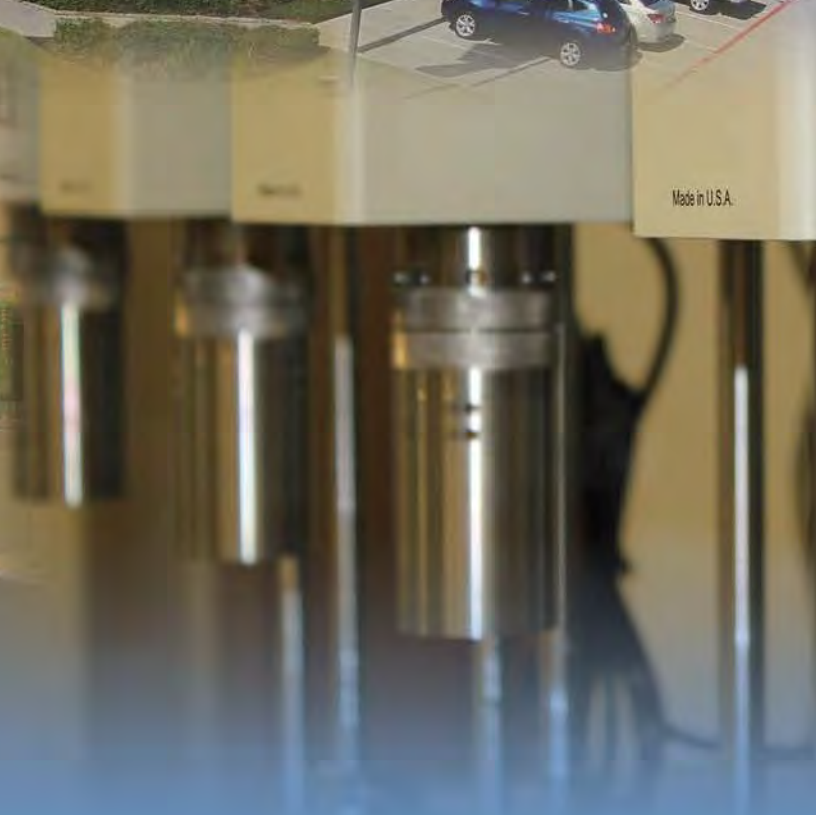




OFI Testing Equipment, Inc.

Product Catalog



Made in U.S.A.

**Testing Equipment for
Drilling Fluids • Cement • Core Analysis • Laboratory Supplies • Reagents**

**Who we are...**

Since 1982, OFI Testing Equipment (OFITE) has manufactured instruments and reagents for testing drilling fluids, completion fluids, oil-well cements, and wastewater.

Our mission...

Our main goal is to provide innovative and dependable instruments using the latest technology, while providing the best customer service available anywhere. We strive to be an indispensable resource to our customers by truly understanding their business, responding quickly to their requests, and by becoming the recognized leader in instrument technology and service.

We're experienced...

We've been in business over 25 years. Many of OFITE's engineers and technicians have been employed by other operators or service companies and have considerable experience in the field and laboratory environments.

Quality-Certified...

All OFITE equipment is built to API specifications, where applicable. OFITE's quality system is certified to ISO 9001:2015 standards.

Full line of products...

OFITE offers a complete line of testing equipment and replacement parts for the oilfield service and related industries. Our products are engineered to provide reliability, ease of operation, and user-friendly maintenance to keep downtime to a minimum.

Worldwide service and support...

As an independent manufacturer and supplier, OFITE has one priority - our customers. We prove this by offering quick response times for new orders, extensive repair services, and custom-designed equipment. With the help of our extensive worldwide distributor network, we're available to render assistance 24 hours a day 7 days a week.

Poised to Compete...

We have the resources, the knowledge, and the experience to compete with the market players in this industry and we have satisfied customers to prove it. We are serious about our quality and competitive on our prices. Insist on genuine OFI Testing Equipment - Dependable Products from People You Trust®.

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MODEL 4020-GS AUTOMATED UCA/SGSM #120-59

Size: 29" x 20" x 14" (74 x 51 x 36 cm)
Weight: 85 lb (39 kg)

By measuring the change in velocity of an acoustic signal, the Ultrasonic Cement Analyzer provides a continuous, non-destructive method of determining compressive strength of a well cement as a function of time while at temperature and pressure.

The Static Gel Strength Measurement (SGSM) device uses a vaned bob to condition a cement slurry inside a pressurized test cell and intermittently measure static gel strength at down-hole conditions. By directly measuring the forces required to initiate movement in the sample, the SGSM provides an accurate way of determining the static gel strength.

Features

- Data acquisition system with automatic temperature and pressure control included
- UCA and SGSM combined in a single unit

UCA

- Cement samples are not destroyed at time intervals
- Unique technology results in a cleaner signal, so transit times and data are more accurate

SGSM

- Automatically conditions the slurry in-place (1 - 150 RPM)
- Provides a direct, mechanical measurement of static gel strength
- Intermittent or continuous measurement under high-temperature, high-pressure conditions
- Simple calibration and system check
- Quick clean up and turn around

Specification

- Maximum Temperature: 400°F (204.4°C)
- Maximum Pressure: 20,000 PSI (137.9 MPa)

Requirements

- Air Supply: 100 PSI (690 kPa) Recommended, 150 PSI (1,035 kPa) Maximum, ¼" NPT Connector
- Water Supply: 40 - 100 PSI, 40° - 100°F, ¼" NPT Connector
- Coolant Supply: ¼" NPT Connector
- Power Supply: 230 - 240 Volt, 50 - 60 Hz, 10 Amps

Patent Pending



#120-59 - Model 4020-GS Automated UCA/SGSM

Cement - Compressive Strength

ULTRASONIC CEMENT ANALYZER, 20000 PSI

#120-50 SINGLE CELL

#120-52 DUAL CELL

Optional

#120-50-SP

Spare Parts Kit

#120-58

Static Gel Strength Measurement Device, High Pressure

Size:

Single: 15" x 24" x 18" (38 x 61 x 46 cm)

Dual: 15" x 40" x 18" (38 x 102 x 46 cm)

Weight:

Single: 85 lb (38.6 kg)

Dual: 170 lb (77.1 kg)

Shipping Size:

Single: 42" x 30" x 49" (107 x 76 x 125 cm)

Dual: 45" x 29" x 47" (114 x 74 x 119 cm)

Shipping Weight:

Single: 290 lb (131.5 kg)

Dual: 420 lb (190.5 kg)

By measuring the change in velocity of an acoustic signal, the Ultrasonic Cement Analyzer provides a continuous non-destructive method of determining compressive strength as a function of time while at temperature and pressure.

Features

- Non-destructive method of determining the compressive strength of well cement
- Automatic temperature control
- Computerized data acquisition and control included

Specifications

- Maximum Temperature: 400°F (204.4°C)
- Maximum Pressure: 20,000 PSI (137.9 MPa)

Requirements

- Air: 100 - 150 PSI
- Water: 50 PSI
- Water Drain
- Power: 230 Volt, 50 / 60 Hz
 - Single: 6.5 Amp
 - Dual: 11 Amp

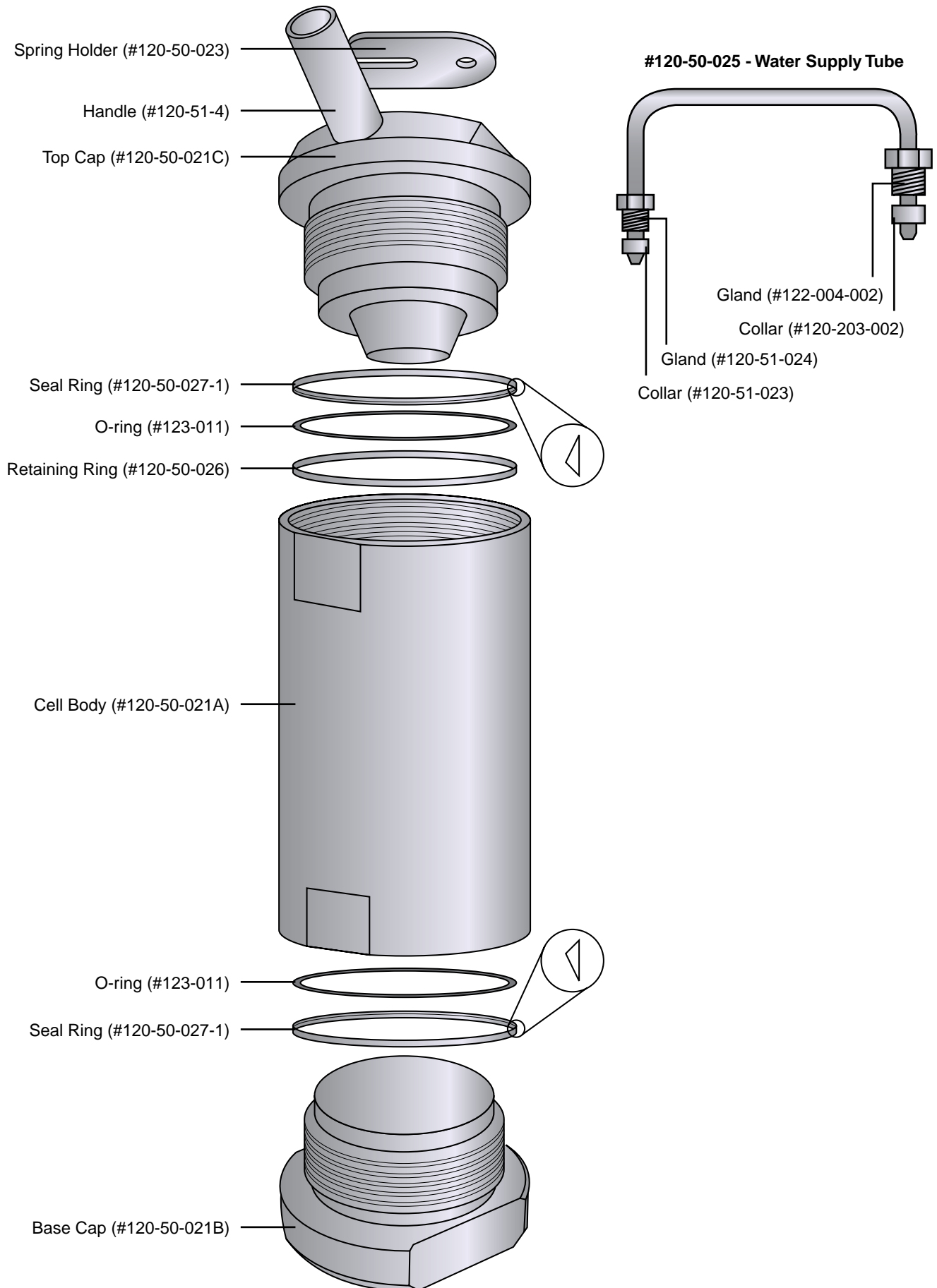
Components

#120-209	Thermocouple Assembly
#120-50-008	Hose, 38", Stainless Steel
#120-50-018	Fill Gauge
#120-50-021	Test Cell
#120-50-026	Retaining Ring
#120-50-027-1	Seal Ring
#120-50-039	Wrench, Box End, ½"
#120-50-040	Wrench, Box End, ⅜"
#120-50-041	Wrench, Strap, 18"
#120-50-053	Heater
#120-50-064	Set of Transducer Cables for #120-52
#120-50-077	Set of Transducer Cables for #120-50
#120-50-TR	Transducer, Set of 2
#120-51-031	Wrench, Adjustable
#120-59-076	Hose Kit
#120-90-033	Air Filter
#122-053	Rupture Disk, 22500 PSI
#122-073	Fuse, 2 Amp, 5 mm x 20 mm
#122-075-2	Fuse, 6 Amp, 5 mm x 20 mm
#122-077	Fuse, 10 Amp, 5 mm x 20 mm
#123-011	O-ring for Test Cell
#123-024	Acoustic Couplant
#130-75-27	Allen Key, T-handle, ⅜"
#130-75-71	Computer Monitor
#130-75-74	Desktop Computer
#130-79-15	Serial Cable



#120-50 - Single Cell UCA

#120-50-021 - UCA Cell Assembly, 20,000 PSI



Cement - Compressive Strength

STATIC GEL STRENGTH MEASUREMENT DEVICE, 20000 PSI #120-58

Size: 20" Tall x 6" Diameter (51 x 15 cm)
Weight: 50.6 lb (23 kg)

The Static Gel Strength Measurement (SGSM) device uses a vane bob to condition a cement slurry inside a pressurized test cell and intermittently measure static gel strength at down-hole conditions. By directly measuring the forces required to initiate movement in the sample, the SGSM provides an accurate way of determining the static gel strength.

Features

- Mechanical measurement of static gel strength of well cement
- Accessory to the Ultrasonic Cement Analyzer

Requirements

- Single Cell UCA (120-50) or Dual Cell UCA (120-58)
- Power: 100 - 240 Volt, 2 Amp, 50 / 60 Hz

Components

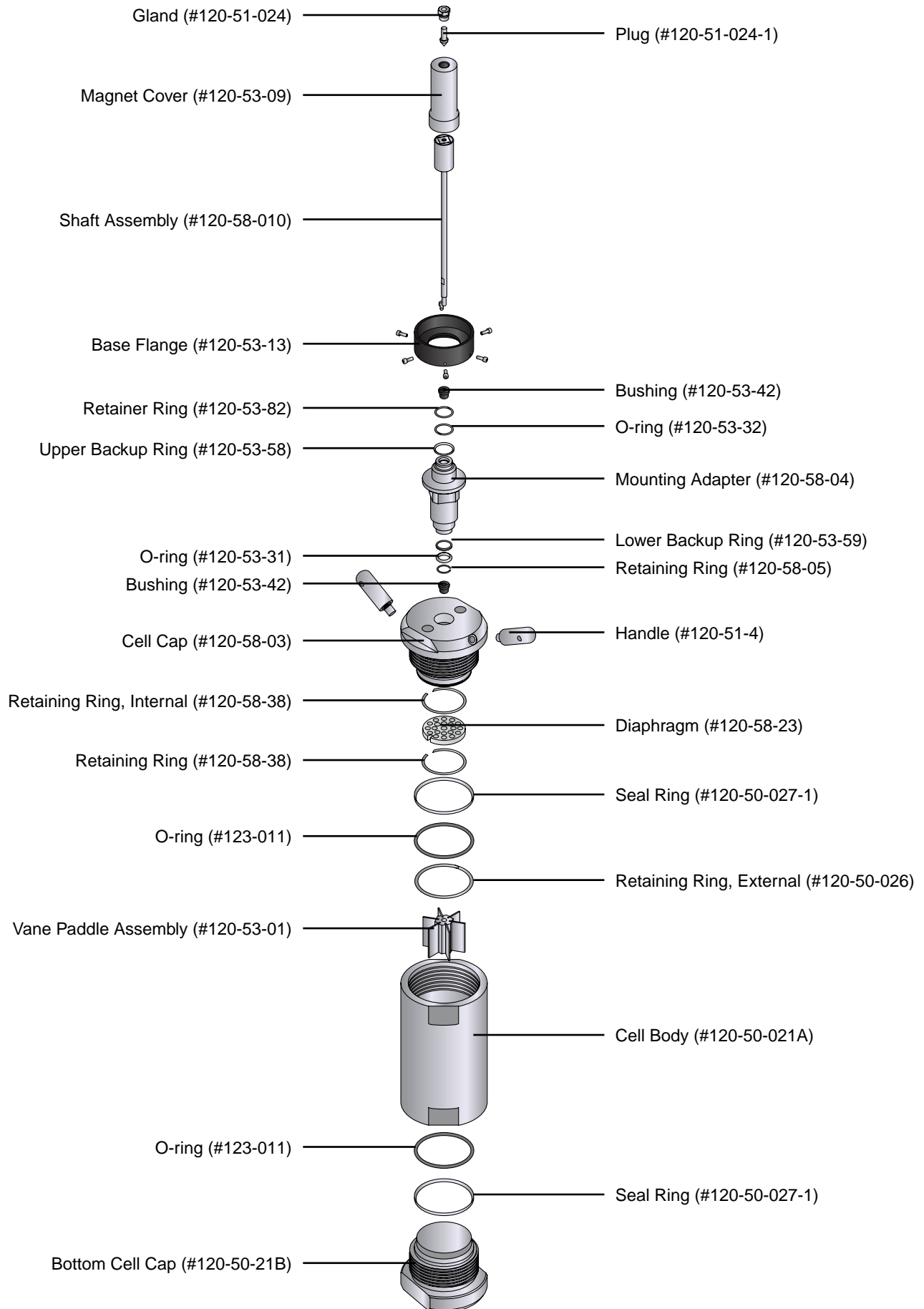
#120-51-020	Thermocouple Assembly
#120-50-21A	Cell Body
#120-50-021B	Cell Cap, Bottom
#120-50-026	Retaining Ring
#120-50-027-1	Seal Ring
#120-53-01	Vane Assembly
#120-53-25	Cable, 25 Pin, Male to Male, 10 Feet
#120-53-31	O-ring for Mounting Adapter, Lower
#120-53-32	O-ring for Mounting Adapter, Upper
#120-53-33	Spring
#120-53-34	Load Cell
#120-53-42	Bushing, Graphite
#120-53-58	Backup Ring, Upper
#120-53-59	Backup Ring, Lower
#120-53-60	Retaining Ring, Internal
#120-53-80	Electronics Box
#120-53-81	Wrench, Combination, 3/16"
#120-58-05	Retaining Ring, External
#120-58-23	Diaphragm
#120-58-38	Retaining Ring, Internal
#120-75-10	Weight Set
#122-073	Fuse, 2 Amp, 5 mm x 20 mm
#130-79-15	Serial Cable
#152-37	AC Power Cord, 115 Volt
#220-10A-EURO	Power Cord, 230V/10A European Plug
#220-15A-EURO	Power Cord, 230V/15A European Plug
#220-15A-USA	Power Cord, 230V/15A USA Plug
#220-20A-USA	Power Cord, 230V/20A USA Plug

Patent Pending



#120-58 - High Pressure SGSM

#120-58-006 - SGSM Cell Assembly, 20000 PSI



Cement - Compressive Strength

ULTRASONIC CEMENT ANALYZER, TWIN CELL, 5000 PSI #120-51

Size: 24" x 18" x 12" (61 x 46 x 31 cm)
Weight: 70 lb (31.8 kg)

By measuring the change in velocity of an acoustic signal, the Ultrasonic Cement Analyzer provides a continuous non-destructive method of determining compressive strength as a function of time while at temperature and pressure.

Features

- Non-destructive method of determining the compressive strength of well cement
- Automatic temperature control
- Computerized data acquisition and control included

Specifications

- Maximum Temperature: 400°F (204.4°C)
- Maximum Pressure: 5,000 PSI (34.5 MPa)

Requirements

- Air: 100 - 150 PSI
- Water: 50 PSI
- Water Drain
- Power: 230 Volt, 10 Amp, 50 / 60 Hz

Components

#120-50-008	Hose, 38", Stainless Steel
#120-50-039	Wrench, Box End, ½"
#120-50-040	Wrench, Box End, ⅝"
#120-50-041	Wrench, Strap, 18"
#120-50-063	Set of Transducer Cables
#120-50-TR	Transducer, Set of 2
#120-51-019	Heater
#120-51-021	Fill Gauge
#120-51-025	Filter, Inline, ¼", 7 Micron, Stainless Steel
#120-51-031	Wrench, Adjustable
#120-51-1	Cell Body
#120-51-2	Cell Cap, Bottom
#120-51-3	Cell Cap, Top
#120-59-076	Hose Kit
#120-90-033	Air Filter
#122-075-1	Fuse, 8 Amp, 5 mm x 20 mm
#123-011	O-ring for Test Cell
#123-024	Acoustic Couplant
#130-75-71	Computer Monitor
#130-75-74	Desktop Computer
#130-79-15	Serial Cable
#220-10A-EURO	Power Cord, 230V/10A European Plug
#220-15A-EURO	Power Cord, 230V/15A European Plug
#220-15A-USA	Power Cord, 230V/15A USA Plug
#220-20A-USA	Power Cord, 230V/20A USA Plug

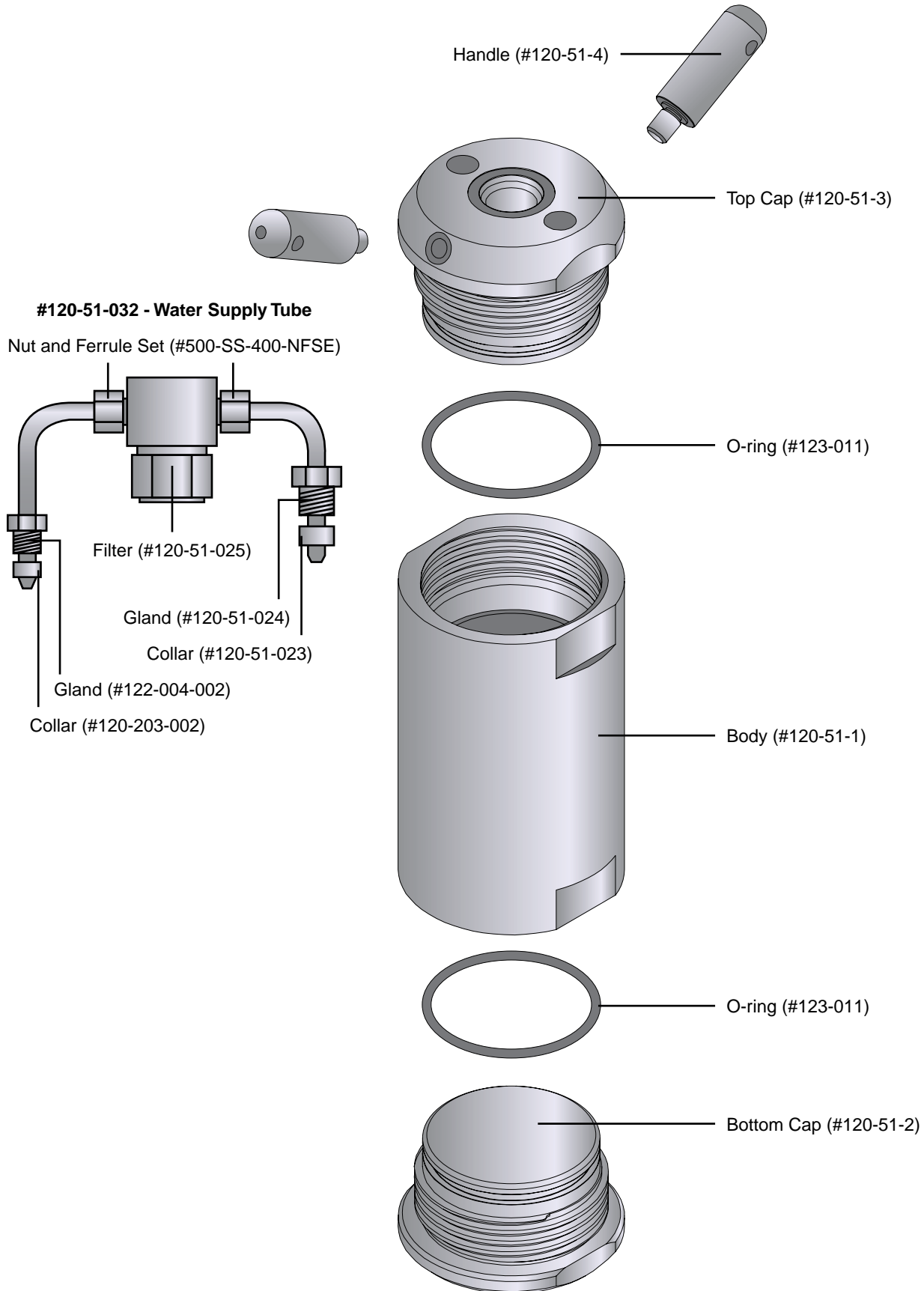
Optional

#120-51-SP	Spare Parts Kit
#120-53	Static Gel Strength Measurement Device, Low Pressure



#120-51 - Twin Cell UCA

#120-51-010 - Twin Cell UCA Cell Assembly, 5000 PSI



Cement - Compressive Strength

STATIC GEL STRENGTH MEASUREMENT DEVICE, 5000 PSI #120-53

Size: 18.25" Tall x 5.9" Diameter (46 x 15 cm)
Weight: 47.2 lg (21.4 kg)

The Static Gel Strength Measurement (SGSM) device uses a vane bob to condition a cement slurry inside a pressurized test cell and intermittently measure static gel strength at down-hole conditions. By directly measuring the forces required to initiate movement in the sample, the SGSM provides an accurate way of determining the static gel strength.

Features

- Mechanical measurement of static gel strength of well cement
- Accessory to the Ultrasonic Cement Analyzer

Requirements

- Twin Cell UCA (120-51)
- Power: 100 - 240 Volt, 2 Amp, 50 / 60 Hz

Components

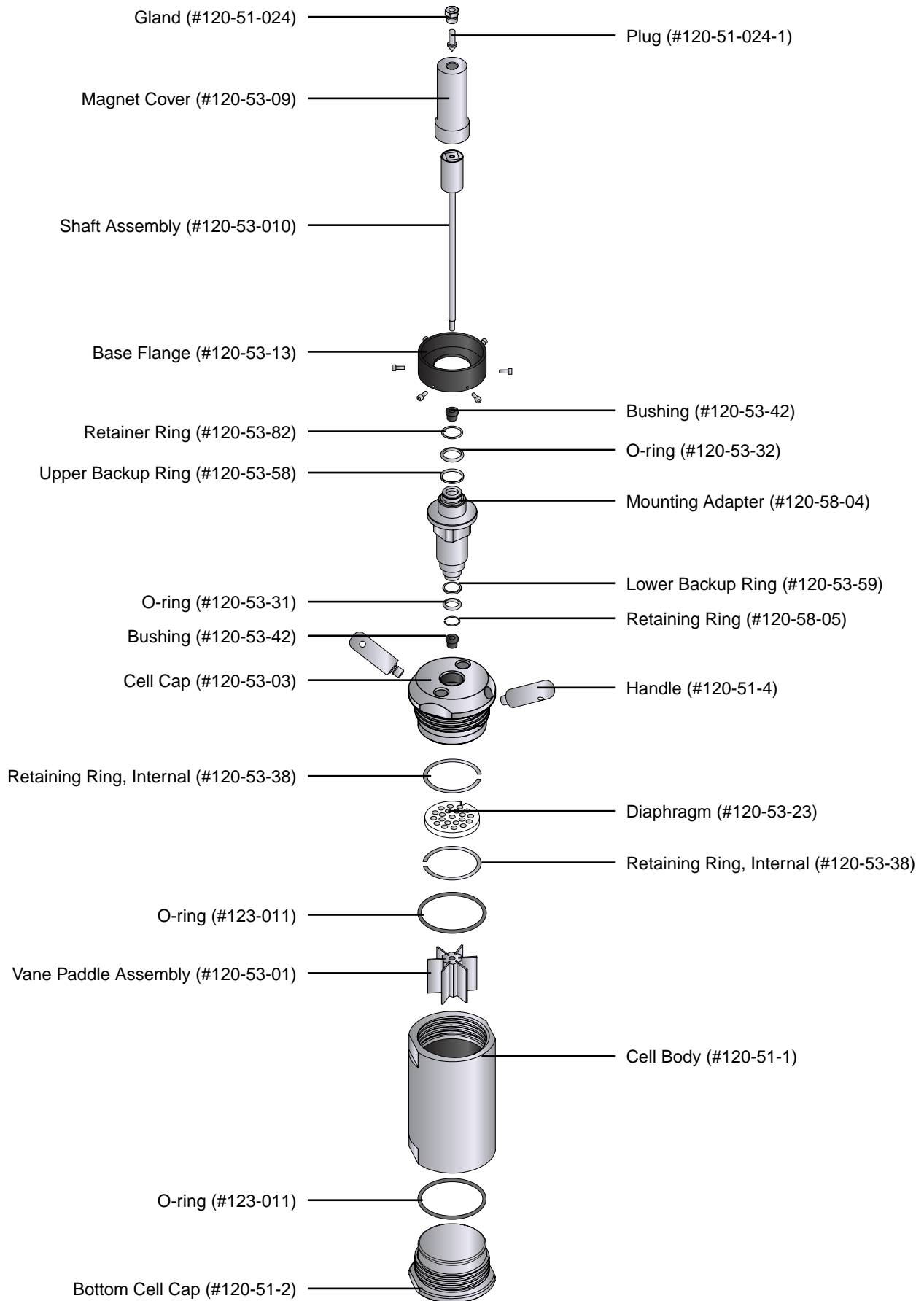
#120-51-020	Thermocouple Assembly
#120-51-021	Fill Gauge
#120-51-1	Test Cell Body
#120-51-2	Cell Cap, Bottom
#120-53-01	Vane Assembly
#120-53-03	Cell Cap, Top
#120-53-06	Shaft for Mag Drive
#120-53-23	Diaphragm
#120-53-25	Cable, 25 Pin, Male to Male, 10 Feet
#120-53-31	O-ring for Mounting Adapter, Lower
#120-53-32	O-ring for Mounting Adapter, Upper
#120-53-33	Spring
#120-53-34	Load Cell
#120-53-38	Retainer, Snap Ring
#120-53-42	Bushing, Graphite
#120-53-60	Retaining Ring, Internal
#120-53-80	Electronics Box
#120-53-81	Wrench, Combination, 3/16"
#120-75-10	Weight Set
#122-073	Fuse, 2 Amp, 5 mm x 20 mm
#123-011	O-ring for Cell
#130-79-15	Serial Cable
#152-37	AC Power Cord, 115 Volt
#220-10A-EURO	Power Cord, 230V/10A European Plug
#220-15A-USA	Power Cord, 230V/15A USA Plug

Patent Pending



#120-53 - Low Pressure SGSM

#120-53-006 - SGSM Cell Assembly, 5000 PSI



Cement - Compressive Strength

CLF-40 COMPRESSIVE LOAD FRAME

#120-285	115 VOLT
#120-285-230	230 VOLT
#120-285-DAS	WITH COMPUTER, 115 VOLT
#120-285-230-DAS	WITH COMPUTER, 230 VOLT

Size: 23" x 23" x 26.5" (59 x 59 x 67 cm)
Weight: 225 lb (102 kg)

Shipping Size: 29" x 31" x 39" (74 x 78 x 99 cm)
Shipping Weight: 340 lb (154.2 kg)

The CLF-40 Automated Compressive Load Frame was designed to determine the compressive strength of a well cement or proppant. The most common means of determining the compressive strength of a cement involves applying a force to the sample at a constant rate until the sample fails. The maximum loading at which the cement fails is defined as the cement's compressive strength.

Features

- Tests the compressive strength of well cement
- Clamshell design with safety switches protect people and equipment
- Safety head, rupture disk, and high pressure alarm prevent over pressurization
- Computerized data acquisition and control system provides detailed test information and precise control
- Operates as a standalone unit or with computer control
- Software accepts cylindrical and cube-shaped samples
- Remote access available via RS-232 or Ethernet
- Small footprint saves valuable lab space

Specifications

- Maximum load capacity: 40,000 lbf
- Variable loading rates from 250 to 40,000 lbf/min
- Maximum load dwell: 15 minutes

Requirements

- Power: 115 Volt at 9 Amp or 230 Volt at 5 Amp, 50 / 60 Hz

Components

#120-28-061	Brush
#120-90-035-1	Filter
#122-074	Fuse, 4 Amp, 5 mm x 20 mm

Optional

#120-285-9	Proppant Adapter
#800-00-038	Proppant Test Cell Assembly, 1.0" Diameter
#800-00-034	Proppant Test Cell Assembly, 1.5" Diameter
#800-00-013	Proppant Test Cell Assembly, 2.0" Diameter



#120-285 - CLF-40 Compressive Load Frame

Cement - Compressive Strength

MODEL 200 HTHP CURING CHAMBER

#120-20	SINGLE CELL, SINGLE DEEP
#120-25	SINGLE CELL, DOUBLE DEEP
#120-30	DUAL CELL, SINGLE DEEP

Size: 47" x 37" x 76" (119 x 94 x 193 cm)
Weight: 1100 lb (499 kg)

The Model 200 HTHP Curing Chamber is designed to prepare well cement specimens for compressive strength tests. It is necessary to determine the amount of time required for a cement to develop compressive strength so that drilling/production operations can be resumed as quickly as possible.

Features

- Cures cement specimens under typical downhole conditions
- Digital programmable temperature controller
- Electronic timer measures elapsed time and may be programmed to terminate test
- Coolant system quickly cools the test cell
- Pressure relief valve and safety head protect people and equipment
- Dual compression molds meet ASTM standard C-109

Specifications

- Maximum temperature: 600°F (315.6°C)
- Maximum pressure: 5,000 PSI (34.5 MPa)
- Test cell cures 8 - 16 specimens
- Creates 2" cubes in accordance with API Specification 10

Requirements

- Air: 100 - 150 PSI
- Water: 40 PSI
- Water Drain
- Power: 230 Volt, 20 Amp, 50 / 60 Hz

Components

#120-00-01	Temperature Controller
#122-008	Heater
#122-052	Rupture Disk, 5500 PSI (37.9 MPa)
#122-083	Mold Assembly, 8 Specimen (Single Deep)
#122-085	Mold Assembly, 16 Specimen (Double Deep)

Optional

#120-21	Spare Parts Kit for #120-20
#120-26	Spare Parts Kit for #120-25
#120-31	Spare Parts Kit for #120-30



#120-30 - Dual Cell HTHP Curing Chamber

BENCHTOP HTHP CURING CHAMBER

#120-55

Size: 25" x 16" x 20" (64 x 41 x 51 cm)
Weight: 215 lb (94.6 kg)

Shipping Size: 36" x 25" x 37" (91 x 64 x 94 cm)
Shipping Weight: 400 lb (181.4 kg)

The Benchtop HTHP Curing Chamber is designed to prepare well cement specimens for compressive strength tests. It is necessary to determine the amount of time required for a cement to develop compressive strength so that drilling/production operations can be resumed as quickly as possible.

Features

- Cures cement specimens under typical downhole conditions
- Digital programmable temperature controller
- Electronic timer measures elapsed time and may be programmed to terminate test
- Coolant system quickly cools the test cell
- Pressure relief valve and safety head protect people and equipment
- Dual compression molds meet ASTM standard C-109

Specifications

- Maximum pressure: 5000 (34.5 MPa)
- Maximum temperature: 500°F (260°C)
- Test cell cures 4 specimens
- Creates 2" cubes in accordance with API Specification 10

Requirements

- Air: 100 - 150 PSI
- Water: 40 PSI
- Water Drain
- Power: 230 Volt, 20 Amp, 50 / 60 Hz

Components

#120-00-01	Temperature Controller
#120-55-006	Heater
#122-052	Rupture Disk, 5500 PSI (37.9 MPa)
#122-072	Fuse, 1 Amp, 5 mm x 20 mm
#122-083-1	Mold Assembly, 4 Specimen

Optional

#120-55-SP	Spare Parts Kit
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#120-55 - Benchtop Curing Chamber

Cement - Compressive Strength

CEMENT MOLD, THREE GANG #120-902

Size: 6" x 4" x 11" (15 x 10 x 28 cm)
Weight: 12 lb (5.4 kg)

Designed and manufactured in strict conformance to ASTM standards, the Three Gang Cement Cube Mold is used to form 2" (5.1 cm) cube samples for compressive strength testing of cement, mortars, lime, gypsum, and capping compounds.

Features

- Creates 2" (5.1 cm) cubes for compressive strength testing
- Designed and manufactured in conformance to ASTM standards



#120-902 - Three Gang Mold

BP SETTLING TUBE #122-086

Size: 8.5" Tall x 2" Diameter (23 x 5 cm)
Weight: 1.5 lb (.68 kg)

The BP Setting Tube is used to test the settling characteristics of a well cement. The cement slurry is poured into the tube and then cured in a Consistometer or water bath. After the cement has cured, the column is then cut into pieces and the density of each piece is measured using Archimedes Principle.

Features

- Tests the settling characteristics of a well cement
- All brass construction



#122-086 - BP Settling Tube

CEMENT MOLD ASSEMBLY #122-083 8 SPECIMEN #122-085 16 SPECIMEN

Size:
8: 12" x 6.5" x 3" (31 x 17 x 84 cm)
16: 22" x 6.5" x 3" (56 x 17 x 84 cm)

Weight:
8: 23 lb (10 kg)
16: 45 lb (20 kg)

The Brass Cement Mold Assemblies are used to form multiple 1" (5.1 cm) cube specimens for compressive strength tests. The 8-specimen assembly is used in the Single Deep Curing Chamber, while the 16-specimen assembly fits the Double Deep Curing Chamber. The 16-specimen assembly can also be used with the Chandler Models 7350 and 7355 Curing Chambers.

Features

- Creates 2" (5.1 cm) cubes for compressive strength testing
- The 8 specimen assembly fits in the Single Deep HTHP Curing Chamber
- The 16 specimen assembly fits in the Double Deep HTHP Curing Chamber



#122-085 - 16 Specimen Cement Mold Assembly

CARVER LABORATORY PRESS, MODEL M #120-901

Size: 19" x 24" x 42" (48 x 61 x 107 cm)
Weight: 350 lb (158.9 kg)

The Carver (Model M) is a twenty-five ton, manual, two-column hydraulic press. The daylight opening is fully adjustable. It is constructed of rigid cast iron and steel for precision and durability. The easy-to-read gauge is calibrated in pounds and metric tons.

Specifications

- Capacity: 25 ton
- Platen size: 9" x 9" (23 x 23 cm)
- Manual operation
- Adjustable daylight opening
- Rigid cast iron and steel construction
- Easy-to-read gauge is calibrated in pounds and metric tons

CIRCULATOR/BATH #120-950 115 VOLT #120-950-1 230 VOLT

Size: 27.8" x 14.8" x 23.2" (71 x 38 x 59 cm)
Weight: 77.2 lb (35 kg)

Features

- Completely Stainless Steel
- Precise Control
- Autotune, High Precision
- Overtemperature Protection
- RS-232 Communication

Specifications

- Bath Capacity: 58 L
- Bath Dimensions: 16.5" x 10.8" x 11.8" (42 x 28 x 30 cm)
- Temperature Range: Ambient to 482°F (250°C)



#120-950 - Circulator/Bath

PRECISION WATER BATH

#152-57 10 LITER
#152-57-1 28 LITER

Size:

10 Liter: 15.5" x 15.1" x 9.2" (39 x 38 x 23 cm)
28 Liter: 15.4" x 21.8" x 11.1" (39 x 55 x 28 cm)

Precision general purpose water baths are rugged, high performance baths that are designed to maintain water temperature from ambient to 100°C. They are ideal for a wide range of lab applications. Over-temperature safety circuitry is designed to prevent thermal runaway, while new auto-on and auto-off timers allow you to optimize operation schedules. Benefit from outstanding chemical and corrosion resistance with epoxy powder-coated exterior, and easily clean the chamber with its seamless stainless-steel interior.

Features

- Smaller footprint, compared to previous models, frees up valuable benchtop space
- Advanced microprocessor controller is designed for extended functionality
- Protect your work with audible alarms
- Conveniently save commonly used settings with four temperature presets
- Baths come with clear polycarbonate gable cover, diffuser tray, drain hose and rubber duck
- UL Listed and CE Marked

Specifications:

- Maximum Temperature: 100°C (212°F)
- Temperature Stability: $\pm 0.1^\circ\text{C}$
- Temperature Uniformity: $\pm 0.2^\circ$ @ 70°C
- Voltage: 115 / 230 Volt, 50 / 60 Hz
- Heater Output:
 - 10 L: 800 Watt
 - 28 L: 1200 Watt

Cement - Thickening Time

AUTOMATED HTHP CONSISTOMETER

- #120-35 MODEL 2025
- #120-35-DAS WITH COMPUTER
- #120-35-R WITH CHART RECORDER
- #120-35-RDAS WITH COMPUTER AND CHART RECORDER

- #120-40 MODEL 2040
- #120-40-DAS WITH COMPUTER
- #120-40-R WITH CHART RECORDER
- #120-40-RDAS WITH COMPUTER AND CHART RECORDER

Size: 22.5" x 27.5" x 70" (57 x 70 x 178 cm)
Weight: Approximately 450 lb (204 kg)

Shipping Size: 39" x 32" x 82" (99 x 81 x 208 cm)
Shipping Weight: 940 lb (426.4 kg)

The Automated HTHP Consistometer was specifically engineered to determine the thickening time of well cements under simulated down-hole pressures and temperatures. The HTHP Consistometer offers a computerized Data Acquisition and Control system, automatic temperature and pressure control, and a variable speed motor all standard in one easy-to-use unit.

Features

- Computerized Data Acquisition and Control system included
- Control multiple units from one computer
- Connect via RS-232 and Ethernet
- Automatic temperature and pressure control
- Automatic, programmable variable speed motor (0 - 300 RPM) powered by a magnetic drive
- Visual indicator provides an at-a-glance status update during testing
- Small cell and efficient cooling system provide quick cool-down times
- Small footprint saves valuable lab space
- Temperature, pressure, and consistency alarms
- Optional chart recorder monitors temperature, pressure, and consistency
- Conforms to API Specification 10A and 10B2 guidelines

Specifications

- Maximum Pressure:
 - Model 2025: 25,000 PSI (172.4 MPa)
 - Model 2040: 40,000 PSI (275.8 MPa)
- Maximum Temperature:
 - Model 2025: 400°F (204°C)
 - Model 2040: 600°F (315°C)
- Consistency Range: (0 - 125 Bc)
- Digital Temperature Controller with 0.1° resolution
- Pressure indicator resolution is 1 PSI and includes both high and low pressure alarms
- Slurry cup rotational speed is variable up to 150 RPM

Requirements

- Air: 100 - 120 PSI
- Water: 40 PSI
- Water Drain
- Power: 230 Volt, 25 Amp, 50 / 60 Hz

What's Included

- Consistometer
- Slurry Cup
- Potentiometer
- Calibration Stand
- Mineral Oil
- Tools
- O-rings and Gaskets
- Hose Kit with Fittings (Air, Water, Drain)



#120-35 - Model 2025 Automated HTHP Consistometer

Components

#120-001	Mineral Oil, 1 Gallon
#120-10-1	Tool Kit
#120-102	Rupture Disk, 28000 PSI (Model 2025)
#120-103	Rupture Disk, 45000 PSI (Model 2040)
#120-40-032	Filter, High Pressure
#120-40-033	Filter Element
#120-106-002	O-ring for Filter Element
#120-35-031	O-ring for Cell, Viton®
#120-35-033	Air Filter
#120-35-132	Oil Filter
#120-40-029	O-ring for Cooling Jacket, FFKM
#120-401	O-ring for Cell, Metal
#120-401-V	O-ring for Cell, Viton®
#120-50-040	Wrench, Box End, 3/8"
#120-59-076	Hose Kit
#122-077	Fuse, 10 Amp, 5 mm x 20 mm

Slurry Cup Components

#120-519	Slurry Cup Assembly without Expansion Chamber
#120-521	Slurry Cup Assembly with Expansion Chamber
#120-501	Sleeve
#120-501-T	Sleeve, Tapered (Model 2040)
#120-502	Diaphragm, Molded
#120-502-1	Diaphragm, Flat
#120-503	Paddle Pin
#120-504	Pivot Bearing
#120-505	Pivot Bearing Gasket
#120-506	Paddle
#120-507	Paddle Shaft, 7.75" (For Slurry Cup without Expansion Chamber)
#120-508	Diaphragm Retaining Ring
#120-509	Drive Disk
#120-510	Drive Bar
#120-511	Shear Pin
#120-512	Drive Pin
#120-513	Gasket
#120-514	Drive Disk Set Screw
#120-515	Diaphragm Support
#120-516	Slurry Cup Base
#120-517	Slurry Cup Locking Ring
#120-520	Paddle Shaft, 9.125" (For Slurry Cup without Expansion Chamber)
#122-522	Expansion Chamber Lid

Potentiometer Components

#120-628	Potentiometer Assembly
#120-602	Calibration Spring
#120-603	Body
#120-604	Resistor
#120-605	Contact Spring
#120-606	Contact Arm
#120-607	Contact Strip
#120-608	Grounding Cable Retaining Screw
#120-609	Grounding Contact Spring

Calibration Components

#120-35-040	Calibration Stand Assembly
#120-75-9	Weight Hanger
#120-75-10	Weight Set

Optional

#120-35-SP	Spare Parts Kit
#120-506M	Paddle for Dynamic Settling Test

Dual cell consistometers available. Ask a sales representative for details.



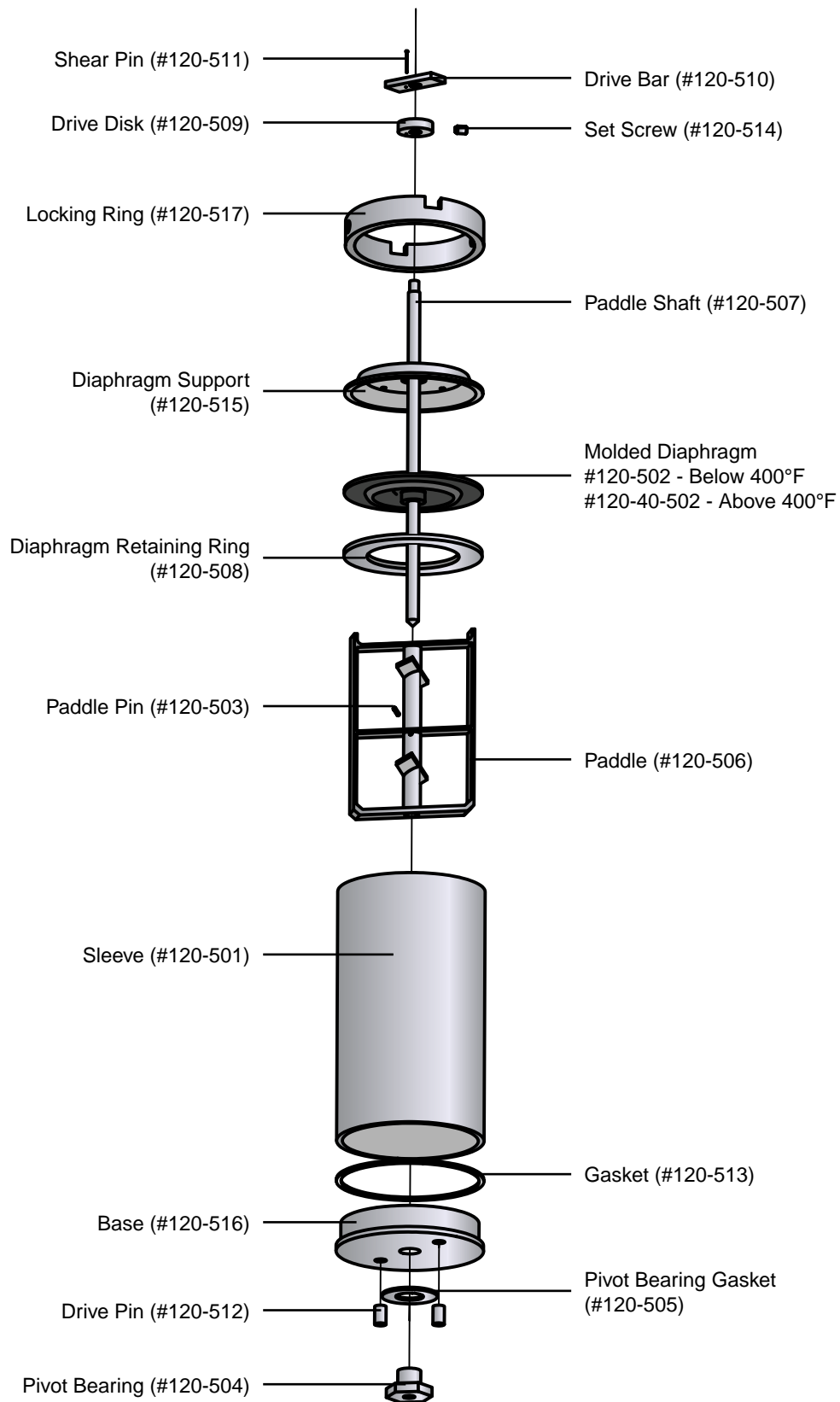
#120-40 - Model 2040 Automated HTHP Consistometer



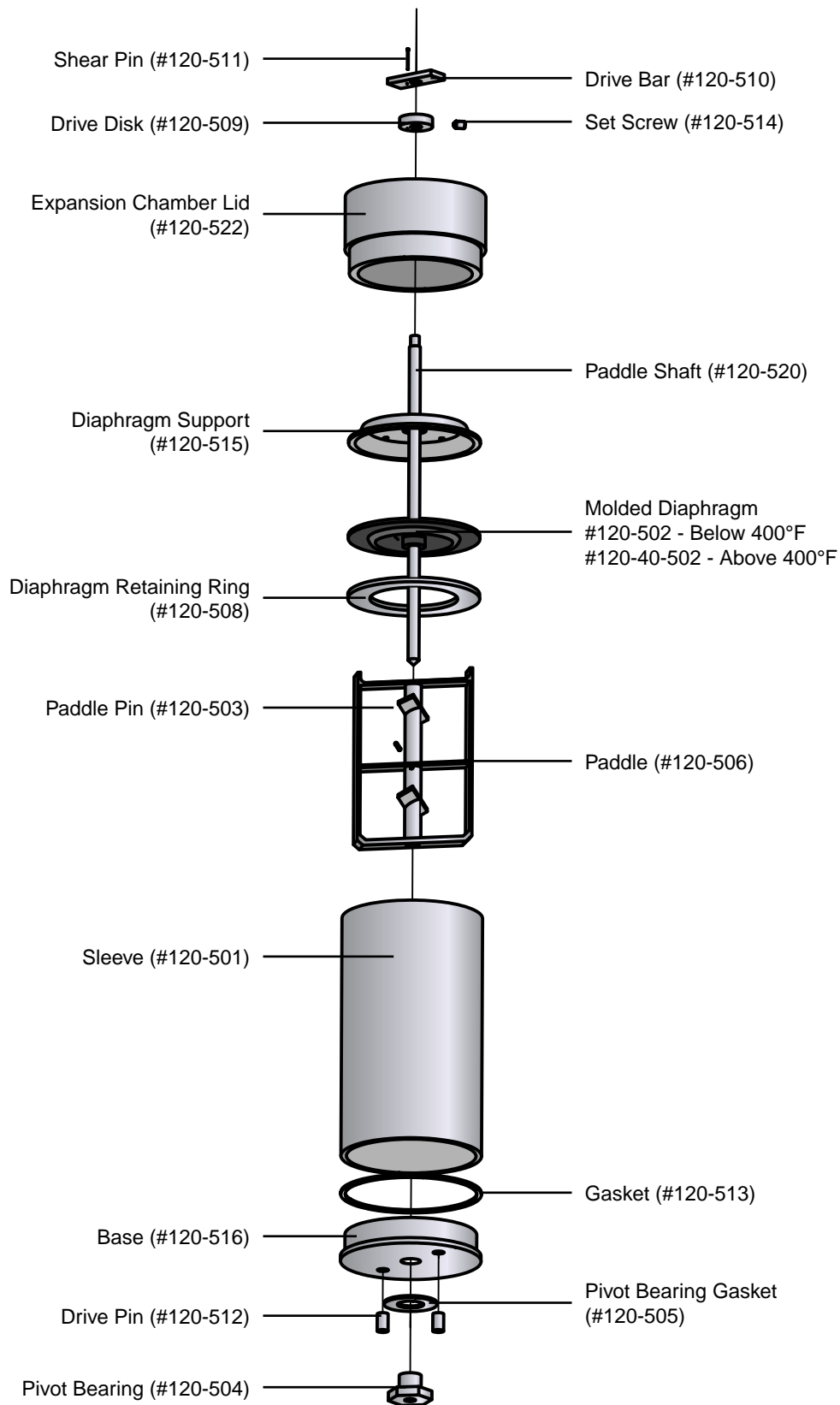
#120-506M - Paddle for Dynamic Settling Test

Cement - Thickening Time

#120-519 - Slurry Cup Assembly Without Expansion Chamber



#120-521 - Slurry Cup Assembly With Expansion Chamber



Cement - Thickening Time

MODEL 130 HTHP BENCHTOP CONSISTOMETER

#120-90 STANDARD
#120-90-DAS WITH DATA ACQUISITION SYSTEM

#120-514	Drive Disk Set Screw
#120-515	Diaphragm Support
#120-516	Slurry Cup Base
#120-517	Slurry Cup Locking Ring
#120-520	Paddle Shaft, 9.125"

Size: 25" x 16" x 20" (64 x 41 x 51 cm)
Weight: 215 lb (97.6 kg)

Shipping Size: 37" x 25" x 44" (94 x 64 x 112 cm)
Shipping Weight: 435 lb (197.3 kg)

The Model 130 Benchtop Consistometer was specifically engineered to determine the thickening time of well cements under simulated down-hole pressures and temperatures. Its compact, lightweight design makes the unit ideally suited for benchtop use.

Features

- Digital programmable temperature controller
- An electronic chronograph measures elapsed time
- Cooling jacket facilitates cool down
- A safety head with rupture disk is provided
- Compact size and light weight make the unit suitable for field work
- Unit is fully capable of testing well cements in strict accordance with the guidelines as stated within API Specification 10A and 10B2

Specifications

- Maximum operating temperature of 400°F (200°C)
- Maximum operating pressure of 16,000 PSI (110.3 MPa)

Instrument Requirements

- Air: 100 PSI
- Water: 40 PSI
- Water Drain
- Power: 230 Volt, 15 Amp, 50 / 60 Hz

Components

#120-00-028	Consistency Indicator
#120-001	Mineral Oil, 1 gal
#120-104	Rupture Disk, 17,500 PSI (121 MPa)
#120-105	Check Valve, High Pressure
#120-106	Filter, High Pressure
#120-257	O-ring for Drain Plug, Viton®
#120-35-050	Temperature/Pressure Controller
#120-90-033	Air Filter
#120-90-035	Filter
#120-90-5	Chart Recorder
#122-073	Fuse, 2 Amp, 5 mm x 20 mm
#503-152V90	O-ring for Cell, Viton®

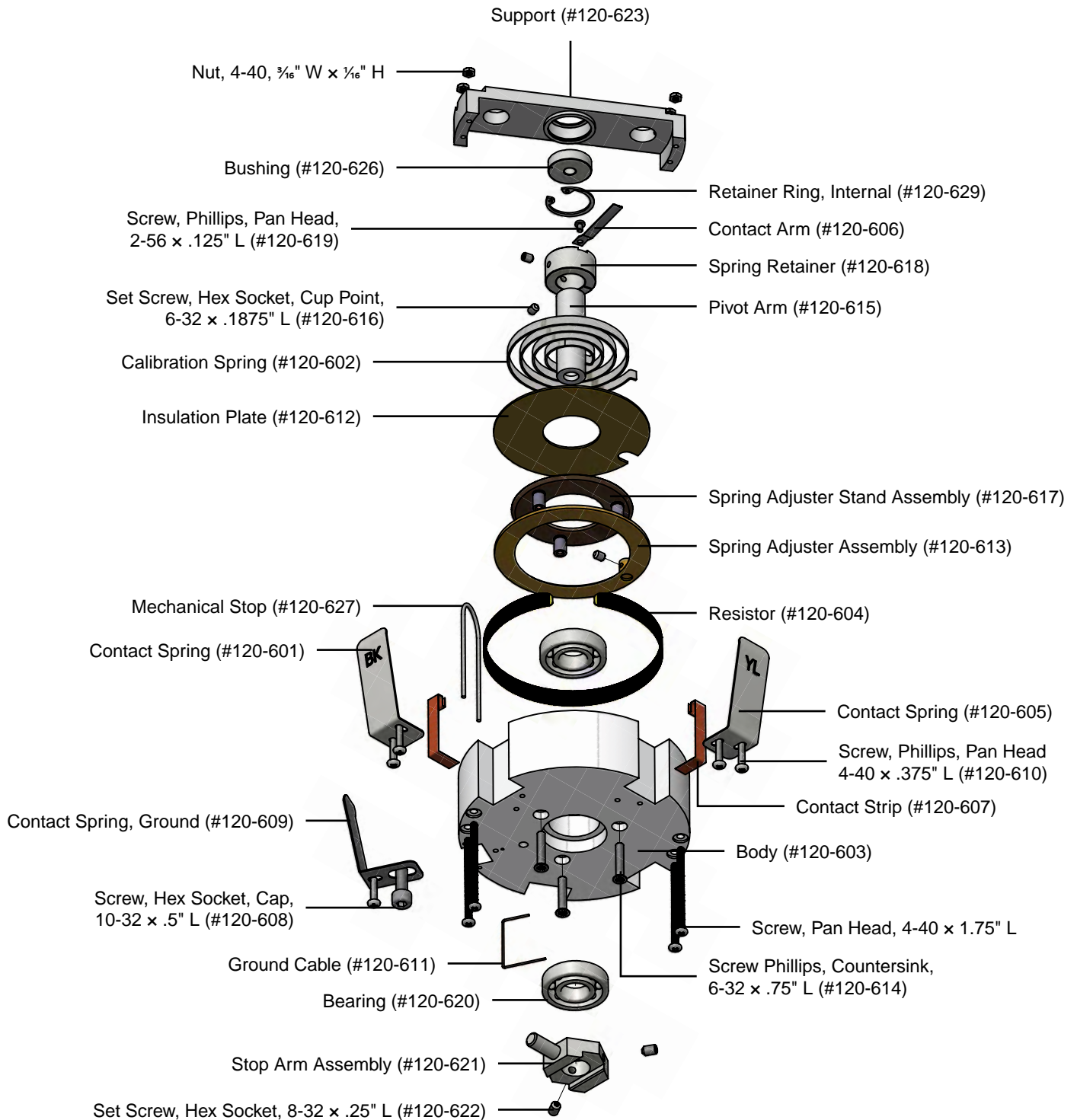
Slurry Cup Components

#120-519	Slurry Cup Assembly without Expansion Chamber
#120-501	Sleeve
#120-502	Diaphragm, Molded
#120-502-1	Flat Diaphragm, Buna-N
#120-503	Paddle Pin
#120-504	Pivot Bearing
#120-505	Pivot Bearing Gasket
#120-506	Paddle
#120-508	Diaphragm Retaining Ring
#120-509	Drive Disk
#120-510	Drive Bar
#120-511	Shear Pin
#120-512	Drive Pin
#120-513	Gasket



#120-90 - Model 130 Benchtop Consistometer

#120-628 - Potentiometer Assembly



Cement - Conditioning

MODEL 80 RECORDING ATMOSPHERIC CONSISTOMETER

#120-80 115 VOLT
#120-80-1 230 VOLT

Size: 30" x 16" x 18" (76 x 41 x 46 cm)
Weight: 105 lb (47.7 kg)

Shipping Size: 33" x 21" x 45" (84 x 53 x 114 cm)
Shipping Weight: 240 lb (108.9 kg)

The Model 80 Recording Atmospheric Consistometer is designed to pre-condition cement slurries in accordance with API Specification 10. Determination of rheological properties, examination of free water content, and evaluation of the API fluid loss test all require that the cement slurry be conditioned by an atmospheric consistometer. This model includes a chart recorder to monitor temperature and consistency over time.

Features

- Multi-channel paperless graphic recorder measures temperature and consistency of each container
- Unit operates at atmospheric pressure
- Microprocessor temperature controller
- Digitally displays process temperature
- Heat transfer fluid is circulated
- Dual sample container design
- Two alarms indicate termination of the test
- Cooling coils
- Stainless steel temperature bath
- Deadweight calibration unit

Specifications

- Maximum Temperature: 200°F (93.3°C)
- Heater: 1,500 Watt
- Speed: 150 RPM

Instrument Requirements

- Water supply for cooling
- Water drain
- 115 Volt at 20 Amp or 230 Volt at 10 Amp, 50 / 60 Hz

Components

#120-001 Mineral Oil, 1 Gallon
#120-75-9 Weight Hanger
#120-75-10 Weight Set, Slotted
#120-75-19 Paddle Assembly
#120-80-4 Temperature Controller
#120-80-5 Chart Recorder
#120-80-6 Motor
#121-001 O-ring for Container
#121-002 Retaining Ring
#121-003 Paddle Assembly
#121-007 Rotator Thrust Bearing
#121-008 Thermocouple
#121-009 Timing Belt
#121-010 Heater (115 Volt)
#121-010-1 Heater (230 Volt)
#152-37 AC Power Cord (115 Volt)
#152-38 AC Power Cord (230 Volt)

For 115 Volt (120-80):

#122-073 Fuse for 15 VDC, 2 Amp, 5 mm x 20 mm
#122-074 Fuse for Motor and Cooling, 4 Amp, 5 mm x 20 mm
#122-077 Fuse for Heater, 10 Amp, 5 mm x 20 mm
#122-078 Fuse for Main Power, 15 Amp, 5 mm x 20 mm

For 230 Volt (120-80-1):

#121-016 Fuse for Heater, 7 Amp, ¼" x 1 ¼"
#122-073 Fuse for Motor, 15 VDC, and Cooling, 2 Amp, 5 mm x 20 mm
#122-077 Fuse for Main Power, 10 Amp, 5 mm x 20 mm

Optional

#120-82 Spare Parts Kit for #120-80
#120-83 Spare Parts Kit for #120-80-1



#120-80 - Model 80 Recording Atmospheric Consistometer

MODEL 60 ATMOSPHERIC CONSISTOMETER

#120-75 115 VOLT

#120-75-1 230 VOLT

Size: 24" x 16" x 18" (61 x 41 x 46 cm)

Weight: 95 lb (43.1 kg)

Shipping Size: 32" x 21" x 32" (81 x 53 x 81 cm)

Shipping Weight: 200 lb (90.7 kg)

The Model 60 Atmospheric Consistometer is used for conditioning cement slurries as specified within API Specification 10. Determination of rheological properties, examination of free water content, and evaluation of the API fluid loss test all require that the cement slurry be pre-conditioned by an Atmospheric Consistometer.

Features

- Unit is operated at atmospheric pressure
- Temperature is maintained via a PID controller
- Process temperature is displayed digitally
- Heat transfer fluid is continuously circulated
- Dual container design
- Cooling system included
- Stainless steel temperature bath
- Deadweight calibration unit

Specifications

- Maximum temperature: 200°F (93.3°C)
- Heater: 1,500 Watt
- Speed: 150 RPM

Instrument Requirements

- Water supply for cooling
- Water drain
- 115 Volt at 19 Amp or 230 Volt at 9.5 Amp, 50 / 60 Hz

Components

#120-001	Mineral Oil, 1 Gallon
#120-511	Slurry Cup Shear Pin
#120-75-9	Weight Hanger
#120-75-10	Weight Set, Slotted
#120-75-16	Calibration Stand
#120-75-17	Drive Assembly
#120-75-18	Potentiometer Assembly
#120-75-19	Paddle Assembly
#120-75-20	Slurry Cup Assembly
#120-80-4	Temperature Controller
#120-80-6	Motor
#121-001	O-ring, Container
#121-002	Retaining Ring
#121-007	Rotator Thrust Bearing
#121-008	Thermocouple
#121-009	Timing Belt
#121-010	Heater (115 Volt)
#121-010-1	Heater (230 Volt)
#121-013	Slurry Container
#121-014	Bottom for Slurry Container

For 115 Volt (120-75):

#120-76-002	Fuse for Heat, 15 Amp, ¼" x 1 ¼"
#120-76-003	Fuse for Main Power, 20 Amp, ¼" x 1 ¼"
#152-37	AC Power Cord
#165-14-10	Fuse for Cooling, ½ Amp, ¼" x 1 ¼"
#172-07	Fuse for Motor, 5 Amp, ¼" x 1 ¼"

For 230 Volt (120-75-1):

#120-76-001	Fuse for Motor, 3 Amp, ¼" x 1 ¼"
#121-016	Fuse for Heat, 7 Amp, ¼" x 1 ¼"
#172-01	Fuse for Cool, ½ Amp, ¼" x 1 ¼"
#172-09	Fuse for Main, 10 Amp, ¼" x 1 ¼"
#220-10A-EURO	AC Power Cord

Optional

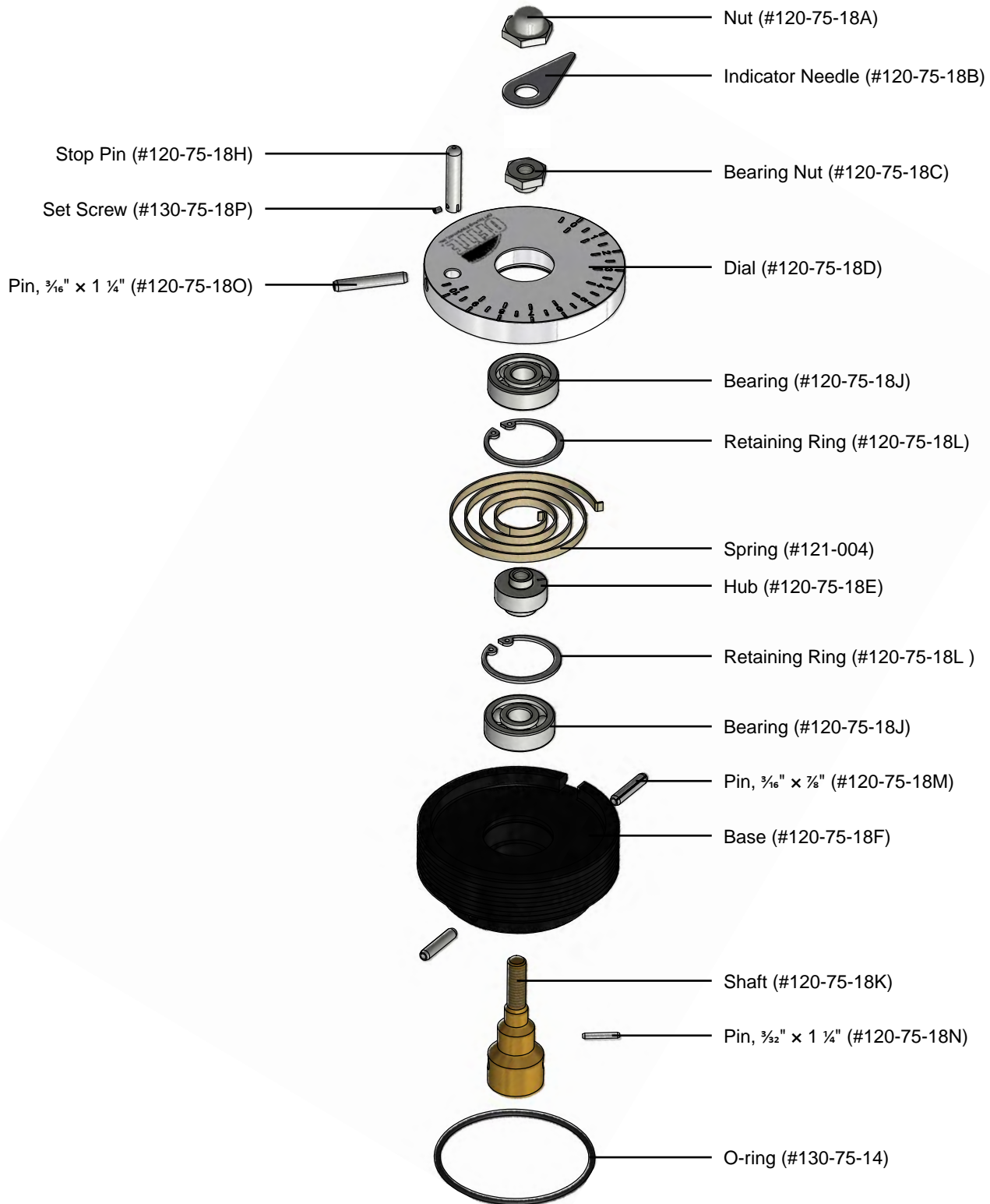
#120-76	Spare Parts Kit for #120-75
#120-76-1	Spare Parts Kit for #120-75-1



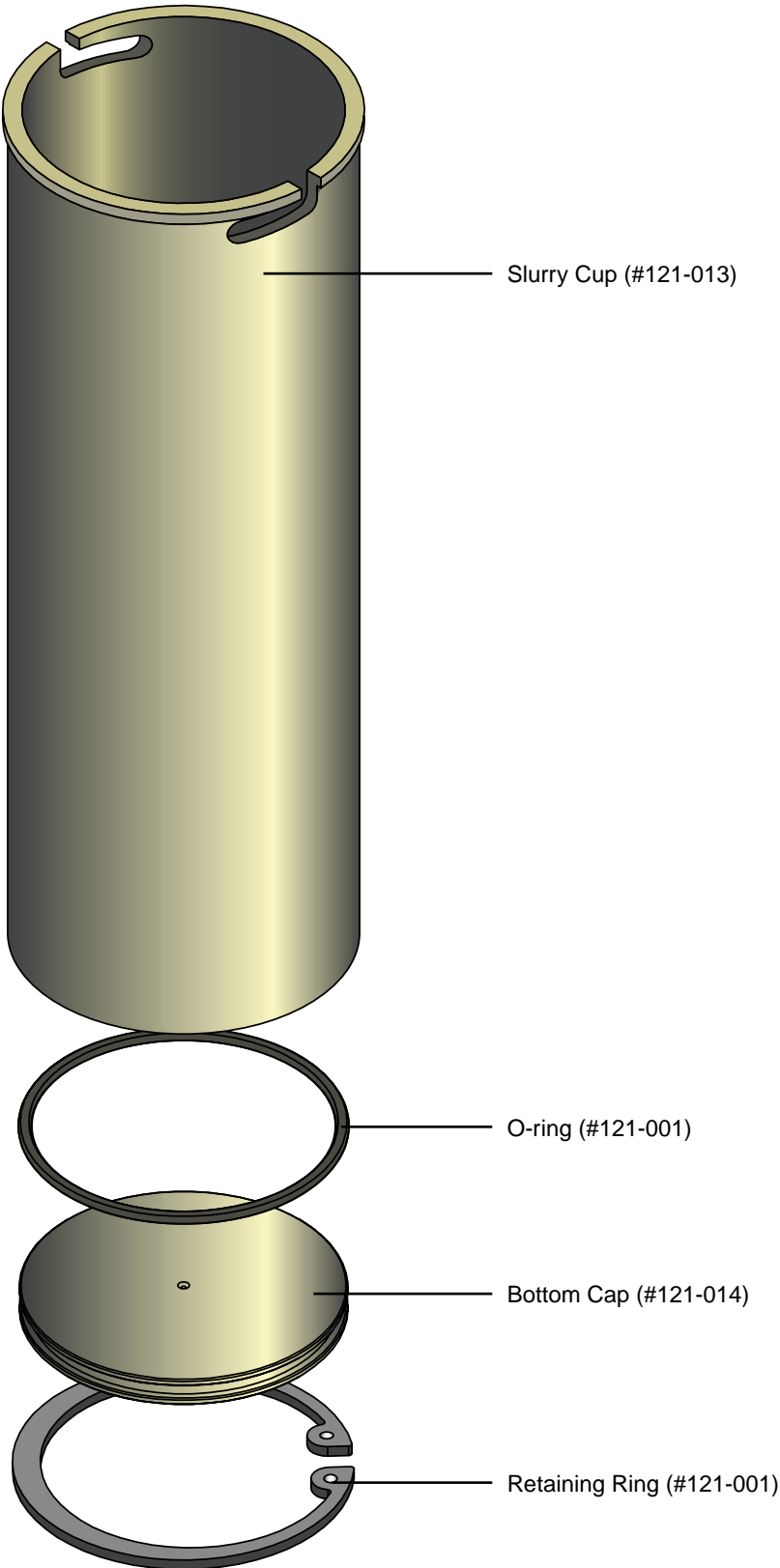
#120-75 - Model 60 Atmospheric Consistometer

Cement - Conditioning

#120-75-18 - Potentiometer Assembly for Atmospheric Consistometer



#120-75-20 - Slurry Cup Assembly for Atmospheric Consistometer



Cement - Gas Migration

GAS MIGRATION TESTER

#120-57 115 VOLT

#120-57-1 230 VOLT

Shipping Size: 37" x 41" x 50" (94 x 104 x 127 cm)

Shipping Weight: 450 lb (204.1 kg)

The Gas Migration Tester helps predict and overcome the potential for gas migration after cementing. This unit evaluates both the potential and severity of gas migration at downhole conditions with the recommended slurry. This allows for the design of the most economical and reliable cement slurry for a particular well.

Features

- Helps predict and overcome the potential for gas migration after cementing
- Evaluates both the potential and severity of gas migration at downhole conditions
- Allows for the design of the most economical and reliable cement slurry for a particular well

Specifications

- Monitors and records both liquid and gas flows
- Multichannel DAQ and computer control
- DAQ registers all parameters in real time
- Test can be performed on real core samples or standard fluid loss screens
- Optional chiller enables sub-ambient testing
- Maximum pressure: 2,000 PSI (13,790 kPa)
- Maximum Temperature: 400°F (204.4°C)

Requirements

- Nitrogen: 1,000 - 2,000 PSI (6.9 - 13.8 MPa)
- Power: 115 Volt at 8 Amp or 230 Volt at 4 Amp, 50 / 60 Hz

Components

#120-57-01	Screen, 325 Mesh, Detachable
#120-57-02	Screen, 60 Mesh
#120-57-03	Piston Seal
#120-57-04	O-ring for Screen
#120-57-05	Rod Seal
#120-57-06	Packing Grease
#120-57-07	Pressure Sensor, 0 - 2,500 PSI
#120-57-08	Load Cell
#120-57-10	Cell Body
#120-57-11	Inlet Cap
#120-57-12	Inlet Cap Screw
#120-57-13	Piston
#120-57-14	Piston Seal Screw Ring
#120-57-15	Piston Rod
#120-57-16	Seal Plug
#120-57-17	Piston Retaining Ring
#120-57-18	Inlet Cap Wrench
#120-57-19	Stand
#120-70-1-052	Hose, 20"
#120-70-1-064	Outlet Cap
#120-75-10	Weight Set
#120-910-011	Stopper, Solid, #11
#120-910-012	Stopper, Solid, #10
#120-910-016	Plate for Load Cell
#120-910-034	Backup Ring, Viton®
#120-910-052	Erlenmeyer Flask, 500 mL
#120-910-053	Erlenmeyer Flask, 1000 mL
#120-910-054	Erlenmeyer Flask, 2000 mL
#120-910-074	Sample Cylinder, 500 cm
#130-75-20	Spanner Wrench, 3/16"

#130-75-71	Computer Monitor
#130-75-74	Desktop Computer
#152-37	AC Power Cord (115 Volt)
#153-67	Syringe, Disposable, 60 cc
#154-63	Spatula, Micro Spoon, Flat, 9"
#170-11	Heating Element
#170-13-3	O-ring for Cell
#170-17	O-ring for Valve Stem
#170-18	Cement Screen, Detachable
#170-35	Wrench, Adjustable, 6"
#170-72	Spacer, 1/4"
#170-77	O-ring for Spacer

For 115 Volt (120-57):

#122-073	Fuse for Electronics, 2 Amp, 5 mm x 20 mm
#122-077	Fuse for Heater, 10 Amp, 5 mm x 20 mm
#152-37	AC Power Cord

For 230 Volt (120-57-1):

#122-073	Fuse for Electronics, 2 Amp, 5 mm x 20 mm
#122-074-1	Fuse for Heater, 5 Amp, 5 mm x 20 mm
#220-10A-EURO	AC Power Cord, 230 Volt, European
#220-15A-USA	AC Power Cord, 230 Volt, USA

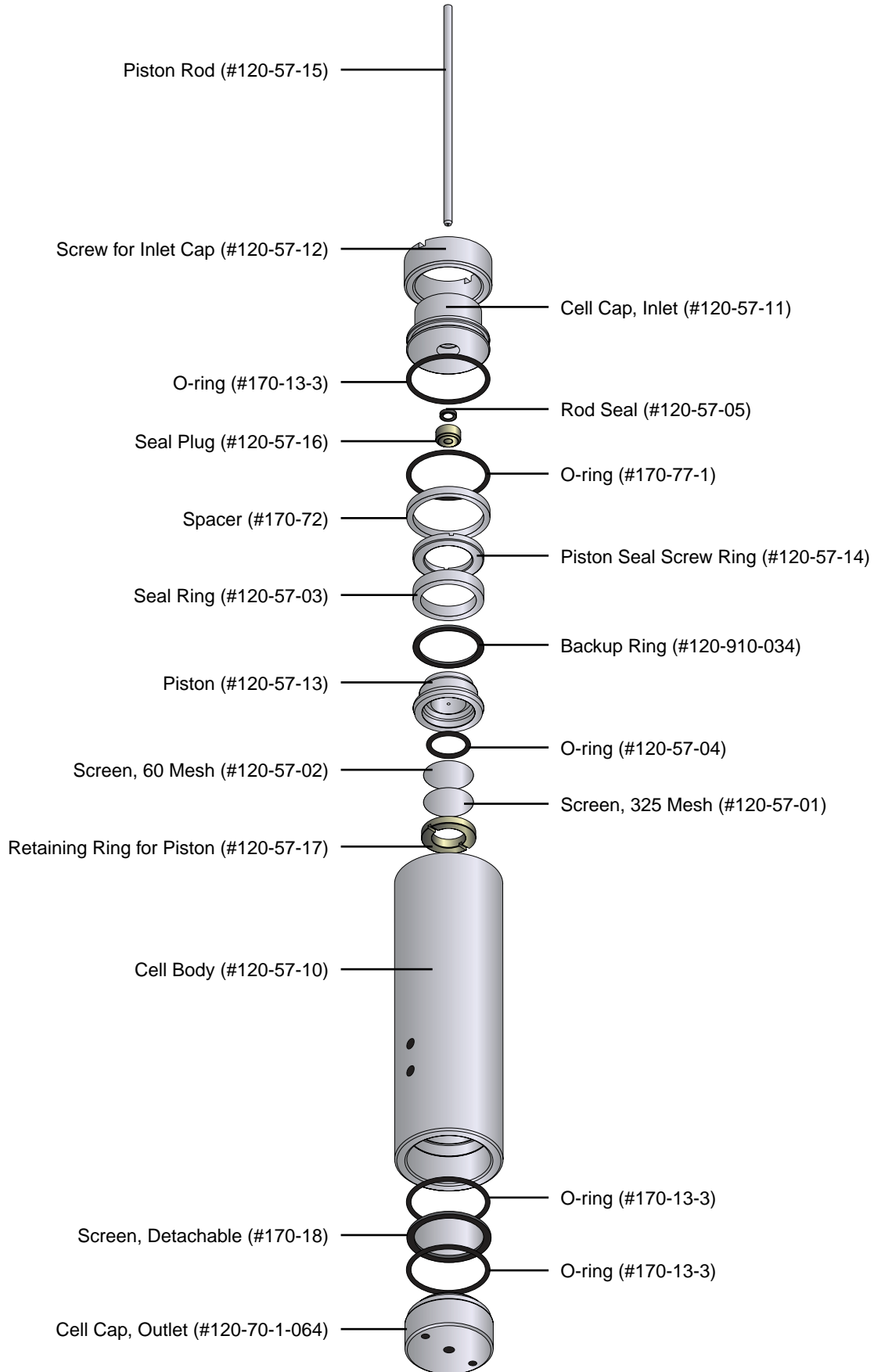
Optional

#120-57-SP	Spare Parts Kit
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#120-57 - Gas Migration Tester

#120-57-09 - Cell Assembly Gas Migration Tester



Cement - Fluid Loss

MODEL 40 STIRRED FLUID LOSS TESTER

#120-70 115 VOLT

#120-70-1 230 VOLT

Size: 36" x 28" x 36" (91 x 71 x 91 cm)

Weight: 290 lb (131.5 kg)

The Stirred Fluid Loss Tester provides a reliable means of determining the fluid loss characteristics of well cements. The ergonomic and easy-to-use design can condition and test cement slurries under HTHP conditions in accordance with API Specification 10 guidelines. An innovative sealing system eases cleanup and extends the usable life of consumable parts.

Features

- Provides a reliable means of determining the fluid loss characteristics of a well cement
- Temperature is maintained by PID temperature controller
- Filtration portion of cell is dimensionally equivalent to an API approved HTHP test cell
- Optional chiller enables sub-ambient testing

Specifications

- Maximum Pressure: 2,000 PSI (13.8 MPa)
- Maximum Temperature: 400°F (204.4°C)
- Paddle Speed: 5 - 200 RPM

Instrument Requirements

- N₂: 2,000 - 2,500 PSI
- Water: 40 PSI
- Water Drain
- 115 Volt at 8 Amp or 230 Volt at 4 Amp, 50 / 60 Hz

Components

#120-257	O-ring for Drain Plug
#120-503	Paddle Pin
#120-70-001	Digital Speed Indicator
#120-70-1-020	Back Pressure Receiver
#120-70-1-026	Paddle Assembly
#120-70-1-043	Drive Belt
#120-70-1-046	Bearing
#120-70-1-049	Spanner Wrench
#120-70-1-052	Hose, 20"
#120-70-1-053	Hose, 24"
#120-70-1-062	Test Cell
#120-70-1-064	Cell Cap, Filter Side
#120-70-1-066	Heater Assembly
#120-70-1-067	Plunger
#120-70-1-068	Cell Cap with Drive Assembly
#120-80-4	Temperature Controller
#120-80-6	Motor
#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#153-16	Graduated Cylinder, 25 mL x 3/16 mL, Glass
#165-44-2	Anti Seize Compound, Silver, 7g Pouch
#170-13-3	O-ring for Cell, Viton®
#170-16	Valve Stem
#170-17	O-ring for Valve Stem
#170-18	Cement Screen, Detachable
#170-20	Manifold Block
#170-35	Wrench, Adjustable, 6"
#171-11	O-ring for Back Pressure Receiver, Nitrile
#171-23-1	Safety Pin with Lanyard

For 115 Volt (120-70):

#122-074	Fuse for Motor, 4 Amp, 5 mm x 20 mm
#122-075-1	Fuse for Heater, 8 Amp, 5 mm x 20 mm
#122-077	Fuse for Main Power, 10 Amp, 5 mm x 20 mm
#152-37	AC Power Cord

For 230 Volt (120-70-1):

#122-073	Fuse for Motor, 2 Amp, 5 mm x 20 mm
#122-074	Fuse for Heater, 4 Amp, 5 mm x 20 mm
#122-075-1	Fuse for Main Power, 8 Amp, 5 mm x 20 mm
#220-10A-EURO	AC Power Cord

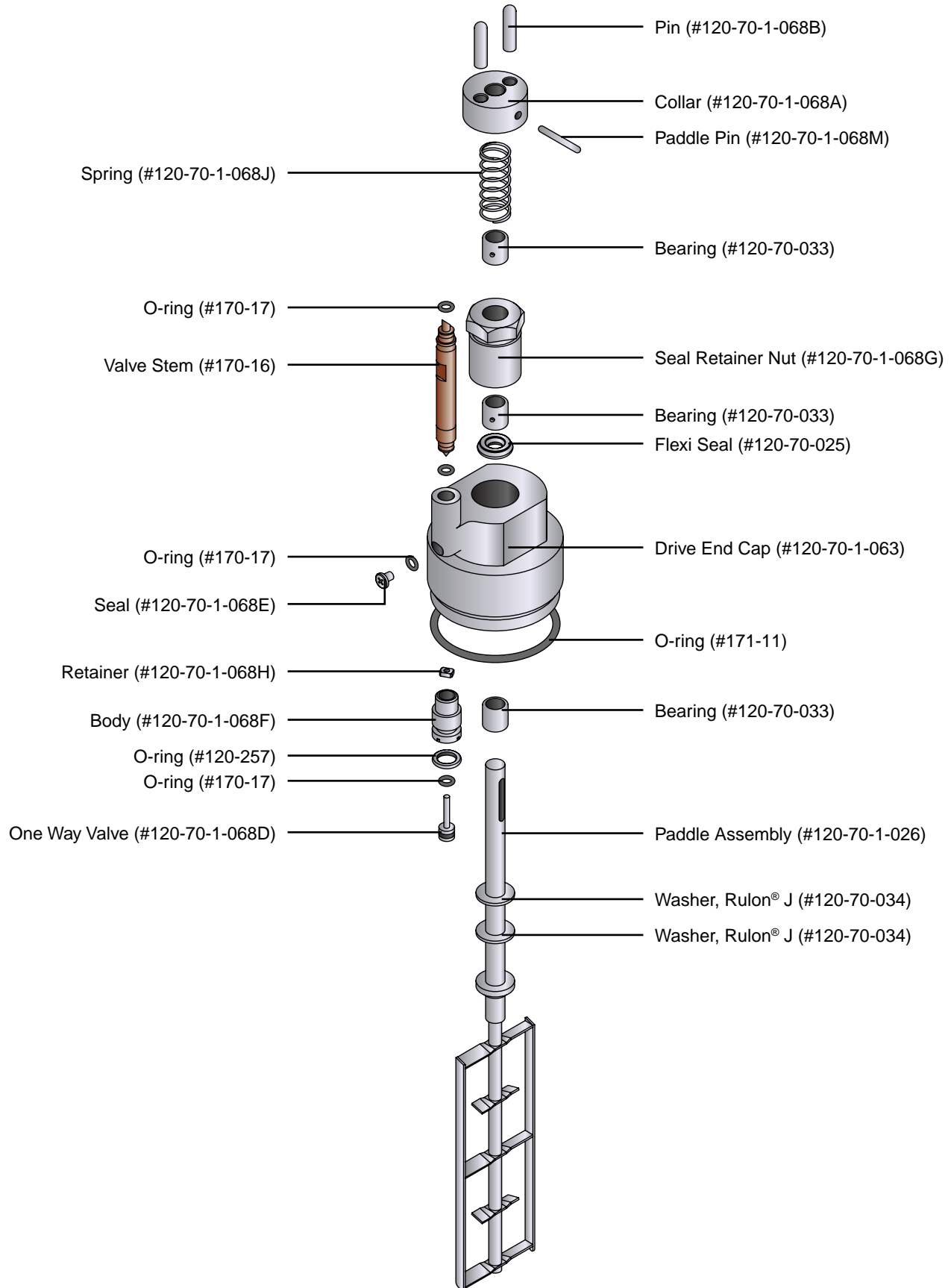
Optional

#120-71	Spare Parts Kit
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#120-70 - Stirred Fluid Loss Tester

#120-70-1-068 - Drive End Cap Assembly Stirred Fluid Loss Tester



Cement - Fluid Loss

HTHP FILTER PRESS, 500 ML, DOUBLE CAPPED CELL, THREADED, FOR CEMENT, N₂ PRESSURE

#171-192 115 VOLT

#171-192-1 230 VOLT

Size: 10" x 18" x 42" (25 x 46 x 107 cm)

Weight: 53 lb (24.1 kg)

The all new threaded cap cell design not only allows for testing to be done at higher temperatures and pressures but ensures safety for the operator. In addition, our modular inner cap system allows multiple filter media to be used with one cell. All cells are provided with pressure certification, unique serialization, and material certification which provides true traceability.

Features

- Threaded cell caps are safer than traditional designs
- Interchangeable caps enable testing with filter paper, ceramic disks, or cement screens with the same cell body

Specifications

- Maximum Pressure: 5,000 PSI (34.5 MPa)
- Maximum Temperature: 500°F (260°C)

Requirements

- Power: 115 Volt at 6.75 Amp or 230 Volt at 3.75 Amp, 50 / 60 Hz
- N₂: Up to 1500 PSI

Components

#153-12	Graduated Cylinder, 100 mL x 1 mL, Glass
#154-20	Thermometer with Metal Dial, 8" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#171-00	Heating Jacket, 115 Volt
#171-01	Heating Jacket, 230 Volt
#170-10	Pilot Light
#170-11	Heating Element, 200 Watt
#171-32	Knob
#171-44	Rubber Foot
#171-71	Thermostat
#171-87	Location Pin
#171-94	Cell Rest Plunger Assembly
#170-13-3	O-ring for Cell, Viton®
#170-17	O-ring for Valve Stem, Viton®
#170-35	Wrench, Adjustable, 6"
#171-10	Back Pressure Receiver, 100 mL
#171-192-S	HTHP Filter Press Cell with Threaded Cap, 500 mL, for Cement
#171-24	Dual Nitrogen Manifold

Optional

#143-07	Regulator Repair Kit
#170-37	Nitrogen Cylinder
#170-40	Cell Carrying Tool
#170-91	Pressure Relief Tool
#171-190-028	Cell Stand
#171-192-SP	Spare Parts Kit



171 Series HTHP Filter Press with Nitrogen Manifold, 500 mL

HTHP FILTER PRESS, 175 ML, DOUBLE CAPPED CELL, THREADED, FOR CEMENT, N₂ PRESSURE

#170-182 115 VOLT

#170-182-1 230 VOLT

Size: 7.5" x 11" x 23.5" (19 x 28 x 60 cm)

Weight: 27 lb (12.3 kg)

The all new threaded cap cell design not only allows for testing to be done at higher temperatures and pressures but ensures safety for the operator. In addition, our modular inner cap system allows multiple filter media to be used with one cell. All cells are provided with pressure certification, unique serialization, and material certification which provides true traceability.

Features

- Threaded cell caps are safer than traditional designs
- Interchangeable caps enable testing with filter paper, ceramic disks, or cement screens with the same cell body
- Includes cell caps for testing with cement screens

Specifications

- Maximum Pressure: 5,000 PSI (34.5 MPa)
- Maximum Temperature: 500°F (260°C)

Requirements

- 115 Volt at 4 Amp or 230 Volt at 2 Amp, 50 / 60 Hz

Components

#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#154-10	Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-00-1	Heating Jacket, 115 Volt
#170-01-1	Heating Jacket, 230 Volt
#170-05	Thermostat
#170-09	Insulation Board
#170-10	Pilot Light
#170-11	Heating Element, 200 Watt
#170-30	Thermostat Cover
#170-30-001	Fish Paper
#170-44	Rubber Foot
#171-32	Knob
#170-06-1	Back Pressure Receiver, 15 mL
#170-13-3	O-ring for Test Cell, Viton® 75D*, Qty: 16
#170-17	O-ring for Valve Stem, Viton® 75D, Qty: 16
#170-182-S	Test Cell for Cement
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35	Adjustable Wrench, 6"
#171-190-057	O-ring for Valve Stem, Viton® 90D**, Qty: 24
#171-190-060	O-ring for Test Cell, Viton® 90D, Qty: 24
#171-24	Dual Nitrogen Manifold

Optional

#143-07	Regulator Repair Kit
#170-37	Nitrogen Cylinder
#170-40	Cell Carrying Tool
#170-91	Pressure Relief Tool
#170-182-SP	Spare Parts Kit
#171-190-028	Cell Stand

HTHP FILTER PRESS, 175 ML, DOUBLE CAPPED CELL, LOCKING SCREWS, FOR CEMENT, N₂ PRESSURE

#170-00-2 115 VOLT

#170-01-2 230 VOLT

Size: 7.5" x 11" x 23.5" (19 x 28 x 60 cm)

Weight: 38 lb (17.2 kg)

Specifications

- Maximum Pressure: 2,000 PSI (13.8 MPa)
- Maximum Temperature: 400°F (204.4°C)

Requirements

- 115 Volt at 4 Amp or 230 Volt at 2 Amp, 50 / 60 Hz

Components

#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#154-10	Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-00-1	Heating Jacket, 115 Volt
#170-01-1	Heating Jacket, 230 Volt
#170-05	Thermostat
#170-09	Insulation Board
#170-10	Pilot Light
#170-11	Heating Element, 200 Watt
#170-30	Thermostat Cover
#170-30-001	Fish Paper
#170-44	Rubber Foot
#171-32	Knob
#170-06-1	Back Pressure Receiver for N ₂ Pressure, 15 mL
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35	Adjustable Wrench, 6"
#170-45	Test Cell with Cement Screens, Double Cap
#171-24	Dual Nitrogen Manifold, 1350 and 750 PSI
#143-07	Regulator Repair Kit
#170-00-2-SP	Spare Parts Kit
#170-37	Nitrogen Cylinder
#170-40	Cell Carrying Tool
#170-91	Pressure Relief Tool
#171-190-028	Cell Stand



170 Series HTHP Filter Press with N₂ Pressure, 175 mL

* For tests up to 400°F (204.4°C)

** For tests above 400°F (204.4°C)

Cement - Expansion

VOLUMETRIC CEMENT EXPANSION DEVICE #120-54

Size: 30" x 18" x 43" (76 x 46 x 109 cm)
Weight: 95 lb (43 kg)

Shipping Size: 37" x 35" x 53" (94 x 89 x 135 cm)
Shipping Weight: 330 lb (149.7 kg)

The Volumetric Cement Expansion Device (VCED) is an accessory component to the Ultrasonic Cement Analyzer (UCA). It can be purchased with a new UCA or as an add-on component for existing units. This system continuously measures the expansion or contraction of a cement sample while simultaneously running a standard UCA test to measure compressive strength.

Features

- Continuously measures the expansion or contraction of a cement sample
- Accessory component to the Ultrasonic Cement Analyzer

Specifications

- Continuous measurement under high temperature, high pressure conditions:
 - Maximum pressure: 15,000 PSI (103.4 MPa)
 - Maximum temperature: 400°F (204.4°C)
- Maximum measurement: ±15%
- Measurement range: ±30 mL
- Sample volume: 190 mL
- Programmable temperature control
- Pressure control: ±25 PSI

Requirements

- Air: 100 - 150 PSI
- Water: 40 PSI
- Water Drain
- Power: 230 Volt, 1 Amp, 50 / 60 Hz

Components

- #130-77-030 Valve
- #120-106-001 Filter Element, High Pressure
- #120-90-035-1 Filter Element, Low Pressure

Optional

- #120-54-001-SP Spare Parts Kit for Pump



#120-54 - Volumetric Cement Expansion Device
with Single Cell UCA

CIRCULAR CEMENT EXPANSION MOLD KIT #122-90

Size: 13.5" x 11" x 5.5" (34 x 28 x 14 cm)
Weight: 7.125 lb (3.2 kg)

The Circular Cement Expansion Mold is designed to measure the expansion or shrinkage characteristics of well cement slurries. In a typical well cementing operation, a cement slurry is pumped into the annulus between the well casing and the bore hole. As the cement slurry hydrates, it undergoes a volume change which translates into bulk expansion or shrinkage. Knowing the amount of expansion or shrinkage allows users to design cement systems which can achieve optimal bonding with the borehole and well casing without sacrificing the integrity of the cement matrix.

Features

- Measures expansion/shrinkage of well cement
- Conforms to API Recommended Practice 10B-5

Included Items

- #122-90-010 Circular Cement Expansion Mold
- #122-90-020 Micrometer Stand
- #122-90-030 Micrometer
- #122-90-040 Carrying Case with Custom Foam Insert



#122-90 - Circular Cement Expansion Mold Kit

PRESSURIZED FLUID DENSITY SCALE

#100-70

Size: 21.5" x 5.5" x 4" (55 x 14 x 10 cm)

Weight: 6.8 lb (3 kg)

Drilling fluids and cement slurries often have a considerable amount of entrained or trapped air that may give erroneous results when determining fluid density. This air volume may be reduced or eliminated by pressurizing the sample cup, which will then give more accurate density readings of the fluid itself.

The Pressurized Fluid Density Scale consists of a sample cup of known volume balanced by a fixed counterweight at the opposite end of a balance beam. A plunger adds pressure to the sample cup through a check valve. A sliding weight moves along a graduated scale and a level bubble on the beam indicates when the system is in balance. The position of the rider on the scale indicates the density of the sample.

Features

- Stronger, more rugged design
- Reduce need for re-calibration
- Machined with Computer Numerically Controlled (CNC) process
- Corrosion resistant
- Easy to clean

Density Measurement Ranges

- 52 - 164 lb / ft³
- 6.9 - 21.9 ppg
- .83 - 2.63 specific gravity
- 360 - 1130 PSI / 1000 ft

What's Included

- Pressurized Mud Balance
- Plunger
- Carrying Case

Components

#100-29	Level Bubble Vial
#100-56	Steel Shot for Calibrating
#100-60-09	Check Valve
#100-60-24	Retaining Ring for Check Valve
#100-70-02	Lid
#100-70-03	Cap
#100-70-04	Rider
#100-70-05	Shotwell
#100-70-06	O-ring for Lid
#100-70-07	Plunger Assembly
#100-60-13	Packing Cup
#100-60-14	Backup Washer
#100-60-18	Screw, Shoulder
#100-70-010	Knob
#100-70-11	Piston Rod
#100-70-13	Compression Cylinder
#100-70-14	Lower Cap
#100-70-15	Upper Cap
#170-07	O-ring
#100-70-08	Carrying Case
#100-70-24	Base
#115-00-002	Set Screw for Knife Edge
#115-32	Knife Edge
#142-54	O-ring for Check Valve Nozzle
#142-56	O-ring for Check Valve



#100-70 - Pressurized Fluid Density Scale

Cement - Slurry Prep

MODEL 20 CONSTANT SPEED BLENDER, 1 LITER

#120-60 115 VOLT

#120-60-1 230 VOLT

Shipping Size: 22" x 17" x 39" (56 x 43 x 99 cm)

Shipping Weight: 105 lb (47.6 kg)

Features

- Facilitates the preparation of oil well cement for testing according to API guidelines
- Hardened stainless steel mixing blades
- Stainless steel mixing container
- Two preset mixing speeds and variable speed
- Rotational speed is maintained with microprocessor
- Timing relays automatically control mixing times
- Digital instrumentation provides excellent readability
- Optional torque measuring module tests crosslinking time for fracturing fluids

Requirements

- Power: 115 Volt at 7 Amp or 230 Volt at 3.5 Amp, 50 / 60 Hz

Components

#122-073-1	Fuse, 3 Amp, 5 mm x 20 mm (230 Volt)
#122-074-1	Fuse, 5 Amp, 5 mm x 20 mm (230 Volt)
#122-075	Fuse, 7 Amp, 5 mm x 20 mm (115 Volt)
#122-077	Fuse, 10 Amp, 5 mm x 20 mm (115 Volt)
#122-200	Blending Assembly and Square Drive
#122-202	Container, 1 Liter, Stainless Steel
#122-203	Lid for 1 Liter Container
#122-204	Gasket
#122-207	Blade
#122-208-1	Exciter Gear, Ten Tooth
#122-209	Blender Assembly with Exciter Gear, Pickup Cable, and Stainless Steel Container, 230 Volt
#122-210	Blender Assembly with Exciter Gear, Pickup Cable, and Stainless Steel Container, 115 Volt
#122-209-2	Magnetic Pick Up
#122-211	Square Drive Stud
#122-212	Coupling
#122-213	Slinger
#122-215	Shaft
#122-216	Washer, Stainless Steel

Optional

#120-61	Spare Parts Kit, 115 Volt
#120-61-1	Spare Parts Kit, 230 Volt
#122-202-1	Container, Glass, 1 Liter



#120-60 - Constant Speed Blender, 1 Liter

MODEL 20 CONSTANT SPEED BLENDER, 4 LITER

#120-65 115 VOLT

#120-65-1 230 VOLT

Shipping Size: 34" x 21" x 40" (86 x 53 x 102 cm)

Shipping Weight: 200 lb (90.7 kg)

Requirements

- Power: 115 Volt at 15 Amp or 230 Volt at 7.5 Amp, 50 / 60 Hz

Components

#122-201	Blending Assembly and Square Drive
#122-205	Lid for 4 Liter Container
#122-206	Container, 4 Liter, Stainless Steel
#122-208-2	Exciter Gear, Ten Tooth
#120-65-018	Blender, 4 Liter (115 Volt)
#120-65-1-018	Blender, 4 Liter (230 Volt)

Optional

#120-66	Spare Parts Kit
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#120-65 - Constant Speed Blender, 4 Liter

FOAMED CEMENT BLENDING CONTAINER

#124-00



#124-00 - Foamed Cement Blending Container

CEMENT PERMEAMETER

#120-87

STANDARD

#120-87-DAS

WITH DATA ACQUISITION SYSTEM

Size: 22" x 18" x 24" (56 x 46 x 61 cm)

Weight: 80 lb (36.3 kg)

Shipping Size: 24" x 24" x 35" (56 x 61 x 89 cm)

Shipping Weight: 175 lb (79.4 kg)

The Cement Permeameter is designed to measure the permeability of cement core specimens one inch in diameter and one inch in length. A core specimen is placed into a core sleeve, which is then inserted into a modified Hassler-style test cell. Nitrogen at a constant flow rate is forced through the core and the differential pressure across the core is measured. The flowrate is measured with calibrated flowmeters. Viscosity is easily determined by the use of nitrogen property tables. These variables are incorporated into Darcy's law to calculate sample permeability.

Features

- Measures the permeability of a cement specimen
- Modified Hassler cell accepts specimens 1" in diameter and 1" in length
- Instrumentation gauge displays driving pressure
- All Hassler components made from 316 stainless steel
- Nitrogen used as test fluid
- Conforms to API specification 10 guidelines

Requirements

- Standard:
 - Nitrogen: up to 500 PSI (3,447 kPa)
- With Data Acquisition System
 - Compressed Air: 100 PSI (689.5 kPa)
 - Gas Pressure: Standard Air, Carbon Dioxide, Nitrogen or Oxygen: up to 500 PSI (3,447 kPa)
 - Electrical: 115 / 230 Volt, 50 / 60 Hz, 3 Amp

Components

#120-85-003	Cement Mold, 4 Gang, Brass
#120-85-010	Caliper, Digital, 0 - 6", 0.001", Stainless Steel
#122-221	O-ring
#122-222	Flowmeter, Low Range
#122-223	Flowmeter, High Range
#122-224	Valve



#120-87-DAS - Cement Permeameter with Data Acquisition System



#120-87 - Cement Permeameter

Drilling Fluids - Viscosity

MODEL 3040 HTHP VISCOMETER

The Model 3040 is a fully-automated, high temperature, high pressure viscometer. It accurately determines the rheological properties of completion fluids and drilling fluids in terms of shear stress, shear rate, time, and temperature at pressures up to 40,000 PSI and temperatures up to 600°F. An optional Chiller is available for those situations in which the fluid sample needs to be cooled, rather than heated, further increasing the flexibility of the system.

Like OFITE's other computer-controlled viscometers, this model features our easy-to-use ORCADAs[®] software. Using this exclusive software, a computer novice can operate the viscometer, and yet the system is versatile enough for advanced research and demanding test parameters.

Features

- Fully-automated control (temperature, pressure, RPM)
- Includes easy-to-use ORCADAs[®] software
- Optional chiller available

Specifications

- Maximum Pressure: 40,000 PSI (275.8 MPa)
- Maximum Temperature: 600°F (315.6°C)

Requirements

- 115 / 230 Volt, 50 / 60 Hz
- Air: 150 - 200 PSI
- Water: 40 PSI

What's Included

- Model 3040 Viscometer
- Mineral Oil
- Tools
- Desktop PC with Monitor and ORCADAs[®] Software
- Calibration Fluid, 100 cP

MODEL 3025 PRESSURIZED VISCOMETER #130-83

The Model 3025 is a fully-automated, pressurized viscometer. It accurately determines the fluid characteristics of stimulation fluids, completion fluids, drilling fluids, and cement in terms of shear stress, shear rate, time, and temperature at pressure elevated temperature and pressure.

Using the exclusive ORCADAs[®] software, a computer novice can operate the viscometer, and yet the system is versatile enough for advanced research and demanding test parameters. It is suitable for both field and laboratory use. A waterproof, compartmentalized case with wheels makes the unit completely portable.

Features

- Automated control (temperature and RPM)
- Includes easy-to-use ORCADAs[®] software and laptop
- Hastelloy[®]-wetted parts

Specifications

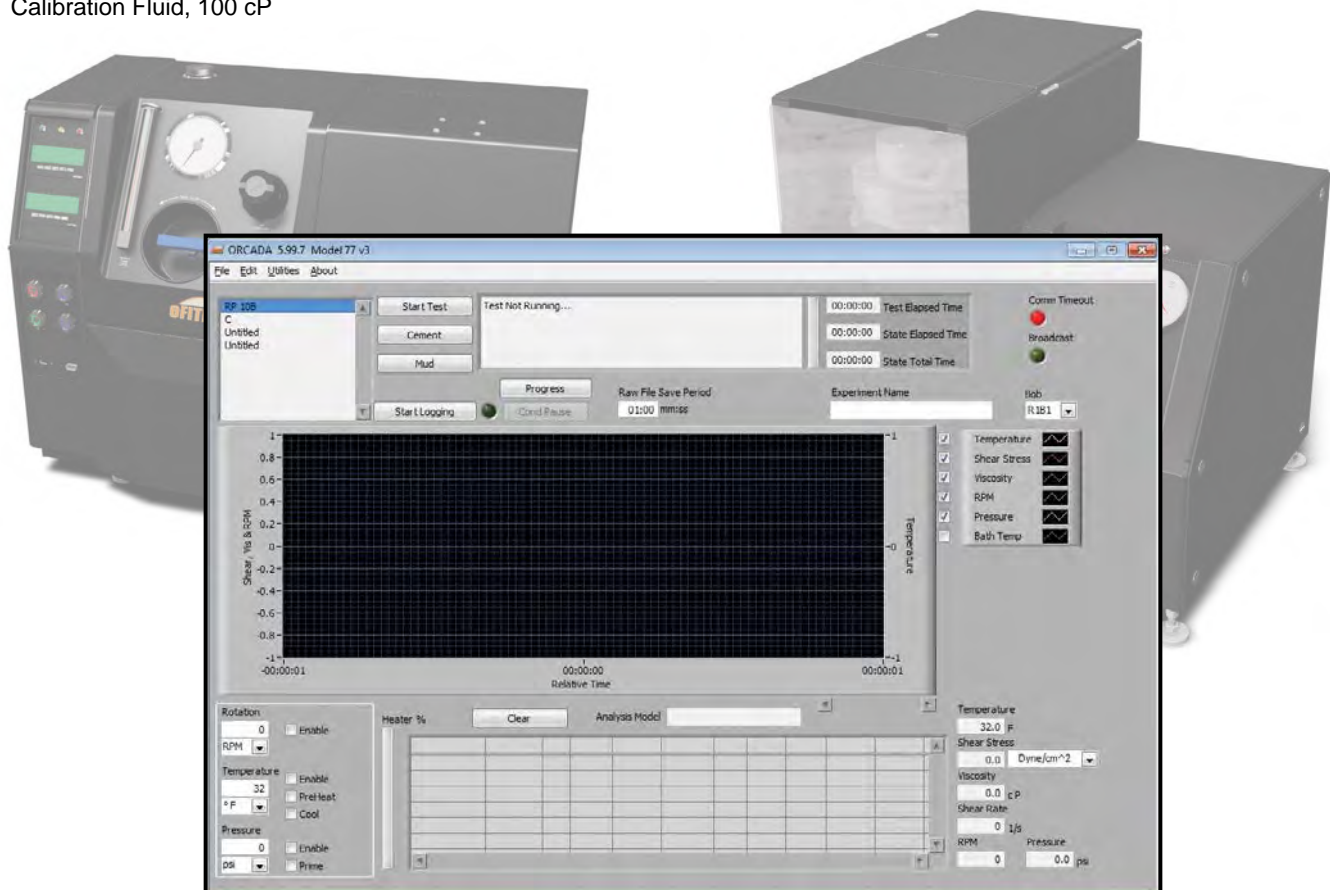
- Maximum Pressure: 2,500 PSI (17.2 MPa)
- Maximum Temperature: 500°F (260°C)

Requirements

- 115 / 230 Volt, 50 / 60 Hz
- N₂: 3,000 PSI
- Water: 15 - 30 PSI

What's Included

- Model 3025 Viscometer
- Laptop PC with ORCADAs[®] Software
- Waterproof, padded carrying case



MODEL 900 VISCOMETER

#130-76-C 115 VOLT

#130-76-1-C 230 VOLT

Size: 17.3" x 15" x 11" (44 x 38 x 28 cm)

Weight: 19 lb (8.6 kg)

The Model 900 Viscometer is a true Couette coaxial cylinder rotational viscometer, which employs a transducer to measure the induced angle of rotation of the bob by a fluid sample. For a fully automated Control/Data Acquisition System suitable for field or research applications, the Model 900 Viscometer may be connected to a computer via a serial (RS-232 or USB with converter) port using OFITE's exclusive and field-proven Windows™-based ORCADA® software. And multiple Viscometers can be run with a single computer.

U.S. Patent Number 6,766,028.

Features

- Variable-speed motor
- Push-button keypad
- Suitable for field and laboratory use

Specifications

- Maximum Temperature: 200°F (93.3°C)
- Motor Speed (RPM): 12 fixed speeds (600, 300, 200, 100, 60, 30, 20, 10, 6, 3, 2, 1), Variable Speed: .01 - 1000
- Power: 115 Volt at 2 Amp or 230 Volt at 1 Amp, 50 / 60 Hz

What's Included

- Model 900 Viscometer
- Universal Heat Cup
- ORCADA® Software
- Carrying Case
- Serial Cable
- Calibration Fluid, 100 cP
- AC Power Cord

Components

#130-76-03	Thermocouple
#130-76-04	Main Bearing
#130-76-08	Wrench for Bob Shaft
#130-76-10	Universal Heat Cup, 115 Volt
#130-76-10-1	Universal Heat Cup, 230 Volt
#130-76-24	Bob Shaft Assembly
#130-79-19	Serial (RS-232) to USB Converter
#132-56	Rotor Sleeve, R1
#132-57	Bearing Shield
#132-58	Bob, B1
#132-80	Calibration Fluid, 100 cP, 16 oz
#134-05-2	Bob Shaft Bearing, Shielded
#134-10	Torsion Spring Assembly, F1.0
#135-02	Retainer Ring, External

Optional

#130-76-C-SP	Spare Parts Kit
#130-76-LSK	Low Shear Conversion Kit
#132-56-S	Rotor Sleeve, R1, Slotted, 316 Stainless Steel
#132-58-5	Bob, B1, Slotted, 303 Stainless Steel
#134-10-2	Torsion Spring Assembly, F0.2
#147-14	pH Meter
#132-81	Calibration Fluid, 50 cP, 16 oz
#132-56-C	Rotor Sleeve, R1, Closed Cup, 316 Stainless Steel



#130-76 - Model 900 Viscometer

Drilling Fluids - Viscosity

MODEL 800 8-SPEED VISCOMETER

#130-10-C

WITH CARRYING CASE

#130-10-L

WITH RETRACTABLE LEGS
FOR KITS

Size: 22" x 10" x 15" (56 x 25 x 38 cm)

Weight: 28 lb (12.6 kg)

The Model 800 Viscometer determines the rheological characteristics of drilling fluids and cement at atmospheric pressure. It features a simple speed control knob and a lighted dial for easy reading. It operates on universal voltage, making it ideal for both field and lab use.

Features

- Operates anywhere in the world without flipping switches or re-wiring.
- Lighted dial makes reading easier and more accurate.
- Conventional oilfield rotor, bob, and torsion springs maintains rheology history and reproducibility between instruments and laboratories
- Threaded rotor and bob - mechanically attach to the unit the same way every time
- Carrying case included

Specifications

- Motor Speeds (RPM): (600, 300, 200, 100, 60, 30, 6, 3)
- Power Requirement: 97 - 250 Volt, 50 / 60 Hz (12 Volt operation requires a special cable)

What's Included

- Model 800 Viscometer
- Power Supply with AC Power Cord
- Carrying Case

Components

- #130-10-18 Lens for Cover
- #130-10-20 Bob Shaft
- #130-10-503 Fuse, 4 Amp, 1 ¼" x ¼"
- #130-10-61 Light Assembly
- #130-21 Cup, Stainless Steel
- #130-76-08 Wrench for Bob Shaft
- #132-56 Rotor Sleeve, R1
- #132-57 Bearing Shield
- #132-58 Bob, B1
- #132-71 Bearing for Main Shaft
- #134-10 Torsion Spring Assembly, F1.0
- #134-05-2 Bob Shaft Bearing, Shielded
- #135-02 Retainer Ring, External
- #152-37 Power Cord, 115 Volt

Optional

- #130-10-33 Power Cord for 12 Volt Cigarette Lighter Adapter
- #130-10-SP Spare Parts Kit
- #130-45-1 Calibrating Instrument
- #132-49 Calibration Check Kit
- #132-56-C Rotor Sleeve, R1, Closed Cup, 316 Stainless Steel
- #132-80 Calibration Fluid, 100 cP, 16 oz
- #132-81 Calibration Fluid, 50 cP, 16 oz
- #152-38 Power Cord, 230 Volt



#130-10-C - Model 800 Viscometer



#130-10-L - Model 800 Viscometer with Retractable Legs

HAND CRANK RHEOMETER #132-00

Size: 9" x 4" x 6.5" (23 x 10 x 17 cm)
Weight: 8 lb (3.6 kg)

The Hand Crank Rheometer (#132-00) is a direct-indicating, manually operated, rotational viscometer. The instrument is powered by a hand crank, which drives the spindle through a precision gear train. The shift cam selects between fixed speeds of 300 and 600 RPM. A knob on the hub of the shift cam determines gel strength.

Components

#130-21	Cup, Stainless Steel
#132-56	Rotor Sleeve, R1
#132-57	Bearing Shield
#132-58	Bob, B1
#132-59	Bearing Retainer
#132-67	Torsion Spring Assembly
#132-68	Bearing, Shielded
#132-69	Bearing for Governor
#132-70	Bearing for Driver Shaft
#132-71	Bearing for Main Shaft
#132-75	Locking Ring, Internal
#132-76	Locking Ring, External
#135-02	Locking Ring for Bob Shaft, External

Optional

#132-00-SP	Spare Parts Kit
#132-06	Case with Foam Insert
#132-80	Calibration Fluid, 100 cP, 16 oz
#132-81	Calibration Fluid, 50 cP, 16 oz



#132-00 - Hand Crank Rheometer

MARSH FUNNEL VISCOMETER #110-10

Size: 6.5" x 6.25" x 14.5" (17 x 16 x 37 cm)
Weight: 12 oz (340.2 g)

Viscosity and gel strength are measurements that relate to the flow properties of fluids. The Marsh Funnel Viscometer has been used for many years to obtain an indication of the relative viscosity of drilling fluids. It is calibrated to outflow one quart (946 mL) of fresh water at a temperature of 70 ± 5°F (21 ± 3°C) in 26 ± 0.5 seconds. The Marsh Funnel is molded from a tough, durable plastic that resists breaking or cracking. A brass orifice assures consistency in all readings.

Features

- Used to measure the relative viscosity of drilling fluids
- Calibrated to outflow one quart of water in 26 ± .5 seconds
- Molded from tough, durable plastics

MEASURING CUP, 1000 ML #110-20

Size: 5.75" x 5.5" x 7.25" (15 x 14 x 18 cm)
Weight: 8 oz (227 g)

The Measuring Cup is graduated in fluid ounces (2 - 32 oz) and cubic centimeters (100 - 1,000 cc) and is designed to be used with the Marsh Funnel Viscometer. The heavy duty plastic measuring cup features a double spout and has the two scales molded into the inside of the cup for convenience.

Features

- Measures Fluid Ounces (2 - 32 oz) and cubic centimeters (100 - 1,000 cc)
- Double spout
- Made from heavy duty plastic



#110-10 - Marsh Funnel and #110-20 - Measuring Cup

DIGITAL STOPWATCH #155-25

Size: 2.4" x 2" x 0.6" (6 x 5 x 2 cm)
Weight: 1.5 oz (42.5 grams)

For use with the Marsh Funnel Viscometer.

Drilling Fluids - Viscosity

SHEAROMETER KIT

#166-08

Size: 4" x 4" x 8.5" (10 x 10 x 22 cm)

Weight: 11 oz (0.3 kg)

Features

- Alternative for measuring gel strength
- Tubes: 5 g, 3.5" x 1.4"
- Scale measures gel strength in lb / 100 ft²

What's Included

- Two Shear Tubes
- Shearometer Cup with Post
- Sample Bottle



#166-08 - Shearometer Kit

SHEAROMETER TUBE WITH WEIGHT SUPPORT

#166-10

Features

- 20 gram shearometer tube with weight support
- Used for testing aged muds
- Tests high-gel strength drilling fluids
- Shear strength in lb/100 ft²

Optional Components

#166-02 Weight Set with Box, 50 g - 10 mg



#166-10 - Shearometer Tube with Weight Support

Bob for HTHP Viscometer

#130-77-39 B1 (35517)

Bobs for Model 3025 and Model 50 Viscometers

#130-78-07 B1, 316 Stainless Steel (36514)
#130-78-23 B1X, 316 Stainless Steel (35254)
#130-78-08 B2, 316 Stainless Steel
#130-78-24 B2X, 316 Stainless Steel (30088)
#130-78-09 B5, 316 Stainless Steel (35687)
#130-78-10 B5X, 316 Stainless Steel
#130-78-13 B1, Hastelloy® (with Threads for Stainless Steel)
#130-78-14 B2, Hastelloy® (with Threads for Stainless Steel)
#130-78-24-H B2X, Hastelloy® (with Threads for Stainless Steel)
#130-78-15 B5, Hastelloy® (with Threads for Stainless Steel)
#130-78-16 B5X, Hastelloy® (with Threads for Stainless Steel)

Bobs for Model 800, Model 900, and Hand Crank Rheometer

#132-58 B1, 303 Stainless Steel
#132-58-1 B2, 303 Stainless Steel
#132-58-2 B3, 303 Stainless Steel
#132-58-3 B4, 303 Stainless Steel
#132-58-4 B5, 303 Stainless Steel
#132-58-5 B1, Slotted, 303 Stainless Steel
#132-58-6 B1, Slotted, Hollow, 316 Stainless Steel
#132-58H B1, Hastelloy®

Bobs for Model 35 Viscometer

#134-15 B1, Hollow, 303 Stainless Steel, (30844)
#134-15-1 B2, 303 Stainless Steel, (30843)
#134-15-2 B3, 303 Stainless Steel, (30842)

Calibration

#130-45 Calibration Instrument for 6-Speed Viscometer, DW-3
#130-45-1 Calibration Instrument for 8-Speed Viscometer
#132-49 Calibration Check Kit

Calibration Fluid, Certified

#132-84 20 cP, 16 oz
#132-84-5 20 cP, 5 gal
#132-81 50 cP, 16 oz
#132-81-5 50 cP, 5 gal
#132-80 100 cP, 16 oz
#132-80-5 100 cP, 5 gal
#132-83 200 cP, 16 oz
#132-83-5 200 cP, 5 gal
#132-82 500 cP, 16 oz
#132-82-5 500 cP, 5 gal

Carrying Case

#130-60-3 Carrying Case for 6-Speed Viscometer
#132-06 Carrying Case for Hand Crank Rheometer
#130-10-13-5 Carrying Case for Model 800
#130-76-49 Carrying Case for Model 900

Cups

#130-21 Stainless Steel, for OFITE Viscometers
#130-41 Polypropylene, for Hand Crank Rheometer
#130-54 Scribed, Stainless Steel, 350 mL
#130-55 Polypropylene, for 6-Speed Viscometers

Torsion Spring Assemblies

#130-78-410 No. 410 Spring Assembly for Model 1100
#132-67 For Hand Crank Rheometer
#134-10 F1.0, for Model 800, Model 900, and 6-Speed
#134-10-2 F0.2 (31068), for Model 800, Model 900, and 6-Speed
#134-10-3 F0.5 (31069), for Model 800, Model 900, and 6-Speed
#134-10-4 F2.0 (31070), for Model 800, Model 900, and 6-Speed
#134-10-5 F3.0 (31071), for Model 800, Model 900, and 6-Speed
#134-10-6 F4.0 (31072), for Model 800, Model 900, and 6-Speed

Transformers/Power Supply

#130-43 Power Pak, AC (115 or 230 Volts) to DC (12 Volt) Converter
#130-74 Transformer, 230 to 115 Volts, 1.10 Amps, 50 / 60 Hz
#159-10 Auto Control Panel, 12 Volt

Thermocups and cup heaters are designed for controlling the temperature of a mud sample while taking readings with a rheometer or viscometer. The holes in the stage of the OFITE Viscometers have been positioned to hold the heated cups at a 45° angle to the line of the instrument for better accommodation of thermometers and power cables.

THERMOCUP WITH THERMOMETER

#130-38-30 WITH REMOVABLE STAINLESS STEEL CUP, 115 VOLT

#130-38-35 WITH REMOVABLE STAINLESS STEEL CUP, 230 VOLT

#130-38-20 WITHOUT CUP, 115 VOLT

#130-38-25 WITHOUT CUP, 230 VOLT

Size: 3" x 4" x 4.5" (8 x 10 x 11 cm)

Weight: 2.6 lb (1.2 kg)

Features

- Anodized finish provides better heat transfer
- Strain relief protects power cable
- Power Requirements 115 Volt at 1.25 Amp or 230 Volt at .75 Amp, 50 / 60 Hz

What's Included

- Thermocup
- Removable Stainless Steel Cup, 230 mL Capacity
- Thermometer with Metal Dial, 5" Stem, 0° - 220°F

Components

#130-26	Heating Element, 150 Watt, 115 Volt
#130-26-1	Heating Element, 150 Watt, 230 Volt
#130-31	Thermostat
#130-38-014	Resistor
#130-38-2	Lens for Lamp, Red
#130-38-3	Lamp
#130-38-7	Cup, Stainless Steel
#154-00	Thermometer
#171-32-1	Knob

CUP HEATER WITH REMOVABLE STAINLESS STEEL CUP

#130-20 115 VOLT

#130-30 230 VOLT

Size: 4.5" x 4.75" x 5.5" (11 x 12 x 14 cm)

Weight: 4 lb 8 oz (2 kg)

What's Included

- Cup Heater
- Removable Stainless Steel Cup

Power Requirements

- 115 Volt at 2.5 Amp or 230 Volt at 1.5 Amp, 50 / 60 Hz

Components

#130-21	Cup, Stainless Steel
#130-25	Heating Element
#130-31	Thermostat
#170-10	Pilot Light for Thermostat
#171-32	Knob



#130-20 - Cup Heater



#130-38-30 - Thermocup

Drilling Fluids - Viscosity

UNIVERSAL HEAT CUP FOR MODEL 900 VISCOMETER

#130-76-10 115 VOLT

#130-76-10-1 230 VOLT

Size: 4.5" x 4.5" x 4" (11 x 11 x 10 cm)

Weight: 3 lb (1.36 kg)

The Universal Heat Cup is designed to control the temperature of a fluid sample while taking viscosity readings. When used with a Model 900 Viscometer, it can be plugged directly into the back, allowing the viscometer to control the temperature of the fluid.

Features

- Plugs into the Model 900 Viscometer
- Includes removable stainless steel cup
- Insulation keeps outer surfaces cool
- Power Requirements 115 Volt at 1.25 Amp or 230 Volt at .75 Amp, 50 / 60 Hz

What's Included

- Heat Cup
- Removable Stainless Steel Cup, 230 mL Capacity

Components

#130-31	Thermostat
#130-38-014	Resistor
#130-35-2	Lens for Lamp, Red
#130-35-3	Lamp
#130-38-7	Cup, Stainless Steel

Optional

#152-37	AC Power Cord, 115 Volt
#152-38	AC Power Cord, 230 Volt



#130-76-10 - Universal Heat Cup

DOUBLE WALLED CIRCULATING CUP #130-15

Size: 4.5" x 4" x 6" (11 x 10 x 15 cm)

Weight: 2 lb 3 oz (1 kg)

The Double Walled Circulating Cup is designed to cool a fluid sample below ambient temperature while taking viscosity readings.

Features

- Designed for testing below ambient temperature
- Compatible with Refrigerated and Heated Bath/Circulator (#152-55 / #152-55-1)
- Includes removable stainless steel cup

Components

#130-38-7	Removable Cup, Stainless Steel
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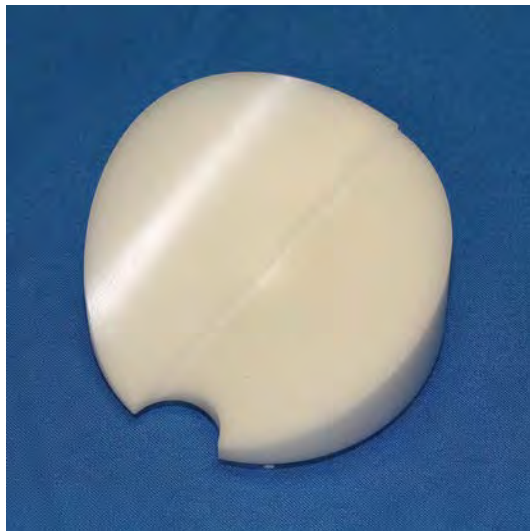
#130-15 - Double Walled Circulating Cup

SAG SHOE ASSEMBLY #130-22

The Viscometer Sag Shoe Test (VSST) is a well site and laboratory test that measures the weight material sag tendency of field and lab drilling fluids under dynamic conditions. The VSST provides an intrinsic fluid property without regard to the conditions under which the fluid has been or will be used. As such, results must be combined with operational factors to correlate results with sag experienced in the field.

The VSST designation is derived from the rotational viscometer used as a mixer and the thermoplastic insert (Sag Shoe) designed to concentrate sagged weight material in the bottom of a viscometer thermocup. Sag tendency is determined by the density increase of samples extracted from the collection well over a 30 minute period at a standard temperature and under a consistent rate of shear.

Weight material bed pickup can be run as an optional measurement to characterize bed removal by higher shear levels. Results can be used to suggest opportunities for bed removal in the field prior to tripping out of the hole.



#130-22 - Sag Shoe Assembly

REFRIGERATED AND HEATED BATH/ CIRCULATOR

#152-55 115 VOLT, 60 HZ
#152-55-1 230 VOLT, 50 HZ

Size: 13.5" x 13.5" x 14" (34 x 34 x 36 cm)
Weight: 49 lb (22.2 kg)

Shipping Size: 23" x 24" x 26" (58 x 61 x 66 cm)
Shipping Weight: 110 lb (49.9 kg)

Features

- Temp Range: -15° - 90°C (-5° - 194°F)
- Capacity: 5.3 Liters / 1.4 Gallons
- Pump Rate: 6 Liters / Minute

What's Included

- Bath

Optional Equipment

#152-55-2 Hoses and Fittings Set
#152-55-3 Carrying Case
#152-55-4 Ethylene Glycol, 1 Liter (For tests below 10°C)



#152-55 - CARON Model 2050W Bath/Circulator

Drilling Fluids - Viscosity

TEMPERATURE CONTROL UNIT, SINGLE UNIT, DUAL INLETS

#171-49 115 VOLT

#171-49-1 230 VOLT

Size: 5" x 6.5" x 7" (13 x 17 x 18 cm)

Weight: 4 lb 5.7 oz (2 kg)

TEMPERATURE CONTROL UNIT, FOUR UNIT, DUAL INLETS

#171-49-4 115 VOLT

#171-49-4-1 230 VOLT

Size: 12.25" x 8.5" x 6.5" (31 x 22 x 17 cm)

Weight: 12 lb 4.8 oz (5.6 kg)

The Temperature Control Unit is a convenient tool for precisely controlling the temperature of an electrical heating device. Simply plug the heating device into the Temperature Control Unit and the built-in Eurotherm 2123 controller will regulate the power output to the heater. The controller can be set with either a simple temperature setpoint or an advanced timer.

Features

- Adds electronic temperature control to almost any device
- Type J thermocouple and Eurotherm 2123 controller provide efficient temperature control
- Ideal for thermocups, hot plates, retorts, and heating jackets for filter presses
- Electrical and thermocouple ports on front and back for convenience
- Power Requirements: 115 Volt at 10 Amp or 230 Volt at 6 Amp, 50 / 60 Hz

Components

- #122-075 Fuse, 7 Amp, 5 mm x 20 mm (4 Unit, 230 Volt Only)
- #122-077 Fuse, 10 Amp, 5 mm x 20 mm (4 Unit, 115 Volt Only)
- #130-76-03 Thermocouple
- #152-37 Power Cord (115 Volt Only)
- #152-38 Power Cord (230 Volt Only)
- #172-09 Fuse, 10 Amp (1 Unit Only)
- #174-03 Temperature Controller



#171-49-4 - Temperature Control Unit with Dual Inlets, 4 Unit



#171-49 - Temperature Control Unit with Dual Inlets, Single

4-SCALE METAL MUD BALANCE #115-00

Size: 21.5" x 4.5" x 4" (55 x 11 x 10 cm)
Weight: 4 lb 3 oz (1.9 kg)

One of the most important properties monitored throughout the drilling operation is mud density. The Mud Balance is engineered so that the mud cup at one end of the beam is balanced by a fixed counterweight at the other end, with a sliding-weight rider that moves along a graduated scale. A level bubble is mounted on the beam to ensure accurate balancing.

Features

- Stronger, more rugged design
- Reduce need for re-calibration
- Machined with Computer Numerically Controlled (CNC) process
- Corrosion resistant
- Easy to clean

Density Measurement Ranges

- 6.5 - 23.0 lb/gal
- 0.79 - 2.72 specific gravity
- 49 - 172 lb/ft³
- 340 - 1,190 PSI/1,000 ft

Components

#100-25-2	Rider
#100-29	Level Bubble Vial
#100-40	Carrying Case
#100-56	Steel Shot for Calibrating
#115-06	Lid
#115-22	Base
#115-32	Knife Edge
#115-34	Shotwell

Optional

#115-01	Metal Mud Balance Without Case
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#115-00 - Metal Mud Balance

PRESSURIZED FLUID DENSITY SCALE #100-70

Size: 21.5" x 5.5" x 4" (55 x 14 x 10 cm)
Weight: 6.8 lb (3 kg)

Features

- Stronger, more rugged design
- Reduce need for re-calibration
- Machined with Computer Numerically Controlled (CNC) process
- Corrosion resistant
- Easy to clean

Density Measurement Ranges

- 52 - 164 lb / ft³
- 6.9 - 21.9 ppg
- .83 - 2.63 specific gravity
- 360 - 1130 PSI / 1000 ft

Components

#100-29	Level Bubble Vial
#100-56	Steel Shot for Calibrating
#100-60-09	Check Valve
#100-60-24	Retaining Ring for Check Valve
#100-70-02	Lid
#100-70-03	Cap
#100-70-04	Rider
#100-70-05	Shotwell
#100-70-06	O-ring for Lid
#100-70-07	Plunger Assembly
#100-60-13	Packing Cup
#100-60-14	Backup Washer
#100-60-18	Screw, Shoulder
#100-70-010	Knob
#100-70-11	Piston Rod
#100-70-13	Compression Cylinder
#100-70-14	Lower Cap
#100-70-15	Upper Cap
#170-07	O-ring
#100-70-08	Carrying Case
#100-70-24	Base
#115-00-002	Set Screw for Knife Edge
#115-32	Knife Edge
#142-54	O-ring for Check Valve Nozzle
#142-56	O-ring for Check Valve



#100-70 - Pressurized Fluid Density Scale

Drilling Fluids - Density

4-SCALE PLASTIC MUD BALANCE #100-00

Size: 21.5" x 5" x 4.5" (55 x 13 x 11 cm)
Weight: 3 lb (1.4 kg)

One of the most important properties monitored throughout the drilling operation is mud density. The Mud Balance is engineered so that the mud cup at one end of the beam is balanced by a fixed counterweight at the other end, with a sliding-weight rider that moves along a graduated scale. A level bubble is mounted on the beam to ensure accurate balancing.

Features

- Corrosion resistant
- Range of measurement:
 - 8 - 25 lb/gal
 - 960 - 3,000 kg/m³
 - 60 - 189 lb/ft³
 - 420 - 1,300 PSI/1,000 ft.

What's Included

- Mud Balance
- Carrying Case

Components

#100-02	Arm Assembly
#100-04	Leg
#100-05	Screw Plug
#100-10	Base
#100-20	Lid
#100-25	Rider
#100-30	Level Bubble
#100-40	Carrying Case
#100-56	Steel Shot for Calibrating

Optional

#100-01	4-Scale Plastic Mud Balance Without Case
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#100-00 - 4-Scale Plastic Mud Balance

HYDROMETER SET WITH CARRYING CASE #153-52

Size: 13.5" x 10" x 2.5" (34 x 25 x 6 cm)
Weight: 2 lb 10 oz (1.2 kg)

Features

- Measures the true specific gravity of liquids
- Range: 0.700 to 2.000 specific gravity
- Consists of eight glass hydrometers and a thermometer packed in a protective, foam-lined carrying case
- Hydrometer scale standardized at 60°F

What's Included

#153-52-03	Hydrometer, 0.700 to 0.810 Specific Gravity
#153-52-04	Hydrometer, 0.800 to 0.910 Specific Gravity
#153-52-05	Hydrometer, 0.900 to 1.010 Specific Gravity
#153-52-06	Hydrometer, 1.000 to 1.220 Specific Gravity
#153-52-07	Hydrometer, 1.200 to 1.420 Specific Gravity
#153-52-08	Hydrometer, 1.400 to 1.620 Specific Gravity
#153-52-09	Hydrometer, 1.600 to 1.820 Specific Gravity
#153-52-10	Hydrometer, 1.800 to 2.000 Specific Gravity
#153-52-13	Case
#153-52-14	Thermometer, -30 - 120°F, 1° Divisions

Optional

#153-52-01	Hydrometer Cylinder, 250 mL, Glass, 13.5" x 1.5"
#153-52-02	Hydrometer Cylinder, 500 mL, Plastic, 14.25" x 2"
#153-52-11	Hydrometer, 2.000 to 2.200 Specific Gravity
#153-52-12	Hydrometer, 2.200 to 2.400 Specific Gravity
#153-52-15	Hydrometer, Soil Test, ASTM 151H, .995 to 1.038°



#153-52 - Hydrometer Set with Carrying Case

MUD DEAERATOR WITH VACUUM PUMP #110-00

Size: 16" x 13" x 11" (41 x 33 x 28 cm)
Weight: 7 lb (3.2 kg)

A hand-operated vacuum pump removes gas or air from fluids to provide a more accurate density measurement. Density readings are then provided using the conventional mud balance. This product comes complete with mud chamber, paddle assembly, and pump.

Features

- Hand operated
- Removes gas or air from fluids for testing in a mud balance.

Components

#141-05 Gasket, Neoprene
#142-54 O-ring
#153-55 Stopcock Grease, Silicone



#110-00 - Mud Deaerator with Vacuum Pump

ACCESSORIES FOR TRU-WATE PRESSURIZED FLUID DENSITY SCALE

Arm Components

#100-60-11 Bubble Level Assembly (459.04716)
#100-29 Vial for Level Bubble
#100-60-28 Screw (70.44363)
#100-60-25 Roll Pin for Rider Stop, 3/32" x 3/4", Stainless Steel
#100-60-31 Pipe Plug, 1/8" Allen Socket Head, 304 Stainless Steel (458.84913)

Case Components

#100-60-02 Carrying Case (459.04723)
#100-60-19 Stand (459.04721)
#100-60-23 Knife Edge (459.04722)
#100-60-27 Screw for Knife Edge (70.44364)
#100-60-20 Screw for Stand (70.44703)
#100-60-21 Wing Nut for Stand (70.33154)
#100-60-22 Flat Washer for Stand (70.58791)

Sample Cup Components

#100-60-01 O-ring for Lid (70.33394)
#100-60-07 Cap for Lid Cup, Brass (459-04709)
#100-60-08 Lid Cup (459.04712)
#100-60-09 Check Valve for Sample Cup (459.04714)
#100-60-24 Retaining Ring for Valve (70.42295)
#142-54 O-ring for T-Fitting (30129)
#142-56 O-ring for Coupling (30127) (70.33386)

Plunger Assembly Components

#100-60-13 Packing Cup, Plastic (459.04707)
#100-60-14 Washer-Backup-Plunger, Brass (459.04706)
#100-60-17 Rod-Piston-Plunger (459.04702)
#100-60-18 Screw Shoulder for Packing Cup (459.04708)
#170-07 O-ring (70.33817)

Drilling Fluids - Filtration

Measurement of the filtration, water loss, and wall cake building characteristics are basic to drilling fluid control and treatment. The filtrate collected is a measure of the relative amount of fluid in the drilling mud lost to permeable formations. Chemical studies of the filtrate are necessary in any successful mud control program. Analysis of the filter cake deposited in terms of thickness, composition, and consistency are also important considerations. These characteristics are controlled by the type and quantities of solids in the fluid and their physical and chemical interactions.

The API Filter Press design features a cell body to hold the mud sample, a pressure inlet, and a base cap with screen and filter paper. Suitable for field and laboratory use, these units have become the industry standard for low pressure / low temperature filtration testing.

API FILTER PRESS, BENCH MOUNT, BASIC #140-20

Size: 8" x 5.5" x 19" (20 x 14 x 48 cm)

Weight: 9 lb 4 oz (4.2 kg)

What's Included

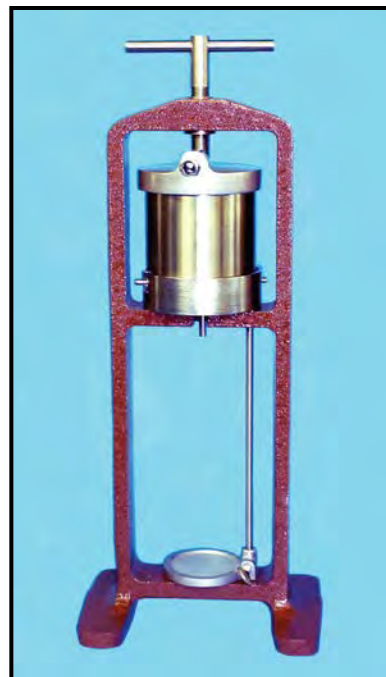
- Filter Press (frame, cell, gaskets, screen)

Components

#141-00-C	Test Cell
#141-00	Cell Body
#141-01	Base Cap
#141-02	Top Cap
#141-04	Screen
#141-05	Gasket, Neoprene
#141-08	Frame
#141-09	Threaded Insert with Set Screw
#141-10	T-Screw
#141-11	Support for Graduated Cylinder
#141-12	Support Rod
#141-18	Thumb Screw
#141-19	Air Hose Adapter
#141-22	Felt Filter

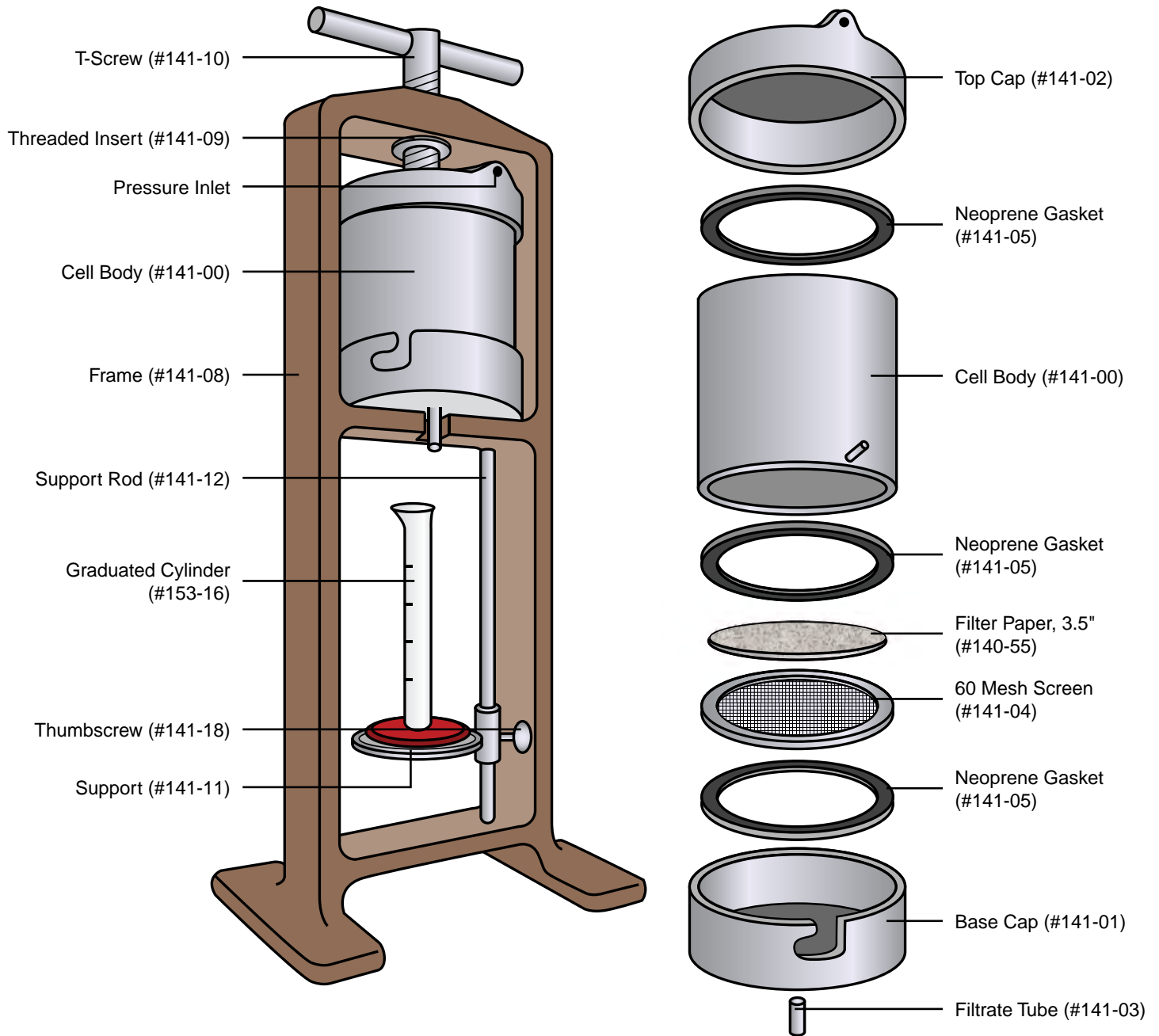
Optional

#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#140-20-SP	Spare Parts Kit
#141-00-1	Cell Body, Acrylic
#153-16	Graduated Cylinder, 25 mL x .2 mL
#155-10	Interval Timer, 30 Minutes



#140-20 - Bench Mount Filter Press - Basic

#140-20 - API Filter Press



Drilling Fluids - Filtration

API FILTER PRESS, BENCH MOUNT, WITH CO₂ PRESSURE ASSEMBLY

#140-30

Size: 9" x 8" x 19" (23 x 20 x 48 cm)

Weight: 12 lb 7 oz (5.6 kg)

What's Included

- Filter Press (frame, cell, gaskets, screen)
- CO₂ Pressure assembly
- Filter paper
- Graduated cylinder

Components

#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#141-00-C	Test Cell
#141-00	Cell Body
#141-01	Base Cap
#141-02	Top Cap
#141-04	Screen
#141-05	Gasket, Neoprene
#141-08	Frame
#141-09	Threaded Insert with Set Screw
#141-10	T-Screw
#141-11	Support for Graduated Cylinder
#141-12	Support Rod
#141-18	Thumb Screw
#141-22	Felt Filter
#142-10	CO ₂ Pressuring Assembly
#143-00	Regulator
#143-01	Gauge
#143-02-10	CO ₂ Puncture Head Assembly
#143-03	Barrel for CO ₂ Bulb
#143-06	Safety Bleeder Valve
#153-16	Graduated Cylinder

Optional

#140-22	Padded Carrying Case
#140-30-SP	Spare Parts Kit
#141-00-1	Cell Body, Acrylic
#143-05	CO ₂ Bulbs, Box of 10, UN2037
#155-10	Interval Timer, 30 Minutes

Note: CO₂ bulbs must be ordered separately.



#140-30 - Bench Mount Filter Press with CO₂ Assembly

* May require special handling for shipping.

API FILTER PRESS, BENCH MOUNT, WITH REGULATOR AND HOSE

#140-31

Size: 19" x 11" x 8" (48 x 28 x 20 cm)

Weight: 11 lb 7 oz (5.2 kg)

What's Included

- Filter Press (frame, cell, gaskets, screen)
- Regulator with Air Hose
- Filter Paper
- Graduated Cylinder

Components

#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#141-00-C	Test Cell
#141-00	Cell Body
#141-01	Base Cap
#141-02	Top Cap
#141-04	Screen
#141-05	Gasket, Neoprene
#141-08	Frame
#141-09	Threaded Insert with Set Screw
#141-10	T-Screw
#141-11	Support for Graduated Cylinder
#141-12	Support Rod
#141-14	Air Hose, 3 Feet
#141-18	Thumb Screw
#141-19	Air Hose Adapter
#141-22	Felt Filter
#143-00	Regulator
#143-01	Gauge
#143-06	Safety Bleeder Valve
#153-16	Graduated Cylinder

Optional

#140-31-SP	Spare Parts Kit
#141-00-1	Cell Body, Acrylic
#155-10	Interval Timer, 30 Minutes



#140-31 - Bench Mount Filter Press with Regulator and Air Hose

API FILTER PRESS, BENCH MOUNT, WITH NITROGEN REGULATOR AND CYLINDER #140-35

Size: 20" x 13" x 13" (51 x 33 x 33 cm)

Weight: 34 lb 3 oz (15.5 kg)

What's Included

- Filter Press (frame, cell, gaskets, screen)
- Nitrogen Regulator with Air Hose
- Nitrogen Cylinder
- Filter Paper
- Graduated Cylinder

Components

#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#141-00-C	Test Cell
#141-00	Cell Body
#141-01	Base Cap
#141-02	Top Cap
#141-04	Screen
#141-05	Gasket, Neoprene
#141-08	Frame
#141-09	Threaded Insert with Set Screw
#141-10	T-Screw
#141-11	Support for Graduated Cylinder
#141-12	Support Rod
#141-14	Air Hose, 3 Feet
#141-18	Thumb Screw
#141-19	Air Hose Adapter
#141-22	Felt Filter
#143-06	Safety Bleeder Valve
#153-16	Graduated Cylinder
#170-36	Regulator
#170-37	Nitrogen Cylinder

Optional

#140-75-SP	Spare Parts Kit
#141-00-1	Cell Body, Acrylic
#155-10	Interval Timer, 30 Minutes



#140-35 - Filter Press with Nitrogen Pressurization

MODEL MB FILTER PRESS WITH CO₂ PRESSURE ASSEMBLY #142-53

Size: 7" x 7.5" x 6.5" (18 x 19 x 17 cm)

Weight: 5 lb 6 oz (2.4 kg)

What's Included

- Filter Press
- CO₂ Pressure Assembly
- Holder for Graduated Cylinder
- Support Bracket for Wall Mounting

Components

#142-37	Regulator
#142-53-1	Cell Assembly
#142-53-1-1	Body
#142-53-2	Lid
#142-60	O-ring for Cell
#142-53-10	Holder for Graduated Cylinder
#142-53-3	Barrel for CO ₂ Bulb Holder Assembly
#142-53-4	CO ₂ Bulb Holder Assembly
#142-53-5	Female Coupling Assembly
#142-53-6	Valve Stem
#142-53-9	Support Bracket
#142-54	O-ring for Bleed Off Screw
#142-58	O-ring for Female Coupling
#142-60	O-ring for Cell
#143-01	Gauge
#144-15	Bushing

Optional

#143-05	CO ₂ Bulbs, Box of 10, UN2037
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Note: CO₂ bulbs must be ordered separately.



#142-53 - Model MB Filter Press with Bracket

* May require special handling for shipping.

Drilling Fluids - Filtration

API FILTER PRESS, BENCH MOUNT, WITH DEAD-WEIGHT HYDRAULIC ASSEMBLY

#140-75

Size: 9" x 10" x 19" (23 x 25 x 48 cm)

Weight: 37 lb (16.8 kg)

The Dead Weight Hydraulic Assembly provides the operator of a standard API Filter Press with a convenient source of hydraulic pressure. This alleviates the need for a regulator, separate pressure source, or outside connections. The assembly is composed of a water reservoir that requires a pint of fresh water for each test, a piston and cylinder, a dead weight gauge, two check valves, and a bleed-off valve. When the system is closed, the dead weight causes the piston to exert a continuous pressure of 100 PSI against the fluid inside the filter press cell. Pressure on the cell is released promptly at the completion of the test with a bleed-off valve. The hydraulic system has sufficient volume to run the complete 30-minute filtration test without further attention from the operator, and the assembly requires a minimum amount of maintenance.

Features

- Provides a convenient source of hydraulic pressure
- Alleviates the need for a regulator, separate pressure source, or outside connections
- Requires only 475 mL of fresh water for each test
- Exerts a continuous pressure of 100 PSI against test cell

What's Included

- Filter Press (frame, cell, gaskets, screen)
- Dead-Weight Hydraulic Pressure Assembly
- Filter Paper
- Graduated Cylinder

Components

#140-20	Bench Mount Filter Press - Basic
#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#140-70	Dead-Weight Hydraulic Pressure Assembly
#120-57-013	Tee, 1/8" NPT
#140-70-001	Weight
#140-70-002	Lid for Reservoir
#140-70-003	Shaft
#140-70-008	Adapter, 1/8" x 1/4"
#140-70-01	Nut
#140-70-010	Check Valve
#140-70-011	Base and Tube
#140-71	O-ring
#141-13	Air Hose
#143-01	Gauge
#144-14	Hex Nipple, 1/8" x 1/8"
#170-32	Needle Valve, Male
#153-16	Graduated Cylinder

Optional

#140-75-SP	Spare Parts Kit
#141-00-1	Cell Body, Acrylic
#155-10	Interval Timer, 30 Minutes



#140-75 - Filter Press with Dead Weight Assembly

API FILTER PRESS, WALL MOUNT, BASIC #140-00

Size: 11" x 7" x 4" (28 x 18 x 10 cm)
Weight: 5 lb 8 oz (2.5 kg)

What's Included

- Filter Press (frame, cell, gaskets, screen)

Components

#141-00-C	Test Cell
#141-00	Cell Body
#141-01	Base Cap
#141-02	Top Cap
#141-04	Screen
#141-05	Gasket, Neoprene
#141-07	Frame
#141-09	Threaded Insert with Set Screw
#141-10	T-Screw
#141-16	Support for Graduated Cylinder
#141-19	Air Hose Adapter
#141-20	Frog Bracket
#141-22	Felt Filter

API FILTER PRESS, WALL MOUNT, WITH CARRYING CASE #144-10

Size: 8.75" x 15.5" x 16.25" (22 x 39 x 41 cm)
Weight: 32 lb (14.5 kg)

What's Included

- Filter Press (frame, cell, gaskets, screen)
- CO₂ Pressuring Assembly
- Carrying Case, Stainless Steel
- Filter Paper
- Graduated Cylinder
- Interval Timer, 30 Minutes

Components

#140-10	Wall Mount Filter Press with CO ₂ Pressure Assembly
#144-09	Case
#153-16	Graduated Cylinder
#155-10	Interval Timer, 30 Minutes

Optional

#141-00-1	Cell Body, Acrylic
#143-05	CO ₂ Bulbs, Box of 10, UN2037

Note: CO₂ bulbs must be ordered separately.



#144-10 - Filter Press with CO₂ Assembly and Case

* May require special handling for shipping.

API FILTER PRESS, WALL MOUNT, WITH CO₂ PRESSURE ASSEMBLY #140-10

Size: 10" x 8.5" x 9" (25 x 22 x 23 cm)
Weight: 8 lb 6 oz (3.8 kg)

What's Included

- Filter Press (frame, cell, gaskets, screen)
- CO₂ Pressuring Assembly
- Filter Paper
- Graduated Cylinder

Components

#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#141-00-C	Test Cell
#141-00	Cell Body
#141-01	Base Cap
#141-02	Top Cap
#141-04	Screen
#141-05	Gasket, Neoprene
#141-07	Frame
#141-09	Threaded Insert with Set Screw
#141-10	T-Screw
#141-16	Support for Graduated Cylinder
#141-20	Frog Bracket
#141-22	Felt Filter
#142-10	CO ₂ Pressuring Assembly
#153-16	Graduated Cylinder
#170-44	Rubber Foot

Note: CO₂ bulbs must be ordered separately.



#140-10 - Wall Mount Filter Press with CO₂ Assembly

Drilling Fluids - Filtration

API FILTER PRESS, MULTI UNIT

#140-50 6 UNIT

Size: 37.5" x 13" x 24.5" (95 x 33 x 62 cm)

Weight: 52 lb 10 oz (23.9 kg)

Shipping Size: 43" x 17" x 34" (109 x 43 x 86 cm)

Shipping Weight: 140 lb (63.5 kg)

#140-40 4 UNIT

Size: 27.5" x 10" x 24.5" (70 x 25 x 62 cm)

Weight: 36 lb 10 oz (16.6 kg)

Shipping Size: 33" x 17" x 34" (84 x 43 x 86 cm)

Shipping Weight: 110 lb (49.9 kg)

What's Included

- Frame
- Pressure Manifold
- Test Cells

Components

#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#141-00-C	Test Cell
#141-00	Cell Body
#141-01	Base Cap
#141-02	Top Cap
#141-04	Screen
#141-05	Gasket, Neoprene
#141-09	Threaded Insert with Set Screw
#141-10	T-Screw
#141-13	Air Hose, Low Pressure, 15"
#141-19	Air Hose Adapter
#141-22	Felt Filter
#143-06	Safety Bleeder Valve
#153-16	Graduated Cylinder
#170-34	Needle Valve

Optional

#141-15	Air Hose, Low Pressure, 6'
#140-40-SP	Spare Parts Kit for #140-40
#140-50-SP	Spare Parts Kit for #140-50
#153-16	Graduated Cylinder, 25 mL x .2 mL
#171-24-1	Nut for Pressure Fitting, Right-Hand Thread
#171-24-2	Nipple for Pressure Fitting
#170-36	Nitrogen Regulator with Gauges



#140-50 - 6-Unit Filter Press

FILTER PRESS, HALF AREA, WITH CO₂ PRESSURING ASSEMBLY

#140-60

Size: 7.5" x 6" x 6" (19 x 15 x 15 cm)

Weight: 4 lb 3 oz (1.9 kg)

What's Included

- Filter Press
- Graduated Cylinder
- Filter Paper

Components

#140-60-01	O-ring for Bleeder Valve
#140-60-03	C-ring for Bleeder Valve
#140-60-04	E-ring for Base Cap
#140-60-05	Sample Boot
#140-60-09	Gasket for Seat Assembly
#140-60-10	Friction Washer
#143-02-10	CO ₂ Puncture Head Assembly
#143-03	Barrel for CO ₂ Bulb
#153-18	Graduated Cylinder, 10 mL x .1 mL
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100

Optional

#140-60-SP	Spare Parts Kit
#140-84	Stand
#143-05	CO ₂ Bulbs, Box of 10, UN2037
#143-19	Repair Kit for Regulator
#155-10	Interval Timer, 30 Minutes

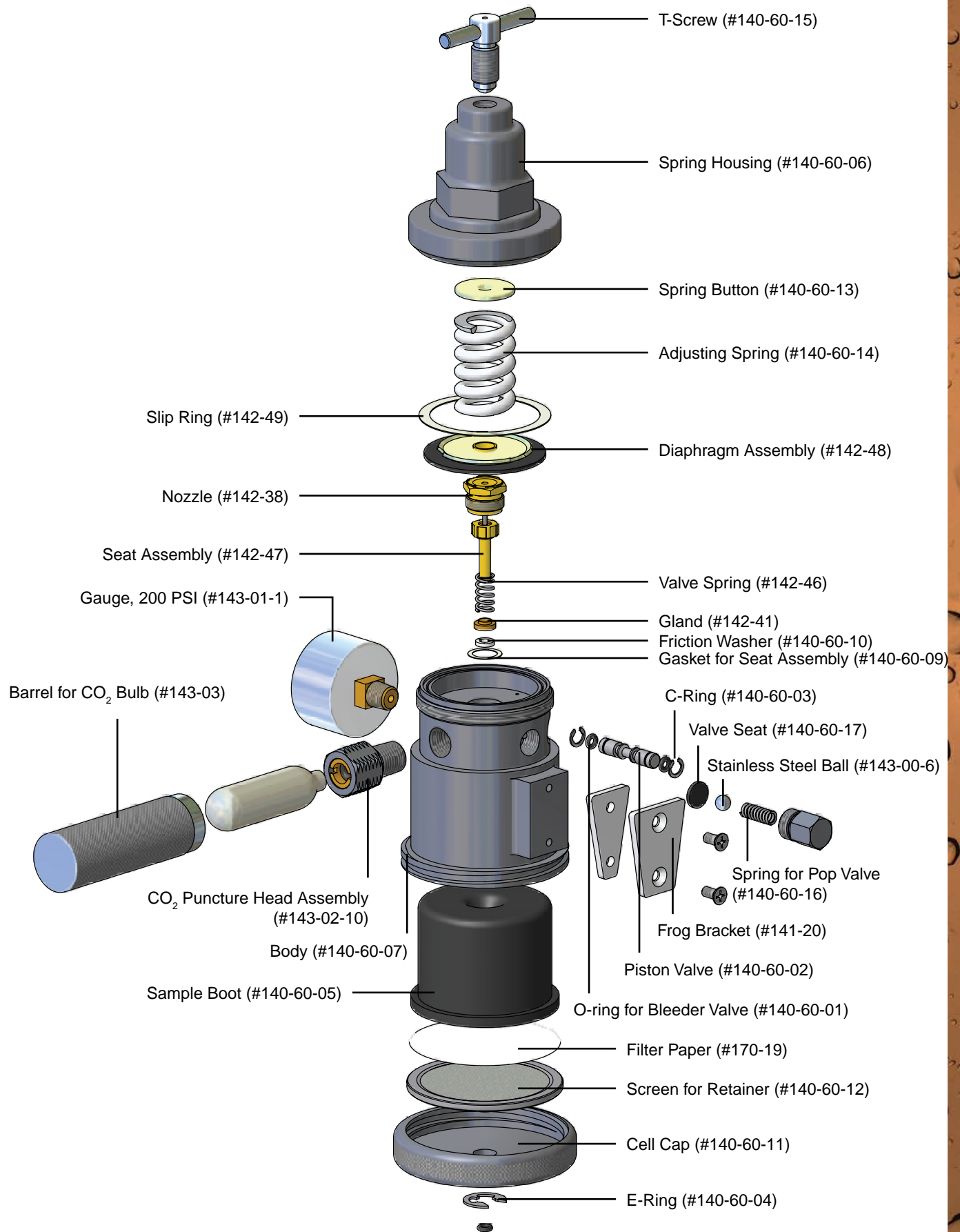
Note: CO₂ bulbs must be ordered separately.



#140-60 - Half Area Filter Press

* May require special handling for shipping.

#140-60 - Half Area Filter Press



Drilling Fluids - Filtration

DIFFERENTIAL STICKING TESTER

#150-50

Size: 6" x 6" x 18" (15 x 15 x 46 cm)

Weight: 26 lb (11.8 kg)

The Differential Sticking Tester measures the stuck-pipe tendency of drilling fluids and determines how effective lubricants might be in any given fluid. By measuring the area of cake building during a test, the Bulk Sticking Coefficient is obtained and read directly at the conclusion of the test. This coefficient takes into account both the friction, or stickiness, of the filter cake, as well as the amount of cake building that would occur to stick the pipe in the hole. How likely a given fluid is to produce a stuck-pipe situation and how effective a given treatment may be can be immediately determined on site. The unit is normally pressurized by a CO₂ assembly, but a nitrogen source will work. The standard test uses 477.5 PSI (3,291 kPa) applied to a stainless steel vessel of approximately 200 mL. Both a flat-faced plate and a plate of 12 ½" spherical radius that simulates the pipe inside casing or collars in the borehole are provided.



#150-50 - Differential Sticking Tester

What's Included

- Test Cell
- Torque Wrench
- Spanner Wrench
- Torque Plates (Flat and Curved)
- Graduated Cylinder
- CO₂ Pressuring Assembly
- Filter Paper
- Adjustable Wrench, 6 Inch
- Hex Wrench, ¼ Inch

Components

#142-56	O-ring for Torque Plate
#150-50-002	Retaining Ring
#150-50-003	Test Cell
#150-50-006	Cell Lid
#150-50-009	Inner Cap
#150-51	Locking Mesh Disk, 60 Mesh
#150-52	Gasket, Neoprene
#150-53	Gasket, Plastic
#150-54	Torque Wrench
#150-55	Spanner Wrench
#150-56	O-ring for Test Cell
#150-58	Torque Plate, Flat Bottom
#150-59	Torque Plate, Spherical Bottom
#153-16	Graduated Cylinder, 25 mL x .2 mL
#170-04	CO ₂ Pressuring Assembly
#170-13-3	O-ring for Inner Cap
#170-16	Valve Stem
#170-17	O-ring for Valve Stem
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35	Adjustable Wrench, 6 Inch
#171-79	Hex Wrench, ¼ Inch

Optional

#143-05	CO ₂ Bulbs, Box of 10, UN2037
#150-50-SP	Spare Parts Kit
#170-03	Carrying Case

Note: CO₂ bulbs must be ordered separately.

* May require special handling for shipping.

PRODUCTION SCREEN TESTER

#810-00-1 STAINLESS STEEL

#810-00-2 ACRYLIC

Size: 11.5" x 8" x 27" (29 x 20 x 69 cm)

Weight: 24 lb (10.9 kg)

The Production Screen Tester is designed to test flow-back of completion fluids on the rig site. It is no longer necessary to ship fluid samples back to the lab and delay the completion operation for days or weeks. Field fluids can be tested in real time with samples of the actual production screen being used down hole. The PST now makes it possible to determine if the fluid remaining in the annulus will flow back through the production screen.

Features

- Tests the flow-back of completion fluids through a production screen
- Designed similar to API filter press
- Tests a sample of the actual production screen in use
- Accepts any type of production screen
- Can test both invert-emulsion and water-based reservoir drill-in fluids
- Portable to well site
- Optional Advanced Screen Holder accepts screens of varying thickness

Components

#141-05	Gasket, Neoprene
#141-09	Threaded Insert W/Set Screw
#141-10	T-screw
#141-22	Filter, Felt
#142-00	CO ₂ Pressuring Assembly With Top Cap
#170-13	O-ring, Nitrile
#810-00-002	Bottom Cap Assembly
#810-00-005	O-ring, Nitrile
#810-00-006	Cap Screen
#810-00-007	Bottom Cup Insert
#810-00-020	Main Insert, Plastic
#810-00-021	Spacer Ring, Thick
#810-00-022	Spacer Ring, Thin
#810-00-1-10	Cell Body Assembly, Stainless Steel
#810-00-1-10-1	Cell Body Assembly, Acrylic

Optional

#120-50-076	Combination Wrench, 5/16"
#120-58-07	Allen Wrench for Threaded Insert, 5/64"
#170-27	Allen Wrench for Base Cap Set Screws, 5/32"
#810-00-010	Advanced Screen Holder Assembly

Note: CO₂ bulbs must be ordered separately.



#810-00-1 - Production Screen Tester

Drilling Fluids - Filtration

CO₂ PRESSURE ASSEMBLY #142-00 WITH TOP CAP #142-10 WITHOUT TOP CAP

Size: 9.5" x 2.5" x 5" (24 x 6 x 13 cm)
Weight: 2 lb 9 oz (1.2 kg)

Components

#141-02 Top Cap
#141-05 Gasket, Neoprene
#141-22 Felt Filter
#143-00 Regulator, Low Pressure
#143-01 Gauge, 1.5", 0 - 200 PSI
#143-02-10 CO₂ Puncture Head Assembly
#143-03 Barrel for CO₂ Cartridge
#143-06 Safety Bleeder Valve

Optional

#143-07 Regulator Repair Kit
#143-00-1 Diaphragm for Regulator

Note: CO₂ bulbs must be ordered separately.



#142-00 - CO₂ Pressure Assembly with Top Cap



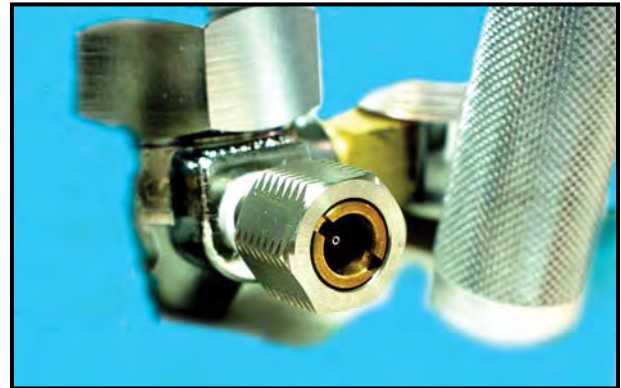
#142-10 - CO₂ Pressure Assembly

CO₂ PUNCTURE HEAD ASSEMBLY #143-02-10

Components

#143-02-13 O-ring for CO₂ Bulb
#143-02-14 O-ring for Puncture Pin Holder

Note: Must use #143-03 barrel with this puncture assembly.



#143-02-10 - CO₂ Puncturing Head Assembly

NITROGEN PRESSURING ASSEMBLY WITH TOP CAP, LOW PRESSURE

#171-31-1 WITH TANK
#171-31-3 WITHOUT TANK

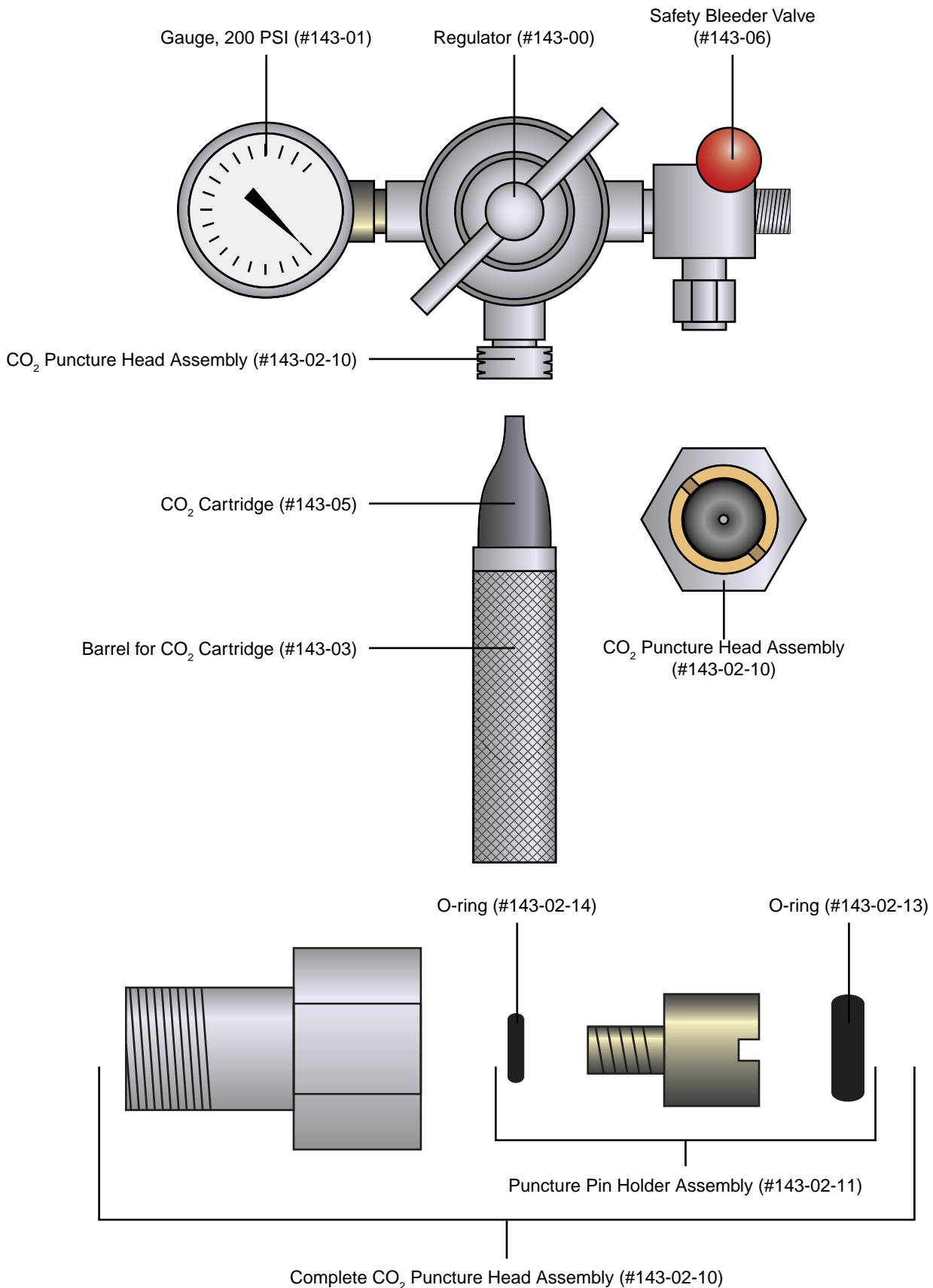
Components

#141-02 Top Cap
#141-05 Gasket, Neoprene
#141-14 Air Hose, Low Pressure, 3 Feet
#141-19 Air Hose Adapter
#141-22 Felt Filter
#143-06 Safety Bleeder Valve
#170-36 Regulator Assembly for Nitrogen Pressure, 200 and 3000 PSI Gauges
#170-37 Nitrogen Cylinder, Right-Hand Thread



#171-31-1 - Low-Pressuring Nitrogen Assembly

#142-10 - CO₂ Pressuring Assembly



Drilling Fluids - Filtration

HTHP FILTER PRESS, 175 ML, DOUBLE CAPPED CELL, THREADED, FOR DRILLING FLUIDS, CO₂ PRESSURE

#170-181 115 VOLT

#170-181-1 230 VOLT

Size: 7.5" x 11" x 23.5" (19 x 28 x 60 cm)

Weight: 27 lb (12.3 kg)

This new cell was designed with safety in mind. This modular design is much safer and more convenient. The two-piece cap is threaded, and cannot be opened while the cell is pressurized. And interchangeable caps make it easy to reconfigure the cell for testing with different filter media (filter paper, ceramic disks, or cement screens) with a single cell body. All cells are provided with pressure certification, unique serialization, and material certification which provides true traceability.

Features

- Threaded cell caps are safer than traditional designs
- Interchangeable caps enable testing with filter paper, ceramic disks, or cement screens with the same cell body
- Includes cell caps for testing with filter paper and ceramic disks

Specifications

- Maximum Pressure: 5,000 PSI (34.5 MPa)
- Maximum Temperature: 500°F (260°C)

Requirements

- 115 Volt at 4 Amp or 230 Volt at 2 Amp, 50 / 60 Hz

Components

#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#154-10	Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-00-1	Heating Jacket, 115 Volt
#170-01-1	Heating Jacket, 230 Volt
#170-05	Thermostat
#170-09	Insulation Board
#170-10	Pilot Light
#170-11	Heating Element, 200 Watt
#170-30	Thermostat Cover
#170-30-001	Fish Paper
#170-44	Rubber Foot
#171-32	Knob
#170-04	CO ₂ Pressurization Unit
#170-06	Back Pressure Receiver, 15 mL
#170-13-3	O-ring for Test Cell, Viton® 75D [*] , Qty: 16
#170-17	O-ring for Valve Stem, Viton® 75D, Qty: 16
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35	Adjustable Wrench, 6"
#170-181-S	Test Cell for Drilling Fluids
#171-190-057	O-ring for Valve Stem, Viton® 90D ^{**} , Qty: 24
#171-190-060	O-ring for Test Cell, Viton® 90D, Qty: 24



HTHP Filter Press, 175 mL, CO₂ Pressure

Optional

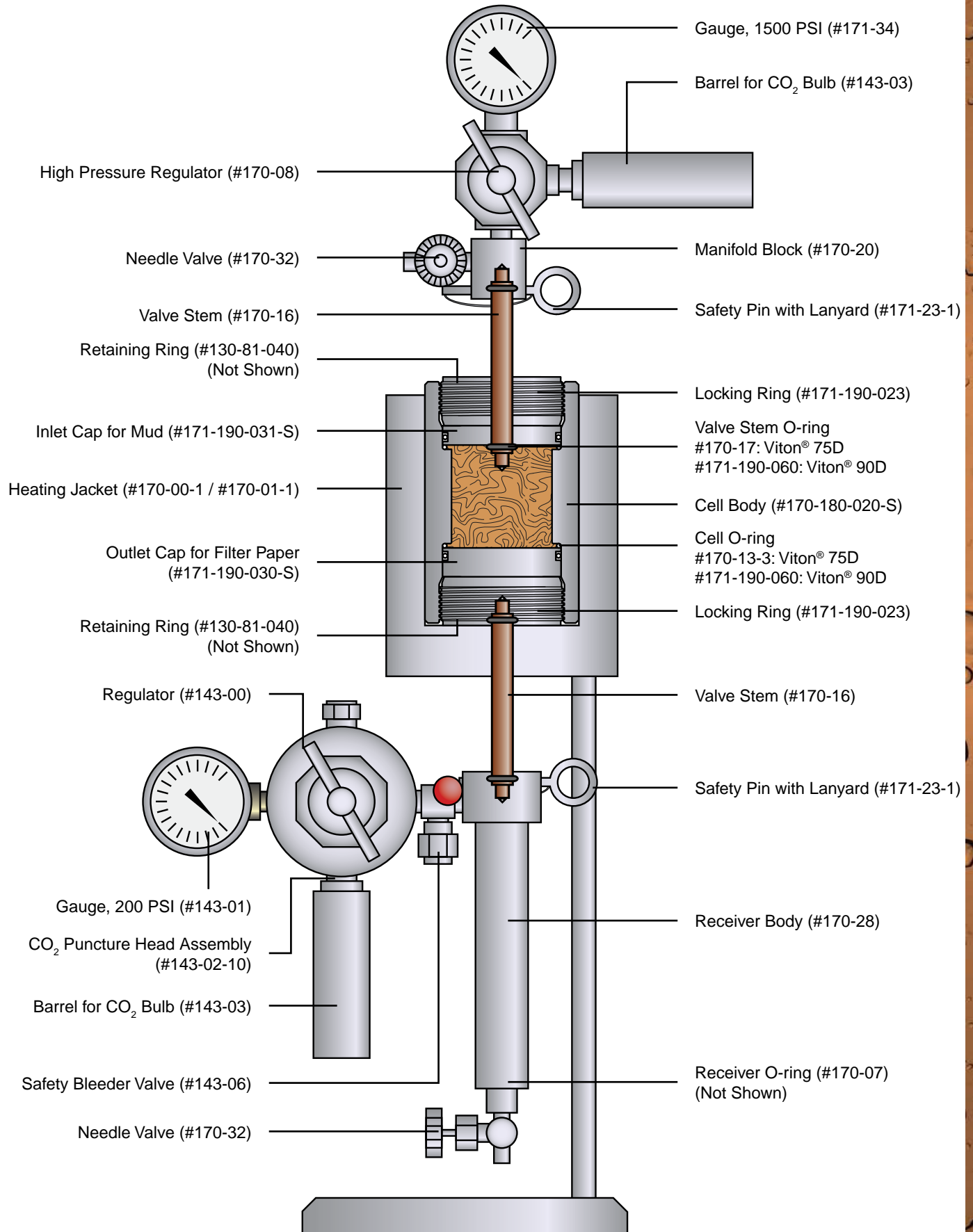
#143-05	CO ₂ Bulbs, Box of 10, UN2037
#143-07	Regulator Repair Kit
#170-03	Carrying Case, Stainless Steel
#170-40	Cell Carrying Tool
#170-91	Pressure Relief Tool
#170-181-SP	Spare Parts Kit
#171-190-028	Cell Stand

* For tests up to 400°F (204.4°C)

** For tests above 400°F (204.4°C)

*** May require special handling for shipping.

HTHP Filter Press with Threaded Cell, 175 mL, CO₂ Pressure



Drilling Fluids - Filtration

HTHP FILTER PRESS, 175 ML, SINGLE CAPPED CELL FOR FILTER PAPER, CO₂ PRESSURE

#170-00 115 VOLT
#170-01 230 VOLT

Size: 7.5" x 11" x 23.5" (19 x 28 x 60 cm)
Weight: 27 lb (12.3 kg)

The High Temperature High Pressure (HTHP) Filter Press is designed to evaluate the filtration characteristics of drilling fluids, cement slurries, fracturing fluids, and completion fluids under elevated temperatures and pressures.

Specifications

- Maximum Pressure: 1,500 PSI (10.3 MPa)
- Maximum Temperature: 400°F (204.4°C)

Requirements

- 115 Volt at 4 Amp or 230 Volt at 2 Amp, 50 / 60 Hz

Components

#153-14 Graduated Cylinder, 50 mL x 1 mL, Glass
#154-10 Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-00-1 Heating Jacket, 115 Volt
#170-01-1 Heating Jacket, 230 Volt
#170-05 Thermostat
#170-09 Insulation Board
#170-10 Pilot Light
#170-11 Heating Element, 200 Watt
#170-30 Thermostat Cover
#170-30-001 Fish Paper
#170-44 Rubber Foot
#171-32 Knob
#170-04 CO₂ Pressurization Unit
#170-06 Back Pressure Receiver, 15 mL
#170-12-1 Test Cell for Filter Paper, 175 mL, Locking Screws, Single Cap
#170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35 Adjustable Wrench, 6"

Optional

#143-05 CO₂ Bulbs, Box of 10, UN2037
#143-07 Regulator Repair Kit
#170-00-SP Spare Parts Kit
#170-03 Carrying Case, Stainless Steel

HTHP FILTER PRESS, 175 ML, DOUBLE CAPPED CELL FOR CERAMIC DISKS, CO₂ PRESSURE

#170-00-7 115 VOLT
#170-01-6 230 VOLT

Size: 7.5" x 11" x 23.5" (19 x 28 x 60 cm)
Weight: 27 lb (12.3 kg)

The High Temperature High Pressure (HTHP) Filter Press is designed to evaluate the filtration characteristics of drilling fluids, cement slurries, fracturing fluids, and completion fluids under elevated temperatures and pressures.

Specifications

- Maximum Pressure: 2,000 PSI (13.8 MPa)
- Maximum Temperature: 400°F (204.4°C)

Requirements

- 115 Volt at 4 Amp or 230 Volt at 2 Amp, 50 / 60 Hz

Components

#153-14 Graduated Cylinder, 50 mL x 1 mL, Glass
#154-10 Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-00-1 Heating Jacket, 115 Volt
#170-01-1 Heating Jacket, 230 Volt
#170-04 CO₂ Pressurization Unit
#170-06 Back Pressure Receiver, 15 mL
#170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35 Adjustable Wrench, 6"
#170-46 Test Cell for Ceramic Disks, 175 mL, Locking Screws, Double Cap

Optional

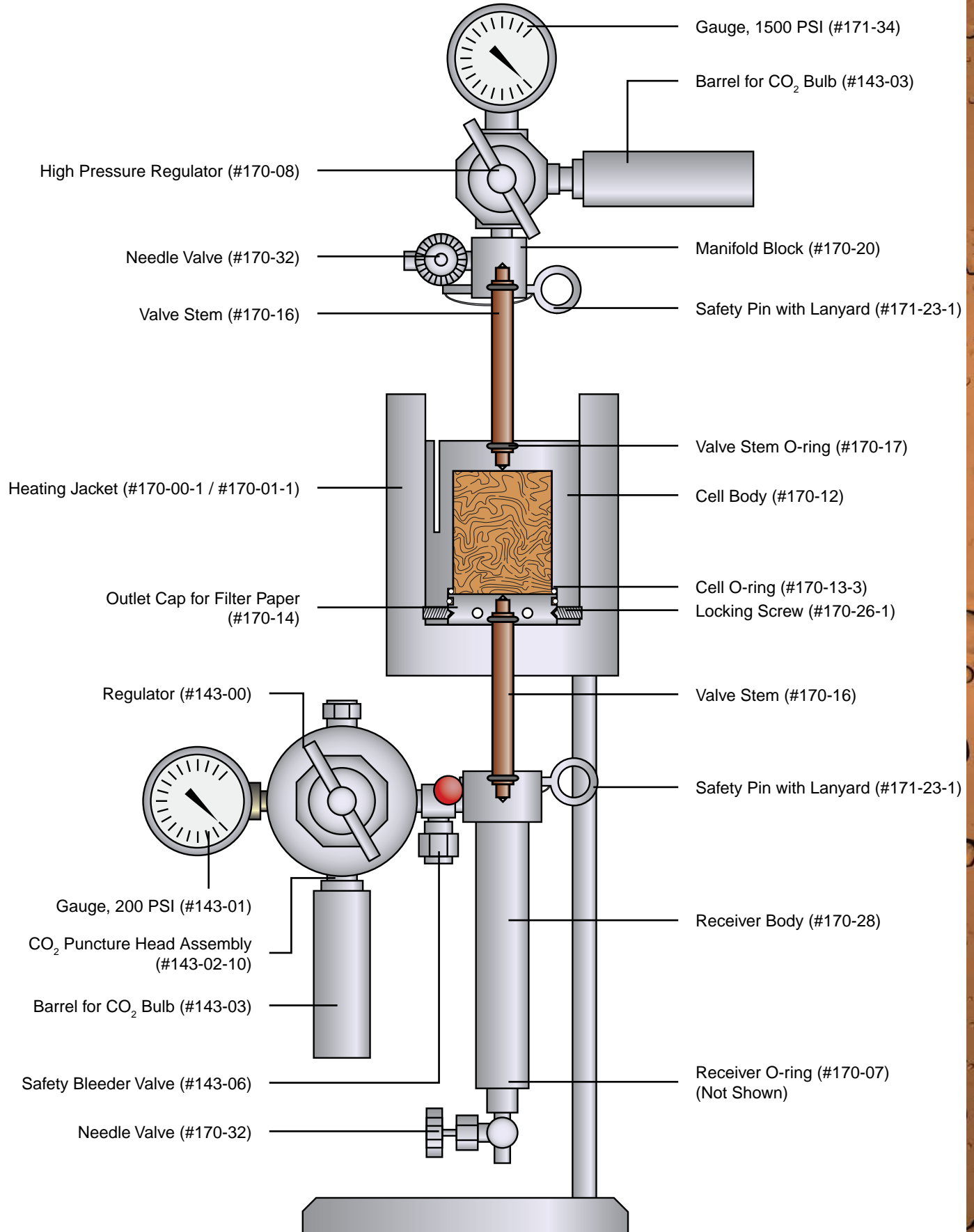
#143-05 CO₂ Bulbs, Box of 10, UN2037
#143-07 Regulator Repair Kit
#170-03 Carrying Case, Stainless Steel



HTHP Filter Press, 175 mL, CO₂ Pressure

* May require special handling for shipping.

HTHP Filter Press, 175 mL, CO₂ Pressure



Drilling Fluids - Filtration

HTHP FILTER PRESS, 175 ML, SINGLE CAPPED CELL FOR FILTER PAPER, N₂ PRESSURE

#170-00-3 115 VOLT

#170-01-3 230 VOLT

Size: 7.5" x 11" x 23.5" (19 x 28 x 60 cm)

Weight: 38 lb (17.2 kg)

The High Temperature High Pressure (HTHP) Filter Press is designed to evaluate the filtration characteristics of drilling fluids, cement slurries, fracturing fluids, and completion fluids under elevated temperatures and pressures.

Specifications

- Maximum Pressure: 1,500 PSI (10.3 MPa)
- Maximum Temperature: 400°F (204.4°C)

Requirements

- 115 Volt at 4 Amp or 230 Volt at 2 Amp, 50 / 60 Hz

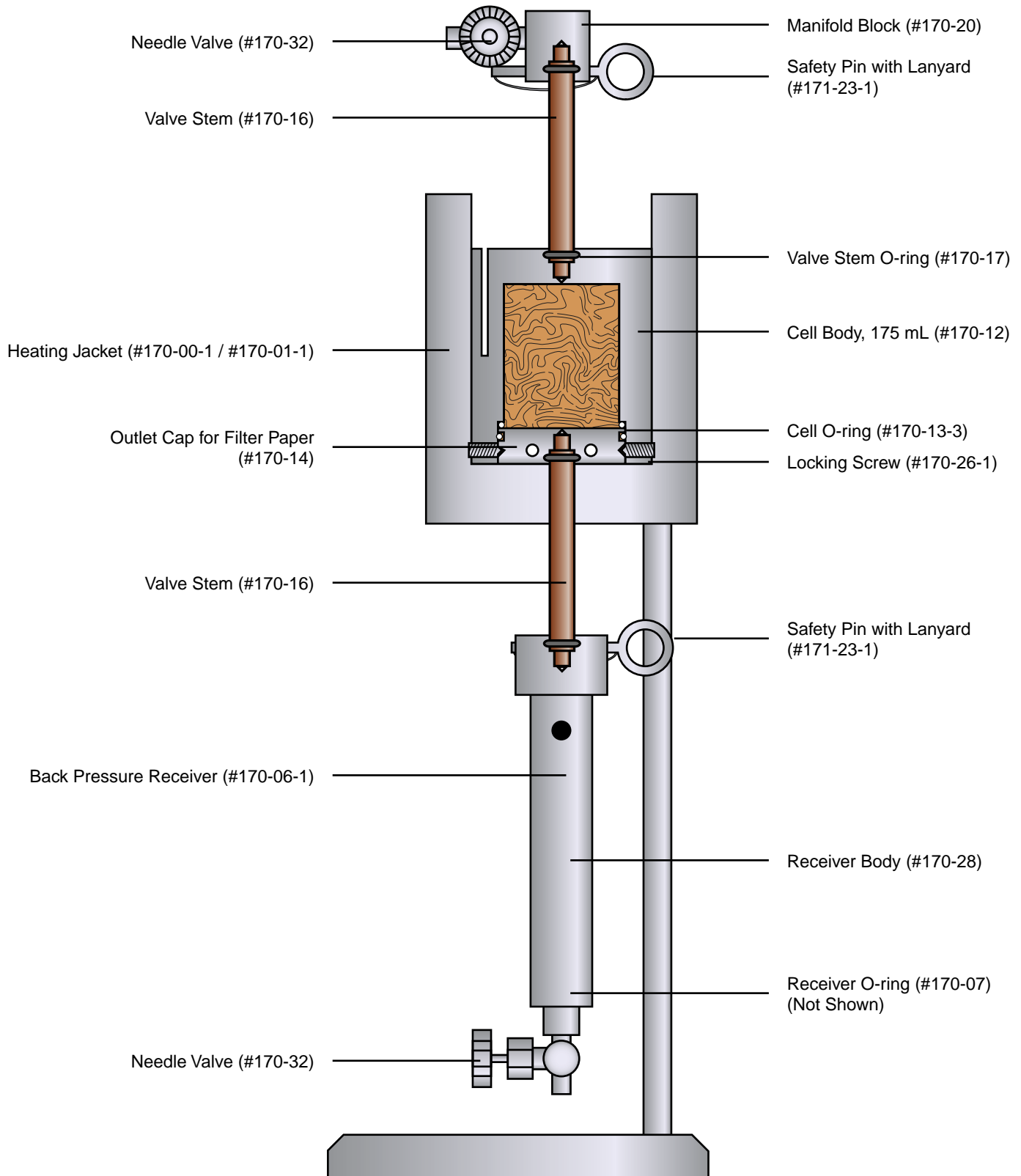
Components

#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#154-10	Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-00-1	Heating Jacket, 115 Volt
#170-01-1	Heating Jacket, 230 Volt
#170-05	Thermostat
#170-09	Insulation Board
#170-10	Pilot Light
#170-11	Heating Element, 200 Watt
#170-30	Thermostat Cover
#170-30-001	Fish Paper
#170-44	Rubber Foot
#171-32	Knob
#170-06-1	Back Pressure Receiver, 15 mL
#170-12-1	Test Cell for Filter Paper, 175 mL, Single Cap
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35	Adjustable Wrench, 6"
#171-24	Dual Nitrogen Manifold, 1350 and 750 PSI
Optional	
#143-07	Regulator Repair Kit
#170-00-3-SP	Spare Parts Kit
#170-03	Carrying Case, Stainless Steel
#170-40	Cell Carrying Tool
#170-91	HTHP Pressure Relief Tool
#170-92	Safety Clamp for HTHP Fluid Loss Cells
#171-190-028	Cell Stand



HTHP Filter Press, 175 mL, N₂ Pressure

HTHP Filter Press, 175 mL, N₂ Pressure



Drilling Fluids - Filtration

HTHP FILTER PRESS, 500 ML, DOUBLE CAPPED, THREADED, FOR DRILLING FLUIDS

#171-191 115 VOLT

#171-191-1 230 VOLT

Size: 10" x 18" x 42" (25 x 46 x 107 cm)

Weight: 53 lb (24.1 kg)

The HTHP (High Temperature, High Pressure) Filter Press is designed for testing drilling fluids and cement under elevated temperatures and pressures. This simulates various down-hole conditions and provides a reliable method for determining the effectiveness of the material being tested.

Features

- Threaded cell caps are safer than traditional designs
- Interchangeable caps enable testing with filter paper, ceramic disks, or cement screens with the same cell body

Specifications

- Maximum Pressure: 5,000 PSI (34.5 MPa)
- Maximum Temperature: 500°F (260°C)

Requirements

- Power: 115 Volt at 6.75 Amp or 230 Volt at 3.75 Amp, 50 / 60 Hz
- N₂: Up to 1500 PSI

Components

#153-12	Graduated Cylinder, 100 mL x 1 mL, Glass
#154-20	Thermometer with Metal Dial, 8" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-13-3	O-ring for Test Cell, Viton® 75D*, Qty: 16
#170-17	O-ring for Valve Stem, Viton® 75D, Qty: 16
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35	Wrench, Adjustable, 6"
#171-00	Heating Jacket, 115 Volt
#171-01	Heating Jacket, 230 Volt
#170-10	Pilot Light
#170-11	Heating Element, 200 Watt
#171-32	Knob
#171-44	Rubber Foot
#171-71	Thermostat
#171-87	Location Pin
#171-94	Cell Rest Plunger Assembly
#171-10	Back Pressure Receiver, 100 mL
#171-24	Dual Nitrogen Manifold
#171-190-057	O-ring for Valve Stem, Viton® 90D**, Qty: 24
#171-190-060	O-ring for Test Cell, Viton® 90D, Qty: 24
#171-191-S	Test Cell for Drilling Fluids

Optional

#143-07	Regulator Repair Kit
#170-37	Nitrogen Cylinder
#170-40	Cell Carrying Tool
#170-91	HTHP Pressure Relief Tool
#171-190-028	Cell Stand
#171-191-SP	Spare Parts Kit

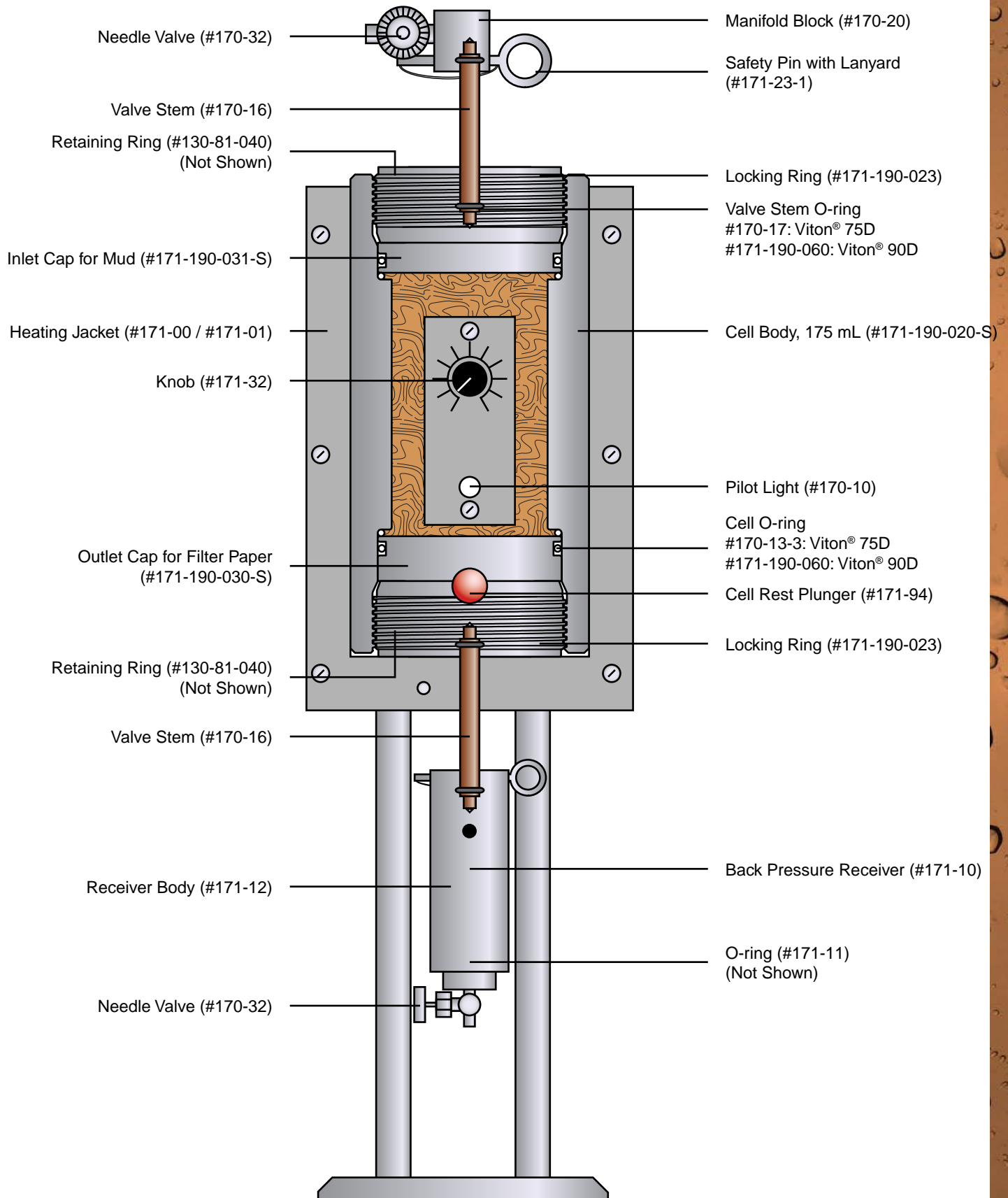


HTHP Filter Press, 500 mL, N₂ Pressure

* For tests up to 400°F (204.4°C)

** For tests above 400°F (204.4°C)

HTHP Filter Press with Threaded Cell, 500 mL, N₂ Pressure



Drilling Fluids - Filtration

HTHP FILTER PRESS, 500 ML, SINGLE CAPPED CELL FOR FILTER PAPER, N₂ PRESSURE

#171-00-C 115 VOLT
#171-01-C 230 VOLT

Size: 10" x 18" x 42" (25 x 46 x 107 cm)
Weight: 53 lb (24.1 kg)

The HTHP (High Temperature, High Pressure) Filter Press is designed for testing drilling fluids and cement under elevated temperatures and pressures. This simulates various down-hole conditions and provides a reliable method for determining the effectiveness of the material being tested. The larger test cell (500 mL) makes it possible to test at higher temperatures and pressures than the smaller cell (175 mL).

Specifications

- Maximum Pressure: 2,000 PSI (13.8 MPa)
- Maximum Temperature: 400°F (204.4°C)

Requirements

- Power: 115 Volt at 6.75 Amp or 230 Volt at 3.75 Amp, 50 / 60 Hz
- N₂: Up to 1500 PSI

Components

#153-12 Graduated Cylinder
#154-20 Thermometer with Metal Dial, 8" Stem, Dual Scale:
50° - 500°F / 0° - 250°C
#170-13-3 O-ring for Test Cell
#170-17 O-ring for Valve Stem
#170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35 Adjustable Wrench, 6"
#171-00 Heating Jacket, 115 Volt
#171-01 Heating Jacket, 230 Volt
#170-10 Pilot Light
#170-11 Heating Element, 200 Watt
#171-32 Knob
#171-44 Rubber Foot
#171-71 Thermostat
#171-87 Location Pin
#171-94 Cell Rest Plunger Assembly
#171-10 Back Pressure Receiver
#171-20 Test Cell for Filter Paper, Single Cap
#171-24 Dual Nitrogen Manifold, 1350 and 750 PSI

Optional

#143-07 Regulator Repair Kit
#170-37 Nitrogen Cylinder
#170-40 Cell Carrying Tool
#170-91 HTHP Pressure Relief Tool
#170-92 Safety Clamp for HTHP Fluid Loss Cells
#171-00-SP Spare Parts Kit
#171-190-028 Cell Stand

HTHP FILTER PRESS, 500 ML, DOUBLE CAPPED CELL WITH CEMENT SCREENS, N₂ PRESSURE

#171-03 115 VOLT
#171-04 230 VOLT

Size: 10" x 18" x 42" (25 x 46 x 107 cm)
Weight: 53 lb (24.1 kg)

The HTHP (High Temperature, High Pressure) Filter Press is designed for testing drilling fluids and cement under elevated temperatures and pressures. This simulates various down-hole conditions and provides a reliable method for determining the effectiveness of the material being tested. The larger test cell (500 mL) makes it possible to test at higher temperatures and pressures than the smaller cell (175 mL).

Specifications

- Maximum Pressure: 2,000 PSI (13.8 MPa)
- Maximum Temperature: 400°F (204.4°C)

Requirements

- Power: 115 Volt at 6.75 Amp or 230 Volt at 3.75 Amp, 50 / 60 Hz
- N₂: Up to 1500 PSI

Components

#153-12 Graduated Cylinder
#154-20 Thermometer with Metal Dial, 8" Stem, Dual Scale:
50° - 500°F / 0° - 250°C
#170-13-3 O-ring for Test Cell
#170-17 O-ring for Valve Stem
#170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-35 Adjustable Wrench, 6"
#171-00 Heating Jacket, 115 Volt
#171-01 Heating Jacket, 230 Volt
#171-10 Back Pressure Receiver
#171-19 Test Cell with Cement Screens, Locking Screws, Double Cap
#171-24 Dual Nitrogen Manifold, 1350 and 750 PSI

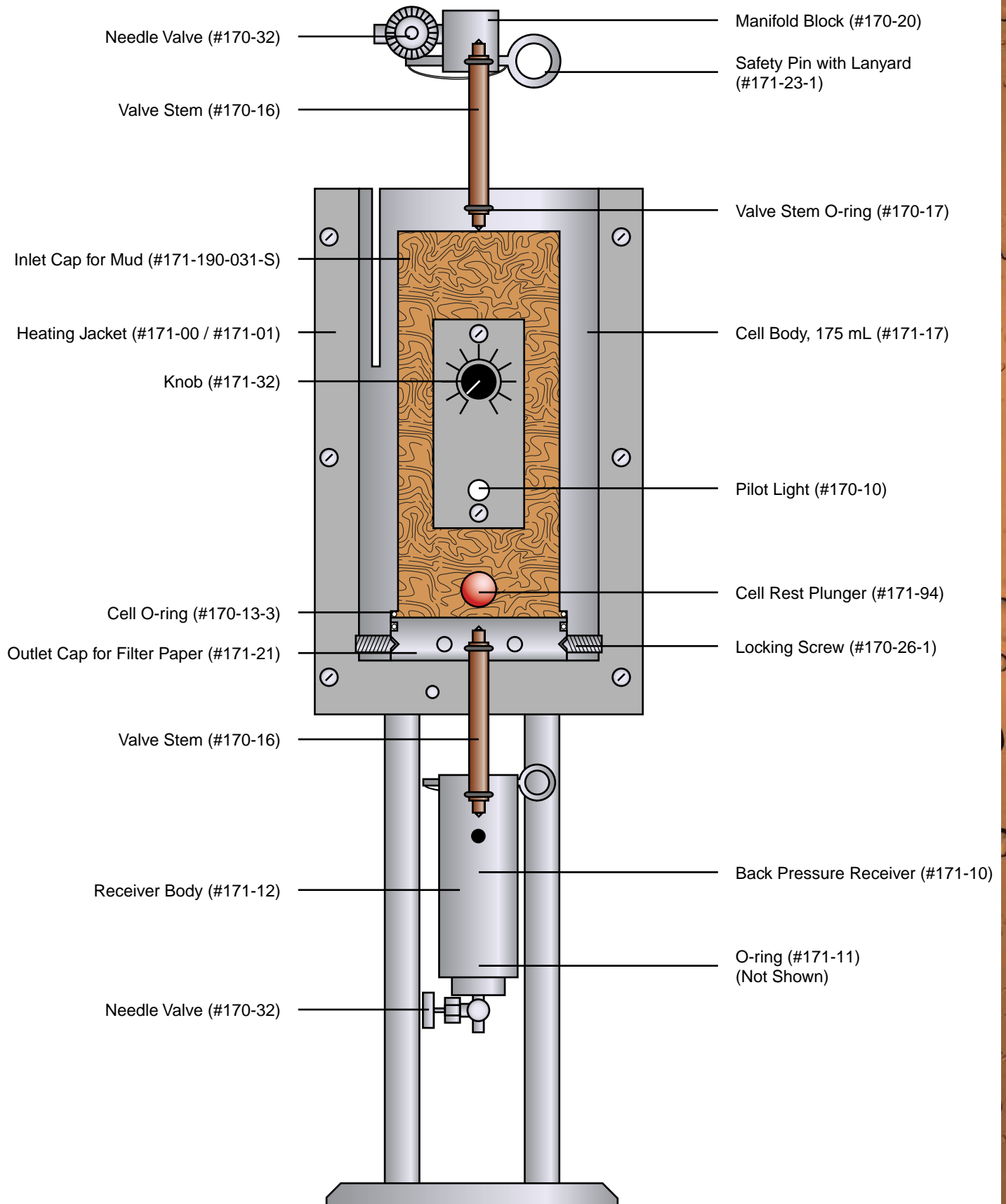
Optional

#143-07 Regulator Repair Kit
#170-37 Nitrogen Cylinder
#171-03-SP Spare Parts Kit



HTHP Filter Press, 500 mL, N₂ Pressure

HTHP Filter Press, 500 mL, N₂ Pressure



Drilling Fluids - Filtration

HTHP FILTER PRESS, 4 UNIT, ELECTRONIC TEMPERATURE CONTROL AND INDEPENDENT PRESSURE, 175 ML

#170-00-4S 115 VOLT

#170-00-4S-230 230 VOLT

Size: 42.5" x 27" x 19" (108 x 69 x 48 cm)

Weight: 172 lb (78 kg)

Shipping Size: 48" x 27" x 38" (122 x 69 x 97 cm)

Shipping Weight: 350 lb (158.8 kg)

The 4 Unit HTHP Filter Press is ideal for high-volume laboratory testing. It accommodates four 175 mL HTHP filter press cells (sold separately). Each cell has a separate electronic temperature controller and two separate pressure regulators (drive pressure and back pressure). This allows each cell to be heated and pressurized independently, while still sharing a single pressure source.

An optional load cell upgrade includes a load cell for each cell with software for recording and graphing filtrate volume over time.

What's Included

- Back Pressure Receivers
- Temperature Controllers (4)
- Regulators (8)
- Safety Pin with Lanyard (8)
- Thermocouple (4)
- Graduated Cylinders (4)
- Filter Paper

Note: Test cells sold separately.

Requirements

- Power: 115 Volt at 16 amp or 230 Volt at 8 Amp, 50 / 60 Hz
- N₂: Up to 1500 PSI

Components

#120-70-1-021	Gauge for Back Pressure, 1000 PSI
#120-70-1-022-1	Gauge for Top Pressure, 1500 PSI
#120-70-1-052	Hose, Stainless Steel
#153-14	Graduated Cylinder
#170-06-1	Back Pressure Receiver
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-20	Manifold Block
#170-93	Wrench for Valve Stem
#171-23-1	Safety Pin with Lanyard
#171-45-7	Thermocouple
#174-03	Temperature Controller

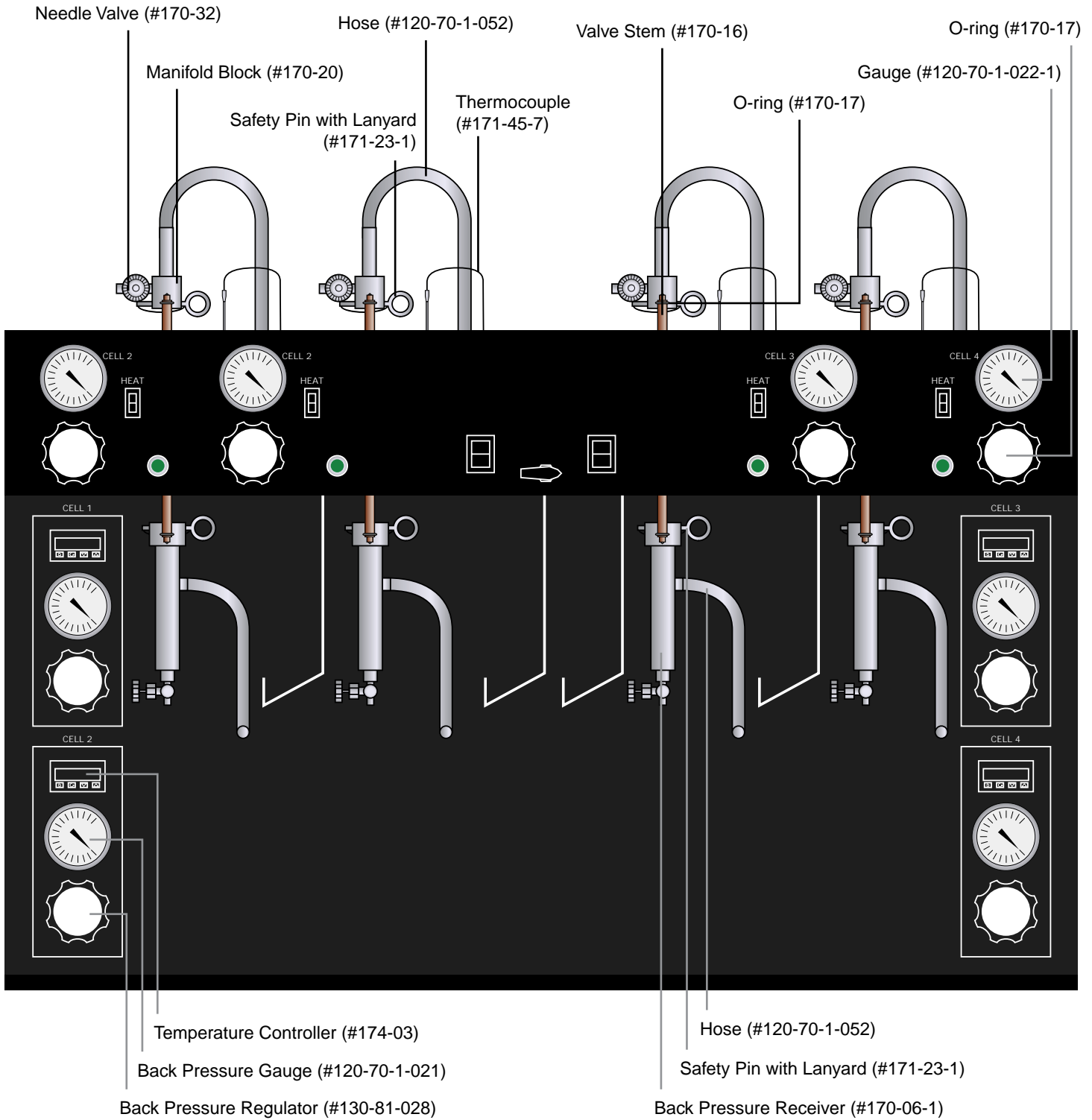
Optional

#170-12-1	Test Cell for Filter Paper, 175 mL, Single Cap
#170-40	Cell Carrying Tool
#170-45	Test Cell with Cement Screens, 175 mL, Locking Screws, Double Cap
#170-46	Test Cell for Ceramic Disks, 175 mL, Locking Screws, Double Cap
#170-181-S	Test Cell for Drilling Fluids, 175 mL, Threaded
#170-182-S	Test Cell for Cement, 175 mL, Threaded
#171-190-028	Cell Stand
#170-91	HTHP Pressure Relief Tool
#170-00-4S-SP	Spare Parts Kit
#170-00-4S-LC	Load Cell Option



#170-00-4S - 4-Unit HTHP Filter Press with Electronic Temperature Control and Independent Pressure

#170-00-4S - 4-Unit HTHP Filter Press with Electronic Temperature Control and Independent Pressure



Drilling Fluids - Filtration

HTHP FILTER PRESS, 4 UNIT, 175 ML, SINGLE CAPPED CELLS FOR FILTER PAPER

#170-00-4 115 VOLT

#170-00-4-230 230 VOLT

Size: 39.25" x 25.75" x 37.5" (100 x 65 x 95 cm)

Weight: 175 lb (79.4 kg)

Shipping Size: 48" x 33" x 41" (122 x 84 x 104 cm)

Shipping Weight: 320 lb (145.1 kg)

The 4 Unit HTHP Filter Press is designed for high-volume laboratory testing. It accommodates four 175 mL HTHP filter press cells. Each cell has a separate thermostat for independent temperature control. All four cells share a single Nitrogen pressure source (sold separately).

What's Included

- Frame
- Heating Jackets (4)
- Test Cells (4)
- Back Pressure Receivers (4)
- Safety Pin with Lanyard (8)
- Graduated Cylinders (4)
- Thermometers (4)
- Filter Paper
- Pressure Manifold and Fittings

Requirements

- Power: 115 Volt at 16 Amp or 230 Volt at 8 Amp, 50 / 60 Hz
- N₂: Up to 1500 PSI

Components

#153-14	Graduated Cylinder
#154-10	Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-05	Thermostat
#170-06-1	Back Pressure Receiver
#170-12-1	Test Cell for Filter Paper, Single Cap
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-20	Manifold Block
#170-35	Adjustable Wrench
#171-25-1	Relief Valve, 750 PSI
#171-25-2	Relief Valve, 1350 PSI
#171-38	Gauge for Back Pressure, 1000 PSI
#171-42	Gauge for Nitrogen Supply, 3000 PSI
#171-40	Gauge for Top Pressure, 1500 PSI

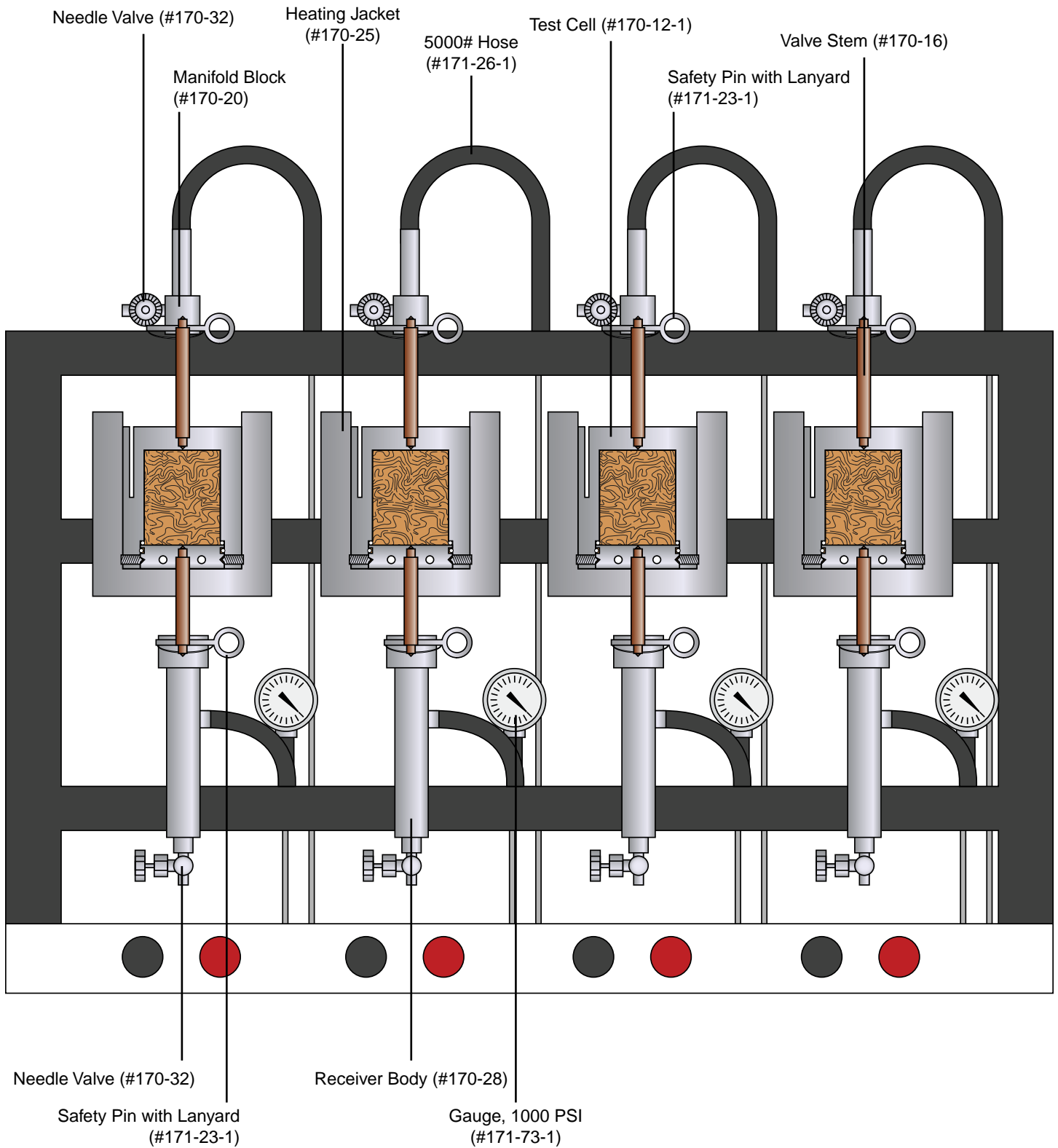
Optional

#143-00-1	Diaphragm for Regulator
#143-07	Regulator Repair Kit
#170-00-4-SP	Spare Parts Kit
#170-40	Cell Carrying Tool
#170-91	HTHP Pressure Relief Tool
#171-190-028	Cell Stand
#171-24	Dual Nitrogen Manifold



#170-00-4 - 4-Unit HTHP Filter Press, 175 mL

#170-00-4 - 4-Unit HTHP Filter Press



Drilling Fluids - Filtration

HTHP FILTER PRESS, 2 UNIT, ELECTRONIC TEMPERATURE CONTROL AND INDEPENDENT PRESSURE, 500 ML

#171-00-2S 115 VOLT
#171-00-2S-230 230 VOLT

The 2 Unit HTHP Filter Press is ideal for high-volume laboratory testing. It accommodates two 500 mL HTHP filter press cells (sold separately). Each cell has a separate electronic temperature controller and two separate pressure regulators (drive pressure and back pressure). This allows each cell to be heated and pressurized independently, while still sharing a single pressure source.

What's Included

- Back Pressure Receivers (2)
- Temperature Controllers (2)
- Regulators (4)
- Safety Pin with Lanyard (4)
- Thermocouple (2)
- Graduated Cylinders (2)
- Filter Paper

Note: Test cells sold separately.

Requirements

- Power: 115 Volt or 230 Volt, 50 / 60 Hz
- N₂: Up to 1500 PSI

Components

- #153-12 Graduated Cylinder, 100 mL x 1 mL
- #171-10 Back Pressure Receiver
- #170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
- #170-20 Manifold Block
- #170-93 Wrench for Valve Stem
- #171-23-1 Safety Pin with Lanyard
- #130-76-03 Thermocouple

Optional

- #170-40 Cell Carrying Tool
- #170-91 HTHP Pressure Relief Tool
- #171-190-028 Cell Stand
- #171-191-S Test Cell for Drilling Fluids, 500 mL, Threaded
- #171-192-S Test Cell for Cement, 500 mL, Threaded



#171-00-2S - 2 Unit HTHP Filter Press with Electronic Temperature Control and Independent Pressure, 500 mL

HTHP FILTER PRESS, SINGLE UNIT, ELECTRONIC TEMPERATURE CONTROL, 175 ML

#170-00-1S 115 VOLT
#170-00-1S-230 230 VOLT

This HTHP Filter Press is ideal for high-volume laboratory testing. It accommodates a 175 mL HTHP filter press cell (sold separately). Temperature and filtrate collection are controlled automatically by the software. And filtrate volume is recorded over time.

What's Included

- Back Pressure Receiver
- Temperature Controller
- Regulators (2)
- Safety Pin with Lanyard (2)
- Thermocouple
- Graduated Cylinders
- Filter Paper

Note: Test cells sold separately.

Requirements

- Power: 115 Volt at 16 amp or 230 Volt at 8 Amp, 50 / 60 Hz
- N₂: Up to 1500 PSI

Components

- #130-76-03 Thermocouple
- #153-14 Graduated Cylinder
- #170-06-1 Back Pressure Receiver
- #170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
- #170-20 Manifold Block
- #170-93 Wrench for Valve Stem
- #171-23-1 Safety Pin with Lanyard

Optional

- #170-181-S Test Cell, Threaded, for Drilling Fluids, 175 mL
- #170-182-S Test Cell, Threaded, for Cement, 175 mL



#170-00-1S - Single Unit HTHP Filter Press with Electronic Temperature Control

DYNAMIC HTHP FILTER PRESS

#170-95 115 VOLT

#170-95-1 230 VOLT

The Dynamic High Temperature High Pressure (HTHP) Filter Press measures filtration volume and cake building properties under varying downhole conditions. A motor driven shaft fitted with propellers turns at varying speeds inside a standard 500 mL HTHP cell. RPM settings from 1 to 3600 RPM impart laminar flow to the fluid inside the cell. By varying the shaft length, the shear stress may be increased or decreased.

During most of the operation, the drilling fluid is circulating inside the hole. With the Dynamic HTHP Filter Press, you can collect filtrate under similar circulating conditions to get a more realistic picture of the conditions inside the well.

Features

- Propeller inside the cell agitates the fluid during the test
- Variable speed motor imparts either laminar flow
- Adjustable shaft length
- Variable speed motor
- Auxiliary pipe connection for the cell top cap. Plug may be removed to add additional fluid additives.
- Rupture disk prevents over pressurization

Specifications

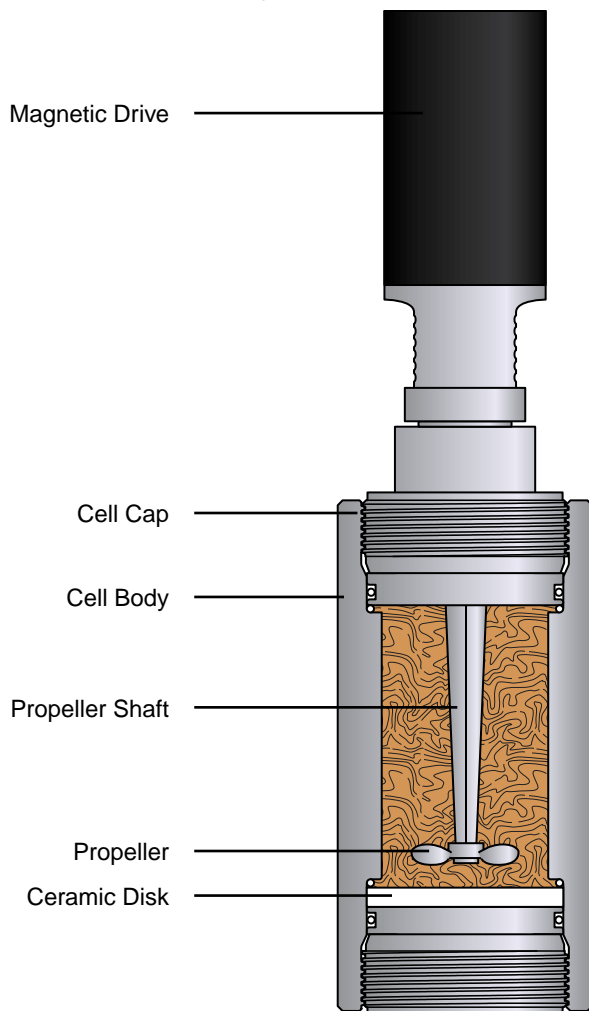
- Maximum Working Pressure: 5,000 PSI (34.5 MPa)
- Maximum Temperature: 500°F (260°C)

Components

#120-70-1-021	Gauge, 1000 PSI
#120-70-1-053	Hose, Stainless Steel, 24"
#120-910-022	Gauge, 3000 PSI
#122-077	Fuse, 10 Amp
#141-28	Hose Kit, Air/Water/Drain
#153-12	Graduated Cylinder, 100 mL x 1 mL
#154-20	Thermometer with Metal Dial, 8" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#165-14-8	Thermocouple
#170-16	Valve Stem
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-20	Manifold Block
#170-32	Needle Valve, Male
#170-35	Adjustable Wrench
#170-53	Ceramic Filter Disk, 50 Micron
#170-67	Propeller, 1.5" (3.81 cm), Stainless Steel
#170-68	Propeller, 2" (5 cm), Stainless Steel
#170-93	Wrench for Valve Stem
#170-95-313	Wrench for Cell Cap, Spanner
#171-10	Back Pressure Receiver, 100 mL
#171-190-028	Stand for Cell
#171-190-057	O-ring for Valve Stem, Viton 90D
#171-190-058	O-ring for Rupture Disk, Viton 90D
#171-190-060	O-ring for Cell, Viton 90D
#171-196-S	Test Cell Assembly
#171-23-1	Safety Pin with Lanyard
#171-25-1	Relief Valve, 750 PSI
#171-25-4	Relief Valve, 2600 PSI
#171-48-2	Thermocouple



#170-90 - Dynamic HTHP Filter Press



Drilling Fluids - Filtration

HTHP FILTER PRESS, MODEL MB

171-50 115 VOLT

171-51 230 VOLT

Size: 19" x 21" x 28" (48 x 53 x 71 cm)

Weight: 35 lb (15.9 kg)

Requirements

- 115 Volt at 7 Amp or 230 Volt at 3.75 Amp, 50 / 60 Hz

Components

- #153-16 Graduated Cylinder, 25 mL x $\frac{3}{16}$ mL, Glass
- #153-55 Grease, High Vacuum, 150 Gram Tube
- #154-10 Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
- #170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
- #171-55 Heating Jacket, 115 Volt
- #171-55-1 Heating Jacket, 230 Volt
 - #170-11 Heating Element, 200 Watt
 - #171-54 Fuse
 - #171-67 Knob
 - #171-68 Pilot Light, Red
 - #171-69 Pilot Light, White
 - #171-71 Thermostat
- #171-56 Test Cell, Model MB
- #171-57 High Pressure Regulator Assembly
- #171-58 Back Pressure Receiver
- #171-79 Hex Wrench, $\frac{1}{4}$ "

Optional

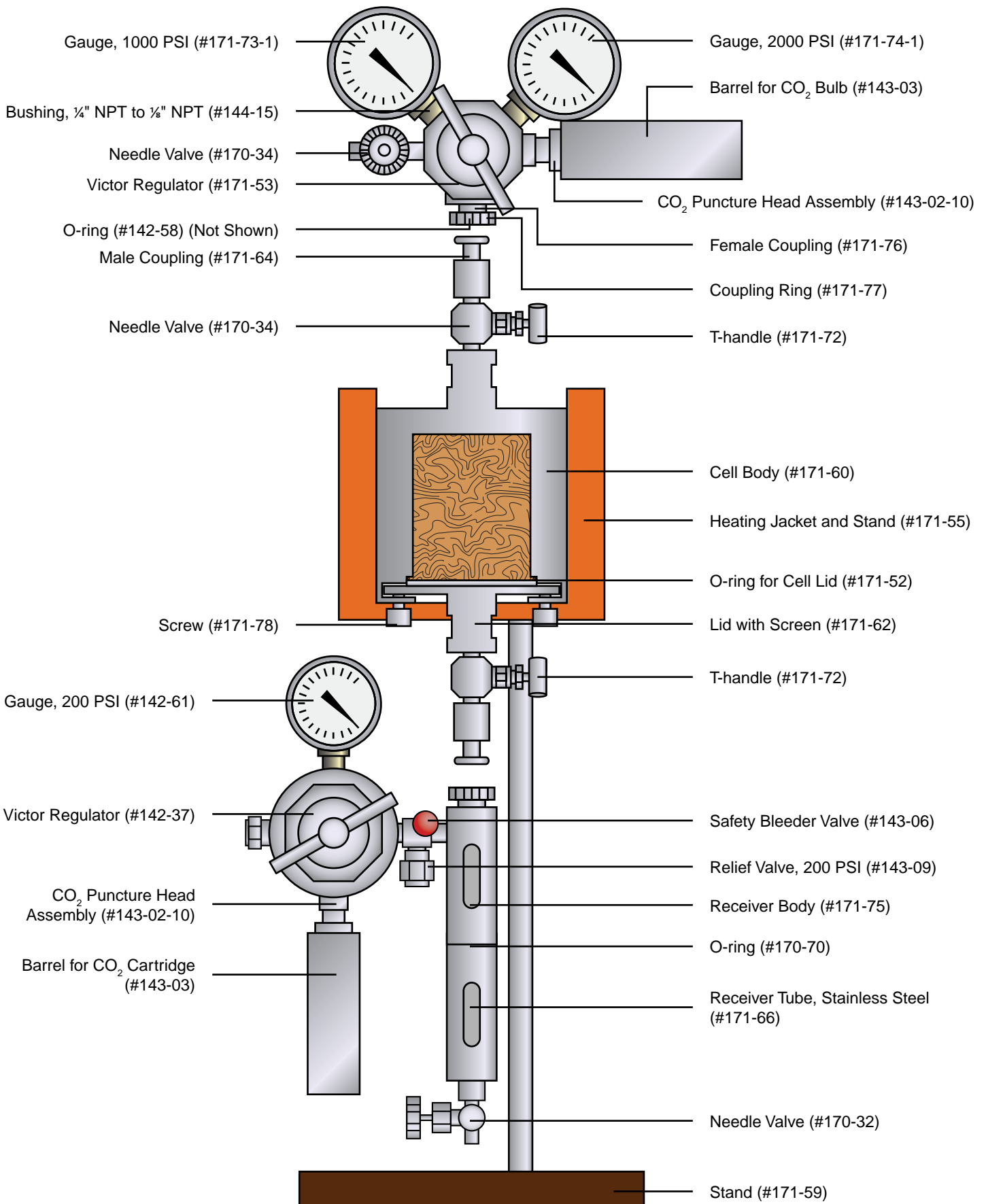
- #143-05 CO₂ Bulbs, Box of 10, UN2037
- #143-19 Repair Kit for Low Pressure Regulator, for 171-58
- #143-20 Repair Kit for High Pressure Regulator, for 171-57
- #171-81 Carrying Case, Stainless Steel
- #171-50-SP Spare Parts Kit



#171-50 Series, Model MB HTHP Filter Press

* May require special handling for shipping.

#171-50 - Model MB HTHP Filter Press



Drilling Fluids - Filtration

HTHP FILTER PRESS, MODEL MB, 4 UNIT #171-50-4

Size: 39.25" x 25.75" x 37.5" (100 x 65 x 95 cm)
Weight: 175 lb (79.4 kg)

Shipping Size: 48" x 33" x 41" (122 x 84 x 104 cm)
Shipping Weight: 350 lb (158.8 kg)

What's Included

- Frame
- Heating Jackets (4)
- Model MB Test Cells (4)
- Back Pressure Receivers (4)
- Pressure Manifold
- Graduated Cylinders (4)
- Thermometers (4)
- Filter Paper
- O-rings

Requirements

- 230 Volt at 15 Amp, 50 / 60 Hz

Components

- #142-58 O-ring for Coupling
- #152-38 AC Power Cord
- #153-16 Graduated Cylinder, 25 mL x $\frac{3}{16}$ mL, Glass
- #154-10 Thermometer with Metal Dial, 5" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
- #170-07 O-ring for Back Pressure Receiver
- #170-11 Heating Element, 200 Watt
- #170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
- #170-32 Needle Valve, $\frac{1}{8}$ " x $\frac{1}{8}$ " NPT
- #170-34 Needle Valve, $\frac{1}{4}$ " x $\frac{1}{4}$ " NPT
- #171-25-1 Relief Valve, 750 PSI
- #171-25-2 Relief Valve, 1350 PSI
- #171-38 Gauge, 1000 PSI
- #171-40 Gauge, 1500 PSI
- #171-42 Gauge, 3000 PSI
- #171-52 O-ring for Cell
- #171-54 Fuse
- #171-56 Test Cell, Model MB
- #171-58 Back Pressure Receiver
- #171-79 Hex Wrench

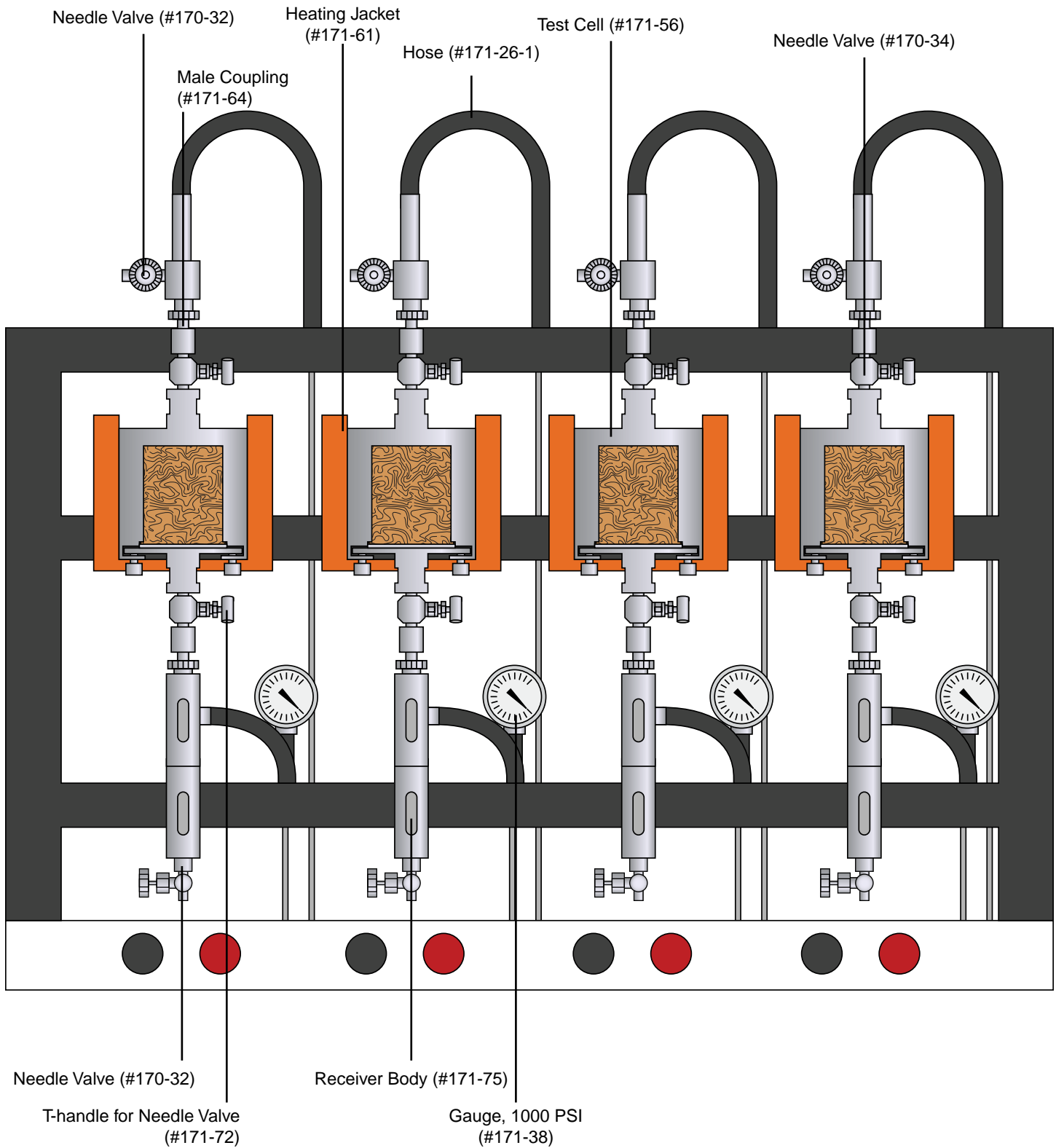
Optional

- #171-50-4-SP Spare Parts Kit
- #143-19 Repair Kit for Low Pressure Regulator, for 171-58



#171-50-4 Model MB 4-Unit HTHP Filter Press

#171-50-4 - HTHP Filter Press, Model MB, 4 Unit



Drilling Fluids - Filtration

PERMEABILITY PLUGGING TESTER, 5000 PSI

#171-193 115 VOLT

#171-193-1 230 VOLT

Size: 15" x 25" x 42" (38 x 64 x 107 cm)

Weight: 61 lb (27.7 kg)

Shipping Size: 34" x 24" x 23" (86 x 61 x 58 cm)

Shipping Weight: 150 lb (68 kg)

The Permeability Plugging Tester (PPT) is designed to run filtration tests on plugging materials without the interference of particles settling on the filter medium. The PPT uses the same test cell as the standard HTHP Filter Press. However, in the PPT, the cell is inverted with the filter and receiver on top. Several filter media are available, such as ceramic disks, conventional filter paper, and slotted stainless steel disks. The cell is pressurized with hydraulic oil. A floating piston separates the oil from the test fluid to prevent contamination.

The new cell is designed with safety in mind. This modular design is safe and convenient. The two-piece cap is threaded, and cannot be opened while the cell is pressurized. And interchangeable caps make it easy to reconfigure the cell for testing with different filter media (filter paper, ceramic disks, or cement screens) with a single cell body. All cells are provided with pressure certification, unique serialization, and material certification which provides true traceability.

Requirements

- 115 Volt at 6.75 Amp or 230 Volt at 3.75 Amp, 50 / 60 Hz

What's Included

- Test Cell with Threaded Caps and Floating Piston
- Heating Jacket
- Back Pressure Receiver with Fittings
- Hand Pump with Hydraulic Oil and Fittings
- Graduated Cylinder
- Thermometer
- Filter Paper
- Ceramic Filter Disk

Components

#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#154-20	Thermometer with Metal Dial, 8" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-04	CO ₂ Pressuring Assembly
#170-13-3	O-ring for Test Cell, Viton® 75D, Qty: 16
#170-17	O-ring for Valve Stem, Viton® 75D, Qty: 18
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-53	Ceramic Filter Disk, 50 Micron
#171-00	Heating Jacket, 800 Watt, 115 Volt
#171-01	Heating Jacket, 800 Watt, 230 Volt
#170-10	Pilot Light
#170-11	Heating Element, 200 Watt
#171-32	Knob
#171-44	Rubber Foot
#171-71	Thermostat
#171-87	Location Pin
#171-94	Cell Rest Plunger Assembly
#171-10	Back Pressure Receiver, 100 mL
#171-23-1	Safety Pin with Lanyard
#171-25-3	Relief Valve, 5500 PSI
#171-27	Hose, 5000#, 3/16" x 6'
#171-84-02	Reducing Bushing, 3/8" MNPT x 1/8" FNPT
#171-90-02	Quick Connect Coupler, Female

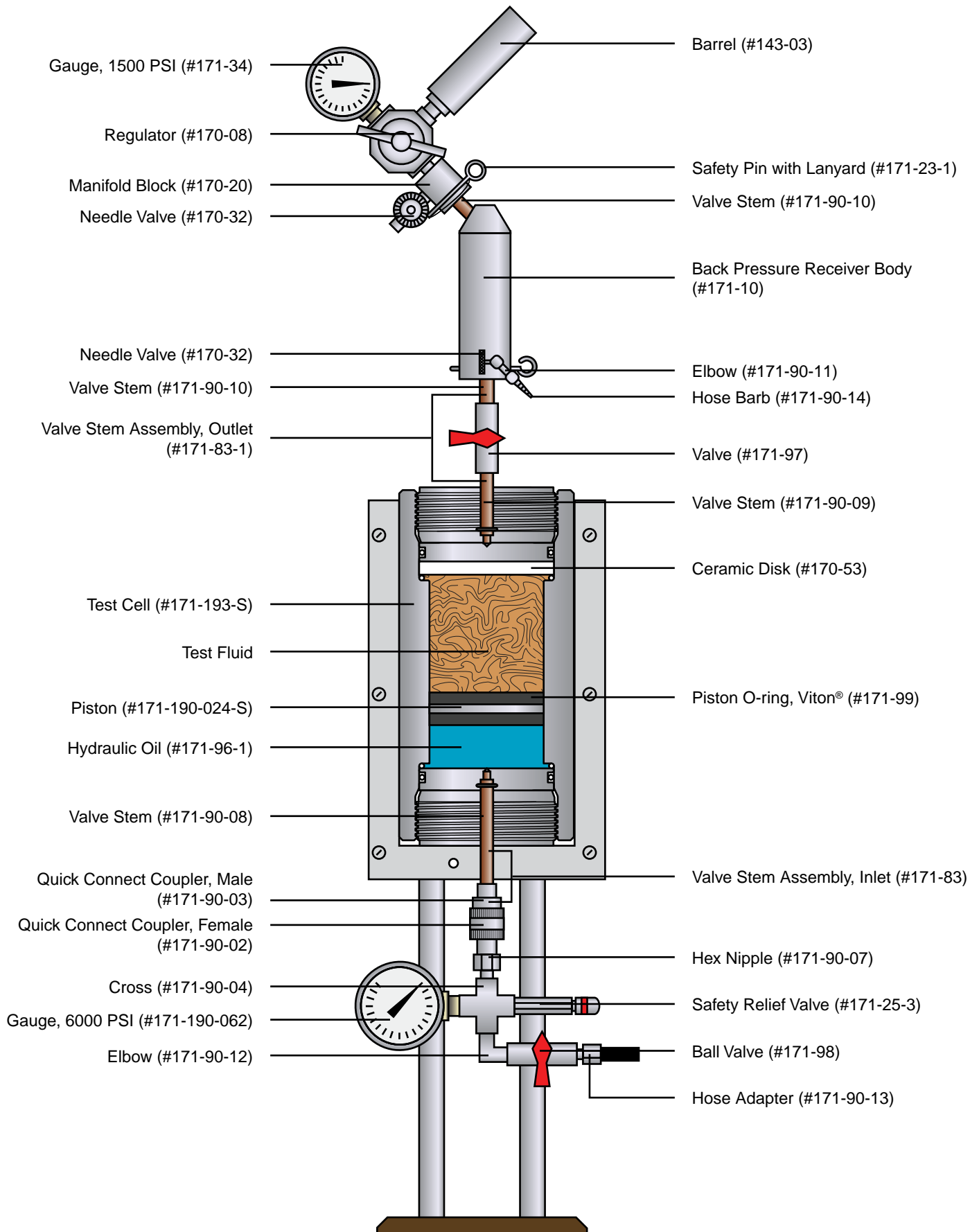
#171-90-04	Cross, 1/4" NPT
#171-90-07	Hex Nipple, 1/4" NPT
#171-90-10	Valve Stem for Back Pressure Receiver
#171-90-11	Elbow for Back Pressure Receiver
#171-90-12	Elbow for Hydraulic Pressure Assembly
#171-90-13	Adapter, 1/4" Flare x 1/4" MNPT
#171-90-14	Hose Barb
#171-90-15	Crescent Wrench, Adjustable, 6"
#171-96	Handpump
#171-96-1	Hydraulic Oil, 32 Oz
#171-98	Ball Valve for Hydraulic Pressure Assembly
#171-99	O-ring for Piston, Viton® 75D, Qty: 8
#171-190-057	O-ring for Valve Stem, Viton® 90D, Qty: 16
#171-190-060	O-ring for Test Cell, Viton® 90D, Qty: 24
#171-190-061	O-ring for Piston, Viton® 90D, Qty: 12
#171-190-062	Gauge, 2.5" Face, 1/4" Bottom Connection, 6000 PSI
#171-193-S	Test Cell with Threaded Caps and Floating Piston

Optional

#143-05	CO ₂ Bulbs, Box of 10, UN2037
#171-190-028	Cell Stand
#171-193-SP	Spare Parts Kit
#171-10	Back Pressure Receiver, 100 mL (For Conventional Filtration)

* May require special handling for shipping.

#171-193 - Permeability Plugging Tester, 5000 PSI



Drilling Fluids - Filtration

PERMEABILITY PLUGGING TESTER, 2000 PSI

#171-90 115 VOLT

#171-90-01 230 VOLT

Size: 15" x 25" x 42" (38 x 64 x 107 cm)

Weight: 61 lb (27.7 kg)

Shipping Size: 34" x 24" x 23" (86 x 61 x 58 cm)

Shipping Weight: 150 lb (68 kg)

The Permeability Plugging Tester (PPT) is designed to run filtration tests on plugging materials without the interference of particles settling on the filter medium. The PPT uses the same test cell as the standard HTHP Filter Press. However, in the PPT, the cell is inverted with the filter and receiver on top. Several filter media are available, such as ceramic disks, conventional filter paper, and slotted stainless steel disks. The cell is pressurized with hydraulic oil. A floating piston separates the oil from the test fluid to prevent contamination.

Requirements

- 115 Volt at 6.75 Amp or 230 Volt at 3.75 Amp, 50 / 60 Hz

What's Included

- Test Cell with Floating Piston, 2000 PSI
- Heating Jacket
- Back Pressure Receiver with Fittings
- Hand Pump with Hydraulic Oil and Fittings
- Graduated Cylinder
- Thermometer
- Filter Paper
- Ceramic Filter Disk

Components

#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#154-20	Thermometer with Metal Dial, 8" Stem, Dual Scale: 50° - 500°F / 0° - 250°C
#170-04	CO ₂ Pressuring Assembly
#170-17	O-ring for Valve Stem, Viton®
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-53	Ceramic Filter Disk, 50 Micron
#170-73	Cell Cap for Ceramic Disks, Scribed, Extra Long
#171-00	Heating Jacket, 800 Watt, 115 Volt
#171-01	Heating Jacket, 800 Watt, 230 Volt
#170-10	Pilot Light
#170-11	Heating Element, 200 Watt
#171-32	Knob
#171-44	Rubber Foot
#171-71	Thermostat
#171-87	Location Pin
#171-94	Cell Rest Plunger Assembly
#171-10	Back Pressure Receiver, 100 mL
#171-23-1	Safety Pin with Lanyard
#171-27	Hose, 5000#, 3/16" x 6'
#171-90-18	Cell Assembly with Floating Piston, 2000 PSI
#170-13-3	O-ring for Cell, Viton®
#170-16	Valve Stem
#170-17	O-ring for Valve Stem, Viton®
#170-26-1	Locking Screw
#170-27	Allen Wrench, 3/32"
#170-69	Cell Cap, For Ceramic Disks, Scribed, Outlet
#170-72	Spacer, Stainless Steel
#170-77-1	O-ring for Spacer
#171-02	Cell Body
#171-21	Cell Cap with Screen, Inlet

#171-93	Piston
#171-95	T-handle for Piston
#171-99	O-ring for Piston
#171-42	Gauge, 3000 PSI
#171-83	Valve Stem Assembly, Hydraulic Entry
#171-83-1	Valve Stem Assembly, Outlet
#171-84-02	Reducing Bushing, 3/8" MNPT x 1/4" FNPT
#171-90-02	Quick Connect Coupler, Female
#171-90-04	Cross, 1/4" NPT
#171-90-07	Hex Nipple, 1/4" NPT
#171-90-11	Elbow for Back Pressure Receiver
#171-90-12	Elbow for Hydraulic Pressure Assembly
#171-90-13	Adapter, 1/4" Flare x 1/4" MNPT
#171-90-14	Hose Barb
#171-90-15	Crescent Wrench, Adjustable, 6"
#171-92	Relief Valve, 2200 PSI
#171-96	Handpump
#171-96-1	Hydraulic Oil, 32 Oz
#171-98	Ball Valve for Hydraulic Pressure Assembly
#171-99	O-ring for Piston, Viton®

Optional

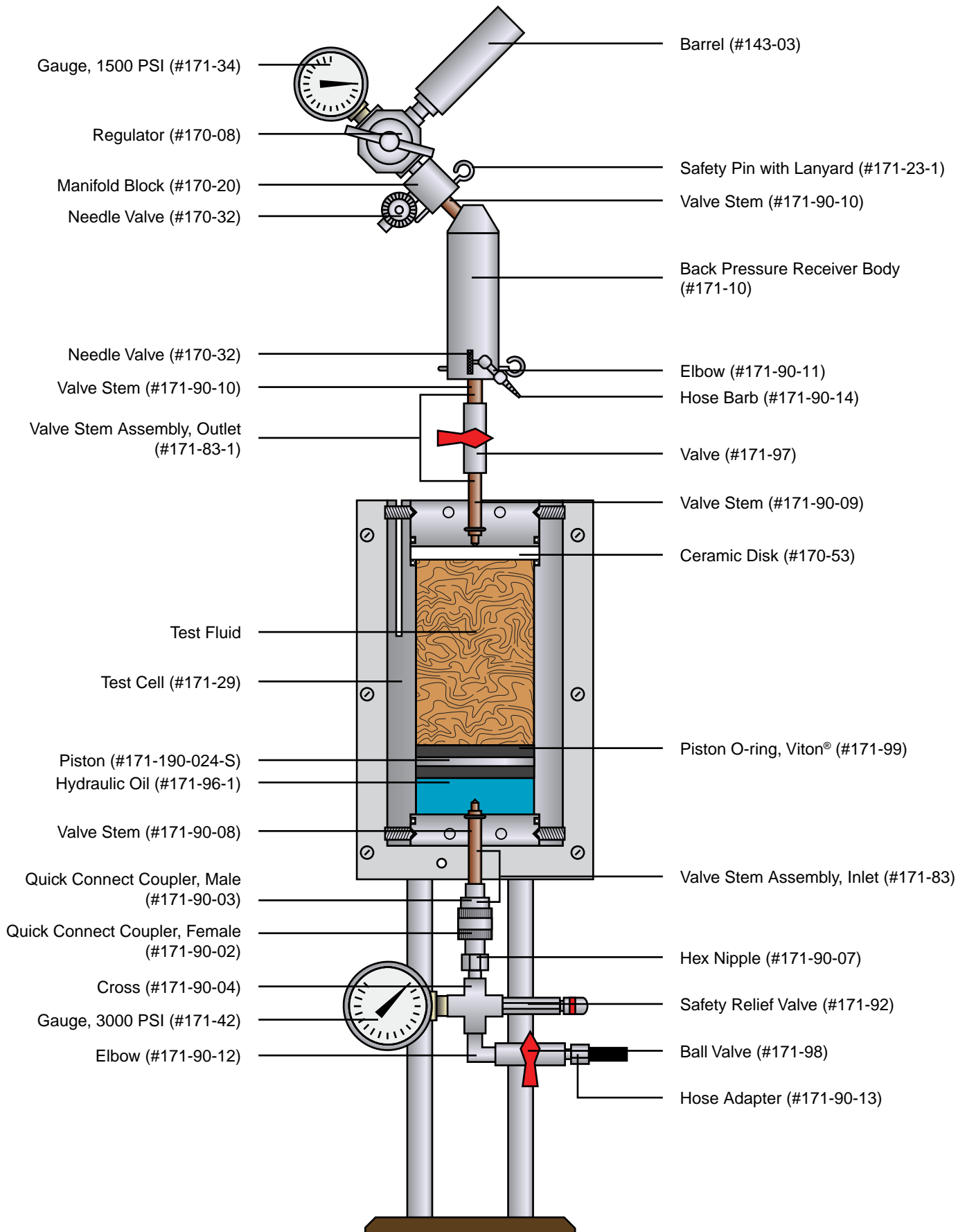
#143-05	CO ₂ Bulbs, Box of 10, UN2037
#171-10	Back Pressure Receiver, 100 mL (For Conventional Filtration)
#171-90-SP	Spare Parts Kit



#171-90 - Permeability Plugging Tester

* May require special handling for shipping.

#171-90 - Permeability Plugging Tester, 2000 PSI



Drilling Fluids - Filtration

AUTOMATIC PRESSURE CONTROL SYSTEM FOR PERMEABILITY PLUGGING TESTER, 4 UNIT

#171-89

Shipping Size: 27" x 26" x 35" (69 x 66 x 89 cm)

Shipping Weight: 200 lb (90.7 kg)

The Automatic Pressure Control System can provide and maintain a constant pressure on up to four Permeability Plugging Testers. It consists of two air-driven pumps and four hydraulic, self-venting regulators. Replacing the manual hand pump, the air-driven pump automatically engages when you start the test and maintains a constant pressure for the duration.

Features

- Maintains constant pressure for up to four Permeability Plugging Testers
- Includes two air-driven pumps and four hydraulic, self-venting regulators
- Replaces the manual handpump



#171-89 - Automatic Pressure Control System for PPT

CO₂ PRESSURE ASSEMBLY

#170-04

Components

#143-02-10	CO ₂ Puncture Head Assembly
#143-03	Barrel for CO ₂ Bulb
#170-08	Regulator, High Pressure
#170-20	Manifold Block
#170-32	Needle Valve, Male
#171-23-1	Safety Pin with Lanyard
#171-34	Gauge, 1500 PSI



#170-04 - CO₂ Pressuring Assembly

HIGH PRESSURE REGULATOR ASSEMBLY FOR MODEL MB FILTER PRESS

#171-57

Components

#142-58	O-ring for Cell Coupling
#143-02-10	CO ₂ Puncture Head Assembly
#143-03	Barrel for CO ₂ Bulb
#144-15	Bushing for Gauges, ¼" NPT to ⅜" NPT
#170-34	Needle Valve, Male, ⅜" x ¼" NPT
#171-53	Regulator, High Pressure, Victor
#171-73-1	Gauge, 1,000 PSI, ⅜" Bottom Connection, 2" Face
#171-74-1	Gauge, 2,000 PSI, ⅜" Bottom Connection, 2" Face
#171-76	Coupling for Top Valve, Female
#171-77	Coupling Ring for Top Valve



#171-57 - Regulator Assembly

BACK PRESSURE RECEIVER FOR CO₂, 15 ML

#170-06

Components

#143-00	Regulator, CONCOA/AIRCO
#143-01	Gauge, 200 PSI, ⅜" Bottom Connection
#143-02-10	CO ₂ Puncture Head Assembly
#143-03	Barrel for CO ₂ Bulb
#143-06	Safety Bleeder Valve, ¼" NPT
#144-11	Street Ell, ⅜"
#170-07	O-ring for Receiver
#170-28	Receiver Body, 15 mL, Stainless Steel
#170-32	Needle Valve, Male, ⅜" x ¼" NPT
#171-23-1	Safety Pin with Lanyard



#170-06 - Back Pressure Receiver for CO₂

BACK PRESSURE RECEIVER FOR N₂, 15 ML #170-06-1

Components

#144-11	Street Ell, 1/8"
#144-15	Bushing, 1/4" NPT Male to 1/8" NPT Female
#170-07	O-ring
#170-28	Receiver Body
#170-32	Needle Valve, Male, 1/8" x 1/8" NPT
#171-23-1	Safety Pin with Lanyard



#170-06-1 - Back Pressure Receiver for N₂

BACK PRESSURE RECEIVER FOR N₂, 100 ML #171-10

Components

#170-32	Needle Valve, Male, 1/8" x 1/8" NPT
#171-11	O-ring for Receiver Body
#171-12	Receiver Body
#171-23-1	Safety Pin with Lanyard

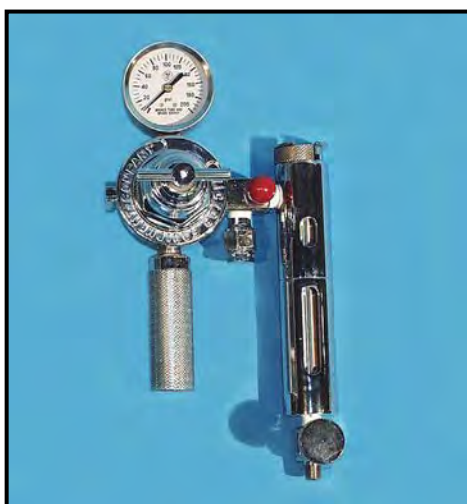


#171-10 - Back Pressure Receiver, 100 mL

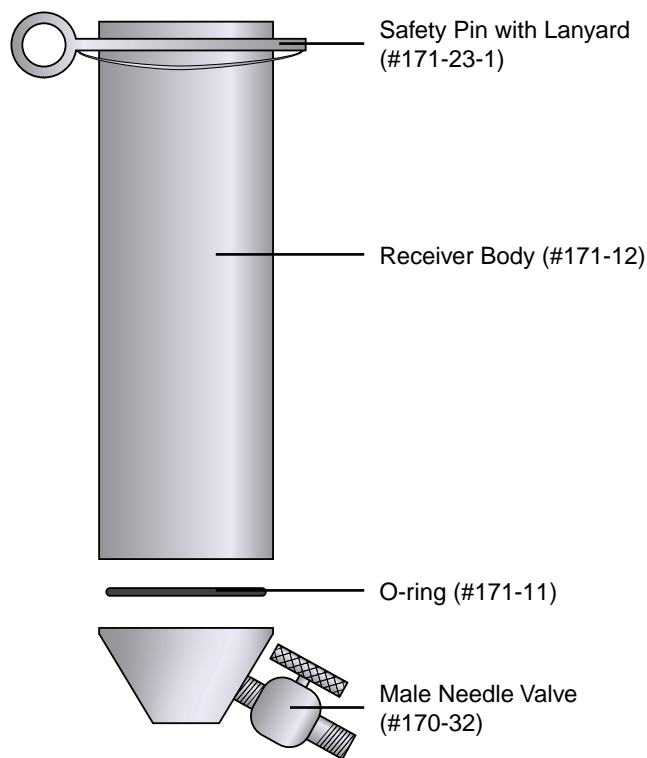
BACK PRESSURE RECEIVER FOR MODEL MB FILTER PRESS #171-58

Components

#142-37	Regulator, Victor
#142-58	O-ring for Cell Coupling
#142-61	Gauge, 200 PSI, 1/4" Bottom, 2" Face
#143-02-10	CO ₂ Puncture Head Assembly
#143-03	Barrel for CO ₂ Cartridge
#143-06	Safety Bleeder Valve, 1/4" NPT
#170-07	O-ring for Receiver
#170-32	Needle Valve, Male, Outlet, 1/8" x 1/8" NPT
#171-66	Receiver Tube, Stainless Steel
#171-75	Receiver Body



#171-58 - Back Pressure Receiver for Model MB Filter Press



Drilling Fluids - Filtration

THERMOCOUPLE ASSEMBLY

#171-45-1 For 175 mL HTHP Filter Press

#171-45-2 For Model MB HTHP Press

#171-45 For 500 mL HTHP Filter Press

In the past, temperature measurements for HTHP filtration testing have been monitored with a metal dial stem thermometer placed in the cell wall or the heating jacket. Therefore, the temperature of the metal was measured and not the temperature of the fluid inside the cell, which was rarely, if ever, at the proper test temperature. Due to the degradation of many fluid additives at certain temperatures, costly discrepancies frequently occurred between the laboratory results and actual downhole drilling conditions.

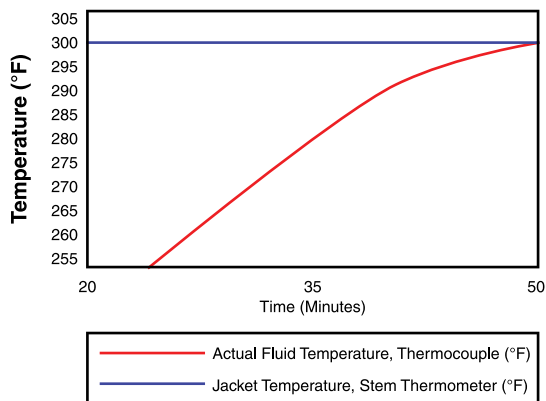
One independent study indicated that variances in fluid temperature resulted in differences of filtrate volume by as much as 30%. More accurate and repeatable results may be obtained if the fluid temperature is monitored inside the cell rather than measuring the temperature of the insulating cell wall only.

The Thermocouple Assembly represents a significant improvement in high-temperature filtration testing. With an accuracy of 2 degrees variance, the operator no longer has to guess at what the fluid temperature is inside the cell or how long to heat the cell before initiating the test. The LED is easily read and the assembly quickly retrofits to all existing models of HTHP cells and requires no modifications to existing equipment. It operates on 115 / 230 Volts, 50 / 60 Hz.

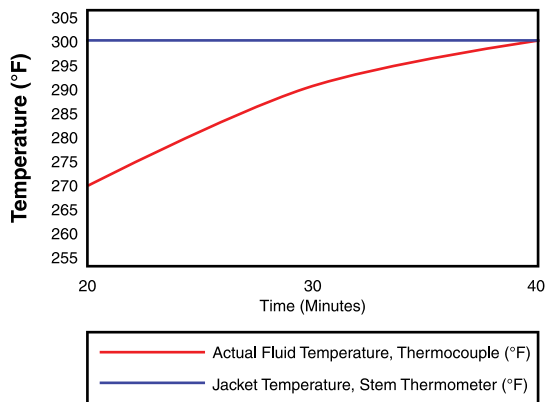


#171-45-1 - Thermocouple Assembly
(Filter Press Sold Separately)

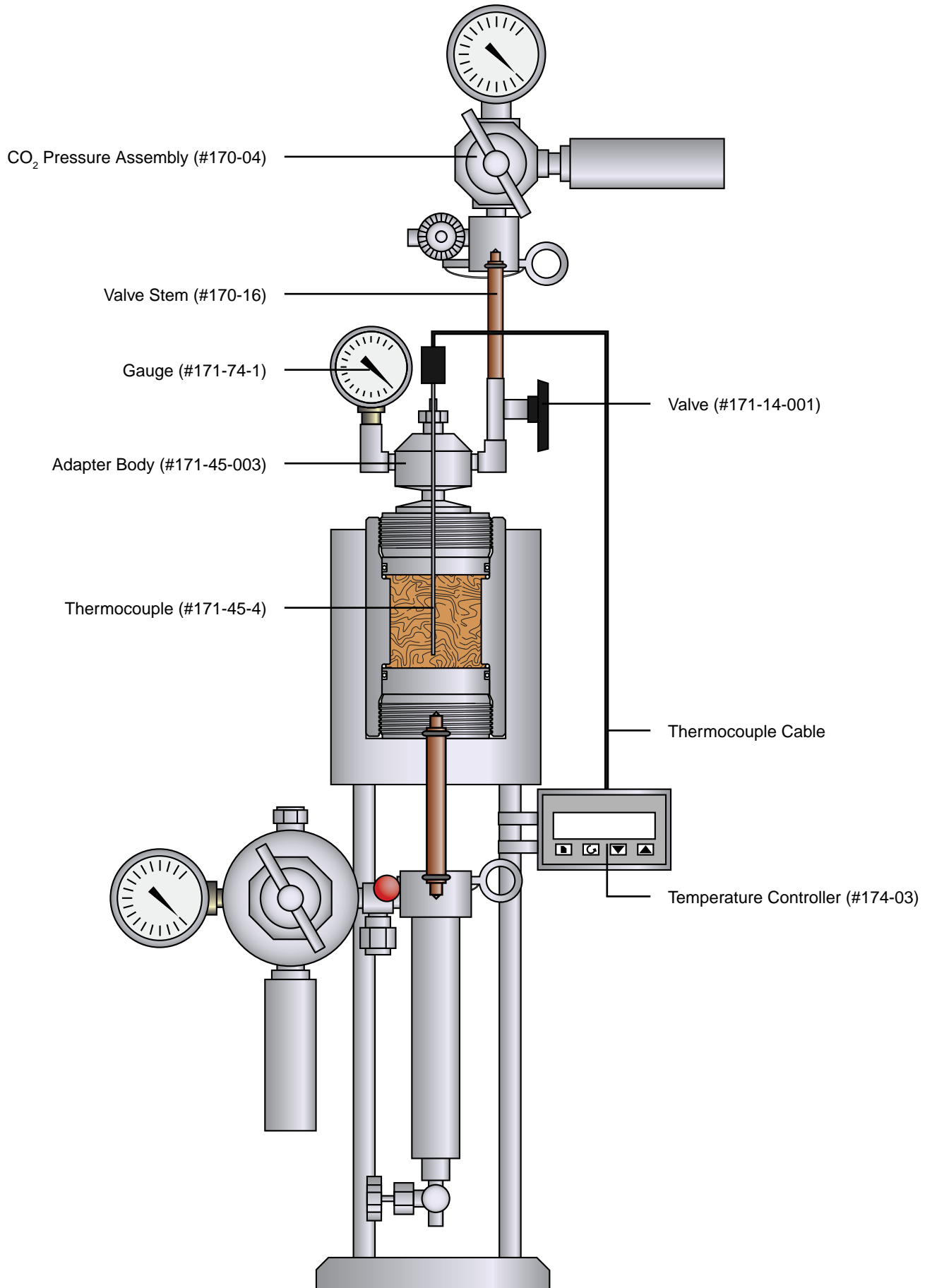
Oil-Based Drilling Fluid, 11.2 lb./gal.



Oil-Based Drilling Fluid, 17.6 lb./gal.



#171-45-1 - Thermocouple Assembly



Drilling Fluids - Filtration

HIGH PRESSURE NITROGEN PRESSURING ASSEMBLY

#171-31

WITH TANK

#171-31-2

WITHOUT TANK

Components

#142-39	Pipe Plug, ¼"
#170-20	Manifold Block
#170-32	Needle Valve, Male, ⅜" x ⅜" NPT
#170-37	Nitrogen Cylinder, Right-Hand Thread, 21" x 7"
#171-23-1	Safety Pin with Lanyard
#171-24-1	Nut for Inlet, Right-Hand Thread, CGA-580, Chrome
#171-24-2	Nipple with Filter for Regulator Inlet
#171-24-3	Union Elbow, Female, ¼" Flare x ⅜" FNPT, Chrome Plated
#171-24-5	Street Tee, ¼" NPT, 316 Stainless Steel
#171-25-1	Relief Valve, 750 PSI
#171-26-1	Hose, 5000#, ⅝" x 2'
#171-38	Gauge, 1000 PSI, 2 ½", ¼" NPT Bottom
#171-42	Gauge, 3000 PSI, 2 ½", ¼" NPT Bottom
#171-53	Regulator, High Pressure, Victor,
#171-90-06	Reducing Bushing, ¼" MNPT x ⅜" FNPT, 316 Stainless Steel



#171-31 - High Pressure Nitrogen Assembly

DUAL NITROGEN MANIFOLD, 1350 AND 750 PSI #171-24

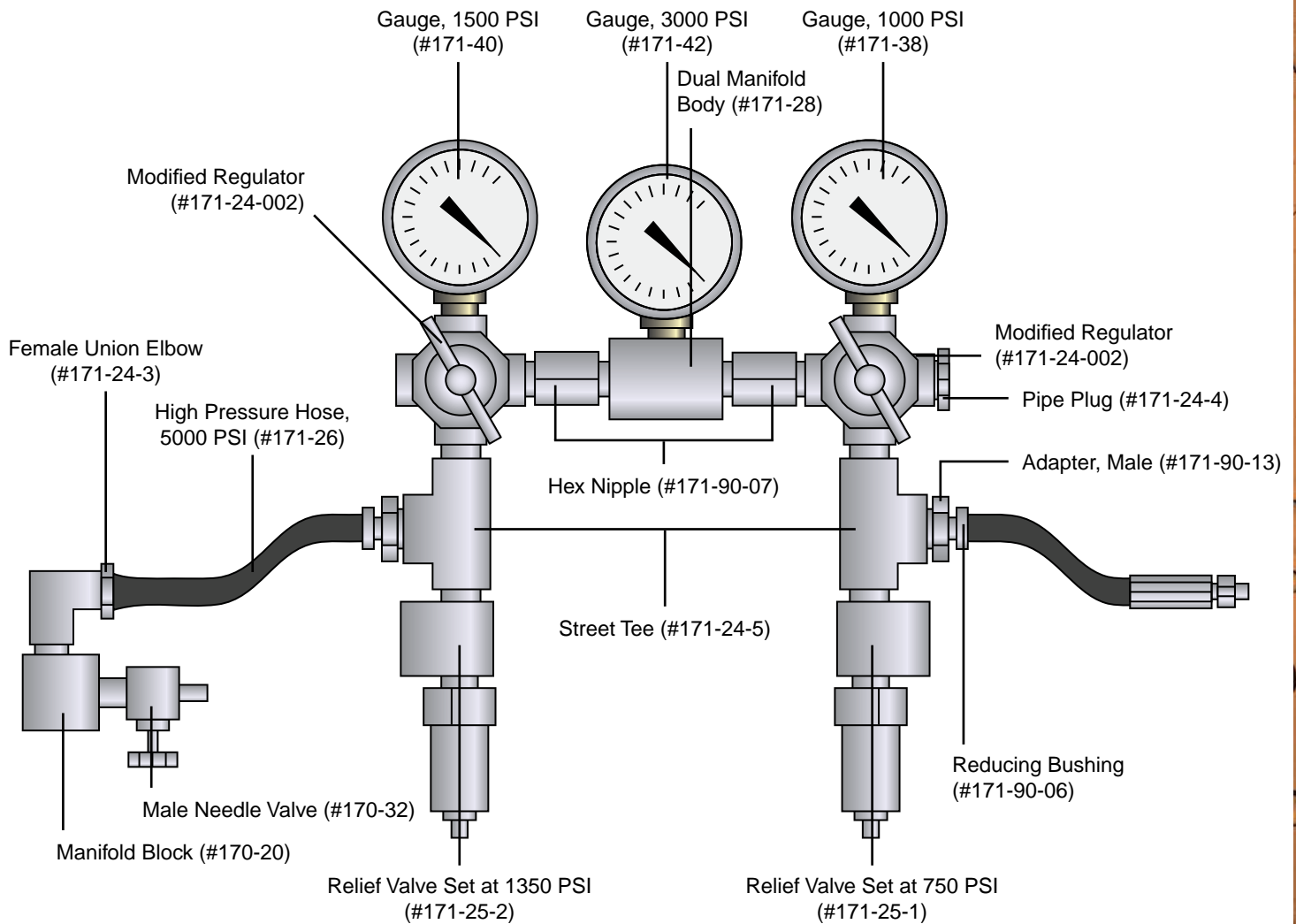
Components

#170-20	Manifold Block
#170-32	Needle Valve, Male, ⅜" x ⅜" NPT
#171-23-1	Safety Pin with Lanyard
#171-24-002	Modified Regulator
#171-24-1	Nut for Regulator Inlet CGA-580, Right-Handed Thread
#171-24-2	Nipple with Filter for Regulator Inlet 15-3SF
#171-24-3	Union Elbow, Female, ¼" Flare x ⅜" FNPT
#171-24-4	Pipe Plug, ¼" NPT, 316 Stainless Steel
#171-24-5	Street Tee, ¼" NPT, 316 Stainless Steel
#171-25-1	Relief Valve, 750 PSI (5,171 kPa)
#171-25-2	Relief Valve, 1350 PSI (9,308 kPa)
#171-26	Hose, 3,000 PSI, ⅝" x 3'
#171-28	Dual Manifold Body
#171-38	Gauge, 1000 PSI, 2.5" Face, ¼" Bottom Connection
#171-40	Gauge, 1500 PSI, 2.5" Face, ¼" Bottom Connection
#171-42	Gauge, 3000 PSI, 2.5" Face, ¼" Bottom Connection
#171-90-06	Reducing Bushing, 316 Stainless Steel
#171-90-07	Hex Nipple, ¼" NPT, 316 Stainless Steel
#171-90-13	Adapter, ¼" Flare x ¼" Male NPT



#171-24 - Dual Nitrogen Manifold

#171-24 - Dual Nitrogen Manifold, 1,350 and 750 PSI



Drilling Fluids - Filtration

**REGULATOR, LOW PRESSURE, CONCOA/AIRCO,
1/4" NPT, 1/8" GAUGE**

#143-00



#143-00 - Low Pressure CONCOA Regulator

**REGULATOR, HIGH PRESSURE, CONCOA/AIRCO,
1/4" NPT, 1/8" GAUGE**

#170-08

Components (both low and high pressure regulators)

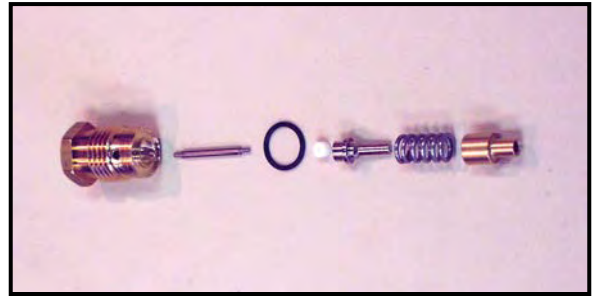
- #143-00-1 Diaphragm (830-0342)
- #143-00-2 Adjusting Screw for 143-00 Regulator (830-1197)
- #143-00-3 Spring Button
- #143-00-4 Diaphragm Plate (830-0340)
- #143-00-5 Slip Ring (830-0341)
- #143-00-6 Ball, 1/4", Stainless Steel
- #143-00-7 Thrust Plate (830-0344)
- #143-00-8 Teflon® Seat (830-3904)
- #143-00-9 O-ring for Seat Assembly (830-2627)
- #143-00-10 Screen (830-4052)
- #143-00-11 Glasswool Filter (830-4060)
- #143-00-12 Spring
- #170-08-1 Adjusting Screw for 170-08 Regulator



#170-08 - High Pressure CONCOA Regulator

**REGULATOR REPAIR KIT, CONCOA/AIRCO
#143-07**

For #143-00 and 170-08 regulators.



#143-07 - CONCOA Repair Kit

**REGULATOR, LOW PRESSURE, VICTOR, 3000 PSI,
1/4" NPT FITTINGS**

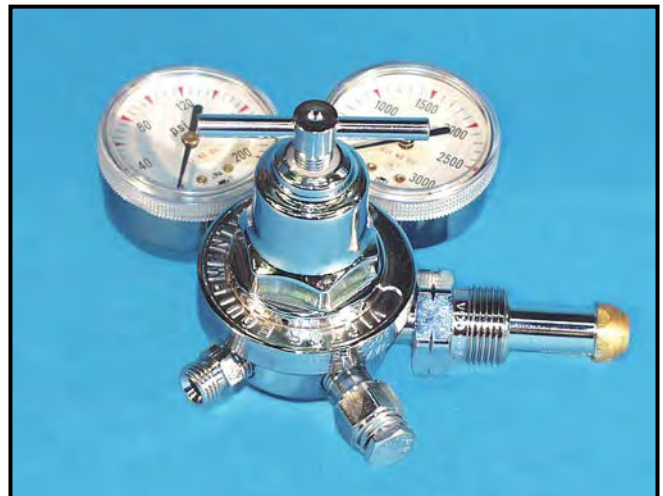
#142-37



#142-37 - Victor Regulator

**REGULATOR, VICTOR, 200 AND 3000 PSI
GAUGES, N₂ FITTING, 1/4" NPT FITTINGS**

#170-36



#170-36 - Nitrogen Regulator

REGULATOR, HIGH PRESSURE, VICTOR, 6000 PSI, 1/4" NPT FITTINGS #171-53

Components (both low and high pressure regulators)

#142-38	Nozzle (0702-0005)
#142-39	Pipe Plug (0704-0009)
#142-40	Spring Button (0706-0015)
#142-41	Gland (0708-0003)
#142-42	Diaphragm (0731-0015)
#142-44	T-Screw (0750-0016)
#142-45	Adjusting Spring (0761-0025)
#142-46	Valve Spring (0762-0003)
#142-47	Seat Assembly (0740-0010)
#142-48	Diaphragm Assembly (0730-0024)
#142-49	Slip Ring (0705-0004)



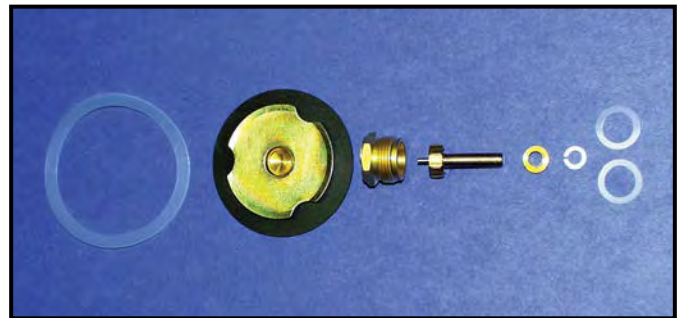
#171-53 - Victor Regulator

REGULATOR REPAIR KIT, VICTOR #143-19

For low pressure regulators and Half-Area Filter Press.

Components

#140-60-09	Gasket (1408-0086)
#140-60-10	Friction Washer (1408-0033)
#142-38	Nozzle (0702-0005)
#142-41	Gland (0708-0003)
#142-47	Seat Assembly (0740-0010)
#142-48	Diaphragm Assembly (0730-0024)
#142-49	Slip Ring (0705-0004)



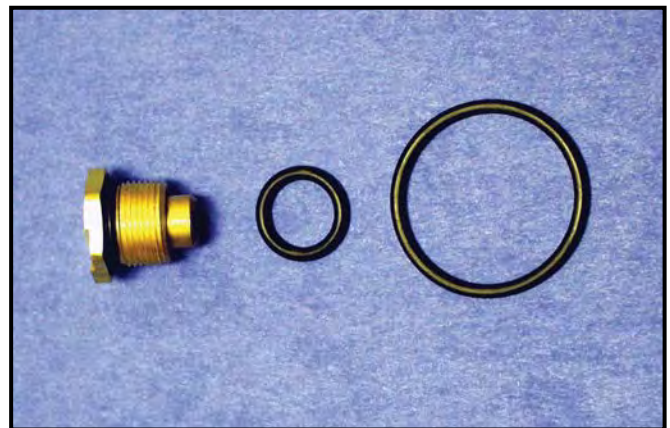
#143-19 - Victor Repair Kit for
Low Pressure Regulators and Half Area-Filter Press

REGULATOR REPAIR KIT, VICTOR #143-20

For High Pressure Regulator, #171-53.

Components

#143-20-1	Cartridge Assembly
#143-20-2	O-ring (Large)
#140-71	O-ring (Small)



#143-20 - Victor Repair Kit for
High Pressure Regulator

Drilling Fluids - Filtration

HTHP FILTER PRESS CELL ASSEMBLY WITH THREADED CAPS

#171-191-S	500 ML, FOR DRILLING FLUIDS
#171-192-S	500 ML, FOR CEMENT TESTING
#171-193-S	500 ML, FOR PPT
#170-181-S	175 ML, FOR DRILLING FLUIDS
#170-182-S	175 ML, FOR CEMENT

This new cell has been designed with safety in mind. This modular design is safe and convenient. The two-piece cap is threaded, and cannot be opened while the cell is pressurized. And interchangeable caps make it easy to reconfigure the cell for testing with different filter media (filter paper, ceramic disks, or cement screens) with a single cell body. All cells are provided with pressure certification, unique serialization, and material certification which provides true traceability.

Features

- Double capped cell
- Two-piece cap with threaded locking ring
- Rupture disks in inlet caps and piston

Specifications

- Maximum Temperature: 500°F (260°C)
- Maximum Pressure: 5,000 PSI (34.5 MPa)

Components

All cells include the following:

#120-910-028	O-ring for Rupture Disk
#130-81-040	Retaining Ring for Cell Cap Assembly
#170-13-3	O-ring for Test Cell, Viton® 75D*
#170-17	O-ring for Valve Stem, Viton® 75D*
#171-190-020-S	Cell Body (500 mL)
#170-180-020-S	Cell Body (175 mL)
#171-190-023	Locking Ring
#171-190-027	Rupture Disk
#171-190-029	Wrench for Cell Cap
#171-190-057	O-ring for Valve Stem, Viton® 90D**
#171-190-060	O-ring for Test Cell, Viton® 90D**

Drilling Fluids Testing (#171-191-S, #170-181)

#171-190-030-S	Cell Cap, Outlet, Filter Paper
#171-190-031-S	Cell Cap, Inlet, Mud
#171-190-034-S	Cell Cap, Outlet, Ceramic Disk

Cement Testing (#171-192-S, #170-182)

#170-18	Cement Screen, Detachable
#171-190-032-S	Cell Cap, Outlet, Cement
#171-190-033-S	Cell Cap, Inlet, Cement

Permeability Plugging Tester (#171-193-S)

#171-190-P	Piston Kit
#171-190-030-S	Cell Cap, Outlet, Filter Paper
#171-190-031-S	Cell Cap, Inlet, Mud
#171-190-034-S	Cell Cap, Outlet, Ceramic Disk
#171-83	Valve Stem Assembly for PPT, Hydraulic Entry
#171-83-1	Valve Stem Assembly for PPT, Outlet

Optional

#171-190-P	Piston Kit
#120-910-028	O-ring for Rupture Disk, Viton® 75D
#171-190-024-S	Piston
#171-190-027	Rupture Disk
#171-190-039	Set Screw for Piston
#171-190-055	Allen Wrench

* For tests up to 400°F (204.4°C)

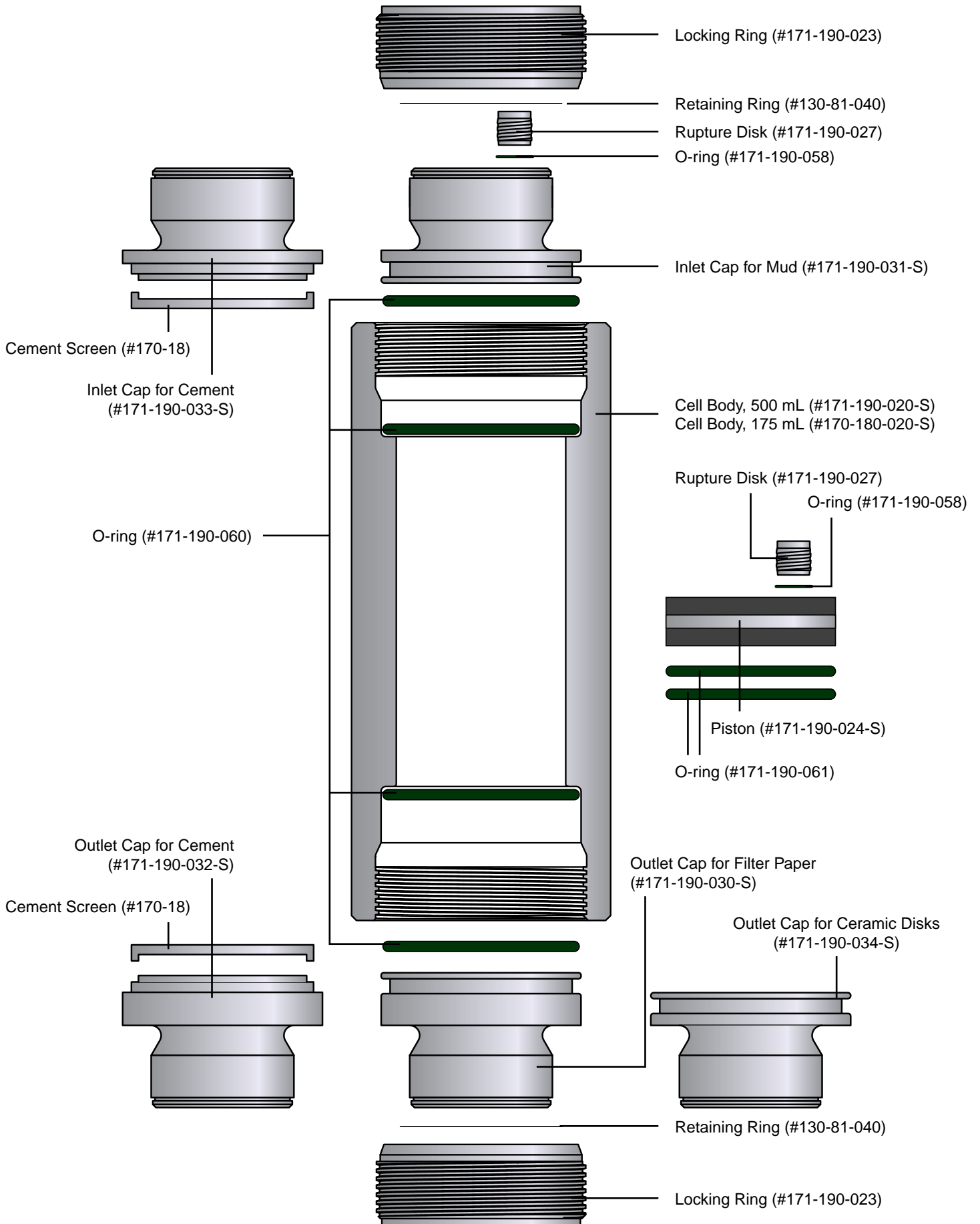
** For tests above 400°F (204.4°C)

#171-190-056	O-ring for Piston Bleed Port, Viton® 90D
#171-190-058	O-ring for Rupture Disk, Viton® 90D
#171-190-061	O-ring for Piston, Viton® 90D, Qty: 2
#171-95	T-handle for Piston
#171-99	O-ring for Piston, Viton® 75D, Qty: 2
#700-100-096	O-ring for Piston Bleed Port, Viton®



HTHP Filter Press Cell Assembly with Threaded Caps and Piston

HTHP Filter Press Cell Assembly, Threaded Caps



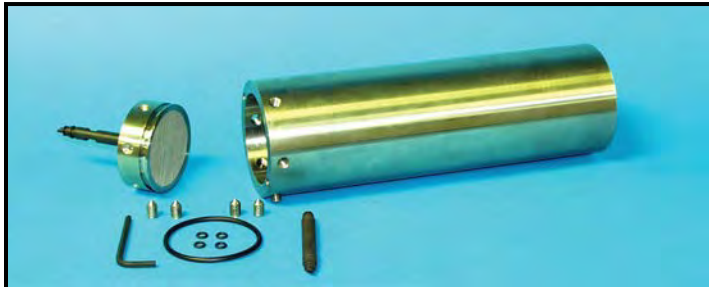
Drilling Fluids - Filtration

HTHP CELL FOR FILTER PAPER, LOCKING SCREWS, 500 ML, SINGLE CAP, 2000 PSI #171-20

Size: 12" x 10" x 5" (31 x 25 x 13 cm)
Weight: 16 lb 8 oz (7.5 kg)

Components

#170-13-3	O-ring for Test Cell, Viton®
#170-16	Valve Stem
#170-17	O-ring for Valve Stem, Viton®
#170-26-1	Locking Screw
#170-27	Allen Wrench, ½"
#171-17	Cell Body
#171-21	Cell Cap with 60 Mesh Screen



#171-20 - Cell Assembly, Single Cap, Filter Paper, 500 mL

HTHP CELL WITH CEMENT SCREENS, LOCKING SCREWS, 500 ML, DOUBLE CAP, 2000 PSI #171-19

Size: 12" x 10" x 5" (31 x 25 x 13 cm)
Weight: 16 lb 8 oz (7.5 kg)

Components

#170-13-3	O-ring for Test Cell, Viton®
#170-16	Valve Stem
#170-17	O-ring for Valve Stem, Viton®
#170-18	Detachable Screen, 325 Mesh with 60 Mesh Backup
#170-24	Cell Cap for Removable Cement Screens
#170-26-1	Locking Screw
#170-27	Allen Wrench, ½"
#171-19-001	Cell Body



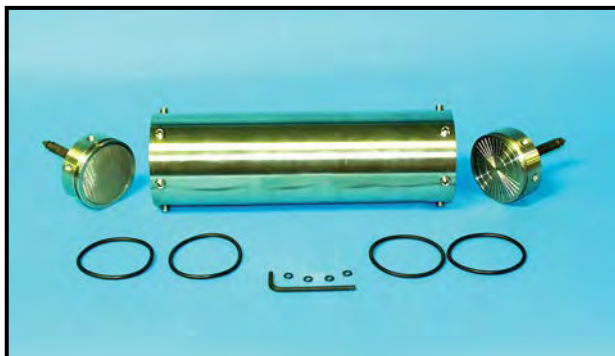
#171-19 - Cell Assembly, Double Cap, Cement, 500 mL

HTHP CELL FOR CERAMIC DISKS, LOCKING SCREWS, 500 ML, DOUBLE CAP, 2000 PSI #171-29

Size: 12" x 10" x 5" (31 x 25 x 13 cm)
Weight: 16 lb 8 oz (7.5 kg)

Components

#170-13-3	O-ring for Test Cell, Viton®
#170-16	Valve Stem
#170-17	O-ring for Valve Stem, Viton®
#170-26-1	Locking Screw
#170-27	Allen Wrench, ½"
#170-69	Cell Cap for Ceramic Disk, Scribed
#170-72	Spacer, ¼"
#170-77	O-ring for Spacer
#171-02	Cell Body
#171-21	Cell Cap with 60 Mesh Screen



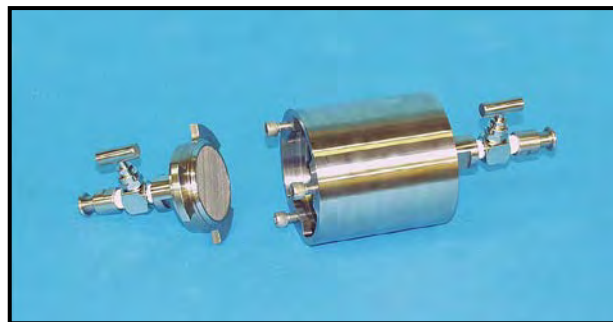
#171-29 - Cell Assembly, Double Cap, Ceramic Disks, 500 mL

HTHP CELL ASSEMBLY, MODEL MB #171-56

Size: 4" x 4" x 11" (10 x 10 x 28 cm)
Weight: 11 lb 3 oz (5.1 kg)

Components

#170-34	Needle Valve, Male, ¼" NPT x ¼" NPT
#171-52	O-ring for Test Cell, Nitrile
#171-60	Cell Body
#171-62	Lid
#171-64	Coupling, Male
#171-72	T-handle for Needle Valve
#171-78	Screw



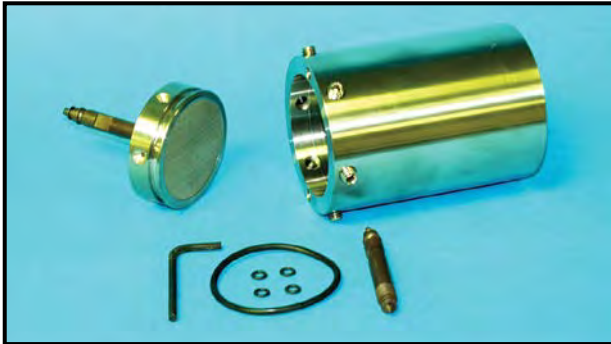
#171-56 - Cell Assembly, Model MB

HTHP CELL FOR FILTER PAPER, LOCKING SCREWS, 175 ML, SINGLE CAP, 1500 PSI #170-12-1

Size: 4.5" x 4" x 3.25" (11 x 10 x 8 cm)
Weight: 7 lb 11 oz (3.5 kg)

Components

#170-12	Cell Body
#170-13-3	O-ring for Test Cell, Viton®
#170-14	Cell Cap with 60 Mesh Screen
#170-16	Valve Stem
#170-17	O-ring for Valve Stem
#170-26-1	Locking Screw
#170-27	Allen Wrench, ½"



#170-20-1 - Cell Assembly, Single Cap, Filter Paper, 175 mL

HTHP CELL WITH CEMENT SCREENS, LOCKING SCREWS, 175 ML, DOUBLE CAP, 2000 PSI #170-45

Size: 8" x 5" x 4" (20 x 13 x 10 cm)
Weight: 8 lb (3.6 kg)

Components

#170-13-3	O-ring for Test Cell, Viton®
#170-16	Valve Stem
#170-17	O-ring for Valve Stem, Viton®
#170-18	Detachable Screen, 325 Mesh with 60 Mesh Backup
#170-24	Cell Cap for Removable Cement Screens
#170-26-1	Locking Screws
#170-27	Allen Wrench, ½"
#170-45-3	Cell Body



#170-45 - Cell Assembly, Double Cap, Cement, 175 mL

HTHP CELL FOR CERAMIC DISKS, LOCKING SCREWS, 175 ML, DOUBLE CAP, 2000 PSI #170-46

Size: 3.25" x 3.25" x 4.5" (8 x 8 x 11 cm)
Weight: 7 lb 14 oz (3.6 kg)

Components

#170-13-3	O-ring for Test Cell, Viton®
#170-16	Valve Stem
#170-17	O-ring for Valve Stem
#170-26-1	Locking Screw
#170-27	Allen Wrench, ½"
#170-47	Cell Body
#170-69	Cell Cap for Ceramic Disks, Scribed
#170-72	Spacer, ¼"
#170-77	O-ring for Spacer
#171-21	Cell Cap with 60 Mesh Screen



#170-46 - Cell Assembly, Double Cap, Ceramic Disks, 175 mL

Drilling Fluids - Filtration

CELL CAP REMOVAL TOOL

#170-33

The Cell Cap Removal Tool provides a convenient method for removing a cell cap from a HTHP filter press cell. After high temperature testing, cell caps are often difficult to remove due to expansion and o-ring friction. This tool screws into the valve stem port and pivots against the side wall of the cell. Simply pushing down on the lever pulls the cap directly up and out of the cell body.



#170-33 - Cell Cap Removal Tool

CARRYING TOOL FOR HTHP CELL

#170-40

The Carrying Tool provides a safe, easy method of removing a hot filter press cell from the heating jacket after a high temperature test. This simple device attaches to the valve stem with a standard retaining pin. The T-handle provides a convenient handhold for lifting the cell out of the heating jacket. The cell can then be carried to a safe location for cooling.



#170-40 - Carrying Tool for HTHP Cell

SAFETY CLAMP FOR HTHP FLUID LOSS CELLS

#170-92

Size: 20.5" x 8" x 7" (52 x 20 x 18 cm)

Weight: 22 lb (10 kg)

The Test Cell Safety Clamp is designed to hold an HTHP test cell securely in place and prevent an uncontrolled pressure release. The two plates clamp the cell in place while the locking screws are removed. Pressure can then be released gradually and safely.

Features

- Secures an HTHP fluid loss cell to prevent an uncontrolled pressure release
- Robust design durable enough to contain a fully-pressurized HTHP cell
- Accommodates both 175 mL and 500 mL cells
- Scribed ring in the bottom plate centers the test cell in the device



#170-92 - Safety Clamp (Cell not included)

HTHP PRESSURE RELIEF TOOL #170-91

Size: 8.5" x 5.5" x 1" (22 x 14 x 3 cm)
Weight: 1 lb (454 g)

The HTHP Pressure Relief Tool provides a safe way to release the pressure in a clogged cell. It screws onto the cell cap using the existing valve stem port. Then, using a T-handle, the operator can drive a pin into the cell to puncture through any obstruction. The pressure will then vent safely through the vent pipe, away from people and equipment.

Features

- Safely clear obstructions in HTHP filtration cells
- Directs released pressure away from people and equipment

US Patent Number 9,375,715



#170-91 - HTHP Pressure Relief Tool

STAND FOR HTHP FILTER PRESS CELLS #171-190-028

Size: 6" x 4" x 8" (15 x 10 x 20 cm)
Weight: 6 lb 6.3 oz (2.9 kg)

This device is designed to hold an HTHP filter press cell upright for assembly, disassembly, or cooling. The cup at the top prevents the cell from tipping, and the open space below provides plenty of room for a valve stem or other pressure fitting. A location pin inside the cup holds the cell body in place to prevent it from turning while tightening threaded cell caps.



#171-190-028 - Stand for HTHP Filter Press Cells

Drilling Fluids - Filtration

Complete Assemblies				
Part #	Size	Fluid	Pressure	Voltage
171-191	500	Mud	N ₂ , 5000 PSI	115
171-191-1	500	Mud	N ₂ , 5000 PSI	230
171-192	500	Cement	N ₂ , 5000 PSI	115
171-192-1	500	Cement	N ₂ , 5000 PSI	230
171-193	500	PPT	Hydraulic, 5000 PSI	115
171-193-1	500	PPT	Hydraulic, 5000 PSI	230
170-181	175	Mud	CO ₂ , 5000 PSI	115
170-181-1	175	Mud	CO ₂ , 5000 PSI	230
170-182	175	Cement	N ₂ , 5000 PSI	115
170-182-1	175	Cement	N ₂ , 5000 PSI	230

Cell Assemblies			
Part #	Capacity	Filter Media	Pressure
171-191-S	500 mL	Paper/Disk	5000 PSI
171-192-S	500 mL	Cement Screens	5000 PSI
171-193-S	500 mL	PPT	5000 PSI
170-181-S	175 mL	Paper/Disk	5000 PSI
170-182-S	175 mL	Cement	5000 PSI

Cell Caps		
Part #	End	Type
170-190-030-S	Outlet	60 Mesh Screen for Filter Paper
170-190-031-S	Inlet	60 Mesh Screen for Mud
170-190-032-S	Outlet	Cement Screen
170-190-033-S	Inlet	Cement Screen
170-190-034-S	Outlet	Scribed for Ceramic Disks

Cell Bodies	
Part #	Capacity
171-190-020-S	500 mL
170-180-020-S	175 mL

Heating Jackets and Stands		
Part #	Capacity	Voltage
170-00-1	175 mL	115
170-01-1	175 mL	230
171-00	500 mL	115
171-01	500 mL	230

Back Pressure Receivers

#170-06	15 mL, With CO ₂ Pressure Assembly
#170-06-1	15 mL, For N ₂ Pressure
#171-10	100 mL, For N ₂ Pressure
#171-58	MB Style

Cases

#170-03	HTHP Filter Press, 175 mL
#171-81	Model MB HTHP Filter Press

Pressure Assemblies

#170-04	CO ₂ Pressure Assembly
#171-24	Dual Nitrogen Manifold
#171-57	CO ₂ Pressure Assembly, Model MB Style

Tools

#170-93	Wrench for Valve Stem
#170-27	Allen Wrench, 3/32", for Cell Locking Screws
#171-190-029	Wrench for Threaded Cells

Ceramic Filter Disks

Porous ceramic filters are commonly used for everything from sewage treatment to medical equipment monitoring. In the oilfield, ceramic filters are used as a replacement for filter paper in the HTHP filtration test. Available in a wide range of pore throat sizes, ceramic filters enable the operator to perform filtration tests at similar porosities to that of the formations being drilled, a big advantage over filter paper. Also, ceramic filters, unlike paper, have depth (usually 1/4"), so invasion and return permeability studies may be performed and bridging characteristics of drilling and drill-in fluids may be analyzed.

Porous ceramics consist of closely-sized particles bonded together, resulting in a uniform, permeable material that forms a tortuous path for fluid flow. The most common materials used are alumina and silica, but there is an almost unlimited variety of material characteristics, shapes, and sizes available.

Ceramic filters are normally classified by mean pore throat size and/or units of permeability. Mean pore throat size is the average minimum pore diameter measured in microns, or a thousandth of a millimeter. Permeability is a measure of the volume flow of fluids through a porous media when subjected to a differential pressure and is mathematically equated by Darcy's Law.

Previously, mean pore throat size and permeability were roughly determined using air standards. Recent research funded by the American Petroleum Institute (API) used the latest mercury injection capillary pressure technology to determine these characteristics. This new testing procedure identified that the ceramic disk manufacturing process does not allow for absolute consistency between ceramic disk batches. Therefore, it was determined that the true mean pore throat size and permeability should result as a mean of the statistical data. Even though the ceramic filters are the same filters that have been provided for years, new API methods for determining mean pore throat size and permeability have resulted in new specifications as outlined in the chart below:

Part #	Mean Pore Throat (µm*)		Permeability (Darcy)	
	New (Mercury)	Old (Air)	New (Mercury)	Old (Air)
170-55	10	3	755 mD	400 mD
170-53-2	12	5	850 mD	750 mD
170-53-3	20	10	3 D	2 D
170-51	40	20	8 D	5 D
170-53	50	35	15 D	10 D
170-53-1	55	60	20 D	20 D
170-53-4	120	90	40 D	100 D
170-53-5	160	150	-	180 D
170-53-6	250	190	-	-

*1 Micron (µm) = 1 / 25,400" or 1 / 1,000 mm

SLOTTED FILTER DISKS, 316 STAINLESS STEEL

Slotted filter disks are often used for testing loss circulation material in HTHP filter press cells. These disks are available with one or three slots. Slots can be either straight or tapered. Disks with a thickness of ¼" fit inside the cell where a ceramic disk would go. Thicker disks fit inside the narrower portion of the cell body where the test fluid goes.

Custom sizes and slot configurations are available.

3 SLOTS, ¼" THICK, 2.5" DIAMETER

#170-53-46	5000 Micron
#170-53-43	4000 Micron
#170-53-42	3000 Micron
#170-53-47	2000 Micron
#170-53-48	1500 Micron
#170-53-49	1250 Micron
#170-53-50	1000 Micron
#170-53-57	800 Micron
#170-53-51	600 Micron
#170-53-52	500 Micron
#170-53-56	400 Micron
#170-53-53	300 Micron
#170-53-54	200 Micron
#170-53-55	100 Micron

SINGLE SLOT, ¼" THICK, 2.5" DIAMETER

#170-53-60-200	200 Micron
#170-53-60-300	300 Micron
#170-53-60-400	400 Micron
#170-53-60-500	500 Micron
#170-53-60-600	600 Micron
#170-53-60-750	750 Micron
#170-53-60-800	800 Micron
#170-53-60-1000	1000 Micron
#170-53-60-1250	1250 Micron
#170-53-60-2000	2000 Micron
#170-53-60-3000	3000 Micron
#170-53-60-4000	4000 Micron
#170-53-60-5000	5000 Micron

SINGLE SLOT, 1" THICK, 2.12" DIAMETER

#171-200-01	1000 Micron
#171-200-02	2000 Micron
#171-200-03	3000 Micron
#171-200-04	4000 Micron
#171-200-05	5000 Micron

SINGLE SLOT, TAPERED, 1" THICK, 2.12" DIAMETER

#171-200-06	2 mm to 1 mm
#171-200-07	3 mm to 2 mm
#171-200-08	4 mm to 3 mm
#171-200-09	5 mm to 4 mm
#171-200-10	6 mm to 5 mm

Optional

#171-99	O-ring for 1" Thick Filter Disks
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Slotted Filter Disks, ¼" Thick



Slotted Filter Disks, 1" Thick

Drilling Fluids - Retorts

The Retort provides a method for measuring the percentage (%) of oil and water, and for estimating both suspended and dissolved solids contained in a sample of water-based or oil-based muds and cuttings. Knowledge of oil, water, and solid content is fundamental to proper control of mud properties when considering oil/ water ratios, rheology, density, filtration, and salinity. Knowledge of solids in drilling fluids is essential to evaluation of viscosity control and solids control equipment.

Electronic temperature control (available on 50 mL and 20 mL sizes) provides more accurate, reliable, and reproducible testing. The digital display shows the current working temperature, so you always know your test conditions.

RETORT KIT WITH STAINLESS STEEL CASE, 50 ML

- #165-14 115 VOLT
- #165-14-1 230 VOLT
- #165-14-2 WITH ELECTRONIC TEMPERATURE CONTROLLER, 115 VOLT
- #165-14-3 WITH ELECTRONIC TEMPERATURE CONTROLLER, 230 VOLT

Size: 9.5" x 8.75" x 17" (24 x 22 x 43 cm)
Weight: 26 lb (11.8 kg)

What's Included

- Retort, 50 mL
- Stainless Steel Case
- Graduated Cylinder
- Receiver Tube
- Brush for Graduated Cylinder
- T-handle Drill
- Corkscrew
- Steel Wool
- Pipe Cleaner
- High Temperature Thread Lubricant
- Spatula
- Wetting Agent

Requirements

- 115 Volt at 4.2 Amp or 230 Volt at 2.5 Amp, 50 / 60 Hz

Components

- #130-79-53-0990 Thermostat (#165-14 Only)
- #130-79-54-0990 Thermostat (#165-14-1 Only)
- #153-02 Brush, Graduate, 1 1/2" x 10 3/4"
- #153-14 Graduated Cylinder, 50 mL x 1 mL
- #165-07 Receiver Tube, 50 mL
- #165-14-13 T-handle Drill
- #165-15-1 Condenser with Ultra-Torr Fitting, 50 mL
- #165-15-4 O-ring for Ultra-Torr Fitting
- #165-16 Retort Chamber with Lid
 - #165-16-1 Lid for Mud Sample Cup
 - #165-16-2 Mud Sample Cup
 - #165-16-3 Expansion Chamber with Non-Threaded Tube
- #165-41 Corkscrew
- #165-42 Steel Wool, Grade 00 Fine, Package of 4 Pads
- #165-43 Pipe Cleaner
- #165-44-2 Anti Seize Compound, Silver, 7g Pouch
- #165-88 Spatula
- #280-00 Wetting Agent, 1 oz

For 115 Volt Only (#165-14 and 165-14-2)

- #122-074-1 Fuse, 5 Amp, 5 mm x 20 mm
- #165-35-1 Heating Element, 500 Watt
- #152-37 Power Cord

For 230 Volt Only (#165-14-1 and #165-14-3)

- #122-073-1 Fuse, 3 Amp, 5 mm x 20 mm
- #165-36-1 Heating Element, 500 Watt
- #152-38 Power Cord

For Electronic Only (#165-14-2 and #165-14-3)

- #165-80-4 Electronic Temperature Controller
- #165-14-10 Fuse, 1 Amp
- #172-07 Fuse, 5 Amp

Optional

- #153-08 Brush for 50 mL Receiver (JP) Tube
- #165-14-SP Spare Parts Kit, 115 Volt
- #165-14-1-SP Spare Parts Kit, 230 Volt
- #165-14-7 Special Legs for Use with JP Tubes
- #165-16-4 Retort Chamber with Threaded Tube and Lid
- #165-40 Power Cable, 115 Volt (For older model retorts)
- #165-40-1 Power Cable, 230 Volt (For older model retorts)



#165-14 - 50-mL Retort Kit



#165-14-2 - 50-mL Retort Kit with Electronic Temperature Control

RETORT KIT WITH STAINLESS STEEL CASE, 20 ML

#165-80 115 VOLT

#165-80-1 230 VOLT

#165-80-2 WITH ELECTRONIC TEMPERATURE CONTROL, 115 VOLT

#165-80-3 WITH ELECTRONIC TEMPERATURE CONTROL, 230 VOLT

Size: 8.25" x 7" x 12.5" (21 x 18 x 32 cm)

Weight: 18 lb 6 oz (8.3 kg)

What's Included

- Retort, 20 mL
- Stainless Steel Case
- Graduated Cylinder
- Brush for Graduated Cylinder
- T-handle Drill
- Corkscrew
- Steel Wool
- Pipe Cleaner
- High Temperature Thread Lubricant
- Spatula
- Wetting Agent

Requirements

- 115 Volt at 4.2 Amp or 230 Volt at 2.5 Amp, 50 / 60 Hz

Components

- #131-15 Graduated Cylinder, 20 mL, 100%
- #153-03 Brush, Graduate, ½" x 8"
- #165-06 Receiver Tube, 20 mL, with Certificate
- #165-14-13 T-handle Drill
- #165-15-4 O-ring for Ultra-Torr Fitting
- #165-41 Corkscrew
- #165-42 Steel Wool, Grade 00 Fine, Package of 4 Pads
- #165-43 Pipe Cleaner
- #165-44-2 Anti Seize Compound, Silver, 7g Pouch
- #165-82-1 Condenser with Ultra-Torr Fitting, 20 mL
- #165-83 Chamber with Lid for 20 mL Retort Kit
 - #165-83-1 Lid for Mud Sample Cup
 - #165-83-2 Mud Sample Cup
 - #165-83-3 Expansion Chamber
- #165-88 Spatula
- #280-00 Wetting Agent, 1 oz

For Non-Electronic Only (#165-80 and #165-80-1)

- #130-79-53-0990 Thermostat

For 115 Volt Only (#165-80 and 165-80-2)

- #122-074-1 Fuse, 5 Amp, 5 mm x 20 mm
- #165-35-1 Heating Element, 500 Watt
- #152-37 Power Cord

For 230 Volt Only (#165-80-1 and #165-80-3)

- #122-073-1 Fuse, 3 Amp, 5 mm x 20 mm
- #165-36-1 Heating Element, 500 Watt
- #152-38 Power Cord

For Electronic Only (#165-80-2 and #165-80-3)

- #165-80-4 Electronic Temperature Controller

Optional

- #153-07 Brush for 20 mL Receiver (JP) Tube
- #165-80-SP Spare Parts Kit, 115 Volt
- #165-80-1-SP Spare Parts Kit, 230 Volt
- #165-40 Power Cable, 115 Volt (For older model retorts)
- #165-40-1 Power Cable, 230 Volt (For older model retorts)



#165-80 - 20 mL Retort Kit



#165-80-2 - 20 mL Retort Kit with Electronic Temperature Control

Drilling Fluids - Retorts

RETORT KIT WITH STAINLESS STEEL CASE, 10 ML

#165-00-1 115 VOLT

#165-10-1 230 VOLT

Size: 7.5" x 6.5" x 11.5" (19 x 17 x 29 cm)

Weight: 12 lb 5 oz (5.6 kg)

What's Included

- Retort Chamber and Cup, 10 mL
- Condenser
- Stainless Steel Case
- Graduated Cylinder
- Brush for Graduated Cylinder
- T-handle Drill
- Corkscrew
- Steel Wool
- Pipe Cleaner
- High Temperature Thread Lubricant
- Spatula
- Wetting Agent



165-00-1 - 10 mL Retort Kit

Requirements

- 115 Volt at 3 Amp or 230 Volt at 1.5 Amp, 50 / 60 Hz

Components

- #153-03 Brush, Graduate, 1/2" x 8"
- #153-18 Graduated Cylinder, 10 mL x 1 mL
- #165-31 Chamber with Lid
 - #165-31-001 Expansion Chamber
 - #165-31-1 Mud Sample Cup
 - #165-33 Lid for Mud Sample Cup
- #165-32 Condenser
- #165-34 Spatula
- #165-41 Corkscrew
- #165-42 Steel Wool, Grade 00 Fine, Package of 4 Pads
- #165-43 Pipe Cleaner
- #165-44-2 Anti Seize Compound, Silver, 7g Pouch
- #280-00 Wetting Agent, 1 oz

For 115 Volt Only (#165-00-1)

- #122-074-1 Fuse, 5 Amp, 5 mm x 20 mm
- #130-79-53-0990 Thermostat
- #152-37 Power Cord
- #165-35 Heating Element

For 230 Volt Only (#165-10-1)

- #122-073-1 Fuse, 3 Amp, 5 mm x 20 mm
- #130-79-54-0990 Thermostat
- #152-38 Power Cord
- #165-36 Heating Element

Optional

- #153-06 Brush for 10 mL Receiver (JP) Tube
- #165-05 Receiver Tube with Certificate, 10 mL, Dual Scale: 0 - 100% x 0.1% / 0 - 10 mL x .1 mL
- #165-00-1-SP Spare Parts Kit, 115 Volt
- #165-10-1-SP Spare Parts Kit, 230 Volt
- #165-14-7 Special Legs for Use with JP Tubes
- #165-14-13 T-handle Drill
- #165-30 Retort Chamber with Lid, 20 mL
- #165-40 Power Cable, 115 Volt (For older model retorts)
- #165-40-1 Power Cable, 230 Volt (For older model retorts)

RETORT, REMOVABLE

#165-00	10 ML, 115 VOLT
#165-10	10 ML, 230 VOLT
#165-80-00	20 ML, 115 VOLT
#165-80-01	20 ML, 230 VOLT

Size: 3.5" x 4" x 11" (9 x 10 x 28 cm)
Weight: 7 lb 9 oz (3.4 kg)

Features

- Compact size makes it ideal for portable kits
- 10 mL and 20 mL chambers are interchangeable

What's Included

- Retort Chamber and Cup
- Condenser

Requirements

- 115 Volt at 3 Amp or 230 Volt at 1.5 Amp, 50 / 60 Hz

Components

#165-30	Chamber with Lid for 20 mL Removable Retort
#165-31-002	Expansion Chamber
#165-31-2	Mud Sample Cup
#165-33	Lid for Mud Sample Cup
#165-31	Chamber with Lid, 10 mL
#165-31-001	Expansion Chamber
#165-31-1	Mud Sample Cup
#165-33	Lid for Mud Sample Cup
#165-32	Condenser

For 115 Volt Only (#165-00)

#122-074-1	Fuse, 5 Amp, 5 mm x 20 mm
#130-79-53-0990	Controller, Fixed
#152-37	AC Power Cord
#165-35	Heating Element

For 230 Volt Only (#165-10)

#122-073-1	Fuse, 3 Amp, 5 mm x 20 mm
#130-79-54-0990	Controller, Fixed
#152-38	AC Power Cord
#165-36	Heating Element

Optional

#165-40	Power Cable, 115 Volt (For older model retorts)
#165-40-1	Power Cable, 230 Volt (For older model retorts)



#165-00 - Removable Retort

Accessories and Consumable Parts for Retorts

#153-05	Brush with Curved Plastic Handle, Mini, 7 ½", Stainless Steel
#152-37	Power Cable for Newer Retorts, 115 Volt
#152-38	Power Cable for Newer Retorts, 230 Volt
#165-41	Corkscrew
#165-14-13	Drill for Retort Chamber Tube, T-Handle
#165-43	Pipe Cleaner, 3 mm, 10'
#165-40	Power Cable for Older Retorts, 115 Volt
#165-40-1	Power Cable for Older Retorts, 230 Volt
#171-06	Safety Shield
#165-42	Steel Wool, Grade 000 Extra Fine, 4 Pads
#171-43	Teflon® Tape, ½"
#165-44-2	Anti Seize Compound, Silver, 7g Pouch
#165-15-2	Ultra-Torr Fitting for 20 and 50 mL Condensers
#165-15-3	Ultra Torr Sleeve, ¼"

For 50 mL Retorts

#131-28	Spatula, 3 ¾"
#153-08	Brush for 50 mL Receiver Tube
#165-07	50 mL Receiver Tube, 2 Scales: 0 - 100% x 0.5%, 0 - 50 mL x 0.25 mL
#165-14-7	Special Legs for Use with JP Tubes, 50 mL
#165-15-1	Condenser with Ultra-Torr Fitting
#165-15-4	O-ring for Ultra-Torr Fitting
#165-16	Retort Chamber with Lid
#165-16-1	Lid for Mud Sample Cup
#165-16-2	Mud Sample Cup
#165-16-3	Expansion Chamber with Non-Threaded Tube

For 20 mL Retorts

#153-07	Brush for 20 mL Receiver Tube
#165-06	20 mL Receiver Tube with Certificate, 2 Scales: 0 - 100% x 0.1%, 0 - 20 mL x 0.1 mL
#165-15-4	O-ring for Ultra-Torr Fitting
#165-30	Chamber with Lid for 20 mL Removable Retort
#165-31-002	Expansion Chamber
#165-31-2	Mud Sample Cup
#165-33	Lid for Mud Sample Cup
#165-82-1	Condenser with Ultra-Torr Fitting
#165-83	Chamber with Lid for 20 mL Retort Kit
#165-83-1	Lid for Mud Sample Cup
#165-83-2	Mud Sample Cup
#165-83-3	Expansion Chamber
#165-88	Spatula with 5 ½" Blade

For 10 mL Retorts

#153-06	Brush for 10 mL Receiver Tube
#165-05	10 mL Receiver Tube with Certificate, 2 Scales: 0 - 100% x 0.1%, 0 - 10 mL x 0.1 mL
#165-31	Chamber with Lid
#165-31-001	Expansion Chamber
#165-31-1	Mud Sample Cup
#165-33	Lid for Mud Sample Cup
#165-32	Condenser
#165-34	Spatula

For Removable Retorts

#165-30	Retort Chamber with Lid, 20 mL
#165-31	Retort Chamber with Lid, 10 mL

Drilling Fluids - Aging

ROLLER OVEN, HIGH TEMPERATURE, 5 ROLLER #176-00-C 230 VOLT

Size: 25.7" x 26" x 33.5" (65 x 66 x 85 cm)

Weight: 133 lb (293 kg)

Crated Size: 33.75" x 26.25" x 26" (86 x 67 x 66 cm)

Crated Weight: 172 lb (78 kg)

Features

- Able to reach higher temperatures than conventional ovens
- Variable-speed controller
- Enclosure is constructed of stainless steel for longer life
- Stainless steel rollers promote a cleaner environment inside the oven
- Sealed back so bearings and chains are not exposed to lab personnel
- Glass-impregnated Teflon® bearings extend the life of the rollers and allow for longer maintenance-free service
- A digital temperature controller maintains a constant temperature throughout the aging process
- A programmable 7-day timer enables unattended operation by automatically starting and stopping the heaters
- The circulating fan ensures more stable, consistent, and reliable heating

Specifications

- Rollers: 5
- Roller Speed: 25 RPM
- Maximum Temperature: 600°F (315.6°C)
- Heaters: 2 x 750 Watts
- Material:
 - Cabinet: 300 Series Stainless Steel
 - Rollers: 304 Stainless Steel
- Capacity (Aging Cells Sold Separately):
 - 260 mL Aging Cells: 12
 - 500 mL Aging Cells: 8
 - 1,000 mL Aging Cells: 4

Requirements

- 230 Volt, 18 Amp, 50 / 60 Hz

Components

#120-50-005	Cooling Fan
#120-76-002	Fuse for Heater, 15 Amp, 1" x 1 ¼"
#130-78-002	Cover for Cooling Fan with Filter
#165-14-8	Type J Thermocouple
#165-14-10	Fuse for Fan, 1 Amp
#172-01	Fuse for Instruments, ½ Amp
#172-02-1	Chain
#172-03-1	Sprocket, Qty: 9
#172-04-1	Connecting Link for Chain, Qty: 4
#172-05	Fuse for Motor, 2 Amp
#172-08-1	Bearing for Rollers, Carbon, Qty: 10
#172-11-1	Temperature Controller
#172-14	On/Off Toggle Switch
#172-15-1	Programmable Timer
#172-24	Solid State Relay, 240V-25A
#172-23-1	Heater, 750 Watt
#172-25-1	Motor for Fan
#174-13	Motor
#174-14	Motor Controller
#176-00-002	Safety Controller



#176-00-C - High Temperature Roller Oven

ROLLER OVEN, 4 ROLLER

#172-00-C	115 VOLT
#172-00-1-C	230 VOLT
#172-00-RC	REDUNDANT HEAT, 115 VOLT
#172-00-1-RC	REDUNDANT HEAT, 230 VOLT

Size: 23" x 26.5" x 26" (58 x 67 x 66 cm)
Weight: 141 lb (64 kg)

Shipping Size: 32" x 29" x 36" (81 x 74 x 91 cm)
Shipping Weight: 240 lb (108.9 kg)

ROLLER OVEN, 5 ROLLER

#173-00-C	115 VOLT
#173-00-1-C	230 VOLT
#173-00-RC	REDUNDANT HEAT, 115 VOLT
#173-00-1-RC	REDUNDANT HEAT, 230 VOLT

Size: 27.5" x 32" x 26" (70 x 81 x 66 cm)
Weight: 172 lb (78 kg)

Shipping Size: 37" x 32" x 36" (94 x 81 x 91 cm)
Shipping Weight: 290 lb (131.5 kg)

The Roller Oven is an effective aid in determining the effects of temperature on drilling fluid as it circulates through the well bore. The Roller Oven is designed to provide heating and rolling functionality simultaneously or independently. It is available with either 4 or 5 rollers and includes a circulation fan for uniform heating.

Features

- Digital temperature controller
- 7 day programmable timer
- Circulation fan
- Optional redundant heat control provides extra safety

Specifications

- Roller Speed: 25 RPM
- Maximum Temperature: 450°F (232.2°C)
- 4 Roller Oven Capacity:
 - 260 mL Aging Cells: 6
 - 500 mL Aging Cells: 3
 - 1,000 mL Aging Cells: 3
- 5 Roller Oven Capacity:
 - 260 mL Aging Cells: 12
 - 500 mL Aging Cells: 8
 - 1,000 mL Aging Cells: 4

Requirements

- 4 Roller: 115 Volt at 6.5 Amp or 230 Volt at 3.5 Amp, 50 / 60 Hz
- 5 Roller: 115 Volt at 9.5 Amp or 230 Volt at 4.5 Amp, 50 / 60 Hz

Components

#165-14-8	Type J Thermocouple
#165-14-10	Fuse for Circulating Fan, 1 Amp
#170-05	Thermostat
#172-01	Fuse for Temperature Controller, ½ Amp
#172-09	Fuse for Heater, 10 Amp
#172-11-1	Temperature Controller
#172-14	On/Off Toggle Switch
#172-15-1	Programmable Timer
#172-24	Solid State Relay, 240V-25A
#172-25	Fan Motor
#174-07-1	Fan Blade, 5"
#174-13	Motor
#174-14	Motor Controller

115 Volt Ovens

#172-07 Fuse for Motor, 5 Amp

230 Volt Ovens

#130-74 Transformer
#172-05 Fuse for Motor, 2 Amp

4 Roller Ovens

#172-02-2 Chain, 12.5", Qty: 2
#172-02-4 Chain, 40.5", Qty: 1
#172-03 Sprocket, ½" Bore, Qty: 7
#172-04 Connecting Link for Chain, Qty: 3
#172-08 Bearing for Roller Shaft, Qty: 8
#172-22 Heater, 350 Watt, Qty: 2

5 Roller Ovens

#172-02-2 Chain, 12.5", Qty: 3
#172-02-4 Chain, 40.5", Qty: 1
#172-03 Sprocket, ½" Bore, Qty: 9
#172-04 Connecting Link for Chain, Qty: 4
#172-08 Bearing for Roller Shaft, Qty: 10
#172-23 Heater, 500 Watt, Qty: 2

Ovens with Redundant Heat Control

#165-14-8 Type J Thermocouple
#172-24 Solid State Relay, 240V - 25A
#174-03 Electronic Controller



#173-00-C - 5-Roller Oven

Drilling Fluids - Aging

ROLLER OVEN, PORTABLE, 3 ROLLER

#174-00 115 VOLT

#174-00-1 230 VOLT

Size: 25" x 12" x 11" (64 x 31 x 28 cm)

Weight: 53 lb (24.1 kg)

Shipping Size: 31" x 18" x 21" (79 x 46 x 53 cm)

Shipping Weight: 110 lb (49.9 kg)

Features

- Specifically designed for the field
- Variable-speed controlled
- Enclosure is constructed of stainless steel for longer life
- Stainless steel rollers promote a cleaner environment inside the oven
- Glass-impregnated Teflon® bearings extend the life of the rollers and allow for longer maintenance free service
- Digital temperature controller that can be read directly from outside the oven
- Temperature is controlled by an electronic solid state thermostat and operates between 100°F and 450°F (38° - 232.2°C)

Specifications

- Rollers: 3
- Roller Speed: 25 RPM
- Maximum temperature: 450°F (232°C)
- Heaters: 150 Watt
- Capacity (Aging Cells Sold Separately):
 - 260 mL Aging Cells: 2
 - 500 mL Aging Cells: 2

Requirements

- 115 Volt at 2.5 Amp or 230 Volt at 1.5 Amp, 50 / 60 Hz

Components

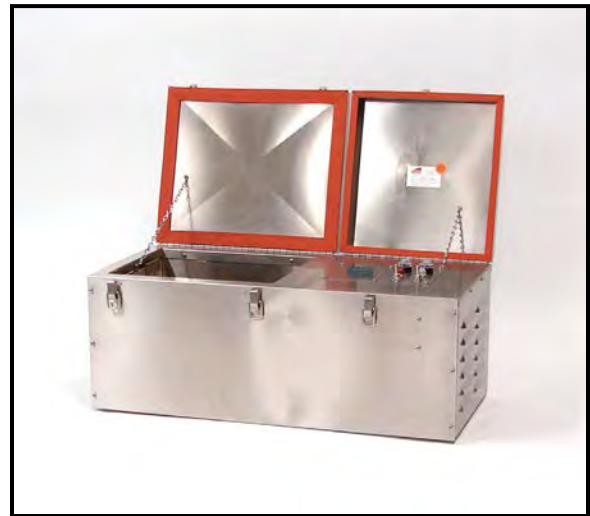
#165-14-8 Type J Thermocouple
#170-05 Thermostat
#172-02-2 Chain, 12.5", Qty: 2
#172-02-3 Chain, 18.5", Qty: 1
#172-03 Sprocket, Qty: 6
#172-04 Connecting Link for Chain, Qty: 5
#172-08 Bearing, Qty: 6
#172-14 On/Off Toggle Switch
#172-20 Heater, 150 Watt
#172-24 Solid State Relay
#174-03 Electronic Controller
#174-13 Motor
#174-14 Motor Controller

115 Volt

#152-37 Power Cable
#172-07 Fuse, 5 Amp

230 Volt

#152-38 Power Cable
#172-05 Fuse, 2 Amp



#174-00 - 3-Roller Portable Oven

GRAVITY CONVECTION DRYING OVEN

#174-50 115 VOLT

#174-50-1 230 VOLT

Size: 29" x 34" x 25.2" (74 x 87 x 64 cm)

Weight: 160 lb (72.5 kg)

Shipping Size: 32" x 42" x 32" (83 x 106 x 80 cm)

Shipping Weight: 227 lb (103 kg)

Features

- Natural air circulation
- Digital timer
- Digital display
- Multiple over-temperature protection
- Stainless steel interior and exterior
- Volume: 3.8 ft³ (108 L)
- Maximum Temperature: 300°C (572°F)



#174-50 - Gravity Convection Oven

ACCESSORIES FOR ROLLER OVENS

Electronics

- #173-04 Redundant Heat Control for 4 and 5 Roll Ovens
 #174-03 Electronic Controller for Portable Oven

Chain Drive

- #172-02-1 Chain for High Temperature Roller Oven
 #172-02-2 Chain, 12.5" for 4 and 5 Roller and Portable Oven
 #172-02-3 Chain, 18.5", for Portable Oven
 #172-02-4 Chain, 40.5", for 4 and 5 Roller Oven
 #172-03 Sprocket for 4 and 5 Roller and Portable Ovens, ½" Bore
 #172-03-1 Sprocket for High Temperature Oven, ¾" Bore
 #172-04 Connecting Link for Chain, for 4 and 5 Roller and Portable Ovens
 #172-04-1 Connecting Link for Chain, for High Temperature Roller Oven
 #172-06 Half Link for Chain, for 4 and 5 Roller and Portable Ovens
 #172-08 Bearing for Rollers, Glass Impregnated Teflon®, for 4 and 5 Roller and Portable Ovens
 #172-08-1 Bearing for Rollers, Carbon, for High Temperature Roller Oven

Fan

- #172-25 Motor for Circulating Fan, for 4 and 5 Roller and Portable Ovens
 #172-25-1 Motor for Circulating Fan, for High Temperature Roller Oven
 #172-26 Shaft Extension for Fan Motor, for 4 and 5 Roller and Portable Ovens
 #172-26-1 Shaft Extension for Fan Motor, for High Temperature Roller Oven
 #172-27 Shroud for Fan Motor, for 4 and 5 Roller and Portable Ovens
 #172-27-2 Shroud for Fan Motor, for High Temperature Roller Oven
 #172-28 Motor Bracket for Circulating Fan, for 4 and 5 Roller and Portable Ovens
 #172-28-1 Motor Bracket for Circulating Fan, for High Temperature Roller Oven
 #174-07-1 Fan Blade, 5", for 4 and 5 Roller and Portable Ovens

Fuses

- #172-01 For Instruments, ½ Amp
 #172-05 For Motor, 2 Amp, 230 Volt
 #172-07 For Motor, 5 Amp, 115 Volt
 #172-09 For Heater, 10 Amp, Standard Temperature Ovens
 #120-76-002 For Heater, 15 Amp, High Temperature Ovens
 #165-14-10 For Circulating Fan, 1 Amp

Lamp

- #165-45 Neon, Red
 #165-45-1 Neon, Clear

Heater

- #172-20 150 Watt, for Portable Oven
 #172-22 350 Watt, for 4 Roller Oven
 #172-23 500 Watt, for 5 Roller Oven
 #172-23-1 750 Watt, for High Temperature Oven

Spare Parts

- #172-00-SP Spare Parts Kit for 4 Roller Oven, 115 Volt
 #172-00-1-SP Spare Parts Kit for 4 Roller Oven, 230 Volt
 #173-00-SP Spare Parts Kit for 5 Roller Oven
 #176-00-SP Spare Parts Kit for High Temperature Oven

Drilling Fluids - Aging

AGING CELL, HIGH TEMPERATURE

#175-80 1,000 ML

Size: 14.5" Tall x 4" Diameter (37 x 10 cm)

Weight: 18.4 lb (8.3 kg)

The High Temperature Aging Cell is a pressure vessel that enables samples to be subjected to temperatures higher than the boiling point of water (up to 600°F / 315.6°C) and still be maintained in a liquid state. The cells may be used for static temperature exposure or in a dynamic mode in a roller oven (sold separately).

Specifications

- Maximum Temperature: 600°F (315°C)
- Maximum Pressure: 2,000 PSI (13.8 MPa)
- Material: 316 Stainless Steel (other materials available)

Components

#170-17	O-ring for Valve Stem, Viton®
#175-16	Valve Stem
#175-46	O-ring for Outside of Cell, Teflon®, Qty: 2
#175-80-010	Cell Body, 1 Liter
#175-80-002	Outer Cap
#175-80-003	Thrust Ring
#175-80-004	Tension Post
#175-80-005	Tension Ring
#175-80-006	Seal Ring
#175-80-007	Thrust Washer
#175-80-008	Set Screw
#175-15	Allen Wrench

Optional

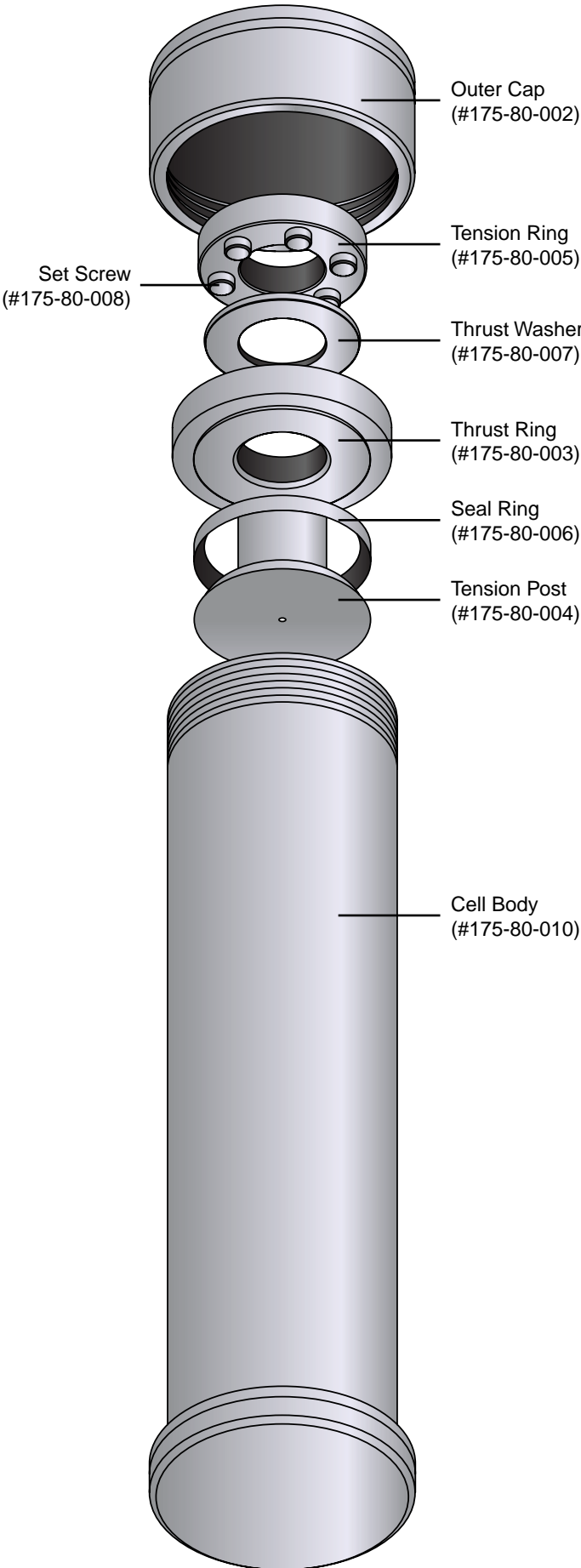
#175-46	O-ring for Outside of Cell, Teflon® (Above 400°F)
#175-47	O-ring for Outside of Cell, Viton® (Up to 400°F)
#175-54	O-ring for Outside of Cell, Buna-N (Below 200°F)
#175-80-015	Torque Wrench for Set Screw
#175-80-016	Socket, Hex Bit

Patent Pending



#175-80 - High Temperature Aging Cell

High Temperature Aging Cell



Drilling Fluids - Aging

AGING CELL, OFITE STYLE, 500 ML

#175-30 303 STAINLESS STEEL

#175-50 316 STAINLESS STEEL

#175-30-H C-276 HASTELLOY®

Size: 4" x 4" x 8" (10 x 10 x 20 cm)

Weight: 11 lb 3 oz (5.1 kg)

Components

#170-17 O-ring for Valve Stem, Viton®
#175-05 Thrust Washer
#175-09-1 O-ring for Inside of Cell, Teflon®
#175-09-2 O-ring for Inside of Cell, Viton®
#175-14 Set Screw, 3/8"
#175-15 Wrench for 3/8" Set Screw
#175-16 Valve Stem, 2"
#175-47 O-ring for Outside of Cell, Viton® 90



#175-30 - Aging Cell, OFITE Style, 500 mL

AGING CELL, OLD STYLE WITH GASKET IN LID, 500 ML

#175-70 316 STAINLESS STEEL

#175-70-H C-276 HASTELLOY®

Size: 4" x 4" x 8" (10 x 10 x 20 cm)

Weight: 11 lb 3 oz (5.1 kg)

Components

#170-17 O-ring for Valve Stem, Viton®
#175-04 Gasket for Inner Cap, Teflon®
#175-05 Thrust Washer
#175-14 Set Screw, 3/8"
#175-15 Wrench for 3/8" Set Screw
#175-16 Valve Stem, 2"
#175-47 O-ring for Outside of Cell, Viton® 90



#175-70 - Aging Cell, Old Style, 500 mL

AGING CELL, OFITE STYLE, 260 ML

#175-25 303 STAINLESS STEEL

#175-25-03 316 STAINLESS STEEL

#175-25-H C-276 HASTELLOY®

Size: 4" x 4" x 5" (10 x 10 x 13 cm)

Weight: 8 lb 2 oz (3.7 kg)

Components

#170-17 O-ring for Valve Stem, Viton®
#175-05 Thrust Washer
#175-09-1 O-ring for Inside of Aging Cell, Teflon®
#175-09-2 O-ring for Inside of Aging Cell, Viton®
#175-14 Set Screw, 3/8"
#175-15 Wrench for 3/8" Set Screw
#175-16 Valve Stem, 2"
#175-47 O-ring for Outside of Aging Cell, Viton® 90

Optional

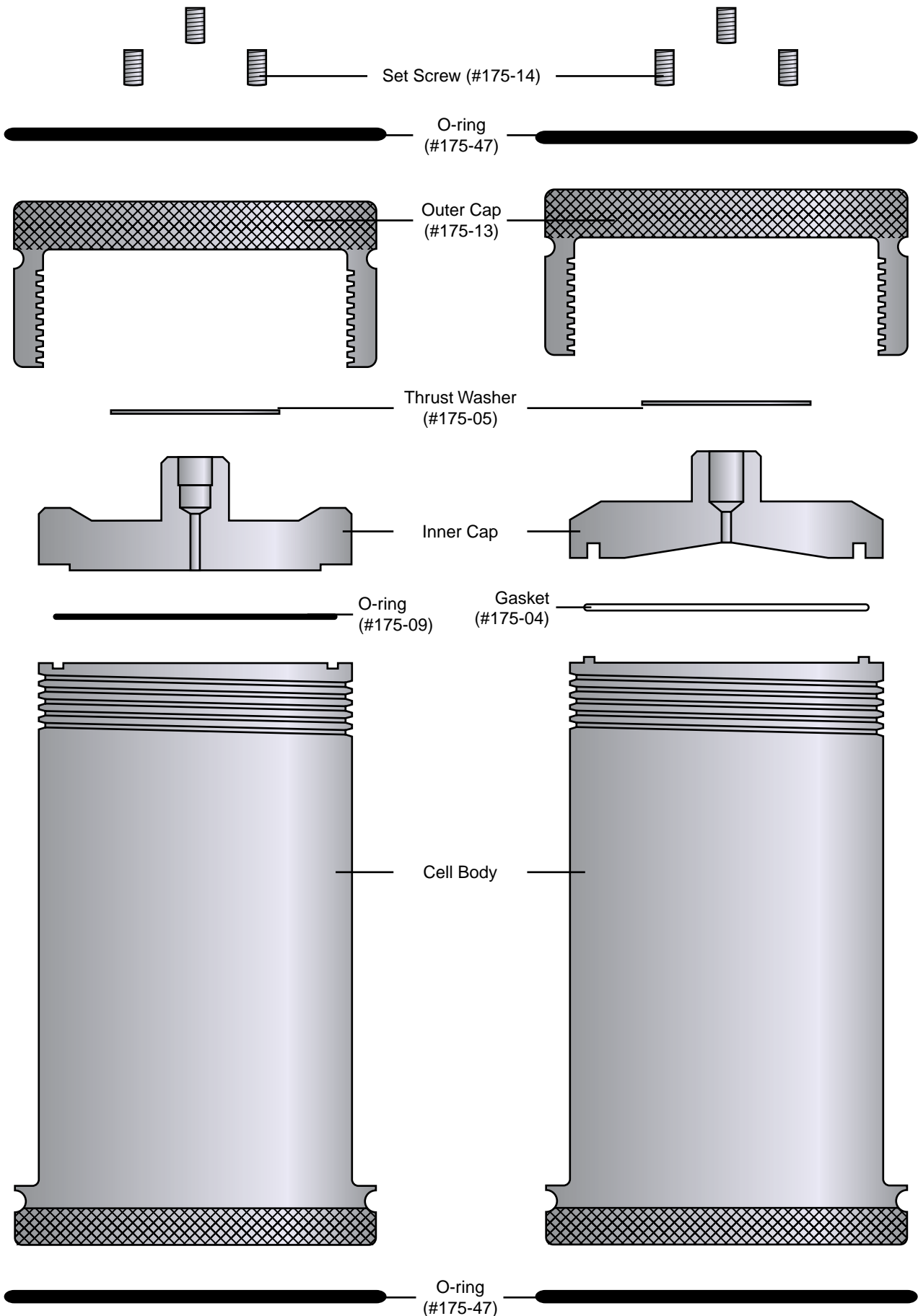
#170-04 CO₂ Pressuring Assembly
#171-24 Dual Nitrogen Manifold
#175-30-SP Spare Parts Kit for OFITE Style Aging Cell
#175-70-SP Spare Parts Kit for Old Style Aging Cell



#175-25 - Aging Cell, OFITE Style, 260 mL

OFITE Style Aging Cell

Old Style Aging Cell



Drilling Fluids - Aging

SHEAROMETER TUBE WITH WEIGHT SUPPORT #166-10

Size: 1.5" x 3.5" x 1.5" (4 x 9 x 4 cm)

Weight: .7 oz (20 g)

This 20 gram shearometer tube with weight support is used for testing heavier muds and is specifically designed for testing high gel strength drilling fluids. It is common for 10 minute gels to reach 35 lb / 100 ft². Drilling conditions and economics will determine the need to reduce gel strengths.

Features

- Designed to test heavier muds and high gel strength drilling fluids
- 20 gram tube with weight support

Optional

#166-02 Weight Set, 10 mg - 50 g



#166-10 - Shearometer Tube with Weight Support

PARTS AND ACCESSORIES FOR AGING CELLS

Liner, Teflon®

#175-60 Teflon® Liner for 500 mL Aging Cell
#175-60-6 Teflon® Liner for 260 mL Aging Cell

O-rings and Gaskets

#175-03 Gasket for Inside of Aging Cell, Peek
#175-04 Gasket for Inner Cap, Teflon® (Old Style)
#175-09 O-ring for Inside of Cell, Viton® (OFITE Style)
#175-09-1 O-ring for Inside of Cell, Teflon® (OFITE Style)
#175-09-2 O-ring for Inside of Cell, Viton® 90D (OFITE Style)
#175-46 O-ring for Outside of Cell, Teflon®
#175-47 O-ring for Outside of Cell, Viton®
#175-54 O-ring for Outside of Cell, Buna-N
#170-17 O-ring for Valve Stem, Viton®

Pressuring Assemblies

#171-31 High Pressure Nitrogen Assembly with Tank
#171-31-2 High Pressure Nitrogen Assembly without Tank

Rupture Disk ¼"

#175-56 2,000 PSI
#175-57 1,500 PSI

Set Screws and Wrenches

#175-14 Set Screw, ⅜"
#175-15 Wrench for ⅜" Set Screw

Valve Stem

#175-16 Valve Stem, 2"

Spare Parts Kits

#175-30-SP Spare Parts Kit for OFITE Style Aging Cell
#175-70-SP Spare Parts Kit for Old Style Aging Cell

CORROSION RINGS AND COUPONS

Corrosion is the destruction of a metal by a chemical or electro-chemical reaction within its environment. It is a costly and severe problem in the drilling industry. Because tubular goods are mostly iron and most drilling fluids are water-based, corrosion is inevitable. To aid in providing corrosion protection, special chemicals may be added to the fluid system.

Pre-weighed corrosion rings are the most effective way of measuring the corrosivity of the drilling fluid and the benefits of any treatment. Corrosion rings, made from grade AISI 4130 cold drawn seamless mechanical tubing similar to drill pipe, are sized to fit into the relief groove in the tool joint box. After exposure in the system, the rings are retrieved, cleaned, and re-weighed. The weight loss is attributed to corrosion and is then calculated. Rings may be returned to OFITE for weighing and analysis.

Corrosion coupons (flat and rod shaped) are mounted on the appropriate coupon holder and usually placed inside an aging cell, but sometimes directly in the flow line at the rig site. Testing is based upon the same principles as the corrosion rings. A simple formula gives a corrosion rate per year. Corrosion coupons are made from cold rolled steel.

Features

- Pre-weighed by OFITE
- Rings are made from AISI 4130 cold drawn seamless mechanical tubing similar to drill pipe
- Coupons are made from cold rolled steel
- Rings are sized to fit in the relief groove in the tool joint box
- Coupons (flat and rod shaped) can be mounted inside a Corrosion Test Cell (#175-40)

Corrosion Coupons

- #180-08 Round, 4 ½" x ¼" Diameter
- #180-10 Scale, 1" x 3" x ¼" (with Holes)
- #180-12 1" x 3" x ¼"
- #180-33 N-80 Casing Material, ¾" x 2"
- #180-34 ¾" x 3" x ¼"
- #180-35 L-80 Casing Material

Holders

- #180-00 Coupon Holder for Flat Coupon, 1" NPT
- #180-02 Coupon Holder for Flat Coupon, 2" NPT
- #180-06 Coupon Holder for Round Coupon, 2" NPT
- #180-04 Grommets for Coupon Holder, Teflon®, Pack of 10



Corrosion Rings and Coupons

Corrosion Rings

Part #	Drill Pipe Size and Type	K-Factor	Dimensions
180-14	2 7/8" Internal Flush and 3 1/2" Slim Hole	394	2.425" OD 2.125" ID
180-16	3 1/2" X-Hole and 3 1/2" Full Hole	357	2.685" OD 2.405" ID
180-18	3 1/2" Internal Flush and 3 1/2" Full Hole	337	2.965" OD 2.435" ID
180-20	4" Full Hole	256	3.156" OD 2.820" ID
180-22	4" Internal Flush and 4 1/2" X-Hole	250	3.703" OD 3.227" ID
180-24	4 1/2" Full Hole and 4 1/2" X-Hole and 4" Internal Flush	207	3.500" OD 3.000" ID
180-26	4 1/2" Internal Flush and 5" X-Hole	253	4.185" OD 3.749" ID
180-28	5 9/16", 5 1/2" API Regular or Full Hole and 6 3/8" API Regular	134	4.590" OD 4.004" ID
180-30	4 1/2" X-Hole	184	3.805" OD 3.399" ID
180-32	5" X-Hole Tool Joint	179.12	4.185" OD 3.745" ID

CORROSION TEST CELL WITH COUPON HOLDER, 500 ML

- #175-40 303 STAINLESS STEEL
- #175-40-1 316 STAINLESS STEEL
- #175-40-H C-276 HASTELLOY®

Size: 4" x 4" x 8" (10 x 10 x 20 cm)
Weight: 11 lb 3 oz (5.1 kg)

Components

- #180-04 Grommets for Coupon Holder, Teflon®, Pack of 10

Optional

- #175-40-SP Spare Parts Kit



#175-40 - Corrosion Test Cell

Drilling Fluids - Corrosion Testing

TEFLON® LINER FOR AGING CELLS

#175-60 FOR 500 ML AGING CELLS

#175-60-6 FOR 260 ML AGING CELLS

Testing highly corrosive fluids at high temperatures and pressures can cause significant, permanent damage to typical stainless steel aging cells. The Teflon® Liner is designed to prevent corrosive damage while still providing the same results as a standard aging cell.

The Teflon® Liner consists of a chamber for the test fluid and a floating piston that pressurizes the sample fluid when the aging cell is pressurized. Included is a T-screw that attaches to a hole in the piston and facilitates removal. A plug seals the hole in the piston during a test to prevent leakage.

Note: Not for use with the Corrosion Test Cell with Coupon Holder (#175-40).

Components

#175-60-1	Chamber for 500 mL Aging Cells
#175-60-5	Chamber for 260 mL Aging Cells
#175-60-2-1	Piston, Teflon®, Solid
#175-60-3	Plug, Teflon®
#175-60-4	T-Screw
#175-62	O-ring for Plug, Viton®
#175-63	O-ring for Lid (Piston), Viton®

Optional

#175-60-SP	Spare Parts Kit
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#175-60 - Teflon® Liner

HTHP CORROSION TESTER

#120-700

Size: 25" x 16" x 26" (64 x 41 x 66 cm)

Weight: 215 lb (97.6 kg)

Shipping Size: 42" x 30" x 41" (107 x 76 x 104 cm)

Shipping Weight: 500 lb (226.8 kg)

The HTHP Corrosion Tester is designed to perform corrosion tests under elevated temperature and pressure. The device is capable of heating the sample up to 400°F (204.4°C) and applying up to 5,000 PSI (34.5 MPa). Four samples can be tested simultaneously. All wetted components are made of corrosion-resistant Stainless Steel.

Four corrosion coupons are thoroughly cleaned and weighed before the test begins. The acid solution and corrosion inhibitor are mixed and poured into each of the four sample bottles. A corrosion coupon is added to each sample and all four bottles are placed into the test cell. Pressure and temperature are applied, and the motor agitates the samples throughout the test. After the test, the coupons are cleaned and weighed again. The mass loss during testing is used to calculate the corrosive properties of the acid.

Features

- Perform corrosion tests under elevated temperature and pressure
- Test 4 specimens simultaneously
- Maximum Temperature: 400°F (204.4°C)
- Maximum Pressure, 5,000 PSI (34.5 MPa)
- All wetted components are made of 316 stainless steel
- Power Requirements 230 Volt, 6 Amp, 50 / 60 Hz

Components

#120-001	Mineral Oil, 1 Gallon
#120-90-008	Breaker, 15 Amp, 2 Pole
#120-700-011	Pressure Release Valve
#120-700-012	Air to Cylinder Valve
#120-700-016	Thermocouple Assembly
#120-700-018-1	O-ring, Viton®
#120-700-020	Sample Jar
#120-700-021	Lid for Sample Jar
#120-700-023-1	Heater
#122-052	Rupture Disk, 5500 PSI (37.9 MPa)

Optional

#120-700-1	Spare Parts Kit
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#120-700 - Corrosion Tester

INTERNATIONAL KIT

#162-00 115 VOLT

#162-00-1 230 VOLT

Size: 36.5" x 25" x 25" (93 x 64 x 64 cm)

Weight: 225 lb (102.2 kg)

Designed for long distance shipping, the International Test Kit is enclosed inside a portable case with reinforced handles and latches. It includes all the equipment necessary to test density, viscosity, filtration, oil/water content, pH, and chemical analysis. Glassware, reagents, and common spare parts for all assembled items have also been included.

Density

#115-00 Mud Balance, Metal
#115-06 Lid for Metal Mud Balance, Stainless Steel

Viscosity

#110-10 Marsh Funnel Viscometer, Plastic
#110-20 Measuring Cup, 1,000 mL, Plastic
#130-10 Model 800, 8-Speed Viscometer
#130-20 Cup Heater, (115 Volt Only)
#130-30 Cup Heater, (230 Volt Only)
#130-31 Thermostat for Cup Heaters

Filtration

#140-30 API Filter Press with CO₂ Pressure Assembly
#140-55 Filter Paper, Whatman #50, 3.5" (9.0 cm), Box of 100
#141-04 Screen, 60 Mesh
#141-05 Gasket, Neoprene
#143-02-11 Puncture Pin Holder Assembly
#143-02-13 O-ring for Puncture Pin Holder Assembly
#143-05 CO₂ Bulbs, Box of 10, UN2037
#170-00 Filter Press, HTHP, 175 mL, CO₂ (115 Volt)
#170-01 Filter Press, HTHP, 175 mL, CO₂ (230 Volt)
#170-10 Thermostat Pilot Light
#170-13-1 O-ring for Test Cell, Viton®
#170-16 Valve Stem
#170-17 O-ring for Valve Stem

Portable Drilling Fluids Test Kit

#161-00 Offshore Kit with Stainless Steel Case

Retort

#165-00 Retort, 10 mL, Removable, (115 Volt)
#165-10 Retort, 10 mL, Removable, (230 Volt)
#165-34 Spatula
#165-35 Heating Element, 350 Watt (115 Volt)
#165-36 Heating Element, 350 Watt (230 Volt)
#165-41 Corkscrew
#165-42 Steel Wool, Grade 000 Extra Fine, Pack of 4 Pads
#165-43 Pipe Cleaner
#165-44-2 Anti Seize Compound, Silver, 7g Pouch

pH Testing

#147-01 pH Meter with Probe and Case, Digital, Portable
#147-20 Buffer Solution, 4 pH, 16 oz
#147-30 Buffer Solution, 7 pH, 16 oz
#147-40 Buffer Solution, 10 pH, 16 oz
#147-44 High pH Indicator Solution, 8 oz

Supplies

#130-74 Transformer, 230 to 115 Volts, 1.10 Amps, 50 / 60 Hz (230 Volt)
#152-38 AC Power Cord, (230 Volt Only)

#153-14 Graduated Cylinder, 50 mL x 1 mL, Glass
#153-14-1 Case for 50 mL Graduated Cylinder, Polycarbonate
#153-16 Graduated Cylinder, 25 mL x .2 mL, Glass
#153-16-1 Case for 25 mL Graduated Cylinder, Polycarbonate
#153-18 Graduated Cylinder, 10 mL x .2 mL, Glass
#153-20 Graduated Cylinder, 5 mL x .1 mL, Glass
#153-21 Centrifuge Tube, Kolmer®, 10-mL
#153-25-2 Centrifuge for 15 mL Tubes, Hand Crank, 4-Place
#153-29 Syringe, 2 CC, Glass Tip
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-35 Case for 1, 2, and 5 mL Pipettes, Polycarbonate
#153-38 Pipette, 5 mL x .1 mL, Glass
#153-39 Case for 10 mL Pipette, Polycarbonate
#153-40 Pipette, 10 mL x .1 mL, Glass
#153-50 Erlenmeyer Flask, 250 mL
#155-10 Timer, 30 Minute Interval
#162-05 Electric Outlet Strip, 6 Outlets
#162-77 Sample Bottle, 4 oz, Polypropylene
#163-20 Mixer for Mud Cup
#166-03 Balance, Hand Held, 0 - 320 g x 0.1 g
#168-01 Hot Plate with Thermostat (115 Volt)
#168-01-1 Hot Plate with Thermostat (230 Volt)
#168-04 Stirring Rod, 6" (15.2 cm), Glass

Reagents

#200-01 Methylene Blue Solution, 1 mL - 0.01 ME, 8 oz (250 mL)
#200-11 Hydrogen Peroxide, 3%, 8 oz (250 mL)
#206-01 Deionized Water, 8 oz (250 mL)
#230-13 Sulfuric Acid, 5 N, 8 oz (250 mL) UN2796
#280-00 Wetting Agent, 1 oz (30 mL)
#285-10 Sodium Perchlorate Solution, 16 oz (500 mL) UN3139
#285-11 Potassium Chloride Solution, 4 oz (120 mL)

Case

#162-01-1 Case, Molded Plastic
#162-03 Padlock

Optional

#162-00-LH International Kit Without HAZMAT Items, 115 Volt
#162-00-1-LH International Kit Without HAZMAT Items, 230 Volt



#162-00 - International Kit

* May require special handling for shipping.

Drilling Fluids - Mud Testing Kits

METEOR KIT

#162-70 115 VOLT

#162-70-1 230 VOLT

Size: 33.5" x 21" x 18" (85 x 53 x 46 cm)

Weight: 114 lb (51.8 kg)

The Mud Engineer's Testing Equipment on Rollers (METEOR) Kit contains all the equipment you'll need to conduct tests on water and oil-based muds (with the optional ES Meter) - all in one waterproof, portable case! In addition to the standard mud balance, marsh funnel, and cup, the METEOR Kit includes an 8-Speed Viscometer, an HTHP Filter Press, a Full Area Filter Press, a pH meter, a retort, and a Methylene Blue Test (MBT) Kit, with ample room for regulators, supplies, and extra chemicals. The rugged, plastic case is built according to military specs, enabling it to withstand the harshest of conditions, while protecting your equipment.

Viscosity

#110-10	Marsh Funnel Viscometer, Plastic
#110-20	Measuring Cup, 1,000 mL, Plastic
#130-10	Model 800, 8-Speed Viscometer
#130-38-30	Thermocup with Removable Cup (115 Volt)
#130-38-35	Thermocup with Removable Cup (230 Volt)

Density

#115-00	Mud Balance with Case, 4-Scale, Machined Arm
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Filtration

#142-53	Filter Press, API, Model MB
#170-00	Filter Press, HTHP (115 Volt)
#170-01	Filter Press, HTHP (230 Volt)

Retort

#165-00	Retort, 10 mL, Removable, (115 Volt)
#165-10	Retort, 10 mL, Removable, (230 Volt)
#165-05	Receiver Tube for 10 mL Retort
#165-08	Case for Retort Receiver Tubes, Polycarbonate
#165-14-13	T-handle Drill
#165-34	Spatula
#165-41	Corkscrew

Sand Content

#167-10	Sieve, 200 Mesh
#167-20	Funnel
#167-30	Tube

Filtrate Analysis

#162-74	Filtrate Analysis Kit (115 Volt)
#162-74-2	Filtrate Analysis Kit (230 Volt)

For components, see page 129.

Supplies

#142-54	O-ring for T-fitting for Model MB Filter Press
#142-58	O-ring for HTHP Coupling for Model MB Filter Press
#142-60	O-ring for Model MB Test Cell
#143-02-13	O-ring for Puncture Pin Holder Assembly
#143-02-14	O-ring for Puncture Pin Holder Assembly
#143-05	CO ₂ Bulbs, Box of 10, UN2037
#147-16-3	pH Meter, pHTestr 10, Waterproof, Double-Junction
#152-38	AC Power Cord (230 Volt)
#153-14-1	Case for 50-mL Graduated Cylinder, Polycarbonate
#153-16	Graduated Cylinder, 25 mL x .2 mL, Glass
#153-16-1	Case for 25-mL Graduated Cylinder, Polycarbonate
#153-55	Stopcock Grease, 150 g Tube, Silicone

#154-05	Thermometer with 4" Probe, Digital, 14° - 392°F (-10° - 200°C)
#155-05	Electronic Clock / Timer
#162-76	Tackle Box, Plano 378, Plastic
#162-77	Sample Bottle, 4 oz, Polypropylene
#165-42	Steel Wool, Grade 000 Extra Fine, Pack of 4 Pads
#165-44-2	Anti Seize Compound, Silver, 7g Pouch
#170-13-3	O-ring for HTHP Test Cell, Viton®
#170-16	Valve Stem
#170-17	O-ring, Valve Stem
#170-19	Filter Paper, Whatman #50, 2.5" (6.4 cm), Box of 100
#170-26-1	Locking Screw
#171-23-1	Safety Pin with Lanyard

Case

#162-72	Case with Rollers and Foam Insert, Waterproof, Plastic
#162-72-4	Velcro Strip

Optional

#131-50	Emulsion Stability (ES) Tester
#153-25-2	Centrifuge for 15 mL Tubes, Hand Crank, 4 Place Head and Shields
#153-51-2	Beaker, 600 mL, Glass
#162-70-LH	METEOR Kit Without HAZMAT Items, 115 Volt
#162-70-1-LH	METEOR Kit Without HAZMAT Items, 230 Volt
#163-20	Mixer for Mud Cup, 115 Volt



#162-70 - METEOR Kit

* May require special handling for shipping.

OIL MUD LABORATORY

#162-60 115 VOLT

#162-60-1 230 VOLT

Size: 26" x 13" x 10" (66 x 33 x 25 cm)

Weight: 68 lb (30.9 kg)

The Oil Mud Laboratory retort analysis is a standard guide for controlling the oil/water ratio, which influences the viscosity and filtration of the oil mud. Labware and reagents are included for deemulsification and for the determination of the aniline point, alkalinity, calcium, and chloride content. Everything is housed in a convenient stainless steel cabinet with lots of storage space and shelving.

Emulsion Stability

#131-50 Emulsion Stability (ES) Tester

Retort

#165-00 Retort, 10 mL, Removable, (115 Volt)
 #165-10 Retort, 10 mL, Removable, (230 Volt)
 #165-05 Receiver Tube with Certificate, 10 mL, 2 Scales:
 0 - 100% x 0.1%, 0 - 10 mL x 0.1 mL
 #165-34 Spatula for 10 mL Retort
 #165-41 Corkscrew
 #165-42 Steel Wool, Grade 000 Extra Fine, Pack of 4 Pads
 #165-43 Pipe Cleaner
 #165-44-2 Anti Seize Compound, Silver, 7g Pouch

Viscosity

#130-10 Model 800, 8-Speed Viscometer
 #130-38-30 Thermocup with Removable Cup (115 Volt)
 #130-38-35 Thermocup with Removable Cup (230 Volt)

Sand Content

#167-10 Sieve, 200-Mesh
 #167-20 Funnel
 #167-30 Tube

Supplies

#110-30 Measuring Cup, 500 mL, Stainless Steel
 #145-83 Utility Clamp
 #152-48 Stirring Hot Plate (115 Volt)
 #152-49 Stirring Hot Plate (230 Volt)
 #152-48-1 Support Rod for Stirrer, ½" x 12"
 #153-03 Brush for Graduated Cylinder, ½" x 8"
 #153-06 Brush for 10 mL Receiver Tube
 #153-15-1 Test Tube, 20 x 1.2 x 150 mm, Glass
 #153-15-2 Test Tube, 41 x 2.0 x 150 mm, Glass
 #153-16 Graduated Cylinder, 25 mL x .2 mL, Glass
 #153-18 Graduated Cylinder, 10 mL x .2 mL, Glass
 #153-29 Syringe, 2 mL, Glass-Tip
 #153-29-2 Syringe, 10 mL, Glass-Tip
 #153-31-1 Wash Bottle, 250 mL
 #153-34 Pipette, 1 mL x .01 mL, Glass
 #153-38 Pipette, 5 mL x .1 mL, Glass
 #153-40 Pipette, 10 mL x .1 mL, Glass
 #153-42 Pipette Filler, Rapid Release, 10 mL
 #153-51-2 Beaker, 600 mL, Glass
 #153-51-3 Beaker, 50 mL, Glass
 #153-53-1 Stir Bar, 1" x ¾"
 #153-53-11 Stir Bar, ½" x ¾"
 #153-88 Cork for Thermometer, Size 8
 #153-89 Cork for Test Tubes, Size 20
 #154-26 Thermometer, Aniline Point, 77 - 221°F
 #154-50 Spatula, 4"
 #166-03 Balance, Hand-Held, 0 - 320 g
 #165-62 Filter for Syringe, 25 mm, 0.45 µm, PTFE

#220-10A-EURO AC Power Cord (230 Volt)

Reagents

#130-78-25 Heating Bath Oil, 16 oz (500 mL)
 #131-16 Aerosol Solution, ½ oz (15 mL)
 #145-84 Aniline Solution, 8 oz (250 mL) UN1547
 #205-14-4 Calcium Buffer Solution, 16 oz (500 mL) UN1824
 #205-17-2 Titration Solution (EDTA), 4,000 mg/L, 8 oz (250 mL)
 #206-01 Deionized Water, 8 oz (250 mL)
 #210-00-1 CalVer® 2 Indicator Powder, 100 gram
 #215-00 Potassium Chromate Solution, 2 oz (60 mL)
 #215-02 Potassium Chromate Solution, 8 oz (250 mL)
 #220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
 #220-01 Phenolphthalein Indicator Solution, 8 oz (250 mL)
 #230-10 Sulfuric Acid, 0.1 N, 8 oz (250 mL)
 #265-08 Silver Nitrate Solution, 0.01 g, 16 oz (500 mL)
 #280-30 Arcosolv®, PNP, 1 Gal (3.785 L) UN1993
 #285-06 Calcium Sulfate, Anhydrous, 58 g

Case

#141-17 Clip for Graduated Cylinder
 #162-61 Case, Stainless Steel
 #163-26 Clip, Small
 #163-27 Clip, Medium
 #163-28 Clip, Large

Optional

#152-60 Blender with Glass Container, Waring, 115 Volt
 #153-59-01 Hydrometer, Protimeter Hydromaster 2
 #162-60-LH Oil Mud Lab Without HAZMAT Items, 115 Volt
 #162-60-1-LH Oil Mud Lab Without HAZMAT Items, 230 Volt
 #162-60-SP Spare Parts Kit



#162-60 - Oil Mud Laboratory

* May require special handling for shipping.

Drilling Fluids - Mud Testing Kits

AIRPLANE TEST KIT

#160-00

Size: 27" x 7" x 12.25" (69 x 18 x 31 cm)

Weight: 36 lb 4 oz (16.4 kg)

Components

- #147-50 pH Paper, pHydrion® Dispenser, pH 2-10, 1-11
- #147-60 pH Paper, pHydrion® Dispenser, pH 6-8, 8-9.5
- #147-70 pH Paper, pHydrion® Dispenser, pH 10-12, 12.5-14
- #153-03 Brush for Graduated Cylinder, ½" x 8"
- #153-04 Brush for Pipette, ½" x 3" Bristles, 24" Wire Length
- #153-18 Graduated Cylinder, 10 mL x .2 mL, Glass
- #153-20 Graduated Cylinder, 5 mL x .1 mL, Glass
- #153-26 Titration Dish, Polyethylene
- #153-28 Stirring Rod, Polyethylene
- #153-29 Syringe, 2 mL, Glass-Tip
- #153-34 Pipette, 1 mL x .01 mL, Glass
- #153-38 Pipette, 5 mL x .1 mL, Glass
- #153-40 Pipette, 10 mL x .1 mL, Glass
- #154-10 Thermometer with Metal Dial, 5" Stem, Dual-Scale: 50° - 500°F (0° - 250°C)
- #154-50 Spatula, 4" Blade
- #155-25 Stopwatch, Digital
- #163-20 Mixer for Mud Cup, 115 Volt
- #165-34 Spatula for 10 mL Retort
- #165-41 Corkscrew
- #165-42 Steel Wool, Grade 000 Extra Fine, Package of 4 Pads
- #165-43 Pipe Cleaner
- #165-44-2 Anti Seize Compound, Silver, 7g Pouch

Sand Content Analysis

- #167-10 Sieve, 200-Mesh
- #167-20 Funnel
- #167-30 Tube

Reagents

- #205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
- #205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL) UN2672
- #205-08 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 4 oz (120 mL)
- #205-14 Versenate® Calcium Buffer Solution, 2 oz (60 mL) UN1824
- #205-15 Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 4 oz (120 mL)
- #206-00 Deionized Water, 4 oz (120 mL)
- #210-00 CalVer® 2 Indicator Powder, 10 g
- #215-00 Potassium Chromate Indicator Solution, 2 oz (60 mL)
- #220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
- #230-16 Sulfuric Acid, 0.1 N, 4 oz (120 mL)
- #230-17 Sulfuric Acid, 0.02 N, 4 oz (120 mL)
- #240-00 Methyl Orange Indicator Solution, 2 oz (60 mL)
- #250-00 Calcium Indicator Solution, 2 oz (60 mL)
- #255-00 Sulfate Indicator Solution, 2 oz (60 mL) UN1789
- #260-00 Sodium Hydroxide, 0.1 N Solution, 2 oz (60 mL)
- #265-12 Silver Nitrate Solution, 0.001 g, .0282 N, 4 oz (120 mL)
- #265-13 Silver Nitrate Solution, 0.01 g, 0.282 N, 4 oz (120 mL)
- #280-00 Wetting Agent, 1 oz

Case

- #141-17 Clip for Graduated Cylinder
- #160-02 Case, Stainless Steel
- #163-26 Clip, Small
- #163-27 Clip, Medium
- #163-28 Clip, Large

Note: CO₂ bulbs must be ordered separately.



#160-00 - Airplane Test Kit, Basic

AIRPLANE TEST KIT WITH RHEOMETER, FILTER PRESS, AND RETORT

#160-00-C 115 VOLT

#160-00-1-C 230 VOLT

Size: 27" x 7" x 12.25" (69 x 18 x 31 cm)

Weight: 56 lb (25.4 kg)

Components

- #130-74 Transformer, 230 to 115 Volts, 1.10 Amps, 50 / 60 Hz (230 Volt)
- #132-00 Rheometer, Hand Crank
- #140-60 Filter Press, Half-Area
- #160-00 Airplane Test Kit
- #165-00 Retort, 10 mL, Removable, (115 Volt)
- #165-10 Retort, 10 mL, Removable, (230 Volt)

Optional

- #143-05 CO₂ Bulbs, Box of 10, UN2037
- #160-00-LH Airplane Test Kit Without HAZMAT Items
- #160-00-SP Spare Parts Kit



#160-00-C - Airplane Test Kit, Complete

* May require special handling for shipping.

OFFSHORE TEST KIT

#161-00

Size: 20.5" x 7.5" x 12" (52 x 19 x 31 cm)

Weight: 34 lb 7 oz (15.6 kg)

Components

#147-70 pH Paper, pHydrion® Dispenser, pH 10 - 12, 12.5 - 14
 #153-03 Brush for Graduated Cylinder, ½" x 8"
 #153-18 Graduated Cylinder, 10 mL x .2 mL, Glass
 #153-20 Graduated Cylinder, 5 mL x .1 mL, Glass
 #153-26 Titration Dish, Polyethylene
 #153-28 Stirring Rod, Polyethylene
 #153-29 Syringe, 2 mL, Glass-Tip
 #153-34 Pipette, 1 mL x .01 mL, Glass
 #153-38 Pipette, 5 mL x .1 mL, Glass
 #153-40 Pipette, 10 mL x .1 mL, Glass
 #165-34 Spatula for 10 mL Retort
 #165-41 Corkscrew
 #165-42 Steel Wool, Grade 000 Extra Fine, Package of 4 Pads
 #165-43 Pipe Cleaner
 #165-44-2 Anti Seize Compound, Silver, 7g Pouch
 #297-08 Bottle with Cap, Boston Round, Natural, 4 oz, Poly

Sand Content Analysis

#167-10 Sieve, 200-Mesh
 #167-20 Funnel
 #167-30 Tube

Reagents

#205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
 #205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL)
 UN2672
 #205-08 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 4 oz (120 mL)
 #205-15 Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 4 oz (120 mL)
 #206-00 Deionized Water, 4 oz (120 mL)
 #215-00 Potassium Chromate Indicator Solution, 2 oz (60 mL)
 #220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
 #230-16 Sulfuric Acid, 0.1 N, 4 oz (120 mL)
 #230-17 Sulfuric Acid, 0.02 N, 4 oz (120 mL)
 #240-00 Methyl Orange Indicator Solution, 2 oz (60 mL)
 #265-12 Silver Nitrate Solution, 0.001 g, .0282 N, 4 oz (120 mL)
 #265-13 Silver Nitrate Solution, 0.01 g, 0.282 N, 4 oz (120 mL)
 #280-00 Wetting Agent, 1 oz

Case

#141-17 Clip for Graduated Cylinder
 #161-02 Case, Stainless Steel
 #163-26 Clip, Small
 #163-27 Clip, Medium
 #163-28 Clip, Large

Optional

#161-00-LH Offshore Test Kit Without HAZMAT Items
 #161-00-SP Spare Parts Kit

OFFSHORE TEST KIT WITH RHEOMETER AND RETORT

#161-00-C 115 VOLT

#161-00-1-C 230 VOLT

Size: 20.5" x 7.5" x 12" (52 x 19 x 31 cm)

Weight: 50 lb (22.7 kg)

Components

#132-00 Rheometer, Hand Crank
 #161-00 Offshore Test Kit
 #165-00 Retort, 10 mL, Removable, (115 Volt)
 #165-10 Retort, 10 mL, Removable, (230 Volt)



#161-00 - Basic Offshore Test Kit



#161-00-C - Complete Offshore Test Kit

* May require special handling for shipping.

Drilling Fluids - Mud Testing Kits

FRONTIER KIT

#161-25

Size: 20.25" x 13.5" x 8.5" (51 x 34 x 22 cm)

Weight: 48 lb (21.8 kg)

Filter Press

#142-53 Filter Press with CO₂ Assembly, Support Bracket, and Graduated Cylinder Holder, Model MB

Retort

#165-34 Spatula, 2"
#165-41 Corkscrew
#165-42 Steel Wool, Grade 000 Extra Fine, Package of 4 Pads

Sand Content Kit

#167-10 Sieve, 200-Mesh
#167-20 Funnel
#167-30 Tube

Labware

#140-55 Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#147-50 pH Paper, Hydrion Dispenser, pH 2 - 10, 1 - 11
#153-03 Graduate Brush, ½" x 8"
#153-18 Graduated Cylinder, TC, 10 mL x .2 mL, Glass
#153-18-1 Graduated Cylinder, TD, 10 mL x .2 mL, Glass
#153-26 Titration Dish, Polyethylene
#153-28 Stirring Rod, 4", Polyethylene
#153-29 Syringe, 2 cc, Glass-Tip
#153-31-1 Wash Bottle, 250 mL
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-38 Pipette, 5 mL x .1 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass
#153-42 Pipette Filler, Fast Release, 10 mL
#153-60 Syringe, Disposable, 3 cc
#154-01 Thermometer with Metal Dial, 5" Stem, Dual-Scale: 0° - 220°F (-10° - 100°C)
#162-77 Sample Bottle, 4 oz, Polypropylene
#165-43 Pipe Cleaner
#165-44-2 Anti Seize Compound, Silver, 7g Pouch

Reagents

#205-02 Versenate® Hardness Indicator Solution, 2 oz
#205-04 Versenate® Hardness Buffer Solution, 2 oz, UN2672
#205-06-M-I Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 8 oz
#205-10-M-I Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 8 oz
#220-00 Phenolphthalein Solution, 2 oz
#230-08-M-I Sulfuric Acid, N/50, 8 oz
#230-10-M-I Sulfuric Acid, N/10, 8 oz
#240-05 Bromocresol Green - Methyl Orange Indicator Solution, 2 oz
#265-00-M-I Silver Nitrate Solution, .001 g, 0.0282 N, 8 oz
#265-06-M-I Silver Nitrate Solution, .01 g, 0.282 N, 8 oz
#280-00 Wetting Agent, 1 oz

Case

#141-17 Clip for Graduated Cylinder
#161-03 Case, Stainless Steel
#163-26 Clip, Small
#163-27 Clip, Medium
#163-28 Clip, Large

FRONTIER KIT WITH VISCOMETER AND RETORT

#161-25-C 115 VOLT

#161-25-1-C 230 VOLT

Components

#161-25 Frontier Kit
#130-10-L Model 800, 8-Speed Viscometer with Retractable Legs
#165-00 Retort with Thermostat, Removable, 10 mL, 350 Watt (115 Volt Only)
#165-10 Retort with Thermostat, Removable, 10 mL, 350 Watt (230 Volt Only)
#152-38 AC Power Cord (230 Volt)

Optional

#130-10-33 Cigarette Lighter Adapter Cable for Model 800
#143-05 CO₂ Bulbs, Box of 10, UN2037

Note: CO₂ bulbs must be ordered separately.



#161-25-C Frontier Kit with Viscometer and Retort

* May require special handling for shipping.

DRILLING FLUIDS TEST KIT (MES)

#161-50

Size: 20.25" x 12.75" x 10" (51 x 32 x 25 cm)

Weight: 45 lb (20.4 kg)

Components

- #115-01 Mud Balance, Metal, 4-Scale
- #165-14-13 T-Handle Drill for Retort Chamber Tube
- #165-34 Spatula for Retort Kit, 2"
- #165-41 Corkscrew
- #165-42 Steel Wool, Grade 000 Extra Fine, Package of 4 Pads
- #165-44-2 Anti Seize Compound, Silver, 7g Pouch

Wall Mount Filter Press Components

- #140-55 Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
- #141-01 Base Cap for Filter Press
- #141-04 Screen, 60-Mesh
- #141-05 Gasket for Cell, ½", Neoprene
- #141-08-1 Frame, MES Design
- #141-08-2 Mounting Bracket, MES Design*
- #141-08-3 Wall Mount Screw, MES Design
- #141-09 Threaded Insert for T-Screw
- #141-10 T-Screw for Filter Press
- #141-16 Support for Graduated Cylinder
- #141-17 Clip for Graduated Cylinder
- #142-00 CO₂ Pressuring Assembly with Top Cap
- #142-70 Cell Body, Half Height, Clear Acrylic

Sand Content Analysis

- #167-10 Sieve, 200-Mesh
- #167-20 Funnel
- #167-30 Tube

Labware

- #147-60 pH Paper, pHydriion® Dispenser, pH 6-8, 8-9.5
- #147-80 pH Paper, pHydriion® Dispenser, pH 8-12
- #153-03 Brush for Graduated Cylinder, ½" x 8"
- #153-16 Graduated Cylinder, 25 mL x .2 mL, Glass
- #153-18 Graduated Cylinder, 10 mL x .2 mL, Glass
- #153-26-1 Porcelain Casserole with Handle, 140 mL
- #153-31-1 Wash Bottle, 250 mL
- #153-34 Pipette, 1 mL x ¼₁₀₀ mL, Glass
- #153-36 Pipette, 2 mL x ¼₁₀ mL, Glass
- #153-38 Pipette, 5 mL x ¼₁₀ mL, Glass
- #153-40 Pipette, 10 mL x ¼₁₀ mL, Glass
- #153-60 Disposable Syringe, 3 cc

Reagents

- #205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
- #205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL)
UN2672
- #205-10 Versenate® Hardness Titration Solution, 1 mL = 20
EPM, 8 oz (250 mL)
- #215-00 Potassium Chromate Indicator Solution, 2 oz (60 mL)
- #220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
- #230-08 Sulfuric Acid, N/50, 8 oz (250 mL)
- #240-00 Methyl Orange Indicator Solution, 2 oz (60 mL)
- #265-00 Silver Nitrate Solution, .001 g, 0.0282 N, 8 oz (250 mL)
- #265-06 Silver Nitrate Solution, .01 g, 0.282 N, 8 oz (250 mL)
- #280-00 Wetting Agent, 1 oz (30 mL)

Case

- #161-60 Case, Stainless Steel
- #163-26 Clip, Small
- #163-27 Clip, Medium
- #163-28 Clip, Large

Note: CO₂ bulbs must be ordered separately.

DRILLING FLUIDS TEST KIT (MES) WITH RHEOMETER AND RETORT

#161-50-C 115 VOLT

#161-50-C-1 230 VOLT

Components

- #161-50 Drilling Fluids Test Kit (MES)
- #132-00 Rheometer, Hand Crank
- #164-33 Plug Adapter (230 Volt)
- #165-00 Retort, 10 mL, Removable, (115 Volt)
- #165-10 Retort, 10 mL, Removable, (230 Volt)

Optional

- #143-05 CO₂ Bulbs, Box of 10, UN2037
- #161-50-LH Drilling Fluids Test Kit (MES) Without HAZMAT Items



#161-50-C - Drilling Fluids Test Kit with Rheometer and Retort

* MES = Mud Engineering Supply Co.

** May require special handling for shipping.

Drilling Fluids - Mud Testing Kits

PILOT TEST KIT

#163-00

Size: 16" x 7" x 12.25" (41 x 18 x 31 cm)

Weight: 30 lb (13.6 kg)

The Pilot Test Kit is the ideal supplemental kit to either the Offshore or Airplane Kit. An oil field barrel holds 350 pounds of fresh water and a pilot test "barrel equivalent" contains 350 mL of fluid. Adding one gram of material to a barrel equivalent is the same as adding one pound of material to an oil field barrel. The Pilot Test Kit enables the operator to quickly mix and test a wide variety of drilling fluids on site. The test kit includes a wallmount filter press, timer, pocket balance, and two-ounce glass bottles for mud additives. The Pilot Test Kit is conveniently packaged in a stainless steel carrying case.

Components

#110-20	Measuring Cup, 1,000 mL, Plastic
#140-60	Filter Press, Half-Area
#153-18	Graduated Cylinder, 10 mL x .2 mL, Glass
#153-20	Graduated Cylinder, 5 mL x .1 mL, Glass
#153-26	Titration Dish, Polyethylene
#153-28	Stirring Rod, Polyethylene
#153-34	Pipette, 1 mL x .01 mL, Glass
#153-38	Pipette, 5 mL x .1 mL, Glass
#153-40	Pipette, 10 mL x .1 mL, Glass
#154-50	Spatula, 4" Blade
#155-10	Timer, 30-Minute Interval
#163-20	Mixer for Mud Cup, 115 Volt
#166-03	Balance, Hand-Held, 0 - 320 G x 0.1 g
#206-00	Deionized Water, 4 oz (120 mL)
#297-01	Bottle with Cap, French Square, 2 oz, Glass

Case

#141-17	Clip for Graduated Cylinder
#163-02	Case, Stainless Steel
#163-26	Clip, Small
#163-27	Clip, Medium

Optional

#143-05	CO ₂ Bulbs, Box of 10, UN2037
#163-00-SP	Spare Parts Kit
#163-10	Mixer for Mud Cup, 12 Volt

Note: CO₂ bulbs must be ordered separately.



#163-00 - Pilot Test Kit

BASIC WATER WELL TEST KIT

#162-50

Size: 20.5" x 10.25" x 12.25" (52 x 26 x 31 cm)

Weight: 45 lb (20.4 kg)

Components

#110-10	Marsh Funnel Viscometer, Plastic
#110-20	Measuring Cup, Plastic
#115-01	Mud Balance, Metal, 4 Scale
#147-53	pH Strips, Range 0-14, Package of 100
#147-60	pH Paper, pHydriion® Dispenser, pH 6-8, 8-9.5
#147-80	pH Paper, pHydriion® Dispenser, pH 8-12

Wall Mount Filter Press Components

#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#141-01	Base Cap for Filter Press
#141-04	Screen, 60-Mesh
#141-05	Gasket for Cell, Neoprene, ½"
#141-08-1	Frame for Wall Mount Filter Press
#141-08-2	Mounting Bracket for Filter Press
#141-08-3	Wall Mount Screw, MES
#141-09	Threaded Insert for Filter Press
#141-10	T-Screw for Filter Press
#142-00	CO ₂ Pressuring Assembly with Top Cap
#142-70	Cell Body for Filter Press, Clear Acrylic

Sand Content Analysis

#167-10	Sieve, 200-Mesh
#167-20	Funnel
#167-30	Tube

Labware

#141-16	Support for Graduated Cylinder
#141-17	Clip for Graduated Cylinder
#153-16	Graduated Cylinder, 25 mL x .2 mL, Glass
#153-18	Graduated Cylinder, 10 mL x .2 mL, Glass
#153-26-1	Porcelain Casserole with Handle, 14 mL
#153-28	Polyethylene Stirring Rod, 4"
#153-31-1	Wash Bottle, 250 mL
#153-34	Pipette, 1 mL x .01 mL, Glass
#153-36	Pipette, 2 mL x .1 mL, Glass
#153-38	Pipette, 5 mL x .1 mL, Glass
#153-40	Pipette, 10 mL x .1 mL, Glass
#155-25	Stopwatch, Digital

Reagents

#205-02	Versenate® Hardness Indicator Solution, 2 oz (60 mL)
#205-04	Versenate® Hardness Buffer Solution, 2 oz (60 mL) UN2672
#205-06	Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 8 oz (250 mL)
#205-10	Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 8 oz (250 mL)
#206-01	Deionized Water, 8 oz (250 mL)
#210-00	CalVer® 2 Indicator Powder, 10 g
#215-00	Potassium Chromate Indicator Solution, 2 oz (60 mL)
#220-00	Phenolphthalein Indicator Solution, 2 oz (60 mL)
#230-08	Sulfuric Acid, N/50, 8 oz (250 mL)
#240-00	Methyl Orange Indicator Solution, 2 oz (60 mL)
#265-00	Silver Nitrate Solution, .001 g, 0.0282 N, 8 oz (250 mL)
#265-06	Silver Nitrate Solution, .01 g, 0.282 N, 8 oz (250 mL)

Case

#161-60	Case, Stainless Steel
#163-26	Clip, Small
#163-27	Clip, Medium
#163-28	Clip, Large

* May require special handling for shipping.

RIG LABORATORY #144-20

Size: 26" x 13" x 26.75" (58 x 33 x 68 cm)
Weight: 75 lb (34.1 kg)

Shipping Size: 31" x 18" x 34" (79 x 46 x 86 cm)
Shipping Weight: 140 lb (63.5 kg)

Included in the Rig Laboratory are a mud balance, marsh funnel, measuring cup, filter press, Sand Content Kit, timer, and all the reagents and labware for performing chloride ion analysis. An air hose and connections are included to run the filter press from rig air. A model with a small sink with hook-ups for rig water (#144-30) is also available.

Components

#110-10 Marsh Funnel Viscometer, Plastic
#110-20 Measuring Cup, 1,000 mL, Plastic
#115-01 Mud Balance with Machined Arm, Metal
#140-10 Wall Mount Filter Press
#140-55 Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#141-13 Air Hose, Low Pressure, 15"
#141-19 Air Hose Adapter
#152-84 Drive Clutch, Rubber

Sand Content Kit

#167-10 Sieve, 200-Mesh
#167-20 Funnel
#167-30 Tube

Labware

#147-50 pH Paper, Hydriion Dispenser, pH 2 - 10, 1 - 11
#147-70 pH Paper, Hydriion Dispenser, pH 10 - 12, 12.5 - 14
#153-01 Bottle Brush, 3" x 12"
#153-03 Brush, Graduate, ½" x 8"
#153-18 Graduated Cylinder, 10 mL x .2 mL, Glass
#153-26 Titration Dish, Polyethylene
#153-28 Stirring Rod, 4", Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass
#154-10 Thermometer with Metal Dial, 5" Stem, Dual-Scale: 50° - 500°F (0° - 250°C)
#155-20 Timer, 60 Minutes Interval
#155-25 Stopwatch, Digital

Reagents

#206-01 Deionized Water, 8 oz
#215-00 Potassium Chromate Solution, 2 oz
#265-00 Silver Nitrate Solution, .001 g, 0.0282 N, 8 oz
#265-06 Silver Nitrate Solution, .01 g, 0.282 N, 8 oz

Case

#141-17 Clip for Graduated Cylinder
#144-21 Cabinet, Stainless Steel
#163-26 Clip, Small
#163-27 Clip, Medium
#163-28 Clip, Large
#144-25 Air Manifold

Optional

#143-05 CO₂ Bulbs, Box of 10, UN2037
#144-20-SP Spare Parts Kit
#144-22 Rig Laboratory with Dead Weight Hydraulic Assembly
#144-30 Rig Laboratory with Sink

Note: CO₂ bulbs must be ordered separately.



#144-20 - Rig Laboratory

HORIZONTAL DIRECTIONAL DRILLING (HDD) MUD TEST KIT #161-05

Size: 23" x 18" x 7.25" (58 x 46 x 18 cm)
Weight: 7 lb (3.2 kg)

Components

#100-01 Mud Balance, Plastic, 4-Scale
#110-10 Marsh Funnel Viscometer, Plastic
#110-20 Measuring Cup, 1,000 mL, Plastic
#147-53 pH Strips (Sticks), pH range 0 - 14, Box of 100
#147-95 Total Hardness Test Strips, SofChek, Package of 50
#153-31-1 Wash Bottle, 250 mL
#155-26 Stopwatch
#166-08 Shearometer
#167-00 Sand Content Kit

Case

#161-06 Case, Executive-Style



#161-05 - HDD Mud Kit

* May require special handling for shipping.

Drilling Fluids - Mud Testing Kits

BASIC TEST KIT

#161-10

Size: 23" x 10.25" x 11" (58 x 26 x 28 cm)

Weight: 9 lb 3 oz (4.15 kg)

In addition to the standard mud balance, marsh funnel, and cup, the Basic Test Kit provides ample room for equipment and extra chemicals that just don't seem to fit in conventional testing equipment kits. As with all of our equipment, this kit may be custom fitted to meet specific requirements.

Components

#110-10 Marsh Funnel Viscometer, Plastic
#110-20 Measuring Cup, 1,000 mL, Plastic
#115-01 Mud Balance, Metal
#147-53 pH Strips (Sticks), pH range 0 - 14, Box of 100
#155-25 Stopwatch, Digital
#167-00 Sand Content Kit

Case

#161-11 Case, Plastic
#161-12 Foam Insert

Optional

#147-95 Total Hardness Test Strips, 0 - 425 ppm, Package of 50



#161-10 - Basic Test Kit

DIRECTIONAL DRILLING TEST KIT

#161-15

Size: 23" x 10.25" x 11" (58 x 26 x 28 cm)

Weight: 8 lb 3.9 oz (3.7 kg)

Components

#100-01 Mud Balance, 4 Scale, Plastic
#110-10 Marsh Funnel Viscometer, Plastic
#110-20 Measuring Cup, 1,000 mL, Plastic
#147-53 pH Strips (Sticks), pH range 0 - 14, Box of 100
#147-95 Total Hardness Test Strips, 0 - 425 ppm, Package of 50
#155-25 Stopwatch, Digital
#167-00 Sand Content Kit

Case

#161-11 Case, Plastic
#161-12 Foam Insert



#161-15 - Directional Drilling Test Kit

SAND CONTENT KIT

#167-00-C

Size: 13" x 6" x 6" (33 x 15 x 15 cm)

Weight: 1 lb 8 oz (0.7 kg)

One of the primary functions of a drilling fluid is to carry drilled solids from the well bore. These solids are a contaminant, and if left in the system, can lead to numerous problems. The Sand Content Kit determines the volume percent of sand-sized particles in the drilling fluid. API defines sand-sized particles as any material larger than 74 μm * (200-mesh) in size. The test can be performed on low solids fluids as well as on weighted fluids. The kit consists of a glass tube graduated to read percent (%) by volume, a funnel, and a 200-mesh sieve contained in a cylindrical shaped holder.

Components

#153-31 Wash Bottle, 500 mL
#167-10 Sieve, 200-Mesh (75 μm), 2.5" Diameter
#167-20 Funnel, Plastic
#167-30 Graduated Tube, Glass, 0 - 20%

Case

#167-01 Carrying Case

Optional

#167-00-C-SP Spare Parts Kit



#167-00-C - Sand Content Kit

OIL THIEF WITH SAMPLE COCK, 16"

#153-25-21 ACRYLIC

#153-25-22 BRASS

Size: 20.5" x 4.5" x 6" (52 x 11 x 15 cm)

Weight: 6 lb 11 oz (3 kg)

This is a simple, one-spring device for taking samples of liquids from any specified depth within a tank. It features a one-line adjustable control, an adjustable hanger, and a replacement valve seat. It is also available in various lengths.



#153-25-21 - Oil Thief with Sample Cock

* Micron (μm) = $\frac{1}{25400}$ " or $\frac{1}{1000}$ mm

Drilling Fluids - Mud Testing Kits

UNDERBALANCE DRILLING TEST KIT (UBD) #144-82

Size: 20.25" x 13.5" x 8.5" (51 x 34 x 22 cm)

Weight: 55 lb (24.9 kg)

Components

- #110-10 Marsh Funnel Viscometer, Plastic
- #110-20 Measuring Cup, 1,000 mL, Plastic
- #152-00 Mixer with Container, Hamilton Beach®, Single Spindle, 115 Volt
- #152-40 Container for Mixers, 30 oz, Stainless Steel
- #153-25-2 Centrifuge for 15 mL Tubes, Hand Crank, 4-Place Head and Shields
- #153-52 Hydrometer Set in Plastic Carrying Case

Labware

- #147-53 pH Strips, 0 - 14, Package of 100
- #153-19 Centrifuge Tube, 15 mL, PYREX® 8080
- #153-26 Titration Dish, Polyethylene
- #153-28 Stirring Rod, 4", Polyethylene
- #153-29 Syringe, 2 cc, Glass-Tip
- #153-29-1 Syringe, 5 cc, Glass-Tip
- #153-29-2 Syringe, 10 cc, Glass-Tip
- #153-34 Pipette, 1 mL x .01 mL, Glass
- #153-36 Pipette, 2 mL x .1 mL, Glass
- #153-38 Pipette, 5 mL x .1 mL, Glass
- #153-40 Pipette, 10 mL x .1 mL, Glass
- #153-42 Pipette Filler, Fast Release, 10 mL

Reagents

- #205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
- #205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL), UN2672
- #205-06 Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 8 oz (250 mL)
- #205-08 Versenate® Hardness Titration Solution 1 mL = 20 EPM, 4 oz (120 mL)
- #206-02 Deionized Water, 16 oz (500 mL)
- #215-00 Potassium Chromate Solution, 2 oz (60 mL)
- #220-00 Phenolphthalein Solution, 2 oz (60 mL)
- #230-04 Sulfuric Acid, .02 N, 16 oz (500 mL)
- #245-00 Bromocresol Green Methyl Red Indicator Solution, 2 oz (60 mL)
- #265-00 Silver Nitrate Solution, .001 g, 0.0282 N., 8 oz (250 mL)
- #265-13 Silver Nitrate Solution, .01 g, 0.282 N, 4 oz (120 mL)
- #285-00 Precipitated Calcium Carbonate Powder, 35 g

Case

- #144-82-03 Case with Custom Foam



#144-82 - UBD Test Kit

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

FILTRATE ANALYSIS TEST / CLAY ANALYSIS TEST (FAT-CAT) KIT

#162-74 115 VOLT
#162-74-2 230 VOLT

Size: 15" x 10" x 10" (38 x 25 x 25 cm)
Weight: 17 lb 11 oz (8 kg)

Components

#140-55 Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#140-57 Filter Paper 7 cm, Whatman Grade 1, Package of 100
#142-53 Filter Press with CO₂ Assembly, Support Bracket, and Graduated Cylinder Holder, Model MB
#143-05 CO₂ Bulbs, Box of 10, UN2037
#144-90-05 Dropper Pipette, 2 mL, Poly
#147-53 pH Sticks, Range 0-14, Package of 100
#153-02 Brush, Graduate, 1 1/2" x 10 3/4"
#153-03 Brush for Graduated Cylinder, 1/2"
#153-06 Brush for 10 mL Receiver Tube
#153-18-1 Graduated Cylinder, TD, 10 mL x .2 mL, Glass
#153-26 Titration Dish, Polyethylene
#153-31-1 Wash Bottle, 250 mL, Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-36 Pipette, 2 mL x .1 mL, Glass
#153-38 Pipette, 5 mL x .1 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass
#153-41 Safety Bulb for Pipette
#153-50-1 Erlenmeyer Flask, 125 mL, Glass
#153-60 Syringe, Disposable, 3 cc
#154-75 Scoop, Brass
#168-01 Hot Plate (115 Volt)
#168-01-1 Hot Plate (230 Volt)
#168-04 Stirring Rod, 6", Glass

Reagents

#200-01 Methylene Blue Solution, 1 mL = 0.01 ME, 8 oz (250 mL)
#200-11 Hydrogen Peroxide, 3% Solution, 8 oz (250 mL)
#205-02 Versenate® Hardness Indicator Solution (Calmagite), 2 oz (60 mL)
#205-04-01 Buffer Solution, Hardness, Versenate®, Ammonium Hydroxide, 1 oz (30 mL) UN2672
#205-06 Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 8 oz (250 mL)
#205-10 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 8 oz (250 mL)
#205-14-01 Calcium Buffer, 1 oz (30 mL) UN1824
#210-00-2 CalVer® 2, 20 g
#215-00 Potassium Chromate Solution, 2 oz (60 mL)
#220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
#230-00-01 Sulfuric Acid, N/10, 1 oz (30 mL)
#230-15-01 Sulfuric Acid, 5 N, 1 oz (30 mL) UN2796
#230-17-01 Sulfuric Acid, N/50, 1 oz (30 mL)
#240-00 Methyl Orange Indicator Solution, 2 oz (60 mL)
#261-55-01 Masking Agent, 1 oz (30 mL)
#265-00 Silver Nitrate Solution, 0.0282 N, 8 oz (250 mL)
#265-06 Silver Nitrate Solution, .01 g, 0.282 N, 8 oz (250 mL)

Cases

#153-35 Case for 1, 2, and 5 mL Pipettes, Polycarbonate
#153-39 Case for 10 mL Pipettes, Polycarbonate
#162-73 Turtlebox, 6 1/2" x 3 7/8" x 3 3/8"
#162-74-1 Custom Foam Insert for Reagent Test Kit
#162-75 Tool Box, Cantilever

TEST STRIPS

#147-92 QUANTOFIX® Chloride Test Sticks, 500 - 3000 mg/L, Box of 100
#147-93 QUANTOFIX® Nitrate Test Strips, 10 - 500 mg/L NO₃, 10 - 080 mg/L NO₂, Box of 100
#147-94 QUANTOFIX® Sulfite Test Strips, 10 - 1000 mg/L SO₃, Box of 100
#147-95 SofChek Total Hardness Test Strips, 0 - 425 ppm, Package of 50



#147-94 and #147-93 QUANTOFIX® Test Strips



#162-74 - Filtrate Analysis Kit - "FAT - CAT"

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

FILTRATE ANALYSIS KIT

#145-00

Size: 12.25" x 6.25" x 11" (31 x 16 x 28 cm)

Weight: 13 lb 6 oz (6.1 kg)

Labware

- #140-55 Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
- #147-53 pH Strips, 0 - 14, Package of 100
- #153-16 Graduated Cylinder, 25 mL x .2 mL, Glass
- #153-26 Titration Dish, Polyethylene
- #153-28 Stirring Rod, 4", Polyethylene
- #153-30 Funnel, 3", Polyethylene
- #153-34 Pipette, 1 mL x .01 mL, Glass
- #153-38 Pipette, 5 mL x .1 mL, Glass
- #153-40 Pipette, 10 mL x .1 mL, Glass
- #153-60 Syringe, Disposable, 3 cc

Reagents

- #205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
- #205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL) UN2672
- #205-08 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 4 oz (120 mL)
- #205-14 Versenate® Calcium Buffer Solution, 2 oz (60 mL), UN1824
- #205-15 Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 4 oz, (120 mL)
- #206-02 Deionized Water, 16 oz (500 mL)
- #210-00 CalVer® 2 Indicator, 10 g
- #215-00 Potassium Chromate Solution, 2 oz (60 mL)
- #220-00 Phenolphthalein Solution, 2 oz (60 mL)
- #230-08 Sulfuric Acid, N/50, 8 oz (250 mL)
- #230-16 Sulfuric Acid, N/10, 4 oz (120 mL)
- #245-00 Bromocresol Green Methyl Red Indicator Solution, 2 oz (60 mL)
- #250-00 Calcium Indicator Solution, 2 oz (60 mL)
- #255-00 Sulfate Indicator Solution, 2 oz (60 mL), UN1789
- #265-12 Silver Nitrate Solution, .001 g, 0.0282 N, 4 oz (120 mL)
- #265-13 Silver Nitrate Solution, .01 g, 0.282 N, 4 oz (120 mL)

Case

- #134-36-1 Knob, Red
- #141-17 Clip for Graduated Cylinder
- #144-36 Kit, Multi-Purpose, Diagonal, Large

Optional

- #145-00-LH Filtrate Analysis Kit Without HAZMAT Items
- #145-00-SP Spare Parts Kit



#145-00 - Filtrate Analysis Kit with Case

METHYLENE BLUE TEST KIT

#168-00

115 VOLT

#168-00-1

230 VOLT

Size: 11.25" x 6.5" x 12" (27 x 17 x 31 cm)

Weight: 12 lb 8 oz (5.7 kg)

The Methylene Blue Test Kit measures the total exchange capacity of a clay system and determines the reactive solids content of fluids. The test measures the capacity of a clay to absorb cations from solution where exchangeable cations on the clay surfaces are replaced by methylene blue cations. The more ions the clay can exchange for methylene blue cations, the more reactive the clay, and the greater the swelling potential.

The Methylene Blue Test Kit comes complete with all necessary chemicals, glassware, and equipment to perform this important and informative test in the field. All of the equipment is stored in a convenient stainless steel carrying case.

Components

- #140-56 Filter Paper, Whatman No. 1, 12.5 cm, Package of 100
- #153-14 Graduated Cylinder, Glass, 50 mL x 1 mL
- #153-29 Syringe, 2 mL, Glass
- #153-34 Pipette, 1 mL x .01 mL, Glass
- #153-40 Pipette, 10 mL x .1 mL, Glass
- #153-41 Pipette Aid (Safety Bulb)
- #153-50 Erlenmeyer Flask, 250 mL
- #168-03 Hot Plate (115 Volt)
- #168-03-1 Hot Plate (230 Volt)
- #168-04 Stirring Rod, 6", Glass

Reagents

- #200-03 Methylene Blue Solution, 16 oz (500 mL)
- #200-11 Hydrogen Peroxide, 3% Solution, 8 oz (250 mL)
- #206-01 Deionized Water, 8 oz (250 mL)
- #230-13 Sulfuric Acid, 5 N, 8 oz (250 mL) UN2796

Case

- #134-36-1 Knob, Red
- #144-36 Kit, Multi-Purpose, Diagonal, Large
- #163-27 Clip, Medium
- #163-28 Clip, Large

Optional

- #168-00-LH MBT Kit Without HAZMAT Items, 115 Volt
- #168-00-1-LH MBT Kit Without HAZMAT Items, 230 Volt
- #168-00-1-SP Spare Parts Kit



#168-00 - Methylene Blue Test Kit

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

CHLORIDE, ALKALINITY, AND WATER HARDNESS #144-80

Size: 10" x 11" x 11" (25 x 28 x 28 cm)
Weight: 13 lb 2 oz (6 kg)

Components

#153-26 Titration Dish, Polyethylene
#153-28 Stirring Rod, Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass

Reagents

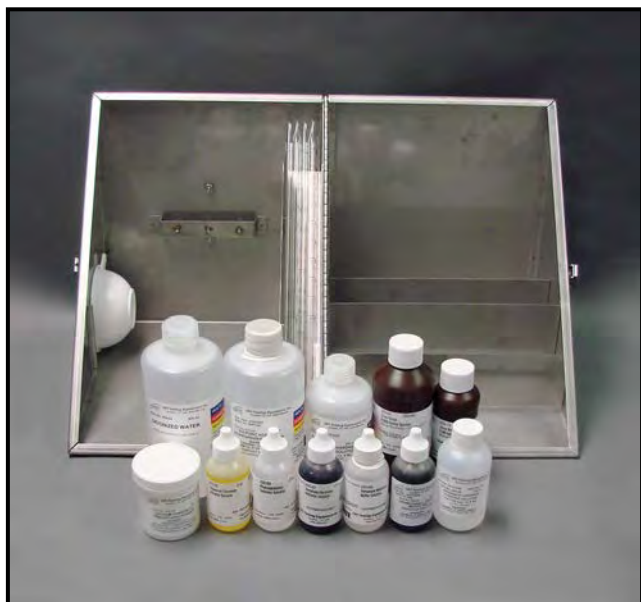
#205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
#205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL)
UN2672
#205-06 Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 8 oz (250 mL)
#205-08 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 4 oz (120 mL)
#206-02 Deionized Water, 16 oz (500 mL)
#215-00 Potassium Chromate Indicator Solution, 2 oz (60 mL)
#220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
#230-04 Sulfuric Acid, 0.02 N, 16 oz (500 mL)
#245-00 Bromocresol Green-Methyl Red Indicator Solution, 2 oz (60 mL)
#265-00 Silver Nitrate, 0.001 g, 0.0282 N, 8 oz (250 mL)
#265-13 Silver Nitrate, 0.01 g, 0.282 N, 4 oz (120 mL)
#285-00 Precipitated Calcium Carbonate Powder, 35 g

Case

#134-36-1 Knob, Red
#144-36 Kit, Multi-Purpose, Diagonal, Large

Optional

#144-80-LH Chloride, Alkalinity, and Water Hardness Kit Without HAZMAT Items



#144-80 - Chloride, Alkalinity, and Hardness Kit

CHLORIDE AND ALKALINITY KIT #144-50

Size: 10" x 11" x 11" (25 x 28 x 28 cm)
Weight: 12 lb 14 oz (5.7 kg)

Components

#153-26 Titration Dish, Polyethylene
#153-28 Stirring Rod, Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass

Reagents

#206-02 Deionized Water, 16 oz (500 mL)
#215-00 Potassium Chromate Solution, 2 oz (60 mL)
#220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
#230-08 Sulfuric Acid, 0.02 N, 8 oz (250 mL)
#245-00 Bromocresol Green-Methyl Red Indicator Solution, 2 oz (60 mL)
#265-00 Silver Nitrate, 0.001 g, 0.0282 N, 8 oz (250 mL)
#265-06 Silver Nitrate, 0.01 g, 0.282 N, 8 oz (250 mL)
#285-00 Precipitated Calcium Carbonate Powder, 35 g

Case

#134-36-1 Knob, Red
#144-36 Kit, Multi-Purpose, Diagonal, Large



#144-50 - Chloride and Alkalinity Test Kit

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

CHLORIDE AND WATER HARDNESS KIT #144-70

Size: 10" x 11" x 11" (25 x 28 x 28 cm)
Weight: 13 lb 2 oz (6 kg)

Components

#153-26 Titration Dish, Polyethylene
#153-28 Stirring Rod, Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass

Reagents

#205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
#205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL)
UN2672
#205-06 Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 8 oz (250 mL)
#205-10 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 8 oz (250 mL)
#206-01 Deionized Water, 8 oz (250 mL)
#215-00 Potassium Chromate Indicator Solution, 2 oz (60 mL)
#220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
#230-17 Sulfuric Acid, N/50, 4 oz (120 mL)
#265-00 Silver Nitrate, 0.001 g, 0.0282 N, 8 oz (250 mL)
#265-06 Silver Nitrate Solution, .01 g, 0.282 N, 8 oz (250 mL)
#285-00 Precipitated Calcium Carbonate Powder, 35 g

Case

#134-36-1 Knob, Red
#144-36 Case, Stainless Steel

Optional

#144-70-LH Chloride and Water Hardness Kit Without HAZMAT Items



#144-70 - Chloride and Water Hardness Kit

CHLORIDE CONTENT KIT #144-40

Size: 6.25" x 11" x 11" (16 x 28 x 28 cm)
Weight: 10 lb 14 oz (4.9 kg)

Components

#153-26 Titration Dish, Polyethylene
#153-28 Stirring Rod, Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass

Reagents

#206-01 Deionized Water, 8 oz (250 mL)
#215-00 Potassium Chromate Solution, 2 oz (60 mL)
#220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
#230-08 Sulfuric Acid, 0.02 N, 8 oz (250 mL)
#265-02 Silver Nitrate, 0.001 g, 0.0282 N, 16 oz (500 mL)
#265-06 Silver Nitrate, 0.01 g, 0.282 N, 8 oz (250 mL)
#285-00 Calcium Carbonate Powder, Precipitated, 35 g

Case

#134-36-1 Knob, Red
#144-35 Case, Stainless Steel



#144-40 - Chloride Content Kit

* May require special handling for shipping.

CALCIUM AND MAGNESIUM KIT #144-85

Size: 15" x 12" x 10.5" (38 x 31 x 27 cm)
Weight: 6 lb 5 oz (2.9 kg)

Components

#153-14 Graduated Cylinder, 50 mL x 1 mL, Glass
#153-18 Graduated Cylinder, 10 mL x .2 mL, Glass
#153-26 Titration Dish, Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-38 Glass Pipette, 5 mL x .1 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass
#153-42 Pipette Filler, Fast Release, 10 mL
#153-51-4 Beaker, 100 mL, Glass
#154-62 Spatula, 123 mm, Porcelain
#154-63 Spatula with Flat Handle, Micro Spoon, 9"
#168-04 Stirring Rod, Glass

Reagents

#205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL) UN2672
#205-10 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 8 oz (250 mL)
#205-14 Versenate® Calcium Buffer Solution, 2 oz (60 mL) UN1824
#205-22 Calcium Titration I, 2 oz (60 mL)
#205-23 Calcium Titration II, 2 oz (60 mL) UN3287
#205-26 Calcon Powder, 40 g
#205-27 Manver Indicator Solution, 2 oz (60 mL)
#206-01 Deionized Water, 8 oz (250 mL)
#230-25 Acetic Acid, Glacial, 8 oz (250 mL) UN2789
#260-07 Sodium Hydroxide Solution, 8 N, 8 oz (250 mL) UN1824
#261-00 Sodium Hypochlorite Solution, 8 oz (250 mL) UN1791

Optional

#144-85-LH Calcium and Magnesium Kit Without HAZMAT Items



#144-85 - Calcium and Magnesium Kit

TOTAL HARDNESS TITRATION KIT #145-10

Size: 11.25" x 6.5" x 12" (29 x 17 x 31 cm)
Weight: 11 lb (5 kg)

Components

#153-26 Titration Dish, Polyethylene
#153-28 Stirring Rod, Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass

Reagents

#205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
#205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL) UN2672
#205-06 Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 8 oz (250 mL)
#205-10 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 8 oz (250 mL)
#206-02 Deionized Water, 16 oz

Case

#134-36-1 Red Knob
#144-35 Case, Stainless Steel

Optional

#145-10-LH Total Hardness Titration Kit Without HAZMAT Items



#145-10 - Total Hardness Titration Kit

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

CALCIMETER

#152-95

Size: 13" x 8" x 2.5" (33 x 20 x 6 cm)

Weight: 2 lb 7 oz (1.1 kg)

The Calcimeter accurately and quickly determines if scale build up is composed of calcium carbonate. The calcite to dolomite content of the unknown sample aids in determining which chemical treating program to implement. The entire test procedure requires 15 to 30 minutes for both calcite and dolomite determination.

Components

#142-54	O-ring for Lid
#152-95-1	Gauge, 30 PSI, 4" Diameter, 1/4" NPT
#152-95-2	Bleed-Off Screw
#152-95-3	Cell Cap
#152-95-4	Reaction Cell
#152-95-5	O-ring for Cell, 1 3/8" x 1/8"
#152-95-6	Sample Cup



#152-95 - Calcimeter

RECORDING CALCIMETER WITH DAQ

#152-97

STANDARD

#152-97-C

WITH LAPTOP

The Recording Calcimeter replaces the gauge with a pressure transducer and PC software. The software automates the data recording process, saving the operator the time of doing it manually. This kit includes the Calcimeter plus all consumable items required.

Features

- Software records pressure increase and calculates percentage CaCO₃ and Dolomite
- Rugged carrying case

Components

#142-54	O-ring for Bleed-Off Screw
#152-95-1	Gauge with Cover, 30 PSI, 4" Diameter
#152-95-2	Bleed-Off Screw
#152-95-3	Cell Cap
#152-95-4	Reaction Cell
#152-95-5	O-ring for Cap
#152-95-6	Sample Cup
#152-96-6	Mortar, 65 mL, Porcelain
#152-96-7	Pestle, Porcelain
#153-02	Brush, Graduate, 1.5" x 10.75"
#153-18	Graduated Cylinder, 10 mL x .2 mL, Glass
#153-55	Stopcock Grease, Silicone
#166-03	Hand-held Balance, 0 - 320 g x .1 g
#275-03	Hydrochloric Acid, 10%, 8 oz UN1789
#285-00-1	Calcium Carbonate, 100 g



#152-97 Recording Calcimeter with DAQ

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

GARRETT GAS TRAIN KIT

#151-00

Size: 18.75" x 14.5" x 8" (48 x 37 x 20 cm)

Weight: 17 lb 5 oz (7.9 kg)

The Garrett Gas Train determines the concentration of soluble sulfides and carbonate in drilling fluid. Mud filtrate is acidified inside the gas train, converting all sulfides to H₂S or all carbonates to CO₂, depending upon the test. The gas train separates the gas from the liquid and an inert carrier gas transports the gasses through the separate chambers. At the end of the train, the gas is passed through a Dräger-tube®, which indicates the concentration of H₂S or CO₂. The Garrett Gas Train consists of a transparent train, pressure regulator assembly, Dräger-tubes® for H₂S and carbonate detection, and a convenient carrying case.

Components

#142-58	O-ring, Small
#143-00	Regulator, Low Pressure
#143-02-10	CO ₂ Puncture Head Assembly
#143-03	Barrel for CO ₂ Bulb
#145-601	Hydrogen Sulfide Test Papers, Package of 100
#151-00-001	Gas Train Body, Acrylic
#151-00-003	Binding Head Machine Screw, Nylon
#151-00-005	Washer, #10, Nylon
#151-05	Thumb Screw for Lid
#151-06	Gas Bag, 1 Liter
#151-07	2-Way Bore Stopcock with Teflon® Plug
#151-09	Hand Vacuum Pump, Dräger Model 31
#151-14	Hose, 3/8" OD x 1/4" ID x 1/8" Thick, 1' Length, Rubber
#151-14-1	Tube, 3" Length, Nylon
#151-15	Fitting for Filter Flow Tube, Nylon
#151-16	Septum for Injection, Rubber
#171-90-14	Hose Barb, 1/8" NPT x 1/4"

Dräger-tubes®

#151-02	Dräger-tube®, H ₂ S 100/a, Range 100 - 2,000 ppm, Package of 10
#151-03	Dräger-tube®, H ₂ S 0.2%/A, Range 0.2 - 7 Vol.%, Package of 10
#151-04	Dräger-tube®, CO ₂ 100/a, Range 100 - 3,000 ppm, Package of 10

Glassware

#151-01	Dispersion Tube, Glass
#151-08	Flow Meter Tube, API
#153-34	Pipette, 1 mL x .01 mL, Glass
#153-40	Pipette, 10 mL x .1 mL, Glass
#153-63	Syringe with Needle, Disposable, 10 mL

O-rings

#142-58	O-ring for Nylon Fitting
#143-02-13	O-ring for CO ₂ Bulb Puncture Pin
#143-02-14	O-ring for Puncture Pin Holder Assembly
#151-10	O-ring for Dräger-tube® Pump
#151-11	O-ring for Flow Meter Tube Floating Ball
#151-12	O-ring for 2 nd and 3 rd Chamber
#151-13	O-ring for 1 st Chamber

Reagents

#151-17	Defoamer, Octanol/Octyl Alcohol, 2 oz (60 mL)
#230-15	Sulfuric Acid, 5 N, 2 oz (60 mL) UN2796

Case

#151-53	Case with Foam Insert
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Optional

#143-05	CO ₂ Bulbs, Box of 10, UN2037
#143-08	N ₂ O Bulbs, Box of 10, UN1070
#151-00-LH	Garrett Gas Train Kit Without HAZMAT Items
#151-00-SP	Spare Parts Kit

Note: CO₂ and N₂O bulbs must be ordered separately.



#151-00 - Garrett Gas Train

GARRETT GAS TRAIN ANALYSIS FOR ACTIVE SULFIDES KIT FOR OIL-BASED DRILLING FLUIDS

#151-20

Size: 6" x 6" x 6" (15 x 15 x 15 cm)

Weight: 2 lb (900 g)

Components

#151-17	Defoamer, Octanol/Octyl Alcohol, 2 oz (60 mL)
#151-20-1	Citric Acid, 2M, Demulsifier, IPA Solution, 16 oz (500 mL) UN1219
#151-20-2	Tubing, 12", with Female Luer Lock Connection
#153-29	Syringe, 2 mL, Glass-Tip
#153-29-1	Syringe, 5 mL, Glass-Tip
#153-29-2	Syringe, 10 mL, Glass-Tip
#153-66	Syringe, Disposable, 20 mL

Optional

#153-53	Magnetic Stirrer, 115 Volt
#151-20-LH	Sulfide Analysis Kit Without HAZMAT Items



#151-20 - Active Sulfides Kit for Garrett Gas Train

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

SULFIDE ION (S²⁻) TEST KIT

#145-50

Size: 6" x 6" x 6" (15 x 15 x 15 cm)

Weight: 1 lb (470 g)

Sulfide ions in drilling fluid or water may be determined semi-quantitatively using this method. (1.06 ppm S = ppm H₂S).

Components

#153-15 Test Tube, 125 mm x 15 mm, Glass
#153-43 Transfer Pipette, Disposable, 5 mL, Poly

Reagents

#145-501 Sulfide Ion Solution "A", 2 oz (60 mL)
#145-502 Sulfide Ion Solution "B", 2 oz (60 mL) UN1789
#145-503 Sulfide Ion Solution, "C", 2 oz (60 mL)
#206-03 Deionized Water, 2 oz (60 mL)



#145-50 - Sulfide Ion Test Kit

SULFIDE ION (S²⁻) TEST KIT NO. 2

#145-55

Size: 6.5" x 8.5" x 10.5" (17 x 22 x 27 cm)

Weight: 3 lb 2 oz (1.4 kg)

Oilfield Brines, Range: 0.1 - 1,000 ppm

Components

#153-12 Graduated Cylinder, 100 mL x 1 mL, Glass
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass
#153-82 Stopper, #5, Rubber

Reagents

#145-551 Starch Indicator Solution, 2 oz (60 mL)
#145-552 Sulfide Buffer Solution, 2 oz (60 mL) UN1789
#145-553 Iodine Titrating Solution, 8 oz (250 mL)
#206-02 Deionized Water, 16 oz (500 mL)



#145-55 - Sulfide Ion Test Kit No. 2

HYDROGEN SULFIDE (H₂S) DETECTION KIT

#145-60

Size: 5" x 6.25" x 3" (13 x 16 x 8 cm)

Weight: 12 oz (0.3 kg)

Soluble sulfides may be determined using mud filtrate. Total sulfides may be determined using whole mud.

Components

#145-601 Hydrogen Sulfide Test Papers, Package of 100
#145-602 Hydrogen Sulfide Test Bottle
#145-603 H₂S Test Color Chart with Instructions
#167-01 Carrying Case

Reagents

#145-604 Alka-Seltzer® Tablets, Packet of 2
#151-17 Defoamer, Octanol/Octyl Alcohol, 2 oz (60 mL)
#230-15 Sulfuric Acid, 5 N, 2 oz (60 mL) UN2796

Optional

#145-60-LH Hydrogen Sulfide Detection Kit Without HAZMAT Items



#145-60 - Hydrogen Sulfide Detection Kit

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

SULFATE (SO₄) ION TEST KIT, 500 - 10,000 PPM #145-20

Size: 12" x 15" x 10.5" (30 x 38 x 27 cm)
Weight: 6 lb 5 oz (2.9 kg)

Components

#153-26 Titration Dish, Polyethylene
#153-28 Stirring Rod, Polyethylene
#153-34 Pipette, 1 mL x .01 mL, Glass
#153-40 Pipette, 10 mL x .1 mL, Glass

Reagents

#205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
#205-04 Versenate® Hardness Buffer Solution, 2 oz (60 mL) UN2672
#205-12 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 16 oz (500 mL)
#275-04 Hydrochloric Acid, 0.02 N, 8 oz (250 mL)
#285-35 Standard Magnesium Chloride Solution, 8 oz (250 mL)
#285-36 Standard Barium Chloride Solution, 16 oz (500 mL)

Optional

#145-20-LH Sulfate Ion Test Kit Without HAZMAT Items
#153-10 Burette with Bottle and Bulb, Automatic, 10 mL
#168-01 Hot Plate, 115 Volt
#168-01-01 Hot Plate, 230 Volt



#145-20 - Sulfate Ion Test Kit

SODIUM CHROMATE TEST KIT #145-40

Size: 5" x 3" x 6.25" (12 x 8 x 16 cm)
Weight: 1 lb (0.5 kg)

To determine the amount of Sodium Chromate (Na₂CrO₄) in a drilling fluid. Reported in parts per million (PPM).

Components

#153-15 Test Tube, 125 mm x 15 mm, Glass
#153-43 Transfer Pipette, Disposable, 5 mL, Poly

Reagents

#145-401 Sodium Chromate Solution "A", 2 oz (60 mL)
#145-402 Sodium Chromate Solution "B", 2 oz (60 mL) UN1789
#145-403 Sodium Chromate Solution "C", 2 oz (60 mL)
#206-03 Deionized Water, 2 oz (60 mL)

Optional

#145-40-LH Sodium Chromate Test Kit Without HAZMAT Items



145-40 - Sodium Chromate Test Kit

SULFITE (SO₃) TEST KIT #145-70

Size: 6" x 10" x 5" (15 x 25 x 13 cm)
Weight: 2 lb 1 oz (0.9 kg)

Components

#153-28 Stirring Rod
#153-43 Transfer Pipette, Disposable, 5 mL, Poly
#153-51 Beaker, 250 mL, Glass
#167-01 Carrying Case

Reagents

#145-551 Starch Indicator Solution, 2 oz (60 mL)
#145-554 Potassium Iodide-Iodate Solution, 8 oz (250 mL)
#206-01 Deionized Water, 8 oz (250 mL)
#220-00 Phenolphthalein Indicator Solution, 2 oz (60 mL)
#275-00 Hydrochloric Acid, 37%, Concentrated, 2 oz (60 mL) UN1789

Optional

#145-70-LH Sulfite Test Kit Without HAZMAT Items



#145-70 - Sulfite Test Kit

* May require special handling for shipping.

Drilling Fluids - Filtrate Analysis Kits

IRON (Fe³⁺) COUNT TEST KIT #161-70

Ferric iron concentration is determined in this procedure by the oxidation of iron to the ferric state at a pH value of 1 or less. The sample is then titrated with a standard EDTA solution in the presence of a salicylic acid indicator at a pH of approximately 2.4. Hydrogen sulfide interferes with the complexing action of both the EDTA solution and the salicylic acid. The hydrogen sulfide can be removed by boiling the sample with hydrochloric acid at a pH level below 1. Results are reported as ppm Fe³⁺ or as epm Fe³⁺.

Components

#147-50	pH Paper, pHydrion® Dispenser, pH 2-10, 1-11
#153-10	Burette with Bottle and Bulb, Automatic, 10 mL
#153-12	Graduated Cylinder, 100 mL x 1 mL, Glass
#153-26	Titration Dish, Polyethylene
#153-28	Stirring Rod, Polyethylene
#153-34	Pipette, 1 mL x .01 mL, Glass

Reagents

#200-10-1	Hydrogen Peroxide, 3% Solution, 2 oz (60 mL)
#205-00	Versenate® Hardness Titration Solution, 1 mL = 2 EPM, 16 oz (500 mL)
#205-12	Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 16 oz (500 mL)
#270-00	Nitric Acid, 3 N, 8 oz (250 mL) UN2031
#275-00	Hydrochloric Acid, 37%, Concentrated, 2 oz (60 mL) UN1789
#285-37	Iron Indicator Solution, 2 oz (60 mL) UN1993
#285-40	Iron Buffer Solution, 2 oz (60 mL)

Optional

#161-70-LH	Iron Count Test Kit Without HAZMAT Items
#168-01	Hot Plate, 115 Volt
#168-01-1	Hot Plate, 230 Volt



#161-70 - Iron Count Test Kit

PARAFORMALDEHYDE TEST KIT #145-30 STANDARD #145-31 WITH ANTIFREEZE

Size: 6.25" x 5" x 3" (16 x 13 x 8 cm)
Weight: 1 lb (0.5 kg)

Most low pH fresh water and saltwater drilling fluids contain bacteria that attack starch material added to the drilling fluid for filtrate control. Paraformaldehyde is often added to destroy these bacteria, but it must be maintained within certain levels for best results. The Paraformaldehyde Kit contains all the apparatus and reagents required to measure the available preservative in pounds per barrel (lb/bbl).

Components

#153-15	Test Tube, 125 mm x 15 mm, Glass
#153-43	Transfer Pipette, Disposable, 5 mL, Poly
#167-01	Carrying Case

Reagents for #145-30

#145-301	Paraformaldehyde Solution "A", 2 oz (60 mL)
#145-302	Paraformaldehyde Solution "B", 2 oz (60 mL)
#145-303	Paraformaldehyde Solution "C", 2 oz (60 mL)
#145-304	Paraformaldehyde Solution "D", 2 oz (60 mL)

Reagents for #145-31

#145-311	Paraformaldehyde Solution "A" AF, 2 oz (60 mL)
#145-312	Paraformaldehyde Solution "B" AF, 2 oz (60 mL)
#145-313	Paraformaldehyde Solution "C" AF, 2 oz (60 mL)
#145-314	Paraformaldehyde Solution "D" AF, 2 oz (60 mL)

AF = Antifreeze



#145-30 - Paraformaldehyde Test Kit

* May require special handling for shipping.

Drilling Fluids - Bacteria Test Kits

AEROBIC AND ANAEROBIC BACTERIA TEST KIT #180-50

Size: 6.5" x 6.5" x 6.5" (17 x 17 x 17 cm)
Weight: 13 oz (368 g)

Features

- Extinction dilution procedure identifies and counts the number of organisms present
- Aerobic tests require 5 days
- Anaerobic tests require 25 days

Components

#153-61 Syringe with Needle, Disposable, 3 cc
 #180-36 Phenol Red Vials (green), 10 cc, Aerobic Bacteria
 #180-38 Sulfate Reducer Vials (silver), 10 cc, Anaerobic Bacteria

Note: All bacteria cultures should be kept refrigerated for longer life.

SANI CHECK AB KIT #110, AEROBIC BACTERIA



#180-50 Bacteria Testing Kit

QUICKCHEK SULPHATE REDUCING BACTERIA RC II TEN-PAK #180-60

Size: 16" x 11" x 6" (41 x 28 x 15 cm)
Weight: 6 lb (2.7 kg)

Features

- Tests for sulfate reducing bacteria
- Requires only 1 hour
- Not affected by chemical or salinity interferences
- Range: 103 to 106 bacteria per mL
- If refrigerated and stored properly, shelf life is one year
- Ten tests per kit



#180-60 - Rapid Check II - SRB Detection System

#180-65

Size: 4.5" x 4.25" x 2.7" (11 x 11 x 7 cm)
Weight: 6 oz (170 g)

The Sani Check AB Kit #110 allows you to determine aerobic bacteria in aqueous and non-aqueous liquids. A saturated test paper strip is incubated for a period of 24-72 hours and then compared to a color chart to determine the bacterial count per square inch. Each kit is good for 25 tests.

Features

- Determine aerobic bacteria in liquids
- 25 tests per kit



#180-65 - Sani Check AB Kit #110

Drilling Fluids - Oilfield Polymers

POLYMER TEST KIT - CLAPPER

#295-00 115 VOLT

#295-01 230 VOLT

Size: 17.5" x 13" x 10" (45 x 33 x 25 cm)

Weight: 23 lb 10 oz (10.7 kg)

Features

- Determines the polymer concentration in mud filtrates
- Measures the rate of ammonia generation while the mud filtrate is heated in the presence of sodium hydroxide solution
- Can be used to analyze all filtrates except those containing some types of lignosulfonates and polyacrylate filtration control additives

Components

#130-74	Transformer, 230 to 115 Volts, 1.10 Amps, 50 / 60 Hz (230 Volt)
#134-36-1	Knob, Red
#140-55	Filter Paper, Whatman #50, 3.5" (9 cm), Box of 100
#144-11	1/8" Street Ell
#151-18	Dräger-tube®, Ammonia 5/a, Range 5 - 700 ppm
#153-02	Brush for Graduated Cylinder, 10 3/4" x 1 1/2"
#153-14	Graduated Cylinder, 50 mL x 1 mL, Glass
#153-31	Wash Bottle, 500 mL, Polyethylene
#153-52-01	Hydrometer Cylinder, 250 mL, Glass
#153-66	Syringe, 20 mL, Plastic
#153-67	Syringe, 60 mL, Plastic
#153-73-1	Tubing, Glass
#153-77	Tubing, 3/16", Latex
#153-79	Tubing, 5/32" x 7/32" x 1/32"
#153-84	Stopper, No. 8, 2-Hole
#154-20	Thermometer with Metal Dial, 8", Dual-Scale: 50° - 500°F (0° - 250°C)
#155-25	Stopwatch, Digital
#163-26	Clip, Small
#163-28	Clip, Large
#165-40	Power Cable, 115 Volt
#165-47	Receptacle, 115 Volt
#168-01	Hot Plate with Thermostat, (115 Volt)
#168-01-1	Hot Plate with Thermostat, (230 Volt)
#170-32	Needle Valve, Male
#171-90-14	Hose Barb, 1/8" NPT x 1/4"
#171-90-16	Hose Barb, 1/8", Chrome Plated
#295-00-002	Slim Taper File
#295-00-003	Wall Receptacle
#295-00-005	Case, Stainless Steel
#295-00-006	Beaker, 1200 mL, Stainless Steel
#295-00-007	Funnel, Glass, 6" Long Stem
#295-00-008	Pump
#295-05	Flowmeter
#295-00-5	Street Tee, 1/2", Chromed
#285-33	Sodium Hydroxide, 5 N (20%), 8 oz (250 mL) UN1824

Optional

#153-52-02	Hydrometer Cylinder, 500 mL, Plastic
#295-00-LH	Polymer Test Kit Without HAZMAT Items, 115 Volt
#295-01-LH	Polymer Test Kit Without HAZMAT Items, 230 Volt
#295-00-SP	Spare Parts Kit



#295-00 - Clapper Polymer Test Kit

PHPA POLYMER CONCENTRATION KIT WITH CENTRIFUGE

#290-00

Size: 15" x 12.5" x 10.5" (38 x 32 x 27 cm)

Weight: 4 lb 8 oz (2 kg)

Components

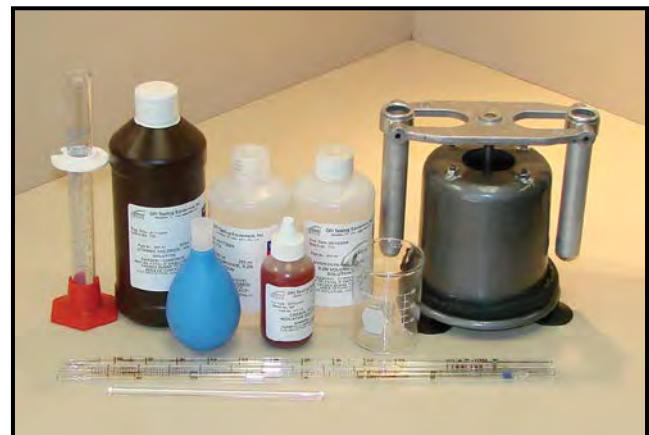
#153-16	Graduated Cylinder, 25 mL x .2 mL, Glass
#153-19	Centrifuge Tube, 15 mL, PYREX®
#153-25-15	Centrifuge, Portable, 2-Place, 2 - 15 mL Shields, Approximately 1,750 RPM, 6 Amp, 115 Volt
#153-34	Pipette, 1 mL x .01 mL, Glass
#153-36	Pipette, 2 mL x .1 mL, Glass
#153-38	Pipette, 5 mL x .1 mL, Glass
#153-41	Pipette Safety Bulb
#153-51-4	Beaker, 100 mL, Glass
#168-04	Stirring Rod, 6", Glass

Reagents

#260-08	Sodium Hydroxide, 0.2 N, 8 oz (250 mL)
#275-06	Hydrochloric Acid, 0.2 N, 8 oz (250 mL)
#290-02	Cresol Red Indicator Solution, 2 oz (60 mL)
#290-04	Stannic Chloride, 10% Solution, 16 oz (500 mL) UN3264

Optional

#153-25-2	Centrifuge for 15 mL Tubes, Hand Crank, 4-Place
#153-25-12	Centrifuge, Portable, 2-Place, 12 Volt, 6 Amp, 2-15 mL Shields, Approximately 2,150 RPM
#130-60-2	Carrying Case with Foam, Handle, and Wheels
#290-00-SP	Spare Parts Kit



#290-00 - PHPA Polymer Concentration Kit

* May require special handling for shipping.

ANILINE POINT DETERMINATION KIT

#145-80 115 VOLT

#145-80-1 230 VOLT

Size: 15" x 12" x 10.5" (38 x 30 x 27 cm)

Weight: 11.75 lb (5.3 kg)

The Aniline Point Determination Kit determines the aniline point of oil used in drilling fluid. The aniline point indicates whether damage may occur to rubber parts of a drilling rig when oil is added to the drilling fluid. In general, oils with a high aromatic content are more detrimental to rubber products than those with a low aromatic content. The relative aromatic content of an oil is indicated by its aniline point. Oils with a high aromatic content have a low aniline point and vice versa. The higher the aniline point of the oil, the more desirable it is for drilling fluid use.

Components

#145-83	Utility Clamp
#152-48	Stirring Hot Plate (115 Volt)
#152-49	Stirring Hot Plate (230 Volt)
#152-48-1	Support Rod for Stirrer, ½" x 12"
#153-15-1	Test Tube, 20 x 1.2 x 150 mm, Glass
#153-15-2	Test Tube, 41 x 2.0 x 150 mm, Glass
#153-29-2	Syringe, 10 cc, Glass-Tip
#153-40	Pipette, 10 mL x .1 mL, Glass
#153-41	Pipette Aid, Rubber Section Bulb
#153-51-3	Beaker, 50 mL, Glass
#153-53-11	Stir Bar, ½" x ⅝"
#153-88	Cork for Thermometer, Size 8
#153-89	Cork for Test Tubes, Size 20
#154-26	Thermometer, Aniline Point, 77 - 221°F
#165-62	Filter for Syringe, 25 mm, 0.45 µm, PTFE

Reagents

#130-78-25	Heater Bath Oil, 16 oz (500 mL)
#145-84	Aniline Solution, 8 oz (250 mL) UN1547
#285-06	Calcium Sulfate, 58 grams

Optional

#166-03	Balance, Portable, 0 - 320 x 0.1 gram
#144-90-07	Carrying Case



#145-80 - Aniline Point Kit with Optional Balance

NITRATE (NO₃) ION TEST KIT WITH CASE

#144-90

Size: 20" x 9" x 9" (57 x 23 x 23 cm)

Weight: 6 lb 6 oz (2.9 kg)

Features

- Designed for reading the concentration of tracer nitrate ions in drilling fluids by people with extensive experience in oilfield research problems
- Does not contain liquids
- Reagent mixtures are in individually sealed plastic ampules to protect them from moisture, air, heat, and cold
- Results are available in ppm Nitrate
- Test requires 13 minutes, exclusive of filtering
- Range for a direct sample is 0 - 10 ppm, and diluting 1 to 5 gives a 50 ppm range with a maximum dilution of 1 to 20 yielding a 0 - 200 ppm range

Components

#140-56	Filter Paper, Whatman Grade 1, 12.5 cm, Pack of 100
#144-90-03	Color Wheel and Comparator Box
#144-90-04	Test Tube Rack, 8 Tube Capacity
#144-90-05	Dropper Pipette, 2 mL, Polyethylene
#144-90-06	Test Tube with Rubber Stopper (150 x 18 mm)
#153-12	Graduated Cylinder, 100 mL x 1 mL, Glass
#153-18	Graduated Cylinder, 10 mL x .2 mL, Glass
#153-30	Funnel, 3", Polyethylene
#153-34	Pipette, 1 mL x .01 mL, Glass
#153-51	Beaker, 250 mL, Glass

Reagents

#144-90-01	Calcium Hydroxide (Low Nitrate), ½ lb Jar
#144-91	NO ₃ ⁻¹¹ Nitrate Test Reagent, Package of 100
#144-92	NO ₃ ⁻¹² Nitrate Test Reagent, Package of 100

Case

#144-90-07	Carrying Case
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#144-90 - Nitrate Test Kit

* WARNING: Aniline is extremely toxic.

** May require special handling for shipping.

Drilling Fluids - Specialty Kits

THIOCYANATE ION (SCN⁻) TEST KIT

#144-94

Size: 16.25" x 6.5" x 12" (29 x 17 x 31 cm)

Weight: 13 lb (5.9 kg)

Thiocyanate Ion (SCN⁻) is used as a tracer in water-based drilling fluids. This test kit provides all of the necessary supplies and reagents to determine thiocyanate ion in a drill stem test fluid or mud filtrate.

Components

- #153-14 Graduated Cylinder, 50 mL x 1 mL, Glass
- #153-34 Pipette, 1 mL x .01 mL, Glass
- #153-36 Pipette, 2 mL x .1 mL, Glass
- #153-38 Pipette, 5 mL x .1 mL, Glass
- #153-50-1 Erlenmeyer Flask, 125 mL, Glass
- #153-60 Syringe, Disposable, 3 mL
- #154-75 Scoop, Brass

Reagents

- #144-941 Bromine Water, 16 oz (500 mL) UN1744
- #144-942 Orthophosphoric Acid Solution, 8 oz (250 mL) UN1805
- #144-943 Phenol Solution, 5%, 8 oz (250 mL) UN2821
- #144-944 Potassium Iodide Crystals, 50 g
- #145-551 Starch Indicator Solution, 2 oz (60 mL)
- #206-01 Deionized Water, 8 oz (250 mL)
- #262-05 Sodium Thiosulfate Solution, 0.01 N, 8 oz (250 mL)

Case

- #134-36-1 Knob, Red
- #144-36 Kit, Multi-Purpose, Diagonal, Large
- #163-28 Clip, Large

Optional

- #144-94-LH Thiocyanate Ion Test Kit Without HAZMAT Items
- #147-93 Nitrate Test Strips, 10 - 500 mg/L, Box of 100



#144-94 - Thiocyanate Ion Test Kit

ZINC CARBONATE (ZnCO₃) TEST KIT

#145-65

Size: 13" x 13" x 13" (33 x 33 x 33 cm)

Weight: 11 lb 13 oz (5.4 kg)

This is a field test procedure for determining zinc carbonate in a drilling fluid. Powdered zinc carbonate may be used to scavenge hydrogen sulfide from viscosified water-based drilling fluids. Hence, it may be necessary to monitor the available ZnCO₃ in the mud. The Zinc Carbonate Test Kit contains all of the required labware, supplies, and reagents for the analysis of zinc carbonate in a drilling fluid.

Components

- #147-54 pH Strips, Range 7.5 to 14
- #153-12 Graduated Cylinder, 100 mL x 1 mL, Glass
- #153-16 Graduated Cylinder, 25 mL x .2 mL, Glass
- #153-18 Graduated Cylinder, 10 mL x .2 mL, Glass
- #153-29-2 Syringe, 10 mL, Glass-Tip
- #153-30 Funnel, 3", Polyethylene
- #153-40 Pipette, 10 mL x .1 mL, Glass
- #153-51 Beaker, 250 mL, Glass
- #168-04 Stirring Rod, 6", Glass

Reagents

- #205-17 Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 32 oz (1 L)
- #205-24 Calcium Titration Solution I, 16 oz (500 mL)
- #205-25 Calcium Titration Solution II, 16 oz (500 mL) UN3287
- #205-27 Manver Indicator Solution, 2 oz (60 mL)
- #206-02 Deionized Water, 16 oz (500 mL)
- #211-00 Ammonium Fluoride, 10% Solution, 32 oz (1 L) UN3287
- #212-00 Ammonium Hydroxide Concentrate, 16 oz (500 mL) UN2672
- #213-00 Formaldehyde, 4% Solution, 32 oz (1 L) UN2209
- #230-25 Acetic Acid, Glacial, 8 oz (250 mL) UN2789

Optional

- #145-65-LH Zinc Carbonate Test Kit Without HAZMAT Items



#145-65 - Zinc Carbonate Test Kit

* May require special handling for shipping.

ZINC (Zn) IN BRINES DETERMINATION KIT #145-66

Size: 12.5" x 15.5" x 10.5" (32 x 39 x 27 cm)
Weight: 5 lb 12 oz (2.6 kg)

Components

- #144-90-05 Dropper Pipette, 2 mL, Polyethylene
- #153-34 Pipette, 1 mL x .01 mL, Glass
- #153-38 Pipette, 5 mL x .1 mL, Glass
- #153-40 Pipette, 10 mL x .1 mL, Glass
- #153-50-1 Erlenmeyer Flask, 125 mL
- #153-51-3 Beaker, 50 mL, Glass

Reagents

- #205-02 Versenate® Hardness Indicator Solution, 2 oz (60 mL)
- #205-04 Versenate® Hardness Buffer Solution, 2 oz, (60 mL) UN2672
- #205-17-3 Versenate® Hardness Titration Solution (EDTA), 200 EPM, 16 oz (500 mL)
- #206-02 Deionized Water, 16 oz (500 mL)
- #262-00 Sodium Sulfide, 10% Solution, 8 oz (250 mL)
- #270-01 Nitric Acid, 1 N, 8 oz (250 mL) UN2031

Optional

- #145-66-LH Zinc in Brines Determination Kit Without HAZMAT Items



#145-66 - Zinc in Brines Kit

POTASSIUM ION TEST KIT (TEST STRIP METHOD) #147-90

Size: 6" x 1.5" x 5" (15 x 4 x 13 cm)
Weight: 7 oz (0.2 kg)

Features

- Suitable as a rapid guiding test for potassium in water, drilling fluids, and extracts from soil samples
- Potassium can be semi-quantitatively determined in the presence of 10 times its amount of sodium
- Color scale:
 - Range: 0 - 300 - 700 - 1,000 - 2,000 mg/L (ppm) K+
- Contains 100 test strips



#147-90 - Potassium Ion Test Kit

* May require special handling for shipping.

POTASSIUM AND POTASSIUM CHLORIDE KIT (CENTRIFUGE METHOD) #285-09

Size: 18.75" x 8" x 15" (48 x 20 x 38 cm)
Weight: 15 lb 11 oz (7.1 kg)

Features

- Range: Clear Filtrates - Above 5,000 mg/L or 1% KCl

Components

- #153-21 Centrifuge Tube, Kolmer®, 10 mL
- #153-25-2-H Centrifuge with 4 Heads and Shields, Hand Crank
- #153-38 Pipette, 5 mL x .1 mL, Glass

Reagents

- #206-01 Deionized Water, 8 oz (250 mL)
- #285-11 Potassium Chloride Standard, 4 oz (120 mL)
- #285-13 Sodium Perchlorate, 8 oz (250 mL) UN3139

Case

- #130-60-2 Carrying Case

Optional

- #285-09-LH Potassium and Potassium Chloride Kit Without HAZMAT Items
- #285-09-SP Spare Parts Kit



#285-09 - Potassium Kit with Hand Crank Centrifuge

Drilling Fluids - Specialty Kits

POTASSIUM ION DETERMINATION KIT (TITRATION METHOD)

#285-30

Size: 15.5" x 12.25" x 10.5" (39 x 31 x 27 cm)

Weight: 6 lb 13 oz (3.1 kg)

Features

Range: Clear Filtrates - Below 5,000 mg/L or 1% KCl.

Components

- #140-56 Filter Paper, Whatman Grade, 12.5 cm, Pack of 100
- #153-16 Graduated Cylinder, 25 mL x .2 mL, Glass
- #153-26 Titration Dish, Polyethylene
- #153-28 Stirring Rod, Polyethylene
- #153-30 Funnel, 3", Polyethylene
- #153-36 Pipette, 2 mL x .1 mL, Glass
- #153-38 Pipette, 5 mL x .1 mL, Glass
- #153-40 Pipette, 10 mL x .1 mL, Glass
- #153-51 Beaker, 250 mL, Glass
- #153-54 Volumetric Flask, 100 mL, Glass

Reagents

- #206-02 Deionized Water, 16 oz (500 mL)
- #285-31 STPB Solution, 16 oz (500 mL)
- #285-32 QAS Solution, 16 oz (500 mL)
- #285-33 Sodium Hydroxide, 5 N (20%), 8 oz (250 mL)
UN1824
- #285-34 Bromophenol Blue Indicator Solution, 2 oz (60 mL)

Optional

- #285-30-LH Potassium Ion Determination Kit Without
HAZMAT Items
- #285-30-SP Spare Parts Kit



#285-30 - Potassium Ion Determination Kit

REVERSE PHASE EXTRACTION KIT #165-65

Size: 20.75" x 13.5" x 16.75" (53 x 34 x 43 cm)

Weight: 23 lb (10.4 kg)

The Reverse Phase Extraction Test Kit is used for the determination of crude or formation oil, or other petroleum oil contamination, in non-aqueous fluids used in oil and gas exploration. The test method is intended to be used as a positive/negative test to determine the presence of crude oil in NAF prior to discharging drill cuttings from offshore drilling and production platforms.

Components

- #153-29-2 Syringe, 10 mL, Glass-Tip
- #153-51-4 Beaker, 100 mL, Glass
- #153-60-1 Syringe, 1 mL, Disposable
- #153-64 Syringe, 5 mL, Disposable
- #165-60-1 UV Lamp, 4W, 365 NM, 115 Volt
- #165-60-2 UV Viewing Cabinet
- #165-61 Sep-pak Plus C-18 Cartridges, Package of 10
- #165-62 Filter for Syringe, 25 mm, 0.45 µm, PTFE
- #165-63 Carrying Case, Plastic
- #165-66 "Standard" Cartridge, 1% Crude
- #165-67 Vials, 20 mL, Glass
- #165-68 Isopropyl Alcohol, 32 oz (1 L) UN1219
- #297-14 Boston Round Bottle with Cap, Natural, Poly, 16 oz
(500 mL)

Optional

- #130-74 Transformer, 230 to 115 Volts, 1.10 Amps, 50 / 60 Hz



#165-65 - Reverse Phase Extraction Kit

* May require special handling for shipping.

WATER ANALYSIS KIT

#144-95

Size: 20" x 10.5" x 9.5" (51 x 27 x 24 cm)

Weight: 28 lb 4 oz (12.8 kg)



#144-95 - Water Analysis Kit

Components

#144-95-001	Burette, Auto Self-Zero
#145-601	Hydrogen Sulfide Test Papers, Package of 100
#145-602	Test Bottle, Hydrogen Sulfide
#145-603	Color Chart, Hydrogen Sulfide
#145-604	Alka-Seltzer® Tablets
#147-50	pH Paper, pHydrion® Dispenser, pH 2-10, 1-11
#153-12	Graduated Cylinder, 100 mL x 1 mL, Glass
#153-15	Test Tube, 15 mm x 125 mm
#153-26	Titration Dish, Polyethylene
#153-28	Stirring Rod, Polyethylene
#153-34	Pipette, 1 mL x .01 mL, Glass
#153-40	Glass Pipette, 10 mL x .1 mL, Glass
#153-75	Tubing, 3/16", Tygon®
#153-76	Tubing, 1/8", Tygon®
#153-83	Rubber Stopper, No. 3, One-Hole

Reagents

#145-551	Starch Indicator Solution, 2 oz (60 mL)
#145-552	ˆSulfide Buffer Solution, 2 oz (60 mL) UN1789
#145-553	Iodine Titrating Solution, 8 oz (250 mL)
#147-30	Buffer Solution, pH 7, 16 oz (500 mL)
#200-10-1	Hydrogen Peroxide, 3% Solution, 2 oz (60 mL)
#205-02	Versenate® Hardness Indicator Solution, 2 oz (60 mL)
#205-04	ˆVersenate® Hardness Buffer Solution, 2 oz (60 mL) UN2672
#205-12	Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 16 oz (500 mL)
#205-14	ˆVersenate® Calcium Buffer Solution, 2 oz (60 mL) UN1824
#206-04	Deionized Water, 32 oz (1 L)
#210-00	CalVer® 2 Indicator Powder, 10 gram
#215-00	Potassium Chromate Solution, 2 oz (60 mL)
#220-00	Phenolphthalein Indicator Solution, 2 oz (60 mL)
#230-04	Sulfuric Acid, 0.02 N, 16 oz (500 mL)
#230-15	ˆSulfuric Acid, 5 N, 2 oz (60 mL) UN2796
#240-00	Methyl Orange Indicator Solution, 2 oz (60 mL)
#250-00	Calcium Indicator Solution, 2 oz (60 mL)
#255-00	ˆSulfate Indicator Solution, 2 oz (60 mL) UN1789
#265-08	Silver Nitrate, 0.01 g, 0.282 N, 16 oz (500 mL)
#275-00	ˆHydrochloric Acid, 37%, Concentrated, 2 oz (60 mL) UN1789
#285-37	ˆIron Indicator Solution, 2 oz (60 mL) UN1993
#285-40	Iron Buffer Solution, 2 oz (60 mL)

Case

#141-17	Clip for Graduated Cylinder
#144-96	Carrying Case, Stainless Steel
#163-26	Clip, Small
#163-27	Clip, Medium
#163-28	Clip, Large

Optional

#144-95-LH	Water Analysis Kit Without HAZMAT Items
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Drilling Fluids - Specialty Kits

BRINE TEST KIT

#146-10

The Brine Test Kit is an accurate test to determine the weight percentage of calcium, zinc, bromide, and chloride in brine solutions. The test procedures are made with a 1:5 dilution of the original brine sample, and involve two separate procedures, one for calcium and zinc, and another procedure for chloride and bromide. Included is a procedure to check the analytical values obtained from the test procedures by comparing the moles of calcium and zinc versus the moles of bromide and chloride. This procedure verifies the calculations and is also useful to check for contamination by other salts such as sodium or potassium chlorides.

Components

#130-56	Beaker, Tripour, Disposable, 50 mL
#144-95-001	Buret, Auto Self-Zero
#147-53	pH Strips, 0 - 14, Package of 100
#153-30	Funnel, 3", Polyethylene
#153-31	Wash Bottle 500 mL
#153-34	Pipette, 1 mL x .01 mL, Glass
#153-38	Pipette, 5 mL x .1 mL, Glass
#153-44	Pipette with Curved Tip
#153-45	Vial, Boiling Beads, Glass, 5 mm
#153-50-1	Erlenmeyer Flask, 125 mL
#153-54-2	Flask with Cap, Volumetric, 25 mL
#154-75	Scoop, Brass
#168-01	Hot Plate With Thermostat, 115 Volt
#296-06	Vial, 17 mm (1 Dram)
#296-07	Cap, 17 mm

Reagents

#205-02	Versenate® Hardness Indicator Solution, 2 oz (60 mL)
#205-04	Versenate® Hardness Buffer Solution, 2 oz (60 mL) UN2672
#205-12	Versenate® Hardness Titration Solution, 1 mL = 20 EPM, 16 oz (500 mL)
#206-02	Deionized Water, 16 oz (500 mL)
#214-00	Ammonium Persulfate, 100 g UN1444
#215-00	Potassium Chromate Solution, 2 oz (60 mL)
#260-09	Sodium Hydroxide, 15%, 4 oz UN1824
#265-14	Silver Nitrate, 0.141 N, 16 oz (500 mL)
#270-02	Nitric Acid, 1 N, 1 oz (30 mL) UN2031
#270-05	Nitric Acid, .1 N, 8 oz (250 mL)

Case

#130-60-2	Carrying Case with Pluck Foam Insert and Rollers
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Optional

#115-00	Mud Balance with Case, 4-Scale
#140-30	Filter Press with CO ₂ Assembly, Benchmark
#146-10-LH	Brine Test Kit Without HAZMAT Items
#153-52	Hydrometer Set with Case, Range: 0.700 - 2.000 Specific Gravity
#153-52-02	Hydrometer Cylinder, 500 mL, Plastic
#168-01-1	Hot Plate With Thermostat, 230 Volt



#146-10 - Brine Test Kit

STATIC SHEEN TEST KIT

#295-50

Size: 19" x 18.5" x 12.5" (48 x 47 x 32 cm)

Weight: 9 lb 13 oz (4.5 kg)

Features

- Determines whether free oil is present in solutions
- Can easily test drilling and well treating fluids, drill cuttings, and produced sands.

Components

#153-12	Graduated Cylinder, 100 mL x 1 mL, Glass
#153-40-5	Pipette, Disposable, 25 mL
#153-51-5	Beaker, 1,000 mL, Glass
#153-51-6	Beaker, 1,000 mL, Polyethylene
#153-68	Weigh Boat, Disposable, Medium, 78 x 78 mm
#154-50	Spatula, 4"
#295-50-1	Dishpan, 18 qt
#295-50-2	Trashbag, 30 gal
#297-28	Pail with Lid, 5 Gallon, Plastic

Optional (But Necessary)

#153-53	Magnetic Stirrer with Stirring Bar, 115 Volt
#153-53-7	Magnetic Stirrer with Stirring Bar, 230 Volt
#166-06	Triple Beam Balance, 610 g x 0.1 g



#295-50 - Static Sheen Test Kit

* May require special handling for shipping.

DYNAMIC LINEAR SWELL METER WITH COMPACTOR AND COMPUTER

#150-80 **115 VOLT**
#150-80-1 **230 VOLT**

Size: **20.5" x 14.5" x 25" (52 x 37 x 64 cm)**
Weight: **220 lb (100 kg)**

Shipping Size: **38" x 34" x 41" (97 x 86 x 104 cm)**
Shipping Weight: **460 lb (208.7 kg)**

Investigating the swelling characteristics of shale formations is vital in selecting a proper drilling fluid to give maximum inhibition and wellbore stability. While drilling a well, a shale formation will immediately begin to swell if the drilling fluid is not completely compatible with the formation. This swelling can cause many problems, such as bit balling, pipe drag, hole sloughing, or other "gumbo" related problems. Therefore, selecting the proper drilling fluid prior to, or during the drilling operation, can be very beneficial in achieving a stable wellbore.

The Dynamic Linear Swell Meter is designed to simultaneously test up to four drilling fluids (expandable to eight) on a representative shale sample for extended periods of time at temperatures up to 180°F.

Most swell meters are designed to test shale samples in static fluid. However, fluids circulate as you drill, so testing shale samples in a static environment does not always provide accurate readings.

The Dynamic Linear Swell Meter is the only swell meter on the market capable of dynamically testing your fluids, so you obtain the most accurate data possible.

Features

- Investigate the swelling characteristics of shale formations
- Test up to four fluids (expandable to eight) simultaneously
- Fluid is circulated during testing
- Maximum temperature: 180°F (82.2°C)

Swell Meter Components

#130-75-71	Monitor
#130-75-74	Desktop Computer
#130-76-03	Thermocouple
#130-79-06	DAQ Cable
#150-80-009	Weight
#150-80-03	Screen, Flat, 1 1/16" Diameter
#150-80-031	Washer (Spacer), Teflon®
#150-80-032	Transfer Stand
#150-80-033	Wafer Tube
#150-80-034	Main Plate
#150-80-035	Cup
#150-80-036	Cap
#150-80-064	LVDT
#150-80-067	Micrometer
#150-80-101	Calibration Block, Multi Point
#150-83	Stirring Hot Plate, 115 Volt
#150-84	Stirring Hot Plate, 230 Volt
#152-37	AC Power Cord, 115 Volt
#152-38	AC Power Cord, 230 Volt
#153-67	Syringe, Disposable, 60 cc

Compactor Components

#122-224	Valve
#150-80-072	Pump
#150-80-075	Hose
#150-80-085	Spacer for Wafer Mold, 1/2"
#150-80-086	Spacer for Wafer Mold, 3/4"
#150-80-087	Body for Wafer Mold
#150-80-088	Plunger for Wafer Mold
#150-80-089	Drop Tube for Wafer Mold
#150-85	Relief Valve, 2,900 PSI (20 MPa)

Optional

#150-81-1	Swell Meter Expansion, Single Unit, 115 Volt Only
#150-81-2	Swell Meter Expansion, Single Unit, 230 Volt Only



#150-80 - Dynamic Linear Swell Meter with Compactor

Drilling Fluids - Lubricity

EP / LUBRICITY TESTER

- #112-00 115 VOLT
- #112-00-1 230 VOLT
- #112-00-T WITH DATA ACQUISITION, 115 VOLT
- #112-00-1-T WITH DATA ACQUISITION, 230 VOLT
- #112-00-C WITH HEAT CUP, ULTRASONIC CLEANER, DATA ACQUISITION, AND CASE, 115 VOLT
- #112-00-1-C WITH HEAT CUP, ULTRASONIC CLEANER, DATA ACQUISITION, AND CASE, 230 VOLT

Size: 19" x 15" x 14" (48 x 38 x 36 cm)

Weight: 56 lb (25.4 kg)

Features

- Measures the lubricating quality of drilling fluids and additives
- Predict wear rates of mechanical parts in known fluid systems
- Perform both Extreme Pressure (EP) and Lubricity (surface to surface drag) tests
- Digital control board
- User-friendly interface
- Automatic speed control
- Push-button torque zeroing
- Maximum speed: 1,000 RPM
- Maximum torque: 600 inch-pounds

Components

- #121-016 Fuse, 7 Amp, ¼" x 1 ¼"
- #111-02-01 Test Ring for Lubricity Test
- #111-04-01 Test Block for EP Test
- #111-06-01 Test Ring for EP Test
- #111-08-01 Test Block for Lubricity Test
- #111-09 Sample Cup
- #111-10 Torque Wrench
- #111-16 Service Wrench, ¾"
- #111-17 Service Wrench, 1 ¼"
- #111-18 Combination Wrench, 1 ¼"
- #111-19 Grinding Compound, Fine and Coarse, 2 oz each

Optional

- #111-00-SP Spare Parts Kit
- #111-01 Case, Padded, for Transport
- #111-11 Measuring Magnifier with Inch Scale, 7x
- #112-50 Heat Cup
- #152-59 Ultrasonic Cleaner, 16 oz, 115 Volt



#112-00 - EP / Lubricity Tester

LUBRICITY EVALUATION MONITOR (LEM)

#113-00

Crated Size: 41" x 31" x 42" (104 x 79 x 107 cm)

Crated Weight: 380 lb (172.4 kg)

Features

- Pneumatic ram applies side load pushing the bob against the sample
- Periodic refresh of test fluid by pulling bob away from sample at definable intervals
- Clamp allows samples of casing, formation, sandstone, etc. to be tested in the same fixture
- Computerized data acquisition and control
- Software
 - Graphs rotational speed (RPM), torque (in-lb), side load (lb), and coefficient of friction with respect to time
 - Operator inputs rotational speed, side load, and refresh period
 - Test archive provides access to historical data

Specifications

- Sample cup capacity: 350 mL
- Range of Mud Weights: 0.83 - 18.0 lbs
- Torque Transducer Maximum Range: 100 lbf-in
- Torque Resolution: +/- 0.1% of full scale combined
- Maximum Side Load: 60 lbf
- Maximum Rotational Speed: 200 RPM
- Speed of Circulating Pump: 20 - 500 RPM
- Calibration: Coefficient of Friction of Water = .32 - .36
- Test Cell Material: Acrylic
- Bob Material: 4140 Steel - Rockwell Hardness of 37

Requirements

- Electrical Supply: 220 Volts
- Air Supply: 60 - 100 PSI



#113-00 - Lubricity Evaluation Monitor (LEM)

EMULSION STABILITY TESTER

#131-50

Size: 9.5" x 6.5" x 3.5" (24 x 17 x 9 cm)

Weight: 2 lb 15 oz (1.3 kg)

The Electrical Stability (ES) of an oil-based drilling fluid is a property related to its emulsion stability and oil wetting ability. The Emulsion Stability Tester determines ES by applying a precision voltage-ramped sinusoidal signal across a pair of parallel flat plate electrodes that are immersed in the fluid. The resulting current remains low until a threshold voltage ($61 \pm 5 \mu\text{A}$) is reached. Then the current rises very rapidly. The point at which the fluid becomes conductive is the dielectric breakdown voltage, or the "ES" of the fluid, and is the voltage in peak volts measured when the current reaches the $61 \mu\text{A}$ point. The API recommended sinewave circuitry results in a more efficient energizing of the fluid and generates considerably lower ES values than the old style "spiky" waveform instruments. The symmetry of the sinusoidal signal inhibits the buildup of solids on the electrode faces and enhances reproducibility.

Features

- Determines the electrical stability of an oil-based drilling fluid
- Applies a precision voltage-ramped sinusoidal signal across a pair of electrodes immersed in the fluid

What's Included

- Meter
- Probe
- High and low calibration standards
- Batteries (4)
- Case

Components

#131-01	Probe
#131-51	Calibration Standards, High and Low
#147-02	Battery, 9 Volt, Alkaline

Optional

#131-50-SP	Spare Parts Kit
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#131-50 - Emulsion Stability Tester

ADVANCED EMULSION STABILITY TESTER

#131-56

Size: 9.25" x 7.5" x 4.5" (24 x 19 x 11 cm)

Weight: 3 lb 15 oz (1.36 kg)

Features

- Improved probe connection prevents damage from test fluid
- Available Power Sources:
 - AC: 90 - 250 Volts, 50 / 60 Hz
 - DC: 24 Volts
 - Battery: 4 x 9 Volts
 - PC USB Port
- Two Calibration Check Probes Included
- Embedded software enables advanced testing capabilities, test history, and remote operation
- Optional Thermocouple Available

What's Included

- Meter with Probe
- High and low calibration check probes
- Batteries (4)
- Case

Components

#130-76-03	Thermocouple
#130-79-16	USB Cable
#131-56-003	Probe with Cable
#131-56-009	DC Power Cord
#131-56-015	Low Calibration Probe
#131-56-016	High Calibration Probe
#147-02	9 Volt Alkaline Battery: Qty: 4
#152-37	AC Power Cord, 115 Volt
#152-38	AC Power Cord, 230 Volt

Optional

#131-56-SP	Spare Parts Kit
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#131-56 - Advanced Emulsion Stability Tester

Drilling Fluids - Resistivity

RESISTIVITY METER, ANALOG

#130-85

Size: 9.5" x 6.5" x 3.5" (24 x 17 x 9 cm)

Weight: 2 lb 7 oz (1.1 kg)

Features

- Measures resistivity of a small sample of fluid, slurry, or semi-solid
- Range: 0.01 to 10 ohm-meter
- Reading can be converted to PPM NaCl using the supplied Nomograph
- Removable probe with built-in thermometer
- Powered by readily available 9 volt batteries

What's Included

- Meter
- Probe with suction bulb and thermometer
- Calibration Standards
- Batteries (2)
- Pipe cleaner
- Carrying case

Components

#130-85-02	Resistivity Probe
#130-85-04	Suction Bulb for Probe, Rubber (63207)
#130-87-014	Calibration Fluid, 1,413 μ mhos, 1 L
#130-87-015	Calibration Fluid, 10,000 μ mhos, 1 L
#130-87-016	Calibration Fluid, 50,000 μ mhos, 1 L
#147-02	Battery, 9 Volt, Alkaline
#165-43	Pipe Cleaner



#130-85 - Resistivity Meter with Case

RESISTIVITY METER, DIGITAL

#130-87

Size: 8.0" x 5.0" x 3.5" (20 x 13 x 9 cm)

Weight: 2 lb 14 oz (1.3 kg)

Features

- Measures resistivity of a small sample of fluid, slurry, or semi-solid
- Range: 0.01 to 400 ohm-meters
- Digital display
- Removable probe
- Powered by readily available 9 volt batteries
- Resistivity units: ohm-meters
- Concentration of NaCl units: ppm, kppm, and gr/gal
- Temperature units: °C or °F

What's Included

- Meter
- Probe with suction bulb
- Calibration standards
- Batteries (2)
- Pipe cleaner
- Case

Components

#130-76-42	Display
#130-85-04	Rubber Suction Bulb
#130-87-05	Resistivity Probe
#130-87-014	Calibration Fluid, 1,413 μ mhos, 1 L
#130-87-016	Calibration Fluid, 50,000 μ mhos, 1 L
#147-02	Battery, 9 Volt, Alkaline
#165-43	Pipe Cleaner

Optional

#130-10-30	Power Supply
#152-37	AC Power Cord, 115 Volt
#152-38	AC Power Cord, 230 Volt



#130-87 - Digital Resistivity Meter with Case

BULK HARDNESS TESTER #150-87

The Bulk Hardness Tester (#150-87) is designed to evaluate the hardness of shale after exposure to fluids. The hardness of the shale can be related to the inhibitive properties of the fluid being evaluated. Shale that interacted with the fluids will become softer due to the adsorption of water, swelling, and dispersion of fine particles. This rock-fluid interaction can be linked to wellbore stability problems, including reduction in the compressive strength, spalling, or fracturing. In terms of integrity of drill cuttings, excessive softening and stickiness of the pieces of shale can produce mud rings in the annulus, sticking problems in the drilling assembly, and bit balling, among other problems.

Features

- Evaluates the hardness of shale samples after exposure to fluids
- Stainless steel construction
- Includes threaded piston, torque wrench, and Allen key



#150-87 - Bulk Hardness Tester

Drilling Fluids - Particle Size

SEQUOIA LISST-PORTABLE|XR PARTICLE SIZE ANALYZER

#365-10

Size: 7" x 11.5" x 17.5" (18 x 29 x 44 cm)

Weight: 17 lb (7.5 kg)

Crated Size: 31" x 21" x 11" (78 x 53 x 28 cm)

Crated Weight: 49 lb (22 kg)

Features

- Truly portable - completely self-contained with built-in data logger, processor, rechargeable battery, and 7" touch panel color display.
- Touch panel allows for easy SOP programming, sample analysis and display of data without a PC.
- Shock mounted optics block.
- Multiple Mie models as well as Fraunhofer model available for inversion, selectable from the touch panel.
- All data-processing is performed on board and stored in ASCII format. No post-processing necessary.
- Outputs: Total volume concentration, mean size, standard deviation, optical transmission, D5, D10, D16, D25, D50 (median grain size), D60, D75, D84, D90, D95, D60/D10 (Hazen uniformity coefficient), particle surface area, silt fraction, silt volume, size distribution, battery voltage, sample notes.
- Built-in ultrasonic probe for complete particle dispersion.
- Based on the laser diffraction principle. Compliant with ISO-13320-1 standard.

Specifications

- 0.34-500 µm in 44 log-spaced size classes.
- 30-1,900 mg/l range, depending on particle size (see table). Resolution < 1 mg/l. Accuracy ± 20%.
- Data storage: 128 MB flash card, capable of storing at least 40,000 size distributions and associated sample information.
- Rechargeable Lithium-ion battery provides for 6 hours of sample processing.
- 25W, 40kHz ultrasonic probe with controller electronics, managed from the touch panel display.



#365-10 - Lisst Portable|XR Particle Size Analyzer

PARTICLE SIZE BY WET SIEVE ANALYSIS TEST #169-00

Size: 9" x 6" x 6" (23 x 15 x 15 cm)

Weight: 3 lb 5 oz (1.5 kg)

The major solids component of a drilling fluid is often the weight material Barite. The American Petroleum Institute outlines several test procedures that help assure the quality of this important ingredient. Among these is the wet screen procedure for particle size analysis. The Particle Size Kit contains all of the equipment necessary to perform particle size analysis as specified in API Specification 13A. The kit is furnished complete with U.S. Standard screens of 200 and 325-mesh, screen holder, and spray wash assembly. The spray system includes a pressure monitoring gauge (0 to 30 PSI), one 24" water hose, and an adapter plug for easy connection to a water supply.

Components

#169-01	Spray Cup
#169-02	Screen, 200-Mesh, 75 µm
#169-03	Gauge, 60 PSI, 1/4" Bottom Connect, 2" Face
#169-04	Screen, 325-Mesh, 45 µm
#169-05	Hose with Adapter
#169-05-004	Reducing Bushing, 1/2" x 1/4" FNPT
#169-06	Complete Tee Jet
#169-08	Pressure Regulator, Water
#171-90-07	Hex Nipple, 1/4" NPT, 316 Stainless Steel



#169-00 - Particle Size by Wet Sieve Analysis Kit

FLOWCAM® BENCHTOP PARTICLE SIZE ANALYZER #365-00

Features

- Measures particle size and shape - over 30 morphological measurements on each particle imaged.
- Provides superior image quality and image-based measurements - fast and accurate results you can see, backed by the quantitative data to prove it.
- Gives statistically relevant results quickly - allows you to look at tens of thousands of particles per minute.
- Allows automated, trainable, statistically-based pattern recognition - saves time by isolating different types of particles into categories and sub-populations.
- Delivers accurate results on all particles from 1 µm to 2 mm (count) and 4 µm to 2 mm (shape).
- Flexible and customizable system meets user-specific requirements.
- Four magnifications (2X, 4X, 10X, and 20X) and various flow cell sizes are available to accommodate a broad range of sample particle sizes (1 µm to 2 mm).
- Captures particle images at up to 22 frames per second - provides high sampling efficiency and fast analysis times.

Software Features

- Sort and filter particle data based upon criteria you supply - results display immediately as particle images.
- Find and display all similar-type particles in a heterogeneous sample with sophisticated pattern recognition capabilities.
- Create and save user-defined particle type libraries, for automatic sorting and statistical analysis.
- Instantly calculates summary statistics, including concentration, and creates corresponding graphs you can interact with.

Optional

- #365-00-1 Objective Kit, 4X, 10X
- #365-00-5 Focus Beads, 10X, 20X



#365-00 - FlowCam® Benchtop Particle Size Analyzer

Core - Preparation

CORE PLUG DRILL

#127-40

Size: 39" x 35" x 75" (99 x 89 x 191 cm)

Weight: 480 lb (217.7 kg)

Features

- Floor-mounted design
- Can be used to cut cores 1" in diameter and up to 6" in length (14" available)
- Splash guard for reducing spills
- Rotary union with shut-off valve connects drill bit to drill press and feeds water to the bit surface
- Includes drain pan, 6" jaw vise, and hoses for coolant

Requirements

- 230 Volt, 50 / 60 Hz

Components

#127-40-003-1	Diamond-Tipped Core Bit, 1" Diameter x 6" Long
#127-40-015	Vise, 6" Jaw
#127-40-006-1	Drain Pan

Optional

#127-40-002-1	Diamond-Tipped Core Bit, .5" Diameter x 6" Long
#127-40-002-2	Diamond-Tipped Core Bit, .75" x 6" Long
#127-40-004-1	Diamond-Tipped Core Bit, 1.5" Diameter, 6" Long
#127-40-005	Reservoir with Submersible Pump, Flexible Hoses, and Fittings, Corrosion Resistant
#127-40-006	Core Holding Tray, 40", Stainless Steel, with Two 6 1/8" Clamping Vises
#127-40-009	Water Swivel Repair Kit
#127-40-SP	Spare Parts Kit



#127-40 - Core Plug Drill

PCS-340 CORE SATURATOR

#127-70

115 VOLT

#127-70-1

230 VOLT

Size: 41" x 32" x 47" (104 x 81 x 119 cm)

Weight: 324 lb (147 kg)

Features

- Fully saturate a core sample before starting a permeability test
- Includes: test cell, vacuum pump, air-driven pump, and saturation fluid reservoir

Specifications

- Maximum Pressure: 2,500 PSI (2.5 MPa)
- Maximum Core Size: 3" Diameter x 24" Long
- Air Requirement: 100 - 120 PSI (689.5 - 827.4 kPa)

Components

#122-073-1	Fuse, 2.5 Amp, 5 mm x 20 mm (230 Volt)
#122-074-1	Fuse, 5 Amp, 5 mm x 20 mm (115 Volt)
#127-70-020	Cell Body
#127-70-021	Cell Plug
#127-70-022	Lock Ring
#127-70-023	Bottom Cell Closure
#127-70-024	Handle
#127-70-026	Cell O-ring
#127-70-027	Cell Backup Ring
#127-70-028	Retaining Ring
#127-70-030	Vacuum Gauge
#120-910-022	Pressure Gauge
#120-00-030	Air Filter



#127-70 - PCS 340 Core Saturator

MK-5000 SERIES CORE SAW

- #127-61 230 VOLT, 1 PHASE, 60 HZ
- #127-61-1 208 / 230 VOLT, 1 PHASE, 50 HZ
- #127-62 230 VOLT, 3 PHASE
- #127-62-1 208 / 230 VOLT, 3 PHASE, 50 HZ
- #127-63 460 VOLT, 3 PHASE
- #127-63-1 460 VOLT, 3 PHASE, 50 HZ

Size: 53" x 26" x 63" (134 x 66 x 160 cm)

Weight: 451 lb (205 kg)

Features

- Precision screw feed mechanism allows the cutting head to be easily raised or lowered to the precise cutting depth required
- Self-leveling blade guard provides optimum blade coverage for operator safety
- Foot pedal for hands-free cutting
- Open-back design allows for material up to 20" long to be cut
- Conveyor cart built from heavy-duty cast aluminum
- 3 phase saws are equipped with GE NEMA 1 starters in NEMA 12 enclosure
- Adjustable water supply for maximum blade protection
- Built-in tie-downs for safer saw transport
- Ergonomically designed handle for reduced operator fatigue
- Heavy-duty built-in forklift brackets allow lift to approach from the front or either side of the saw

Specifications

- Motor: Baldor
- Arbor Size: 1"
- Motor RPM: 1,725
- Shaft RPM - 14" Blade: 2,700
- Shaft RPM - 20" Blade: 1,925
- Shaft RPM - 24" Blade: 1,540
- Depth of Cut - 14" Blade: 5"
- Depth of Cut - 20" Blade: 8"
- Depth of Cut - 24" Blade: 10"

CORE SAW ACCESSORIES

- #127-61-2 Blade, Segmented Rim, 14" Diameter x .095" Width, 1" Arbor, 10 mm Segment Height
- #127-61-3 Blade, Segmented Rim, 20" Diameter x .135" Width, 1" Arbor, 10 mm Segment Height
- #127-61-4 Blade, Continuous Rim, 10" Diameter x .050" Width, ½" Arbor, 5 mm Rim Height
- #127-61-5 Blade, Continuous Rim, 14" Diameter x .070" Width, 1" Arbor, 5 mm Rim Height
- #127-61-6 Blade, Continuous Rim, 20" Diameter x .100" Width, 1" Arbor, 5 mm Rim Height
- #127-61-7 Blade, Segmented Rim, 20" Diameter x .100" Width, 1" Arbor, 5 mm Rim Height
- #127-61-8 Blade, Segmented Rim, 24" Diameter x .100" Width, 1" Arbor, 5 mm Rim Height
- #127-61-9 Blade, Segmented Rim, 30" Diameter x .125" Width, 1" Arbor, 5 mm Rim Height

BD-2000 SERIES CORE SAW

- #127-64 230 VOLT, 60 HZ
- #127-64-1 208 / 230 VOLT, 50 HZ

Size: 34" x 25" x 32" (86 x 64 x 81 cm)

Weight: 172 lb (78 kg)

Features

- Stay level blade guard gives 180° coverage at all times
- Blade shaft is built with sealed, permanently lubricated, heavy-duty bearings
- Cast-aluminum structural components & jig-welded steel frame assembly
- Convenient ON/OFF switch for operator safety
- Recoil spring return cutting head
- Cast aluminum blade guard with stainless steel water tubes that will not bend or rust
- Adjustable water supply for maximum blade protection
- Thermally protected 3 hp Baldor motor on electric saw
- Submersible electric water pump
- Made in the USA
- 208-240V/50 Hz motor available on request
- One-year limited warranty

Specifications

- Motor: Baldor, 3 hp
- Motor RPM: 3,450
- Blade RPM: 3,100
- Blade Capacity: 14" (35 cm)
- Arbor: 1" (2.5 cm)
- Table Travel: 29" (74 cm)
- Max Core Sample Length: 12" (30 cm)
- Max Core Sample Diameter: 5" (13 cm)
- Minimum Core Sample Diameter: 1" (2.5 cm)

Core - Routine Analysis

MODEL 340 MANUAL PERMEAMETER #127-00

Size: 44" x 20" x 45.5" (112 x 51 x 116 cm)
Weight: 519 lb (235 kg)

Crate 1:

Size: 51" x 33" x 54" (130 x 84 x 137 cm)
Weight: 651 lb (254 kg)

Crate 2:

Size: 41" x 34" x 37" (104 x 86 x 94 cm)
Weight: 245 lb (111 kg)

The permeability of a petroleum reservoir is one of the most influential parameters in determining the production capabilities of a producing formation. Permeability is a measure of the ability of a fluid to flow through a porous media when subjected to a differential pressure and is mathematically equated by Darcy's law. The Reservoir Permeability Tester was developed to evaluate how fluids affect the permeability of a core specimen. In addition, the unit may be used to evaluate acidizing techniques and to develop typical Acid Response Curves (ARCs).

Features

- Evaluates how fluids affect the permeability of a core specimen
- Develop Acid Response Curves (ARCs) for different acidizing techniques
- Hassler test cell accepts cores of variable length
- Duplex pump delivers constant drive pressure
- Flow direction of test fluid easily reversed by use of valves
- All wetted components constructed of Hastelloy® or 316 Stainless Steel
- Multiple accumulators with piston
- Cell temperature maintained via internal heaters

Specifications

- Maximum Drive Pressure: 5,000 PSI (34.5 MPa)
- Maximum Confining Pressure: 5,000 PSI (34.5 MPa)
- Maximum Back Pressure: 1,000 PSI (6.9 MPa)

Requirements

- Air: 100 - 120 PSI (689.5 - 827.4 kPa)
- Nitrogen: 1000 - 2000 PSI (6.9 - 13.8 MPa)
- Water: 30 - 40 PSI (206.9 - 275.8 kPa)
- Electrical: 230 Volt

Components

- #120-27-019 Band Heater for Hassler Test Cell
- #120-70-1-052 Hose, 18"
- #120-80-4 Temperature Controller
- #122-073-1 Fuse for Main Power, 3 Amp, 5 mm x 20 mm
- #122-074 Fuse for Pump, 4 Amp, 5 mm x 20 mm
- #122-077 Fuse for Safety Controller, 10 Amp, 5 mm x 20 mm
- #127-00-003 Regulator
- #127-00-205 O-ring for Accumulator Cap and Piston
- #127-00-210 Rod for Hassler Cell Cap
- #127-00-212 O-ring for Hassler Cell Cap
- #127-00-213 O-ring for Hassler Insert
- #127-00-217 Knob for Hassler Cell Cap
- #127-00-235 Core Boot for Hassler Cell, 1.5" Diameter x 1.5" ID x 0.125" Wall x 7" Length, Viton®
- #127-00-247 Sample Cylinder with ¼" FNPT Ports, 75 mL
- #127-00-255 Clamp Rod
- #127-00-256 Bearing Plate

- #127-00-300 Heat Exchanger
- #127-00-301 Cartridge Heater for Heat Exchanger
- #127-00-305 Gauge with Back Connection, 5,000 PSI, 4.5"
- #127-00-306 Gauge with Back Connection, 1,000 PSI, 4.5"
- #127-00-310 Fill Pump for Accumulator, 230 Volt
- #127-00-320 Bearing for Hassler Pivot, ¾"
- #130-75-71 Monitor
- #130-75-74 Desktop Computer
- #130-76-03 Thermocouple
- #130-76-44 Thermocouple Jack
- #130-76-48 Power Supply
- #130-79-15 Serial Cable, OB9 M/F
- #130-79-16 USB Cable
- #152-38 AC Power Cord, 3-Conductor, International (Continental European)
- #166-05 Plug Adapter, European, 230 Volt
- #172-24 Solid State Relay, 25 Amp, 230 Volt

Optional

- #127-02 Spare Parts Kit



#127-00 - Model 340 Manual Permeameter

RGP-560 GAS PERMEAMETER #127-87

Size: 27" x 24" x 32" (69 x 61 x 81 cm)
Weight: 160 lb (72.6 kg)

The RGP-560 Gas Permeameter is designed to measure the permeability of core specimens one inch in diameter and one inch in length. A core specimen is placed into a core sleeve, which is then inserted into a modified Hassler-style test cell. Nitrogen at a constant flow rate is forced through the core and the differential pressure across the core is measured. The flowrate is measured with calibrated flowmeters. Viscosity is easily determined by the use of nitrogen property tables. These variables are incorporated into Darcy's law to calculate sample permeability.

Features

- Data Acquisition and Control system with software included
- Modified Hassler cell accommodates cores of 1" length and 1" diameter
- Instrumentation gauge displays driving pressure
- All Hassler components are fabricated from 316 Stainless Steel
- Nitrogen test fluid

Requirements

- Compressed Air: 100 PSI (689.5 kPa)
- Gas Pressure: Standard Air, Carbon Dioxide, Nitrogen, or Oxygen up to 500 PSI (3.5 MPa)
- Power: 115 Volt or 230 Volt, 50 / 60 Hz

Components

- #120-85-010 Digital Calipers
- #122-220 Rubber Specimen Holder
- #122-221 O-ring
- #122-225 Stainless Steel Core Sleeve



#127-87 - RGP-560 Gas Permeameter

GAS PERMEAMETER #120-85

Size: 22" x 18" x 24" (56 x 46 x 61 cm)
Weight: 80 lb (36.3 kg)

The Gas Permeameter is designed to measure the permeability of core specimens one inch in diameter and one inch in length. A core specimen is placed into a core sleeve, which is then inserted into a modified Hassler-style test cell. Nitrogen at a constant flow rate is forced through the core and the differential pressure across the core is measured. The flowrate is measured with calibrated flowmeters. Viscosity is easily determined by the use of nitrogen property tables. These variables are incorporated into Darcy's law to calculate sample permeability.

Features

- Modified Hassler cell accommodates cores of 1" length and 1" diameter
- Instrumentation gauge displays driving pressure
- All Hassler components are fabricated from 316 Stainless Steel
- Nitrogen test fluid

Requirements

- Compressed Air: 100 PSI (689.5 kPa)
- Gas Pressure: Standard Air, Carbon Dioxide, Nitrogen, or Oxygen up to 500 PSI (3.5 MPa)

Components

- #120-85-010 Digital Calipers
- #122-220 Rubber Specimen Holder
- #122-221 O-ring
- #122-225 Stainless Steel Core Sleeve



#120-87 - Cement Permeameter

Core - Routine Analysis

AUTOMATED GAS PERMEAMETER

#127-80

The Automated Gas Permeameter is designed to measure the permeability of core specimens 1" or 1.5" in diameter and 2" to 4" in length. A core specimen is placed into a Phoenix Instruments Hydrostatic Core holder and confining pressure up to 10,000 PSI is applied. Nitrogen is forced through the core and differential pressure across the core is measured. The flowrate is measured with a series of calibrated flowmeters designed to operate within varying ranges. Viscosity is easily determined by the use of nitrogen property tables. These variables are then incorporated into Darcy's law to calculate permeability.

Features

- Phoenix Instruments hydrostatic core holder with Tri-Lock technology
- Built-in data acquisition and control system with software
- Nitrogen test fluid
- Confining pressure up to 10,000 PSI
- Automated testing
- Multiple flowmeters of varying sensitivity provide a greater range of flowrates
- Accepts core samples 1" or 1.5" diameter and 2" to 4" length



#127-80 - Automated Gas Permeameter

BLP-530 GAS POROSIMETER #127-20

Size: 24" x 22" x 20" (61 x 55.9 x 50.8 cm)
Weight: 150 lbs (68.1 kg)

The BLP 530 Gas Porosimeter was designed to rapidly and accurately measure the effective porosity of a core sample. Porosity is defined as the percentage of void space within a solid media. Effective porosity is the percentage of void space within a solid media in which the pore spaces are interconnected. It is imperative to accurately determine the effective porosity of a petroleum reservoir when estimating the total amount of recoverable hydrocarbons within a producing formation. The BLP 530 Gas Porosimeter was designed to precisely measure the effective porosity of a core sample.

Features

- Precision regulator for accurate pressure control
- Digital display of pressure
- Vacuum gauge and connection port for evacuation
- Lock in feature allows for rapid measurements of samples
- Unit is compact and virtually maintenance free
- Calibration sample included with unit
- Air relief valve prevents over pressurization

Specifications

- Can test core samples up to 1.5" in diameter by 2" long (Larger core holders available upon request)

Requirements

- Helium or Nitrogen source (500 PSI / 3,448 kPa minimum)
- 220 Volt, 50 Hz power source

Components

#120-27-004	DP-15 Diaphragm (0 - 200 PSI)
#122-073	Fuse, 2 Amp, 5 mm x 20 mm
#127-00-262	Valve
#127-20-004	O-ring for Test Cell
#127-20-020	Calibration Block



#127-20 - BLP-530 Gas Porosimeter

BLP-630 AUTOMATED GAS POROSIMETER #127-25 115 VOLT #127-25-1 230 VOLT

The BLP 630 Automated Gas Porosimeter was designed to rapidly and accurately measure the effective porosity of a core sample. Porosity is defined as the percentage of void space within a solid media. Effective porosity is the percentage of void space within a solid media in which the pore spaces are interconnected. It is imperative to accurately determine the effective porosity of a petroleum reservoir when estimating the total amount of recoverable hydrocarbons within a producing formation. The BLP 630 Automated Gas Porosimeter was designed to precisely measure the effective porosity of a core sample.

Features

- Three separate volumetric gas reservoirs provide 7 possible gas volume combinations to improve effective pore space data for a broad range of core sizes and core porosities.
- Comes with an assortment of volumetric core holder inserts to minimize dead space for greater accuracy
- Core holder secured and released with ¼ turn by hand for quick and easy core loading
- Integrated vacuum pump allows evacuation of pore space and porosimeter gas circuits
- Various gases can be used, including helium, nitrogen and carbon dioxide
- Calibration is performed with the software to ensure accuracy
- Pressure relief valves are incorporated into the gas circuits to ensure safe operation
- Comes with PC and software for automatic or manual control and data acquisition

Specifications

- Core holder can test cores up to 2" diameter and up to 3" long
- Comes with adapter kit for 1", 1 ½" and 30mm diameter cores
- Gas pressure: 200 psi maximum testing pressure

Requirements

- Gas (helium, nitrogen, etc.): 200 PSI
- Power: 115 Volt, 7 Amp or 230 Volt, 3 Amp



#127-25 - BLP-630 Automated Gas Porosimeter

Core - Advanced Analysis

CRF-840 ROCK-FLUID CENTRIFUGE #700-570

Size: 57" x 45" x 72" (145 x 114 x 183 cm)
Weight: 1,820 lb (825.5 kg)

A properly-equipped centrifuge has many applications in the study of the rock-fluid properties of hydrocarbon reservoirs. Processing the centrifuge core analysis results provides relative permeability and capillary pressure data applicable to reservoir production performance calculations. Because enormous forces on the pore fluids are easily generated in the centrifuge, it is possible to perform experiments that model gravity drainage production processes. Rates and end points are key concerns that can be derived from the measured centrifuge core analysis data.

Features

- Solid construction with welded frame provides enhanced stability and safety
- Testing chamber is mounted on compressed vibration absorbers for smooth operation
- Top rotor shaft bearing enables stable and safe operation throughout the entire RPM range
- Integrated vacuum pump evacuates testing chamber so that the rotor can maintain high speeds
- Radiant heating system makes it possible to heat the core holders in a vacuum environment
- Integrated chiller for fast cool-down cycle after tests
- Hassler-type core holders apply equivalent confining pressure along the length of the cores
- Core holders are reversible for operating in either imbibition or drainage mode
- Computer with control and data acquisition software is included
- High-resolution camera gives accurate measurements of the fluid interface changes

Specifications

- Rotor speed
 - Maximum: 5,000 RPM
 - Minimum (with data acquisition simultaneously on all 4 core holders): 100 RPM
- Core holders
 - Sample Size: 1.0" and 1.5" diameter x 2.0" maximum length
 - Maximum Confining Pressure: 3,000 PSI
 - Maximum Temperature: 200°F (250°F Optional)
 - Maximum Pore Pressure: 1,000 PSI
 - Maximum Confining Pressure: 3,000 PSI
 - Maximum Capillary Pressure: 300 PSI in drainage mode
- Camera
 - Resolution: 2048 linear pixels
 - Data rate: 1 reading per revolution below 700 RPM, 10 readings per second above 700 RPM

Requirements

- Power: 220 Volt, 50 / 60 Hz, 1 Phase (20 Amp) and 3 Phase (30 Amp)

Components

#122-077	Fuse, 10 Amp, 5 mm x 20 mm
#127-20-004	Inlet O-ring
#700-570-015	Cell Body
#700-570-016	End Cap - Receiver Side
#700-570-017	Receiver Tube
#700-570-018	Plunger
#700-570-019	Plunger End Piece
#700-570-019-2	Spacer, Rubber, 1/8"
#700-570-019-4	Spacer, Rubber, 1/4"
#700-570-019-6	Spacer, Rubber, 3/8"
#700-570-020	End Cap - Core Side
#700-570-021	Locking Ring
#700-570-024	Charge Valve Assembly
#700-570-022	Valve Seat
#700-570-023	Needle Valve
#142-56	O-ring
#700-570-027	Core Sleeve
#700-570-028	Retainer
#700-570-030	O-ring for Cell Body
#700-570-031	O-ring for Receiver Tube



#700-570 - CRF-840 Rock-Fluid Centrifuge

SGR-740 SPECTRAL GAMMA RAY CORE LOGGER #700-410

Size: 126" x 38" x 55" (320 x 97 x 140 cm)
Weight: 1550 lb (703.1 kg)

A total gamma-ray well log is a recording of the total natural gamma radiation of the formation around the wellbore. A spectral gamma-ray well log is a recording of the relative amounts of the three main elements that create natural radiation (Potassium, Uranium, and Thorium).

The SGR-740 Gamma Ray Core Logger measures the energy level and quantity of the radiation emitted from a core sample and calculates the quantity of each of the elements. The amounts of each of these elements and the total gamma-ray count are then plotted as a function of depth.

Features

- Dual logging mode - simultaneously plots Spectral and Total logs from cores in one pass
- Constant temperature controller is integrated with scintillation detector - improves repeatability
- Stepper motor drive mechanism for multiple speed settings - optimizes resolution and speed
- Automatic conveyor stop mode - prevents cores from falling off end of conveyor
- Mounted on locking swivel castors - enables quick and easy moving
- V-shaped conveyor track - keeps cores in center of conveyor
- Can log cores up to 7" in diameter
- Calibration standards are included

Specifications

- Belt Size: 6" wide x 9' long (15 x 274 cm)
- Gamma Ray Detector: NaI Crystal, 3" x 3" (8 x 8 cm)
- Size: 24" x 47" x 118" (60 x 120 x 300 cm)
- Weight: 992 lb (450 kg)

Requirements

- 230 Volt, 2 Amp, 50 / 60 Hz

Components

#122-075-2	Fuse, 6 Amp, 5 mm x 20 mm
#700-400-014	Conveyor Belt
#700-400-017	Distance Sensor
#700-400-021	Motor
#700-410-001	Multi-Channel Analyzer
#700-410-401	Potassium Calibration Standard
#700-410-402	Thorium Calibration Standard
#700-410-403	Uranium Calibration Standard

Optional

#700-410-404	Background Calibration Standard
#700-410-405	API 200 Calibration Standard



#700-410 - SGR-740 Spectral Gamma Ray Core Logger

Frac / Stimulation - Preparation

MODEL 20 CONSTANT SPEED BLENDER FOR FRACTURING FLUID TESTING, 1 LITER

#120-60-F 115 VOLT

#120-60-1-F 230 VOLT

Size: 45" x 32" x 12" (114 x 81 x 31 cm)

Weight: 75 lb (34.1 kg)

Features

- Hardened stainless steel mixing blades
- Glass mixing container
- Two preset mixing speeds (500 and 1,000 RPM) and variable speed
- Rotational speed is maintained with microprocessor
- Timing relays automatically control mixing times at required RPM
- Digital instrumentation provides excellent readability
- Optional torque measuring module tests crosslinking time

Requirements

Power: 115 Volt at 7 Amp or 230 Volt at 3.5 Amp, 50 / 60 Hz

Components

#122-073-1	Fuse, 3 Amp, 5 mm x 20 mm (230 Volt)
#122-074-1	Fuse, 5 Amp, 5 mm x 20 mm (230 Volt)
#122-075	Fuse, 7 Amp, 5 mm x 20 mm (115 Volt)
#122-077	Fuse, 10 Amp, 5 mm x 20 mm (115 Volt)
#122-200	Blending Assembly and Square Drive
#122-203	Lid for 1 Liter Container
#122-204	Gasket
#122-207	Blade
#122-208-1	Exciter Gear, Ten Tooth
#122-209	Blender Assembly with Exciter Gear, Pickup Cable, and Stainless Steel Container, 230 Volt
#122-210	Blender Assembly with Exciter Gear, Pickup Cable, and Stainless Steel Container, 115 Volt
#122-209-2	Magnetic Pick Up
#122-211	Square Drive Stud
#122-212	Coupling
#122-213	Slinger
#122-215	Shaft
#122-216	Washer, Stainless Steel
#152-64	Container, 1 Liter, Glass



#120-60-F - Model 20 Constant Speed Blender for Fracturing Fluids

MODEL 900 DIGITAL VISCOMETER

#130-76-C 115 VOLT

#130-76-1-C 230 VOLT

Size: 17.3" x 15" x 11" (44 x 38 x 28 cm)

Weight: 19 lb (8.6 kg)

The Model 900 Viscometer is a true Couette coaxial cylinder rotational viscometer, which employs a transducer to measure the induced angle of rotation of the bob by a fluid sample. For a fully automated Control/Data Acquisition System suitable for research applications, the Model 900 Viscometer may be connected to a computer via a serial (RS-232 or USB with converter) port using OFITE's exclusive and field-proven Windows™- based ORCADADA® software.

For more information, refer to page 39.



#130-76 - Model 900 Viscometer

MODEL 3025 PRESSURIZED VISCOMETER

#130-83

The Model 3025 is a fully-automated, pressurized viscometer. It accurately determines the fluid characteristics of stimulation fluids, completion fluids, drilling fluids, and cement in terms of shear stress, shear rate, time, and temperature at elevated temperature and pressure.

Using the exclusive ORCADADA® software, a computer novice can operate the viscometer, and yet the system is versatile enough for advanced research and demanding test parameters. It is suitable for both field and laboratory use. A waterproof, compartmentalized case with wheels makes the unit completely portable.

Features

- Automated control (temperature and RPM)
- Includes easy-to-use ORCADADA® software and laptop
- Hastelloy®-wetted parts

Specifications

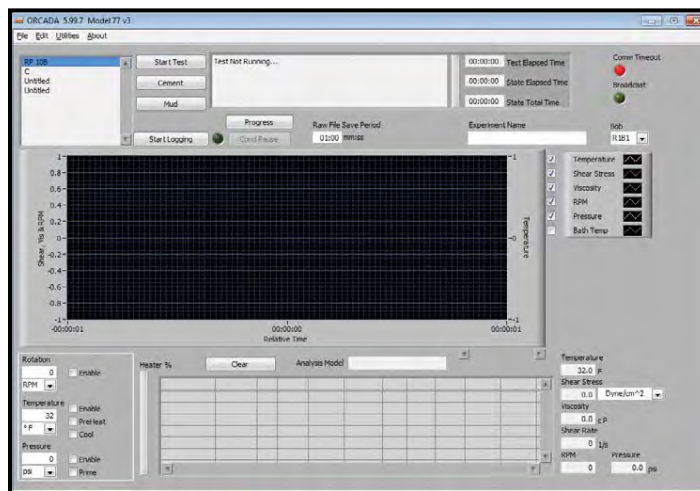
- Maximum Pressure: 2,500 PSI (17.2 MPa)
- Maximum Temperature: 500°F (260°C)

Requirements

- 115 / 230 Volt, 50 / 60 Hz
- N₂: 3,000 PSI
- Water: 15 - 30 PSI

What's Included

- Model 3025 Viscometer
- Laptop PC with ORCADADA® Software
- Waterproof, padded carrying case



ORCADADA® Software

Frac / Stimulation - Compressive Strength

CLF-40 COMPRESSIVE LOAD FRAME

#120-285 115 VOLT

#120-285-230 230 VOLT

Size: 23" x 23" x 26.5" (59 x 59 x 67 cm)

Weight: 225 lb (102 kg)

Shipping Size: 29" x 31" x 39" (74 x 78 x 99 cm)

Shipping Weight: 340 lb (154.2 kg)

The CLF-40 Automated Compressive Load Frame was designed to determine the compressive strength of a well cement or proppant.

Features

- Perform crush testing on proppant
- Clamshell design with safety switches protect people and equipment
- Safety head, rupture disk, and high pressure alarm prevent over pressurization
- Computerized data acquisition and control system provides detailed test information and precise control
- Operates as a standalone unit or with computer control
- Software accepts cylindrical and cube-shaped samples
- Remote access available via RS-232 or Ethernet
- Small footprint saves valuable lab space

Specifications

- Maximum load capacity: 40,000 lbf
- Variable loading rates from 250 to 40,000 lbf/min
- Maximum load dwell: 15 minutes

Requirements

- Power: 115 Volt at 9 Amp or 230 Volt at 5 Amp, 50 / 60 Hz

Components

#120-28-061 Brush
#120-90-035-1 Filter
#122-074 Fuse, 4 Amp, 5 mm x 20 mm

Optional

#120-285-9 Proppant Adapter



#120-285 - CLF-40 Compressive Load Frame

PROPPANT TEST CELL, 1" DIAMETER

#800-00-038

Size: 3.9" (10 cm)

Weight: 3 lb 2 oz (1.4 kg)

Components:

#800-00-035 Cell Body
#800-00-036 Cell Bottom
#800-00-037 Piston

PROPPANT TEST CELL, 1.5" DIAMETER

#800-00-034

Size: 3.9" (10 cm)

Weight: 4 lb 14 oz (2.2 kg)

Components:

#800-00-031 Cell Body
#800-00-032 Cell Bottom
#800-00-033 Piston

PROPPANT TEST CELL, 2" DIAMETER

#800-00-013

Size: 3.9" (10 cm)

Weight: 7 lb 2 oz (3.2 kg)

Components:

#800-00-010 Cell Body
#800-00-011 Cell Bottom
#800-00-012 Piston



#800-00-034 - Proppant Test Cell, 1.5"

TURBIDITY METER, PORTABLE #299-10

Size: 7.5" x 3.5" x 2.5" (19 x 9 x 6 cm)
Weight: 13 oz (368 g)

Features

- Signal Averaging: Disabled, 2, 5, 10
- Power: USB computer cable/wall adapter or Lithium ion rechargeable battery, 3.7V, 2.5" x .75", 1.7 oz
- Data Logging: 500 points
- Auto Shut-Off: Disabled, 5, 10, 30 minutes
- Languages: English, French, Spanish, Japanese, Italian, Portuguese, Chinese
- Waterproof: IP67

Specifications

- Unit of Measure: NTU, AU, ASBC, EBC
- Range: 0-4000 NTU/FNU, 0-10,500 ASBC, 0-150 EBC
- Resolution:
 - 0.01 NTU/FNU 10.00-10.99
 - 0.1 NTU/FNU 11.00-109.9
 - 1 NTU/FNU 110-4000
- Accuracy:
 - From 0-2.5 NTU the accuracy is ± 0.05 NTU
 - From 2.5-100 NTU the accuracy is $\pm 2\%$
 - From 100 NTU the accuracy is $\pm 3\%$
- Detection Limit: 0.05 NTU/FNU
- Range Selection: Automatic
- Reproducibility: 0.02 NTU/FNU or 1%
- Light Source: Tungsten complies with EPA 180.1 Standard

What's Included

- 9 volt alkaline battery
- AC power adapter
- Four optically selected sample vials with screw caps
- Standardization package (1.0 NTU and 10.0 NTU standards)
- Sturdy carrying case

Components

- #299-10-4 Turbidity Tubes, Set of 4
- #299-10-5 Turbidity Standard, 1.0 NTU, 60 mL
- #299-10-6 Turbidity Standard, 10 NTU, 60 mL
- #299-10-7 Turbidity Standard, 100 NTU, 60 mL



#299-10 - Turbidity Meter

HYDROMETER SET WITH CARRYING CASE #153-52

See page 48 for more information.

ZINC (Zn) IN BRINES-DETERMINATION KIT #145-66

See page 143 for more information.

THERMOCUP WITH REMOVABLE STAINLESS STEEL CUP

#130-38-30 115 VOLT
#130-38-35 230 VOLT

See page 43 for more information.

MODEL 3025 PRESSURIZED VISCOMETER #130-83

See page 38 for more information.

IRON (Fe³⁺) COUNT TEST KIT #161-70

See page 138 for more information.

RESISTIVITY METER

#130-85 ANALOG
#130-87 DIGITAL

See page 150 for more information.

CALCIMETER

#152-95 WITH GAUGE ONLY
#152-97 WITH DATA ACQUISITION

See page 134 for more information.

Completions - Completions

CON 450 WATERPROOF CONDUCTIVITY/TDS/ SALINITY/TEMPERATURE METER

#130-86

Size: 7.9" x 3.1" x 2.25" (20 x 8 x 6 cm)

Weight: 1.3 lb (.6 kg)

Features

- Intuitive, user-friendly icon electrode status displays cell constant
- Grip-Clip holder quickly and easily secures probe to beaker/ container
- USB and RS-232 output for up to 500 data sets
- 500 hours battery life or optional universal power adapter
- Built-in stand with Wall Mount option allows for easy benchtop measurement and storage

Specifications

Conductivity Range	0.00 to 200 mS
Conductivity Resolution	0.01 μ S, 0.1 mS
Conductivity Accuracy	\pm 1% full scale
Conductivity Calibration	One point per range
TDS Range	0 to 200 ppt
TDS Resolution	0.01 ppm to 0.1 ppt
TDS Accuracy	+/-1% full range
TDS Calibration	One point per range
Temperature Range	-10.0 to 110.0°C
Temperature Resolution	0.1°C
Temperature Accuracy	\pm 0.5°C
Temperature Calibration	Offset 0.1°C increments
ATC	Automatic or manual
Memory	Up to 500 data sets with temperature and calibration
Power	2 AA batteries
Real Time Clock	Yes
RS-232	Yes and USB
Cell constant	Selectable at K = 1.0, 0.1 or 10
Temperature coefficient	Adjustable 0.00 to 10.00% per °C
Optional AC Power	Yes
Built-in Stand	Yes
Dual Display	Yes
Waterproof/Dustproof (IP67)	Yes

Components

#130-86-02 Calibration Kit Contains Four Each of TDS "Singles" Calibration Pouches 447 μ S, 1413 μ S, 2764 μ S, and 15.0 μ S and Four Rinse Water Pouches, All in a Hard Plastic Carrying Case with Room for the CON 450 Meter



#130-86 - CON 450 Conductivity/TDS/Temp Meter

MILLIPORE MEMBRANE FILTER TESTER #145-00-10

The makeup water for a completion fluid can be studied effectively using a membrane filter tester. The apparatus provides information on biological contaminants, chemical composition, and filtration rates of water and other liquids. The main body of this unique filtering device is a 3200 mL, 5.75" by 10.5" transparent cylinder, which has been graduated for instantaneous readings. Pressurization is provided by optional manifold assemblies that attach to the top of the filtering chamber and allow for pressurization with either carbon dioxide or nitrogen.

Features

- Study makeup water for a completion fluid
- Provides information on biological contaminants, chemical composition, and filtration rates of water
- Includes 3,200 mL transparent cylinder with graduations on the side
- Optional pressure manifold for CO₂ or N₂

Components

#142-39	Pipe Plug, ¼" (0704-0009)
#143-01-2	Gauge, 30 PSI, ½" Bottom Connection
#144-15	Bushing, Plated Brass
#145-00-10-1	Cylinder
#145-00-10-3	Bottom
#145-00-12	Membrane Filters, 0.45 µm, Package of 100 UN3270
#145-00-13	Filter Holder, Swinnex #47
#145-00-14	O-ring for Filter Holder, Silicone
#145-00-15	O-ring for Top and Bottom Lids for Membrane Tank
#145-00-16	Relief Valve, 30 PSI, ¼" MNPT
#145-00-17	Coupler Plug, ¼" MNPT
#145-00-18	Labcock Valve, ¼" MT x T Male Thread x Female Thread, PVC
#145-00-19	Labcock Valve, ¼" MT x H, PVC
#145-00-20	PU Tubing, ⅜" ID x ¼" OD
#153-09-2	Graduated Cylinder, 1,000 mL
#155-25	Stopwatch, Digital

Optional

#145-00-21	Carrying Case with Pluck Foam
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#145-00-10 - Membrane Filter Tester with
#145-00-11 Pressure Assembly

CO₂ PRESSURE ASSEMBLY FOR #145-00-10 #145-00-11

Components

#143-00	Regulator, CONCOA/AIRCO 805-1179
#143-02-10	CO ₂ Puncture Head Assembly
#143-03	Barrel for CO ₂ Bulb
#143-05	CO ₂ Bulbs, Box of 10, UN2037
#143-06	Safety Bleeder Valve, ¼" NPT
#144-16	Coupling, Female, ¼", Plated
#145-00-23	Speed Coupler, ¼" FNPT
#170-34	Needle Valve, Male, ¼" x ¼" NPT

N₂ PRESSURE ASSEMBLY FOR #145-00-10 #145-00-22

Components

#141-15	Air Hose, Low Pressure, 6'
#141-19	Air Hose Adapter
#142-39	Pipe Plug, ¼"
#143-06	Safety Bleeder Valve, ¼" NPT
#145-00-23	Speed Coupler, ¼" FNPT
#170-36	Regulator for Nitrogen Pressure
#170-37	Nitrogen Cylinder, 21" x 7", Right-Hand Thread

* May require special handling for shipping.

Wastewater - Wastewater Testing Equipment

CAPILLARY SUCTION TIMER (CST)

#294-50

Size: 10" x 4.75" x 2" (25 x 12 x 5 cm)

Weight: 1 lb 8 oz (.68 kg)

The capillary suction time test was developed to study the filterability of sewage sludge and evaluate the effects of pre-treatment chemicals and process conditions of sewage treatment. It has been widely used to study the colloidal properties of clay suspensions. The petroleum industry uses the Capillary Suction Timer to characterize shales and to optimize the electrolyte concentration in drilling fluids for minimizing its effect on shale formations.

Features

- Measures the time required for filtrate to advance between radially separated electrodes when a fixed area of special filter paper is exposed to a suspension
- Studies the filtration characteristics of aqueous systems and the colloidal properties of clay suspensions
- Low battery indicator
- Used in the wastewater treatment, sewage, and petroleum industries
- Digital display

Components

#147-02	Battery, 9 Volt, Alkaline
#294-01	CST Paper, Standard, Chromatography Grade, Whatman 17, 7 cm x 9cm, Box of 100
#294-50-004	Spacer, Nylon
#294-50-006	Cable Connector
#294-50-007	Battery Connector
#294-50-011	Lower Block
#294-50-012	Electrode
#294-50-013	Support Rod
#294-50-014	Terminal Cover
#294-50-015	Power Supply
#294-50-017	Plug Adapter for Power Supply
#294-50-021	Upper Block Assembly

Optional

#294-05	CST Paper for very viscous or slow filtering systems, Box of 300
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#294-50 - Capillary Suction Timer (CST)

DIFFUSED AIR / DISSOLVED AIR FLOTATION TEST APPARATUS (DADAFTA), 115 VOLT, 60 HZ

#298-00

115 VOLT, 60 HZ

#298-00-1

230 VOLT, 50 HZ

Features

- Simulates a Diffused Air Flotation or Dissolved Air Flotation process on a small scale
- Measure the floatability of a particular sludge to design treatment plants and evaluate chemical flotation aids
- Clear, unibody pressure cell withstands pressures up to 125 PSI
- Oil-less piston air compressor for high efficiency and constant performance
- Permeable ceramic disk used for the diffuser can be removed, cleaned, and reused
- Chemical flotation aid inlet with septum
- Stainless steel paddle for additional mixing capabilities
- Easy-to-read flow meter and pressure gauge
- Quick disconnect fittings

Components

#135-04	Retainer Ring, External
#141-22	Filter, Felt
#143-01-1	Gauge, 200 PSI, 1/8" Back Connection
#153-09-2	Graduated Cylinder, Nalgene®, 1,000 mL, PMP
#153-75	Tygon® Tubing, 3/16", 3 Feet
#298-04	Flowmeter, 0 - 30 SCFH, 50 mm
#298-13	Poly Pak Seal
#298-20	Stopper, O Size, Rubber
#298-21	Pressure Relief Valve, 100 PSI (689.5 kPa)
#298-22	Pump, 100 PSI, 115 Volt, 60 Hz
#298-22-1	Pump, 100 PSI, 230 Volt, 50 Hz
#298-27	Stopcock Valve, 1/4" Male x Female
#298-28	Tubing, 3/16" ID x 3/16" OD, Polyethylene
#298-29	Tubing, Flexible, Polyurethane
#298-32	Gauge, Glycerine Filled, 100 PSI, 2 1/2" Face, 1/4" Back Connection, Stainless Steel
#298-33	Air Diffuser, 1.5" Long x 0.75" Wide, 3/16" OD Barb, 4 mm, ABS



#298-00 - Diffused Air - Dissolved Air Flotation Test Apparatus (DADAFTA)

Wastewater - Wastewater Testing Equipment

POLY PREP "N" FLOC TEST KIT #291-00

Features

- Enables field personnel to properly prepare water soluble flocculants/coagulants and observe their effects on the type of fluid or sludge in use
- Ideal for quickly selecting the proper polymer and dosage for sludge dewatering and water/wastewater treatment

Components

#130-41	Beaker, Nalgene®, 400 mL, Polypropylene
#153-01	Brush, Bottle, 3" x 12"
#153-09	Graduated Cylinder, Nalgene®, 250 mL, PMP
#153-09-2	Graduated Cylinder, Nalgene®, 1,000 mL, PMP
#153-53-8	Stir Bar, Spin Wedge, 1 ¾" x ½"
#153-53	Magnetic Stirrer with Stir Bars, 200 - 2,500 RPM, 6" Diameter, 3" Height, 115 Volt
#153-60	Syringe, Disposable, 3 cc
#153-60-1	Syringe, Disposable, 1 mL
#153-62	Syringe, Disposable, 10 cc
#166-03	Balance, Hand-Held, 0 - 320 g x 0.1 g
#291-01	Rack for 4 Acrylic Cylinders, Stainless Steel
#291-06	Cylinder, 3" OD x 2.75" ID x 11" H, 1 L, Acrylic
#291-07	Stopper, Solid, No. 13 ½, Neoprene
#297-08	Bottle, Boston Round, Natural, 4 fl oz, Poly
#297-10	Bottle with Cap, Boston Round, Natural, 8 fl oz, Poly



#291-00 - Poly Prep "N" Floc Test Kit

CON 410 WATERPROOF CONDUCTIVITY/TDS/ TEMP. METER #130-86

See page 166 for more information.

PORTABLE TURBIDITY METER #299-10

See page 165 for more information.

HYGROMASTER 2 HYGROMETER WITH SHORT QUICKSTICK SENSOR AND CASE #153-59-01

Size: 7" x 3.2" x 1.5" (18 x 8 x 4 cm)

Weight: 8 oz (0.2 kg)

Features

- Provides a measurement of relative humidity in a closed space above an emulsified fluid and relates the humidity to the activity of the water
- Infrared non-contact surface temperature
- Psychrometric calculations
- Data logging
- Simple to use interface with color display
- Fast temperature and humidity response
- Replaceable humidity and temperature sensor
- Highly accurate

Specifications

- Relative humidity: 0 - 100 %rh
- Temperature: 32° - 122°F (0 - 50°C)

Optional

#153-59-1	Extension Lead for Hygrostick
#153-59-3	Hygrostick Probe, Tip Only
#153-71	Glass Jar with Grommet
#153-72	Glass Jar without Grommet
#153-59-4	*Calcium Chloride, Saturated, 4 oz
#153-59-5	*Calcium Nitrate, Saturated, 4 oz, UN3139
#153-59-6	*Potassium Nitrate, Saturated, 4 oz, UN3139
#153-59-7	Sodium Chloride, Saturated, 4 oz



#153-59-01 - HygroMaster 2 Hygrometer

WATER ANALYSIS KIT IN STAINLESS STEEL CASE #144-95

See page 145 for more information.

MILLIPORE MEMBRANE FILTER TESTER #145-00-10

See page 167 for more information.

* May require special handling for shipping.

Laboratory - Balances

Balances			
Part #	Type	Capacity	Readability
166-17	Analytical	220 g	.0001 g
166-30	Moisture Analyzer	50 g	.001 g / .01%
166-15	Precision	2500 g	.01 g
166-18	Precision	450 g	.001 g
166-31	Electronic	620 g	.1 g
166-20	Precision, Portable	3000 g	.1 g
166-20-2	Precision, Portable	600 g	.01 g
166-03	Handheld	320 g	.1 g
166-16	Electronic	15000 g	2 g
166-06	Triple Beam	610 g	.1 g

OHAUS ADVENTURER® ANALYTICAL BALANCE, 220 GRAM CAPACITY, 0.0001 GRAM READABILITY #166-17

Size: 13.9" x 13.4" x 9.1" (35 x 34 x 23 cm)
Weight: 11.3 lb (5.1 kg)

Standard Features

- Color Touchscreen
- Two USB Ports
- Draftshield
- External and Internal Calibration
- Stability Indicator
- Software Over/Under Load Protection
- AC Adapter
- Auto Tare



#166-17 - OHAUS Adventurer®

PMB MOISTURE ANALYZER, 50 GRAM CAPACITY, 0.001 GRAM / 0.01% READABILITY

#166-30 115 VOLT
#166-30-1 230 VOLT

Size: 14" x 9.8" x 7.3" (36 x 24 x 19 cm)
Weight: 13 lb (5.9 kg)

Features

- Built-in memories for storing products and settings
- Date and time
- Full range tare
- Zero Tracking
- Multilingual display
- Large backlit display with dual text prompts
- Overload protection
- RS-232 and USB interface
- Calibration facilities for temperature and weight



#166-30 - PMB Moisture Balance

NBL PRECISION BALANCE

#166-15 2500 GRAM x 0.01 GRAM, 115 VOLT
#166-15-1 2500 GRAM x 0.01 GRAM, 230 VOLT
#166-18 450 GRAM x 0.001 GRAM, 115 VOLT
#166-18-1 450 GRAM x 0.001 GRAM, 230 VOLT

Size: 9.9" x 14.1" x 4.1" (33 x 28 x 53 cm)
Weight: 11 lb (4.9 kg)

Features

- Backlit LCD with dual display
- Security locking station
- GLP printouts

Note: NIST traceable calibration weights also available to meet quality assurance requirements.



#166-15 - NBL Top Loading Balance

OHAUS SCOUT® MODEL SPX621 ELECTRONIC BALANCE, 620 GRAM CAPACITY, 0.1 GRAM READABILITY

#166-31 115 VOLT
#166-31-1 230 VOLT

Size: 8" x 8.8" x 2.1" (20 x 22 x 54 cm)
Weight: 2.2 (1 kg)

Features

- Finger touch operation
- Large LCD screen
- USB or RS232 connectivity
- Multiple weighing units
- Integral weigh-below hook
- Battery (not included) or AC power



#166-04 - OHAUS SP601 Balance

HIGHLAND PORTABLE PRECISION BALANCE

#166-20 3000 GRAM x 0.1 GRAM, 115 VOLT
#166-20-1 3000 GRAM x 0.1 GRAM, 230 VOLT
#166-20-2 600 GRAM x 0.01 GRAM, 115 VOLT
#166-20-3 600 GRAM x 0.01 GRAM, 230 VOLT

Size: 6.7" x 9.6" x 3.1" (17 x 25 x 8 cm)
Weight: 4 lb 6 oz (2 kg)

Features

- LCD display
- Multiple weighing units and modes
- RS-232 and USB interface
- Internal rechargeable battery pack / AC operation
- Capacity tracker
- Internal manual calibration



#166-20 - Portable Prescription Balance

HANDHELD SCALE, 320 GRAM CAPACITY, 0.1 GRAM READABILITY, AAA BATTERIES

#166-03

Size: 5.35" x 3.25" x 0.8" (13.6 x 8.3 x 2.0 cm)
Weight: 6 oz (0.16 kg)

Features

- Four-button keypad
- Luminescent backlight
- Units: grams (g), ounces (oz), pennyweight (dwt), or troy ounces (ozt).
- Includes automatic shut off to extend battery life



#166-03 - Handheld Scale

OHAUS VALOR™ 1000 COMPACT ECONOMICAL SCALE, 15000 GRAM CAPACITY, 2 GRAM READABILITY

#166-16 115 VOLT
#166-16-1 230 VOLT

Size: 12.8" x 6.25" x 11.9" (34 x 16 x 30 cm)
Weight: 8.8 lb (4.0 kg)

Features

- Removable stainless steel weighing platform and a mid-profile ABS plastic housing with leveling adjustment
- Internal rechargeable battery and AC power adapter included



#166-16 - OHAUS Valor™ 1000 Balance

Laboratory - Balances

TRIPLE BEAM BALANCE, 610 GRAM CAPACITY, 0.1 GRAM READABILITY

#166-06

Size: 19.9" x 4.3" x 6.3" (51 x 11 x 16 cm)

Weight: 7 lb (3.2 kg)

Features

- Tiered, notched beams
- Below balance weighing
- Integral security bracket
- Mass holder

Optional

#166-07 Attachment Weight Set, 2000 g (x2), 500 g (x1)

ACCESSORIES FOR BALANCES

- #153-26 Titration Dish, Polyethylene
- #153-28 Stirring Rod, 4", Polyethylene
- #153-68 Weigh Boat, Disposable, Medium, 78 x 78 mm
- #153-69 Weigh Boat, Disposable, Large, 124 x 124 mm
- #166-02 Weight Set with Hinged Covered Weight Box, Precision, 10 mg to 50 g
- #166-07 Weight Set Attachment for Triple Beam Balance to Expand Capacity to 2610 g
- #166-27 Anti-Vibration Table
- #166-29 Disposable Aluminum Sample Pans, Package of 250



#166-06 - Triple Beam Balance



#166-07 - Attachment Weight Set for
Triple Beam Balance (Optional)

SILVERSON® L5M-A LAB MIXER

#152-16 115 VOLT

#152-16-1 230 VOLT

Size: 37" x 12" x 20" (94 x 31 x 51 cm)

Weight: 55 lb (25 kg)

Shipping Size: 46" x 30" x 25" (117 x 76 x 64 cm)

Shipping Weight: 172 lb (78 kg)

Features

- Powerful 1 hp motor
- Digital tachometer, timer, and amperage display
- Touch screen control for cleaner and more reliable operation
- Capacity from 1 mL up to 12 L
- Nominal maximum speed: 10,000 RPM
- Infinitely variable speed control with integral on/off switch

Optional

#152-15-2	Bushing, PTFE
#152-15-3	Bushing, Bronze Alloy
#152-15-4	Coupling Pin
#152-15-6	Drive Shaft and Rotor
#152-16-2	Motor Brushes



#152-16 Silverson® L5M-A Mixer

MINIMASTER LABORATORY DISPERSER

#152-76

230 VOLT

Features

- Robust machine stand comprised of portable stainless steel support columns with cast steel base
- Drive power of 0.6 kW
- Direct power transmission from the motor to the mixer spindle
- Infinitely variable speed control up to a maximum of 12,000 min⁻¹ via frequency inverter with push buttons and digital display on the control panel
- Height of the drive motor with agitator shaft easily adjustable on the support columns
- Restraint straps to secure mixing vessels with volumes from 0.2 L to 2 L
- The mixer spindle can accommodate different types of mixing tools
- Wetted parts made of Cr-Ni-steel
- For your safety - stationary shaft protector of PVC

Mixing Heads

#152-70-1 Duplex Head

A precision slotted cylindrical head with internal baffles that perform like a submerged centrifugal pump. Double shearing results in faster, more thorough mixing because it disperses materials that float and sink. Excellent for mixing low viscosity materials with solids that tend to settle.

#152-70-2 Simplex Head

Similar to the duplex head, the simplex head is more useful for dispersing materials heavier than the suspending liquid and is excellent for emulsifying and liquifying.

#152-70-3 Hi-Vis Head

A flat rotating disk with angled teeth along the periphery is useful for very high shearing action on shear thinning viscous liquids and pastes from 10,000 to 30,000 centipoise.



#152-76 - MiniMaster Laboratory Disperser

Laboratory - Mixers and Blenders

MULTIMIXER, FIVE SPINDLE, SINGLE SPEED, NO LOAD SPEED 11,500 RPM

#152-50 115 VOLT, 60 HZ
#152-52-1 230 VOLT, 50 HZ

Size: 22" x 18" x 14" (56 x 46 x 36 cm)
Weight: 71 lb (32.2 kg)

Note: Male connector for 230 Volt power cable sold separately.

Optional

#152-40 Container, 30 oz, Stainless Steel
#152-41 Agitator Button
#152-41-1 Screw for Bottom Agitator
#152-43 Impeller Blade
#152-50-SP Spare Parts Kit
#152-51 Case for Multi-Mixer, Soundproof, Stainless Steel
#152-52-2 Spare Part for Multi-Mixer
#164-32 Male Connector for 230 Volt Power Cable (US)
#164-34 Male Connector for 230 Volt Power Cable (European)



#152-50 - Multimixer

LABORATORY MIXER WITH STAND, 2 SPEED

#152-18 115 VOLT, 60 HZ
#152-18-1 230 VOLT, 60 HZ

Size: 8" x 12" x 25" (20 x 31 x 64 cm)
Weight: 18 lb 7 oz (8.4 kg)

Two Speed Switch and Motor - No load - 6,000 and 12,000 RPM

Component

#152-18-100 Laboratory Mixer, 2-Speed (115 Volt Only)
#152-18-101 Laboratory Mixer, 2-Speed (230 Volt Only)
#152-18-2 Adjustable Stand
#152-18-5 Shaft Extension, 4"
#163-09 Impeller



#152-18 - 2-Speed Laboratory Mixer with Stand

POWERSTAT®

#152-35 115 VOLT
#152-36 230 VOLT



#152-35 - POWERSTAT® for 2-Speed Laboratory Mixer

Laboratory - Mixers and Blenders

THREE SPINDLE HAMILTON BEACH® MIXER WITH CONTAINERS, THREE SPEED

#152-20 115 VOLT, 60 HZ
#152-30 230 VOLT, 50 HZ

Size: 15" x 15" x 24" (38 x 38 x 61 cm)
Weight: 39 lb (17.7 kg)

Components

#152-40 Container, Stainless Steel



#152-20 - Three Spindle Hamilton Beach® Mixer

SINGLE SPINDLE HAMILTON BEACH® MIXER WITH CONTAINER, THREE SPEED

#152-00 115 VOLT, 60 HZ
#152-10 230 VOLT, 50 HZ

Size: 7.25" x 8.5" x 21.25" (18 x 22 x 54 cm)
Weight: 13 lb (5.9 kg)

Components

#152-40 Container, Stainless Steel

Optional

#152-00-SP Spare Parts Kit
#152-41 Agitator Button, Upper
#152-42 Agitator Button, Lower



#152-00 - Single Spindle Hamilton Beach® Mixer

CUP MIXER

#163-10 12 VOLT
#163-20 115 VOLT

Size: 9" x 5" x 5" (23 x 12 x 12 cm)
Weight: 2 lb 14 oz (1.3 kg)

Components

#130-46 Male Plug Connector (12 Volt Only)
#152-42 Agitator Button, Lower
#152-87 Motor, 1/5 HP (115 Volt Only)
#163-10-001 Motor, 1/55 HP (12 Volt Only)
#163-10-1 Power Cord, 18-2 (12 Volt Only)
#163-20-1 Splash Guard
#163-20-2 Shaft, Stainless Steel
#163-20-3 Power Cord with In-line, Single-Speed Switch, 18-3 SJT, 8' (115 Volt Only)
#163-20-4 All Thread, 8-32 x 4 1/2"

Optional

#130-74 Transformer, 230 to 115 Volts, 1.10 Amps, 50 / 60 Hz



#163-10 - Cup Mixer

Laboratory - Mixers and Blenders

WARING BLENDER WITH GLASS CONTAINER

#152-60 MODEL 700G, 115 VOLT
#152-60-1 MODEL 800G, 230 VOLT

Size: 8" x 9" x 15.5" (20 x 23 x 39 cm)
Weight: 10 lb 12 oz (4.9 kg)

Features

- Heat-resistant glass container (1 Liter)
- No load speed: 22,000 RPM

Components

#152-64 Container, 1 L, Glass
#122-207 Blade



#152-60 Model 700G Waring Blender

WARING BLENDER WITH STAINLESS STEEL CONTAINER

#122-210-1 MODEL 7009S, 115 VOLT
#122-209-1 MODEL 8009L, 230 VOLT

Size: 13.5" x 9.5" x 8.25" (34 x 24 x 21 cm)
Weight: 12 lb 13 oz (5.8 kg)

Components

#122-207 Blade



#122-209 - Waring Blender

BLENDER WITH ½ GALLON (1.9 L) STAINLESS STEEL CONTAINER, HAMILTON BEACH® MODEL HBF500S

#152-13 115 VOLT
#152-13-1 230 VOLT

Size: 7" x 8" x 20.5" (18 x 20 x 52 cm)
Weight: 12.5 lb (5.7 kg)



#152-13 - Hamilton Beach® HBF500S Blender

ACCESSORIES FOR MIXERS AND BLENDERS

- #152-37 AC Power Cord, 115 Volt
- #152-38 AC Power Cord, 230 Volt
- #152-47 Agitator for Hamilton Beach® Mixers, Butterfly
- #152-41 Agitator Button for Hamilton Beach® Mixers, Upper
- #152-42 Agitator Button for Hamilton Beach® Mixers, Lower
- #122-207 Blade for Blender, 1 qt
- #152-03 Brush and Spring Set for Hamilton Beach® Mixer, 115 Volt
- #152-03-1 Brush and Spring Set for Hamilton Beach® Mixers, 230 Volt
- #152-51 Case for Multi Mixer®, Sound Proof, Stainless Steel
- #152-40 Container for Mixers, 30 oz, Stainless Steel
- #152-39 Container with Handle for Mixers, 30 oz, Stainless Steel
- #152-64 Container Assembly with Lid for Model 700, 1 L, Glass
- #163-09 Impeller for 2-Speed Laboratory Mixer
- #152-43 Impeller Blade for Multi-Mixer
- #152-35 Powerstat®, 115 Volt
- #152-36 Powerstat®, 230 Volt
- #152-44 Screw for Lower Impeller for Hamilton Beach® Mixer
- #152-41-1 Screw for Bottom Agitator for Multi-Mixer
- #130-74 Transformer, 230 to 115 Volts, 1.10 Amps, 50 / 60 Hz

Laboratory - Hot Plates and Stirrers

STIR LIGHT MAGNETIC STIRRER WITH LIGHT #153-53-2 115 VOLT, 60 HZ

Size: 8.75" x 12.5" x 11.5" (22 x 32 x 29 cm)
Weight: 6 lb (2.7 kg)

Features

- Speed: Variable 250 - 2,500 RPM
- Surface Size: 7" x 7" (18 x 18 cm)

Component

#153-53-2-001 Cover, Plastic



#153-53-2 - Stir Light Magnetic Stirrer

HEATED MAGNETIC STIRRER WITH STIR BAR #152-45 115 VOLT, 60 HZ #152-46 230 VOLT, 50 HZ

Size: 4.25" x 7.75" x 11" (11 x 20 x 28 cm)
Weight: 7 lb 1 oz (3.2 kg)

Features

- Speed: 60 - 1,150 RPM
- Temperature: 41° - 1,022°F (5 - 550°C)
- Surface Size: 5" x 7" (13 x 18 cm)



#152-45 - Heated Magnetic Stirrer

STIRRING HOT PLATE #150-83 115 VOLT #150-84 230 VOLT

Size: 12" x 10" x 7.5" (31 x 25 x 19 cm)
Weight: 5 lb 1 oz (2.8) kg

Features

- Speed: 60 - 1,100 RPM
- Temperature: 77 - 1022°F (25° - 550°C)
- Surface Size: 4" x 5" (10 x 13 cm)



#150-83 - Stirring Hot Plate

STIRRING HOT PLATE #152-48 115 VOLT #152-49 230 VOLT

Size: 10" x 5" x 25.5" (25 x 13 x 10cm)
Weight: 7 lb (3.2 kg)

Features

- Speed: 60 - 1,200 RPM
- Temperature: 41° to 1004°F (5° to 540°C)
- Surface Size: 4.25" x 4.25" (11 x 11 cm)



#152-48 - Stirring Hot Plate

Laboratory - Hot Plates and Stirrers

MAGNETIC STIRRER WITH TFE-COATED STIR BAR, 60 - 1200 RPM, 230 VOLT

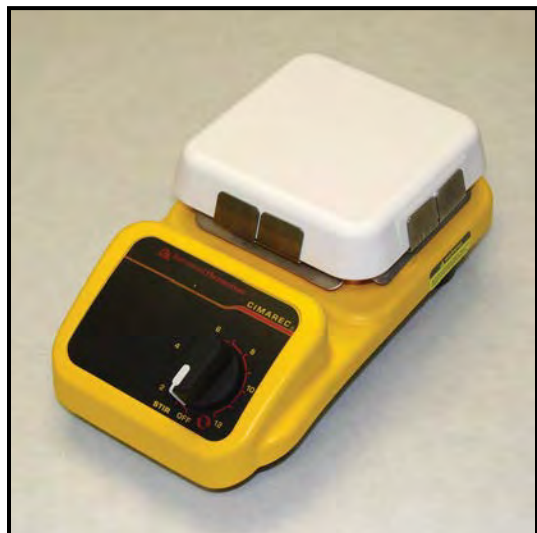
#153-53-7

Size: 10" x 5" x 3.5" (26 x 13 x 9 cm)

Weight: 6 lb 3 oz (2.8 kg)

Features

- Speed: 60 - 1,200 RPM
- Surface Size: 4" x 4" (10 x 10 cm)



#153-53-7 - Magnetic Stirrer

MAGNETIC STIRRER WITH DIGITAL READOUT

#153-53-12 115 VOLT

#153-53-13 230 VOLT

Size: 7.75" x 10" x 4.5" (20 x 25 x 11 cm)

Weight: 6.5 lb (3 kg)

Features

- Speed: 60 - 1,100 RPM
- Surface Size: 5" x 7" (13 x 18 cm)



#153-53-12 - Magnetic Stirrer

MAGNETIC STIRRER WITH TFE-COATED STIR BAR, 200 - 2500 RPM, 115 VOLT

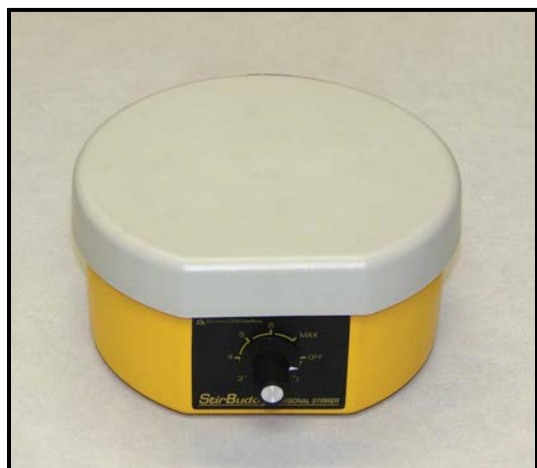
#153-53

Size: 6" Diameter x 3" Height (15 x 8 cm)

Weight: 2 lb 6 oz (1.1 kg)

Features

- Speed: 200 - 2,500 RPM
- Surface Size: 6" Diameter



#153-53 - Magnetic Stirrer

BATTERY-POWERED MAGNETIC STIRRER

#153-53-10

Size: 9.25" x 5" x 3.5" (24 x 13 x 9 cm)

Weight: 6.4 lb (2.9 kg)

Features

- Speed: up to 900 RPM
- Surface Size: 4" x 5" (10 x 13 cm)



#153-53-10 - Battery Powered Magnetic Stirrer

HOT PLATE WITH THERMOSTAT

#168-01 115 VOLT

#168-01-1 230 VOLT

Size: 3.75" Tall x 3.25" Diameter (9.5 x 8 cm)

Weight: 1.5 lb (680 g)

Features

- Maximum Temperature: 700°F (371°C)
- Surface Size: 3.25" Diameter



#168-01 - Hot Plate with Thermostat

ACCESSORIES FOR STIRRERS

#153-53-11 Stirring Bar, Magnetic, ½" x ⅝"

#153-53-6 Stirring Bar, Magnetic, ⅞" x ⅝"

#153-53-1 Stirring Bar, Magnetic, 1" x ⅝"

#153-53-4 Stirring Bar, Magnetic, 1 ½" x ⅝"

#153-53-5 Stirring Bar, Magnetic, 2" x ⅝"

#153-53-8 Stirring Bar, Spin Wedge, 1 ¼" x ½"

HOT PLATE

#168-03 115 VOLT

#168-03-1 230 VOLT

Size: 8" x 7.5" x 6" (20 x 19 x 15 cm)

Weight: 3 lb (1.4 kg)

Features

- Temperature: 77° - 672°F (25° - 360°C)
- Surface Size: 5" x 5" (13 x 13 cm)



#168-03 - Hot Plate

Laboratory - Centrifuges

PORTABLE CENTRIFUGE, 2-PLACE HEAD AND SHIELDS FOR 12.5 ML TUBES

#153-25-15 115 VOLT

#153-25-12 12 VOLT

Size: 13.75" x 8" x 6.5" (34.9 x 20.3 x 16.5 cm)

Weight: 7 lb 4 oz (3.3 kg)

Features

Speed: 1,750 RPM

Optional

#130-74 Transformer, 230 to 115 Volts, 1.10 Amps, 50 / 60-Hz



#153-25-15 - Portable Centrifuge

CENTRIFUGE FOR 12.5 ML TUBES, 4 PLACE HEAD, HEATED

#153-220 115 VOLT

#153-222 230 VOLT

Size: 18" x 14" x 9" (46 x 36 x 23 cm)

Weight: 32 lb (14.5 kg)

CENTRIFUGE FOR 12.5 ML TUBES, 4 PLACE HEAD, NON-HEATED

#153-221 115 VOLT

#153-223 230 VOLT

Size: 14" x 14" x 9" (36 x 36 x 23 cm)

Weight: 24 lb (10.9 kg)

CENTRIFUGE FOR 100 ML SHORT CONE TUBES, 4 PLACE

#153-224 NON-HEATED, 115 VOLT

#153-225 NON-HEATED, 230 VOLT

#153-226 HEATED, 115 VOLT

#153-227 HEATED, 230 VOLT

Size: 21.5" x 20" x 11.5" (55 x 51 x 29 cm)

Weight: 40 lb (18.1 kg)

CENTRIFUGE FOR 100 ML PEAR SHAPED CONE TUBES, 4 PLACE

#153-228 NON-HEATED, 115 VOLT

#153-229 NON-HEATED, 230 VOLT

#153-230 HEATED, 115 VOLT

#153-331 HEATED, 230 VOLT

Size: 21.5" x 20" x 11.5" (55 x 51 x 29 cm)

Weight: 40 lb (18.1 kg)



#153-220 - #153-331 Robinson Centrifuge

CENTRIFUGE, HAND CRANK, 4 PLACE HEAD AND SHIELDS FOR 15 ML TUBES

#153-25-2

Size: 11.5" x 6" x 4.5" (29 x 15 x 11 cm)

Weight: 2 lb (900 g)



#153-25-2 - Hand Crank Centrifuge, 15 mL

HAND CRANK CENTRIFUGE WITH 2-PLACE HEAD AND SHIELDS

#153-25-1 FOR 100 ML PEAR SHAPED TUBES

#153-25-1-1 FOR 12.5 ML FINGER TUBES

#153-25-1-2 FOR 100 ML SHORT CONE TUBES

Size: 9.5" x 4" x 3.5" (24 x 10 x 8.9 cm)

Weight: 1 lb 8 oz (680 g)



#153-25-1 - Hand Crank Centrifuge, 100 mL Capacity

TUBES AND PARTS FOR CENTRIFUGE

- #153-00 Bottle Brush for Centrifuge Tubes
- #153-19 Tube, 15 mL x 0.1 mL, Glass, 12 cm
- #153-21 Tube, Kolmer®, 10 mL, Glass, 12.5 cm
0 - 2 mL x 0.1 mL
2 - 10 mL x 0.2 mL
- #153-22 Tube, API, 12.5 mL, 100%, Glass, 12 cm
0 - 3% x 0.2%
3 - 10% x 0.5%
10 - 50% x 1%
- #153-23 Tube, ASTM, Pear Shaped, 100 mL
0 - 2 mL x 0.2 mL
2 - 10 mL x 1.0 mL
10 - 25 mL x 5.0 mL
25 - 100 mL x 25.0 mL
- #153-24 Tube, Pear Shaped, 100 mL, Glass Stopped
0 - 0.2 mL x 0.01 mL
Body at 25, 50, and 100 mL
- #153-25-20 Centrifuge Tube, 100 mL, Short Cone
0.0 - 0.5 mL x 0.05 mL
0.5 - 2.0 mL x 0.1 mL
2.0 - 3.0 mL x 0.2 mL
3.0 - 5.0 mL x 0.5 mL
5.0 - 10.0 mL x 1.0 mL
10.0 - 25.0 mL x 5.0 mL
25.0 - 100.0 mL x 25.0 mL
- #153-25-3 Shield for 10 - 15 mL Tubes, Aluminum
- #153-25-4 Head Assembly for two 15 mL Tubes for #153-25
- #153-25-4-1 Head Assembly for two 100 mL Pear Tubes for #153-25-1
- #153-25-4-2 Shield for 100 mL Pear Tubes, Aluminum
- #153-25-7 Handle for #153-25-2 Centrifuge
- #153-25-13 Shield for 12.5 mL Tube with Cushion for #153-25-12 and #153-25-15



#153-19



#153-21



#153-22



#153-23



#153-24



#153-25-20

Laboratory - pH Analysis

ION 700 METER, PH/MV/ION/TEMP #147-04

Size: 6.125" x 6.875" x 2.75" (16 x 18 x 7 cm)
Weight: 1 lb 6 oz (.6 kg)

Features

- Small footprint saves bench space
- Direct readout of ion concentration in ppm
- Oversized dual display for easier viewing
- Features 0.1 mV resolution for ORP measurements
- Simultaneous display of ppm and mV electrode output in the ion mode
- Selectable buffer sets and five-point pH calibration with auto buffer recognition
- Works with many ion-selective electrodes
- Built-in electrode stand
- Selectable manual or automatic temperature compensation
- Built-in memory function
- Hold function, "Ready" indicator, diagnostic messages
- Slide-out instruction card for quick reference

Specifications

- Measuring Parameters: pH, mV, Ion concentration, Temperature
- pH:
 - Range: -2.00 to 16
 - Resolution: 0.01
 - Accuracy: ± 0.01
 - Calibration: Up to 5 points
- Millivolt:
 - Range: ± 2000 mV
 - Resolution: 0.1 mV from ± 199.9 mV
 - Accuracy: 1 mV beyond ± 199.9 mV
 - Calibration: Offset up to ± 150 mV
- Ion:
 - Range: 0.01 - 2000 ppm
 - Resolution: 0.01 ppm / 0.1 ppm / 1 ppm
 - Accuracy: $\pm 0.5\%$ of reading (monovalent)
 $\pm 1.0\%$ of reading (divalent)
 - Calibration: From 2 to 5 points
- Temperature:
 - Range: 0.0° - 100.0°C (32° - 212°F)
 - Resolution: 0.1°C (0.1°F)
 - Accuracy: ± 0.3 °C (± 0.5 °F)
 - Calibration: Offset 0.1°C Increments
 - Temperature Compensation Automatic or Manual, 0 - 100°C



#147-04 - Ion 700 Meter

Ion Selective Electrodes (ISE) and Solution Kits (For #147-04 and 147-06 Meters)

Features

- Eliminate time consuming steps such as filtration, weighing, distillation, and titration
- Easily analyze dark or colored liquids
- Produces fewer mistakes
- Can be run on samples as small as 5 mL
- Compatible with Ion 6+ (#147-06) and Ion 700 (#147-04) meters

Electrode Specifications

- Glass body
- Double junction
- Refillable
- BNC connector

What's Included

- Electrode
 - Electrolyte, 15 mL
 - Filling pipette
 - Instructions
- Solution kit
 - Replacement reference electrolyte
 - Ionic strength adjustor
 - Calibration standards (1,000 ppm)
 - Filling pipette

Part #	ISE	Electrode Type	Measuring Range
#147-10-2	Potassium, K ⁺	Polymer Membrane	0.04 - 39,000 ppm
#147-10-3	Hardness, Ca ⁺² Mg ⁺²	Polymer Membrane	0.4 - 40,000 ppm
#147-10-4	Calcium, Ca ⁺²	Polymer Membrane	0.2 - 40,000 ppm
#147-10-5	Sodium, Na ⁺	Glass Bulb Electrode	0.2 - 23,000 ppm
#147-10-6	Chloride, Cl ⁻	Solid State Electrode	1.8 - 35,500 ppm
#147-10-7	Iodide, I ⁻	Solid State Electrode	0.006 - 127,000 ppm
#147-10-8	Fluoride, F ⁻	Solid State Electrode	0.02 ppm to saturated



#147-10-6 - Double-Junction Chloride ISE with Glass Body and Solution Kit

PORTABLE METER KIT

- #147-01 OAKTON PH 5+, PH / TEMP METER
- #147-06 OAKTON ION 6+, PH / MV / ION / TEMP METER

Size: 14" x 10.5" x 3" (36 x 27 x 8 cm)
Weight: 3 lb 12 oz (1.7 kg)

What's Included

- Meter
- Electrode
- pH buffer solution
- Sample bottles
- Rubber boot
- Batteries (4)
- Carrying case

Specifications

pH Range: 0.00 to 14.00
 Resolution: 0.01 pH
 Accuracy: ±0.01 pH
 Calibration Points: 3 points (pH 4.01, 7.00, 10.00)
 Temp Range: 0.0 - 100.0°C
 Temp Resolution: 0.1°C
 Temp Accuracy: ±0.5°C
 Temp Calibration: Offset 0.1° increments
 Temp Compensation: Automatic / Manual (0 to 100°C)
 Power: 4 x AA Batteries
 Battery Life: 200 hours

Ion 6+ Meter #147-06

Ion Range: 0.01 - 1999 ppm
 Ion Resolution: 0.01 ppm up to 0.99 ppm
 0.1 ppm up to 199.9
 1 ppm up to 1999 ppm
 Ion Accuracy: ±1.0% of Reading
 Ion Calibration: 2 or 3 points (0.1, 1, 10, 1000 ppm)
 Millivolt: Accepts Ion Selective Electrodes (ISE)
 Millivolt Range: -1999 to +1999 mV
 mV Resolution: 1 mV
 mV Accuracy: ±0.01 pH
 mV Calibration: ±50 mV

Optional

- #147-10-1 pH Electrode, Refillable, Double Junction, Glass Body
- #147-02-2 Battery, AA
- #147-06-3 pH Electrode Saver Bottle
- #147-06-4 pH Calibration Pouch, pH 4.01
- #147-06-5 pH Calibration Pouch, pH 7.00
- #147-06-6 pH Calibration Pouch, pH 10.0
- #147-06-7 Deionized Rinse Water Pouch
- #147-10-9 Temperature Probe for #147-01 and #147-06



#147-01 - pH 5+ Meter

HACH MODEL H135 PROFESSIONAL MINILAB PH METER WITH CALIBRATION BUFFER SET

#147-11

Size: 5.5" x 1" x 0.6" (14 x 3 x 2 cm)
Weight: 1.0 lb (0.45 kg)

Features

- Silicon chip non-glass pH sensor
- Stores dry with minimal maintenance
- 1, 2, or 3 point calibration
- Automatic temperature compensation

What's Included

- Meter
- Buffer solutions (4, 7, and 10 pH)
- Case

Optional

- #147-11-1 Replacement Reference Electrode



#147-11 - H135 Professional Minilab pH Meter

HACH MODEL H260 PH METER WITH PROBE

#147-14

Features

- pH Range: -2 to +19
- Resolution: 0.1 or 0.01 pH
- Calibration: Up to five points
- Temp Compensation: Automatic or Manual

Components

- #147-14-1 Hach Model H260 pH Meter
- #147-15 pH Probe, ISFET, Stainless Steel



#147-14 - Hach Model H260 pH Meter

Laboratory - pH Analysis

POCKET PH METER

#147-16-1 ECOTESTR PH 2, SINGLE JUNCTION

#147-16-3 PHTESTR® 10, DOUBLE JUNCTION

	EcoTestr pH 2 #147-16-1	pHTestr® 10 #147-16-3
Range	-1.0 - 15.0	-1.0 - 15.0
Resolution	0.1	0.1
Accuracy	± 0.1	± 0.1
Electrode Design	Single Junction Non-Replaceable	Double Junction Replaceable
Housing	Water Dust / Proof	Water / Dust Proof
Calibration	Up to 3 Points	Up to 3 Points
Operating Temp	0° - 50°C 32° - 122°F With ATC	0° - 50°C 32° - 122°F With ATC
Battery	1.5 Volt Batteries (4) 250 Hours	1.5 Volt Batteries (4) 500 Hours
Dimensions	1.5" x 6.5"	1.5" x 6.5"
Boxed Weight	5.6 oz (159 g)	4.5 oz (125 g)

pH Indicator Strips			
Part #	Package	Range	Resolution
#147-53	Box of 100	0.0 - 14	1.0
#147-54	Box of 100	7.5 - 14	0.5

pHydrion® Papers			
Part #	Package	Range	Resolution
#147-50	Dispenser 1 Roll	1 - 11	2.0
	Dispenser 1 Roll	2 - 10	2.0
#147-51	Refill 5 Rolls	2 - 10	1.0
#147-52	Refill 5 Rolls	1 - 11	2.0
#147-60	Dispenser 1 Roll	6 - 8	0.2
	Dispenser 1 Roll	8 - 9.5	0.5
#147-61	Refill 5 Rolls	6 - 8	0.2
#147-63	Refill 5 Rolls	6 - 11	1.0
#147-70	Dispenser 1 Roll	10 - 12	0.5
	Dispenser 1 Roll	12.5 - 14	0.5
#147-80	Dispenser 1 Roll	8 - 12	0.5

Optional

#147-16-5

Replacement Sensor for 147-16-3

#147-17

Battery, 1.5 Volt



#147-16-1 - Single Junction EcoTestr pH 2 (Left)

#147-16-3 - Double Junction pHTestr® 10 (Right)



PH ELECTRODE

- #147-08** **DOUBLE JUNCTION, GLASS BODY, REFILLABLE, AMBER GLASS**
- #147-10** **SINGLE JUNCTION, EPOXY BODY, SEALED, ECONOMICAL**
- #147-10-1** **DOUBLE JUNCTION, GLASS BODY, REFILLABLE, FLUSHABLE PTFE JUNCTION**

Features

- For use with any meter with a BNC connector
- Includes electrode saver bottle to extend electrode life
- Single junction: for field, clean water, and general purpose applications
- Double junction: for dirty water, heavy metals and organics applications
- 12 mm with 3' cable

PH ANALYSIS ACCESSORIES

- #147-20** Buffer Solution, pH 4, 16 oz
- #147-20-1** Buffer Solution, pH 4, 1 gal
- #147-06-4** Buffer Solution, pH 4, Single Pouch
- #147-30** Buffer Solution, pH 7, 16 oz
- #147-30-1** Buffer Solution, pH 7, 1 gal
- #147-06-5** Buffer Solution, pH 7, Single Pouch
- #147-40** Buffer Solution, pH 10, 16 oz
- #147-40-1** Buffer Solution, pH 10, 1 gal
- #147-06-6** Buffer Solution, pH 10, Single Pouch
- #145-95-001** Capsule Set, pH 4, 7, and 10, 1 Vial of 10 Capsules Each
- #147-42** High pH Indicator Solution, 2 oz
- #147-44** High pH Indicator Solution, 8 oz
- #147-09** Reference Fill Solution for Double Junction Electrodes, KCl, 4M, 125 mL



pH Electrode

HANDHELD REFRACTOMETER, (GLYCOL AND BATTERY TESTER WITH VIEWPOINT)

#153-57

Size: 10" x 2.25" x 2.25" (25 x 6 x 6 cm)

Weight: 8 oz (227 g)

Features

- Fast and easy method for testing the freeze point of glycol-based solutions and battery charge conditions
- Automatic temperature compensation



#153-57 - Hand-held Refractometer

Laboratory - Thermometers

THERMOMETER, TYPE K, DIGITAL

#154-25

STANDARD

#154-25-5

WITH NIST CERTIFICATION

Size: 2.75" x 6" x 1.5" (7 x 15 x 4 cm)

Weight: 2 lb (0.9 kg)

Features

- Temperature range of -58° - 1,999°F (-50 - 1,093°C)
- Resolution: .1° below 200°, 1° above 200°
- Accuracy: ±0.3% of reading +2°F(+1°C)
- Low battery indicator
- LCD display
- 6 AAA batteries provide 500 hours of life
- NIST certification available upon request

What's Included

- Thermometer
- Batteries (6)

Optional

#147-02-1

Battery, AAA, Alkaline

#154-25-1

Type K Probe, 4", -418° - 1,500°F (-250° - 816°C) with 5' Coiled Cable

#154-25-2

Type K Flexible Probe, 12", -418° - 1290°F (-250° - 700°C)

Not recommended for aqueous solutions



#154-25 - Thermometer with Probe

TRACEABLE FULL SCALE THERMOMETER

#154-06

Features

- Readings updated every second
- 1 cm LCD display
- Magnetic back allows for placement on metal surfaces
- Stainless steel probe with 10' (304.8 cm) long cable and piercing tip
- 1.5 volt silver oxide battery provides 1.5 years continuous use
- Range: -58° - 500°F (-50° - 250°C)
- Resolution: 0.1° from -20° to 200, and 1° elsewhere

What's Included

- Thermometer
- Probe
- Traceable certificate
- Battery (1)



#154-06 - Thermometer, Traceable Full-Scale

OTHER THERMOMETERS

#154-24 ASTM 90C, Glass, 0° - 30°C x 0.1°C

#154-26 ASTM 34F, Glass, 77° - 221°F x 0.5°F

#154-04 Digital Long Stem, NIST Traceable, 8" Stem, -58° - 302°F (-50° - 150°C)

#154-05 Digital, 4" Probe, 14° - 392°F (-10 - 200°C)

#154-01 Dual-Scale, 5" Stem, Metal Dial, 0° - 220°F (-10° - 100°C)

#154-10 Dual-Scale, 5" Stem, Metal Dial, 50° - 500°F (0° - 250°C)

#154-15 Dual-Scale with Metal Dial, 4" Stem, 50° - 500°F (0° - 250°C)

#154-20 Dual-Scale with Metal Dial, 8" Stem, 50° - 500°F (0° - 250°C)

#154-23 General Purpose, Total Immersion, Mercury-Filled, Glass, 0° - 230°F

#154-22 Pocket, 5" Stem, 1" Dial, 0° - 220°F

#154-00 Metal Dial, 5" Stem, 0° - 220°F

#147-03 Spirit-Filled (Non-Mercury), -20° - 105°C

BALANCE ACCESSORIES

- #153-68 Weigh Boat, Disposable, Medium, 78 x 78 mm
- #153-69 Weigh Boat, Disposable, Large, 124 x 124 mm
- #166-02 Weight Set, 10 mg - 50 g
- #166-07 Attachment Weight Set for Triple Beam Balance

BATTERIES

- #147-02 9 Volt, Alkaline
- #147-02-1 AAA, Alkaline
- #147-02-2 AA, Alkaline
- #147-17 1.5 Volt, A76

BEAKERS

- #153-51-3 50 mL, Glass
- #153-51-4 100 mL, Glass
- #153-51-8 150 mL, Glass
- #153-51 250 mL, Glass
- #153-51-1 400 mL, Glass
- #130-41 400 mL, Nalgene®, Polypropylene
- #153-51-2 600 mL, Glass
- #130-55 600 mL, Nalgene®, Polypropylene
- #166-08-1 600 mL, Stainless Steel
- #153-51-5 1,000 mL, Glass
- #153-51-6 1,000 mL, Polypropylene
- #153-51-7 2,000 mL, Glass
- #120-910-054 2,000 mL, Plastic



BOOKS AND LITERATURE

- #190-20 "Drilling Fluids Technology Manual" by Mud Tech
- #190-90 OFI Testing Equipment, Inc. Product Catalog

BOTTLES, GLASS

- #297-00 1 oz (30 mL), French Square with Cap
- #297-01 2 oz (60 mL), French Square with Cap
- #297-03 8 oz (250 mL), Amber Round with Cap
- #297-04 8 oz (250 mL), Clear Paragon with Cap
- #297-05 16 oz (500 mL), Mason Jar with Cap

BOTTLES, POLY

- #297-06 1.25 oz (35 mL), White Oval Dropper with Insert
- #296-49 1 oz (30 mL), Natural Boston Round Dropper with White Cap and Natural Tip
- #297-07 2 oz (60 mL), Natural Oval Dropper with Insert
- #297-09 4 oz (125 mL), Amber Boston Round with Cap
- #297-08 4 oz (125 mL), Natural Boston Round with Cap
- #297-04-1 4 oz (125 mL), Natural Wide Mouth with Cap
- #162-77 4 oz (125 mL), Sample Bottle, Polypropylene
- #297-12 8 oz (250 mL), Amber Boston Round with Cap
- #297-10 8 oz (250 mL), Natural Boston Round with Cap
- #297-13 8 oz (250 mL), Natural Wide Mouth with Cap
- #297-11 8 oz (250 mL), White Modified Bottle with Cap
- #297-15 16 oz (500 mL), Amber Boston Round with Cap
- #297-14 16 oz (500 mL), Natural Boston Round with Cap
- #297-16 16 oz (500 mL), Natural Wide Mouth with Cap
- #297-18 32 oz (1 L), Amber Boston Round with Cap
- #297-17 32 oz (1 L), Natural Boston Round with Cap
- #297-19 32 oz (1 L), Natural Wide Mouth with Cap
- #297-21 1 gal (4 L), Amber Jug with Cap
- #297-20 1 gal (4 L), Natural Jug with Cap

BOTTLES, WASH, POLYETHYLENE

- #153-31-1 8 oz (250 mL)
- #153-31 16 oz (500 mL)



BRUSHES

- #153-01 Brush, Bottle, Wood Handle, 3" x 12"
- #153-05 Brush, Mini, 7 1/2" x 3" Curved, Stainless Steel
- #153-00 Brush for Centrifuge and Sand Content Tubes
- #153-02 Brush for Graduated Cylinder, 1 1/2" x 10 3/4"
- #153-03 Brush for Graduated Cylinder or Pipette, 1/2" x 8"
- #153-04 Brush for Pipette, 10 mL, 1/2" x 3" Bristles, 24", Wire
- #153-06 Brush for Receiver Tube, 10 mL
- #153-07 Brush for Receiver Tube, 20 mL
- #153-08 Brush for Receiver Tube, 50 mL
- #153-05-1 Brush for Retort Chamber, 1" Diameter, Stainless Steel

Laboratory - Supplies

CABLES

#130-38-5	Power Cord for Thermocup
#130-42	Cable for 2-Speed Viscometer, 12 Volt
#135-33	Cable for 6-Speed Viscometers, 6'
#152-37	Power Cord, 3 Conductor, 5-15P, C13
#152-38	Power Cord, 3 Conductor, CEE 7/VII, C13
#165-40	Cable for 115 Volt Retort
#165-40-1	Cable for 230 Volt Retort and Portable Oven
#171-82	Round Power Cord with Male Plug Only, 8'

CASES (ALPHABETICAL ORDER)

#160-02	Airplane Kit, Stainless Steel
#111-01	EP-Lubricity Tester
#170-03	Filter Press, HTHP, 175 mL, Stainless Steel
#171-81	Filter Press, HTHP, Model MB, Stainless Steel
#142-53-8	Filter Press, MB, with CO ₂ Assembly
#151-53	Garrett Gas Train
#153-16-1	Graduate Cylinder Case, 25 mL, Polycarbonate
#132-06	Hand Crank Rheometer
#161-06	HDD Case, Executive-Style
#153-52-13	Hydrometer Set
#162-01-1	International Kit, Molded Plastic
#162-72	METEOR Kit
#100-40	Mud Balance
#161-60	Mud Laboratory, MES Design, Stainless Steel
#144-35	Multi-Kit, Diagonal Design, Stainless Steel
#144-90-07	Nitrate Test Kit, Plastic
#161-02	Offshore Kit, Stainless Steel
#162-61	Oil Mud Laboratory
#163-02	Pilot Test Kit, Stainless Steel
#153-35	Pipette Case (1, 2 and 5 mL), Polycarbonate
#153-39	Pipette Case (10 mL), Polycarbonate
#165-63	Reverse Phase Extraction Kit
#144-21	Rig Laboratory Cabinet without Sink
#162-76	Tackle Box, Plastic, Plano 3780
#163-21	Tool Box, Plastic, 13" x 6 1/2" x 5 1/2"
#163-22	Tool Box, Plastic, 19 3/4" x 8 1/2" x 8 3/4"
#163-23	Tool Box, Plastic, 16 1/4" x 9" x 12 1/2"
#130-10-13-5	Viscometer, Model 800 8-Speed
#144-96	Water Analysis Kit, Stainless Steel

CENTRIFUGE TUBES

#153-19	12 cm, Glass	
	0 - 15 mL	0.1 mL
#153-21	Tube, Kolmer®, 10 mL, Glass, 12.5 cm	
	0 - 2 mL	0.1 mL
	2 - 10 mL	0.2 mL
#153-22	12.5 mL, API, 100%, Glass, 12 cm	
	0 - 3%	0.2%
	3 - 10%	0.5%
	10 - 50%	1.0%
	50 - 100%	50%
#153-23	100 mL, ASTM, Pear Shaped	
	0 - 2 mL	0.2 mL
	2 - 10 mL	1.0 mL
	10 - 25 mL	5.0 mL
	25 - 100 mL	50 mL
#153-25-20	100 mL, Short Cone, for Oil	
	0.0 - 0.5 mL	0.05 mL
	0.5 - 2.0 mL	0.1 mL
	2.0 - 3.0 mL	0.2 mL
	3.0 - 5.0 mL	0.5 mL
	5.0 - 10.0 mL	1.0 mL
	10.0 - 25.0 mL	5.0 mL
	25.0 - 100.0 mL	25.0 mL

CERAMIC FILTER DISKS, 2 1/2" x 1/4"

Part #	Mean Port Throat (µm)		Permeability (Darcy)	
	New (Mercury)	Old (Air)	New (Mercury)	Old (Air)
170-55	10	3	755 mD	400 mD
170-53-2	12	5	850 mD	750 mD
170-53-3	20	10	3 D	2 D
170-51	40	20	8 D	5 D
170-53	50	35	15 D	10 D
170-53-1	55	60	20 D	20 D
170-53-4	120	90	40 D	100 D
170-53-5	160	150	-	180 D
170-53-6	250	190	-	-

CHARGERS

- #143-05 CO₂ Bulbs, Box of 10, UN2037
- #143-08 N₂O Bulbs, Box of 10, UN1070
- #170-37 Nitrogen Cylinder, 21" x 7", Right-Hand Thread

Nitrous oxide cartridges should not be used as pressure sources for high temperature, high pressure (HTHP) filtration. Under temperature and pressure, nitrous oxide can detonate in the presence of grease, oil, or carbonaceous materials. Nitrous oxide cartridges are to be used only for Garrett Gas Train carbonate analysis.

Carbon dioxide and nitrous oxide cartridges are pressurized to approximately 900 PSI at 1 atmosphere (sea level). Therefore, they should never be placed on airplanes without proper packaging, due to the possibility of cabin de-pressurization, which may result in an explosion.

CONTAINERS

- #297-24 Cubitainer with Carton and Valve, 5 gal (20 L)
- #297-25 Pail with Lid, 1 gal (4 L)
- #297-26 Pail with Lid, 2 gal (8 L)
- #297-27 Pail with Lid, 3.5 gal (10.9 L)
- #297-28 Pail with Lid, 5 gal (30 L)
- #297-22 Solvent Can with Cap, 16 oz (500 mL), Metal
- #297-23 Solvent Can with Cap, 1 gal (4 L), Metal

CUPS



- #110-20 Measuring Cup, Beige, 1,000 mL, Plastic
- #110-30 Measuring Cup, 500 mL, Stainless Steel
- #110-40 Measuring Cup, 1,000 mL, Stainless Steel
- #110-50 Measuring Cup, 2,000 mL, Stainless Steel
- #130-21 Sample Cup for 8-Speed Viscometer, Stainless Steel
- #130-41 Beaker for Hand Crank Rheometer, 400 mL, Polypropylene
- #130-54 Sample Cup for 6-Speed Viscometers, 350 mL, Stainless Steel Scribed
- #130-55 Sample Cup for 6-Speed Viscometers, 600 mL, Polypropylene
- #131-12 Sample Cup for Ministill
- #165-16-2 Mud Sample Chamber for 50 mL Retort
- #165-31-1 Mud Sample Cup for 10 mL Retort
- #165-83-2 Mud Sample Cup for 20 mL Retort
- #169-01 Spray Cup for #169-00 Particle Size Analyzer

DRÄGER-TUBES®

- #151-18 Ammonia 5/a, Range 5 - 700 ppm
- #151-04 CO₂ 100/a, Range 100 - 3,000 ppm
- #151-03 H₂S 0.2%/A, Range 0.2 - 7 Vol.%
- #151-02 H₂S 100/a, Range 100 - 2,000 ppm
- #151-09 Dräger Hand Pump
- #151-09-1 Dräger Tube Opener

FILTERS

- #170-19 Filter Paper, Whatman #50, 2.5" (6.4 cm), 2.7 µm, Box of 100
- #140-55 Filter Paper, Whatman #50, 3.5" (9 cm), 2.7 µm, Box of 100
- #140-56 Filter Paper, Whatman #1, 4.9" (12.5 cm), 11 µm, Box of 100
- #140-56-1 Filter Paper, Whatman #40, 3.5" (9 cm), 8 µm, Box of 100
- #140-56-2 Filter Paper, Whatman #42, 3.5" (9 cm), 2.5 µm, Box of 100
- #141-22 Filter for Regulators, Felt
- #165-62 Filter for Syringe, 25 mm, 0.45 µm, PTFE
- #170-19-1 Filter, Dynalloy®, 2 ½", Stainless Steel
- #145-00-12 Filter, Millipore, 47 mm, 0.45 µm, Package of 100 UN3270
- #170-18 Screen, 325 Mesh with 60 Mesh Backup, Detachable
- #170-19-2 Glass Fiber Paper for Filter Paper Backup, 2 ½" (6.3 cm), Box of 50

FLASKS, ERLLENMEYER

Part #	Capacity (mL)	Subdivisions (mL)	Stopper
#153-50-4	25	5	0
#153-50-3	50	10	1
#153-50-1	125	25	5
#153-50	250	25	6
#153-50-2	500	50	7

FLASKS, OTHER

- #153-49 Le Chatelier with Glass Stopper for Specific Gravity, 250 mL Body, Neck Graduated 18 - 24 x 0.1 mL, Lid 2" OD x 3.5" OD Base
- #153-54 Volumetric, 100 mL, Glass
- #153-54-1 Volumetric, 250 mL, Glass

FUNNELS

- #110-10 Marsh Funnel Viscometer, Plastic
- #153-30 Funnel, 3" Diameter, Polyethylene
- #295-00-007 Funnel, 6" Stem, Glass
- #167-20 Funnel for Sand Content Kit

GAUGES

- #152-95-1 30 PSI, ¼" Bottom Connection, 4" Face
- #143-01-2 30 PSI, ⅜" Bottom Connection, 1 ½" Face
- #169-03 60 PSI, ¼" Bottom Connection, 2" Face
- #143-01-1 200 PSI, ⅜" Back Connection, 1 ½" Face
- #143-01 200 PSI, ⅜" Bottom Connection, 1 ½" Face
- #142-61 200 PSI, ¼" Bottom Connection, 2" Face
- #171-73-1 1,000 PSI, ⅜" Bottom Connection, 1 ½" Face
- #171-38 1,000 PSI, ¼" Bottom Connection, 2 ½" Face
- #171-34 1,500 PSI, ¼" Bottom Connection, 2" Face
- #171-40 1,500 PSI, ¼" Bottom Connection, 2 ½" Face
- #171-74-1 2,000 PSI, ⅜" Bottom Connection, 1 ½" Face
- #171-42 3,000 PSI, ¼" Bottom Connection, 2 ½" Face
- #171-41 5,000 PSI, ¼" Bottom Connection, 2 ½" Face

* May require special handling for shipping.

Laboratory - Supplies

GRADUATED CYLINDERS

#131-15	20 mL, 100%
#153-20	5 mL x .1 mL, TD, Glass
#153-18	10 mL x .1 mL, TC, Glass
#153-18-1	10 mL x .2 mL, TD, Glass
#153-09-3	10 mL x .2 mL, PMP, Nalgene®
#153-16	25 mL x .2 mL, TC, Glass
#153-09-4	25 mL x .5 mL, PMP, Nalgene®
#153-14	50 mL x 1 mL, TC, Glass
#153-09-5	50 mL x 1 mL, PMP, Nalgene®
#153-12	100 mL x 1 mL, TC, Glass
#153-09	250 mL x 2 mL, PMP, Nalgene®
#153-09-1	500 mL x 5 mL, PMP, Nalgene®
#153-09-2	1,000 mL x 10 mL, PMP, Nalgene®

LUBRICANTS

#100-60-32	Grease, Multi-Purpose, Mystik JT-6
#153-55	Stopcock Grease, 150 g, Silicone
#153-56	Stopcock Grease, Lubriseal, 75 g Tube
#165-44-2	Anti Seize Compound, Silver, 7g Pouch

MIXER ACCESSORIES

#152-01	Armature for Hamilton Beach® Mixer, 115 Volt
#152-02	Armature for Hamilton Beach® Mixer, 230 Volt
#152-35	Powerstat® for Variable Mixing Speeds, 115 Volt
#152-36	Powerstat® for Variable Mixing Speeds, 230 Volt
#152-40	Container for Hamilton Beach® Mixers, Stainless Steel
#152-41	Upper Agitator Button for Hamilton Beach® 1 and 3 Spindle Mixers
#152-42	Lower Agitator Button for Hamilton Beach® 1 and 3 Spindle Mixers
#152-43	Impeller Blade for Multi-Mixer
#152-44	Screw for Hamilton Beach® Lower Agitator Button
#152-51	Sound Resistant Case for Multi-Mixer, Stainless Steel

O-RINGS AND GASKETS

Aging Cells

#175-03	O-ring for OFITE Style Aging Cell, Inside, PEEK
#175-04	Gasket for Old-Style Inner Caps, Teflon®
#175-09-2	O-ring for OFITE Style Aging Cell, Inside, Viton®
#175-09-1	O-ring for OFITE Style Aging Cell, Inside, Teflon®
#175-46	O-ring for Outside of Aging Cell, Teflon®
#175-54	O-ring for Outside of Aging Cell, Buna-N
#175-62	O-ring for Teflon® Liner Plug, Viton®
#175-63	O-ring for Teflon® Liner Lid (Piston), Viton®
#170-17	O-ring for Valve Stem

Differential Sticking Tester

#150-52	Gasket for Sticking Tester, Neoprene
#150-53	Gasket for Sticking Tester, Plastic
#150-56	O-ring for Test Cell
#170-13	O-ring for Test Cell, Buna-N
#142-56	O-ring for Torque Plate
#170-17	O-ring for Valve Stem

Filter Press, API

#141-05	Gasket, ½" Thick, Neoprene
#141-05-1	Gasket, ¼" Thick, Neoprene
#140-60-09	Gasket for Half-Area Filter Press
#142-58	Gasket for MB T-Fitting and CO ₂ Head
#142-54	O-ring for 12B T-Fitting
#142-60	O-ring for 12B and MB Filter Press Cell
#140-60-01	O-ring for Bleeder Valve
#140-71	O-ring for Deadweight Hydraulic Assembly
#142-56	O-ring for Model MB and 12B Cell Coupling

Filter Press, HTHP

#170-07	O-ring for Back Pressure Receiver, 15 mL
#171-11	O-ring for Back Pressure Receiver, 100 mL
#140-60-01	O-ring for Bleeder Valve
#170-13-2	O-ring for Test Cell, Nitrile
#170-13-3	O-ring for Test Cell, Viton® 75D*
#171-190-060	O-ring for Test Cell, Viton® 90D**
#170-13-1	O-ring for Test Cell, Teflon®
#142-58	O-ring for Model MB Coupling
#171-52	O-ring for Model MB Test Cell
#171-99	O-ring for Piston, Viton® 75D**
#171-190-061	O-ring for Piston, Viton® 90D**
#700-100-096	O-ring for Piston Bleed Port, Viton® 75D**
#171-190-056	O-ring for Piston Bleed Port, Viton® 90D**
#120-910-028	O-ring for Rupture Disk, Viton® 75D**
#171-190-058	O-ring for Rupture Disk, Viton® 90D**
#170-77	O-ring for Spacer on Ceramic Filters, Nitrile
#170-17	O-ring for Valve Stem, Viton® 75D**
#171-190-057	O-ring for Valve Stem, Viton® 90D**

Garrett Gas Train

#151-13	O-ring for 1 st Chamber
#151-12	O-ring for 2 nd and 3 rd Chamber
#142-58	O-ring for Fitting
#151-11	O-ring for Flow Meter Tube
#151-10	O-ring for Dräger-tube®

Mud Balance, Pressurized

#100-70-06	O-ring for Lid
#142-54	O-ring for Top of Check Valve
#142-56	O-ring for Bottom of Check Valve
#170-07	O-ring for Plunger Assembly

Regulators

#143-00-9	O-ring for CONCOA/AIRCO Regulator
#143-02-13	O-ring for Puncture Head Assembly, CO ₂ Bulb
#143-02-14	O-ring for Puncture Head Assembly, Holder
#143-22	Gasket for Puncturing Pin

Retorts

#165-15-4	O-ring for Ultra-Torr Fitting
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* For tests up to 400°F (204.4°C)

** For tests above 400°F (204.4°C)

PH PAPER

- #147-50 pHydrion® Dispenser pH Paper, pH 2-10, 1-11
- #147-51 pHydrion® "A" pH Refill, pH 2-10, Box of 5 rolls
- #147-52 pHydrion® "B" pH Refill, pH 1-11, Box of 5 rolls
- #147-53 pH Sticks, 0 - 14, Box of 100
- #147-54 pH Sticks, 7.5 - 14, Box of 100
- #147-60 pHydrion® Dispenser pH Paper, pH 6-8, 8-9.5
- #147-61 pHydrion® pH Refill, pH 6-8, Box of 5 rolls
- #147-63 pHydrion® pH Refill, pH 6-11, Box of 5 rolls
- #147-70 pHydrion® Dispenser pH Paper, pH 10-12, 12.5-14
- #147-80 pHydrion® Dispenser pH Paper, pH 8-9.5, 10-12



PIPETTES

- #153-32 .1 mL x .01 mL, PYREX®, Case of 12
- #153-34 1 mL x .01 mL, KIMAX®
- #153-34-1 1 mL x .01 mL, Plastic
- #153-36 2 mL x .1 mL, KIMAX®
- #153-36-1 2 mL x .1 mL, Glass, Disposable, Pack of 50
- #153-38 5 mL x .1 mL, KIMAX®
- #153-40 10 mL x .1 mL, KIMAX®
- #153-40-5 25 mL x .2 mL, Disposable
- #153-10 Burette with Bottle and Bulb, Automatic, 10 mL
- #144-90-05 Dropper Pipette, 2 mL, Nalgene®
- #296-14 Eppendorf Variable Pipettor, 10 - 100 µL x .1 µL
- #296-15 Eppendorf Variable Pipettor, 100 - 1,000 µL x 1 µL
- #296-16 Pipette Tips, 1 - 200 µL Range
- #296-17 Pipette Tips, 200 - 1,000 µL Range
- #153-41 Pipette Aid (Safety Bulb)
- #153-42 Pipette Filler, up to 10 mL, Fast Release
- #153-43 Transfer Pipette, Not Graduated, 5 mL, Polyethylene

REGULATORS AND ASSEMBLIES

- #140-70 Dead Weight Hydraulic Assembly for Filter Press
- #142-00 CO₂ Pressure Assembly with Top Cap, CONCOA/AIRCO
- #142-10 CO₂ Pressure Assembly, CONCOA/AIRCO Low Pressure
- #170-04 CO₂ Pressure Assembly, CONCOA/AIRCO High Pressure
- #171-57 CO₂ Pressure Assembly, Victor, High Pressure
- #171-24 Dual N₂ Manifold, 1,350 and 750 PSI
- #143-00 Regulator, CONCOA/AIRCO, Low Pressure
- #170-08 Regulator, CONCOA/AIRCO, High Pressure
- #142-37 Regulator, Victor, Low Pressure
- #171-53 Regulator, Victor, High Pressure
- #170-36 Regulator, Victor, N₂, 200 and 3,000 PSI Gauges
- #143-07 Repair Kit, CONCOA/AIRCO
- #143-19 Repair Kit, Victor, Low Pressure
- #143-20 Repair Kit, Victor, High Pressure

RETORT RECEIVERS, VERIFIED

- #165-05 10 mL, 0 - 100%
- #165-06 20 mL, 0 - 100%
- #165-07 50 mL, 0 - 100%

SPATULAS

- #154-75 Brass Scoop, 4" Length
- #154-63 Spatula, Micro-Spoon, 9" Flat Handle
- #154-62 Spatula, Porcelain, 123 mm
- #165-34 Spatula for 10 mL Retort, 2" x 7/8" Blade
- #165-88 Spatula for 20 mL Retort, 5 1/4" x 1 1/8" Blade
- #131-28 Spatula for 50 mL Retort and Ministill, 3.75" x 1 1/8"
- #154-50 Spatula with Rounded-Tip Blade, 4" x 3/4"
- #154-60 Spatula with Rounded-Tip Blade, 6" x 1"

STIRRING BARS

- #153-53-11 Magnetic, 1/2" x 3/16"
- #153-53-6 Magnetic, 7/8" x 3/16"
- #153-53-1 Magnetic, 1" x 3/16"
- #153-53-4 Magnetic, 1 1/2" x 3/16"
- #153-53-5 Magnetic, 2" x 3/16"
- #153-53-8 Spinwedge, 1 3/4" x 1/2"

STIRRING RODS

- #153-28 4", Polyethylene,
- #168-04 6", Glass
- #168-05 10 3/4", Polyethylene

SYRINGES

- #153-60-1 1 mL, Disposable, Luer-Lok™ Tip
- #153-29 2 mL, Glass-Tip
- #153-60 3 mL, Disposable, Luer-Lok™ Tip
- #153-61 3 mL, Disposable with 20 g Needle
- #153-64 5 mL, Disposable, Luer-Lok™ Tip
- #153-65 5 mL, Disposable with 20 g Needle
- #153-29-1 5 mL, Glass-Tip
- #153-62 10 mL, Luer-Lok™ Tip, Disposable
- #153-63 10 mL, Disposable, with 20 g Needle
- #153-29-2 10 mL, Glass-Tip
- #168-02 10 mL, Veterinary
- #153-66 20 mL, Disposable without Needle
- #153-67 60 mL, Disposable without Needle
- #165-64 BD Precision Glide Disposable Needle
- #165-62 Filter for Syringe, 25 mm, 0.45 µm, PTFE

TEST TUBES

- #153-15 15 x 125 mm, ~16 mL, Glass
- #144-90-06-1 18 x 150 mm, ~28 mL, Glass
- #144-90-06 18 x 150 mm, ~29 mL, Glass with Rubber Stopper
- #153-15-1 20 x 1.2 x 150 mm, Glass
- #153-15-2 41 x 2.0 x 150 mm, Glass
- #144-90-04 Rack for 8 Test Tubes, Poly

Laboratory - Supplies

THERMOMETERS

- #154-24 ASTM 90C, Glass, 0° - 30°C x 0.1°C
- #154-26 ASTM 34F, Glass, 77° - 221°F x 0.5°F
- #154-04 Digital, NIST Traceable, 8" Stem, -58° - 302°F (-50° - 150°C)
- #154-05 Digital, 4" Probe, 14° - 392°F (-10° - 200°C)
- #154-06 Traceable, Full-Scale, Battery-Powered, -58° - 500°F (-50° - 250°C)
- #154-01 5" Stem, Metal Dial, 0° - 220°F (-10° - 100°C)
- #154-10 5" Stem, Metal Dial, 50° - 500°F (0° - 250°C)
- #154-15 4" Stem, Metal Dial, 50° - 500°F (0° - 250°C)
- #154-20 8" Stem, Metal Dial, 50° - 500°F (0° - 250°C)
- #154-23 General Purpose, Total Immersion, Mercury-Filled, Glass, 0° - 230°F
- #154-22 Pocket, 5" Stem, 1" Dial, 0° - 220°F
- #154-00 5" Stem, Metal Dial, 0° - 220°F
- #147-03 Spirit-Filled (Non-Mercury), -20° - 105°C
- #154-25 Type K, Digital, -50° - 1999°F (-50° - 1300°C)
Probe required. See page 186 for more information.

TIMERS

- #155-05 Electronic, Battery (AAA) Powered
- #155-10 30 Minute Interval
- #155-20 60 Minute Interval
- #155-25 Stopwatch, Digital
- #155-26 Stopwatch, Bodytronics
- #172-15-1 Timer for Oven, Electronic, 7 Day, 115 / 230 Volt

TITRATION DISHES

- #153-26 Polyethylene
- #153-26-1 Casserole, 140 mL Handle, Porcelain



TRANSFORMERS AND CONVERTERS

- #111-15 Transformer for EP-Lube Tester, 230 / 115 Volt
- #130-43 Powerpak, 230 / 115 to 12 Volt
- #130-74 Transformer for 6-Speed VG-Meter, 230 to 115 Volts, 1.10 Amps, 50 / 60 Hz
- #152-32 Transformer with Russian Plugs, 300 Watt, 230 to 115 Volts
- #152-35 Powerstat®, 115 Volt
- #152-36 Powerstat®, 230 Volt
- #174-21 115 / 230 Volt Voltage Converter Switch

TUBES, MISCELLANEOUS

- #151-08 Flow Meter Tube for Garrett Gas Train
- #151-01 Dispersion Tube for Garrett Gas Train, Glass
- #165-05 Receiver Tube with Certificate, 0 - 100% x 0.1%, 0 - 10 mL x 0.1 mL, 10 mL
- #165-06 Receiver Tube with Certificate, 0 - 100% x 0.1%, 0 - 20 mL x 0.1 mL, with Certificate, 20 mL
- #165-07 Receiver Tube with Certificate, 0 - 100% x 0.5%, 0 - 50 mL x 0.25 mL, 50 mL
- #167-30 Sand Content Tube, Graduated to 20%, Glass
- #166-12 Shearometer Tube, 5 g, Aluminum
- #166-10 Shearometer Tube with Weight Support, 20 g, Stainless Steel
- #299-10-4 Turbidity Tubes, Set of 4

VALVES

- #171-97 Ball Valve for PPT Cell Outlet, 1/8" NPT
- #171-98 Ball Valve for PPT Inlet Pressure Line, 1/4" NPT
- #170-32 Needle Valve, Male, 1/8" x 1/8" NPT
- #170-34 Needle Valve, Male, 1/4" x 1/4" NPT
- #171-25-1 Relief Valve for Dual Nitrogen Manifold, 750 PSI
- #171-25-2 Relief Valve for Dual Nitrogen Manifold, 1350 PSI
- #143-06 Safety Bleeder Valve, 1/4" NPT
- #171-92 Safety Relief Valve for PPT Inlet, 2000 PSI
- #171-92-1 Safety Relief Valve for PPT Inlet, 4000 PSI
- #171-25-3 Safety Relief Valve for PPT Inlet, 5500 PSI
- #175-16 Valve Stem for Aging Cells
- #170-16 Valve Stem for HTHP Test Cells
- #171-90-08 Valve Stem for PPT Cell Hydraulics Entry
- #171-90-09 Valve Stem for PPT Cell Filtrate Outlet
- #171-90-10 Valve Stem for PPT Receiver Entry

SIEVES

Sieve, Brass Frame, 3" Diameter, 1" Deep		
Part#	Mesh	Mesh Size
#167-21	4	4.75 mm (0.187")
#167-22	5	3.55 mm (0.157")
#167-23	6	3.35 mm (0.132")
#167-24	7	2.80 mm (0.111")
#167-25	8	2.36 mm (0.0937")
#167-26	10	2.00 mm (0.0787")
#167-27	12	1.70 mm (0.0661")
#167-28	14	1.40 mm (0.0555")
#167-29	16	1.18 mm (0.0469")
#167-31	18	1.00 mm (0.0394")
#167-31-1	20	850 µm (0.0331")
#167-32	25	710 µm (0.0280")
#167-32-1	30	600 µm (0.0232")
#167-33	35	500 µm (0.0197")
#167-34	40	425 µm (0.0165")
#167-35	45	355 µm (0.0138")
#167-36	50	300 µm (0.0117")
#167-37	60	250 µm (0.0098")
#167-38	70	212 µm (0.0083")
#167-39	80	180 µm (0.0070")
#167-40	100	150 µm (0.0059")
#167-41	120	125 µm (0.0049")
#167-41-1	140	106 µm (0.0041")
#167-41-2	170	90 µm (0.0035")
#167-42	200	75 µm (0.0029")
#167-42-1	230	63 µm (0.0024")
#167-43	270	53 µm (0.0021")
#167-43-1	325	45 µm (0.0017")
#167-44	400	38 µm (0.0015")
#167-45	450	32 µm (0.0013")

US Sieve No.	Mesh per Linear Inch	Opening (in)	Opening (µm)
50	52.38	0.117	297
70	72.45	0.0083	210
100	101.01	0.0059	149
140	142.85	0.0041	105
200	200.00	0.0029	74
270	270.26	0.0021	53
325	323.00	0.0017	44

*1 Micron (µm) = 1/25,400" or 1/1,000 mm

Sieve, Brass Frame, 8" Diameter, 2" Deep		
Part#	Mesh	Mesh Size
#167-48	1	25.4 mm (1.0")
#167-49	2	22.2 mm (0.875")
#167-50	3	19.1 mm (0.750")
#167-51	4	15.9 mm (0.625")
#167-52	5	12.7 mm (0.500")
#167-53	6	9.5 mm (0.375")
#167-54	7	6.3 mm (0.250")
#167-55	8	4.75 mm (0.187")
#167-56	10	3.55 mm (0.157")
#167-57	12	3.35 mm (0.132")
#167-58	14	2.80 mm (0.111")
#167-59	16	2.36 mm (0.0937")
#167-60	18	2.00 mm (0.0787")
#167-61	20	1.70 mm (0.0661")
#167-62	25	1.40 mm (0.0555")
#167-63	30	1.18 mm (0.0469")
#167-64	35	1.00 mm (0.0394")
#167-65	40	850 µm (0.0331")
#167-66	45	710 µm (0.0280")
#167-67	50	600 µm (0.0232")
#167-68	60	500 µm (0.0197")
#167-69	70	425 µm (0.0165")
#167-70	80	355 µm (0.0138")
#167-71	100	300 µm (0.0117")
#167-72	120	250 µm (0.0098")
#167-73	140	212 µm (0.0083")
#167-74	170	180 µm (0.0070")
#167-75	200	150 µm (0.0059")
#167-76	230	125 µm (0.0049")
#167-77	270	106 µm (0.0041")
#167-78	325	90 µm (0.0035")
#167-79	400	75 µm (0.0029")
#167-80	450	63 µm (0.0024")
#167-81	500	53 µm (0.0021")
#167-82	600	45 µm (0.0017")
#167-83	700	38 µm (0.0015")

Accessories

- #167-84 Sieve Pan (Collector), 8" x 2" (20 x 5 cm), Brass
- #167-85 Sieve Cover, 8" (20.3 cm) Diameter, Brass

Sieve Shaker

- #167-86 Ro-Tap, for Six 8" Diameter Sieves, 1,750 RPM, 115 Volt, 60 Hz
- #167-87 Ro-Tap, for Six 8" Diameter Sieves, 1,450 RPM, 230 Volt, 50 Hz

Reagents

*Acetic Acid / Potassium Acetate Buffer UN3265

#216-00 16 oz (500 mL)

*Acetic Acid, Glacial UN2789

#230-25 8 oz (250 mL)

#230-26 32 oz (1 L)

*Acetone UN1090

#280-31 16 oz (500 mL)

Aerosol

#131-16 ½ oz (15 mL)

Aluminum Chloride, 0.1M

#290-03 8 oz (250 mL)

*Ammonium Fluoride, 10% Solution, UN3287

#211-00 32 oz (1 L)

*Ammonium Hydroxide Concentrate, UN2672

#212-00 16 oz (500 mL)

*Ammonium Persulfate, UN1444

#214-00 100 gram

*Aniline Solution, UN1547

#145-81 2 oz (60 mL)

#145-84 8 oz (250 mL)

API Evaluation Base Clay

#191-00 5 gal (20 L)

API Test Calibration Barite

#191-02 2 gal (8 L)

API Test Standard Calibration/Reference Bentonite

#191-01 2 gal (8 L)

Barium Chloride, Standard Solution

#285-36-10 8 oz (250 mL)

#285-36 16 oz (500 mL)

*Barium Chloride, 10% Solution, Neutralized UN3287

#285-07 8 oz (250 mL)

#285-07-10 16 oz (500 mL)

*Barium Chloride, Saturated Solution, UN3287

#285-08 8 oz (250 mL)

#285-08-10 16 oz (500 mL)

#285-12-1 1 gal (3.785 L)

Boric Acid, 2% Solution

#230-22 8 oz (250 mL)

#230-21 16 oz (500 mL)

#230-20 32 oz (1 L)

Boric Acid, 3% Solution

#230-23 8 oz (250 mL)

*Bromide Water UN1744

#144-941 16 oz (500 mL)

Bromocresol Green Indicator Solution

#246-00 2 oz (60 mL)

#246-01 8 oz (250 mL)

#246-00-1 1 gal (3.785 L)

Bromocresol Green - Methyl Orange Indicator Solution

#240-05 2 oz (60 mL)

#240-06 8 oz (250 mL)

Bromocresol Green - Methyl Red Indicator Solution

#245-00 2 oz (60 mL)

#245-01 8 oz (250 mL)

#245-00-1 1 gal (3.785 L)

Bromophenol Blue Indicator Solution

#285-34 2 oz (60 mL)

Buffer Powder, Hardness

#205-21 100 g

*Buffer Solution, Hardness, Versenate®, Ammonium Hydroxide UN2672

#205-04-01 1 oz (30 mL)

#205-04 2 oz (60 mL)

#205-05 8 oz (250 mL)

#205-05-10 16 oz (500 mL)

#205-05-20 32 oz (1 L)

#205-04-2 64 oz (1.85 L)

#205-04-3 2.5 gal (10 L)

#205-04-5 5 gal (20 L)

Buffer Solution, pH 4, Standard @ 75°F (25°C)

#147-20 16 oz, (500 mL)

#147-20-1 1 gal, (3.785 L)

#147-06-4 Single Pouch

Buffer Solution, pH 7, Standard @ 75°F (25°C)

#147-30 16 oz, (500 mL)

#147-30-1 1 gal, (3.785 L)

#147-06-5 Single Pouch

Buffer Solution, pH 10, Standard @ 75°F (25°C)

#147-40 16 oz, (500 mL)

#147-40-1 1 gal, (3.785 L)

#147-06-6 Single Pouch

*Calcium Buffer Solution, Versenate®, Sodium Hydroxide UN1824

#205-14-01 1 oz (30 mL)

#205-14 2 oz (60 mL)

#205-14-6 8 oz (250 mL)

#205-14-4 16 oz (500 mL)

#205-14-2 64 oz (1.85 L)

#205-14-3 2.5 gal (10 L)

#205-14-5 5 gal (20 L)

Calcium Carbonate Powder, Precipitated

#285-00 35 gram

#285-00-1 100 gram

Calcium Chloride, Anhydrous

#253-50 500 gram

Calcium Chloride, 2% Solution

#285-15 16 oz, (500 mL)

Calcium Chloride, Saturated

#153-59-4 4 oz (120 mL)

Calcium Hydroxide - Low Nitrate

#144-90-01 ½ lb Jar

* May require special handling for shipping.

Calcium Indicator Solution

#250-00	2 oz, (60 mL)
#250-02	8 oz, (250 mL)
#250-00-1	1 gal, (3.785 L)
#250-01	Antifreeze, 2 oz, (60 mL)
#250-03	Antifreeze, 8 oz, (250 mL)
#250-01-1	Antifreeze, 1 gal, (3.785 L)

*Calcium Nitrate Crystals, UN1454

#253-51	500 g
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*Calcium Nitrate Solution, Saturated UN3139

#153-59-5	4 oz (120 mL)
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Calcium Sulfate, Anhydrous

#285-06	58 g
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Calcium Titration Solution, No. 1

#205-22	2 oz (60 mL)
#205-24	16 oz (500 mL)

*Calcium Titration Solution, No. 2 UN3287

#205-23	2 oz (60 mL)
#205-25	16 oz (500 mL)

Calcon Powder

#205-26	40 g
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Calibration Fluid, Silicone, Certified

#132-84	20 cP, 16 oz (500 mL)
#132-81	50 cP, 16 oz (500 mL)
#132-80	100 cP, 16 oz (500 mL)
#132-83	200 cP, 16 oz (500 mL)
#132-83-1	200 cP, 1 gal (3.785 L)
#132-82	500 cP, 16 oz (500 mL)

CalVer® 2 Indicator Powder

#210-00	10 g
#210-00-2	20 g
#210-00-1	100 g

*Citric Acid, 2M, Demulsifier, IPA Solution UN1219

#151-20-1	16 oz (500 mL)
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Congo Red Solution

#221-00	2 oz (60 mL)
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Cresol Red Indicator Solution

#290-02	2 oz (60 mL)
#290-02-02	8 oz (250 mL)
#290-02-1	1 gal (3.785 L)

Defoamer, Octyl Octanol Alcohol

#151-17	2 oz (60 mL)
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Defoamer, Silicone Solution

#205-50	2 oz (60 mL)
#205-51	8 oz (250 mL)

Deionized Water

#206-03	2 oz (60 mL)
#206-00	4 oz (120 mL)
#206-01	8 oz (250 mL)
#206-02	16 oz (500 mL)
#206-04	32 oz (1 L)
#206-05	.5 gal (2 L)
#206-06	1 gal (3.785 L)
#206-07	2.5 gal (10 L)
#206-08	5 gal (20 L)
#147-06-7	Rinse Water Single Pouch

Dispersant Solution

#205-30	32 oz (1 L)
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Eriochrome Black T

#205-28	25 gram
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*Ethanol (Ethyl Alcohol) UN1987

#280-32	32 oz (1 L)
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Ethylene Glycol

#152-55-4	32 oz (1 L)
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Fluoride Ion Solution, 0.0100M

#216-02	32 oz (1 L)
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Fluoride Ion Solution, 0.0010M

#216-03	32 oz (1 L)
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*Formaldehyde, 4% Solution UN2209

#213-00	32 oz (1 L)
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Heater Bath Oil

#130-78-25	16 oz (500 mL)
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High pH Indicator Solution

#147-42	2 oz (60 mL)
#147-44	8 oz (250 mL)

Hydraulic Oil

#171-96-1	32 oz (1 L)
#171-96-2	1 gal (3.785 L)

Hydrochloric Acid Solution, .02 N (N/50)

#275-04	8 oz (250 mL)
#275-04-02	16 oz (500 mL)
#275-02-1	1 gal (3.785 L)
#275-05-1	Antifreeze, 1 gal (3.785 L)

Hydrochloric Acid Solution, .1 N (N/10)

#275-02	8 oz (250 mL)
#275-10	16 oz (500 mL)

Hydrochloric Acid Solution, .2 N (N/5)

#275-06	8 oz (250 mL)
#275-06-2	64 oz (1.85 L)

*Hydrochloric Acid Solution, .5 N (N/2) UN1789

#290-01	2 oz (60 mL)
#290-01-02	8 oz (250 mL)

*Hydrochloric Acid Solution, 1 N UN1789

#275-08-1	8 oz (250 mL)
#275-08	32 oz (1 L)
#275-08-2	64 oz (1.85 L)

* May require special handling for shipping.

Reagents

***Hydrochloric Acid Solution, 5 N UN1789**

#275-12 8 oz (250 mL)
#275-09 32 oz (1 L)

***Hydrochloric Acid, 10% Solution UN1789**

#275-03 8 oz (250 mL)
#275-03-02 16 oz (500 mL)

***Hydrochloric Acid 15% Solution UN1789**

#275-07-02 8 oz (250 mL)
#275-07 32 oz (1 L)

***Hydrochloric Acid 20% Solution UN1789**

#275-11 16 oz (500 mL)

***Hydrochloric Acid 37% Solution UN1789**

#275-00 2 oz (60 mL)
#275-00-02 16 oz (500 mL)
#275-01 32 oz (1 L)

Hydrogen Peroxide 3% Solution

#200-10-1 2 oz (60 mL)
#200-10 4 oz (120 mL)
#200-11 8 oz (250 mL)
#200-12 16 oz (500 mL)
#200-13 32 oz (1 L)
#200-09-1 1 gal (3.785 L)

Indicator Powder, Hardness

#205-20 100 g

Indicator Solution (Calmagite), Versenate® Hardness

#205-02 2 oz (60 mL)
#205-02-4 8 oz (250 mL)
#205-02-2 16 oz (500 mL)
#205-02-3 32 oz (1 L)
#205-02-1 1 gal (3.785 L)
#205-03 Antifreeze, 2 oz (60 mL)
#205-03-3 Antifreeze, 32 oz (1 L)
#205-03-1 Antifreeze, 1 gal (3.785 L)

Iodine Titrating Solution

#145-553 8 oz (250 mL)

Iron Buffer Solution

#285-40 2 oz (60 mL)
#285-41 8 oz (250 mL)
#285-42 1 gal (3.785 L)

***Iron Indicator Solution UN1993**

#285-37 2 oz (60 mL)
#285-38 8 oz (250 mL)
#285-39 1 gal (3.785 L)

***Iron Sulfide Detection Solution UN2922**

#280-02 2 oz (60 mL)

***Isopropyl Alcohol, UN1219**

#165-68 32 oz (1 L)
#280-10 1 gal (3.785 L)
#280-10-5 5 gal (20 L)

***Isopropyl Alcohol (99%) - Deionized Water Solution, 1:1 Mix UN1219**

#280-15 32 oz (1 L)

Magnesium Chloride, Standard Solution

#285-35 8 oz (250 mL)

Manver Indicator Solution

#205-27 2 oz (60 mL)
#205-27-02 8 oz (250 mL)

Methylene Blue Solution, 1 mL = 0.01 ME

#200-01-1 4 oz (120 mL)
#200-01 8 oz (250 mL)
#200-03 16 oz (500 mL)
#200-05 32 oz (1 L)
#200-07 1 gal (3.785 L)
#200-07-5 5 gal (20 L)
#200-02 Antifreeze, 8 oz (250 mL)
#200-04 Antifreeze, 16 oz (500 mL)
#200-06 Antifreeze, 32 oz (1 L)
#200-08 Antifreeze, 1 gal (3.785 L)

Methyl Orange Indicator Solution

#240-00 2 oz (60 mL)
#240-02 8 oz (250 mL)
#240-00-2 32 oz (1 L)
#240-00-1 1 gal (3.785 L)
#240-01 Antifreeze, 2 oz (60 mL)
#240-03 Antifreeze, 8 oz (250 mL)
#240-01-1 Antifreeze, 1 gal (3.785 L)

Methyl Purple Indicator Solution

#240-04 2 oz (60 mL)
#240-04-02 8 oz (250 mL)
#240-04-1 1 gal (3.785 L)

Methyl Red Indicator Solution

#241-00 2 oz (60 mL)
#241-01 8 oz (250 mL)
#241-00-2 64 oz (1.85 L)

Mineral Oil

#120-001 1 gal (3.785 L)

Mineral Oil, SO® (Shell Ondina®)

#120-003 1 gal (3.785 L)

Nitrate Test Reagent, NitraVer® 6, 0 - 0.4 mg/L

#144-91 Package of 100

Nitrite Test Reagent, NitraVer® 3, 0 - 0.5 mg/L

#144-92 Package of 100

***Nitric Acid Solution, 0.1 N (N/10), UN2031**

#270-05 8 oz (250 mL)

***Nitric Acid Solution, 1 N, UN2031**

#270-02 1 oz (30 mL)
#270-01 8 oz (250 mL)

***Nitric Acid Solution, 3 N, UN2031**

#270-00 8 oz (250 mL)

***Orthophosphoric Acid Solution, UN1805**

#144-942 8 oz (250 mL)

* May require special handling for shipping.

Paraformaldehyde Solution "A"

#145-301 2 oz (60 mL)
#145-311 Antifreeze, 2 oz (60 mL)

Paraformaldehyde Solution "B"

#145-302 2 oz (60 mL)
#145-312 Antifreeze, 2 oz (60 mL)

Paraformaldehyde Solution "C"

#145-303 2 oz (60 mL)
#145-313 Antifreeze, 2 oz (60 mL)

Paraformaldehyde Solution "D"

#145-304 2 oz (60 mL)
#145-314 Antifreeze, 2 oz (60 mL)

Phenol Red Serum, (Aerobic Bacteria Culture)

#180-36 10 cc

*Phenol Solution, 5% UN2821

#144-943 8 oz (250 mL)

Phenolphthalein Indicator Solution

#220-00 2 oz (60 mL)
#220-01 8 oz (250 mL)
#220-02 16 oz (500 mL)
#220-03 32 oz (1 L)
#220-00-1 1 gal (3.785 L)

Potassium Chloride Solution

#285-11 4 oz (120 mL)

Potassium Chromate Solution

#215-00 2 oz (60 mL)
#215-02 8 oz (250 mL)
#215-04 16 oz (500 mL)
#215-05 32 oz (1 L)
#215-00-1 1 gal (3.785 L)
#215-01 *Antifreeze, 2 oz (60 mL) UN1993
#215-03 *Antifreeze, 8 oz (250 mL) UN1993
#215-01-1 *Antifreeze, 1 gal (3.785 L) UN1993

*Potassium Hydroxide, 25% Solution UN1814

#217-00 16 oz (500 mL)

*Potassium Hydroxide, 0.1 N (N/10), in Methanol, UN1230

#285-43 8 oz (250 mL)
#217-05 16 oz (500 mL)

*Potassium Hydroxide, 8 N, UN1814

#253-56 2 oz (60 mL)
#253-57 4 oz (120 mL)
#253-55 16 oz (500 mL)
#253-55-2 64 oz (1.85 L)

Potassium Iodide, 5% Solution

#145-72 8 oz (250 mL)

Potassium Iodide Crystals

#144-944 50 gram

Potassium Iodide - Iodate Solution

#145-554 8 oz (250 mL)

*Potassium Nitrate, Saturated UN3139

#153-59-6 4 oz (120 mL)

*Potassium Nitrate Crystals UN1486

#253-53 500 gram

*Propylene Glycol Normal Propyl Ether (PNP) UN1993

#280-30-02 16 oz (500 mL)
#280-30-01 32 oz (1 L)
#280-30 1 gal (3.785 L)
#280-30-5 5 gal (20 L)

QAS (Quaternary Ammonium Salt) Solution

#285-32 16 oz (500 mL)

Reinecke Salt (Ammonium Reineckate), in 1 oz French Square Bottle with Cap

#295-21 0.75 gram

Rev Dust

#191-10 50 lb Bag

*Silver Nitrate Crystals, UN1493

#265-15 1 lb (453.6 g)

Silver Nitrate Solution, 0.001 g Cl/mL, 0.0282 N, 1,000 ppm

#265-12 4 oz (120 mL)
#265-00 8 oz (250 mL)
#265-02 16 oz (500 mL)
#265-04 32 oz (1 L)
#265-00-1 1 gal (3.785 L)
#265-01 Antifreeze, 8 oz (250 mL)
#265-03 Antifreeze, 16 oz (500 mL)
#265-05 Antifreeze, 32 oz (1 L)
#265-01-1 Antifreeze, 1 gal (3.785 L)

Silver Nitrate, 0.141 N

#265-14 16 oz (500 mL)

Silver Nitrate Solution, 0.01 g Cl/mL, 0.282 N, 10,000 ppm

#265-13 4 oz (120 mL)
#265-06 8 oz (250 mL)
#265-08 16 oz (500 mL)
#265-10 32 oz (1 L)
#265-06-1 1 gal (3.785 L)
#265-07 Antifreeze, 8 oz (250 mL)
#265-09 Antifreeze, 16 oz (500 mL)
#265-11 Antifreeze, 32 oz (1 L)
#265-07-1 Antifreeze, 1 gal (3.785 L)

Sodium Chloride, Crystals

#253-52 500 gram

Sodium Chloride, 10,000 ppm Cl⁻

#235-00 4 oz (120 mL)

Sodium Chloride, Saturated

#153-59-7 4 oz (120 mL)

Sodium Chromate Solution

#145-401 "A", 2 oz (60 mL)
#145-402 "B", 2 oz (60 mL) UN1789
#145-403 "C", 2 oz (60 mL)

Sodium Hexametaphosphate, Crystals

#205-41 500 g

Sodium Hexametaphosphate, 10% Solution

#205-40 32 oz (1 L)

* May require special handling for shipping.

Reagents

Sodium Hydroxide Pellets, UN1823

#260-02 2 oz (60 g)

Sodium Hydroxide Solution, .02 N (N/50)

#285-44 2 oz (60 mL)

#285-45 8 oz (250 mL)

Sodium Hydroxide Solution, .1 N (N/10)

#260-00 2 oz (60 mL)

#260-03 8 oz (250 mL)

#260-01 16 oz (500 mL)

#260-00-1 1 gal (3.785 L)

#260-02-1 Antifreeze, 1 gal (3.785 L)

Sodium Hydroxide Solution, .2 N (N/5)

#260-08 8 oz (250 mL)

#260-08-2 64 oz (1.85 L)

Sodium Hydroxide Solution, 1 N UN1824

#260-05-4 4 oz (120 mL)

#260-05 8 oz (250 mL)

#260-05-1 16 oz (500 mL)

#260-05-6 32 oz (1 L)

#260-05-2 64 oz (1.85 L)

#260-05-3 2.5 gal (10 L)

#260-05-5 5 gal (20 L)

Sodium Hydroxide Solution, 5 N UN1824

#285-33-01 4 oz (120 mL)

#285-33 8 oz (250 mL)

#285-33-1 16 oz (500 mL)

#285-33-2 64 oz (1.85 L)

#285-33-3 2.5 gal (10 L)

#285-33-5 5 gal (20 L)

Sodium Hydroxide Solution, 6 N UN1824

#260-06 8 oz (250 mL)

#260-06-1 32 oz (1 L)

Sodium Hydroxide Solution, 8 N UN1824

#260-10 2 oz (60 mL)

#260-07 8 oz (250 mL)

#260-07-1 16 oz (500 mL)

Sodium Hydroxide, 15% Solution UN1824

#260-09 4 oz (120 mL)

Sodium Hypochlorite Solution, UN1791

#261-00 8 oz (250 mL)

Sodium Perchlorate Solution, UN3139

#285-13 8 oz (250 mL)

#285-10 16 oz (500 mL)

#285-14 32 oz (1 L)

#285-13-2 64 oz (1.85 L)

Sodium Sulfate, Anhydrous

#145-82 28 gram

Sodium Sulfide, 10% Solution

#262-00 8 oz (250 mL)

Sodium Sulfite, 0.05% Solution

#145-71 8 oz (250 mL)

Sodium Thiosulfate Solution, 0.01 N (N/100)

#262-05 8 oz (250 mL)

Sodium Thiosulfate Solution, 0.1 N (N/10)

#262-06 8 oz (250 mL)

Stannic Chloride, 10% Solution UN3264

#290-04 16 oz (500 mL)

#290-04-2 64 oz (1.85 L)

Starch Indicator Solution

#145-551 2 oz (60 mL)

STPB (Sodium Tetraphenylborate) Solution

#285-31 16 oz (500 mL)

Sulfate Indicator Solution UN1789

#255-00 2 oz (60 mL)

#255-02 8 oz (250 mL)

#255-04 32 oz (1 L)

#255-01 Antifreeze, 2 oz (60 mL)

#255-03 Antifreeze, 8 oz (250 mL)

Sulfate Reducer Vials, (Anaerobic Bacteria Culture)

#180-38 10 cc

Sulfide Buffer Solution UN1789

#145-552 2 oz (60 mL)

Sulfide Ion Solution

#145-501 "A", 2 oz (60 mL)

#145-502 "B", 2 oz (60 mL) UN1789

#145-503 "C", 2 oz (60 mL)

Sulfuric Acid, 0.02 N (N/50)

#230-17-01 1 oz (30 mL)

#230-17 4 oz (120 mL)

#230-08 8 oz (250 mL)

#230-04 16 oz (500 mL)

#230-06 32 oz (1 L)

#230-08-2 64 oz (1.85 L)

#230-08-3 2.5 gal (10 L)

#230-08-5 5 gal (20 L)

#230-09 Antifreeze, 8 oz (250 mL)

#230-05 Antifreeze, 16 oz (500 mL)

#230-07 Antifreeze, 32 oz (1 L)

#230-09-2 Antifreeze, 64 oz (1.85 L)

#230-09-3 Antifreeze, 2.5 gal (10 L)

#230-09-5 Antifreeze, 5 gal (20 L)

Sulfuric Acid, 0.1 N (N/10)

#230-00-01 1 oz (30 mL)

#230-00 2 oz (60 mL)

#230-16 4 oz (120 mL)

#230-10 8 oz (250 mL)

#230-02 16 oz (500 mL)

#230-18 32 oz (1 L)

#230-00-2 64 oz (1.85 L)

#230-00-3 2.5 gal (10 L)

#230-00-5 5 gal (20 L)

#230-01 Antifreeze, 2 oz (60 mL)

#230-11 Antifreeze, 8 oz (250 mL)

#230-03 Antifreeze, 16 oz (500 mL)

#230-01-2 Antifreeze, 64 oz (1.85 L)

#230-01-3 Antifreeze, 2.5 gal (10 L)

#230-01-5 Antifreeze, 5 gal (20 L)

* May require special handling for shipping.

Sulfuric Acid, 5 N, UN2796

#230-15-01	1 oz (30 mL)
#230-15	2 oz (60 mL)
#230-12	4 oz (120 mL)
#230-13	8 oz (250 mL)
#230-13-1	16 oz (500 mL)
#230-14	32 oz (1 L)
#230-12-2	64 oz (1.85 L)
#230-12-3	2.5 gal (10 L)
#230-12-5	5 gal (20 L)

THI-2000 Total Indicator Solution

205-19	2 oz (60 mL)
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Thymolphthalein Indicator Solution

#225-00	2 oz (60 mL)
#225-01	8 oz (250 mL)
#225-02	16 oz (500 mL)
#225-03	32 oz (1 L)

Triethanolamine : Tetraethylenepentamine : Water (1:1:2), Masking Agent

#261-55-01	1 oz (30 mL)
#261-55	2 oz (60 mL)
#261-50	16 oz (500 mL)

Triethanolamine, 10% Solution

#205-55	32 oz (1 L)
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Titration Solution (EDTA), Hardness, Versenate®, 2 EPM, 1 mL = 40 mg/L Ca²⁺, .001M

#205-15	4 oz (120 mL)
#205-06	8 oz (250 mL)
#205-00	16 oz (500 mL)
#205-16	32 oz (1.85 L)
#205-00-1	1 gal (3.785 L)
#205-07	Antifreeze, 8 oz (250 mL)
#205-01	Antifreeze, 16 oz (500 mL)
#205-07-1	Antifreeze, 1 gal (3.785 L)

Titration Solution (EDTA), Hardness, Versenate®, 20 EPM, 1 mL = 400 mg/L Ca²⁺, .01M

#205-08	4 oz (120 mL)
#205-10	8 oz (250 mL)
#205-12	16 oz (500 mL)
#205-17	32 oz (1 L)
#205-08-1	1 gal (3.785 L)
#205-09	Antifreeze, 4 oz (120 mL)
#205-11	Antifreeze, 8 oz (250 mL)
#205-13	Antifreeze, 16 oz (500 mL)
#205-09-1	Antifreeze, 1 gal (3.785 L)

Titration Solution (EDTA), Hardness, Versenate®, 200 EPM, 1 mL = 4,000 mg/L, .1M

#205-17-1	4 oz (120 mL)
#205-17-2	8 oz (250 mL)
#205-17-3	16 oz (500 mL)
#205-17-4	32 oz (1 L)
#205-17-5	1 gal (3.785 L)

Wetting Agent

#280-00	1 oz (30 mL)
#280-00-1	1 gal (3.785 L)
#280-01	Antifreeze, 1 oz (30 mL)

Xylene/IPA (Isopropanol) Solution, 1:1 mix, UN1993

#280-25	1 gal (3.785 L)
#280-25-5	5 gal (20 L)

Xylene Solution, UN1307

#280-20	1 gal (3.785 L)
#280-20-5	5 gal (20 L)

* May require special handling for shipping.

Reagents

*United Parcel Service (UPS) will not ship
Hazardous Chemicals DOT Shipping Requirements

Reagent Name	UN#	Packing Group	Hazard Class	NFPA Rating		
				Health	Flammability	Reactivity
Acetic Acid, Glacial	UN2789	II	8	3	2	0
Acetic Acid, Potassium Acetate Buffer	UN3265	II	8	3	2	0
Acetone	UN1090	II	3	2	3	0
Ammonium Fluoride, 10% Solution	UN3287	III	6.1	3	0	0
Ammonium Hydroxide, Concentrated Solution	UN2672	III	8	3	1	0
Ammonium Persulfate	UN1444	III	5.1	3	0	3
Aniline Solution	UN1547	II	6.1	3	2	0
Arcosolv® PNP Solution	UN1993	III	3.0	1	2	0
Barium Chloride, 10%	UN3287	III	6.1	2	0	0
Barium Chloride (Saturated)	UN3287	III	6.1	2	0	0
Bromine Water	UN1744	I	8	U	0	0
Buffer Solution, Hardness	UN2672	III	8	3	1	2
Calcium Buffer Solution	UN1824	III	8	3	0	1
Calcium Nitrate	UN1454	III	5.1	2	0	3
Calcium Nitrate, Saturated	UN3139	III	5.1	2	0	3
Calcium Titration Solution II	UN3287	I	6.1	3	0	1
Citric Acid, Demulsifier, IPA Solution	UN1219	II	3	2	4	0
Ethanol (Ethyl Alcohol)	UN1987	II	3	2	3	0
Formaldehyde Solution	UN2209	III	3	2	0	1
Hydrochloric Acid, 0.5 N - 37%	UN1789	II	8	3	0	0
IPA/Xylene	UN1993	II	3	3	2	3
Iron Sulfide Detection Solution	UN2922	II	8	3	0	0
Isopropyl Alcohol	UN1219	II	3	2	4	0
Isopropyl Alcohol (99%) / Deionized Water	UN1219	II	3	2	4	0
Nitric Acid, 1 and 3 N	UN2031	II	8	3	0	0
Orthophosphoric Acid	UN1805	III	8	3	0	0
Phenol Solution, 5%	UN2821	II	6.1	3	2	1
Potassium Chromate, AF	UN1230	II	3	3	2	1
Potassium Hydroxide 0.1 N in Methanol	UN1230	II	3	1	3	0
Potassium Hydroxide, 8.0 N	UN1814	II	8	3	0	1
Potassium Hydroxide, 25% Solution	UN1814	II	8	3	0	1
Potassium Nitrate, Crystals	UN1486	III	5.1	1	0	3
Potassium Nitrate, Saturated	UN3139	III	5.1	1	0	3
Propylene Glycol Normal Propyl Ether (PNP)	UN1993	III	3	1	2	0
Silver Nitrate Crystals	UN1493	II	5.1	4	0	1
Sodium Chromate B Solution	UN1789	II	8	3	0	0
Sodium Hydroxide Pellets	UN1823	II	8	3	0	1
Sodium Hydroxide, 1.0 N, 2.0 N	UN1824	II	8	3	0	0
Sodium Hydroxide, 15%,20%,6 N,8 N	UN1824	II	8	3	0	1
Sodium Hydroxide Solution, AF	UN1824	II	3	2	3	1
Sodium Hypochlorite Solution	UN1791	III	8	3	0	1
Sodium Perchlorate Solution	UN3139	II	5.1	2	0	2
Stannic Chloride, 10%	UN3264	II	8	2	0	1
Sulfate Indicator Solution	UN1789	III	8	2	0	0
Sulfide Buffer Solution	UN1789	II	8	3	0	0
Sulfide Ion "B" Solution	UN1789	II	8	3	0	0
Sulfuric Acid, 5 N	UN2796	II	8	3	0	2
Xylene	UN1307	III	3	2	3	0

Packing Groups	Hazard Class	Health	Flammability	Reactivity
Group I - Great Danger	3 = Flammable Liquids	0 = Ordinary	0 = Will not burn	0 = Stable: not reactive with water
Group II - Medium Danger	5.1 = Oxidizer	1 = Slight Hazard	1 = Ignites if preheated	1 = Unstable if heated
Group III - Minor Danger	6.1 = Toxic Substance	2 = Hazardous	2 = Ignites if moderately heated	2 = Violent chemical heated
	8 = Corrosive	3 = Extreme Danger	3 = Ignites at most ambient conditions	3 = Shock and heat may detonate
	9 = Miscellaneous	4 = Deadly	4 = Burns readily at ambient conditions	

INDICATOR SOLUTIONS

Some reagents, when in solution, change color when the pH of the solution reaches a certain level. The pH range over which the reagent changes color is both narrow and exact, making it useful for colorimetric pH testing. No two indicators change color in exactly the same pH range. Below is a list of the common indicators used for pH determination.

Bromocresol Green

Yellow - 4.0 / Blue - 5.4

Bromocresol Green - Methyl Red

Pink - 4.6 / BlueGreen - 5.2

Bromophenol Blue

Yellow - 3.0 / Blue - 4.6

Calmagite

Red - Ca^{+2} - Mg^{+2} / Blue - EDTA

Congo Red

Blue - 3.0 / Red - 5.0

Cresol Red

Orange - 2.0 / Yellow - 3.0 / Red - 8.8

Methyl Orange

Pink - 3.2 / Yellow - 4.4

Methyl Purple

Purple - 4.8 / Green - 5.4

Methyl Red

Pink - 4.2 / Yellow - 6.2

Phenolphthalein, 0.5%

Colorless - 8.0 / Pink - 10.0

Phenol Red, 0.02%

Yellow - 6.8 / Red - 8.2

Potassium Chromate

Yellow - xs Cl^- / Red - xs Ag^+

Starch Indicator

Colorless = No Iodine / Blue = Iodine

Thymolphthalein, 0.05%

Colorless - 9.3 / Blue - 10.5

Water Hardness

Red - Ca^{+2} - Mg^{+2} / Blue - EDTA

COMMON METRIC CONVERSIONS

Liquid

1 fl oz = 29.57 mL

2 fl oz = 59.15 mL

4 fl oz = 118.29 mL

8 fl oz = 236.59 mL

16 fl oz = 1 pint = 473.18 mL

32 fl oz = 1 quart = 946.35 mL

128 fl oz = 1 gallon = 3,785.41 mL

Length

1 micron (μm) = 0.001 mm = $\frac{1}{25400}$ inch

10 mm = 1 cm = 0.394 inch

25.4 mm = 2.54 cm = 1 inch

30.48 cm = 0.3048 meter = 1 foot

39.37 inch = 1.094 yards = 1 meter

1,000 meters = 1 kilometer = 0.621 mile

Weight

.0353 oz = 1 g

1 oz = 28.35 g

2 oz = 56.70 g

8 oz = 226.8 g

16 oz = 1 lb = 453.6 g = .454 kg

Temperature

$^{\circ}\text{C} = (^{\circ}\text{F} - 32) \times \frac{5}{9}$

$^{\circ}\text{F} = (^{\circ}\text{C} \times \frac{9}{5}) + 32$

Pressure

1 PSI = 6.9 kilopascal (kPa)

dynes/cm² = 0.100 pascal (Pa)

Miscellaneous:

mg/L = parts/million (ppm) \times specific gravity

General Terms and Conditions of Sales

The term "Buyer" as used in this document shall mean the company purchasing the goods, materials, equipment or other services as described in the Sales Order (collectively, the "Goods"). The term "Seller" as used in this document shall mean OFI Testing Equipment, Inc. Collectively Buyer and Seller are referred to as the "Parties" and individually as "Party." Any Sales Order accepted by Buyer shall operate as an acceptance of these terms and conditions which are expressly incorporated into any such Sales Order

- 1. Entire Agreement:** The Sales Order embodies the entire agreement between Buyer and Seller. The Parties shall not be bound by nor liable for any statement, representation, promise or understanding not set forth herein. Nothing contained in proposals, correspondence, discussions or negotiations prior to the date of the Sales Order shall alter or amend the terms of the Sales Order unless specifically incorporated herein. No changes, amendments, substitutions or modifications of any of the terms and conditions hereof shall be valid unless reduced to writing and signed by both Parties in accordance with the changes clause of the Sales Order.
- 2. Changes:** Buyer and Seller, through their assigned respective representatives may at any time make agreed changes, in writing, including but not limited to changes in any one or more of the following: (1) Drawings or specifications; (2) Additions to or deletions from quantities ordered; (3) Delivery schedule; (4) Method of shipment or packing; and/or (5) Place of delivery. However, the Sales Order shall only be modified by written amendments or revisions executed by the representatives of Buyer and Seller.
- 3. Price and Payment:** The purchase price shall be as set out on the face of the Sales Order. Seller shall be paid, except as otherwise stated in the Sales Order, upon submission of proper invoices, the prices stipulated herein for Goods delivered and accepted or services rendered and accepted. Sales Order payment terms are net thirty (30) calendar days from the date of Delivery of the Goods. Those provisions of the Sales Order that by their very nature survives completion of the Sales Order shall remain in full force and effect after completion. Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. Remittance shall be in U.S. Dollars.
- 4. Delivery:** Subject to the provisions of Article 5, delivery of Goods shall be made ex works (Incoterms 2010) Seller's facility ("Delivery") unless otherwise expressly agreed to in writing by the Parties. Seller will not be liable for delays in performing its obligations to the extent such delays are caused by any unforeseeable condition which is beyond Seller's reasonable control and which could not be avoided by the exercise of ordinary diligence. Acts of God, such as storms or floods, as well as government priorities, acts of civil or military authorities, fires, storms, epidemics, war or riot, work stoppages, accidents, casualties, inability to procure supplies and raw materials, delays in transportation, shortage of cars are examples of events which will be excusable for being beyond Seller's reasonable control provided that within fourteen (14) calendar days of the discovery of the commencement of any excusable delay, Seller provides Buyer with notice of such delay and the anticipated duration. In the event the Goods are not shipped within seven (7) days of the stipulated Delivery date due to any action or inaction of Buyer, Seller retains the right, at its discretion, to charge storage fees to Buyer, which such fees shall not exceed ten (10) percent of the Sales Order amount. If delivery of any special items is delayed by Buyer for more than thirty (30) days after completion, Seller may invoice for such items and hold for Buyer's disposition for a reasonable period of time. Buyer shall make payment for such special items within thirty (30) days from date of invoice.
- 5. Title and Risk of Loss:** Title to all Goods furnished by Seller hereunder shall transfer to Buyer upon payment of all amounts due by Buyer to Seller under the Sales Order. Notwithstanding the foregoing, Seller shall be responsible for and shall bear any and all risk of loss or damage to the Goods until Delivery thereof in accordance with the delivery provisions of the Sales Order. Upon such Delivery, risk of loss or damage shall pass to Buyer.
- 6. Quality Standards:** Seller shall comply with the standards of quality specified in Seller's Quality Policy as set out at <http://www.ofite.com/quality-policy>. Buyer's authorized representatives shall be afforded free access during normal working hours to facilities of Seller and to Seller's sub-suppliers in order to monitor compliance with quality requirements. Buyer's right to inspect, examine, and test the Goods shall extend through the manufacturing process.
- 7. Warranties and Guarantees:** Seller warrants that the Goods shall be free from liens and defects in title, and shall conform in all respects to the terms of the Sales Order and the specifications applicable to the Goods. All Goods shall be furnished subject to Seller's standard manufacturing variations and practices. Unless the warranty period is otherwise extended in writing by the Parties, the following warranty shall apply: if, at any time prior to twelve (12) months from the date of Invoice, the Goods, or any part thereof, do not conform to these warranties or to the specifications applicable thereto, and Seller is so notified in writing upon discovery, Seller shall promptly repair or replace the defective Goods. Notwithstanding the foregoing, Seller's warranty obligations shall not extend to any use by Buyer of the Goods in conditions more severe than the Seller's recommendations nor to any defects which were visually observable by Buyer but which are not promptly brought to Seller's attention.

In the event that Buyer has purchased installation and commissioning services on applicable Goods the above warranty shall extend for an additional period of twelve (12) months from the date of the original warranty expiration for such Goods.

In the event that Seller is requested to provide customized research and development for Buyer, Seller shall use its best efforts but makes no guarantees to Buyer that any Goods will be provided.

Any non-defective items returned by Buyer during the applicable 90 day period from date of invoice are subject to a 15% restocking fee. Items returned must be received by OFI Testing equipment in original condition for it to be accepted.

Seller makes no other warranties or guarantees to Buyer, either express or implied and the warranties provided in this clause shall be exclusive of any other warranties including **ANY IMPLIED OR STATUTORY WARRANTIES OF FITNESS FOR PURPOSE, MERCHANTABILITY AND OTHER STATUTORY REMEDIES WHICH ARE WAIVED.**
- 8. Intellectual Property Rights:** The term "Intellectual Property Rights" shall mean (a) all patents, rights in designs, copyrights, computer software, programs and topography rights, in each case whether registered or not; (b) all proprietary information, including, without limitation, trade secrets, know-how, manufacturing and production processes and techniques, and research and development information, discoveries, formulas, processes, plans, specifications, software, drawings, illustrations, copyrightable works or ideas or materials (and all documentation related thereto); (c) all registrations and applications for registration for any of the foregoing; and/or (d) all rights under licenses and consents in relation to any of the foregoing.

Buyer and Seller and each of their affiliates shall retain any right, title and interest in their respective Intellectual Property Rights developed, invented, created, improved, acquired or obtained (i) prior to the effective date of the Sales Order; (ii) during the term of the Sales Order; (iii) pursuant to the Sales Order; and (iv) at all times associated with the Goods.

Seller hereby grants Buyer one non-exclusive, royalty-free, nontransferable license in and to those Seller Intellectual Property Rights necessary for Buyer's use of the Goods.
- 9. Compliance:** Seller warrants that all Goods sold hereunder shall have been produced, sold, delivered and furnished in compliance with all applicable laws and regulations to which the Goods are subject.
- 10. Assignment:** Neither Party to the Sales Order shall assign, transfer or sublet the Sales Order, any portion thereof or any of the obligations, benefits, or interests contained therein or created thereby in any manner whatsoever without the prior written consent of the other Party.
- 11. Non-Waiver:** Failure by either Party to insist upon strict performance of any of the terms and conditions hereof, or failure to delay to exercise any rights or remedies provided herein or by law shall not release the other Party from any of the obligations of the Sales Order and shall not be deemed a waiver of any right of the Parties to insist upon strict performance hereof or any of its rights or remedies set forth in the Sales Order.

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12. **Indemnities:** Notwithstanding anything to the contrary contained elsewhere herein but subject always to the transfer of risk of loss as set out in Article 5, Seller shall release, protect, defend, indemnify and hold harmless Buyer, its parent, subsidiary and affiliated companies, any assignees of Buyer and its and all of their officers, directors, members, employees and representatives (collectively "Buyer Group") from and against any loss, cost, claim, obligation to indemnify another, suit, judgment, award or damage on account of any illness, injury, death, loss or damage to Seller's employees and in any case of loss or damage to Seller's property arising out of or relating to the provision of any Goods under the Sales Order and **REGARDLESS OF WHETHER CAUSED OR BROUGHT ABOUT BY BUYER GROUP'S NEGLIGENCE (INCLUDING ACTIVE, PASSIVE, SOLE, JOINT OR CONCURRENT NEGLIGENCE) OR ANY OTHER THEORY OF LEGAL LIABILITY, INCLUDING STRICT LIABILITY, BREACH OF CONTRACT, BREACH OF WARRANTY AND INCLUDING PRE-EXISTING CONDITIONS.**

Notwithstanding anything to the contrary contained elsewhere herein, but subject always to the transfer of risk of loss as set out in Article 5, Buyer shall defend, protect, indemnify and hold harmless Seller, its parent, subsidiary and affiliated companies, any assignees of Seller and its and all of their officers, directors, members, employees and representatives (collectively "Seller Group") from and against any loss, cost, claim, obligation to indemnify another, suit, judgment, award or damage on account of any illness, injury, death, loss or damage to Buyer's employees and in any case of loss or damage to Buyer's property arising out of or relating to the provision of the Goods under the Sales Order and **REGARDLESS OF WHETHER CAUSED OR BROUGHT ABOUT BY SELLER GROUP'S NEGLIGENCE (INCLUDING ACTIVE, PASSIVE, SOLE, JOINT OR CONCURRENT NEGLIGENCE) OR ANY OTHER THEORY OF LEGAL LIABILITY, INCLUDING STRICT LIABILITY BREACH OF CONTRACT, BREACH OF WARRANTY AND INCLUDING PRE-EXISTING CONDITIONS.**

The indemnity obligations voluntarily assumed by Seller and Buyer under this Article shall be supported by liability insurance and shall have coverage of not less than \$2,000,000 per occurrence, and which shall be primary to any other insurances provided by the indemnity. Seller agrees to have its underwriters name Buyer as additional assured and waive subrogation against Buyer, but only to the extent of the risks for which Seller has agreed to assume responsibility and indemnify or release Buyer under the Sales Order. Buyer agrees to have its underwriters name Seller as additional assured and waive subrogation against Seller, but only to the extent of the risks for which Buyer has agreed to assume responsibility and indemnify or release Seller under the Sales Order. Additional assureds shall be entitled to the full limits of all policies actually obtained, including excess or umbrella insurances. The limits and coverage's of the said insurances shall in no way limit the liabilities or obligations assumed by the parties under this Article. If it is judicially determined that the monetary limits of insurance required hereunder or the indemnities assumed under this Article exceed the maximum monetary limits or scope permitted under applicable law, it is agreed that said insurance requirements or indemnities shall automatically be amended to conform to the maximum monetary limits or scope permitted under such law.

13. **Choice of Law:** The laws of the State of Texas shall control the validity, construction and interpretation of the Sales Order excluding any conflicts of laws principles which would direct the substantive law of another jurisdiction to apply.
14. **Arbitration:** All claims, disputes or controversies arising out of, or in relation to the interpretation, application or enforcement of the Sales Order, including all claims of arbitrability, shall be decided by resort of either Seller or Buyer to arbitration utilizing a single arbitrator in accordance with the Commercial Rules of the American Arbitration Association. The arbitration shall be held in Houston. The arbitrator shall apply the choice of law as set forth in Article 13 exclusive of its principles of conflicts of laws for determination of the rights and remedies under the Agreement and for all aspects of the award hereunder. The arbitrator shall have the right to award attorney fees and costs to the prevailing party. The decision of the arbitrator shall be final, binding and enforceable in any court of competent jurisdiction and Seller and Buyer agree that there shall be no appeal from the arbitrator's decision. All statutes of limitation that would otherwise be applicable shall apply to any arbitration proceeding. The right to arbitrate shall survive the termination of the Sales Order.
15. **Consequential Damages:** Notwithstanding anything to the contrary contained elsewhere herein, each Party for and on behalf of itself and its parent, subsidiary and affiliated companies releases the other Party and their parent, subsidiary and affiliated companies from any claims for consequential, incidental, indirect or punitive damages of any kind or character, including, but not limited to, loss of use, loss of profit, loss of revenue, loss of product or production, delayed production, loss of business opportunity or business relations (collectively "Consequential Damages") whenever arising out of, in connection with or related to the Sales Order or as a result of, relating to or in connection with the Goods or the activities under the Sales Order, and no claim shall be made by either Party, its parent, subsidiary and affiliated companies against the other Party, its parent, subsidiary and affiliated companies **REGARDLESS OF WHETHER SUCH CLAIM IS BASED OR CLAIMED TO BE BASED ON NEGLIGENCE (INCLUDING SOLE, JOINT, ACTIVE, PASSIVE, GROSS OR CONCURRENT NEGLIGENCE), UNSEAWORTHINESS, UNAIROWORTHINESS, FAULT, BREACH OF WARRANTY, BREACH OF CONTRACT, STATUTE, STRICT LIABILITY OR OTHERWISE AND INCLUDING PRE-EXISTING CONDITIONS.**
16. **Termination:** In the absence of a breach of any of the conditions of any Sales Order, the Sales Order may not be canceled, terminated or modified by either Party, whether in whole or in part, except with the written consent of both Parties.
17. **Severability:** If, in any legal proceeding, it is determined that any provision herein is unenforceable under applicable law, the unenforceable provision shall automatically be amended to conform to that which is enforceable under the law. In any event, the validity or enforceability of any provision shall not affect any other provision of the Sales Order, and the Sales Order shall be construed and enforced as if such provision had not been included.
18. **Third Parties:** Except as specifically provided for elsewhere herein, these terms and conditions shall not be construed to confer any benefit on any third party not a Party to the Sales Order nor shall it provide any rights to such third party to enforce its provisions.
19. **Confidentiality:** The Parties shall maintain in confidence, not disclose to any third party, and not use, except for the specific purpose of performing under the Sales Order, all information furnished one Party to the other Party in connection with the Sales Order.
20. **CISG Waiver:** The Parties acknowledge and agree that the United Nations Convention on Contracts for the International Sale of Goods ("CISG") shall not apply to any of the obligations of either Party, the services provided or to the sale of any goods under the Sales Order. Notwithstanding anything to the contrary contained elsewhere herein, Seller's limitation of liability for any claim of defective Goods or services arising during the above warranty period shall be limited to repair or replacement of the claimed defective Goods and Buyer shall return such claimed defective Goods to Seller's manufacturing facility.
21. **Export Compliance:** Buyer shall be responsible for determining all export licensing requirements and obtaining all necessary export licenses and authorizations as required by the laws of the United States of America, including, but not limited to, the United States Department of Defense, the United States Department of Commerce, the United States Department of the Treasury, and any other department or agency thereof that imposes and obligations relating to the export of goods, materials or intellectual property, including those of foreign government (i.e., non-United States) governments. Buyer represents that no Goods shall be provided to, either directly or indirectly, any end-user prohibited by any applicable U.S. law. Buyer shall assume all liability and shall indemnify Seller from and claims or damages on account of failing to file for and properly obtain all such export licenses and authorizations relating to the sale of the Goods by Seller to Buyer.

OFI Testing Equipment, Inc.

Application for Credit

(Please Type or Print Legibly)

Application is hereby made for an open credit account with net 30-day terms.

APPLICANT:

Legal Name of Firm: _____

Subsidiary of: _____

INVOICE ADDRESS:

Street or PO Box: _____

Phone Number: _____

City/State/Zip: _____

Fax Number: _____

Preferred Method for Receiving Invoices (Circle One): Mail / Email / Both

Email: _____

SHIPPING ADDRESS:

Street: _____

Phone Number: _____

City/State/Zip: _____

Fax Number: _____

TYPE OF BUSINESS:

Check One: Corporation

Partnership

Proprietorship

Date Established: _____

Fed. Tax ID No: _____

Dunn & Bradstreet No. _____

BANK REFERENCE:

Bank Name: _____

Account No: _____

Type of Acc't: _____

Address: _____

City/State/Zip: _____

Contact: _____

Phone No: _____

Fax No: _____

TRADE REFERENCES:

Name: _____

Phone: _____

Fax No. _____

Address: _____

City/State/Zip: _____

Acc't/Cust No: _____

Name: _____

Phone: _____

Fax No. _____

Address: _____

City/State/Zip: _____

Acc't/Cust No: _____

Name: _____

Phone: _____

Fax No. _____

Address: _____

City/State/Zip: _____

Acc't/Cust No: _____

FINANCIAL HISTORY (If yes to any of the following, give details on another page.)

Have you ever filed bankruptcy or reorganization for benefit of creditors?

Yes No

Have you ever been sued by any person or entity for alleged nonpayment of a debt?

Yes No

Is your inventory pledged as collateral?

Yes No

Are your accounts receivables factored or pledged as collateral?

Yes No

PURCHASING AGENTS:

Name/Title: _____

Name/Title: _____

Name/Title: _____

Purchase Order Number Required with Order: Yes No

Sometimes

The applicant's signature attests financial responsibility and that the information and statements in this application are true and complete, and are made for the purpose of inducing OFI Testing Equipment to establish an open account line of credit. OFI Testing Equipment is hereby authorized to obtain any information it considers necessary from any source concerning the statements in the application. The applicant promises to pay for all purchases in accordance with the terms and conditions as stated below. The applicant further agrees to notify OFI Testing Equipment immediately if the applicant becomes insolvent or otherwise unable to meet current obligations and to pay reasonable attorney or collection fees plus interest in case of default in payments in compliance with terms. If, at any time, for any reason, the undersigned is unable to pay for purchases when due, the undersigned agrees to pay and authorizes OFI Testing Equipment to bill my/our account service charge in the amount of 1.5% per month on the unpaid balance. All purchases are deemed made and payment is due at the principle place of business of OFI Testing Equipment. For any transaction, the undersigned agrees to pay all charges within 30 days following the invoice date. OFI Testing Equipment reserves the right to withdraw credit immediately or not to extend credit to the undersigned at its sole discretion at any time. The undersigned wishes to apply for credit with OFI Testing Equipment in accordance with these terms and conditions, which have been read, understood and accepted.

Signature of Authorizing Officer: _____ Date: _____ Phone No: _____

Please Print Name: _____ Title: _____ Fax No: _____

Mail/Shipping: 11302 Steeplecrest Dr. - Houston, TX - 77065 - U.S.A.

Tele: (713) 880-9885 or (877) 837-8683 (toll free) - Fax: (713) 880-9886 - E-Mail: sales@ofite.com

You can also order online at www.ofite.com!

OFI Testing Equipment, Inc.

Repair Order Form

Send Repairs To:
 11302 Steeplecrest Dr.
 Houston, TX 77065 U.S.A.



Phone: 713-880-9885
 Toll Free: 877-837-8683
 Fax: 713-880-9886
 Email: sales@ofite.com
 Web: www.ofite.com

Please submit a separate form for each piece of equipment.

Serial #: _____

Are you sending accessories? None Case Other _____

SHIP TO: <i>(UPS will not ship to a P.O. Box)</i>	BILL TO:
COMPANY: _____	COMPANY: _____
ADDRESS: _____	ADDRESS: _____
CITY: _____ STATE: _____	CITY: _____ STATE: _____
COUNTRY: _____ ZIP: _____	COUNTRY: _____ ZIP: _____
NAME/DEPT: _____	NAME/DEPT: _____
PHONE: _____	PHONE: _____
EMAIL: _____	
SHIP METHOD: _____	PO#: _____ <i>(Required)</i>

EQUIPMENT <i>(Check One)</i>
<input type="checkbox"/> 130-10-C Model 800 Viscometer
<input type="checkbox"/> 130-10 Model 800 (No Case)
<input type="checkbox"/> 130-76-C Model 900 Viscometer
<input type="checkbox"/> 130-76 Model 900 (No Case)
<input type="checkbox"/> 130-60 6-Speed Viscometer
<input type="checkbox"/> 132-00 Hand Crank Rheometer
<input type="checkbox"/> 165-00-1 10 mL Retort Kit
<input type="checkbox"/> 165-00 10 mL Removable Retort
<input type="checkbox"/> 165-80 20 mL Retort Kit
<input type="checkbox"/> 165-80-2 20 mL Electronic Retort Kit
<input type="checkbox"/> 165-14 50 mL Retort Kit
<input type="checkbox"/> 165-14-2 50 mL Electronic Retort Kit
<input type="checkbox"/> 170-00-1 175 mL HTHP Heat Jacket
<input type="checkbox"/> 171-55 250 mL HTHP Heat Jacket
<input type="checkbox"/> Other* _____

OPTIONAL PRE-WORK
<input type="checkbox"/> Report of "As Found" Condition Includes a certificate documenting the condition and calibration check of the instrument at the time it was received by OFITE. Additional \$100 charge applies.
<input type="checkbox"/> Diagnostic An estimate of charges for As Needed repairs based on a physical inspection of the instrument. Additional \$100 charge applies.

WORK REQUESTED <i>(Check One)</i>
<input type="checkbox"/> Certified Repair Fixed pricing. 5-business day turnaround. Fully refurbished with all parts known to fail. Includes calibration.
<input type="checkbox"/> As Needed
<input type="checkbox"/> Restock (Retort Only) <input type="checkbox"/> Consumables <input type="checkbox"/> Chamber <input type="checkbox"/> Condenser
<input type="checkbox"/> Warranty RMA # Required: _____

**Not available for Certified Repair*

Description of the problem or work to be performed:

If you have a warranty claim, contact your OFITE Sales Representative at 713-880-9885 or 877-837-8683 for an RMA number.
 OFITE warranties all products that have been operated and maintained in accordance with the guidelines in the instruction manual. New products and "Certified Repairs" come with a twelve (12) month limited warranty. Any equipment repaired "As Needed" comes with a ninety (90) day limited warranty.

Part Numbers

#100-00	Mud Balance, 4 Scale, Plastic.....	48	#130-10-L	Model 800 Viscometer with Retractable Legs.....	40
#100-70	Pressurized Fluid Density Scale.....	35, 47	#130-15	Double Walled Circulating Cup.....	44
#110-00	Mud Deaerator.....	49	#130-20	Cup Heater, 115 Volt.....	43
#110-10	Marsh Funnel Viscometer.....	41	#130-22	Sag Shoe Assembly.....	45
#110-20	Measuring Cup, 1000 mL.....	41	#130-30	Cup Heater, 230 Volt.....	43
#112-00-1-C	EP/Lubricity Tester, Complete, 230 Volt.....	148	#130-38-20	Thermocup, 115 Volt.....	43
#112-00-1	EP / Lubricity Tester, 230 Volt.....	148	#130-38-25	Thermocup, 230 Volt.....	43
#112-00-1-T	EP / Lubricity Tester With DAQ, 230 Volt.....	148	#130-38-30	Thermocup with Removable Stainless Steel Cup, 115 Volt.....	43
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#120-30	Model 200 HTHP Curing Chamber, Dual Cell, Single Deep.....	15	#130-86	CON 450 Conductivity Meter.....	166
#120-35-DAS	Model 2025 Consistometer with PC.....	18	#130-87	Resistivity Meter, Digital.....	150
#120-35	Model 2025 Consistometer.....	18	#131-50	Emulsion Stability Tester.....	149
#120-35-RDAS	Model 2025 Consistometer with PC and Chart Recorder.....	18	#131-56	Emulsion Stability Tester, Advanced.....	149
#120-35-R	Model 2025 Consistometer with Chart Recorder.....	18	#132-00	Hand Crank Rheometer.....	41
#120-40-DAS	Model 2040 Consistometer with Computer.....	18	#140-00	API Filter Press, Wall Mount, Basic.....	55
#120-40	Model 2040 Consistometer.....	18	#140-10	API Filter Press, Wall Mount, with CO ₂ Pressure Assembly.....	55
#120-40-RDAS	Model 2040 Consistometer with PC and Chart Recorder.....	18	#140-20	API Filter Press, Bench Mount, Basic.....	50
#120-40-R	Model 2040 Consistometer with Chart Recorder.....	18	#140-30	API Filter Press, Bench Mount, with CO ₂ Pressure Assembly.....	52
#120-50	Ultrasonic Cement Analyzer, Single Cell, 20 KSI.....	6	#140-31	API Filter Press, Bench Mount, with Regulator and Hose.....	52
#120-51	Ultrasonic Cement Analyzer, Twin Cell, 5 KSI.....	12	#140-40	API Filter Press, 4 Unit.....	56
#120-52	Ultrasonic Cement Analyzer, Dual Cell, 20 KSI.....	6	#140-50	API Filter Press, 6 Unit.....	56
#120-53	Static Gel Strength Measurement Device, 5 KSI.....	12	#140-60	Filter Press, Half Area, with CO ₂ Pressuring Assembly.....	56
#120-54	Volumetric Cement Expansion Device.....	34	#140-75	API Filter Press, Bench Mount, Dead Weight Hydraulic Assy.....	54
#120-55	Benchtop HTHP Curing Chamber.....	15	#142-00	CO ₂ Pressure Assembly with Top Cap.....	60
#120-57-1	Gas Migration Tester, 230 Volt.....	28	#142-37	Regulator, Low Pressure, Victor, 3000 PSI.....	92
#120-57	Gas Migration Tester, 115 Volt.....	28	#142-53	Filter Press, Model MB, with CO ₂ Pressure Assembly.....	53
#120-58	Static Gel Strength Measurement Device, 20 KSI.....	8	#143-00	Regulator, Low Pressure, CONCOA/AIRCO.....	92
#120-59	Model 4020-GS Automated UCA/SGSM.....	5	#143-02-10	CO ₂ Puncture Head Assembly.....	60
#120-60-1-F	Model 20 Constant Speed Blender, Frac Fluids, 230 Volt.....	162	#143-07	Regulator Repair Kit, CONCOA/AIRCO.....	92
#120-60-1	Model 20 Constant Speed Blender, 1 Liter, 230 Volt.....	36	#143-19	Regulator Repair Kit, Victor.....	93
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#120-60	Model 20 Constant Speed Blender, 1 Liter, 115 Volt.....	36	#144-10	API Filter Press, Wall Mount, with Carrying Case.....	55
#120-65-1	Model 20 Constant Speed Blender, 4 Liter, 230 Volt.....	36	#144-20	Rig Laboratory.....	125
#120-65	Model 20 Constant Speed Blender, 4 Liter, 115 Volt.....	36	#144-40	Chloride Content Kit.....	132
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#120-70	Model 40 Stirred Fluid Loss Tester, 115 Volt.....	30	#144-70	Chloride and Water Hardness Kit.....	132
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#120-87	Cement Permeameter.....	37	#144-95	Water Analysis Kit.....	145
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