

The **Grace Instrument M8500 High Pressure, High Temperature Dynamic Sag Tester** is designed for evaluating barite and other weight material sag under simulated drilling conditions.

### Data Integrity

The innovative design of the **M8500** accumulator piston prevents contamination of the drilling fluid inside the testing cell with pressurization fluid.

### Control Parameters

A sample of drilling fluid is subjected to an adjustable temperature, pressure, rotor (pipe) speed and borehole angle for a set period of time.

### Sample Extraction

Small amounts of the sample are taken from a defined collection site within the testing cell while maintaining temperature, pressure, and shear conditions. This method of sample extraction produces repeatable results.

### Sample Characterization

Density and composition of the extracted sag samples can be measured. Other qualitative and quantitative analysis can also be performed.

### Multifunction Option

The **M8500 HPHT Dynamic Sag Tester** is available with optional HPHT Fluid Rheometer, HPHT Cement Rheometer, and/or PVT Tester modules. These options allow a laboratory to significantly expand the scope and variety of fluid performance testing, without having to purchase, operate and maintain multiple instruments.

### Measurement Range (B1, B2, B5 bob):

Total Sample Size: 400 mL  
 Speed Range: 0.01 to 600 rpm continuous  
 Shear Rate: 0.004 to 202 S<sup>-1</sup>  
 Temperature: Ambient (20 °F w/chiller) to 600 °F  
 Pressure: Atm to 20,000 or 30,000 psi  
 Borehole Angle: 0 to 80°  
 Computer: Windows PC

### Mechanical Specifications:

Dimensions: 30" tall x 12.5" wide x 25" deep (tower)  
 20" tall x 14" wide x 25" deep (cab)  
 Weight: 278 lbs

### Electrical Supply:

Viscometer Voltage: 120 VAC (or 240 VAC w/transformer)  
 Frequency: 50 or 60 Hz



### Example of Sag Test Results:

Table 1: M8500 Dynamic Sag Tester Results for 11.00 lb/gal, oil-based fluid with API Barite weight material		
Initial Mud Density	lb/gal	11.00
Borehole Angle	degrees	80
Temperature	°F	300
Pressure	psi	20,000
RPM	rpm	100
Annulus	inch	0.375
Shear Rate	S <sup>-1</sup>	33.71
Sag Density after 1 hour	lb/gal	13.14
Density Difference	lb/gal	2.14
Relative Density Increase	%	19.45