

DATA SHEET

Servo-Pneumatic Four Point Bend Apparatus Standalone MkIV



General description

Compact and convenient, the Servo-Pneumatic Four Point Bend Apparatus Standalone features a digitally-controlled servo-pneumatic actuator that delivers highly accurate loading in both stress and strain control modes. Its beam cradle designed to subject asphalt beam specimens to four point bending with backlash free rotation and horizontal translation at all load reaction points. This new model is now designed to provide a range of precise strain measurement options - at top-center from floating beam (EN, Austroads), the neutral axis referencing the outer pivots (ASTM, AASHTO), or top-center referencing the outer pivots.

Controlling the Four Point Bend Apparatus Standalone is the Third Generation Integrated Multi-Axis Controls and Data Acquisition System (IMACS2) and UTS Neutron test application software.

The **Four Point Bend Apparatus** is of great benefit for your **Superpave and other performance-based testing** programs for measuring stiffness & fatigue properties, characterizing mixtures and as inputs into sophisticated pavement design models.

Main features

- Digital servo- pneumatic actuator provides accurate control of loading waveshape
- Includes both on-specimen and outer fixed reference point strain measurement capabilities
- Deflection can be measured at the neutral axis or at the top surface of the specimen.
- Backlash free rotation and translation on all load and reaction points
- Sinusoidal or haversine controlled stress loading
- Constant force motorized clamping with multiple preset force levels
- Non-linear regression data fitting ensures reliable determination of phase and modulus

Standards

- AASHTO T321
- EN 12697-26 Annex B
- EN 12697-24 Annex D
- ASTM D7460
- ASTM D8237

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- AG:PT/T233
- AG:PT/T274
- AS 03:2000

Specifications

Loading frequency: up to 60 Hz (load limitations apply at higher frequencies)

Load capacity: up to 5 kN dynamic

Optional on-specimen displacement transducers LVDT +/- 0.5mm, +/- 1mm or +/- 2.5mm

SPECIMEN DIMENSIONS

Specimen sizes: Max height 70 mm, Max width 80 mm, Length from 380 mm to 500+ mm

Accommodates typical 50 x 50 x 400 mm, 60 x 60 x 400 mm, 50 x 63 x 400 mm and 70 x 70 x 500 mm specimens

LOADING SPANS

Inner span ≤ 118.5 mm to >140 mm

Outer span ≤ 355.5 mm to >420 mm

Yoke Alignment Tool 50 x 50 x 355.5 mm (H x W x Outer span centers) 70 x 70 x 420 mm (optional)

DIMENSIONS AND WEIGHT

Apparatus 600 x 230 x 490 – 560mm (H x D x W) / 35kg

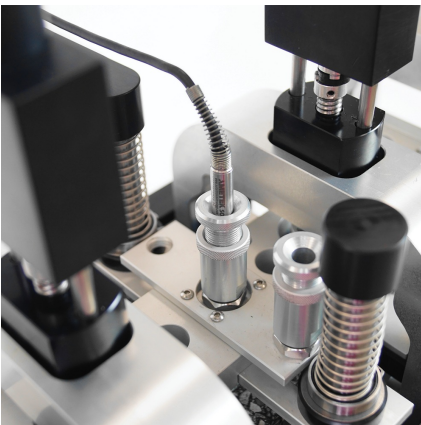
IMACS2 445 x 280 x 245 mm (H x D x W) / 11kg

Air Accumulator 330 x 470 x 450mm (H x D x W) / 9.5kg

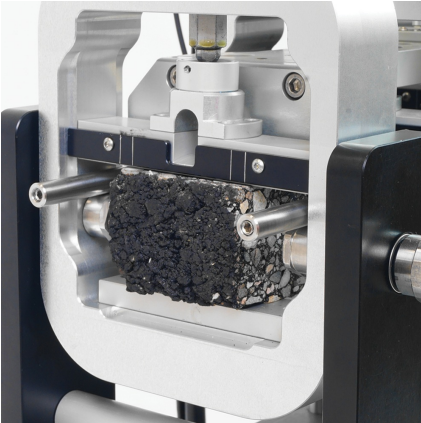
SERVICES

Air supply Clean, dry air at 800 – 900kPa

Minimum flow rate 5 liter/sec



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Detail of Servo-Pneumatic Four Point Bend Apparatus



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Products

79-PV74A12/I2

IPC Global Four Point Bend Apparatus - Pneumatic - Complete with IMACS2 controller. 110-230V / 50-60Hz / 1ph

Accessories and consumables

79-PV70E02

Environmental chamber for servo-pneumatic testing machine, -25°C to +60°C, 110-230V/50-60Hz/1Ph

79-PV70116

Temperature measuring kit (-50 +100°C), including two probes

79-PV70206

On Specimen LVDT (+/-0.5mm) w/ ILC.

79-PV70407

On Specimen LVDT (+/-1mm) with ILC

79-PV70408

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On Specimen LVDT (+/-2.5mm) with ILC