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Wall-Mount API Filter Press

Basic: #140-00
With CO_2 Pressure Assembly: #140-10

Instruction Manual

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Intro

Measurements of filtration behavior and wall cake-building characteristics of a drilling fluid are fundamental to control and treatment of drillings fluids, as are various characteristics of the filtrate such as oil, water or emulsion content. These factors are affected by the types and quantities of the solids in the fluid and their physical and chemical interactions, which in turn are affected by changing temperatures and pressures.

The pressure cell is designed so that a 3½" (9 cm) sheet of filter paper can be placed in the bottom of the chamber to remove particles from the fluid. The filtration area is 7.1 ± 0.1 in^2 (4,580 ± 60 mm^2). The filter press gasket is the determining factor of the filtration area. Pressure may be applied with any non-hazardous fluid medium, either gas or liquid. Some models are equipped with pressure regulators and may be pressurized with portable pressure cylinders, midget pressure cartridges, or by utilizing hydraulic pressure.

Components

#140-00 Wall-Mount API Filter Press, Basic:

#141-00	Cell Body
#141-01	Base Cap with Filtrate Tube
#141-02	Top Cap
#141-04	60-Mesh Screen
#141-05	Neoprene Gasket, 3/32", Qty: 2
#141-07	Wall-Mount Frame
#141-09-002	Threaded Insert
#141-10	T-Screw
#141-16	Support Arm with Clip for Graduated Cylinder
#141-20	Frog Bracket
#141-21	Wall Bracket
#141-22	Felt Filter, Qty: 2

#140-10 Wall-Mount API Filter Press with CO_2 Pressuring Assembly:

#140-55	Filter Paper for Low-Pressure Filtration, 3½" (9.0 cm) Diameter, Box of 100
#141-00	Cell Body
#141-01	Base Cap with Filtrate Tube
#141-04	60-Mesh Screen
#141-05	Neoprene Gasket, 3/32", Qty: 2
#141-07	Wall-Mount Frame
#141-09-002	Threaded Insert
#141-10	T-Screw
#141-16	Support Arm with Clip for Graduated Cylinder
#141-20	Frog Bracket
#141-21	Wall Bracket
#142-00	CO_2 Pressuring Assembly with Top Cap
#153-16	Glass Graduated Cylinder, 25 mL × 2/10 mL

Operation

1. Be sure each part of the cell is clean and dry, particularly the screen, and that the gaskets are not distorted or worn. The screen should be free of sharp edges, burrs, or tears.

2. Assemble the cell as follows: Base Cap, rubber gasket, screen, filter paper, rubber gasket and cell body.

3. Pour the freshly stirred sample of fluid into the cell to within 0.5" (13 mm) to the top in order to minimize. CO_2 contamination of the filtrate. Check the top cap to insure the rubber gasket is in place and seated all the way around and complete the assemble. Place the cell assembly into the frame and secure with the T-screw.

4. Place a clean dry graduated cylinder under the filtrate exit tube.

5. Close the relief valve and adjust the regulator so that a pressure of 100 ± 5 PSI (690 ± 35 kPa) is applied in 30 seconds or less. The test period begins at the time of initial pressurization.

6. At the end of 30 minutes, measure the volume of filtrate collected. Shut off the air flow through the pressure regulator and open the relief valve carefully.

7. Report the volume of filtrate collected in cubic centimeters to the nearest 0.10 cm^3 as the API filtrate. Report the time interval and the mud temperature in °F (°C) at the start of the test. Save the filtrate for running chemical analysis.

8. Check to see that all pressure has been removed from the cell, and then remove the cell from the frame. Disassemble the cell, discard any remaining mud and using extreme care save the filter paper and deposited cake with a minimum of disturbance to the cake. Wash the filter cake on the paper with a gentle stream of water or with diesel oil if oil mud is being tested.

9. Measure and report the thickness of the filter cake to the nearest 1/32" (0.8 mm). A cake thickness less than 2/32" is usually considered acceptable. Observations as to the quality of the cake should be noted. Notations such as hardness, softness, toughness, slickness, rubberiness, firmness, flexibility, and sponginess are appropriate descriptions.