



**CHANDLER**  
ENGINEERING

## Model 1602

### *ROLLING BALL VISCOMETER*

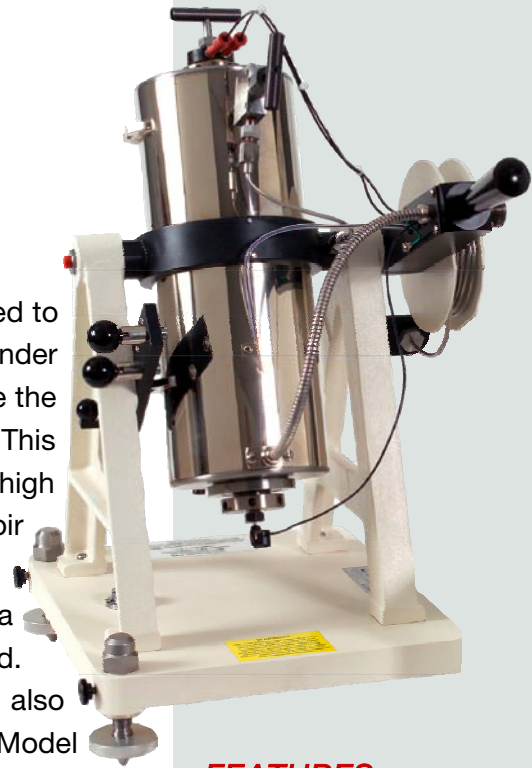
#### **A Key Measurement for Reservoir Analysis**

The Model 1602 Rolling Ball Viscometer is specifically designed to determine the relative viscosity of reservoir liquids under downhole conditions. The principle of operation is to measure the time it takes for a metal ball to fall through the sample fluid. This simple yet effective approach is the most reliable for the high pressure measurements required to simulate reservoir conditions.

When used in combination with high pressure sampling and a high pressure pump, live oil samples can be measured. In addition to acting as stand-alone test, the Model 1602 is also designed to be integrated with the Model 2370 Console, Model 2353 Flash Separator and the Model 2331D Gasometer to be part of a complete series of tests for determining the properties of reservoir fluids.

#### **Operational Simplicity**

The instrument is very easy to use. The pressurized sample is injected into the test chamber. A magnetic solenoid holds a steel ball at the top of its travel. When released, a highly accurate digital timer is automatically started as the ball rolls down through the sample. When the ball reaches the end of its travel, the timer is automatically stopped providing a precise falling time measurement. Viscosity values are then obtained by correlation of the falling time and ball diameter with curves of fluids with known viscosities and densities. Three fixed roll angles are provided to facilitate testing a wide range of samples.



#### **FEATURES**

- ✓ Automatic, Digital Time Clock
- ✓ An Insulated Heating Jacket for Safety and Temperature Uniformity
- ✓ Visual Indication of Test Status: Ready, in Process, Completed
- ✓ Optional Hydrogen Sulfide Resistant Wetted Materials



## Specifications

Measurement Repeatability	±0.1%
Maximum Temperature	300°F / 150°C
Maximum Pressure	10,000 psi / 69 MPa
Fluid Capacity	70 cm <sup>3</sup> Total; 20 cm <sup>3</sup> Test Chamber and 50 cm <sup>3</sup>
Roll Angles	23°, 45°, 70°

### Utilities

Power Supply	240 VAC +/- 15% 50/60 Hz 750 Watts
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### Physical Dimensions

Space Required	36 in. x 12 in. / 91 x 30 cm
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*Manufacturer's specifications subject to change without notice*



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