

GYROTRONIC SUPERPAVE GYRATORY COMPACTOR



STANDARDS: EN 12697-10, EN 12697-31 | ASTM D6925 | AASHTO T312, TP4 | SHRP M-002

This Gyrotory Compactor, entirely developed and manufactured by Matest, is used to simulate and reproduce the real compaction conditions under actual road paving operations, hence determining the compaction properties of the asphalt.

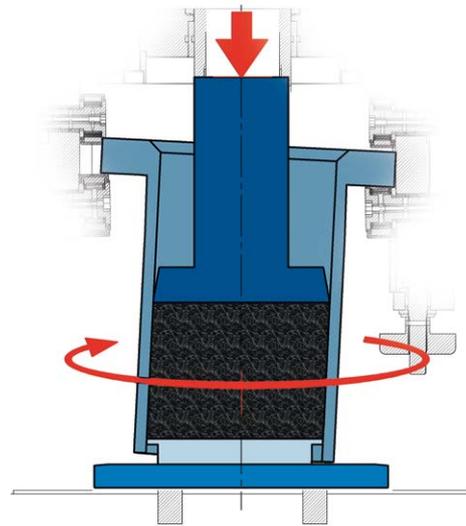


B041 with accessories

MAIN FEATURES

- Rigid steel frame ensuring excellent angle control.
- Electro-pneumatic action with servo-controlled regulator.
- Full color touch screen control unit, running like a standard PC based on Windows operating system.
- Software for PC control acquisition and data processing.
- Optional shear stress measurement.
- Concept based on American DOT principles.
- Cold mix emulsions which can be compacted.
- Optional integrated balance.
- Optional integrated extruder.
- Gyrotory angle adjustable from 0 to 2.4° (up to 3°).
- Electromechanical version available on request.

Gyrotronic working principle precisely meets the international Standards specifications avoiding any interpretation deviation. Its stable mechanism with gears and bearers a is embedded inside a sturdy frame.



A SUCCESSFUL PRODUCT

- COST COMPETITIVE
- TRIED AND PROVEN
- OVER 50 UNITS DELIVERED EVERY YEAR

GYROTRONIC - SUPERPAVE GYRATORY COMPACTOR

Gyrotronic compacts in a fully automatic way, by combining the rotary action and the vertical resultant force applied by a mechanical head. The Compactor comprises a highly rigid steel frame ensuring excellent angle control.

Load is applied by an electro-pneumatic cylinder, servo-controlled by a precision pressure regulator; the height is measured by a linear transducer.

Gyratory motion is generated by an eccentric high precision system allowing an easy set up with precision and constant angle of gyration.

The rotation speed is controlled by an inverter through on board computer control.

Using the proper perforated mould, the Compactor is able to run tests also on cold emulsified asphalt mix.

The acquired results are also employed in the investigation of volumetric and mechanical characteristics of the asphalt mix.

The machine is calibrated at Matest factory to the selected internal angle.

ADVANTAGES OF AN ELECTRO-PNEUMATIC COMPACTION SYSTEM

The Gyrotronic is equipped with a high performance, value engineered, **electro-pneumatic loading system**. The vertical actuator is low friction pneumatic cylinder and allows to apply constant stress regardless of the response of the specimen. In this way, the compaction is strictly performed in stress control and load/stress spikes are prevented. This concept provides a simple, cost effective solution with **reduced maintenance requirement**.

ON-BOARD TOUCH SCREEN or PC CONTROL

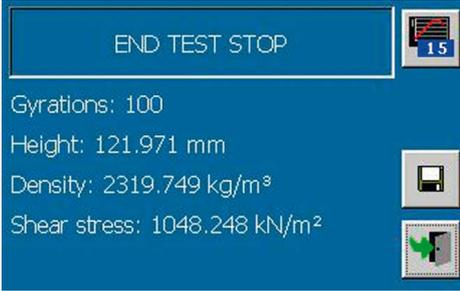
The touch-screen icon interface allows an easy set up of the parameters and an immediate automatic execution of the test, data acquisition and processing, graphics and file. A remote test control is available through a dedicated software, provided in bundle.

Direct connection to Intranet (through LAN network) and Internet to establish a remote communication and receive an immediate diagnostic of potential problems from Matest technicians, or for software updates.

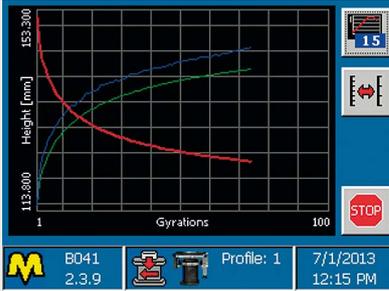
Unlimited memory storage with: 2 USB ports, 1 SD card.

Hardware technical details: see catalogue at p. 19.

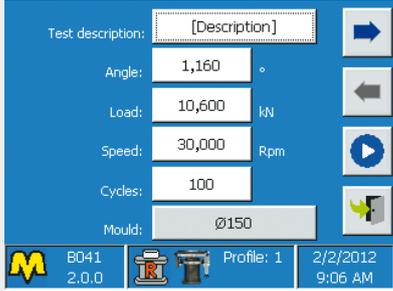




End test data (with shear stress value)



Test execution (data plot)



Setting of test parameters

TECHNICAL SPECIFICATIONS

- Compacted specimen size: Ø 100 and 150 mm; height from 0 to 200 mm for both sizes.
- Mould dimensions: Internal Ø 100 and 150 mm; height 250 mm for both moulds.
- Gyrotory angle: adjustable from 0 to 2.4° (up to 3°)
- Number of cycles (gyrotory): adjustable from 1 to 5000
- Gyration rate: adjustable from 5 to 60 work cycles/min (30 cycles/min requested by Standards)
- Vertical load on Ø 150 mm specimen: adjustable from 10 to 1000 kPa (1000 kPa with 10 bar compressor) (800 kPa with 8 bar compressor) (700 kPa with 7 bar compressor)
- Vertical load on Ø 100 mm specimen: adjustable from 23 to 1500 kPa (with 7 bar compressor)
- The vertical load on the specimen is automatically controlled and adjusted by the electronic system.

Modes of operation:

- Compaction of specimen in accordance to the selected number of rotations.
- Compaction of specimen upon reaching the selected height.
- Compaction of specimen upon reaching the selected density.
- **The machine can also perform a final flattering cycle at “zero” angle to obtain specimens with perpendicular faces.**

Data acquisition: number of rotations, specimen height, applied load (to ensure tolerances requested by the Standards)

Requires pressurized air, minimum 7 bar.

The Matest Gyrotory Compactor is **supplied complete** with lubricant and power cord.

Optional extra are: moulds, filter paper, penetration pistons, extruder, bench, air compressor Accredia official vertical load calibration certificate, to be ordered separately (see accessories)

Power supply: 230V 1ph 50-60Hz 1000W 12A

Dimensions: 640x500x1050 mm

Weight: 240 kg approx.

Overview of mechanical “heart”



Compaction phase: simultaneous action of a static compression and of the shearing action



AVAILABLE MODELS

B041 GYROTORY COMPACTOR - ASTM

STANDARDS: ASTM D6925 | AASHTO T312 | SHRP M-002
 The machine is calibrated at Matest factory and supplied with the internal angle set to 1.16° as requested by ASTM, AASHTO Specifications.

 **Note:** Electromechanical Gyrotory Compactor version available on request.

B041EN GYROTORY COMPACTOR - EN

STANDARDS: EN 12697-10, EN 12697-31
 The machine is calibrated at Matest factory and supplied with the internal angle set to 0.82° as requested by EN Specifications.