

# Automatic Penetrometer

PNR 500



# Versatile Consistency Testing

Inspired by decades of expertise, the PNR 500 takes your precise consistency testing to the next level.

Simple operation

Fast, reliable results

Broad application range

Advanced data management



#### Automatic surface detection

Reduce human error and maximize automation: The optional patented force sensor plunger automatically detects the sample surface – even when submerged in water. For electrically conductive materials, an optional sensor hook provides fully automated surface detection.



#### Intuitive operation

Whether you select a preset standard method or create your own testing program, operation via the jog wheel and the clear user interface ensures accurate and repeatable results down to 0.1 penetration units (PU).



#### Accelerate your workflow

Speed up your daily testing routine with the Rapid Function. Simplify bitumen testing through the magnetic plunger and bitumen needle, eliminating manual handling steps and improving repeatability.



#### Seamless data integration

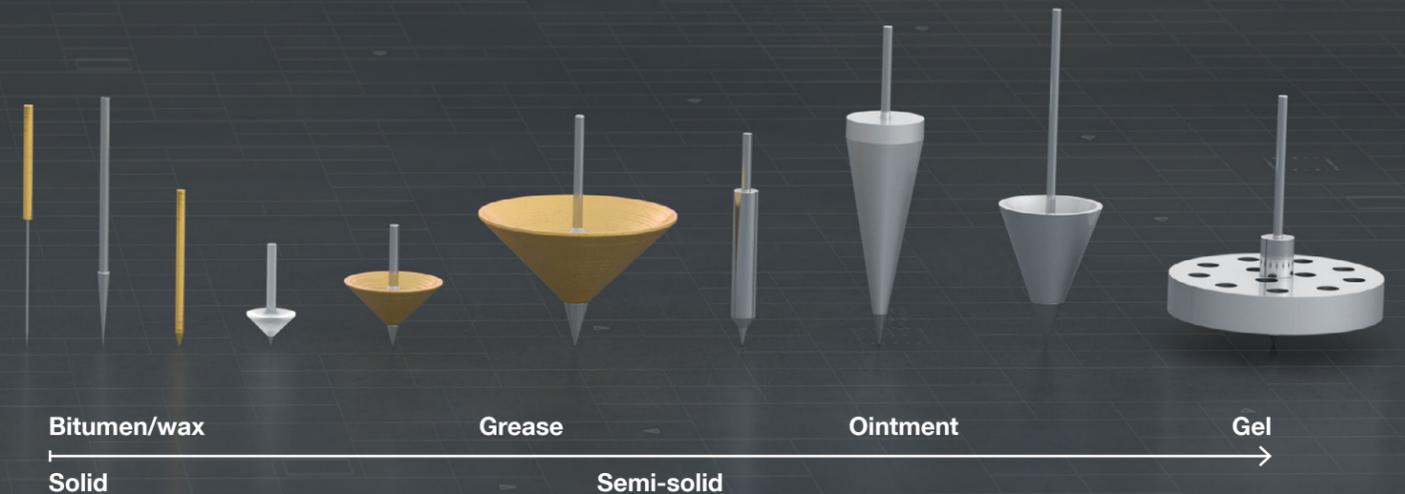
Transfer your test results to your LIMS or to AP Connect for full digital traceability and product-quality monitoring. Built-in data conversion streamlines reporting across applications: EN bitumen values for the petroleum industry, C-values for food applications, and automatic conversion to full-cone and NLGI class.

# One Instrument, a World of Applications

From bitumen to butter, the PNR 500 delivers consistent, accurate test results across countless industries.

## Broad application range

Anton Paar offers the widest application range across industries and sample types with a complete portfolio of test bodies and accessories, from needles for hard samples to cones and disks for semi-solids. The accessories are compliant with numerous international standards (ASTM, DIN, ISO, IP, JIS, Ph. Eur., USP).



### Petroleum industry

- Examples: bitumen, grease, wax, petrolatum
- Standards: ASTM D5, EN 1426, ASTM D217, ISO 2137, ASTM D1321 and more
- Benefits:
  - Automatic surface detection for highly viscous samples
  - Automatic classification of the measured value within the specification of the sample



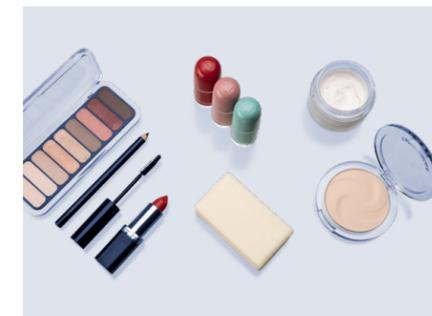
### Chemical industry

- Examples: silicone gels, pastes, adhesives
- Benefits:
  - Consistent performance evaluation for production and R&D
  - Minimal sample volume using the ¼ cone



### Building materials industry

- Examples: cement, ceramic paste, joint mortar
- Benefits:
  - Simplified handling with jog wheel, magnifier, and bright LED illumination
  - Intuitive operation even with protective gloves



### Cosmetics industry

- Examples: balm, lotion, cream, lipstick, toothpaste
- Benefits:
  - Small sample volumes
  - Automatic data conversion (¼ cone to full cone, and ½ cone to full cone)
  - Wide range of test bodies for diverse sample types – all with one instrument



### Pharmaceutical industry

- Examples: ointment, gels
- Standards: Ph. EU.2.9.9, USP 915 and USP 1912
- Benefits:
  - Complete IQ/OQ/PQ qualification documentation
  - Password-protected testing
  - Compliance-ready test kits



### Food industry

- Examples: butter, margarine, cheese, syrup
- Standards: AOCS Cc 16-60, Unilever method, internal quality controls
- Benefits:
  - Accurate C-value conversion for 80 g / 160 g samples
  - Extensive test-body range for diverse sample types

# Performance in Practice



## Bitumen

- Automatic surface detection ensures accurate penetration testing of highly viscous samples (<160 PU) and water-submerged samples
- Ready-to-run preset programs for automatic and manual operation
- Accelerated routine workflows via Rapid Function and magnetic plunger with bitumen needle
- Optional circulator baths, transfer dishes, and temperature sensors guarantee perfect sample tempering
- Automatic EN Bitumen Class classification according to EN 12591



## Grease

- Full, half-scale, quarter-scale, and solid cones available as per ASTM D217, ASTM D1403, ASTM D7342, ISO 2137, JIS K2220
- Preset programs for fast, consistent measurements
- Automatic conversion of results to NLGI classes, and between cone types
- Manual grease workers for sample preparation of half-scale and quarter-scale cone penetration tests



## Pharma

- Pharma cones and needles compliant with EU Pharmacopoeia 2.9.9, and USP 915 / USP 1912
- IQ|OQ|PQ documentation, maintenance, and support from Anton Paar experts
- Password-protected operation for regulated environments
- Micro-cones for small sample volumes enable measurements across a wide consistency range and allow air-bubble-free filling, short tempering times, and easy cleaning

## PNR 500

Measuring range	0 mm to 80 mm (plunger-dependent)
Max. test load	2 kg
Resolution	0.01 mm
Test duration	0.1 s to 999.9 s
Start delay	Up to 9,999 s
Interfaces	USB, LAN, LIMS compatibility
Memory capacity	Up to 200 results
Power supply	100 V to 240 V, 50 Hz/60 Hz, 1.5 A, 70 W
Dimensions	300 mm x 380 mm x 570 mm (W x D x H)
Weight	11 kg

Patents: CN101578511B, DE102006049813B4, EP2082210B1, EP2420816B1, US8201441B2

**Reliable.  
Compliant.  
Qualified.**

Our well-trained and certified technicians are ready to keep your instrument running smoothly.



