EP/Lubricity Tester
Model 212

Combination EP Lubricity Tester

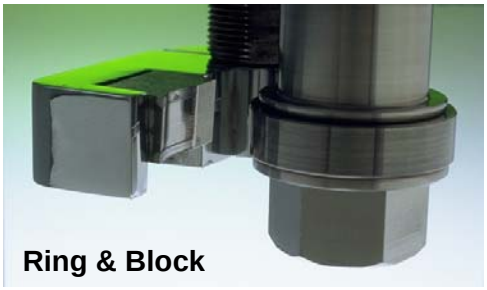
Manifestation of friction between the drill string and the borehole is as old as drilling itself. Frictional resistance to rotation of the drill string is called torque, and frictional resistance to hoisting and lowering the drill string is called drag. Many different materials have been used as drilling fluid additives to improve lubricity, thereby reducing friction. The lubricity test was designed to simulate the torque and drag produced by a given drilling fluid down-hole. The tester approximates the speed of rotation of the drill pipe and the pressure with which the pipe bears against the wall of the hole where the friction is generated.

Extreme pressure lubricants have been developed to increase the life of bit-bearings. Extreme pressure lubrication deals with metal surfaces in rubbing contact with each other at very high pressures (e.g., 30,000 to 100,000 psig (206,820 to 689,400 kPa)). Lubrication for the metal surfaces is provided by a pressure resistant film that is produced as a result of the chemical reaction initiated by a high temperature generated from friction at the area of contact.

The Fann ***Model 212*** Combination EP (Extreme Pressure) and Lubricity Tester is a high-quality instrument designed to measure the lubricating quality of drilling fluids, provide data to evaluate the type and quantity of lubricating additives that may be required, and predict wear rates of mechanical parts in known fluid systems.

EP tests are performed by applying a measured force with a torque arm to a torque-sensitive, rotating bearing cup. This provides a means of testing lubrication under extreme pressure conditions and produces an indication of the film strength of the fluid being tested.

The problem of reduction of friction between the drill string and the borehole requires a different simulation. The more common lubricity test measures fluid resistance (lubricating character) between two hardened steel moving surfaces at a hundred pounds force (which translates into a 5,000 to 10,000 psig (34,470 to 68,940 kPa) pressure on the intermediate fluid film). During the lubricity test, a steel block is pressed against a rotating steel ring. Load in inch-pounds is read directly from the dial on the torque arm.



Ring & Block

***EP/Lubricity Tester capabilities**:*

Measure the lubricating quality of drilling fluids

Provide data to evaluate the type and quantity of lubricating additives that may be required

Predict wear rates of mechanical parts in known fluid systems

Measure of friction is a requirement for the determination of the film strength of a lubricant, for bit bearing wear, as is obtained in EP test and for the determination of torque or drag of the drill pipe as determined in the lubricity test.

Ordering Information

Item	Part Number
EP/Lubricity Tester, 115 Volt	**206923**
Parts & Accessories	
Transformer for 230 Volt Operation	**205723**
Calibrated Ring & Block Pair	**206904**
EP Test Ring	**206900**
EP Test Block	**206901**
Lubricity Test Ring	**206902**
Lubricity Test Block	**206903**

Contact Fann for more information on the EP/Lubricity Tester and our complete line of Fluid Testing Equipment

Fann Instrument Company
P O Box 4350
Houston, Texas USA 77210

Phone: 281-871-4482
Fax: 281-871-4358
Email: Fannmail@fann.com