PIVOT Fully Automatic Penetrometer

A compact instrument, microprocessor controlled, using the latest technologies and programming tools. The apparatus is supplied complete with outfit for penetration of bituminous materials including needle, needle holder, 50 g weight, 150 g additional weight and 6 containers.

The test should be performed placing the penetration cup in thermostatically controlled water, using a suitable device as the 81-B0102/C Digital circulation water bath with conditioning vessel.

**Standards**
- EN 1426
- EN 13380-2
- ASTM D5
- ASTM D217
- AASHTO T49
- AFNOR T66-004
- DIN 52210
- IP 49
- JIS K 2207

- **Fully automatic operation.**
  The entire test cycle (rapid approach, starting point determination, penetration and return to the initial position) is automatically performed by simply pressing the start button on the touch screen display.
- **Rapid approach and automatic starting point determination**
  to eliminate any operator inaccuracy during needle positioning
- **Penetration measurement**
  via contactless displacement transducer, with 0.01 mm resolution
- **Real time display**
  of penetration/time curve

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Specifications

> Integrated automatic approach and positioning functions
> Intuitive and easy-to-use touch screen display
> Eight programmable reference positions for the holder assembly
> High precision vertical movement by stepper motor
> Programmable penetration time between 0 and 9999 sec
> Programmable delay time between 0 and 999 sec
> Range: 0 to 50mm (penetration 500dmm)
> Penetration resolution: 0.01mm
> Possibility to recall the vertical position for repeated tests

> Penetration measurement by contactless displacement transducer
> Possibility to display and average up to 6 tests
> Anodized base plate with spirit level
> Connections: USB port for test database and LAN port for PC connection
> Adjustable leveling feet, led lamp
> Overall dimensions (wxdxh): 360x410x680 mm
> Weight approx.: 18 kg

Highlights

- Touch screen high resolution 640 x 480 px color display 5.7"
- Display with adjustable inclination
- Rear connections: USB and LAN ports
- Additional weights to be used depending on the sample stiffness
- Adjustable leveling feet
- Set of 6 cups
- High precision vertical movement
- Anodized base plate with integrated spirit level

Automatic Penetrometer
81-PV0103

PIVOT Automatic Penetrometer, microprocessor controlled

- Fully automatic test cycle.
- Penetration range: 0-50 mm with 0.01 resolution, measured with contactless displacement transducer.
- Intuitive and easy to use touch screen display (640 x 480 px).
- Real time display of penetration/time curve.
- USB Port for test database and LAN port for PC connection.
- Supplied with outfit for penetration of bituminous materials: needle, needle holder, 50 g weight, 150 g additional weight and 6 containers.
- 110-230V, 50-60 Hz, 1ph.

Software

![Calibration of the contactless displacement transducer](image1.png)

![Graphical real time display of the tests](image2.png)

![Tests settings](image3.png)

![Alternative manual adjustment of the needle position](image4.png)
Accessories

Penetrometer needles
81-B0113
Penetrometer needle, 2.5 ± 0.05 g
81-B0113/A
Penetrometer needles, 2.5 ± 0.05 g. Set of 3 pieces
81-B0113/1
Verified penetrometer needle 2.5 ± 0.05 g. Complete with test certificate issued by National Physical Laboratory.

81-PV0113
Magnetic penetrometer needle, 2.5 ± 0.05 g. Set of 3.

81-PV0113/AM
Magnetic penetrometer needle, 2.5 ± 0.05 g. Set of 3.

81-PV0113/1M
Magnetic penetrometer needle, 2.5 ± 0.05 g. Complete with test certificate issued by National Physical Laboratory.

Set of 3 pieces

81-B0110/A
Sample cup, dia. 55x35 mm. Set of 6 pieces
81-B0110/B
Sample cup, dia. 70x45 mm. Set of 6 pieces

81-PV0103/1
Locking element for 55 mm dia. sample cup.*
81-PV0103/2
Locking element for 70 mm dia. sample cup.*

*NOTE: 81-B0109 glass transfer dish can accept either one 81-PV0103/1 or one 81-PV0103/2.
81-B0103/1
Locking element for 55 mm dia. sample cup.

81-PV0103/2
Locking element for 70 mm dia. sample cup.

81-B0115
Standard penetration cone.

Thermometers
82-B0100/6
IP 38 C Thermometer, range from +23 to +26°C, 0.1°C graduation
82-B0125/2
EN thermometer, range from +19 to +27°C range, 0.1°C graduation, type ASTM 17C
82-B0122/4
EN thermometer, range from -8 to +32°C range, 0.1°C graduation, type ASTM 63C

Digital circulation water bath with cooling unit
81-B0102/C
Thermostatically controlled digital water bath with cooling system and conditioning vessel. 230V, 50-60Hz, 1ph.
Provides water at the required temperature (25 ± 0.1°C) to perform the penetration test. The apparatus consists of a water bath fit with heater, water cooler, digital thermoregulator, cylindrical vessel with cooling coil and connections.
81-B0102/CZ
Same as above but 110V, 60Hz, 1ph.

81-B0109 glass transfer dish can accept either one 81-PV0103/1 or one 81-PV0103/2.
81-B0102/C digital circulation water bath can accept either three 81-PV0103/1 or one 81-PV0103/2

Glass transfer dish
81-B0109
Glass transfer dish with support, 100 mm dia. x 100 mm high

Sample cups
81-B0110/A
Sample cup, dia. 55x35 mm. Set of 6 pieces
81-B0110/B
Sample cup, dia. 70x45 mm. Set of 6 pieces

81-B0115
Standard penetration cone conforming to ASTM D217 and EN 13880-2

In line with its continual program of product research and development, CONTROLS S.R.L. reserves the right to alter specifications to equipment at any time.