



PAVETEST
WHEN PERFORMANCE MATTERS

PAVEMENT
TECHNOLOGY



Pavetest, a new division of Matest

Pavetest is the new division of Matest committed to developing innovative, dynamic testing systems for asphalt.

Whilst Pavetest Pty. Ltd. may be a new player in this growing market sector, they are certainly not lacking experience. With many years of experience in developing pavement testing systems between them, Con Sinadinos (Managing Director) and Alan Feeley (Technical Director) bring a wealth of experience and talent to the company. The benefit is evident in every aspect of every product, which are designed to perform, built to last and easy to use.

From its inception, Pavetest's aim is to develop a range of **testing systems with unparalleled performance, ultimate versatility and exceptional reliability, at a price that represents real value for money.**

Pavetest's range of pavement testing systems both complements and completes Matest's Asphalt and Bitumen business unit.

CDAS - Control and Data Acquisition System

Pavetest's compact Control and Data Acquisition System (CDAS) delivers unparalleled performance, real time control and ultimate versatility in acquisition.

The CDAS:

- provides excellent waveform fidelity from integrated acquisition and control functions, with low level sampling at speeds of up to 192,000 samples per second simultaneously on all channels (using up to 64x oversampling)
- gives superior low noise performance and resolution of 20 bit over the full dynamic input signal range (no auto ranging required).

AVAILABLE MODELS:

B205 8 Channel CDAS - Acquisition 8 CH, 20 bit resolution
 Sampling rate up to 192 kHz (all channels)
 Smoothing up to 64 times over-sampling
 Calibration on power up
 Control Axis 2
 Communication USB or Ethernet

B206 16 Channel CDAS - Acquisition 16 CH, 20 bit resolution
 Sampling rate up to 192 kHz (all channels)
 Smoothing up to 64 times over-sampling
 Calibration Automatically on power up
 Control Axis 4
 Communication USB or Ethernet

Dimensions: 100(h) x 310(d) x 250(w) mm
 Power Supply: 90-264V 50/60 Hz 1ph 240W

TestLab Software

Developed with ultimate flexibility in mind, TestLab test and control software caters to all levels of operator experience. By using pre-programmed **"Method files"**, an inexperienced operator can run a range of international test methods without the need for any programming.

Moreover, a test **"Wizard"**, available with popular tests, can guide the operator step by step based on a "recipe book" approach.

Most importantly, the experienced engineer and/or researcher need not be constrained by the functions and analysis in the method files provided. The operator may clone, modify and/or generate his/her own method file to suit their specific requirements. The Excel based data analysis offers the operator the flexibility to implement alternative analysis and customize reporting facilities.

TestLab allows for real time graphing of results and configurable real time transducer levels display with unprecedented clarity of results and analytical power.

TestLab software is included with CDAS - Control and Data Acquisition System. It is supplied on CD that also includes the relevant Method files (based on the test configurations supplied) and calibration files for all transducers supplied.



B206 CDAS 16 channels



B200

AMPT/SPT Asphalt Mixture Performance Tester

The Pavetest AMPT is a servo-hydraulically controlled testing machine specifically designed to perform the three asphalt tests developed under NCHRP Projects 9-19 and 9-29; Dynamic Modulus, Flow Number and Flow Time.

It is also the prescribed equipment in AASHTO TP 79-09 Standard Method Test for Determining the Dynamic Modulus and Flow Number for Hot Mix Asphalt (HMA) using the Asphalt Mixture Performance Tester (AMPT).

In addition, the Pavetest AMPT can also perform Direct Tension Cyclic Fatigue, Indirect Tensile Dynamic Modulus, Incremental Repeated Load Permanent Deformation, Semi-circular bend, and Overlay Testing of Asphalt Mixtures.

The Pavetest AMPT is underpinned by Pavetest's leading edge CDAS digital controller, TestLab software and a full complement of accessories, hardware and software in perfect unison.

The machine includes:

- 8 Channel Control and Data Acquisition System (CDAS) & TestLab software
- 30 mm Actuator LVDT
- Load cell (± 15 kN)
- Pressure transducer (± 300 kPa)
- Temperature transducer (from 0°C to +65°C)
- On-specimen LVDT (2 mm) (3 pieces)
- 105 mm bottom loading platen
- 105 mm top loading platen

MAIN FEATURES:

- **Compact, fully self contained, precision engineered unit.**
- Thermoelectric (TE) Heating/Cooling - More reliable and environmentally friendly than mechanical refrigeration & heating elements.
- **Built-in, silent, air compressor with associated air preparation equipment** – No need for external compressed air supply.
- **Patented magnetically mounted on-specimen transducer system**, based on loose core LVDTs.
- Optional Epsilon (extensometer) on-specimen strain transducers.
- **Gauge point fixing jig** facilitates gluing gauge points and the (top and bottom) platens for proposed AMPT Direct Tension Cyclic Fatigue (S-VECD) Test.
- **Dynamic Verification Device.**

TECHNICAL SPECIFICATIONS:

- Load capacity: 15 kN (Static) - 13.5 kN (Dynamic)
- Actuator stroke: 30 mm
- Specimen size: 100 mm (dia) x 150 mm (h)
- Temperature range: 4°C to 60°C
- Confining pressure: 0 to 210 kPa
- Noise level: Less than 70 db at 2 m

Power Supply: 230V 50 Hz 1ph 3,2 kW

Dimensions: 1510(h) x 650(d) x 1220(w) mm

Weight: 300 kg (excluding oil)



B202
Gauge point fixing jig



B203 verification device with on-specimen LVDTs and load cell

B200 AMPT/SPT Asphalt Mixture Performance Tester



CONSUMABLE ACCESSORIES:

B201 KIT AMPT Consumables kit. Comprises:

- **B201-51** Gauge point (24 pieces)
- **B201-52** 5 Minute, two part epoxy 24 mL
- **S311-03** 100 mm Sealing Rings (Pack of 10)
- **S310-03** 100 mm Rubber membranes (Pack of 10)

RECOMMENDED ACCESSORIES:

- B202** AMPT Gauge Point Fixing Jig
- B203** AMPT Dynamic Verification Device
- H009-01** PC complete with LCD monitor 22", keyboard, mouse, cables and installation of Testlab software

TESTING JIGS:

B204 KIT AMPT Overlay kit. Comprises:

- **B204-01** AMPT Overlay jig
- **B204-02** Pair of Overlay Tester (OT) specimen plates
- **B204-03** OT specimen preparation kit

B207 KIT AMPT Indirect Tensile (IDT) kit. Comprises:

- **B207-01** AMPT IDT Jig
- **B253-01** AASHTO T322 LVDT mounting kit
- **B253-03** AASHTO T322 gauge point template (150 mm specimen)
- **B290-08** AMPT Miniature LVDT (1 mm) (4 pieces)
- **B253-51** AASHTO T322 short gauge point (16 pieces)
- **B253-52** AASHTO T322 long gauge point (16 pieces)

B208 AMPT Semi-Circular Bending (SCB) Jig



B210 KIT STAND-ALONE SERVO-PNEUMATIC FOUR POINT BENDING (4PB) SYSTEM

STANDARDS: EN 12697-24 Annex D / EN 12697-26 Annex B / AASHTO T321 / ASTM 03 / ASTM-D7460

The Pavetest Servo-pneumatic Four Point Bending (4PB) System is a servo-pneumatic testing machine utilizing digital control of a high performance servo valve to provide accurate loading wave shapes up to 60Hz. The 4PB system can be operated in haversine or sinusoidal, controlled strain or sinusoidal controlled stress mode to determine the flexural stiffness/modulus and resistance to fatigue of asphalt beams of various sizes.

The 4PB System is underpinned by Pavetest's leading edge CDAS digital controller, TestLab software and a full complement of accessories, hardware and software in perfect unison.

B210 KIT comprises:

- **B210-01** Servo-pneumatic Four Point Bending (4PB) Device with 10 mm actuator LVDT, ± 5 kN load cell, and 2 mm On-specimen LVDT
- **B205** 8 Channel Control and Data Acquisition System (CDAS) & TestLab software
- **B270-12** Air reservoir assembly

Requires pressurized air, minimum 7 bar (not included).

MAIN FEATURES:

- Robust four point loading frame
- Backlash free rotation and translation on all load and reaction points
- Fully configurable to suit a large range of testing applications
- High performance servo-valve
- Long life pneumatic actuator
- Digital Servo-pneumatic control
- 2 axis control and 8 channel data acquisition

TECHNICAL SPECIFICATIONS:

- **Load frame** Outer clamp span 355.5 mm (14") and 420 mm
Nominal beam size(s): 50 mm (h) X 50 mm (w)
50 mm (h) X 63.5 mm (w)
70 mm (h) X 70 mm (w)
- **Servo actuator** Capacity ± 5 kN; Frequency Up to 60 Hz;
Stroke 10 mm
- **On-specimen transducer** Range ± 1 mm; Resolution 0.0002 μ m;
Accuracy Better than 5 μ m

Power Supply: 90-264V 50/60 Hz 1ph 300 W (B210 KIT)

Dimensions: 600(h) x 250(d) x 570(w) mm (B210-01)

420(h) x 250(d) x 570(w) mm (B212)

Weight: 39 kg

4PBA on DTS16:

- **B210-01** Servo-pneumatic Four Point Bending (4PB) device with 10 mm actuator LVDT, ± 5 kN load cell and 2 mm Onspecimen LVDT

4PBA on DTS30:

- **B212** 4PB JIG

RECOMMENDED ACCESSORIES:

- **B221** Temperature controlled cabinet: -20°C to +80°C to suit DTS-16 or 4PBA
- **H009-01** PC complete with LCD monitor 22", keyboard, mouse, cables and installation of Testlab software



B210-01

Servo-pneumatic four point apparatus

ACCESSORIES:

B210-02 4PB PVC Beam

B210-03 4PB Reference beam

B250-07 KIT Temperature measuring kit comprising:

- **B292-01** Temperature transducer (-80°C to +80°C) (2 pieces)
- **B250-10** Dummy asphalt specimen
- **B250-11** 100 mm "O" ring (3 pieces)
- **B250-12** Thermal conducting grease (about 56 g)

TECHNICAL FEATURES:

- The specimen is securely clamped using servo-motor driven ball screws to maintain the prescribed clamping force and accommodate any compliance of the specimen between the clamping surfaces, during the test. The clamping force is controlled by regulating the motor current.
- Two switches, located on the front of the device, are used to activate and release the inner and outer specimen clamps. The four specimen yokes provide backlash free rotation and translation at all load and reaction points.
- Markings on the top clamp pads assist the operator to centre the beam laterally prior to clamping.
- The servo-pneumatic system uses a bottom loading pneumatic actuator coupled to a high performance servo valve, with PID closed-loop control and run time adaptive control to achieve/maintain the requested strain/stress for the duration of the test.
- A low profile, high performance stainless steel ring torsion load cell is used to measure and control the load and a co-axially mounted (LVDT) displacement transducer on the actuator is used to position the centre cradle.
- An on-specimen (LVDT) displacement transducer is used to measure and control the deflection at the centre of the beam with respect to the outer load/reaction points, as prescribed in the relevant standards.
- The Windows based, TestLab software provides a user interface that is as simple and efficient as possible and application software according to the above mentioned international Standards.



16 kN SERVO-PNEUMATIC DYNAMIC TESTING SYSTEM - two models available:

B220-01 KIT DTS-16 with manual crosshead

B220-02 KIT DTS-16 with motorized crosshead

The DTS-16 Dynamic Testing System is a servo-pneumatically controlled testing machine utilizing digital control of a pneumatic servo valve to provide accurate loading wave shapes up to 70 Hz. The DTS-16 can be operated in tension, compression dynamic loading and is suited to testing a diverse range of materials such as asphalt, soil, unbound granular materials, fibres and plastics.

The DTS-16 is underpinned by Pavetest's leading edge CDAS digital controller, TestLab software and a full complement of accessories, hardware and software in perfect unison.

The machines comprise:

B220-11 20 kN Load frame with manual crosshead,
16 kN Servo-pneumatic actuator with its LVDT (30 mm stroke),
± 20 kN load cell

or

B220-12 20 kN Load frame with motorized crosshead,
16 kN Servo-pneumatic actuator with its LVDT (30 mm stroke),
± 20 kN load cell

B206 16 Channel Control and Data Acquisition System
(CDAS) & TestLab software

B270-12 Air reservoir assembly

Requires pressurized air, minimum 7 bar (not included).

Model	B220-01 KIT	B220-02 KIT
B220-11	●	
B220-12		●
B206	●	●
B270-12	●	●

MAIN FEATURES:

- Compact, robust 2-Column load frame
- Precision engineered
- Optional Motorized crosshead positioning
- Fully configurable to suit a large range of testing applications
- Digital Servo-Pneumatic control
- 4 axis control and 16 Channel Control and Data Acquisition System

TECHNICAL SPECIFICATIONS:

- Load frame Between Columns 345 mm
Vertical Space 650 mm
- Servo actuator Capacity ±16 kN
Frequency up to 70 Hz
Stroke 30 mm
Air supply clean dry air
Pressure 800-900 kPa
Minimum rate 5 litres/sec

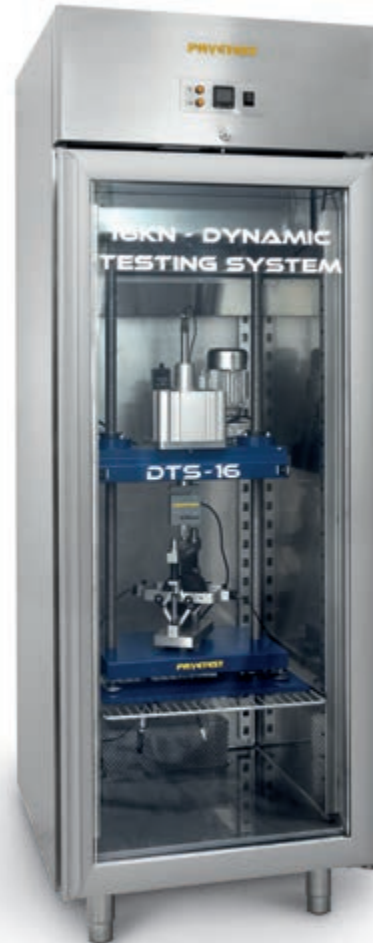
Power Supply: 230V 50 Hz 1 ph 100W (B220-12)
230V 50 Hz 1 ph 1450W (B221)

Dimensions: 1020(h) x 450(d) x 500(w) mm load frame
2100(h) x 900(d) x 750(w) mm with temperature controlled cabinet

Weight: 100 kg without temperature controlled cabinet

TEST CONFIGURATIONS and RELATED JIGS:

consult the following pages



B220-02 KIT 16 kN Servo-Pneumatic dynamic testing system (motorized crosshead) with **B221** Temperature controlled cabinet

RECOMMENDED ACCESSORIES:

B221 Temperature controlled cabinet: -20°C to +80°C to suit DTS-16 or 4PBA

B250-07 KIT Temperature measuring kit

H009-01 PC complete with LCD monitor 22", keyboard, mouse, cables and installation of Testlab software

We can upgrade your existing UTM (also from other manufacturers)



B220-02 KIT
DTS-16 detail



B220-12
20 kN Load frame with motorized crosshead



B230

30 kN SERVO-HYDRAULIC DYNAMIC TESTING SYSTEM (DTS-30)

The DTS-30 Dynamic Testing System is a servo-hydraulic testing machine utilizing digital control of a high performance servo valve to provide accurate loading wave shapes up to 100 Hz. The DTS-30 can be operated in tension, compression dynamic loading and is suited to testing a diverse range of materials such as asphalt, soil, unbound granular materials, fibres and plastics.

The DTS-30 is underpinned by Pavetest's leading edge CDAS digital controller, TestLab software and a full complement of accessories, hardware and software in perfect unison.

The DTS-30 Dynamic Testing System is compact, fully integrated, user and environmentally friendly.

The machine includes:

- 150 kN Load frame
- 30 kN Servo-hydraulic actuator (100 mm Stroke)
- 2.2 kW Hydraulic Power Supply
- 16 Channel Control and Data Acquisition System (CDAS) & TestLab software
- Load cell (± 30 kN)
- 100 mm actuator LVDT

MAIN FEATURES:

- **Compact, robust (150 kN) load frame**
- Small footprint; 90 cm x 135 cm, including hydraulic power supply and climatic chamber
- **Reaction frame embedded in the test chamber**
- **Portable temperature control unit**
- **Fully configurable** to suit a large range of testing applications
- Digital Servo-Hydraulic control
- 4 axis control and 16 channel data acquisition as standard

ADVANTAGES:

- **The DTS-30 fatigue rated, servo-hydraulic actuator utilizes metal labyrinth bearings and seals.**
The labyrinth bearings and seals are designed to reduce friction and maintain low operating temperatures. The bearings experience little-to-no wear, operate at high speeds and offer a long service life.
- **The speed of the HPS pump motor is controlled using a variable-frequency drive (VFD), or inverter drive.**
This enables the motor to be slowed down, or turned off, when the oil flow from the pump exceeds the flow required by the actuator at any given time. This not only reduces noise and heat generation but also offers cost savings, by reducing power consumption. Furthermore, the HPS can operate at 50 Hz or 60 Hz.

TECHNICAL SPECIFICATIONS:

- **Load frame** Between Columns 600 mm
 Vertical Space 800 mm
- **Servo actuator** Capacity ± 30 kN
 Frequency up to 100 Hz
 Stroke 100 mm
- **Hydraulic Power Supply** Pressure up to 160 bar, user defined
 Flow rate up to 7,5 litres/min
 Dimensions: 650(h) x 550(d) x 450(w) mm
 Power Supply: 230V 50/60 Hz 1 ph 2.5 kW
- **Temperature Control Cabinet** -20°C to +80°C

Power Supply: 230V 50/60 Hz 1 ph 2.5 kW (B230)
230V 50 Hz 1 ph 1.3 kW (B231)

Dimensions: 2100(h) x 900(d) x 700(w) mm with temperature controlled cabinet



B230 30 kN Servo-Hydraulic Dynamic Testing System with **B231** temperature controlled cabinet

NEEDED ACCESSORIES:

B231 Temperature controlled cabinet:
-20°C to +80°C to suit DTS-30

or

B232 Temperature controlled cabinet:
-40°C to +80° to suit DTS-30

RECOMMENDED ACCESSORIES:

H009-01 PC complete with LCD monitor 22", keyboard, mouse, cables and installation of Testlab software

B250-07 KIT Temperature measuring kit

We can upgrade your existing UTM (also from other manufacturers)

TEST CONFIGURATIONS and RELATED JIGS:

consult the following pages



WHAT MAKES IT DIFFERENT MAKES IT BETTER!

The DTS-30 is Universal Testing Machine (UTM), but not as most people know it. It does not conform to the “me too” attitude of most UTM manufacturers. The innovations featured on the DTS-30 are built on many years of experience, developing, studying and using various universal testing machines from a number of manufacturers.

The first thing you will notice about the DTS-30 is the absence of a reaction frame. **The reaction frame** most certainly exists, but it's **embedded in the test chamber**. This provides a very sleek appearance, maximizes the space inside whilst reducing the space required outside.

Since it is mandatory to control the test temperature of most pavement materials, e.g. asphalt, **the test chamber is insulated and forms part of the temperature controlled cabinet**.

Most UTM manufacturers opt for an elaborate (and expensive) moveable crosshead, only to find that its range (and usefulness) is limited by the climatic chamber.

The DTS-30 has a remotely positioned reaction shaft that adjusts the work space. However, you won't need to adjust it often because the **servo-hydraulic actuator has 100 mm of stroke**.

PORTABLE TEMPERATURE CONTROL UNIT

The temperature control unit attaches to the test chamber using a magnetic seal and can be wheeled away when not required or for servicing.

This also makes servicing, replacing or upgrading the temperature control unit virtually effortless: it can be removed without dismantling the machine or disrupting the testing program.



B230 DTS-30 Dynamic Testing System, open

A BOTTOM LOADING MACHINE

Before this current crop of universal testing machines, many dynamic testing machines were bottom loading.

More recently, the Asphalt Mixture Performance Tester (AMPT) changed the mindset of the testing community by highlighting the benefits of a bottom loading machine.

Firstly, **it is a neat, compact and integrated solution**, that places all hydraulic components within easy reach: gone are the long hydraulic hoses that run up and down the side of the machine and got in the way. They have been replaced by **shorter hoses that connect the actuator to the hydraulic power supply** that's tucked neatly away behind the machine, under the test chamber.

Can't see the **Control and Data Acquisition System (CDAS)**? That's because **it's housed neatly, in the cabinet in front of the machine**.

You won't see a tangle of cables either; they enter the cabinet through the floor of the test chamber or through the back of the cabinet and connect to the CDAS.

The door of the cabinet can be held ajar to allow transducers to be re-allocated or opened completely for servicing. Unused transducers can also be stored out of harm's way.

Moreover, the DTS-30 reaction frame is symmetrical; **the servo-hydraulic actuator and reaction shaft can be interchanged to make the DTS-30 top loading**.



B206 16 Channel CDAS



TEST CONFIGURATIONS

TESTING KIT	RELEVANT STANDARD(S)	WITH DYNAMIC SYSTEM	ACCESSORIES	PICTURE
<p>B250 KIT • IDTM Indirect Tensile Modulus Comprises: B250-01 Basic IDT Jig B250-08 Yoke B250-09 Assembly for B250 KIT B290-01 LVDT (0.2 mm) (2 pieces)</p>	<p>AASHTO TP31 Resilient modulus of bituminous mixtures by indirect tension ASTM D4123 Indirect Tension Test for Resilient Modulus of Bituminous Mixtures AS/NZS 2891.13.1 Resilient modulus of asphalt - Indirect tensile method EN 12697-26 Annex C - Indirect tension to cylindrical specimens (IT-CY)</p>	<p>B220-01 KIT Manual DTS-16 with Climatic chamber (B221) B220-02 KIT Motorized DTS-16 with Climatic chamber (B221) B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>	<p>B250-03 Asphalt proving ring B250-04 100 mm diameter PVC specimen B250-05 150 mm diameter PVC specimen B250-06 KIT Torque screwdriver (B250-13) with hexagonal head 4 mm (B250-14)</p>	
<p>B251 KIT • IDTF Indirect Tensile Fatigue Comprises: B250-01 Basic IDT Jig B290-03 LVDT, double ball ended (3,75 mm) (2 pieces) B251-01 LVDT mounting strip gluing jig</p>	<p>EN 12697-24 Annex E – Indirect tensile test on cylindrical shaped specimens</p>	<p>B220-01 KIT Manual DTS-16 with Climatic chamber (B221) B220-02 KIT Motorized DTS-16 with Climatic chamber (B221) B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>	<p>B251-51 Pair of LVDT mounting strip to suit 100 mm specimen (needed accessory) And/or B251-52 Pair of LVDT mounting strip to suit 150 mm specimen (needed accessory) B201-52 5 Minute, two part epoxy 24 mL</p>	
<p>B260 KIT • UCC Uniaxial cyclic compression Comprises: B260-01 Base assembly B260-02 Chamfered top platen B290-02 LVDT (10 mm) (2 pieces)</p>	<p>EN 12697-25 Cyclic compression. Test Method A - Uniaxial cyclic compression test with confinement</p>	<p>B220-01 KIT Manual DTS-16 with Climatic chamber (B221) B220-02 KIT Motorized DTS-16 with Climatic chamber (B221) B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>		
<p>B253 KIT • IDTOS Indirect Tensile modulus, creep compliance and strength using on-specimen transducers Comprises: B250-01 Basic IDT Jig B253-01 AASHTO T322 LVDT mounting kit B290-04 Miniature LVDT (1 mm) (4 pieces) B253-02 AASHTO T322 gauge point template (100 mm specimen) B253-03 AASHTO T322 gauge point template (150 mm specimen)</p>	<p>ASTM D7369 Resilient Modulus of Bituminous Mixtures by Indirect Tension Test AASHTO T 322 Creep Compliance and Strength of Hot-Mix Asphalt (HMA) Using the Indirect Tensile Test Device</p>	<p>B220-01 KIT Manual DTS-16 with Climatic chamber (B221) B220-02 KIT Motorized DTS-16 with Climatic chamber (B221) B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>	<p>B253-51 Short gauge point (needed accessory) B253-52 Long gauge point (needed accessory) B201-52 5 Minute, two part epoxy 24 mL</p>	
<p>B212 • 4PB Four Point Bending for use with Pavetest B230</p>	<p>AASHTO T 321 Fatigue Life of Compacted Hot-Mix Asphalt (HMA) Subjected to Repeated Flexural Bending ASTM D7460 Fatigue Failure of Compacted Asphalt Concrete Subjected to Repeated Flexural Bending AG/PT/T233 & ASTM 03 Fatigue life of compacted bituminous mixes subject to repeated flexural bending EN 12697-24 Annex D - Four point bending test on prismatic shaped specimens EN 12697-26 Annex B - Four point bending test on prismatic specimens (4PB-PR)</p>	<p>B230 DTS-30 with Climatic chamber (B231 or B232)</p>	<p>B210-02 4PB PVC Beam B210-03 4PB Reference beam</p>	
<p>B280 KIT • 2PB Two Point Bending (2PB) to suit B230. Comprises: B280-01 2PB Jig B280-51 2PB Mounting plate (25 mm apex) B280-52 2PB Mounting plate (50 mm apex) B280-53 2PB Mounting plate (base)</p>	<p>EN 12697-24 Annex A - Two-point bending test on trapezoidal shaped specimens (2PB-TR) EN 12697-26 Annex A - Two point bending test on trapezoidal specimens (2PB-TR)</p>	<p>B230 DTS-30 with Climatic chamber (B231 or B232)</p>	<p>B290-05 LVDT (2 mm) (needed accessory) B280-02 Two point Bending (2PB) gluing jig B201-52 5 Minute, two part epoxy 24 mL</p>	



TESTING KIT	RELEVANT STANDARD(S)	WITH DYNAMIC SYSTEM	ACCESSORIES	PICTURE
<p>B261 KIT • PD Permanent deformation Comprises: B260-01 Base assembly B260-03 100 mm top platen B290-02 LVDT (10 mm) (2 pieces)</p>	AS/NZS 2891.12.1 Determination of the permanent compressive strain characteristics of asphalt - Dynamic creep test	<p>B220-01 KIT Manual DTS-16 with Climatic chamber (B221) B220-02 KIT Motorized DTS-16 with Climatic chamber (B221) B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>	B260-04 150 mm top platen	 B261 KIT  B262 KIT
<p>B255 KIT • E* Dynamic modulus Comprises: B200-02 105 mm bottom loading platen B200-03 105 mm top loading platen B253-04 AASHTO T342 LVDT mounting kit (3 pieces) B290-06 LVDT (1 mm) (3 pieces) B253-05 Screwdriver hex bit with spherical head size 2 mm</p>	AASHTO T342 Determining Dynamic Modulus of Hot Mix Asphalt (HMA)	<p>B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>	<p>B202 AMPT Gauge Point Fixing Jig B203 AMPT Dynamic Verification Device B253-53 AASHTO T342 gauge point B201-52 5 Minute, two part epoxy 24 mL</p>	
<p>B271 KIT • CCT Cyclic triaxial compression Comprises: B270-01 Modified triaxial cell, suitable for 100 mm dia., up to 200 mm height specimens B270-02 Triaxial cell external LVDT mounting kit B293-02 Pressure transducer (± 600 kPa) B270-05 110 mm diameter bottom platen assembly for EN 12697-25B B270-06 110 mm diameter top loading platen for EN 12697-25B B270-13 Distance piece 50 mm height B270-14 Distance piece 100 mm height</p>	EN 12697-25 Cyclic compression. Test Method B - Triaxial cyclic compression test	<p>B220-01 KIT Manual DTS-16 with Climatic chamber (B221) B220-02 KIT Motorized DTS-16 with Climatic chamber (B221) B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>	<p>B290-02 Displacement transducer (10 mm) (2 pieces needed) B270-04 Air reservoir assembly confining pressure upgrade kit (needed accessory for DTS-16) or B270-03 Air reservoir assembly with confining pressure control (needed accessory for DTS-30/130) Requires pressurized air; minimum 7 bar (not included)</p>	
<p>B272 KIT • TRM Triaxial resilient modulus Comprises: B270-01 Modified triaxial cell, suitable for 100 mm dia., up to 200 mm height specimens B270-02 Triaxial cell external LVDT mounting kit B293-02 Pressure transducer (± 600 kPa) S315-07 100 mm diameter bottom platen S314-03 100 mm diameter top platen</p>	AASHTO T307 Determining the resilient modulus of soils and aggregate materials	<p>B220-01 KIT Manual DTS-16 with Climatic chamber (B221) B220-02 KIT Motorized DTS-16 with Climatic chamber (B221) B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>	<p>B290-02 Displacement transducer (10 mm) (2 pieces needed) B270-04 Air reservoir assembly confining pressure upgrade kit (needed accessory for DTS-16) or B270-03 Air reservoir assembly with confining pressure control (needed accessory for DTS-30/130) Requires pressurized air; minimum 7 bar (not included)</p>	
<p>B254 KIT • SCB Semi-Circular Bending Comprises: B254-01 SCB kit B254-51 SCB wear plate (2 pieces)</p>	EN 12697-44 Tensile Strength and Fracture Toughness-Crack Propagation	<p>B220-01 KIT Manual DTS-16 with Climatic chamber (B221) B220-02 KIT Motorized DTS-16 with Climatic chamber (B221) B230 DTS-30 with Climatic chamber (B231 or B232) B240 DTS-130 with Climatic chamber (B241 or B242)</p>	<p>B250-01 Basic Indirect Tensile Jig (needed accessory) B290-07 Deformation gauge (needed accessory)</p>	
<p>B282 KIT • TSRST Thermal Stress Restrained Specimen Test Comprises: B282-01 TSRST Temp. Transducer (-80°C to +80°C) (3 pieces) B282-02 Rod End (2 pieces) B282-03 Clevis Yoke and Pin (2 pieces) B282-04 Platen (2 pieces) B282-05 LVDT Holder (2 pieces) B282-06 Invar Rod (250 mm long) (2 pieces)</p>	<p>AASHTO TP10 Thermal Stress Restrained Specimen Tensile Strength</p> <p>EN 12697-46 Low Temperature Cracking and Properties by Uniaxial Tension</p>	<p>B230 DTS-30 with Climatic chamber (B232) B240 DTS-130 with Climatic chamber (B242)</p>	<p>B290-09 Displacement transducer for TSRST (2 pieces needed) B282-07 Tension platen gluing jig (2 pieces needed)</p>	



MATEST ASPHALT COMPACTOR

B039A

ASC - Asphalt Shear box Compactor

Asphalt technologists are acutely aware of the importance of a representative specimen during any laboratory performance testing. The precise shearing motion of the ASC replicates the conditions of field compaction in order to reproduce the field properties of asphalt, quickly and easily under the controlled conditions of a laboratory.

The ASC compacts large asphalt prisms that can be sawn to produce four to six beams or slabs for laboratory wheel tracking; or the prism can be cored to produce three to four 100mm diameter cylinders, all having essentially identical properties.

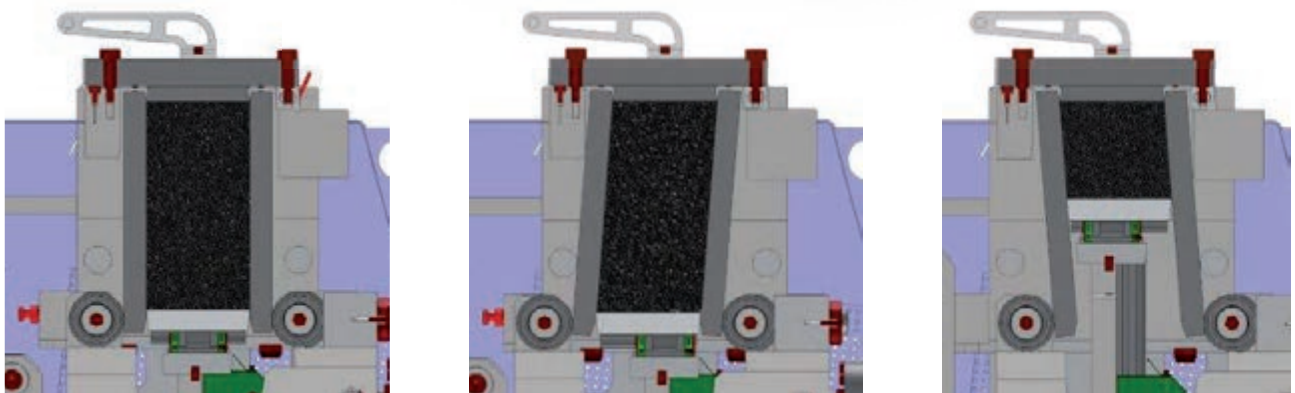
The electronic control unit with touch screen color display operates like a standard Windows based PC for the management and analysis of the data, test results and graphs.

The user friendly touch-screen icon interface allows for easy set up parameter entry, enables immediate (fully automatic test execution) data acquisition/processing, test report, and data file generation.

A LAN connection to Intranet/Internet enables remote communication to receive immediate diagnostic analysis and technical support from Matest technicians, and/or software updates.



B039A



During the compaction process a lateral displacement is applied to the specimen along with a vertical load, which results in a shearing action that makes the compaction similar to the the on-field one.



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MATEST ASPHALT COMPACTOR

MAIN FEATURES:

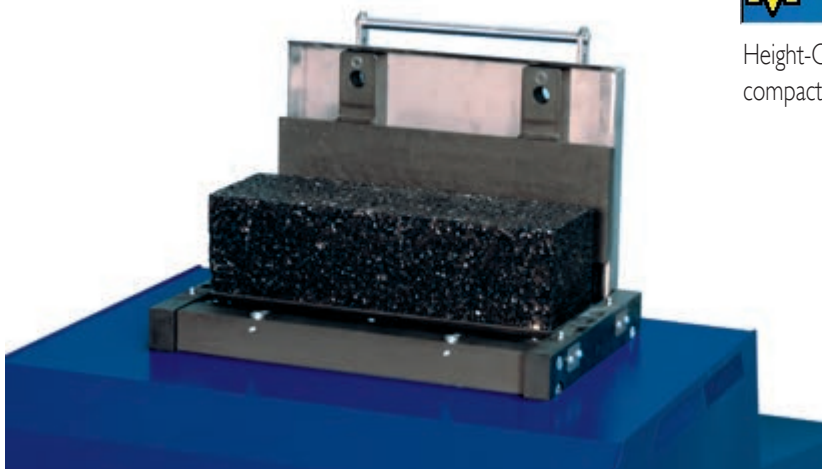
- Extremely sturdy fabricated frame combined with precision machined components
- Servo hydraulic vertical ram with integral hydraulic power supply
- Precision electro-mechanical shearing motion
- Integral specimen extruder
- Electronic control unit with touch screen color display (no need for PC)
- Unlimited memory storage with: 2 USB ports, 1 SD card slot, RS232/485 serial port
- The compaction cycle can be programmed by specifying vertical stress/load and test termination conditions; Number of cycles, Specimen height and/or density
- ASC can be equipped with a load cell for shear stress measurement, upon request

TECHNICAL SPECIFICATION:

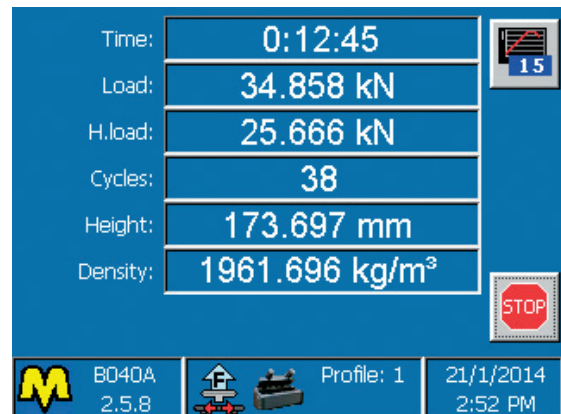
Vertical force:	Up to 100kN
Shearing force:	Up to 50kN
Shear angle:	$4^\circ \pm 0.1^\circ$
Shearing cycle rate:	3 ± 0.1 gyrations per minute
Mould width:	$150\text{mm} \pm 0.1\text{mm}$
Mould length:	$450\text{mm} \pm 0.1\text{mm}$
Mould surface finish (inside):	Smoother than $0.4\mu\text{m rms}$
Mould surface hardness:	More than 48 Rockwell C
Mould capacity:	Approx. 20 litres
Loading platen width:	$149\text{mm} \pm 0.2\text{mm}$
Loading platen length:	$449\text{mm} \pm 0.2\text{mm}$
Loading platen smoothness:	Smoother than $0.4\mu\text{m rms}$
Loading platen surface hardness:	More than 48 Rockwell C
Number of cycles:	Up to 100
Vertical stress:	0.1 to $1.5\text{MPa} \pm 0.01\text{MPa}$
Compaction height:	145mm to $185\text{mm} \pm 0.1\text{mm}$
Power supply:	230V 1ph 50/60Hz
Dimensions:	$788 \times 1360 \times (H) 1314\text{mm}$
Weight:	1200 kg

ACCESSORIES:

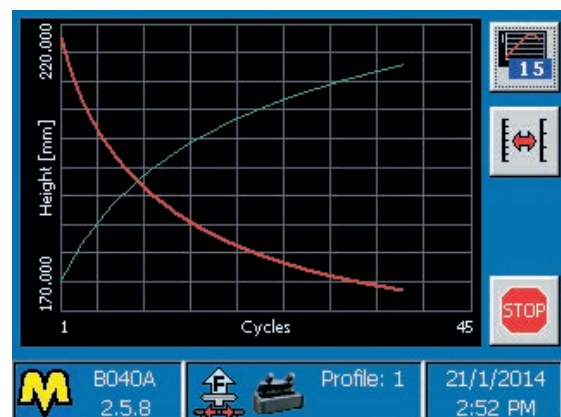
- B039A-01** Loading Chute
- B039A-02** Tray (2 off)
- B039A-03** Spreading comb
- B039A-04** Leveling blade



Specimen is extruded after the machine has completed the specified number of cycles, or when the required specimen height has been reached. An automatic extruder allows an easy extraction of the compacted specimen.



Test parameters during compaction



Height-Cycles and Density-Cycles curves during compaction



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PAVETEST

PAVETEST IS A DIVISION OF MATEST COMMITTED TO DEVELOPING INNOVATIVE DYNAMIC TESTING SYSTEMS.

Matest is the leading manufacturer of material testing equipment for the construction industry.

Our vision and mission have constantly been focused on R&D and manufacturing, with an emphasis on innovation and quality.

As a result, we have established **Pavetest**, a division committed to developing **innovative dynamic testing systems for asphalt** that are designed to perform, built to last and easy to use.

Pavetest is the brainchild of Australian industry veterans Con Sinadinos (CEO), and Alan Feeley (Technical director), engaged in developing dynamic testing systems with unparalleled performance, ultimate versatility and exceptional reliability, at a price that represents real value for money.

With a proven track record in value engineering, **we can now offer a complete range of static and dynamic products and testing solutions from sample preparation to advanced material research.**

We provide excellent technical support, either directly or through our network of distributors.

Contact us at info@matest.com for any further information on Pavetest products!

WHERE TECHNOLOGY MEETS THE PAVEMENT

- UNPARALLELED PERFORMANCE
- ULTIMATE VERSATILITY
- EXCEPTIONAL RELIABILITY

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