

## Servo Controlled Superpave Gyrotory Compactor (GRC-20)



- Self-Heating molds for 4" and 6" diameter Hot Mix Asphalt (HMA) specimens.
- Continuous positive feedback to maintain gyration angle precision throughout compaction.
- Closed-Loop servo control of ram pressure and tilt angle.
- Automatic material mass measurements.
- High stiffness/Low compliance frame.
- Measures shear stress.
- Meets AASHTO 312-04 (Preparing and Determining the Density of Hot Mix Asphalt (HMA) by Means of the Superpave Gyrotory Compactor.

### DESCRIPTION

The GCTS Gyrotory Compactor offers a high level of accuracy while maintaining ease of use. The GRC-20 is a fully automated servo-controlled compactor that provides a high productivity rate.

The servo controlled mechanism provides a high level of accuracy for the tilt angle as well as the gyration rate and start/stop position. The servo actuators are isolated from the compaction area preventing any possible jamming from material spills. All of the compaction parameters are microprocessor-controlled. This allows user modifications of any parameter through simple on-screen controls without any cumbersome mechanical adjustment.

By introducing a self-heating mold with precise temperature control, the GRC-20 compactor eliminates the need to keep and handle multiple pre-heated molds providing an efficient and safe operating environment. The self-heating molds eliminate the handling of heavy and hot components for each compacted specimen. The mold temperature is precisely controlled allowing the user to specify the temperature during compaction. The controlled temperature can be prescribed to be constant or variable as a function of time during compaction.

Because the mold is rigidly fastened and self-heated, it not only provides a high level of reliability, but eliminates the need to purchase multiple expensive molds and large ovens to keep them at the required temperature. GCTS offers molds for compacting 100 and 150 mm (4 and 6 inches) diameter specimens with heights of up to 200 mm (8 inches).

Once all the required compaction parameters (density, number of gyrations, temperature, etc.) are set, the operator only needs to push a button for each specimen compaction sequence. The HMA material is weighed automatically, using an integrated precision scale, and its mass entered into the controller automatically virtually eliminating operator data entry errors.

The GCTS GRC-20 is also capable of measuring the shear stress required for compaction. Each specimen's data is automatically recorded in the GRC-20 memory for printing or transferring to a Windows computer/network at any time.

This compactor, together with our pressure-controlled core drill and lab saw are ideal for preparing specimens for Dynamic Modulus determination and Simple Performance Tests (SPT).

### SPECIFICATIONS

Normal load control:	0 - 18 kN (0 - 4200 lbs)
Normal Stress control:	0 - 1,000 kPa (0 - 150 psi)
Number of gyrations:	1 - 9999
Gyration angle:	0.02 - 3.00 degrees (+/-0.02°)
Gyration rate:	1 - 60 / minute
Maximum specimen height:	200 mm (8 inch)
Minimum specimen height:	50 mm (2 inch)
Power:	110 / 220 volts 50-60 Hertz Single phase (3.5 amps) 800-1,000 kPa clean, dry compressed air (10 SCFM min)