

# AUTOMATIC RING AND BALL TESTER

Automatic Determination  
of Binder Softening Point



# Automatic Ring and Ball Tester

**Standards:** EN 1427 | ASTM D36 | AASHTO T53 | IP 58 | JIS K 2207

The Automatic Ring and Ball Tester allows fully automatic performance of softening point determination of binders conforming to most common international Standards.

Two binder specimens, cast in shouldered brass rings, are heated at a controlled temperature rate in a water or glycerol bath while each supports a steel ball. The softening point corresponds to the average temperature at which the two specimens soften enough to allow each ball, enveloped in binder, to fall 25mm, automatically detected by a calibrated light barrier.

## Full Conformity

The Automatic Ring and Ball Tester fully complies with the temperature heating rate, displaying in real time the gradient and its deviation from the theoretical one. The tester saves the gradient and softening point results on the internal memory or onto a USB pen drive. You can export the temperature / time data in real-time to your PC or manage it with the optional PC software.

## Improved Safety

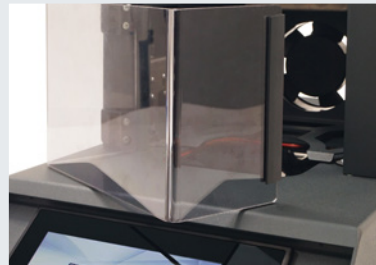
The hotplate is fully sealed, so it cannot be damaged or affected by possible water or glycerol leakages, or if the beaker breaks. At the end of the test, the hotplate is automatically switched off and the integrated cooling fan enabled, improving the beaker cooling operations and reducing risks for the operator. The front transparent cover reduces the risks coming from accidental water or glycerol spilling from the beaker.

## Standard Outfit

The apparatus is supplied complete with outfit for softening point of bituminous materials (two rings, two steel balls, two centering devices, support frame, 600ml beaker, PT100 probe, sample preparation plate and magnetic stirrer).

### Main Features

- Fully automatic softening point determination. The apparatus automatically applies the temperature gradient and detects the specimen position with light barriers, recording the softening point.
- 7" color touchscreen display, with multiple preset and custom testing procedures, allowing real-time display of the temperature / time graph on display or PC (with optional software)
- Inbuilt cooling fan, automatically enabled at the end of the test, to reduce the beaker cooling time.
- Removable transparent front cover, protecting the operator from accidental hot water or glycerol splashing or accidental contact with the hot beaker and plate.
- PT100 probe holder and drip tray for specimen holder, complete with handle, improving beaker positioning operations.
- Possibility to perform user-defined tests with maximum temperature up to 250°C.



Detail of the removable transparent front cover and the cooling fan



Detail of the PT100 probe holder drip tray for specimen holder, complete with handle

# Technical Specifications

**Test places:** 2

**Temperature range:** up to 250°C

**Temperature probes:**

- PT100 probe, range -30 +350°C, 0.1°C resolution, ±0.2 °C accuracy
- K thermocouple for hotplate monitoring range from 0°C to +1000°C, 0.1° resolution

**Stirrer speed:** from 0 to 200 rpm

**Safety features:**

- Integrated cooling fan
- Removable front protection cover
- Temperature warning icon
- Included PT100 probe holder and drip tray for specimen holder

**Electronic controller specifications:**

- 7" color capacitive touch screen graphical display, 16M color and 800 x 480 px resolution
- Possibility to set up to 10 personalized test profiles
- Possibility to program used custom tests with user defined end test conditions (up to 250°C) and temperature gradient up to 6°C/min
- Display of temperature/time graph in real-time, and softening point temperature of the two specimens
- Possibility to set the language among 14 pre-set languages

**Connections and memory:**

- RS232 for PC connection (optional software)
- USB for memory stick
- Internal memory, storage up to thousands tests.

**Power supply:** 110 V or 230 V, 50 Hz/60 Hz, 2500W

**Dimensions:** 290 mm x 460 mm x 430 mm (W x D x H)

**Weight:** approx. 10 kg

## Ordering Information

### 81-PV0144

Automatic Ring and Ball Tester, 230V/50-60Hz/1ph. Conforming to EN 1427, ASTM D36, AASHTO T53, IP 58, JIS K 2207, for the automatic determination of the softening point of bituminous materials.

## Accessories

### 82-Q0800/3

RS232 serial cable with RS232-USB adapter for PC connection

### 81-PV0144/SOF

PC Software, for real time display of temperature/time graph and test certificate management and printout.



## Spares

### 81-PV0144/2

Specimen and ring holder assembly f or 81-PV0144

### 81-PV0145/2

Steel ball

### 81-PV0145/3

Ball centering guide

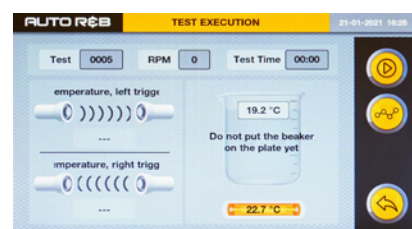
### 81-PV0145/1

Brass ring

### 81-PV0143/1

600 ml beaker

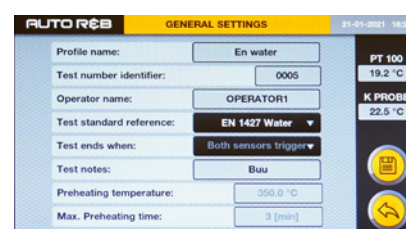
## Firmware



Test performance menu



Saved test, complete with temperature/time graph



Test settings menu

## IPC Global Customer Care

IPC Global is the Advanced Pavement Testing Division of CONTROLS. As one of the longest established manufacturing companies in the world of Construction Materials Testing solutions, we are dedicated to supplying high quality, accurate, affordable, easy to use systems.

As a valued customer of CONTROLS, you will receive continuous, expert support and advice for your IPC Global equipment. Furthermore, we can offer full installation and training in the correct operation of your equipment.

For support from our expert Customer Care Team, contact your local CONTROLS office / distributor or email [support@controls-group.com](mailto:support@controls-group.com).

For more information, please visit [www.controls-group.com](http://www.controls-group.com).

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