Servo-Hydraulic Universal Testing Machine

CRT-UTM-HYD

> ***A new generation of Universal Testing Machine combining state of the art technology with proven reliability and precision for research and standard testing***

The Servo-Hydraulic Universal Testing Machine (CRT-UTM-HYD) is a well designed, inexpensive machine specifically developed for the testing of materials used in pavement construction. A motorized, adjustable cross head reduces the time between test set-ups. The programmable temperature cabinet provides the possibility to perform frequency/temperature sweeps. Accurate waveforms are digitally generated and applied by the actuator producing repeatable conditions that are simulative of those created by moving or static vehicles. The actuator is double-acting allowing both compressive and tensile forces to be applied. Various systems are available for the measurement of the modulus of unbound materials.

Standards

- EN 12697-24 Annex E
- EN12697-25 Method A and B
- EN 12697-26 Annex C and E
- ASTM D4123
- ASTM D7369
- ASTM D7313
- ASTM D8044
- AASHTO TP31
- AASHTO TP62
- AASHTO TP 105
- AASHTO TP124
- AASHTO T307
- AASHTO T322
- AASHTO T342
- NCHRP 9-19

Key Features

- Designed to perform a range of tests on asphaltic paving materials, sub-grade soils and granular sub-base materials
- Double acting fatigue rated hydraulic actuator with integral stroke transducer
- Star servo valve with ‘Sapphire Technology’
- Motorised adjustable lower cross head with automatic hydraulic frame clamping
- Integral programmable temperature controlled cabinet
- Issued with UKAS accredited certificate of calibration for EN 12697-24; EN 12697-25, EN 12697-26

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- Accessories available to perform a range of standard and non standard test methods

Key Uses

- Assessment of resistance to permanent deformation (rutting)
- Measurement of stiffness modulus
- Assessment of resistance to fatigue cracking
- Resilient modulus of unbound materials
- Mix design

Control System and Software

This machine can be controlled using our Standard Acquisition and Control System along with Universal Software™. Universal Software™ is user friendly, intuitive and reliable Windows® software developed using LabVIEW™. Universal test software for the development of test methods using static, sinusoidal, haversine, square, triangular with user selected frequencies and data collection rates. Stored test data can be imported into a spreadsheet package to be analysed by the user. Utilities are included for transducer check, diagnostic routines and calibration. Alternatively, our next generation digital data acquisition and control unit cDAC™ Advanced Data Acquisition System brought together in alliance with our flagship software DIMENSION™ gives you the power to perform the most demanding of tests with your materials testing equipment. cDAC™, our next generation class leading digital controller is unparalleled in its field and suitable for advanced testing required for research.

Accessories

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

CRT-ITSMFAT-SET	Indirect tensile stiffness modulus and fatigue measurement system to perform EN 12697-26 (Annex C) EN 12697-24 (Annex E) Ø100&150mm specimens.
CRT-ITSM-SET	Indirect tensile stiffness modulus measurement system to perform EN 12697-26 (Annex C) Ø100&150mm specimens.
CRT-FAT-SET	Indirect tensile fatigue measurement system to perform EN 12697-24 (Annex E) for Ø100mm specimens. To be used with CRT-ITSM-SET.
CRT-FAT-SET100_150	Indirect tensile fatigue measurement system to perform EN 12697-24 (Annex E) for Ø100mm specimens. To be used with CRT-ITSM-SET.
CRT-FAT-SET150	Add-on for CRT-FAT-SET for 150mmØ specimens. To be used with CRT-ITSM-SET and CRT-FAT-SET.
CRT-PD-SET	Dynamic and static creep measurement system to perform EN12697-25 (Method A)
CRT-PRESTRIAX-SET	Dynamic and static creep measurement system - confining stress to perform test according to EN 12697-25 Method B.
CRT-IT-RESMOD	Resilient modulus test system to perform AASHTO TP31 and ASTM D4123
CRT-IT-D7369	Resilient modulus test system to perform ASTM D7369
CRT-INDTENS-CREEP	Indirect Tensile Creep measurement system according to AASHTO T322
CRT-DTC-HYD	Direct Compression & Tension Measurement System to perform test according to EN 12697-26 Annex E for CRT-UTM-HYD
CRT-T307	Triaxial system to perform AASHTO T307 for Ø200x100mm specimens of unbound materials
CRT-T307+	Triaxial system to perform AASHTO T307 for Ø200x100mm and Ø150x300mm specimens of unbound materials. To use with CRT-UTM-NU pillar extensions are required.
CRT-T307-EXTRA	Additional parts to upgrade from T307 to T307+
CRT-SPTLV	Test system to perform dynamic modulus according to AASHTO TP62, SPT flow number (NCHRP 9-19), SPT flow time (NCHRP 9-19)
CRT-INDTENS-CREEP	Indirect Tensile Creep measurement system according to AASHTO T322
CRT-PUMA	PUMA - Precision Unbound Materials Analyser for 150mmØ specimens
CRT-UTM-SCB	Semi circular bending system to perform EN 12697-44 SCB test

Specifications

Technical specifications are subject to change without notice.

Model	CRT-UTM-HYD25
Maximum Load	25kN
Load Transducer	Variable dependant on capacity
Actuator Stroke mm	50
Frequency	0 to 70 Hz
Electrical Supply[1]	3 Phase 415 Volts 50 Hz @ 16A
Compressed Air	7 bar @ 100 L/min For accessories only
Dimension mm (W x D x H)	UTM & Cabinet: 1000 x 1300 x 2400 Power Pack: 630 x 580 x 890

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Working space required mm (W x D x H)	1100 x 2300 x 2600
Weight (approx.) Kg	UTM & Cabinet 680 Power Pack 60
PC	Included

[1] others available upon request

Calibration & Maintenance
Calibration, Annual Service and Maintenance Contracts are available for this device. UKAS accreditation to satisfy typed testing as described in EN 13108. Please enquire for further details. Note: This device should be checked and calibrated annually.

Datasheet Version: 19.05/02

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