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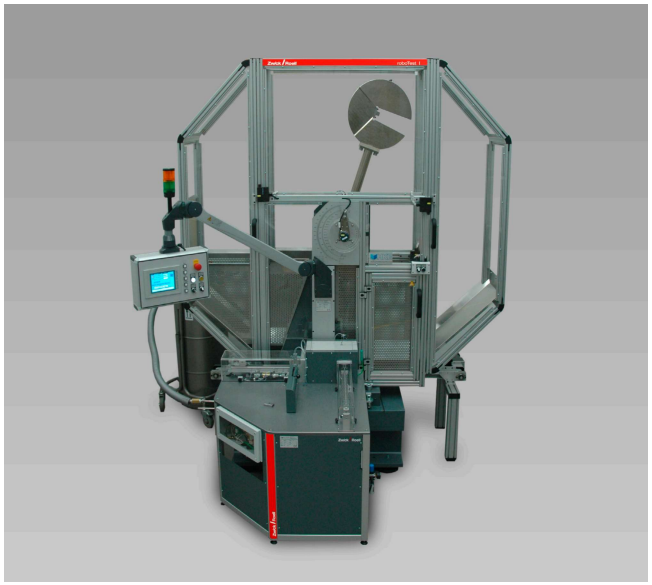
Materials Testing

Product Information

Robotic Testing System ‘roboTest I’ (Impact) for pendulum impact testers



Robotic testing system ‘roboTest I’ for pendulum impact tester RKP 450 or PSW 750

Application

The robotic testing system is used for semi or fully automatic tempering, feeding and testing of Charpy specimen according to EN10 045 or ASTM E23 at temperatures -180°C up to +300°C

System configuration

- Pendulum impact tester 450 J (semi automatic) or 750 J (semi or fully automatic)
- Semi automatic tempering and feeding unit ‘roboTest I’ (Impact) with a capacity of 10 specimens (optional 21 specimens) in the tempering unit
- Fully automatic tempering and feeding unit ‘roboTest I’ (Impact) with a capacity of 10 specimens (optional 21 specimens) in the tempering unit and a integrated magazine for typically 90 specimens

Characteristics

- The cooling of the specimen will be done via liquid nitrogen, the heating electrically. The heat transmission between the specimen and the tempering frame is via direct conductive contact.
- Slides will do the specimen handling inside the temperature unit. The slides are manual (semi-automatic) or automatic (fully automatic) operated.
- A PLC controls the temperature unit and the test process.

Advantages of the robotic testing system ‘roboTest I’

- 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.).
- The alignment of the specimen at the specimen support and the start of the test are done automatically.
- Enclosed system, no manual handling inside the liquid tank
- A massive and isolated tempering frame guarantees a homogenous and exact specimen temperature.
- The specimen temperature is measured by a thermo elements.
- Only one temperature unit is necessary for all temperatures
- The system reduces the testing costs per specimen and usually pays off within one to two years.
- The machine can be used during idle times (break, night shift) thus increasing the rate of utilization and allowing „quicker“ results.

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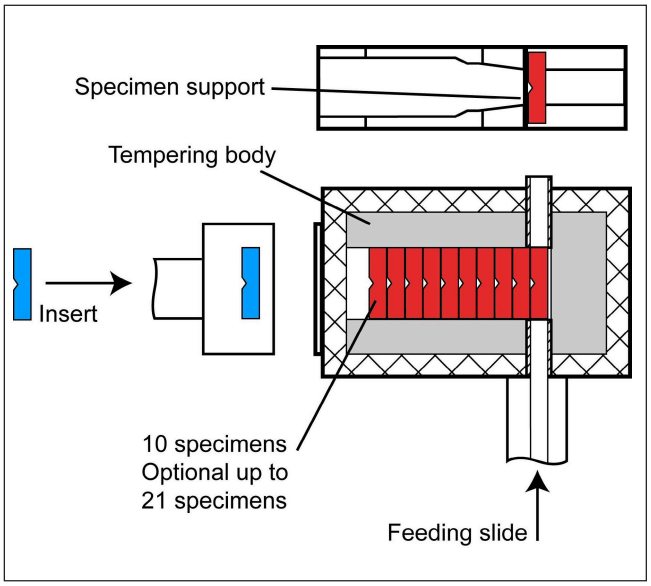

Test sequence

- All specimens have to be filled manually or automatically into the tempering unit.
- The tempering unit will heat up or cool down the specimens to the determined temperature.
- After all specimens reached the necessary temperature, the first specimen will be brought in the pendulum and will be aligned and tested automatically. The test is done during 5 seconds after taking the specimen out of the tempering unit.
- After the pendulum reached its start position, the next test can be performed.

Technical Data

Tests	
• Test type	Notched bar impact test

Specimens	
• Specimen dimensions	10 x 5...10 x 55 mm
• Material	dimensionally stable
• Length tolerance	± 0.5 mm
• Height / width tolerance	± 0.2 mm

Tempering	
Temperature range	-180°C ... +300°C
Cooling	liquid nitrogen
Heating	electric
Control precision	± 1°C
Cycle time	≤ 1.5 minutes
Feeding time	≤ 5 seconds
Heating conductor	approx. 13-16 Ohm
Liquid nitrogen pressure	approx. 0.5 ... 1 bar
Thermo elements	Typ K
Power consumption	max. 2500 Watt

Options
Specimen identification (Datamatrix)
Specimen removal belt (only PSW)
Data exchange with *testXpert*® / RS232
Increase temperature up to +600 °C
Increasing the capacity of the furnance up to max. 21 specimens
Increasing the capacity of the magazine up to max. 450 specimens

Mechanics	
Capacity magazine (standard)	
• Semi automatic	10 specimens (only in tempering unit)
• Fully automatic	90 specimens
Capacity tempering unit	10 specimens
Dimensions (H x W x T)	2700 x 2207 x 1739 mm
Weight (without base)	approx. 800 kg

Connected values	
Electrical connection	400/230 V - 3 PNE/PNE
Output	2700 VA
Mains frequency	50/60 Hz
Compressed air	5-7 bar, filtered
Required compressed air	2 lpm

All Data at ambient temperature.