VINCI TECHNOLOGIES
Laboratory and field instruments for Petroleum Industry

UC20 – ULTRA-SPEED CENTRIFUGE

Determination of capillary pressure and relative permeability curves

VINCI TECHNOLOGIES Parc de l'Ile, 27B rue du Port, 92022 NANTERRE
Phone: +33 1 41 37 92 20 - vincinet@vinci-technologies.com - http://www.vinci-technologies.com

Centrifuge

The UC20 is designed for fast, accurate, and simultaneous determination of capillary pressure (Pc) and relative permeability (Kr) curves on up to six core samples.

- Fast capillary pressure runs (1–2 days)
- Multi-speed centrifuge experiments up to 20,000 RPM
- Digital camera for real-time fluid interface measurement
- Rotor imbalance sensor for enhanced safety

Features:

Temperature: Ambient
Speed ramp: available
Pressure: atmospheric
Radius length: 91.3 mm (drainage 1.5” diameter samples)
Radius length: 166.3 mm (imbibition 1.5” diameter samples)
Minimum speed: 1,000 rpm
Maximum speed: 20,000 rpm
Speed control: +/- 20 rpm
Power supply: 200 to 240 VAC, 50/60 Hz, 20 A

Rotor for 1.5-inch diameter samples

The 1.5-inch rotor holds three core holders and spins them to generate the centrifugal force needed for capillary pressure testing. Its balanced design ensures stable, accurate, and safe operation while enabling simultaneous multi-sample analysis.

VINCI TECHNOLOGIES Parc de l'Ile, 27B rue du Port, 92022 NANTERRE
Phone: +33 1 41 37 92 20 - vincinet@vinci-technologies.com - http://www.vinci-technologies.com

1.5-inch Drainage and Imbibition buckets

imbibition drainage

Up to 3 custom-designed drainage and imbibition buckets secure the 1.5-inch diameter core samples during drainage and imbibition tests and ensure precise fluid displacement measurements. They allow testing under atmospheric pressure conditions while maintaining sample integrity.

Features:

Core diameter: 1.5-inch
Core length: up to 2-inch
Speed: up to 16,500 rpm (drainage)
up to 15,000 rpm (imbibition)
Receiving tubes: 6 ml, 12 ml & 23 ml

Rotor for 1-inch & 30-mm diameter samples

The 1-inch & 30-mm rotor holds six core holders and spins them to generate the centrifugal force needed for capillary pressure testing. Its balanced design ensures stable, accurate, and safe operation while enabling simultaneous multi-sample analysis.

1-inch Drainage and Imbibition buckets

imbibition drainage

Up to 6 custom-designed drainage and imbibition buckets secure the 1-inch diameter core samples during drainage and imbibition tests and ensure precise fluid displacement measurements. They allow testing under atmospheric pressure conditions while maintaining sample integrity.

Features:

Core diameter: 1-inch
Core length: up to 1-inch
Speed: up to 20,000 rpm (drainage)
up to 16,000 rpm (imbibition)
Receiving tubes: 1 ml, 2 ml, 3 ml and 4 ml

30-mm Drainage and Imbibition buckets

Up to 6 custom-designed drainage and imbibition buckets secure the 30-mm diameter core samples during drainage and imbibition tests and ensure precise fluid displacement measurements. They allow testing under atmospheric pressure conditions while maintaining sample integrity.

Features:

Core diameter: 30-mm
Core length: up to 30-mm
Speed: up to 18,000 rpm (drainage)
up to 16,000 rpm (imbibition)
Receiving tubes: 3 ml, 4 ml & 6 ml

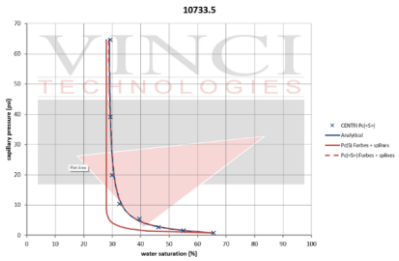
Video camera system

The video camera system captures fluid production in each core holder while spinning at high speed. It is synchronized with tachometer to take precise images of all six core holders at every rotation, ensuring accurate and continuous volume measurement.

Real time data acquisition software

The system provides real-time acquisition of fluid production for each core sample. The screen displays three or six live images representing the fluid production of the three or six core holders. Integrated functions automatically convert the images into core saturation data.

Interpretation software



The interpretation software enables derivation of Pc and Kr using methods such as Hassler-Brunner, Forbes, and Hagoort. It offers multiple curve-fitting options (linear, splines, bi-exponential, etc.) and applies the latest research-based methodologies. Pc determination is performed by numerical history matching, ensuring accurate and reliable simulations.

VINCI TECHNOLOGIES Parc de l'Ile, 27B rue du Port, 92022 NANTERRE
Phone: +33 1 41 37 92 20 - vincinet@vinci-technologies.com - http://www.vinci-technologies.com