

ADVANCED PAVEMENT TESTING

BUYER'S GUIDE

Gyratory Compaction STANDARDS

EN 12697-31 | AASHTO T312 | ASTM D6925



How to use the Buyer's Guide

IPC Global carries a wide range of advanced pavement testing equipment to fit the specific needs of an asphalt and bitumen materials testing laboratory.

We have developed this Buyer's Guide to help you decide which machine and configuration are right for your Gyrotory Compaction testing needs.

First, select and click the method you wish to use in the Index to your right. This will take you to a dedicated page for the selected method that includes a summary table with the suggested instrument and required accessories to perform the test.

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BUYER'S GUIDE | Gyrotory Compaction

Gyrotory Compaction 1
 STANDARD: EN 12697-31

Sugg. Qty	Model	Description
<i>Choose one</i>		
1	78-PV2522/E	Gyrocomp, gyrotory compactor, internal angle of gyration preset to 0.82° to EN 12697-31, 110-230V / 50-60Hz / 1ph
	78-PV20002	Galileo, fully electromechanical gyrotory compactor, 230V / 50-60Hz / 1ph
	78-PV20004	Galileo, fully electromechanical gyrotory compactor, 110V / 60Hz / 1ph
	78-PV20R02	Galileo Research, fully electromechanical gyrotory compactor, including motorized mold lifting, shear measurement system, PC software for data analysis and integrated extruder, 230V / 50-60Hz / 1ph
	78-PV20R04	Galileo Research, fully electromechanical gyrotory compactor, including motorized mold lifting, shear measurement system, PC software for data analysis and integrated extruder, 110V / 60Hz / 1ph
PRE-CALIBRATION TO EN 12697-31 (GALILEO AND GALILEO RESEARCH ONLY)		
1	78-PV20UP4*	Traceable verification certificate conforming to EN 12697-31 annex B. 2
INTEGRATED WORK TOP WITH EXTRUDER (GYROCOMP ONLY)		
<i>Choose one</i>		
1 - Optional	78-PV2520/15***	Integrated work top with electromechanical specimen extruder, 230V / 50-60Hz / 1ph
	78-PV2520/15Z***	Integrated work top with electromechanical specimen extruder, 110V / 60Hz / 1ph
	PV0252/14***	Integrated work top with manual extruder
TEST MOULDS, SPACERS AND ADAPTERS		
<i>Choose one or more</i>		
1	78-PV0250/2	Cylinder mould 150 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded, complete with top and bottom plates. 3
	78-PV0250/5	Cylinder mould 100 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded, complete with a spacer, top and bottom plates.
	78-PV0250/3	Distance plate, 150 mm dia., 50 mm high, for preparing short samples
	78-PV0250/6	Distance plate, 100 mm dia., 38 mm high, for preparing short samples
	78-PV0250/4	Accessories to compact 100 mm dia. specimens including 100 mm height calibration device. Required to use 78-PV0250/5 or 78-PV0250/8 100mm moulds
TEST MOULDS WITH HOLES (FOR COLD MIXES)		
<i>Choose one or more</i>		
Optional	78-PV0250/10	Cylinder mould 150 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded, with holes for cold mix compaction. Complete with top and bottom plates
	78-PV0250/8	Cylinder mould 100 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded, with holes for cold mix compaction. Complete with a spacer, top and bottom plates

* Suitable for use with PV2000x and PV20R0x models only
 ** Suitable for use with PV2000x models only
 *** Suitable for use with PV2522/E model only

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1. Test method and configuration type
2. Name of main instrument or accessory
3. Choose one or several accessories
4. Go back to Index by clicking here "BACK TO INDEX" button

Introduction to Gyrotory Compaction

Gyrotory technique consists of the compaction of an asphalt mix contained in a cylindrical mold with the simultaneous action of a vertical static compaction and of a shearing action resulting from the rotation of the mold on its inclined axis.

The compaction data is measured and recorded during the test. Gyrotory Compaction is the reference method for Volumetric Mix Design, and compacted specimens can then be used for performance testing. Optional shear measurement can be related to mechanical performances of the compacted mix such as rutting resistance.

The product range includes :

Gyrocomp

Gyrocomp

This version is designed to perform gyrotory compaction both to AASHTO T312/ASTM D6925 and EN 12697-31.

The vertical load is applied by pneumatic actuator, the rotation by electromechanical motor and the angle is adjustable. All the test parameters are manually controlled. Gyrocomp can be controlled by the included touchscreen display or by PC with dedicated software, included with the machine. → [Explore Online](#)

Galileo Research

Galileo Research

Galileo Research allows a perfect gyrotory angle with real-time closed loop automatic angle adjustment for compliance compensation, with the possibility to automatically obtain a zero-angle at the end of the test for complete sample face perpendicularity. The machine is complete with electromechanical extruder, shear measurement and PC software. → [Explore Online](#)

Galileo

Galileo

Galileo is based on EmS Electromechanical servo-actuation mechanism, not requiring the use of compressed air.

The machine can test to both AASHTO/ASTM and EN standards, controlled by a large 7" touchscreen. Optional accessories include electromechanical extruder, shear measurement, external balance and PC software, allowing to remotely control the machine. → [Explore Online](#)

Gyrotory Compaction

STANDARD: EN 12697-31

Sugg.Qty	Model	Description
1	<i>Choose one</i>	
	78-PV2522/E	Gyrocomp, gyrotory compactor, internal angle of gyration preset to 0.82° I to EN 12697-31. 110-230V / 50-60Hz / 1ph
	78-PV20G02	Galileo, fully electromechanical gyrotory compactor. 230V / 50-60Hz / 1ph
	78-PV20G04	Galileo, fully electromechanical gyrotory compactor. 110V / 60Hz / 1ph
	78-PV20R02	Galileo Research, fully electromechanical gyrotory compactor, including motorized mold lifting, shear measurement system, PC software for data analysis and integrated extruder. 230V / 50-60Hz / 1ph
	78-PV20R04	Galileo Research, fully electromechanical gyrotory compactor, including motorized mold lifting, shear measurement system, PC software for data analysis and integrated extruder. 110V / 60Hz / 1ph
PRE-CALIBRATION TO EN 12697-31 (GALILEO AND GALILEO RESEARCH ONLY)		
1	78-PV20UP4*	Traceable verification certificate conforming to EN 12697-31 annex B.
INTEGRATED WORK TOP WITH EXTRUDER (GYROCOMP ONLY)		
1 - Optional	<i>Choose one</i>	
	78-PV2520/15***	Integrated work top with electromechanical specimen extruder. 230V / 50-60Hz / 1ph
	78-PV2520/15Z***	Integrated work top with electromechanical specimen extruder. 110V / 60Hz / 1ph
	78-PV0252/14***	Integrated work top with manual extruder
TEST MOLDS, SPACERS AND ADAPTERS		
1	<i>Choose one or more</i>	
	78-PV0250/2	Cylinder mold 150 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded. Complete with top and bottom plates.
	78-PV0250/5	Cylinder mold 100 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded. Complete with a spacer, top and bottom plates.
	78-PV0250/3	Distance plate, 150 mm dia., 50 mm high, for preparing short samples
	78-PV0250/6	Distance plate, 100 mm dia., 38 mm high, for preparing short samples
	78-PV0250/4	Accessories to compact 100 mm dia. specimens including 100 mm height calibration device. Required to use 78-PV0250/5 or 78-PV0250/8 100mm molds
TEST MOLDS WITH HOLES (FOR COLD MIXES)		
Optional	<i>Choose one or more</i>	
	78-PV0250/10	Cylinder mold 150 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded, with holes for cold mix compaction. Complete with top and bottom plates
	78-PV0250/8	Cylinder mold 100 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded, with holes for cold mix compaction. Complete with a spacer, top and bottom plates

* Suitable for use with PV20G0x and PV20R0x models only

** Suitable for use with PV20G0x models only

*** Suitable for use with PV2522/E model only

Gyrotory Compaction (Continued)

STANDARDS: EN 12697-31

Sugg.Qty	Model	Description
AIR COMPRESSOR (GYROCOMP ONLY)		
1 - Optional	78-PV0250/7***	Low noise air compressor. 230V / 50-60Hz / 1ph.
UPGRADING OPTIONS (GALILEO AND GALILEO RESEARCH ONLY)		
1 - Optional	78-PV20UP1**	Shear measurement system (to be specified at time of order)
1 - Optional	78-PV20UP2**	Integrated electromechanical extruder (to be specified at time of order)
1 - Optional	78-PV20UP3*	Electronic balance, 30 kg cap., 1 g resolution. To weight the sample and to calculate the density.
1 - Optional	78-PV20/SOF**	PC software
CALIBRATION DEVICES		
1 - Optional	78-PV0250/11	Vertical force indicator, complete with 25kN load cell, base, spherical seat, load readout unit and ACCREDIA calibration certificate
1 - Optional	78-PV0255	ILS device for internal angle measurement for Gyrotory compactors, conforming to EN 12697-31, annex B. Complete with PC software, PC connection cable and traceable calibration certificate

* Suitable for use with PV20G0x and PV20R0x models only

** Suitable for use with PV20G0x models only

*** Suitable for use with PV2522/E model only

Gyrotory Compaction

STANDARDS: AASHTO T312 | ASTM D6925

Sugg.Qty	Model	Description
1	<i>Choose one</i>	
	78-PV2522	Gyrocomp, gyrotory compactor, internal angle of gyration preset to 1.16° to AASHTO T312 / ASTM D6925. 110-230V / 50-60Hz / 1ph
	78-PV20G02	Galileo, fully electromechanical gyrotory compactor. 230V / 50-60Hz / 1ph
	78-PV20G04	Galileo, fully electromechanical gyrotory compactor. 110V / 60Hz / 1ph
	78-PV20R02	Galileo Research, fully electromechanical gyrotory compactor, including motorized mold lifting, shear measurement system, PC software for data analysis and integrated extruder. 230V / 50-60Hz / 1ph
	78-PV20R04	Galileo Research, fully electromechanical gyrotory compactor, including motorized mold lifting, shear measurement system, PC software for data analysis and integrated extruder. 110V / 60Hz / 1ph
INTEGRATED WORK TOP WITH EXTRUDER (GYROCOMP ONLY)		
1 - Optional	<i>Choose one</i>	
	78-PV2520/15***	Integrated work top with electromechanical specimen extruder. 230V / 50-60Hz / 1ph
	78-PV2520/15Z***	Integrated work top with electromechanical specimen extruder. 110V / 60Hz / 1ph
	78-PV0252/14***	Integrated work top with manual extruder
TEST MOLDS, SPACERS AND ADAPTERS		
1	<i>Choose one or more</i>	
	78-PV0250/2	Cylinder mold 150 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded. Complete with top and bottom plates.
	78-PV0250/3	Distance plate, 150 mm dia., 50 mm high, for preparing short samples
TEST MOLDS WITH HOLES (FOR COLD MIXES)		
Optional	<i>Choose one or more</i>	
	78-PV0250/10	Cylinder mold 150 mm dia., special alloy steel hardened to 53-55 HRC, internally grinded, with holes for cold mix compaction. Complete with top and bottom plates
AIR COMPRESSOR (GYROCOMP ONLY)		
1 - Optional	78-PV0250/7***	Low noise air compressor. 230V / 50-60Hz / 1ph
UPGRADING OPTIONS (GALILEO AND GALILEO RESEARCH ONLY)		
1 - Optional	78-PV20UP1**	Shear measurement system (to be specified at time of order)
1 - Optional	78-PV20UP2**	Integrated electromechanical extruder (to be specified at time of order)
1 - Optional	78-PV20UP3*	Electronic balance, 30 kg cap., 1 g resolution. To weight the sample and to calculate the density.
1 - Optional	78-PV20/SOF**	PC software
CALIBRATION DEVICES		
1 - Optional	78-PV0250/11	Vertical force indicator, complete with 25kN load cell, base, spherical seat, load readout unit and ACCREDIA calibration certificate
1 - Optional	78-PV0255	ILS device for internal angle measurement for Gyrotory compactors, conforming to EN 12697-31 annex B, ASTM D7115 and AASHTO T344. Complete with PC software, PC connection cable and traceable calibration certificate.

* Suitable for use with PV20G0x and PV20R0x models only

** Suitable for use with PV20G0x models only

*** Suitable for use with PV2522/E model only

IPC Global Customer Care

IPC Global is the Advanced Pavement Testing Division of CONTROLS. As one of the longest established manufacturing companies in the world of Construction Materials Testing solutions, we are dedicated to supplying high quality, accurate, affordable, easy to use systems.

As a valued customer of CONTROLS, you will receive continuous, expert support and advice for your IPC Global equipment. Furthermore, we can offer full installation and training in the correct operation of your equipment.

For support from our expert Customer Care Team, contact your local CONTROLS office / distributor or email support@controls-group.com.

For more information, please visit www.controls-group.com.

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