Automatic Cupping Tester

Define the resistance of paint, varnish or related products to cracking and detachment

Datasheet › SP4500

TQC Sheen Automatic Cupping Tester to perform a cupping (Erichsen / Dent) test on coated steel panels to define the resistance of paint, varnish or related products to cracking and/or detachment from a metal substrate when subjected to gradual deformation by indentation under standard conditions.

The test is either used as a "pass / fail" test by testing to a specified depth or defining the minimum depth at which a coating fails by gradually increasing the indentation.

The ISO1520 standard requires panels to be slowly deformed at a steady rate between 0,1 mm/s and 0,3 mm/s without interruption. Especially with thicker steel panels hand-operated testers not always allow an uninterrupted deformation.

The Automatic Cupping Tester is driven by a micro-step controlled electro motor which allows precise and steady deformation with 0,01 mm steps. Uniquely this deformation can be paused / resumed.

Each Automatic Cupping Tester is equipped with the Triple I ® Navigation Tool. This Intelligent Illumination Interface guides the operator through the TQC Sheen lab-machines. At each step of the operating menu the interface detects which buttons are active and indicates these by means of an illuminated red center This results in a very intuitive operating system which is enhanced with information on the machine's full colour display.

The Automatic Cupping Tester has numerous set-ups. The custom set-up optionally is password-protected, and after each set number of test runs statistics are shown. Also the illumination of the test specimen can be set-up. To guarantee maximum visibility of all possible types of surface including high gloss, matte or colored samples the Automatic Cupping Tester is equipped with a complementary light system of which the colors can be changed to achieve maximum contrast. The strength of the LED's is adjustable as is the direction of the light source.

The connectivity of the TQC Sheen Automatic Cupping Tester is extensive, with connections for USB-A, USB-B and TQC Sheen-Bus.

Mandatory test in Qualicoat and QIB accredited laboratories.

Features

- Easy-to-use
- Triple I operating interface illuminates only active keys
- User calibration with message service
- Integrated multi-colour led lighting with multiple set ups
- Pause/ Resume function
- Statistics are shown after each run or each set number of runs
- Custom set-up optionally password protected
- Connections for Ethernet, USB-A, USB-B and TQC Sheen-bus
- Safe 24V DC Power adapter
- Full colour Display

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Standards

EN-ISO 1520, DIN 53156, DIN 53232, BS 3900-E4, NBN T22-104, NFT 30 019.
Refer to the relevant standard for a correct execution of the test.

Scope of supply

- Automatic Cupping Tester
- Reference Panel
- Optical tool support rod
- Optical tool mount
- Power cord + adapter
- Manual
- Calibration certificate

Ordering information

SP4500 – Automatic Cupping Tester

Accessories / Optional Items

LD6182 - USB Digital microscope
SP4375 - Foil clamp
SP4331 - Calibration plate

Specifications

Technical Data

Indenter Speed	: 0.01 – 0.70 mm/s
Stroke length	: 0 - 12 mm
Max panel width	: 105 mm
Max. panel thickness steel	: 0.8 mm
Max. speed steel panel:	: 0.6 mm/s
Max. panel thickness aluminium	: 1.2 mm
Max. speed aluminium panel	: 0.7 mm/s
Max. indentation Force	: 35kN (3500 kg)
Indenter width (Ball) Ø	: 20 mm
Die diameter	: 27 mm

Dimensions and Weight

Depth	: 390 mm
Width	: 355 mm
Height	: 450 mm
Net weight	: approx. 29 kg

Basic Unit

Power Supply	: 100 – 240 VAC, 50 - 60 Hz
Power consumption	: Max. 90 Watt
Display	: Full Colour 480 x 272 pixel TFT display
Safety alarm	: Emergency button, integrated acoustic
Function	: 5-key navigation switch with Triple I Control

Accuracy

Indenter Speed	: +/- 1% of set speed
Stroke length	: +/- 0.01 mm or 0.2% whichever is greater

Use

The SP4500 Automatic Cupping Tester has a menu-driven interface and an integrated calibration function. Check manual for full details.

Special Care

- Though robust in design, this instrument is precision-machined.
- Always clean the instrument after use.
- Clean the instrument using a soft dry cloth. Never clean the instrument by any mechanical means such as a wire brush or abrasive paper. This may cause, just like the use of aggressive cleaning agents, permanent damage.
- Do not use compressed air to clean the instrument.
- Never perform repairs or service to the instrument yourself. This should be done by TQC Sheen or selected distributors.

Safety Precautions

- Always make sure the instrument is connected to an earthed socket.
- Maintenance and inspection should be carried out at the correct intervals.
- Operating personnel should be informed before starting with maintenance or repair work.
- Always make sure the instruments power is turned off and the instrument is not connected to a socket while adjusting any electrical component whenever maintenance, inspection or repair work is done.
- Do not open the instrument. In case of malfunction always consult the manufacturer.

Disclaimer

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