Centrifuge

VPrime is a trusted supplier of high-quality laboratory instruments, including the 6-Tube Laboratory **Centrifuge**. This centrifuge is designed for precise and efficient separation of fluids based on density, making it an essential tool for research, medical diagnostics, and industrial laboratories. It ensures rapid and reliable sample processing, meeting the needs of modern scientific applications.

KEY FEATURES

- Compact and durable design with a sturdy metal body
- Efficient separation with high-speed rotation
- 6-tube capacity for simultaneous sample processing
- Easy-to-use operation with safety-lock mechanism
- Low noise and minimal vibration for smooth performance
- Suitable for clinical, research, and industrial applications

TECHNICAL SPECIFICATIONS

- Model: LALCO 6-Tube Centrifuge
- Tube Capacity: 6 tubes
- Maximum Speed:3500 RPM
- Power Supply: Standard electrical connection
- Material: High-quality metal and plastic components
- Safety Features: Secure lid lock & stable base

WORKING PRINCIPLE

The centrifuge operates by spinning liquid samples at high speed, generating a centrifugal force that separates components based on density. Heavier particles settle at the bottom of the tube, while lighter components remain at the top, enabling effective sample analysis and processing.

APPLICATIONS

- Oil and gas Drilling Fluids testing
- Medical & Clinical Diagnostics
- Pharmaceutical Research
- Chemical & Biological Laboratories
- Environmental & Industrial Testing

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pH Meter

VPrime is a trusted supplier of high-quality laboratory instruments, including the digital **pH Meter**. This advanced pH meter is designed to provide accurate and consistent pH measurements for research, industrial, and laboratory applications. With high precision and easy-to-use features, it ensures reliable analysis in various scientific and industrial fields.

KEY FEATURES

- High-precision pH measurement with minimal error margin
- Digital display for clear and accurate readings
- Compact and durable design for laboratory and field use
- Comes with pH buffer solutions for calibration
- User-friendly operation with quick response time
- Reliable electrode with long service life
- Suitable for water analysis, chemical industries, and research laboratories

TECHNICAL SPECIFICATIONS

- Model: CL-54+ Deluxe
- Measurement Range: 0 - 14 pH
- Accuracy: ± 0.01 pH
- Calibration: 3-point calibration with buffer solutions
- Power Supply: Standard electrical connection
- Electrode Type: Glass electrode with high sensitivity
- Operating Temperature: 0 - 50°C

WORKING PRINCIPLE

The pH meter operates by measuring the hydrogen ion activity in a solution using a glass electrode. The difference in potential between the reference electrode and the measuring electrode is converted into a pH value, which is displayed digitally for easy interpretation.

APPLICATIONS

- Water Quality Analysis
- Chemical & Pharmaceutical Industries
- Food & Beverage Industry
- Environmental Monitoring
- Research & Academic Laboratories

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HTHP Filter Press

VPrime is a trusted supplier of the **HTHP (High Temperature High Pressure) Filter Press**, designed for evaluating the filtration properties of drilling fluids and cement slurry under deep well conditions. This device accurately simulates high-pressure and high-temperature environments to measure filtration rates and analyse mud cake properties. Its precise operation, reliability, and ease of use make it a preferred choice for oil fields, research institutions, and laboratories

KEY FEATURES

- High precision and small error margin for reliable results
- Measures filtration loss and mud cake characteristics under HTHP conditions
- Simple operation with accurate data recording
- High heating efficiency with an insulated jacket
- Compatible with API-recommended testing procedures

TECHNICAL SPECIFICATIONS

- Temperature Range: Room temperature to 150°C
- Maximum Working Pressure: 4.2 MPa
- Filtration Pressure Difference: 3.5 MPa
- Filtration Area: 22.6 cm²
- Testing Duration: 30 minutes

WORKING PRINCIPLE

The instrument follows API-recommended protocols for evaluating fluid filtration properties at high temperatures and pressures. The mud sample is heated within a specialized chamber while a controlled pressure differential is applied. The resulting filtrate is collected and analyzed to determine filtration loss and mud cake properties.

OPERATION PROCESS

- Assemble pipe-manifold and connect air supply.
- Preheat the heating jacket and prepare the sample cup.
- Fill the mud sample cup and secure the cover with filter paper.
- Place the sample cup into the heating jacket and apply pressure.
- Conduct the filtration test, maintaining a stable temperature range.
- Collect and record filtrate volume for analysis.
- Safely depressurize and clean all components post-experiment.

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Sand Content Kit

VPrime is a trusted manufactures of **Sand Content Kit** is an essential laboratory tool designed for measuring the sand content in drilling fluids. Excessive sand in drilling mud can cause serious equipment wear and lead to costly operational inefficiencies. This simple yet effective device helps operators monitor and control sand levels to ensure smooth and efficient drilling operations.

KEY FEATURES

- **Accurate Measurement** – Determines the percentage of sand in drilling fluids with precision.
- **Durable Components** – Includes a graduated glass tube, funnel, and a mesh sieve for effective separation.
- **Portable & Lightweight** – Compact design for easy transport and field applications.
- **Easy to Use** – Simple step-by-step testing process requiring minimal training.
- **Corrosion-Resistant Materials** – Built for longevity.

WORKING PRINCIPLE

The Sand Content Kit functions based on fluid filtration and sedimentation. A sample of drilling fluid is mixed with water in the graduated glass tube. The fluid is then poured through the 200-mesh sieve, which captures the solid particles. The remaining liquid drains out, and the sand retained on the sieve is measured against the graduated scale on the glass tube, providing an accurate sand percentage reading.

Test Procedure:

- Fill the glass tube with drilling fluid up to the required level.
- Add water and shake well to disperse the solid content.
- Pour the mixture through the sand sieve to separate the sand particles.
- Measure the retained sand using the graduated markings on the glass tube.
- Report the sand percentage for monitoring and corrective actions.

APPLICATION

- Oil & Gas Industry – Helps in monitoring and controlling abrasive solids in drilling mud.
- Geotechnical & Civil Engineering – Used in soil and fluid analysis for construction and research.
- Mining Industry – Essential for assessing slurry properties in mineral extraction.

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Marsh Funnel & Mug

VPrime supplied **Marsh Funnel & Mug** is a simple and effective tool used for quick viscosity measurements of drilling fluids. It provides a rapid indication of fluid consistency, allowing for real-time monitoring and necessary adjustments. The viscometer is widely utilized in drilling operations to ensure the proper rheological properties of muds, optimising performance and efficiency.

KEY FEATURES

- **Quick & Easy Measurement** - Provides instant viscosity readings in seconds.
- **Durable Construction** - Made from high-quality, break-resistant plastic to withstand field conditions.
- **Portable & Lightweight** - Designed for easy transport and use in labs, drilling sites, and field applications.
- **ASTM Standard Compliance** - Conforms to ASTM D6910/D6910M-09 and API RP 13B-1 test methods.
- **Minimal Maintenance** - Simple cleaning ensures continued accuracy and performance.

WORKING PRINCIPLE

The Marsh Funnel Viscometer operates based on shear rate and shear stress. It consists of a conical funnel with a calibrated 2" x 3/16" (50.8 mm x 4.7 mm) orifice at the bottom. The fluid passes through the outlet, and the time required for one quart (946 mL) of fluid to flow out is recorded as the Marsh Funnel viscosity in seconds.

Calibration Check:

- The standard outflow time for one quart of fresh water at 70 ± 5°F (21 ± 3°C) is 26 ± 0.5 seconds.
- If deviations occur, the outlet should be cleaned to remove obstructions or the funnel should be replaced.

APPLICATION

- Drilling Fluids Monitoring - Ensures optimal fluid properties during drilling operations.
- Oil & Gas Industry - Used by mud engineers for routine fluid viscosity checks.
- Geotechnical & Civil Engineering - Helps in the assessment of construction slurries and drilling fluids.

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Mud Balance

VPrime Mud balance provides accurate & precise mud weight measurements. A crucial piece of equipment in the lab for accurately calculating the density of drilling fluids is the mud balance. It provides the best qualities of the drilling fluid and offers accurate and reliable measurements that are essential for efficient drilling operations. With its graduated arm and constant-volume cup, the balance is simple to use and gives highly precise readings.

KEY FEATURES

- **High Precision**: Measures fluid density with high accuracy.
- **Durable Construction**: Made of corrosion-resistant zinc/aluminum alloy for long-lasting use.
- **Easy Calibration**: Simple to calibrate using fresh water at a standard reference temperature.
- **Laser-Etched Scale**: Ensures easy and accurate readings.
- **Portable and Lightweight**: Designed for field and laboratory use with a convenient carrying case.
- **Multiple Measurement Scales**: Supports density measurements in lbs/gal, specific gravity (SG), lbs/ft³, and pressure gradient psi/1000 ft.

WORKING PRINCIPLE

The Mud Balance operates on a simple mechanical principle. A fluid sample is placed in the cup, and the lid is secured to eliminate air pockets. The instrument balances on a fulcrum, and a rider weight moves along a graduated scale until equilibrium is reached. The density is then read directly from the scale, ensuring quick and accurate results.

TECHNICAL SPECIFICATION

- Density Measurement Ranges:
- 6.5 - 23.0 lbs/gal
- 0.79 - 2.72 specific gravity
- 49 - 172 lbs/ft³
- 340 - 1190 psi/1000 ft
- Material: Heavy-duty anodized aluminum/zinc alloy
- Leveling System: Built-in bubble level for accuracy
- Calibration Check: Can be verified using fresh water at 70°F (21°C)

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Multi-Cylinder Filter Press

VPrime is a trusted supplier of the Multi-Cylinder Filter Press—High-Performance Filtration System. A state-of-the-art laboratory tool for effective drilling fluid filtering and other industrial uses is the Multi-Cylinder Filter Press. Because of its many filtering units, different fluid samples may be tested simultaneously under carefully regulated pressure settings. In the oil and gas sector, this system is crucial for evaluating solid content, fluid loss, and filtering characteristics.

KEY FEATURES

- **Multi-Unit Efficiency**: Processes multiple samples at the same time, increasing laboratory productivity.
- **Durable Construction**: Built from high-quality, corrosion-resistant stainless steel for long-term reliability.
- **Precision Pressure Control**: Equipped with multiple pressure gauges to ensure accurate and consistent filtration results.
- **Easy Operation**: User-friendly design with simple assembly and operation.
- **Versatile Applications**: Suitable for a wide range of drilling fluids and industrial filtrations.

WORKING PRINCIPLE

The Multi-Cylinder Filter Press functions by applying controlled pressure to multiple fluid samples, forcing them through a filter medium. The setup consists of:

1. Sample Chambers: Hold the test fluid samples.
2. Filtration Screens: Separate solid particles from liquid.
3. Pressure System: Applies uniform pressure across multiple units simultaneously.
4. Filtrate Collection: Collects the filtered liquid for further analysis.

This process helps determine fluid loss characteristics and solid retention efficiency, critical in drilling fluid performance evaluation.

APPLICATIONS

- **Oil & Gas Industry**: Drilling fluid filtration and fluid loss testing.
- **Industrial Filtration**: Evaluation of filtration efficiency in various industrial processes.
- **Research & Development**: Laboratory testing for fluid separation and solid content analysis.
- **On-Site and Field Testing**: Portable setup for real-time analysis in drilling operations.

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Retort Kit

VPrime supplies the **Retort Kit**, a device for separating water and oil from drilling fluid. Drilling fluid samples can have their water and solids quantities separated and measured with the Retort Kit, a high-accuracy laboratory tool. This tool helps to maximise performance and efficiency in drilling operations by ensuring precise assessment of drilling fluid mixtures.

KEY FEATURES

- Efficient Separation: Utilizes an external heating distillation method for precise separation of oil, water, and solid components.
- High Accuracy: Offers a 50ml capacity with ±0.2ml measurement precision.
- Superior Recovery Rate: Achieves a liquid recovery rate of over 98%.
- Durable Construction: Made from corrosion-resistant stainless steel, ensuring longevity and reliability.
- User-Friendly Design: Simple setup and operation, suitable for both lab and field use.

TECHNICAL SPECIFICATIONS

- Model - VP - RK - 01
- Power Supply - 220V, 50/60Hz
- Power Consumption - 1000W
- Capacity -50ml ± 0.2ml
- Max Temperature - 500°C ± 20°C
- Liquid Recovery Rate - >98%

WORKING PRINCIPLE

The retort kit heats a 50ml drilling fluid sample externally until its liquid components vaporize. These vapors are then condensed and collected in a graduated cylinder. The final readings help determine:

- Water Content (%)
- Oil Content (%)
- Total Solid Volume (%)

These calculations assist in analyzing drilling fluid efficiency, optimizing formulations, and maintaining quality control.

APPLICATIONS

- Drilling fluid testing for oil & gas exploration
- Mud composition analysis in offshore and onshore rigs
- Laboratory and field environments requiring precise separation techniques

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Hamilton Beach Mixers

VPrime supplies the HMD200 and HMD400 Laboratory Mixers from **Hamilton Beach**: Accurate Mixing for Oil and Gas Industry Uses. With its exceptional mixing capabilities for laboratory usage, Hamilton Beach mixers—which are designed for specialist applications in the oil and gas industry—ensure precise and reliable results in testing and research.

KEY FEATURES

Industrial-Grade Performance

- 1/3 HP motor ensures efficient and precise mixing of lab samples.
- Three-speed settings with a pulse switch for enhanced control.
- Minimal vibration for stable and reliable operation

Built for Laboratory Durability

- Heavy-duty die-cast construction for long-term industrial use.
- Sealed, permanently lubricated ball bearings for extended motor life.
- Stainless steel agitator and mixing cup designed for chemical and material compatibility.

Optimized for Oil & Gas Laboratory Applications

- Two-way motor activation: Pulse switch or cup guide for precision handling.
- Removable cup guides allow easy cleaning and prevent cross-contamination.
- Suitable for sample preparation, viscosity testing, and material consistency analysis.

MODEL COMPARISON

- Model - HMD200 & HMD400
- Motors - 1 Motor & 3 Motors
- Weight - 6.35 kg & 16.78 kg
- Electrical Specs -120V, 60Hz, 900W

APPLICATIONS & BENEFITS

- Sample preparation for fluid dynamics studies
- Viscosity and chemical testing in petroleum labs
- Mixing of drilling fluids and mud samples
- Quality control testing for lubricants and fuels

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API Filter Press

Reliable Filtration Testing for Drilling Fluids, **VPrime** presents the **API Filter Press**, a high-quality instrument designed to measure fluid loss and analyse mud cake formation in drilling fluids. Widely used in oil fields, geological exploration, and laboratories, this filter press ensures precise and consistent results.

KEY FEATURES & SPECIFICATIONS

- Model: VPRIME – PRESS-A5
- Effective Filtration Area: 45.6 cm² (7.1 in²)
- Working Pressure: 0.69 MPa (100 PSI)
- Drilling Fluid Capacity: 350 ml/unit
- Application: Determines filtration loss and forms mud cake for analysis

HOW IT WORKS

The API Filter Press applies a differential pressure of 0.69 MPa or 100 psi to a drilling fluid sample to measure filtrate loss and evaluate the quality of mud cake formation. The system consists of a drilling fluid cup, filter screen, and seal packing, ensuring precise filtration results.

APPLICATIONS & BENEFITS

- **Accurate Fluid Loss Measurement** to optimize drilling fluid performance.
- **Robust & Durable Construction** for reliable and repeatable testing.
- **User-Friendly Design** with an easy-to-assemble filtration system.
- **Versatile Application** for oil field, geological and lab use.
- **Compact & Portable** design for convenient field and laboratory testing.

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Lubricity Tester

Accurate Drilling Fluid Lubricity Testing, The EP-C **Lubricity Tester**, a high-performance equipment made to gauge and assess drilling fluid lubrication quality, is offered by **VPrime**. Especially for deep wells, horizontal drilling, and complicated geological conditions, this cutting-edge tool guarantees the best possible friction reduction, increasing drilling efficiency.

KEY FEATURES & SPECIFICATIONS

- Model: VPRIME EP-C
- Power Supply: Single phase 220V ±10%, 50Hz
- Motor Power: 370W
- Temperature Range: Room temperature to 90°C
- Torque Measurement: 0–70 N·m (Metric), 0–600 in.lb (Imperial)
- Speed Range: 0–1000 r/min (Variable Speed Control)
- Friction Measurement: Direct calculation of the friction coefficient for enhanced precision.

WORKING PRINCIPLE

The EP-C Lubricity Tester evaluates the friction between a rotating bearing sleeve (ring) and friction block under controlled conditions. By simulating downhole drilling conditions, the instrument provides an accurate measure of the coefficient of friction resistance, ensuring effective lubricant selection for various drilling environment.

APPLICATIONS & BENEFITS

- **Measures Friction Coefficient & Reduction Rate** to optimize drilling fluid and completion fluid performance.
- **Advanced Variable Speed Technology** with an imported frequency converter for precise speed control.
- **Digital Display & Microcontroller Precision** ensures accurate test results and easy data recording.
- **Enhanced Drilling Efficiency** by reducing rotation resistance and preventing downhole accidents.
- **User-Friendly Operation** with simplified setup and maintenance for field and lab applications.

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6 Speed Rotary Viscometer

Advanced Laboratory Equipment for Precise Rheological Analysis, **VPrime** presents the **6 Speed Rotary Viscometer**, a high-performance instrument designed for accurate measurement of drilling fluid viscosity and rheological parameters. Engineered for reliability and ease of use, it provides critical data for efficient, safe, and scientific well drilling operations.

KEY FEATURES & SPECIFICATIONS

- Model: VPRIME – VIS6
- Power Supply: 220V ± 5%, 50Hz
- Engine Power: 40W
- Rotation Speed: 800 r/min
- Measurement Speeds: 3, 6, 100, 200, 300, 600 r/min
- Shear Rate: 5, 10, 170, 340, 511, 1022 S^{-1}
- Viscosity Range :

1.Newtonian fluids : 0~300mPa.s (F1 package)
0~60mPa.s (F0.2 package)
2.Non-Newtonian fluids : 0~150 mPa.s (F1 package), 0~30 mPa.s (F0.2 package)
3.Shear stress : 0~153.3Pa (F1 package)
0~30.7Pa (F0.2 package)

- Accuracy: ±1 mPa·s (Newtonian Fluids: 1~25 mPa·s), ±4% (Newtonian Fluids >25 mPa·s)
- Size: 520 × 420 × 250 mm
- Weight: 13 kg

HOW IT WORKS

The 6 Speed Rotary Viscometer operates using a motor-driven rotating system where the tested fluid is placed between concentric cylinders. The interaction between the rotor and bob generates torque, which is measured to determine viscosity and shear stress. The device allows for precise data collection to evaluate fluid behavior under varying shear condition

APPLICATIONS & BENEFITS

- Comprehensive Rheological Analysis.
- Enhanced Well Drilling Efficiency
- User-Friendly Operation
- Durable & Reliable
- Portable & Compact Design

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