
- The automatic data logging system ensures secure documentation and enables statistical long-term monitoring (Statistical Process Control).
- The components of the robotic testing system are not subject to wear; they are maintenance-free and designed for three-shift operation.

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Automatic measuring of the cross-section

#### Test Sequence

- The user fills the specimen magazine directly on the test system or outside the system. The filling of the magazine can be done also during operation.
- The specimen data (ident number, width, thickness,...) are entered on the PC. In barcode operation this step can be omitted.
- After the startup of the system, specimen feed, test and removal of the specimen rests are carried out automatically. The order of testing can be controlled by the operator. A specimen rests removal with good/bad sorting is possible by corresponding inputs.

#### Technical Data

##### Mechanics

Dimensions	depends on the equipment
Weight	depends on the equipment

##### Connected values

Electrical connection	230/400 V
Input / Output	up to 80 kVA <sup>1)</sup>
Mains frequency	50/60 Hz
Compressed air	6 bar
Required compressed air	from 10 lpm <sup>1)</sup>

<sup>1)</sup> depends on the equipment

##### Control

Automation	autoEdition2
Peripheral connection	PROFIBUS

##### Specimens

Specimen type	dumbbells, stripes, round specimens
Capacity	depends on specimen dimensions
Material	dimensionally stable, non-adhesive
Weight	max. 30 kg
Length	max. 500 mm
Shoulder width (flat)	max. 50 mm
Diameter (round)	max. 20 mm
Thickness	max. 80 mm

other specimen dimensions on request

##### Options

- Specimen identification by barcode
- Cross-section measuring  
(1 or 3 measurements per specimen)
- Hardness measuring
- Roughness measuring
- Coat thickness measuring
- Spectrum analysis
- Rib measuring
- Reduction of area
- Scale
- Temperature chamber
- Specimen removal
- Good/Bad sorting
- Data exchange with superior processor systems  
(e.g. LIMS) via upload/download of ASCII-files or ODBC
- Optical status indicator by threefold „traffic light“  
(running, refill specimens/finished, error)