Gyratory Compactor

CRT-GYR

A high quality machine with which the user can easily and safely obtain accurate, repeatable results day after day

Gyratory compaction is considered to be one of the best methods of laboratory compaction for the assessment of compactibility and the manufacture of test specimens. Compaction is achieved by the application of a vertical stress (normally 600KPa) via end platens to a known mass of asphaltic mixture within a 100 or 150mm internal Ø mould. The longitudinal axis of the mould is rotated (gyrated) at a fixed angle to the vertical whilst the platens are kept parallel and horizontal. During compaction the height of the sample is automatically measured and both the mixture density and void content calculated. The compaction data is shown on-screen in a graphical and tabular format as compaction progresses and it is also saved as a Microsoft Excel™ compatible format. The operator can choose whether to compact for a certain number of gyrations or until a target mixture density or void content is achieved. Problems with existing compactors are mainly related to build quality and ease of use. Unlike most compactors 100 and 150mm Ø moulds can be tested without changing machine parts. A filled gyratory compactor mould is heavy and often very hot. In many cases these moulds have to be lifted in and out of gyratory compactors. With the CRT-GYR no lifting of filled moulds is required. They are automatically lowered into position for compaction and then lifted up again for transfer to the integrated demoulding system.

Standards

- EN 12697 - 31
- ASTM D6925
- AASHTO T312
- TEX 241-F

Key Features

- Automatic mould insertion and retraction on side table which allows cooling time before extraction without loss of compaction time (especially important for rubberized asphalt)
- 150mm and 100mm internal Ø moulds can be tested without changing parts
- Cold mix (emulsion) materials can be compacted and the expelled fluid collected
- Ethernet connection for data acquisition and control system
- User friendly LabVIEW™ software displays results in real time
- Machine calibrated with traceable equipment
- Option for mould up to 300mm high

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Key Uses

- Compaction of asphaltic paving material to a target mixture density or void content
- Assessment of mixture compactibility
- SHRP Superpave asphalt mixture design
- Preparation of cylindrical test specimens

Software

- User friendly, intuitive and reliable Windows™ software developed using LabVIEW™
- Software allows 3 methods of compaction – no. of gyrations, height and target density
- The operator is guided through every step of the compaction
- Real-time display of current height, density and void content (percentage)
- Data is recorded to disk at regular intervals for further analysis
- Utilities are included for transducer check, diagnostic routines and calibration

Accessories

Accessories are not included in the price of main device (unless stated otherwise) and may be purchased separately if required.

CRT-GYR-EXT	Specimen Extruder
CRT-GYR-RUB	Gyro Accessories for rubber Asphalt
CRT-GYR-SHEAR	Shear force display
CRT-GYR-TEMP	Specimen Temperature Measurement
CRT-GYRM-100T	100mm Internal Ø mould & platens, feature for specimen temperature measurement
CRT-GYRM-150T	150mm Internal Ø mould & platens, feature for specimen temperature measurement
CRT-GYRMS-100	100mm Internal Ø mould & platens, slotted for emulsion mix
CRT-GYRMS-150	150mm Internal Ø mould & platens, slotted for emulsion mix
CRT-GYRCFP-100	100mm circle filter papers (pack of 100)
CRT-GYRCFP-150	150mm circle filter papers (pack of 100)
CRT-GYR-LH	Lift Handle for Lightweight Gyro Moulds
CRT-GYR-SP100_63	Spacer 100mm to compact 63mm height on CRT-GYR
CRT-GYR-SP150_63	Spacer 150mm to compact 63mm height on CRT-GYR
CRT-GYR-CALANG	Calibration Kit

Specifications

Technical specifications are subject to change without notice.

Speed r.p.m	Normally 30
Stress KPa	Normally 600 , Maximum 1000 (Dependant upon air pressure available)
Actuator stroke mm	250
Internal Angle of Gyration	0.2 to 2°
Compressed Air	7-10 bar @ 350 L/min
Specimen Ø	100 mm and 150 mm
Mixtures	Wet or dry
Electrical Supply[1]	220-240 Volts 50/60Hz @ 16A
Dimension mm (WxDxH)	780 x 1000 x 1920
Working space required mm (WxDxH)	2000 x 2000 x 2200
Estimated Weight Kg	508
PC	Included

[1] others available upon request

Calibration & Maintenance

Calibration, Annual Service and Maintenance Contracts are available for this device.
Please enquire for further details. Note: This device should be checked and calibrated annually.

Datasheet Version: 19.12/03

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