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QUALITEST™

STRESS RELAXATION TESTER FOR REINFORCING AND PRESTRESSING STEEL



STANDARDS

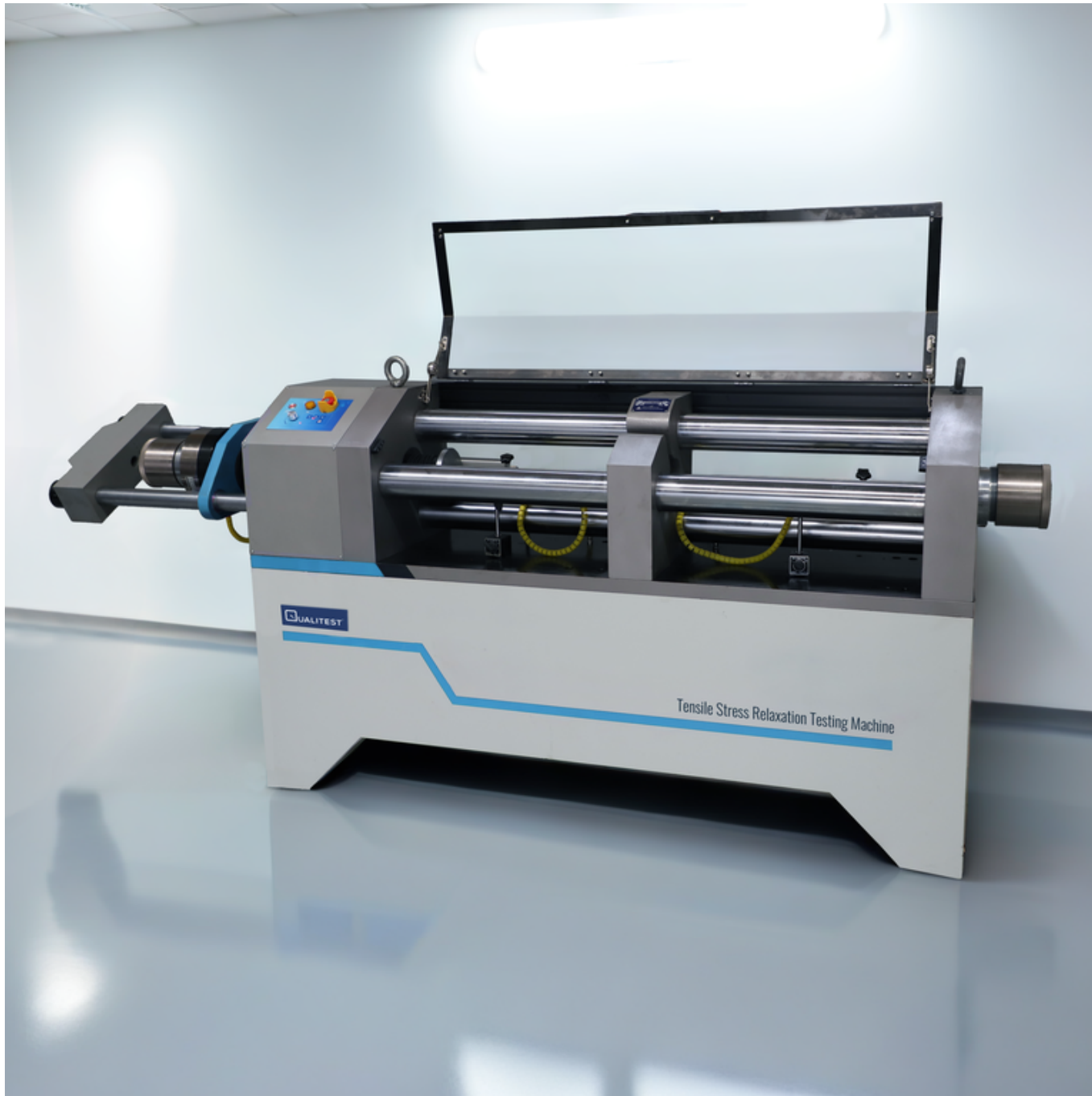
ASTM E328

ISO 15630-3

APPLICATIONS

Stress Relaxation Tester for Reinforcing and Prestressing Steel

Qualitest's QT-SR Series Stress Relaxation Tester is designed to measure the stress-relaxation behavior of metals such as pre-stressed concrete strands, pre-stressed concrete bars, steel ropes, and more. The test involves deforming a specimen by a specific amount and monitoring the decrease in stress over an extended period at a constant elevated temperature.



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Tensile Stress Relaxation Testing Machine

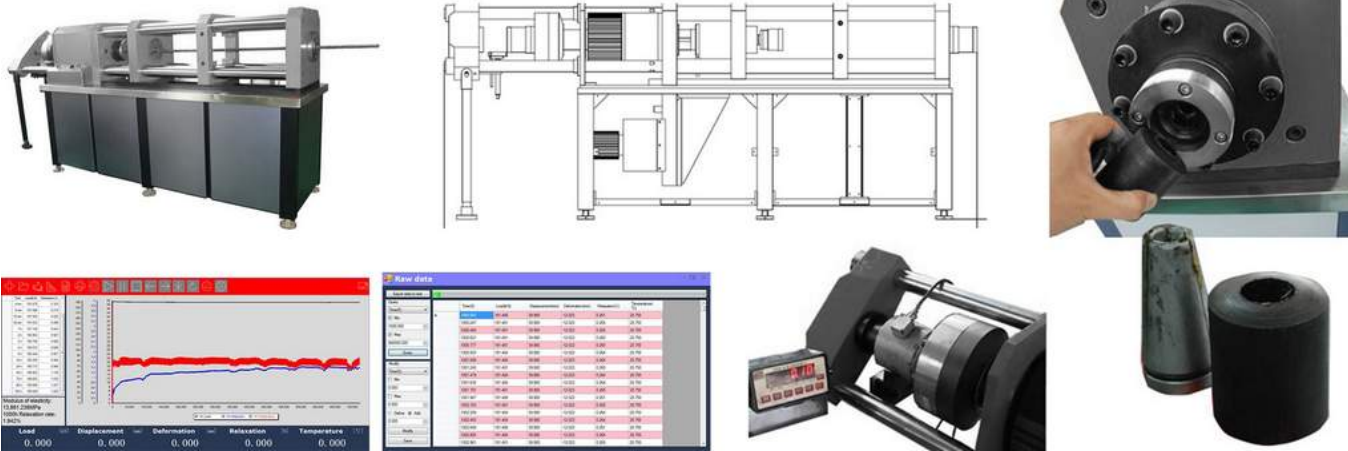
The ASTM E328 Standard Test Methods for Stress Relaxation Tests for Materials and Structures provides guidelines for these tests. Stress relaxation is a critical factor to consider when designing mechanical fasteners that require permanent tightness, as failure can occur over time if this property is neglected.

According to ASTM, typical applications tested using this standard include bolted or riveted assemblies, press or shrink-fit components, rolled-in tubes, gasket tightness, the constraining force of springs, and the stability of wire in pre-stressed concrete. This test is also applicable for measuring stress relaxation in areas with high stress concentrations. A controlled testing environment is essential to avoid alterations in the material's properties due to environmental factors.

FEATURES

Stress Relaxation Tester for Reinforcing and Prestressing Steel Features

- Real-time display of load vs. time, temperature vs. time, and relaxation rate vs. time curves.
- Automatic calculation of the tensile stress relaxation rate over 1000 hours.
- High-precision temperature recorder included to monitor the impact of room temperature variations.
- Servo-controlled drive system ensures precise load, displacement, and strain control in a closed-loop, with minimal noise.
- User-configurable test methods and customizable report templates.
- Self-aligning specimen anchorage design guarantees high accuracy.
- A patented calibration system is integrated into the machine, allowing for calibration of both the load cell and the entire system without needing to disassemble the load cell.



TECHNICAL SPECIFICATIONS

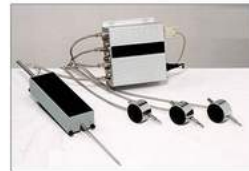
Stress Relaxation Tester for Reinforcing and Prestressing Steel Technical Specifications

Model	QT-SR-200	QT-SR-300	QT-SR-400	QT-SR-500
Standards	ASTM E328, ISO 15630-3			
Capacity	200kN	300kN	400kN	500kN
Measuring Range	8 - 200kN	12 - 300kN	16 - 400kN	20 - 500kN
Load Resolution	7N	10N	12N	15N
Load Accuracy	±1%			
Load Measuring Accuracy	±0.1% of reading to 1/100 of load weighing system capacity meets or exceeds the requirements of the following standards: ISO 7500-1, EN 10002-2, ASTM E4, JIS B7721			

Model	QT-SR-200	QT-SR-300	QT-SR-400	QT-SR-500
Creep of Load Cell	30 minutes \leq 0.02%			
Position Accuracy	\pm 0.5%			
Horizontal Span	1850mm			
Ball Screw Stroke	100mm			
Loading Speed	100 - 5000N/S			
Speed Accuracy	Set speed < 0.05% - Max. Speed: \pm 1%, set speed \geq 0.05% - Max. speed: \pm 0.5%			
Temperature Accuracy	Temperature sensor resolution: 0.1°C, Temperature sensor accuracy: \pm 0.3°C			
Position Measurement Accuracy	\pm 0.01 of reading or 0.0001 mm, whichever is greater			
Specimen Dimensions				
PC Strand (mm)	Φ 12.7 - Φ 15.24	Φ 12.7 - Φ 15.24	Φ 12.7 - Φ 15.24	Φ 15.2 - Φ 21.8
PC Wire (mm)	Φ 3 - Φ 9	Φ 3 - Φ 9	Φ 3 - Φ 9	Φ 3 - Φ 9
PC Bar (mm)	Φ 7 - Φ 18	Φ 7 - Φ 18	Φ 7 - Φ 18	Φ 7 - Φ 18
Power Supply	Please specify voltage and frequency before placing the order. Standard operational voltages 3ph, 220/380VAC, 50-60 Hz, Power must be free of spikes and surges exceeding 10% of the nominal voltage.			
Operating Temperature	0 to +38°C (+32 to +100°F)			
Humidity Range	10% to 90% non-condensing			
Storage Temperature	-40 to +66°C (-40 to +150°F)			
Machine Dimension	1950 x 540 x 1015mm (L x W x H)			
Weight	1400kg			

Model	QT-SR-200	QT-SR-300	QT-SR-400	QT-SR-500
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Standard Configurations	<ul style="list-style-type: none"> ■ Main unit ■ Servo systems: driver and motor ■ Synchronous toothed belt ■ Anchorage ■ QualiSoft ■ Linear gauge extensometer ■ Control unit ■ Speed reducer ■ Temperature recorder ■ Computer ■ Printer 			
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<p>The load cell can be calibrated directly on the testing machine without needing to remove it for external calibration. A master load cell is available, which can be installed alongside the machine's load cell to perform the calibration process in place. This method ensures efficiency and accuracy, eliminating the need for disassembly and external calibration equipment.</p>	<p>Anchorage</p>
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Model	QT-SR-200	QT-SR-300	QT-SR-400	QT-SR-500
				



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